National Association of County Agricultural Agents

NACAA 2019

Proceedings

104th Annual Meeting and Professional Improvement Conference

September 8-12, 2019 **Fort Wayne, IN**

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2018-2019 NACAA Report to the Membership

President

Richard H. Fechter

Kansas

Where did the year go? The past year has just flown by. It seems like only yesterday we were in Chattanooga, Tennessee and I was being sworn in as the 101st President of NACAA. This has been a very exciting and challenging year. I am very pleased to report that NACAA has had an excellent year and is in great shape for the years ahead.

Serving as your President has been a great experience for me, but I cannot take credit for all our accomplishments. Each member of your elected board of directors plays a unique and significant role in ensuring the smooth functioning of this association. Many thanks to the officers and directors for your sincerity and work ethic for your role in NACAA. The NACAA Board of Directors is truly a team. As a team, our main goal has been to increase the value of your membership in NACAA. The NACAA Board continues to look forward toward potential changes and how our association can adjust to these.

Those of you that have participated in hosting an AM/PIC, know the amount of work that goes into this meeting from the host states perspective. The Indiana agents have worked very hard to put together professional development tours, spouse and life member programs, and sons and daughter's programs that are sure to please everyone.

The 2019 AM/PIC will provide multiple opportunities for members to hear presentations from speakers and witness the presentation of awards to many of our peers. I think you will find our Sunday evening speaker extremely inspirational. Also, our keynote speaker, Damian Mason, on Monday morning will be one you won't want to miss. Damian will provide insight on today's business of agriculture and entertainment. Both men attended Purdue University. The schedule at the AM/PIC will be very similar to last year with the shortened Wednesday general session allowing for additional breakout sessions for member presentations. This enables a larger number of members the opportunity to be recognized as having presented at a national conference.

Some other changes that we have implemented this year to better meet the needs of our members is through technology. Thanks to the help of John Porter and Jennifer Rees, our member presentations will be able to be evaluated on your smartphone or other device with SLIDO. Also, we will be using the YAPP app for the AM/PIC. The YAPP has many capabilities besides just our schedule of events. We are very excited about the possibilities not only for this year, but in future years with the YAPP.

A couple of other noteworthy changes to the AM/PIC. Our Hall of Fame winners will be recognized at the Annual Banquet on Wednesday evening. Also, when you registered for the AM/PIC, you should have noticed that we are offering lunch opportunities for all members. Members that signed up for lunches can attend any of the Search for Excellence Luncheons that they wish once they pick up their lunch and if the room has available seats. This is just another way that our board is giving back more to our members.

I have had the privilege of leading the NACAA Board through the Post AM/PIC meeting in Chattanooga, Tennessee; the Winter Board Meeting in Fort Wayne, Indiana and a Spring Board Meeting in Wichita, Kansas and monthly conference calls. I also attended the NACAA Western Region Professional Improvement Conference in Cody, Wyoming.
The Spring Board Meeting was a slight change from previous years. Besides being later in the year, it was in my home area of Kansas. We had a very productive meeting and accomplished many things. We also had a great tour day and ended the day for supper at the Fechter home and was entertained by Jeff Davidson. Jeff is a former Kansas County Agent (my County Agent when I was growing up) and western singer and entertainer.

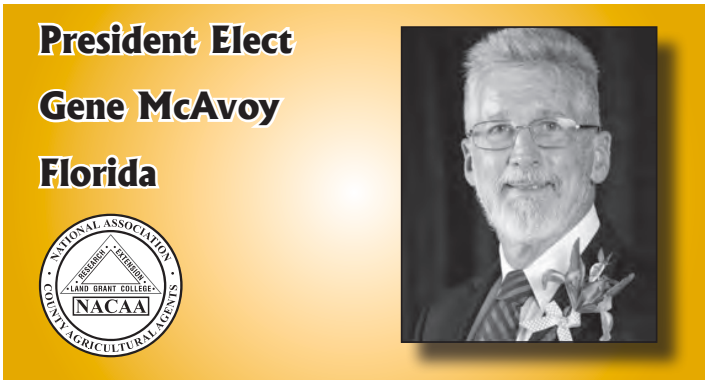
In addition to being NACAA President, I have had the honor of representing NACAA on the Joint Council of Extension Professionals (JCEP) board, participating in monthly conference calls and two face to face board meetings. I served

on the planning committee for the Extension Leadership Conference in San Antonio, Texas. Next year I will serve as Secretary for JCEP. I also participated in the PILD Conference in Washington D.C. While there, Past President Alan Galloway and President Elect Gene McAvoy and I met with various officials in USDA and NIFA to build a common understanding and to build future professional development partnerships between USDA/NIFA and NACAA.

It is our committees at the state and national level that allow NACAA to accomplish our mission and goals. They are truly the backbone of this great association. Each year committees work with the NACAA board to bring new opportunities to our membership. As we continue to look for ways to increase our association's value to members, we need your involvement. We need your input to the state and national committees, and we also need individuals that are willing to step into committee leadership roles.

One committee change that will take place at the end of this years AM/PIC is with the 4-H & Youth Committee. These changes were recommended to the board from the current 4-H & Youth Committee. The Excellence in 4-H & Youth Committee under the Program Recognition Council will be dissolved. The Excellence in 4-H & Youth Programming Award will be under the Search for Excellence committee in the Program Recognition Council and the name of the award will be changed to Search for Excellence in Youth Programming. A committee was created under the Professional Improvement Council named 4-H & Youth programs to oversee accepting and scheduling 4-H & Youth presentations.

It certainly has been my pleasure to serve as your president this past year. It has been an experience that was beyond what I expected, and I have treasured every moment of it. Through challenges and high points, it was a great privilege to serve with my fellow NACAA Board members and with our Executive Director, Scott Hawbaker. I have gained so much from the experience and I hope that I have had some small positive impact on the future of NACAA and its members. A very special thank you to my wife Julia and our children Wyatt and Peyton; for all their support and willingness to take care of things at home when I have been gone.



It has been a fast paced year and it is difficult to believe that my term as President-Elect of the National Association of County Agricultural Agents (NACAA) is rapidly coming to a close.

It has been my privilege and an honor to work with and learn from the many talented men and women that make up the NACAA board of directors, the council chairs and committee leaders who work tirelessly behind the scenes to ensure that NACAA continues to serve its members and achieve its stated goals of: advancing the professional status of Extension agents and specialists with agriculture-related Extension appointments, to encourage, promote, and provide professional improvement for all members and provide members with the opportunity for the exchange of ideas, methods, and techniques.

Each NACAA office has a specific set of duties and responsibilities which are clearly defined in the NACAA Policy Handbook. The NACAA President-Elect is responsible for a number of things, the most important of which is to facilitate and coordinate NACAA donors and sponsors and assist the Executive Director with retention of current sponsors while focusing on identifying, soliciting, and securing new donors. Sponsors are essential to NACAA and without the generous funding from our supporters many of our professional improvement programs and program recognition awards would not be possible.

This has been a challenging year as one of our long-time sponsors which has been a major partner for many years has dramatically reduced their support due to changing market forces. Despite this we have been successful in identifying several new sponsors which have helped fill some of the shortfall which resulted from this unforeseen decision. Some of the new sponsors that we have been successful in identifying this year include Farm Dog, Advanced Composting, The Fertilizer Institute and the National Corn Growers Association.

I would be remiss if I did not recognize our many long time sponsors including: Farm Credit, Livestock Marketing Association, Syngenta, Corteva Agriscience (formerly Dow AgroSciences), American Income Life, National Crop Insurance Services, Pipeline Ag Safety Alliance, the Center for Veterinary Medicine, SARE, the National Pork Board, Bayer Crop Science, and Explorations by Thor.

Donor support for the NACAA AM/PIC is vital to NACAA's ability to provide members with a low-cost but world-class professional development meeting. We are constantly seeking new donors as they are vital to support our programs. NACAA members have a critical role to play in recruiting new sponsors and retaining our long-time supporters. You all are on the front lines and interact regularly with potential sponsors. You may have grown up with or might have gone to school with someone who is now in an upper level position with a company that may represent a possible donor.

To encourage members who recruit prospective donors, NACAA has developed an incentive program to reward those who nurture fruitful partnerships between new sponsors and NACAA. Members who recruit new sponsors contributing $2,000 to $4,999 have their AM/PIC registration fee reimbursed. Members who secure sponsors contributing $5,000 and $9,999 are rewarded with registration reimbursement and $500 to attend the AM/PIC. If a member helps NACAA partner with a donor contributing $10,000 or more, they receive the registration reimbursement and $1,000 for travel to the AM/PIC. These benefits make the effort to help recruit new sponsors truly rewarding for members.

Another thing all members can do is to take a few minutes and thank all of our sponsors old and new for their generosity and support of NACAA. When you get back home, take a few minutes to write a note to the donor who sponsored your award or conduct a Trade Talk or Super Seminar on something that will help you educate your clientele back home, and simply because of the many professional improvement and development opportunities they make possible.

I would like to extend a special thank you to Scott Hawbaker, NACAA Executive Director. NACAA is very fortunate to have someone like Scott. He does an amazing job of maintaining existing partnerships, identifying opportunities for potential donors and has a unique ability to selling NACAA to prospective new donors. Thank you Scott for everything you do for NACAA and for making my job as president-elect easier.

As President-elect, I had the chance to participate in the Joint Council of Extension Professionals (JCEP) Extension Leadership Conference in San Antonio. The JCEP represents the collective voice of over 10,000 professionals and connects Extension agents from all disciplines ranging from Community Development, Family and Consumer Science, 4-H and Natural Resources. The JCEP Board consists of the President, Past President and President Elect of all the JCEP member organizations. The opportunity to work with the leaders of our seven sister Extension professional associations has been rewarding and has helped broaden my perspectives and hone my leadership skills.

In April, I attended the JCEP Public Issues Leadership Development (PILD) conference in Washington DC., with Past-President Alan Galloway, President Richard Fechter, and Vice President J Craig Williams. Richard, Alan and I met with Bill Hoffman at NIFA as well as NIFA Director Scott Angle, USDA's Research, Education, and Economics Mission Area Deputy-under Secretary Scott Hutchins and many others at USDA, NIFA and SARE. I feel we were successful in cementing our relationship with these important federal partners and were gratified to hear NIFA officials express a strong desire for more agent involvement in research proposals. Hopefully this will translate into more financial support for agent led research and outreach activities. SARE continues to be an important partner and supports a number of our professional development opportunities and tours.

On a personal note, while in Washington DC, I was pleased to be able to pursue a personal tradition and attend Sunday services at the National Cathedral and pray for blessings for the strength, wisdom and determination to perform my duties as a leader and officer of the National Association of County Agricultural Agents.

At the JCEP Summer Board Meeting in Nashville, I was humbled and honored to be nominated and elected as President-elect of JCEP and my term will commence in January 2020.

I would like to take this opportunity to say thank you to the members of the Florida Association of County Agricultural Agents for their support and confidence in me as without their encouragement and the support of the University of Florida IFAS Administration I would not have had the chance to be a part of this amazing opportunity to serve on the NACAA Board.

The more I learn about NACAA and work my way through the officer rotation, the more I come to appreciate the foresight, leadership and organizational skills of the members and NACAA leaders who have gone before us and who have helped make NACAA what it is today.

I would like to express my gratitude to all you all, the NACAA Members as well, for strength of the National Association of County Agricultural Agents stems from your collective talents and abilities.

I appreciate the trust you placed in me when you elected me to the NACAA Board and I look forward with great enthusiasm and deep humility to serving as your president. I am truly humbled by the opportunity to follow in the footsteps of the many outstanding leaders of NACAA.

My door is always open and I look forward to seeing you all in Fort Wayne, Indiana in September.

Vice President
J. Craig Williams
Pennsylvania

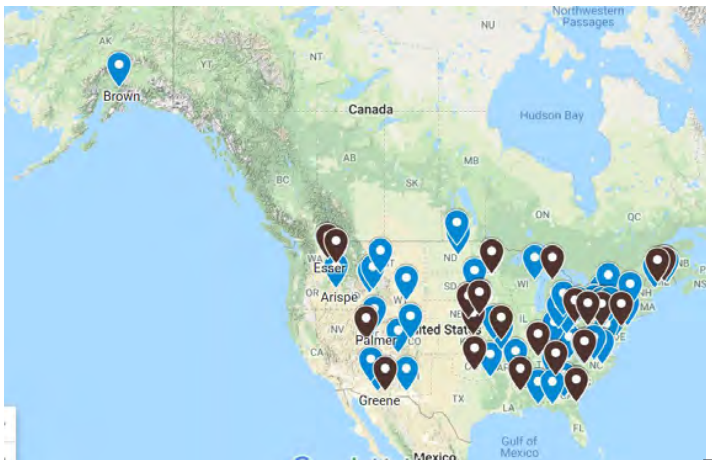
It is a great honor to serve as the NACAA Vice President and to be involved in the workings of the NACAA association. The NACAA is the member's association and that is not truer than the workings of the Committees and the Vice President.

My Vice President campaign Motto is "All working together for your association".

An example from one of our NACAA board meetings is that: Participation is like an extension cord; it only works when it is plugged in on both ends. This is how the committee structure works.

The year begins with reviewing the post AM/PIC reports from the committees and making any changes to the handbook or committee work that is needed. This is the start of our monthly meetings.

I want to let everyone know that we have an effective Executive Program Committee team (EPC). The team is Keith Mickler, Program Recognition Council Chair, Brian Haller, Extension Development Council Chair, and Bill Burdine, Professional Improvement Council Chair and the Vice President of NACAA. We meet monthly to discuss NACAA committee business. The Vice President and the EPC worked very hard to keep committee positions filled and refilled when committee vice chairs became open during the year. I have included a map of the Committee positions across the country. We have 76 agents serving across the 17 National Committee Chairs and 68 Regional Committee positions.



Each new idea for NACAA is brought forward in the committee structure and can be passed on to the committee chairs. Then the council chair and the Vice President talk them over and the Vice President presents them to the NACAA Board. The board welcomes these ideas and several approved changes happened this year, that are listed below.

We changed the 4-H award and 4-H presentations committee structure and procedure. This idea was presented by the 4-H and Youth Committee in a very well thought out and written presentation to take effect in 2020. This revised committee will be in place for the 2020 awards and presentation year. This is a one example of a change that the committee proposed and that was implemented.

We redefined the JCEP NACAA Creative Excellence award better reflect NACAA goals. We thank JCEP for this opportunity.

The EPC and the board clarified the position of NACAA's focus on diversity and inclusiveness for all members. This position was added to the Committee handbook under the Leadership and Administrative Committee section.

Members of the EPC team and SARE met to review the common SARE and NACAA goals for the AM/PIC. We had productive discussions to meet and maximize each association's goals! We thank SARE for their involvement in our association and the opportunities for our members.

For several of the past AM/PICs we have talked about improving the agent presentation evaluations. Why do we print over 1000 copies of the paper evaluations? We ask how can we do better? But with all ideas comes: Who will do it? No goals get accomplished unless someone steps up to say, I will do that! We thank the Teaching and Educational Technologies Committee for helping with this idea. This committee will enter the presentations into the SLIDO system. Electronic SLIDO evaluations of the Agent's professional improvement presentations on Tuesday and Wednesday will happen at the 2019 AM/PIC.
NACAA has purchased and invested in this SLIDO technology following a test run at our winter board meeting. Members of the NACAA Teaching and Educational Technologies Committee have stepped up to help run the evaluation during the AM/PIC. We encourage everyone to try the new evaluation technology during the 2019 AM/PIC. Our goal is to make evaluations easier on the audience, the agent giving the presentations, and the meeting hosts.

There are 153 accepted professional presentations that will be at 2019 AM/PIC this year. We hope to have all these evaluated electronically. I also thank the agents who took the time to present their presentations to the membership. Thank You.

I encourage all agents to find the opportunities that await you

at the AM/PIC. These opportunities might be a Breakfast or Luncheon celebration or the professional presentations. If you have a desire to help and serve on a committee, let your regional director or vice director know. This is the first step of becoming more active.

Thank You for your service to the association and for being active in the association.

Secretary

Ginny Rosenkranz

Maryland

This has been my second year as the NACAA Secretary, and it has been amazing! I have learned so very much about how much work every NACAA Board member does.

As Secretary of the Association, my primary responsibility is to record minutes of the board meetings and other activities of the association and keep our membership informed through posting the minutes to the NACAA website. The board hold meetings before and after the Annual Meeting and Professional Improvement Conference. We held winter and spring board meetings and monthly teleconferences. During the meetings I take minutes, but I also make audio recordings that I play back to try to capture details I may have missed. Draft minutes are reviewed by the board and then approved at a meeting that is at least 2 weeks after the board members received the draft minutes. After the minutes are approved by the board they are posted on the NACAA website. Links are also established to board documents. The board decided in 2010 to restrict access to association financial information and so these reports are not available through the website, but can be requested from the NACAA Treasurer.

As the NACAA Secretary it is also been a part of my job to contact all the Voting Delegates from each state to let them then when and where to meet for the Voting Delegates Breakfast on Monday Morning and the Voting Delegates Session on Tuesday. Each state's voting Delegates are determined by the membership.

The Association Secretary serves as the chair of the Internal Publications Committee. This committee is charged with oversight of the content of the NACAA Website, The County Agent magazine and the Journal of NACAA. Lee Stivers has been a wonderful editor of the Journal of NACAA since 2015 and is now joined by Don Llewellyn who will learn the ins and outs of being an exceptional editor of the Journal of the NACAA. The NACAA Journal provides members an avenue to publish in a peer-reviewed journal, and is an opportunity to share program and research results with our membership.

It has been an honor to serve the membership of NACAA and I look forward to seeing you in Fort Wayne, Indiana this September!

Treasurer

Lenny Rogers

North Carolina

I have truly enjoyed serving as your national treasurer during my second year in this position. Handling the day-to-day account tasks of our association is a never ending task. But once in the swing of things, and after handling all the position's duties for an entire year, it comes much easier. Handling the complete accounting process of last year's AM/PIC in Chattanooga TN was a learning experience all in itself.

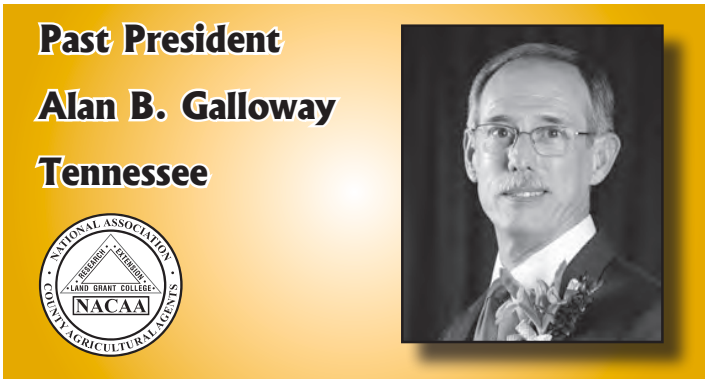
The 2018 AM/PIC in Chattanooga was a successful and profitable meeting. With a very large turnout the meeting was successful for both NACAA and the TAAA&S. I do assure you that our National Association is in good financial order. We have a wide diversity of accounts that give us stability, in addition the National Board has been making wise spending decisions. We have been able to put ourselves in a very stable financial position. We are now able to absorb some of the excess AM/PIC expense burdens in order to keep registration costs down in less profitable years, such as this year's 2019 AM/PIC.

Our income sources are steady with strong membership dues, AM/PIC registration and National Donors/Sponsor incomes. We have lost one major sponsor, but have picked up a several other sponsors this year to help offset things.

I sincerely want to thank my own state association, NCACAA, for their support and encouragement through this process as a national officer. Also I wish to thank the North Carolina Cooperative Extension Administration and my County Administration for their support. With this, I hope to serve you with continued hard work and integrity in this position for one more year if re-elected.

If you have any questions about NACAA's financial status or questions on our financial operations, look me up at this year's AM/PIC or email me at lenny_rogers@ncsu.edu . I will be glad to be transparent about our finances at any time.

I have truly enjoyed working with the current National Board this past year. This has definitely been a cohesive group that has worked extremely well to accomplish several things that benefit our association. I am eagerly looking forward to reuniting with old friends and serving NACAA at this summer's AM/PIC in Fort Wayne!



Time never stands still! That statement seems even more poignant as I recall the past few years of involvement on the NACAA board. Serving two years as an NACAA southern regional director, three as treasurer and four in the vice-president to past president rotation have made nine of the last ten years go very quickly. The experiences and the members met along the way have been above all expectations.

Two major duties of the past president is to update the Annual Meeting and Professional Improvement Conference Handbook and serving as Chair of the Fiscal Committee. The AM/PIC handbook has seen major updates and now includes many details to assist potential host states as they make plans to bid to host and information on the functions of each committee as a state association works toward hosting an AM/PIC. The NACAA Fiscal committee works closely with the treasurer and president to ensure all NACAA funds are appropriately tracked and all fiscal policies are followed. NACAA has been fortunate that past and current boards have planned conservatively and managed our funds wisely. Moving forward NACAA should remain in a solid financial position.

I have been constantly encouraged and impressed with the work of NACAA members and what they accomplish in their counties, parishes, states and across our country. NACAA remains a strong professional association because our members care about what they do and about keeping NACAA a premier professional association. There are not enough words of praise for all the NACAA committee members, council chairs and board members I have been fortunate to serve alongside. In the words of Tony Robinson, "The secret to success is…..is no secret. It's called work your tail off and find a way to add more to the value to people's lives than anyone else does!" NACAA members do it every day!

All NACAA members need to know their work is important to the rest of us. Everyone should submit an entry into the communication awards program, a poster presentation, a Search for Excellence entry, or even apply to provide a presentation during the NACAA AM/PIC. Others can learn from your successes. Members younger in their career might take your idea and grow it even bigger in their community. It is important we all share what we have done with others. One of the most successful educational programs I have had the pleasure of working on grew in part out of a conversation I had with an Achievement Award recipient during an AA awards breakfast. Seeing and hearing her enthusiasm as she discussed involvement in a program in her state, provided the incentive to ask co-workers back home if we could do something similar.

NACAA members also have the opportunity to help get a young farmer receive recognition by nominating them for the National Outstanding Young Farmer (NOYF) program. The farmers nominated each year for the recognition program and the past NOYF recipients have grown into a fantastic support organization for farmers across the country. Serving as a judge of the recognition program was a high point during my year as past president. The challenge of interviewing the top ten nominees and ranking them to determine the top four was extremely difficult. The caliber and knowledge of those young farmers and their spouses was amazing. They were simply impressive! Every NACAA member should be looking for a farmer they can nominate. NACAA has been an integral part of the NOYF program for a number of years. NACAA members often nominate many of the top ten farmers recognized each year.

My sincere appreciation goes to the administrators of the University of Tennessee Extension for their support of NACAA and understanding the value in having members highly involved in professional associations. Also a huge thank you goes to the members of the Tennessee Association of Agricultural Agents and Specialists (TAAA&S). Their support, hard work and commitment to showcase Tennessee showed through the exemplary job done in the execution of the 2018 NACAA AM/PIC in Chattanooga. They certainly set a high bar for all AM/PIC host states to follow. They truly went above and beyond.

While I will miss the regular interaction with Scott Hawbaker (NACAA executive director) and all the members of the NACAA board, I am confident in the ability of Scott, the board and our committee structure to keep NACAA moving forward and continually finding ways to enhance our professional improvement programs. The opportunities I have enjoyed and the many wonderful people met along the way will always provide treasured memories. I look forward to hearing of the accomplishments of NACAA members and our association leaders as NACAA continues to enrich the abilities

of our members by providing top quality recognition and professional improvement opportunities. Whenever recalling my involvement in NACAA, I think it was probably best said by Dr. Seuss, "Don't cry because it is over. Smile because it happened". My smile will always be a wide one when thinking of NACAA.

Policy Chair

Stan Moore

Michigan

In my report last year, I spoke of a fishing trip to the Au Sable River in Grayling Michigan, the policies that govern that amazing river, and how important those policies were to making that experience what it was.

As many of you know, I am hiking sections of the Appalachian Trail with three other past presidents of NACAA. This year, our group (Three Men and a Yankee), jumped forward to the northern terminus of the trail. We hiked the 100-mile wilderness and eventually up Mount Katahdin. The hike spanned nine days and covered a total of 120 miles. To say that it was challenging would be a grand understatement. Those that laid out the trail in Maine seemed to have a passion to take hikers to the top of each rock laden mountain, through each muddy bog, and across every slippery root they could find. Coupled with some very determined black flies and mosquito's, each of us would say it is the toughest hike we have accomplished so far. The last day of the hike was a climb up Mount Katahdin. It was especially challenging for your policy chair, as I'm not big on heights. When we found ourselves needing to put away the hiking poles so that we could grasp the rock face with hands and feet, I definitely busted out of my comfort zone. I had to remind myself that many had gone before me and many would follow behind me, and almost all made the summit safely.

One question we often hear is "It sounds so hard, and not very fun, why do you do it?". Well, that's the rest of the story. They say we learn the most, and grow the most from challenging experiences. We also tend to remember them the best. With our hiking, we know it is going to be challenging, but we also know that we will have a great time of comradery, and will experience some amazing sights during our journey. If you want to see some of this "why" you can visit our Facebook page under our trail name.

If you haven't been to an NACAA AM/PIC then you're missing one of the "why's" of your Extension career. In Extension we all go through some challenging times. The rigors of the long and off hours, times when you feel like the university system is against you, betrayal by colleagues, losing a close co-worker, and feeling unappreciated, may be some of the challenging experiences you have had. Like the days following a hard hike, you might feel a bit bruised and battered at times. You might even hear from family or friends, "why do you do it?". Your involvement in NACAA can provide the comradery, recognition, and help you journey to some amazing heights in your career. You just have to be willing to set out on the journey, get involved, and reap the rewards.

I would challenge you, as an NACAA member, to break out of your comfort zone! Get involved and help take NACAA to new heights. Besides serving in various roles within NACAA, you can also provide your valuable insights through input to those already serving. Input can be made through NACAA committees, State leadership, or through National leadership.

Policy may seem like a dry and boring subject to some. Granted it would likely not be listed as your highpoint of involvement with NACAA or any other organization, yet it is critical to how an organization runs. Policy keeps us pointed in the right direction, keeps the process as fair as possible, and helps to ensure that all members have the opportunity to gain from the association and the opportunity to contribute to its continued success. Policies are like blazes on the trail that show which way to go, you don't brag about how beautiful they are, but you sure are glad they are there.

Each year one section of the NACAA Policy Handbook goes through a major review process, in addition to the policy updates that occur through regular board meetings. For the 2018-2019 year, Section IV, Duties of Officers and Directors was reviewed and updated. Special effort was made to clarify any grey areas, bring outdated language up to current operations, and make the entire section more readable for our members.

Your current Policy Committee members are: Rick Gibson, Phil Pratt, Stan Moore, Paul Wigley, Paul Craig, Henry Dorough, Mike Hogan, Cynthia Gregg, Mark Nelson, and Alan Galloway.

It's been my pleasure to serve in the role of policy chair for you and NACAA. My term ends with this year's AM/PIC in Fort Wayne. Henry Dorough of Alabama, will begin his two-year term at that time, and I am confident that Henry will do an amazing job in this role.

North Central Region Director
Connie Strunk
South Dakota

Wow!! What an experience the past two years as being the North Central Region Director has been for me. I am forever grateful for the professional development and personal growth opportunities provided to me from within our organization.

Over the last year, I have had the opportunity to visit with many NACAA members within our region. I have had the privilege of attending, participating, and presenting at the state meetings in Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. Due to scheduling conflicts I was unable to attend Missouri's state meeting this year. I need to thank Jerry Clark, North Central Vice-Director, for being flexible and making the trip to Missouri as my stunt double.

While traveling to each state visit I found myself with a lot of time to reflect and gain a greater appreciation for agriculture, Extension, and our association. I am humbled with the strength, persistence, and resiliency of those in agriculture. This past year in the North Central Region, we have had major snow fall events, rain, flooding, more rain, more flooding, more rain, delayed planting, late planting, prevented planting while some states are in or are facing drought conditions, high input costs, low prices, and farm stress. Through all this uncertainty, our farmers/ranchers/producers remain committed to doing what they love—taking care of their livestock and their land for today and future generations.

Each state visit was both a unique and rewarding experience. At each visit I brought forward the board's need-to-know talking points and issues of concern. I strived to make honest and open communication and interacting with our members a very important part of each of my visits. I also spent some time encouraging diversity within our organization, not only focusing on gender and race, but also encouraging representation from all states within the region. I really enjoyed representing NACAA at each business meeting and being put to work whether it was presenting awards, providing inspiration at banquets, or grilling my own supper; these experiences have helped me become a better Extension professional and for that I will always be forever thankful.

Back in February, I had the pleasure of attending the JCEP Leadership Conference. While there, I was able to visit with many of our state association's leaders. I am hopeful we can continue with open communication and embrace change in a positive light no matter the size of the issue or concern.

In order for our NACAA Association to grow and stay relevant we have to be willing to try new things and accept that change is needed. This change starts with each and every one of us. We need you! We as an association need all NACAA members to step out of their comfort zone and participate. Whether this is by attending our national meeting (AM/PIC) and pre-tours, submitting an abstract for a presentation or poster, applying for communication or search for excellence awards, serving on the many different NACAA committees both within your State Association or on the National Association level, becoming a SARE Fellow, utilizing those scholarship funds, writing an article for the Journal of NACAA, or running for State or National office. I have found you get out of this organization what you put into it. It's time to invest in yourself and better our Association, so what's stopping you?

I would be remiss if I didn't take the time to thank those who love, support, and encourage me to follow my heart and my passions. I need to extend a huge thank you to my husband David who has been holding down the home-front and doing a wonderful job while I have been gone! I also want to thank my children, Benjamin, Ada, Gunnar, Cora, Weston, and Zachary for their understanding and patience while I have been away. I would also like to express my gratitude to the South Dakota Association of Agricultural Extension Professionals, SDSU Extension, and the North Central Region for allowing me this wonderful, once-in-a-career opportunity.

In closing, serving our association and representing the North Central Region has been and continues to be, both an honor and a privilege. If you ever have any questions, comments, ideas, etc. please feel free to reach out to me. Even though, I will be retiring this year as your North Central Director I will continue to be a cheer leader for the North Central Region. I get the privilege of passing the gavel onto, Jerry Clark your incoming North Central Region Director from Wisconsin. I hope you will welcome Jerry into each of our states with the same grace and hospitality that you all have provided to me. Jerry, thanks for having my back and for all that you have done and will do for our association. For those of you who can make it—I look forward to seeing you in Fort Wayne!!

Northeast Region Director
Dwane Miller
Pennsylvania

It has been my honor to represent the North East Region as a Director on the NACAA Board this past year. I was approached to fill the unexpired term of current Director J. Craig Williams when he ran for Vice-President at the 2018 AM/PIC. While my time on the board is only one year, I've enjoyed the opportunity to meet many NACAA members throughout the North East Region. While visiting with membership at their state meetings, I've gained an appreciation for the hard work, dedication, and talent that exists within our organization. During the professional improvement tours, I saw first-hand the good work that is being done by NACAA members in working with the agricultural and natural resource community. I also had the opportunity to attend the Extension Leadership Conference sponsored by JCEP, where I experienced excellent professional development while networking with both NACAA and other professional association members. I always leave these conferences with new ideas to improve myself and the organizations I work with.

I would encourage each and every member to take an active role in YOUR professional association. I think back about the person who encouraged me to apply for a vice-chair position over 10 years ago. If it wasn't for him pushing me, I probably wouldn't have done it. I have met so many great people and forged relationships with agents across the country. The rewards of this association are tremendous if you take the opportunity!

The North East states are busy laying the foundation for an excellent 2021 AM/PIC in Philadelphia. As we have done in the past, all the North East states come together and contribute in hosting the AM/PIC. I am impressed with the teamwork that is occurring to ensure a great time when you to come to Philadelphia over the 4th of July; it's an experience that will not disappoint.

Serving on the NACAA board has allowed me to see very clearly the hard work and dedication that our national officers, directors, council chairs, policy chair and executive director put into this organization. Their efforts are greatly appreciated.

Finally, I would like to thank the Pennsylvania Association for nominating me to serve as Director this past year. It is an opportunity that probably will come around only once in a person's career, and the experience has been one that I will forever be grateful for.

Southern Region Director
Andy Overbay
Virginia

It is sign that I am getting older; time has flown by and my service as a Southern Region Director is drawing to a close. Of course, I won't be straying too far from board meetings until the 2020 AM/PIC in Virginia Beach has run its course. By the way, y'all come see us in VA Beach!

I have really enjoyed my time on the National Board; it is always interesting to get first-hand knowledge of the inner workings of any organization. I would like to thank my fellow Board members for their friendship and also for reminding me that we all come to the table with different interests, talents, goals and needs.

NACAA membership is truly a diverse group and while it is a challenge to meet the needs of our members, NACAA offers a unique opportunity to make a variety of selections from our "cafeteria" of needs-based programming and member expertise.

Andrea and I will be attending our 18th straight AM/PIC in Fort Wayne. We always look forward to seeing old friends and making new ones. Good Extension work requires that educators establish relationships. For me, that is what makes NACAA so special and attending our national meetings so personally fulfilling.

With the goal of relationship building, I challenge our Region Directors and Officers to share their personal stories with members as they travel to State Association meetings. Members need to be able to relate to us as their representatives, and members also need to know how much we appreciate their friendship and support as well. I certainly have been uplifted by friends old and new in each State.

Just as NACAA continues to be open to the future, I encourage each of our members to be open to the possibilities that lie within each of the people we touch on a daily basis. During my final year of State visits, I posed the question, "What does every 60-year-old farmer have in common?" The answer: Forty-nine years ago, every 60-year-old farmer was an 11-year-old boy or girl. Regardless of your current responsibilities and duties, 4-H offers us the opportunity to reach the clients of our future.

Just one example is Mr. Paul Saunders of Piney River VA. Paul grew up on a subsistence farm in Nelson County VA. His 4-H "teacher" (Paul's term) was a Mr. Whitehead, who encouraged Paul to consider growing boxwoods as a 4-H project in 1947. From that humble suggestion grew one of the premier nurseries on the Eastern Seaboard, Saunders Brothers Nursery. Paul and his seven sons, and their families send boxwoods and other products to many customers including the White House and the Smithsonian. The moral here is that we never know where the seeds we plant will grow…but we do need to be committed to getting them broadcast among our youth.

I would like to thank each State, Region and National officer, director, and committee member for their service to our organization. Your time and talents do not go unnoticed. I would also like to remind you that the true mark of a successful leader is how well they paved the way for future leaders to guide our associations. Our future leaders should not be clones of past leaders; they need to trust their instincts and abilities to make sound decisions based on current circumstances. They can only do this if we "old dogs" stand aside and assume a supportive role.

Please consider this. Where in their homes do people hang their most treasured artwork? It isn't in the hall or foyer…it's on the refrigerator. The refrigerator is reserved for a child's renderings of everything from the family unit to the Easter Bunny. They may only be one color and a swirl of lines…but each one is special. Each one is valued. Our future leaders of NACAA may not always get it right. Mistakes will be made; however, great leaders of today allow future leaders of tomorrow to grow and improve.

In closing, my pledge is to continue to serve NACAA as a supportive follower. I will do my best to help our future directors and officers shine. I want to thank my fellow Virginia and Southern Region members for putting their trust in me and I want to give a special thank you to my wife Andrea who supports me in every way possible.

Southern Region Director Michael Reeves Alabama

My first year as Southern Region Director has been a great experience. I would like to thank the Alabama Association of County Agriculture Agents and Specialist for having enough confidence in me to nominate me. It is a high honor to be able to represent the NACAA members of my home state and the Southern Region by serving all NACAA on this Board. I truly appreciate the opportunity.

For me, it feels like I receive more from being an NACAA member than I ever give. I think it is because the more I am involved, the more I gain. I have gained much from the professional development opportunities provided by this organization, but for me personally, the most valuable benefit of being an NACAA member is the chance to get to know and work with Extension people from all over the country. There are certainly many ways we each go about our jobs and personal lives in the various regions of the country we live in, but it seems to me that we are all much more alike than we are different. When we work together, we all benefit personally from the experience. If we do not, then we are not paying attention.

While technologies, job responsibilities, and demands on our time change, I think the benefits of being an NACAA member are more valuable than ever. I would like to encourage current NACAA members to take the time to share how you have benefited, from this organization, with other Extension employees, especially newly hired Extension employees. Ask them to become a member and then help them get acquainted with NACAA. Show them how they can be involved. My first AM/PIC was in Albuquerque in 2000. I really appreciated the way Ronald Britnell, an experienced Alabama member, took the time to make sure I knew what was going on during the AM/PIC. As a new hire, the AM/PIC was a great time to get to know people from my own state, way out in Albuquerque, NM, while at the same time, getting the feel of what being a part of a national organization was like. Do not just assume that every new Extension Agent wants to be a part of our organization. Tell them how you have benefited, professionally and personally, by being involved in NACAA. Tell them about the scholarship program; the opportunities to present at a national conference and publish in a national journal; and the chance to see places that you might not otherwise see. In my case, I will always tell them about how being involved in the NACAA has given me the chance to know people from all over the country and learn from them. As iron sharpens iron…

I would like to thank all the people from the states that I have had the privilege of visiting, as Southern Director--always southern hospitality at its finest! For those I did not visit this year, I would love to join you at your upcoming AM/PIC. Thank you to Andy Overbay, our Senior Southern Director, for guidance and setting the example of how to serve. Thank you to our Southern Vice-Directors, Stuart Gauthier and J.J. Jones, for covering for me while I was dealing with a health issue earlier this year. I am doing great now and looking forward to another year serving NACAA as your Southern Director.

Western Region Director
K. Scott Jensen
Idaho

Greetings from the Western region! As I near end of my first year as a director on the national board, I am thankful and humbled for the opportunity to serve the association. I have been impressed by the serious dedication and commitment of the national board members to the future of our association. We are in good hands! I am likewise impressed by our council and committee chairs and appreciate the time they give to fulfill their responsibilities.

It has been my privilege to visit several of the state association meetings in the Western region over the last year where I have made many new friends and acquaintances. Our Western region states may be small in membership as compared to other regions in the country however there is no lack of quality work and service performed by our agents and educators!

The Western region professional improvement conference this past year was hosted by the Wyoming Association in Cody, WY. We had a great day of presentations followed by some excellent entertainment and dinner at the Buffalo Bill Museum. The tour the following day was outstanding as we learned about agriculture and history in the area. One of the highlights for me was a tour of the Y-Tex ear tag factory.

This fall our Western Region PIC will be hosted by the Montana Association and will be held in Great Falls, MT. Their committee is hard at work developing some tour stops and planning for the presentation meetings. We would love to have you join us!

I would like to thank my colleagues in Idaho and the Western Region for this opportunity to serve. I am also thankful for the support of our administration at the University of Idaho for their support. It would not be possible to serve as a director without it!

If there is ever anything that I can do for you, questions I can answer, or messages/concerns you would like brought to the national board, please don't hesitate to contact me. I look forward to visiting with many of you at the 2019 NACAA AM/PIC in Fort Wayne.

Extension Development Council Chair
Brian Haller
Arkansas

The Extension Development Council's (EDC) committees – Leadership and Administrative Skills, Agricultural Issues and Public Relations, Early Career Development, and Teaching and Educational Technologies – help members improve their skills related to the art and science of extension practice. This focus on skills and methodologies to conduct extension work effectively makes NACAA unique from other subject-specific professional organizations.

The Council's efforts for the 2019 AM/PIC include informational seminars on Tuesday morning, September 10th. The presentations are part of four concurrent sessions featuring 12 hours of training. There are some great and diverse topics that have been accepted. Teaching and Educational Technologies has planned a hands-on super seminar on video production and Agricultural Issues and Public Relations has planned a super seminar regarding "GMO Questions and Answers". Leadership and Administrative Skills has a leadership panel planned as part of their presentations session. We hope you will join us!

Over the year, educational programming extended beyond AM/PIC through a webinar. The Early Career Development Committee offered a "First Timers Webinar" in June. NACAA is only as good as its committees, so I encourage NACAA members to increase your participation in the Extension Development Council's activities, and offer guidance and ideas on how we can better to serve your needs. Please share any ideas with your State Committee Chair or Regional Committee Vice-Chair, or attend out Committee Workshops on Monday afternoon, September 9th at the AM/PIC.

I appreciate our committee chairs, regional vice-chairs and state chairs as well as Vice President Williams for their individual and collective leadership and guidance during the past year.

Ag Issues & Public Relations Chair

Paul Pugliese

Georgia

We live in an era of 24-7 media exposure and are constantly bombarded with misinformation on the internet, social media, television, and marketing messages on food labels. There's no shortage of agricultural issues and public relations challenges that face every agriculture extension agent in the nation. This year's oral presentations at the NACAA AM/PIC will cover some of the hot topics that cross over state boundaries and touch a diverse audience. If you didn't submit an abstract this year, please consider submitting one for next year and sharing your exceptional work with colleagues around the nation.

This year, our committee will feature a Super Seminar at the upcoming NACAA Conference titled "Hot Topics: GMO Questions and Answers." This will be a 90-minute presentation about genetically engineered crops and how to communicate answers to common questions surrounding their use with the public. Our featured speaker, Dr. Wayne Parrott, is a Professor of Crop and Soil Science at the University of Georgia. He is a member of the university's Institute of Plant Breeding, Genetics and Genomics. Wayne was recently recognized as a Fellow of the American Association for the Advancement of Science. He was selected for this prestigious award "for distinguished contributions to the development and implementation of plant transformation technologies and to the discussions of the science and regulatory processes associated with genetically modified organisms." Perhaps no one in the world has been a more ardent defender of and advocate for genetically modifying agricultural crops for a more bountiful, nutritious and sustainable food supply.

It has been both a pleasure and a privilege stepping up to the role of National Chair this year and getting to work with our committee members serving from across the nation. We hope to see y'all soon in Ft. Wayne!

Early Career Development Chair

Greg Strait

Pennsylvania

The Early Career Development Committee has been working diligently to have a program for the many educators across the nation in their early careers. Thanks to the service of the committee members that have served this past year:

Greg Strait, Pennsylvania State University
Sarah Mills-Lloyd, University of Wisconsin
Danny Lauderdale, North Carolina State University
Steven Brown, University of Alaska

Our focus is to develop professional improvement opportunities that will assist educators with development in the association at the local and national level. The programs will help any educator succeed in their position regardless of years of service.

The committee has put together educational sessions at the 2019 AM/PIC in Fort Wayne, Indiana. Eleven abstracts have been accepted for presentation on Tuesday, September 10th from 9:00 -4:30 p.m. please check your agenda booklet for topics and location. There is a wide array of topics that will be covered. Please try to attend these as there will be educational topics for educators across the nation.

Early Career Development Committee held Zoom meeting for First Timers on June 11th. The goal was to have educators more prepared to attend the 2019 AM/PIC by reviewing the registration process, program and logistics of Fort Wayne. I would like to thank all educators working together to make this meeting a success. The First Timers Orientation will be held Sunday September 8th, from 3:00 - 4:30 p.m. and the luncheon will be on Monday, September 9th, at 11:00 a.m. Educators interested in Early Career Development are encouraged to attend any of these sessions. The committee will meet on Monday, September 9th, from 1:30 – 2:30 p.m. Your ideas will be very helpful to the committee to set goals for 2020.

It has been a great honor for me to serve as Early Career Development Committee Chair.

We look forward to visiting with you in Fort Wayne!

Leadership & Administrative Skills Chair
Nathan Winter
Minnesota

Hello from the Leadership and Administrative Skills Committee!

I would like to show some appreciation to our committee for their service and efforts on this committee.

Ed Martin, University of Arizona Cooperative Extension
Nicole Santangelo, Penn State Extension
Melody Rose, University of Tennessee

The work of this committee is valuable for the membership of NACAA. We have educational opportunities for the first year member and for the veteran Extension Educator or Extension Agent. To keep our competitive edge, I believe it is imperative for everyone to work on their development of leadership and administrative skills. Extension work develops leaders and our committee provides the opportunity for leaders to present and future leaders to learn. We also provide the opportunity for presentations on administrative skills that could be helpful to others. Last year I highlighted that leadership is the action of leading a group of people or an organization. Administrative skills are the skills required for success in administration, such as communicating, computing, organizing, planning, scheduling, or staffing. Our committee reviews the abstracts for the best presentations that will support the development of our NACAA membership.

We are looking forward to the following presentations at the NACAA AM/PIC followed by a 1-hour panel to discuss leadership challenges:

Active Listening
Kevin Camm, Virginia Cooperative Extension

The Politics of Being Apolitical: Being Carriers of Research-Based Information in the Age of Fake News
Neil A. Clark, Virginia Cooperative Extension

Mission Possible: Communication Tool for Moving Farm Families Forward
Tina L. Kohlman, University of Wisconsin-Extension

Washington State University Extension Administration Team Internship: Succession Planning Through Hands-On Leadership Development
Don W. Mcmoran, Washington State University

Creation of Leadership of Regional Extension Teams: An Example in Climate Education
Hans F. Schmitz, Purdue Extension

Young Cattle Producers Conference Builds Leaders in Idaho
Carmen Willmore, University of Idaho Extension

Challenges to Leadership in Extension
1-Hour Presentation Panel

The Leadership and Administrative Skills Committee will be meeting during our committee time on Monday. We would appreciate you joining us for the committee meeting and your insight. Thank you for the opportunity to serve as the Leadership and Administrative Skills Chair.

Teaching & Educational Technologies Chair
Jennifer Rees
Nebraska

The purpose of the Teaching & Educational Technologies Committee is to share new and innovative ways of using technologies and tools in teaching/reaching our Extension audiences. This year we've focused on a Super Seminar and a new evaluation tool for presentations at the AM-PIC called Sli-Do. We also thank John Porter from Nebraska on his assistance with Sli-Do.

Video production including editing has been a topic members have requested from this committee. We're excited to have a hands-on Super Seminar at AM-PIC this year focusing specifically on this! Committee members Matt Lollar and Sergio Arispe are taking the lead and will showcase the editing tools they successfully use in their programming (CyberLink and Camtasia). Please be sure to RSVP in the AM-PIC registration if you're interested in attending this Super Seminar.

Our committee also worked hard in seeking presentation abstracts for the upcoming AM-PIC and appreciate the state committee chairs for your help. We will have 16 presentations on Tuesday and Wednesday this year. Thank you to all who applied and we look forward to these presentations!

I've appreciated serving you in my time as chair and am grateful to our committee members for their service! Our regional vice-chairs are: Stan Mckee (Penn State), Northeast

Region; Matt Lollar (Florida), Southern Region; Sergio Arispe (Oregon State), Western Region; and Jenny Rees (Nebraska), North Central Region.

Professional Improvement Council Chair Bill Burdine Mississippi

The Professional Improvement Council (PIC) is one of three Councils under our NACAA committee structure. Our mission is to provide subject-matter, professional development opportunities to our membership. The Council consists of six committees: Agricultural Economics & Community Development, Agronomy & Pest Management, Animal Science, Horticulture & Turfgrass, Natural Resources/Aquaculture and Sustainable Agriculture.

Our educational activities include presentations, educational Pre-Tours, SARE Fellows program and super seminars during the AM/PIC. A great attribute of the committee seminar sessions at AM/PIC is that our presenters are our fellow NACAA members. This helps the presenter increase their promotion in rank while allowing our audience members to hear "real-world" information that they can modify to use in their own programming.

Between member led presentations, pre-tours and super seminars, everyone has plenty opportunities to teach and learn about a wide variety of topics. The Animal Science, Horticulture and Turfgrass, and Natural Resource committees have educational pre-tour opportunities scheduled and Sustainable Ag conducts the SARE Fellows program. Both of these events provide significant training on a specific topic. All six committees have multiple sessions planned in 2019 for member led presentations. I recommend you review the proceedings book and earmark the ones that interest you most. We have done our best to prevent committees from "competing" against themselves with concurrent sessions but we cannot prevent all conflicts. We have more sessions and presenters scheduled that ever before and will continue to offer as many member presentation slots as possible.

NACAA offers numerous opportunities for professional development and leadership. I encourage you to get involved with a committee to improve our association and improve your career through national service recognition.

I wish to thank the National Committee Chairs who have endured my many email reminders of deadlines and followed through on meeting those deadlines. The Vice-Chairs and State Chairs also functioned well in 2019. I truly appreciate your hard work and efforts. In closing, I wish to extend my appreciation to the other Council Chairs and to Vice-President Williams for the great working relationship we had in fulfilling our duties.

Ag Economics and Comunity Development Chair Richard Brzozowski Maine

The Agricultural Economics and Community Development Committee is pleased to offer professional improvement opportunities for NACAA members. This year's AM/PIC will include a full day of member presentations on Tuesday, September 10, 2019 when a variety of topics important to Extension professionals will be made. Each presentation will be 20 minutes in length with 5 minutes for questions.

The following presentations are scheduled.
Jane Elizabeth Cant, University of Florida, IFAS Extension; Enhancing Cattle Production Profitability in the Southeast through Incorporation of Winter-Annual Forages

Jeannie Layton - Dudding, Virginia Cooperative Extension, Judging School Virginia – Building a Community Certified Fair Judge

Jody Gale, Utah State University, Area Sector Analysis Process (ASAP) in Central Utah

Steven D. Johnson, Iowa State University Extension, Improving Crop Marketing Skills

Timothy McDermott, The Ohio State University Extension, Buckeye ISA (Institution Supported Agriculture)

Jason Ott, Texas A&M AgriLife Extension Service, Texas A&M AgriLife Extension Service Emergency Recovery Strike Team Efforts

Kate Painter, University of Idaho Extension, Techniques for Determining Equitable Pasture Land Leases

Suzanne Mills-Wasniak, The Ohio State University Extension, Perception of Decreased Anxiety and Increased Self-Efficacy for Community Service Linked to Agricultural Activities

Christine A. Kelly-Begazo, University of Florida, IFAS Extension, Assisting Citrus Growers Pass 3rd Party Audits via Fresh Fruit GAP and Safety Training Program

Christopher Prevatt, University of Florida, IFAS Extension, A Simulated Economic Analysis of Grazing Warm-Season Annual Forages as a Cash Crop Alternative

Jacqueline Kowalski, The Ohio State University Extension, Summit County Community Garden Leadership Training Program

Karaline Mayer, Kansas State University, Enhancing Producers Financial Recordkeeping Skills through Quickbooks Desktop Pro

The committee hopes you will find these presentations interesting and useful in your own Extension efforts.

Super Seminar
The Agricultural Economics and Community Development Committee is pleased to offer a professional improvement opportunity for NACAA members. This year's AM/PIC will include a special Super Seminar on Monday afternoon, September 9 from 1:00 to 3:00. Janet McAlister, the PDP Coordinator for Northeast SARE will lead a practical session titled "Making Cents Out of Your Program Impacts". Participants will be equipped to measure the economic, environmental or social impact of their extension programming based on sound design, implementation, and evaluation. Several resources will be shared. The topic and space limit this session to 30 people.

Special Thanks – We are very grateful to Dr. Laurence Crane and the National Crop Insurance Services (NCIS) based in Overland Park, Kansas for supporting NACAA and for sponsoring the efforts of this committee.

The members of your Agricultural Economics and Community Development Committee are: National Chair and Northeast Region Vice Chair – Richard Brzozowski, ME; North Central Region Vice Chair – Amanda Douridas, OH; Southern Region Vice Chair – Amanda Smith, GA; and Western Region Vice Chair – Jody A Gale, UT.

Agronomy & Pest Management Chair

Aaron Esser

Washington

I'm Aaron Esser with Washington State University Extension and the Chair for the Agronomy and Pest Committee and the Western Region representative. Our Southern Region committee member is Robert Goodson, University of Arkansas Cooperative Extension, our Eastern Region committee member is Jim Lewis, University of Maryland Extension and, our Midwest Region committee member is Ted Wiseman, Ohio State University Extension. This has been a very good year for the Agronomy and Pest Committee and we are looking forward to the upcoming 2019 AM/PIC in Ft. Wayne, IN. We have 20 presentations on Tuesday and Wednesday morning over a variety of topics that we are excited about. We will not be doing a super seminar this year but we are considering organizing one for the 2020 AM/PIC in Virginia Beach, VA.

Animal Science Chair

Ashley Wright

Arizona

Committee Members
Chair: Ashley Wright, AZ
Northeast Region Vice-Chair: Andrew Sandeen, PA
North Central Region Vice-Chair: Karl Hoppe, ND
Southern Region Vice-Chair: Rex Herring, AR
Western Region Vice-Chair: Mark Heitstuman, WA

The 2019 Animal Science Pre-AM/PIC tour will take a look at animal agriculture across the state of Indiana. Tour participants will arrive in Louisville, KY on the evening of Thursday, September 5th. We will head out Friday morning and spend September 6th and 7th touring livestock operations and facilities around the state of Indiana. Tour highlights include an Angus cow-calf producer, the Indiana Beef Evaluation Program (IBEP) Bull Test Facility, the Feldun Purdue Agricultural Center, a sheep producer, Rose Acres Poultry, Rochester Livestock Auction, a swine manure nutrient application and

utilization facility, and a tour at Fair Oaks Dairy which will include a discussion of transparency in agriculture with the CEO of the company. Thank you to all of the Indiana county agents, sponsors, and tour hosts for making this tour possible.

The Animal Science committee is also proud to be hosting Animal Science Professional Improvement seminars, featuring presentations from successful Extension programs around the country. This year we will have twenty-two different presentations in four sessions: a Tuesday morning session, two concurrent Tuesday afternoon sessions, and a Wednesday morning session. These sessions will cover a broad range of topics and programs including dairy, beef, sheep and goat, poultry, equine, and forage production. All of these presentations will serve as examples of successful Extension programs with information to share that may be useful for your home state.

American Registry of Professional Animal Scientists (ARPAS) certification exams will again be offered at this year's AM/PIC. The testing will take place Wednesday afternoon, from 1 to 4. Be sure to check your program for the room assignment, and contact any of the Animal Science Committee members listed above for more information. Special thanks to Karl Hoppe for organizing and proctoring the exams. Additionally, we have been approved for 8 CEUs by ARPAS for attending the Animal Science Professional Improvement seminar sessions.

Finally, the Animal Science Committee will be meeting on Monday afternoon. Your input and involvement into planning our 2019-2020 activities is critical to making sure we are meeting the needs of the members. Please plan to attend this meeting and be a part of the planning process.

I am extremely grateful and privileged to have been selected to serve as the committee chair this year. The dedication to this organization and its membership shown by all of the national chairs, vice chairs, council chairs, and officers is astounding. I would very much like to thank my four vice-chairs. Their hard work and commitment to organizing this year's professional development opportunities was invaluable. I look forward to seeing everyone in Indiana!

Committee Members:
Karla K. Kean, Committee Chair
Patrick L. Byers, North Central Committee Vice-Chair
Cyndi K. Lauderdale, Southern Committee Vice-Chair
William Sciarappa, Northeast Committee Vice-Chair
Janet Schmidt, West Committee Vice-Chair

The Horticulture & Turfgrass committee have joined forces to develop a slate of 24 excellent presentations related to Extension Horticulture programs during the AM/PIC in Ft. Wayne, IN. There will be twenty-four professional improvement sessions offered on September 10 – 11th, 2019. The topics vary from volunteer management to research and general horticulture. Additionally, a NACAA Horticulture PRE/AM/PIC Horticulture & Turfgrass Study Tour 2019 has been planned.

The tour is entitled Sustainable Horticulture Initiatives: Hydroponic Focused Workshop and Tour for Agents. The National Horticulture Committee invites you to join us for another awesome horticulture study tour to be held pre-conference on September 6-7th, 2019 in Indiana.
Cost to Participants: $100/person; does not include hotel or travel costs. Includes evening meal on Friday, breakfast-lunch-dinner on Saturday.
Participants may apply online to attend once conference registration opens.

Basic Daily Itinerary:
Participants should make arrangements to arrive in Ft. Wayne, IN on Friday, September 6th before 5:00 pm. At 6:00 pm that evening, participants meet in the hotel lobby and take the hotel shuttle to Lakeside Park and Rose Garden where we will have dinner and self-guided tour. This will be a casual meet and greet time.

On Saturday morning breakfast will be provided from 6:30 – 7:45 am at the conference center. At 7:45 - 8:00 am load bus/van and travel to Lafayette/Purdue. Attend a hands-on training hosted by Purdue University from 10:00 am – 5:00. Then, we will have dinner and tour of the Purdue Arboretum and Horticulture Gardens in West Lafayette, IN.

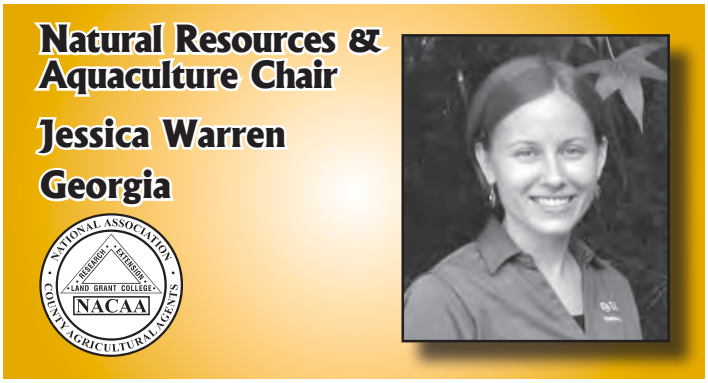
The training at Purdue will be conducted by Krishna Nemali, Assistant Professor of Controlled Environment Agriculture-

Horticulture and Landscape Architecture; Petrus Langenhoven, Horticulture/Hydroponic Crop Specialist; Annette Wszelaki, University of TN Vegetable Specialist and other faculty/staff from Purdue.

Our basic agenda for our day at Purdue will include:

- Putting together a hydroponic system in greenhouse.
- How to build a multi-level indoor production farm.
- Basics of fertilizer injection and fertigation.
- Lighting and heating requirements for crops.
- Identifying nutrient deficiencies during production.
- There will also be a demonstration of different high wire greenhouse crops, i.e. pepper, eggplant, cucumber and tomato. Production methodology of the different crops.

Please join us on our horticulture committee meeting on Monday, September 9th from 1:30 – 2:30 pm. Our guest speaker will be Tatiana Sanchez-Rodriguez, Commercial Horticulture Agent, Gainesville, FL who will speak on her Beekeeping Class Series.



Committee Members:
Chair: Jessica Warren, Southern Region
Vice-Chair: Tracy Mosley, Western Region
Vice-Chair: Lindy Berg, North Central Region
Vice-Chair: Anna Busch, Northeast Region

The Natural Resources and Aquaculture Committee is proud to offer a pre-conference tour as well as high quality professional presentations for the 2019 AM/PIC in Fort Wayne. We welcome any member whose work or interests encompass any aspect of the natural resources field to join us for our committee meeting, presentations, and/or pre-tour.

Our pre-tour this year will be a one day tour with a limit of twelve participants. We will start off the day by visiting Eagle Marsh/Little River Wetland Project which is on the southwest side of Fort Wayne. We can actually hike along the continental divide and hear about the geology, restoration, and wildlife of the area. Our second stop will be near Bluffton – 25 miles south of Fort Wayne. We will visit Ouabache State Park. This park has an interesting history as a wildlife game park, a camp site for the Civilian Conservation Corps, and is home to an American Bison herd. Our last stop will be about 20 miles southeast at the Gene Stratton Porter/Loblolly Marsh site, in Geneva, Indiana. We will enjoy historical talks/tours at their museum/house, and then spend time visiting and walking the Loblolly marsh while learning about the native plants and restoration projects going on there.

The Natural Resources and Aquaculture Committee was happy to accept eleven professional presentations out of those submitted this year. Our presentation session will be held on Tuesday September 10th from 9am to 4:30pm with an afternoon break as listed in the conference agenda. We will have presentations on a variety of natural resources topics including oyster gardening, venison, water conservation, septic issues, winter patch grazing, and the emerald ash borer.

We look forward to helping the membership expand their knowledge and networking in natural resources and aquaculture. Please see the conference agenda for final meeting locations, times, and other details.

Committee Members:
John Porter (Nebraska), Committee Chair and North Central Region Vice-Chair
Stacey Jones (North Carolina), Southern Regional Vice Chair
Matt Palmer (Utah), Western Regional Vice Chair
Liz Bosak (Pennsylvania), North Eastern Regional Vice Chair

This year the Sustainable Agriculture Committee is excited to host twelve exciting talks during our professional improvement sessions at on Tuesday, September 10 at the AM/PIC. The topics range from cover crops and soil health, developing collaborations and industry groups, testing fruit crops for disease resistance, and innovative extension program delivery for rural and urban populations. The offering provide a great range of sustainable agriculture across the agricultural disciplines.

NACAA's partnership with SARE allows us to provide a wide-ranging agenda of professional improvement tours, seminars, and the Sustainable Agriculture pre-tour. SARE sponsorship supports six of the professional improvement tours on the agenda that touch on multiple facets of agriculture including livestock production, row/grain crops, cover crops, horticulture, agritourism, beekeeping, and family farm

management. One of the tours is part of the Reading the Farm program, an exciting program of holistic farm assessment that provides tools for extension educators to provide valuable feedback to their clients. The tour is connected to the Reading the Farm Super Seminar offered on Wednesday at the AM/PIC (you must register for both the super seminar and the tour). The Sustainable Agriculture pre-tour offers a glimpse of organic agriculture from seed to feed to processing and soil health, nutrient management, and watersheds. The committee owes a great deal of gratitude to Roy Ballard of Purdue, and SARE Fellow Michael O'Donnell of Purdue for organizing the pre-tour, the Reading the Farm Tour and Super Seminar, and other sustainable agriculture related tours.

One other responsibility of the committee is reviewing applications and selecting the upcoming class of SARE Fellows. The fellows engage in intensive study of farms engaged in sustainable agriculture over their two year program. The fellows will travel to one experience in each of the four regions to engage with local producers, extension personnel, and partners and visit farms practicing facets of sustainable agriculture. The committee is excited to welcome the 2020 class of SARE Fellows candidates:

North Central: Tom Buller (Kansas)
Northeast: Dan Severson (Delaware)
Southern: Mary Love Tagert (Mississippi)
West: Tip Hudson (Washington)

One programming/policy change for this year is the inclusion of the graduating SARE Fellows class as facilitators for the Reading the Farm Super Seminar and Professional Improvement Tour. The 2017 class of fellows who finished their program last year will be leading the program this year at AM/PIC, with their registration and travel costs graciously covered by SARE. This year's graduate facilitators are Michael O'Donnell (Indiana), Olivia Saunders (New Hampshire), and Laura Miller (Texas), who will be joined by SARE Fellow and incoming Sustainable Agriculture committee national chair Stacey Jones (North Carolina).

In closing, I extend my greatest gratitude to the regional vice chairs, our council chair, and our NACAA leadership. We always want to thank the SARE (Sustainable Agriculture Research and Education) program and their associate director Kim Kroll for sponsoring the SARE Fellows program, the Reading the Farm seminar and tour, the Sustainable Agriculture professional improvement tours and pre-tours. Much of our work would not be possible without the generous support of SARE.

Program Recognition Council is just one of three Councils that makes up the committee structure for NACAA. The Program Recognition Council consists of seven committees:

- 4-H and Youth chaired by JJ Jones from Oklahoma (S)
- Communications chaired by David Marrison from Ohio (NC)
- Professional Excellence chaired by Mike Haberland from New Jersey (NE)
- Public Relations chaired by Kathryn Hopkins from Maine (NE)
- Recognition & Awards chaired by Joni Ross Harper from Missouri (NC)
- Scholarship chaired by Donna Hamlin Beliech from Mississippi (S)
- Search for Excellence chaired by Amy-Lynn Albertson from North Carolina (S)

The Program Recognition Council is the engine to recognize professionalism, performance, and outstanding programs by members while our sponsors provide the monetary support.

Program Recognition Council committees recognize the outstanding work of our members in their respective states and regions. Each year committees review hundreds of entries to determine state, regional and national winners. Committees worked hard to recognize NACAA members for their outstanding efforts. During the AM/PIC, Program Recognition Council committees will award nearly $36,000 to members.

The activities of this council also focus on some very special recognitions such as the Distinguished Service Award, Achieve Award, and Hall of Fame. In addition presentations, programs, posters, communication methods, and other forms of recognition during the AM/PIC.

This is my third and final year as council chair; I am honored to have had the opportunity to serve as your Program Recognition Council Chair. The position of Council Chair is truly a challenge and a blessing all in one giant package. It has allowed me to learn more about our organization (NACAA) and develop lifelong working relationships but most importantly the friendships, that's the blessing.

The Council Chair role would be an impossible task if not for the excellent group of men and women who serve as chairs and vice chairs. They have worked very hard and put in many hours fulfilling the duties expected of chairs and vice-chairs. Thanks to each member for your time, hard work, and dedication to NACAA.

Awards programs offered via Program Recognition Council and number of entries for 2019:

- 4-H & Youth total number of entries - 25
- Communications: total numbers of entries for all categories – 853
- Posters: total numbers of entries in Applied Research and Education - 150
- Search for Excellence total number of entries for all categories - 87
- Public Relations total number of entries – 20
- AA, DSA, and Hall of Fame total number - 140

Beginning after this year's AM/PIC a change will transpire with the 4-H & Youth Committee. The 4-H & Youth Committee will be moving from the Program Recognition Council to the Professional Improvement Council. Currently the 4-H & Youth Committee has two functions: 1. Search for Excellence Award in 4-H & Youth Programming, and 2. 4-H & Youth Presentations.

With the 4-H & Youth Committee's move to the Professional Improvement Council the Search for Excellence Award will awarded by the Search for Excellence Committee which is housed under the Program Recognition Council. The 4-H & Youth presentations will be awarded by the 4-H & Youth Committee which will be housed under the Professional Improvement Council following the 2019 AM/PIC.

By making these changes we hope to alleviate the confusion often associated with the 4-H & Youth Committee's awards and presentation; thus by now having all of NACAA award's under Program Recognition Council and all professional improvement presentations under the Professional Improvement Council. Be sure you pay close attention to the 2020 NACAA County Agents magazine Awards Edition available online in December 2019, and the hard copy arriving on your desk sometime in January,

Joining a Committee

Each year the challenge to fill vacancies within the national committee structure gets a little more daunting. I encourage each and every member (regardless of how long you have been a member) to consider applying for committee membership. If anyone is interested or curious about the time commitment, speak with a current or past committee member during the AM/PIC. I think you will find that the benefit of committee membership and work far outweighs the time commitment. Hope to see you in Fort Wayne.

4-H & Youth Chair

JJ Jones

Oklahoma

The 4-H and Youth committee is responsible for reviewing and judging the Search for Excellence in 4-H and Youth Programming Award as well as reviewing and choosing presenters for the Excellence in 4-H and Youth programming seminars. Each year the membership makes it extremely difficult to choose the award winners and seminar presenters and this year was no different.

For the Search for Excellence in 4-H and Youth Programs, there were 25 entries. Judging was very difficult and the scores were extremely close.

Again, the board has created more presentation time slots, which allowed us to accept 10 presentations. Each year applications for presenters is extremely competitive and the committee has a hard time choosing which presentation should be accepted.

I would like to encourage the membership to continue to make this process difficult on the committee. If you applied this year and were not chosen, apply again next year. In some cases, the scores were separated by less than five points. If you have not applied, please do. The committee knows that our membership is doing some outstanding work and that work needs to be shared with others. The committee would like to thank the NACAA board for allowing us this opportunity and we look forward to the future.

Communications Chair

David L. Marrison

Ohio

We continue to see large numbers of entries in the fourteen communication award categories. The caliber of award entries is outstanding. Our members are producing excellent materials and are to be commended for the quality of their submissions.

As a whole, the competition for the national winner and national finalists in each category was extremely close.

In total, 853 total entries (up from 824 in 2018, 810 in 2017, & 586 in 2016) were submitted by NACAA members from across the nation. The Southern Region led the way with 487 entries submitted followed by the North Central Region with 255 entries, the Northeast Region with 77, and the West Region with 34. Congratulations to the Florida Association for have the most entries as a state with 126 total applications. Florida was followed in the top five by Tennessee with 55, Ohio with 53, Wisconsin with 52 and South Carolina with 51.

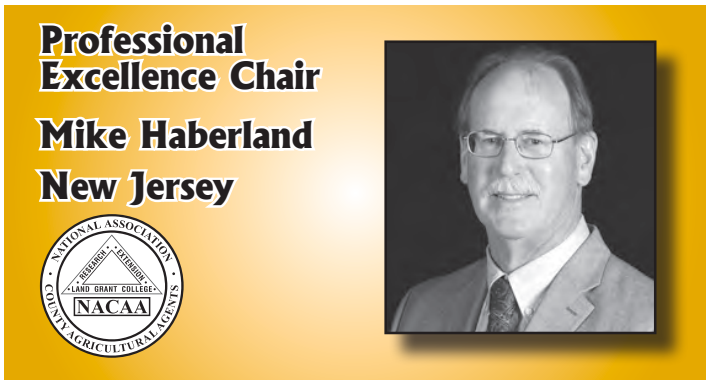
The following is a summary of the entries made in each category.
Audio recording had 52 entries
Published Photo and Caption had 56 entries
Computer Generated Graphics had 60 entries
Promotional Piece had 136 entries
Personal Column had 74 entries
Feature Story had 76 entries
Individual Newsletter had 60 entries
Team Newsletter had 39 entries
Video Presentation had 83 entries
Fact Sheet had 63 entries
Publication had 54 entries
Web Site had 58 entries
Learning Module had 23 entries
Bound Book had 19 entries

The National Winner for each category will be announced at the NACAA Communications Award Luncheon scheduled for Tuesday, September 10, 2019. The National Finalists and Regional Finalists will also be recognized at this luncheon.

The NACAA Communications Committee was very disappointed for the loss of our national sponsor of the Communications Awards Program, but we are very appreciative of the NACAA Board for stepping in to continue funding this program.

I am appreciative of the work of the National Region Vice-Chairs for the communication committee. The regional vice-chairs are: North Central Region Chair – Heather Gessner (South Dakota), North East Region Chair - Marjorie Peronto (Maine), Southern Region Chair – Brittany Council (Virginia) and West Region Chair – Ronald Patterson (Idaho). A special thank you is extended to all the State Communication Chairs for their diligence and timeliness in conducting their state contests.

I would also like to thank Keith Mickler, NACAA Program Recognition Council Chair and Scott Hawbaker, NACAA Executive Director for their assistance throughout the year with questions and concerns. If you have any suggestions for improving the NACAA Communications Contest, please contact David Marrison at marrison.2@osu.edu or call 740-622-2265.



The Professional Excellence committee is responsible for organizing and conducting the poster session before and during the AM/PIC. Presenting a poster is a great way for members to showcase their work in Extension Education or Applied Research, generate discussion during the conference "Meet the Authors" sessions, and get their abstract published in the Conference Proceedings. It takes a lot of dedication and work to make this happen and without the regional vice-chairs, state chairs, and volunteer judges, the poster session would not be possible. Current regional vice-chairs are: North Central Region, Gary Gao (OH); North East Region, Steven Yergeau (NJ); Southern Region, Nick Simmons (FL); and Western Region, Bonnie Hopkins (NM).

This year we will have an excellent number of accepted posters for judging and/or display in Ft. Wayne, with a total of 144 (44 Research and 100 Extension Education). For 2019, we used independent pre-AM/PIC regional judging of state winners to select the 24 National Finalist posters (three from each region for both categories). This will allow more efficient use of the volunteer judge's time during the AM/PIC. Two teams of four judges, comprised of a NACAA peer member from each region, will judge the posters during the AM/PIC to determine the National 1st, 2nd, and 3rd place award winners. Judging criteria is found on the NACAA website, and can be reviewed to prepare for next year's posters.

Posters are to be in place no later than 5:00 p.m. Sunday, September 8th and stay through 3 p.m. Tuesday, September 10th, 2019. There will be a "Meet the Author's Poster Session" from 10:00 a.m. – 10:30 a.m. during the break on Monday.
National winners and finalists will be formally recognized during the poster session awards breakfast to be held on Tuesday, September 10th starting at 6:30 a.m. The Professional Excellence Committee would like to thank Syngenta for once again sponsoring the poster session awards and breakfast at the 2019 AM/PIC.

Public Relations & Ag Awareness Chair

Kathryn Hopkins

Maine

The Public Relations and Agricultural Awareness Committee is responsible for conducting the Agriculture Awareness and Appreciation Awards (A4) program. The Ag Awareness and Appreciation program is a great way for NACAA members to highlight educational programs that demonstrate the public relations component of Extension work. It is also an opportunity to showcase how Extension agents and educators enrich and inform the public's understanding of agriculture in their communities. This year the Ag Awareness and Appreciation award program had 20 examples of outstanding public relations work. There is a tremendous amount of great Extension work that many educators and agents are doing and this outreach makes an excellent entry in the Ag Awareness and Appreciation award program. Think about writing up your work for 2019!

Congratulations to De Broughton and her team from Florida. They are the Ag Awareness and Appreciation Award National Winners for 2019. De will present her winning entry during the Ag Awareness and Appreciation Recognition Luncheon on Monday in Fort Wayne. Her topic will be "Promoting Agriculture in the Suwannee River Valley to Local and State Leaders". Congratulations also go National Finalists Edwin Lentz from Ohio, Chuck Talbot, John Jett and Mahfuz Rahman from West Virginia, and to Regional Finalist, Stewart Runsick from Arkansas.

State winners include: Phillip Durst from Michigan, Jerry Clark from Wisconsin, Curtis L. Dame and Darrell Simpson from Kentucky, Amy-Lynn Albertson and Morgan Watts from North Carolina and Ryan Blair from Tennessee.

I want to send a sincere thank you to all of the hard-working judges, Public Relations and Ag Awareness Committee Regional Vice Chairs and the state chairs for their commitment to the difficult work of judging the excellent entries this year.

The Public Relations and Ag Awareness Committee appreciated having entries from three of the four regions in 2019 and challenges everyone in NACAA to submit an entry in one of the NACAA awards programs and especially in the Ag Awareness and Appreciation Award program in 2020. Your work makes a difference!

We would like to send a sincere and special thank you to Bayer CropScience for sponsoring the Agriculture Awareness and Appreciation Award this year. It has been my pleasure to serve as the National Chair. I have enjoyed working with our Regional Vice Chairs and reviewing all of the great programming our agents and educators are doing across the country on behalf of the agricultural industry.

Recognition & Awards Chair

Joni Harper

Missouri

Recognition and Awards Committee Members:
Joni Harper, Chair (Missouri)
North Central Vice-Chair – Edwin M. Lentz (Ohio)
West Vice-Chair – Donna Hoffman (Wyoming)
Northeast Vice-Chair – Amber Yutzy (Pennsylvania)
Southern Vice-Chair – Paula Burke (Georgia)

The Recognition and Awards committee has been busy preparing for the 2019 NACAA conference in Fort Wayne. The national and state committee members are very passionate about recognizing our fellow agents. I would like to thank the regional vice-chairs and state chairs for all the great work and support they give to this committee. It has been an honor serving on this committee.

On Tuesday morning, 66 Achievement Award recipients will receive their awards at a breakfast in their honor. This is the 45th year that NACAA has presented this award and this year's recipients will be joining 2,233 fellow Achievement Awards winners. The 2019 Achievement Award winners have demonstrated their ability to conduct high-quality educational programs for their clientele and gain the respect of co-workers for their work. Achievement Award recipients have accomplished this in less than 10 years. A special thank you goes to NACAA President Richard Fechter and American Income Life's Erin Bain, who will assist with the awards presentation on Tuesday morning.

This is the 81st year our national professional organization has recognized fellow educators with the Distinguished Service Award. These members were chosen by their respective states to receive one of the most prestigious awards given by NACAA. This year's recipients will be recognized during the annual banquet on Wednesday evening. The Distinguished Service Award will be presented to 63 NACAA members from across the country and join 7,395 past recipients. These DSA

recipients are being recognized for providing outstanding educational programming, are respected by their clientele and coworkers, and have worked for more than ten years.

The committee is also fortunate to facilitate the selection of Hall of Fame recipients each year. This is the 14th year for this prestigious award. Four outstanding Hall of Fame winners will receive their awards at annual banquet. Recipients of this award are recognized for a career of outstanding work as an extension educator and for being involved in their communities. They have provided leadership for professional organizations, churches, and humanitarian service organizations.

The committee wishes to thank the Pipeline Ag Safety Alliance for continuing their financial support for the Hall of Fame award. The committee expresses our appreciation for the continued support of the Achievement Awards breakfast by American Income Life Insurance Company for 46 years. In addition, they have provided sponsorship for 64 years overall to NACAA programs. Altria Client Services is the sponsor of the awards booklet and the committee wishes to say thank you for your continued support of the annual banquet.

I would like to express the Recognition and Awards committee's congratulations to all of the Achievement Award, Distinguished Service Award and Hall of Fame Award winners this year.

The current Search for Excellence (SFE) committee is comprised of four regional vice chairs and myself. The regional vice chairs include: Christopher Zoller from Ohio (NC), Elizabeth Claypoole from New York (NE), Linda McClanahan from Kentucky (S), and Lance Ellis from Idaho (W).

The committee held an organizational meeting via Zoom in December 2018. We discussed procedures for promoting SFE entry submissions and for scoring the entries to be received. We also welcomed the addition of Search for Excellence in 4-H Programming award which is moving from the 4-H & Youth Committee to SFE after the 2019 AM/PIC. During the conference call, we also confirmed the division of responsibilities regarding the SFE categories that each would lead, and preside over at the 2019 NACAA AM/PIC. They were as follows:

Consumer or Commercial Horticulture- Lance Ellis
Crop Production- Elizabeth Claypoole
Environmental Quality, Forestry, and Natural Resources- Amy-Lynn
Farm & Ranch Financial Management- Linda McClanahan
Livestock Production – Linda McClanahan
Sustainable Agriculture- Amy-Lynn
Young, Beginning, or Small Rancher/Farmer – Chris Zoller

Each regional vice chair was responsible for organizing a team of judges for each respective category, judging the entries and reporting the results to me by May 1, 2019. All the entries forwarded by the states were judged by the end of April, and national winners, finalists, and state winners were notified of their placing by May 22nd.

The number of completed entries per category is as follows:
Consumer or Commercial Horticulture - 13
Crop Production – 12
Environmental Quality, Forestry and Natural Resources – 10
Farm and Ranch Financial Management – 11
Livestock Production – 20
Sustainable Agriculture – 11
Young, Beginning or Small Farmers/Ranchers – 10

The total number of entries received in 2019 was 87. The Search for Excellence awards provide many opportunities for members to participate through submitting entries before March 15. The entries are easy to prepare and submit, and the program provides an excellent opportunity for individual and team recognition. The 2019 winners and finalists will be recognized during their respective SFE luncheons at our upcoming AM/PIC. The committee will continue to promote SFE awards program and encourage more applications next year.

Thanks to each state chair for their efforts in promoting SFE to their membership, and selecting state winners. Thanks to each regional vice chair for all their efforts to facilitate the judging of the entries and other associated tasks of the committee. Thanks to Program Recognition Council Chair Keith Mickler for his assistance and support during the year. Thanks to NACAA Board for their support of the Search for Excellence program. Thanks to NACAA Executive Director, Scott Hawbaker for his support and assistance.

Life Member Chair
Dave Phillips
Montana

The Life Member Committee Regional Vice-Chairs for 2018-19 have been Eddie Holland, Texas; Paul Craig, Pennsylvania; Milt Green, Wyoming; and Dave Stenberg, Nebraska. With Eddie Holland and Paul Craig finishing the second year of their two-year term, James DeVillier, LA, will succeed Eddie and Herb Reed, MD, will succeed Paul as Regional Vice Chairs for the 2020 and 2021 AM/PIC's. Discussions at the 2019 AM/PIC will identify the next National Committee Chair for the Life Member Committee. According to the set rotation schedule, that person should come from the Northeastern Region.

Why does NACAA have a Life Member Committee? According the by-laws of NACAA the purpose is to serve as a liaison between Life Members and members of NACAA and the Board of Directors; to actively seek resources for the Scholarship Fund and to encourage state program committees to develop programs that will enhance the Cooperative Extension Service. With nearly 3,000 Life members the committee is committed to working on behalf of those members to advise the NACAA Board on life member activities and offer assistance when needed.

The NACAA web site has a Life Member page that has been in existence over a year and a half now to provide information to life members across the country. Please check out the page at http//www.nacaa.com/committees/LifeMemberInformation.php. Let us know how we can make it better and more meaningful.

This has been the fourth year that the Life Member Committee has set up a rotating schedule by region to submit an interesting article for a Life Member page in each The County Agent magazine publication. We hope you have read them and enjoyed learning about some of the things Life Members are doing after retirement. We plan to continue this series of articles for the 2019-20 year as well. If you are a life member and have an interesting story to tell and would like to submit an article you are welcome to contact your Life Member Regional Vice-Chair.

The life members hold an annual business meeting each year during AM/PIC. At that meeting a memorial service is held to honor all NACAA members who have passed away during the past year. Names are gathered by the Regional Vice-Chairs with the cooperation of state life member contacts. Two challenges we continue to face each year is to make sure we have a life member contact in each state and then, for them to be able to find or be aware of the individuals who have left us so we can be provided with the information needed for the "In Remembrance" publication and memorial service. We ask for each state's cooperation in this effort.

In your particular state, if your association is having an event or activity, keep in mind the life members so they can participate and/or stay connected. Life members often like to hear what is going on in your state, appreciate having the opportunity to be part of the association meeting or going on that tour or visit you have planned for educational purposes. So think about contacting a life member near you when something is being planned.

This is my first year as the NACAA Life Member Committee Chair. I will serve as Chair of the Life Member Committee through the 2020 AM/PIC in Virginia Beach. I thank the Life Member Committee and the NACAA Board for their confidence in me to serve in this capacity. I also wish to thank the Indiana Life Member Committee for helping set up a great Life Member program that includes speakers, tours and activities at this year's which allows life members to be able to renew acquaintances, see old friends and make new ones during the AM/PIC week. Thank you!

Outstanding Young Farmer Liason
Tammy Cheely
Georgia

When I was chosen as the NACAA Liaison to the Outstanding Young Farmer program, I had no idea how rewarding and just simply fun this assignment would be. I attended the 2019 National Outstanding Young Farmer Congress in Bettendorf, Iowa in early February. The experience was special from beginning to end.

The National Outstanding Young Farmer Awards Congress is the culmination of an intense independent judging process. Nominees from across the United States are eligible and may be submitted by anyone. Multiple nominations from any state are permitted, however following the judging process to determine the semi-finalists, no more than two from any state will be chosen.

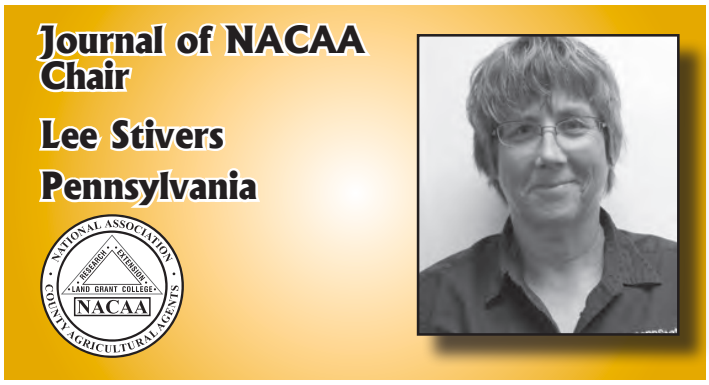
This program is administered by the Outstanding Farmers of America and supported by NACAA, John Deere and the United States Junior Chamber. The qualifications include the following:

- Nominees must be between the ages of 21 and 40, not becoming 41 prior to January 1 before the National OYF Awards Congress.
- Nominees must be actual farm operators, deriving a minimum of two-thirds of their income from farming.
- All the information about the National Outstanding Young Farmer Awards Congress and program can be obtained by visiting www.ofafraternity.org.
- National winners are determined based on personal contributions in the following categories:
  - Progress in agricultural career (50%)
  - Extent of soil and water conservation practices (25%)
  - Contributions to the well –being of the community, state and nation (25%)

As the farmer's business has changed, so has his or her involvement in the community. Today's farmer has become as active citizen, participating in everything from local and state government to civic groups and charitable organizations. It is not only fitting that farmers be honored for their contributions and achievements; it is essential. This award has been established to recognize outstanding achievements in agriculture as well as community involvement.

Applications for this year have already been completed and judging is underway to choose the top ten finalists that will compete at the 2020 outstanding Young Farmer Awards Congress that will be held February 6 – 9 in Westbrook, Connecticut.

For more information, contact Tammy Cheely at 706-465-2136 or tcheely@uga.edu.



The purpose of the Journal of NACAA is to provide members with opportunities to publish in a nationally recognized peer reviewed journal; to share scholarly work in Extension; and to become more knowledgeable Extension professionals.

The Journal publishes scholarly works in the field of Extension, including discipline-based research as well as works describing important aspects of Extension practices and processes. Honoring the wide variety of scholarly activities undertaken by Extension agents and educators, the Journal welcomes submissions of original research, applied research, survey results, needs assessments, demonstrations, case studies, literature reviews, and innovative techniques and approaches to programming.

The Journal publishes on June 1 and December 1 each year. Submissions must be electronically submitted by March 15 for the June edition, and September 15 for the December edition. A total of fifty-three articles were reviewed for the past two issues (December 2018 and June 2019); forty-three were ultimately published.

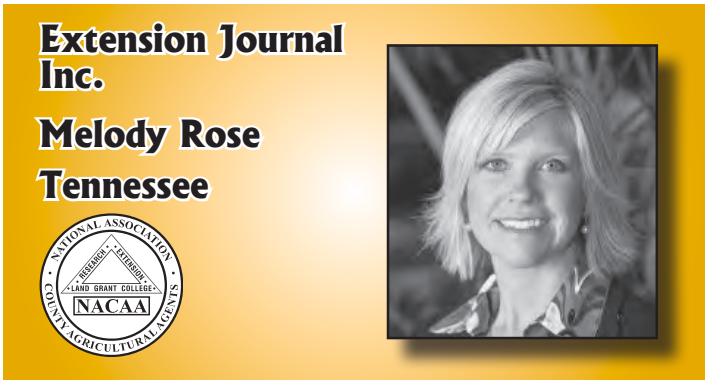
We currently have fifty-two peer reviewers, with a wide range of interests and expertise. Our peer reviewer pool is a real strength of our journal, and we sincerely appreciate their service to NACAA and its members.

My three-year term as editor of the Journal of NACAA ends in September. I would like to express my sincere thanks to all the authors and reviewers I have had the opportunity to work with during my term. Serving as the editor of the Journal has been one of the most gratifying experiences of my Extension career, and I thank NACAA for the opportunity. We are very pleased that Don Llewellyn of Washington State University will be serving as the new editor with the December issue.

Thanks to 2018/2019 Journal of the NACAA National Peer Reviewers

Nicole Anderson	Oregon
Chris Augustin	North Dakota
William Bamka	New Jersey
Jerry Bertoldo	New York
Carol Bishop	Nevada
Liz Bosak	Pennsylvania
Stephen Brown	Alaska
Chris Bruynis	Ohio
Lily Calderwood	Maine
Carl J. Cantaluppi, Jr.	Retired
Brent Carpenter	Missouri
Wayne Flanary	Missouri
Gary Gao	Ohio
Roger Gates	Georgia
Hemant Gohil	New Jersey
Sheila Gray	Washington
Linden Greenhalgh	Utah
Adele Harty	South Dakota
Steven Hines	Idaho
Ashley Hoppers	Georgia
Jessica Kelton	Alabama
Richard Kersbergen	Maine
Jeremy M. Kichler	Georgia
Stephen Komar	New Jersey
Rocky Lemus	Mississippi
Don Llewellyn	Washington
Salvatore Mangiafico	New Jersey

Keith Mickler	Georgia
Tracy Mosley	Montana
Rebekah Norman	Tennessee
Andy Overbay	Virginia
Michael Pace	Utah
Angelique Peltier	Illinois
Chris Penrose	Ohio
Marjorie Peronto	Maine
Heidi Rader	Alaska
Hans Schmitz	Indiana
Jane Schmidt	Washington
Sharma Lakesh	Maine
Mary Carol Sheffield	Georgia
Sara Shields	Louisiana
Bill Shockey	West Virginia
Carrie Stevenson	Florida
Mark Stewart	Missouri
William Strader	North Carolina
Gary L. Strickland	Oklahoma
Ed Twidwell	Louisiana
Stephen Van Vleet	Washington
Richard W. VanVranken	New Jersey
John Wilson	Nebraska
Tim Wilson	Florida
Jeff Wilson	Mississippi



Many thanks and appreciation is extended to the NACAA officers and board for their support of me representing our association on the Extension Journal, Inc. (EJI) board for the past three years. I have thoroughly enjoyed serving in the capacity as the liaison to NACAA for Extension Journal, Inc.

Journal of Extension

JOE is a scholarly, double-blind, peer-reviewed online journal representing the best of Cooperative Extension from across the nation. All JOE submissions are peer reviewed with high editorial standards and scholarly rigor expected from all papers submitted and from the reviewers. Should your paper be published in JOE, consider that a huge achievement!

The Journal of Extension remains a rigorous, refereed journal for Extension professionals, and is now indexed in the Web of Science Core Collection's Emerging Sources Index (ESCI), thereby increasing visibility of both the Journal of Extension and the Extension profession overall. JOE authors now also have accessibility to track citation activity associated with their article(s). Well over a million visited the JOE site during 2018, along with 239 submissions received for publication. The Special Issue on Innovation, released in September 2018 was a huge success. If you missed the special issue, read more here: https://joe.org/joe/2018september/index.php

If you are interested in being a reviewer and have breadth across several areas as well as depth of expertise, please visit JOE: http://www.joe.org/about-faqs.php#rp01. You can apply to become a JOE reviewer by sending the name and e-mail address of a reference who can speak to your ability to serve as a reviewer and a file containing your curriculum vitae to Robert Ricard at: robert.ricard@uconn.edu.

A Year of Change

Exciting changes are occurring within Extension Journal Inc.! Many of these changes are due to strategic planning the board participated in earlier this year. Moving forward, you should see more participation from institutional delegates in regard to onboarding and scholarship, as well as consistency in content delivered at national conferences (among all associations within Extension). A plan is underway to improve long-term readership, as well as effectively engage administrators, readers, and authors in the overall process of publishing. More streamlining in the publishing process is also being implemented. Collaborations and partnerships among Extension associations and groups is being strengthened to increase value of the comprehensive scope of all Extension programming nationwide. EJI is also undergoing an audit revue later this year. Stay tuned for more exciting outcomes of EJI's 2019 strategic planning process!

National Job Bank

Extension Journal, Inc.'s additional product is the National Job Bank http://jobs.joe.org/. The National Job Bank provides access to a broad range of faculty positions in teaching, research, extension and outreach along with o the professional positions involving education, research and/or outreach missions.

The National Job Bank allows the job seekers free registration and accounts, quick access to employers that are ready to hire, ability to communicate to employers online, and alerts when a relevant job becomes available. Employers to search through and find key individuals for positions they wish to fill.

Special thanks

Since joining the EJI Board in January 2017, it has been a wonderful experience and a great opportunity to serve with other members of the Extension family from across our nation. The friendships and contacts I have made are priceless. Serving as the NACAA representative on the EJI board continues to both an honor and privilege.


NATIONAL ASSOCIATION
COUNTY AGRICULTURAL AGENTS
RESEARCH
EXTENSION
LAND GRANT COLLEGE
NACAA

Poster Session

Applied Research

2019 NACAA

104th
Annual Meeting
and
Professional Improvement Conference

Fort Wayne, Indiana

National Winners & Finalists

1st Place

ASSESSMENT OF MITICIDES FOR MANAGEMENT OF THE SUGARCANE RUST MITE (ACTINEDIDA: ERIOPHYIDAE) IN FLORIDA SUGARCANE

VanWeelden, M. T.[1]; Beuzelin, J. M.[2]
[1]Extension Agent II, UF/IFAS Extension, Belle Glade, FL, 33430
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Poster URL: https://www.nacaa.com//posters/uploads/1859.pdf

The sugarcane rust mite, Abacarus sacchari (Actinedida: Eriophyidae), was first discovered feeding on Florida sugarcane in 2007; however the pest's impact on the crop is relatively unknown. Trials were conducted in 2017 and 2018 to evaluate the efficacy of miticides in reducing A. sacchari injury on sugarcane. Three miticides (Agri-Mek, Torac, and Oberon) were assessed using small-plot trials imbedded within commercial sugarcane fields. In both years, results demonstrated significant reductions in A. sacchari injury compared to the untreated check, with all miticides reducing injury by up to 50% 12 to 15 days after treatment (DAT). Numerically, Torac provided the greatest injury reduction in 2017; however, this difference was not significant. In 2018, an additional trial was designed to compare yields between miticide treated and untreated sugarcane; however, no differences in stalk weight were detected presumably as a result of low A. sacchari populations present in the field. These miticide trials aim to provide data necessary for the registration of chemical products for managing A. sacchari in Florida sugarcane.

2nd Place

A COMPARISON OF THREE GARDEN SOIL TEST KITS AND A CERTIFIED SOIL TESTING LAB

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This project compared soil test results from a certified commercial soil testing lab with soil test kits purchased from a garden retailer. The soil test kits were the Luster leaf Rapitest soil test kit (Rapitest), Luster leaf 4-way Analyzer (4-way Analyzer), and LaMotte complete soil test kit (LaMotte). Garden test kit results were compared to soil tests completed by the North Dakota State University Soil Testing Laboratory (NDSU STL). Fourteen different soil series were collected based on location, taxonomy, and prevalence in North Dakota. Store bought compost and potting soil were also tested. Soil pH, nitrate, phosphorus, and potassium content were determined. Soil test levels were statistically analyzed by Student's T-test procedure and compared only with the NDSU STL results. The LaMotte soil tests were similar to the NDSU STL ($p < 0.05$), except for the potassium test ($p < 0.001$). The Rapitest soil pH and nitrate ($p < 0.05$) were similar to the NDSU STL results. The NDSU STL and Rapitest phosphorus ($p < 0.001$) and potassium ($p < 0.001$) tests were different. The 4-way Analyzer soil tests were different from all NDSU STL soil tests ($p < 0.001$). When NDSU STL and garden test kit nutrient analyses were different, all garden test kits measured less nutrients than NDSU STL. This discrepancy could greatly impact garden fertilizer application rates.

3rd Place

JAPANESE STILTGRASS MANAGEMENT IN A PASTURE: USING A GDD MODEL TO APPLY PROWL H2O

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Japanese stiltgrass (Microstegium vimineum) is an unpalatable invasive annual grass with limited selective management options in a cool-season pasture. Prowl H2O is considered to be an effective herbicide to manage this weed when applied prior to germination. We hypothesized that a predictive model to time pre-emergent application based on a Growing Degree Days (GDD) may provide consistent weed control. An experiment was conducted in 2018 at Bethlehem, West Virginia, to determine the lowest effective rate of Prowl H2O applied at 4, 2, and 1 quarts/acre, based on a GDD Model available through Climate Smart Farming at Cornell University (http://climatesmartfarming.org/) prior to weed germination. Herbicide treatments were applied

on April 27, when GDD_{50F} recorded 134 at this location. Japanese stiltgrass germinated a week later in untreated plots when GDD_{50F} surpassed 200. Soil moisture levels preceding and following treatments were adequate to ensure herbicide activation. Prowl H2O applied at 4 quarts/acre consistently provided excellent control (>95%) of Japanese stiltgrass up to 16 weeks after treatment, whereas Prowl H2O applied at 2 and 1 quarts/acre failed to provide acceptable levels of control (<70%) during this time. A GDD model, by virtue of its direct relationship with soil temperature (warming), could be used as a viable estimate to time effective preemergence herbicide application to manage Japanese stiltgrass in a cool-season pasture upon validation.

National Finalists

OPTIMUM PLANTING DATES FOR GARLIC IN SOUTHWEST MISSOURI

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Commercial garlic (Allium sativum) production is in its infancy in Missouri. To aid existing farmers and encourage other producers to grow garlic, research was needed to investigate the optimum planting date for garlic in southwest Missouri. Included in this research project were comparisons between one spring and four fall planting dates over two production cycles. Three garlic varieties, Inchelium Red, German White, and Elephant garlic were utilized at two replicated sites. Post-harvest data was collected on bulb weight and diameter and clove weight and quantity. Project results did show the treatments with fall planting dates yielded significantly more than those with the spring planting date, with yields considered sufficient to justify a spring planting date if necessary. Implications from this research include the possibility of utilizing both fall and spring planting dates for commercial garlic production in Missouri. A variety of planting dates will give producers a research-based decision tool if planting conditions are not optimal during traditional planting periods.

SOYBEAN ROW SPACING AND NITROGEN MANAGEMENT ON-FARM RESEARCH IN WESTERN NEBRASKA

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Due to lack of management options to control resistant insect pests (Western Corn Rootworm, Western Bean Cutworm) and bacterial disease outbreaks (Goss's wilt, Bacterial leaf streak) occurring in continuous corn systems, rotations including soybean is becoming an increasingly important crop in western Nebraska. The objectives of this project were to quantify two suspected soybean yield gaps (row spacing and nitrogen management) and develop scientific-based resources for growing irrigated soybeans in a semiarid environment. We conducted three replicated on-farm studies comparing soybean yields in 15-inch vs 30-inch rows, and additionally three on-farm studies to evaluate the effects of applying 80 lbs of N/A late season (R3) nitrogen fertilizer to soybeans. When averaged across three on-farm trials, soybean planted in 15-inch rows yielded 67 bu/ac which was 7 bu/ac more than soybeans planted in 30-inch rows (yielded 60 bu/ac). Aerial imagery showed less vigor and higher thermal stress in 30-inch planted soybeans during the early reproductive growth, while 15-inch rows also provided better suppression of volunteer corn. Late season (R3) N fertilization did not increase yield or profit of soybeans grown in three on-farm trials in southwest Nebraska in 2017. Supplementing N to soybeans is more likely to be beneficial in higher yielding environments, perhaps higher than yields achieved in these studies (up to 77 bu/ac). The only notable difference in end-of-season N balance was N content in plant residue, which was 5-14 lbs of N/ac higher in the N treatments. In conclusion, we highly encourage soybean farmers in western Nebraska to test narrower row spacing and evaluate late season N fertilization in their own fields, and more importantly, to consider implementing other practices that are critical in increasing soybean yield potential.

DEEP SOIL CORES REVEAL SUBSTANTIAL RESIDUAL MINERAL NITROGEN REMAINS FOLLOWING CASH CROPS

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The amount of mineral nitrogen (N) remaining after cash crops informs agronomic and conservation practices. Cash crops cease taking up N a month or more before harvest maturity, and residual N (as nitrate) commonly leaches downward >1 m between fall and spring in the humid mid-Atlantic region. Few studies have investigated residual soil N deeper than 30 cm, yet N in deeper soil layers is more at risk for leaching to groundwater than N in upper layers. We took soil cores to 210 cm deep in late-summer following cash crop growth on 29 farms in the Coastal Plain and Piedmont regions of Maryland and Pennsylvania in order to investigate how much mineral N remains in the soil following summer cash crops and at what soil depths. Across the sites, we found, on average, 253 kg ha^{-1} of mineral N, 115 kg ha^{-1} in the NO_3–N form,

remained after summer cash crops. Of this residual mineral N, 55% was 90 to 210 cm deep. Sites with Coastal Plain sediment parent material had lower NO_3-N percent of the total mineral N than the sites with acidic rock parent material at 90-120 cm, 120-150 cm, and 150-180 cm soil depth layers, and then sites with calcareous rock parent material at 120-150 cm, 150-180 cm, and 180-210 cm soil depth layers. Deep cores taken in four side-by-side corn and soybean fields indicated that more residual NO_3–N remained after soybean than after corn. The substantial pools of mineral N remaining deep in the soil profile after productive cash crops, even unfertilized soybean, suggest that practices should be designed to scavenge residual N from deep soil layers in the fall, before it is lost over winter.

LEEK VARIETY EVALUATION IN SE PENNSYLVANIA

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A leek variety trial was conducted in SE Pennsylvania in 2017 to update recommendations in the regional commercial vegetable production guide. Twenty varieties of leek, both hybrid and open pollinated, were grown using standard culture and pest control methods for a fall crop. At harvest plants from each plot were graded into marketable and cull and each group was counted and weighted. Quality measurements including shank diameter and length, foliage color and bulbing were also rated. Chester, Comanche, Gevaria, Lancaster, Navaho and Takrima statistically had the highest number of marketable plants and % marketable while Comanche, Megaton and Rally had the highest marketable weight. Statistically, Megaton had the highest plant weight and shank diameter while American Flag, Bulgarian Giant and Zermat had the highest cull number and weight. American Flag, Bulgarian Giant and Chester had unacceptable bulbing ratings while all varieties had acceptable shank length. Lancaster, Lexton, Navajo and Surfer had the bluest foliage while Comanche, Lexton, Navajo and Surfer had the most upright plant habit. Based on the results of this trial, variety recommendations were changed in the commercial vegetable production guide to enable growers to select the highest yielding leek varieties with desirable marketing and growth characteristics.

APPLICATION OF TWO BACTERICIDES TO MITIGATE DAMAGE CAUSED BY FROST IN DEVELOPING PEACH FLOWERS IN ?EUR~FIREPRINCE?EUR(TM) PEACH (PRUNUS PERSICA)

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Frost injury to developing flowers in fruit trees is a perennial concern among fruit crop producers. Ice nucleating bacteria are responsible for the transition of water to ice in super cooled water. The objective of this study was to evaluate two bactericide products for frost damage mitigation in developing flower buds of 'Fireprince' peach. Experimental plots consisted of three trees spaced 10 ft. within a row. Bactericide treatments consisted of Kocide 3000 (0.5 lb/acre) and Oxidate 2.0 (1 gal/acre) and were applied using a blast sprayer 3 days and 1 day prior to predicted sub-freezing weather. An untreated control was included. Twelve shoots (four shoots per tree per treatment) 12 to 18 inches long and 6 ft. above the ground were selected. Subsequently, 100 flower buds were analyzed for frost damage. Ovary cross sections were made by making equatorial or longitudinal cuts using a razor. Floral ovaries with brown to black interiors were considered non-viable. Percent survivability was determined by dividing number of viable buds by total number of buds evaluated. An analysis of variance was performed on all responses using pro glimmix in SAS version 9.4. The study was a randomized complete block design. Treatment design was a two-way factorial of bactericide treatment and days from application of first treatment. Differences among cultivar least squares means were tested using the simulate method. All significances were at $\alpha = 0.05$. There was a significant interaction between bactericide treatment and days from first treatment application in percent survivability ($P = 0.04$). Percent bud survivability was highest numerically in Oxidate 2.0 and Kocide 3000 applied at 1 day pre-frost (20.5% and 17.8%, respectively) than both applied at 3 days pre-frost (15.2% and 15.0%, respectively). Percent survivability in both pre-frost treatments were higher than the non-treated control (9.5%). Differences were not statistically significant ($P = 0.4102$). Oxidate when applied 1 day pre-frost provided more than double survivability of the control. Although treatment differences were not significant, Oxidate 2.0 and Kocide 3000 treatments provided 1.5 to 2 times survivability of the control and were, therefore, effective in mitigating frost damage.

EFFECTS OF PLANT SPACING VARIABILITY AND NON-UNIFORM EMERGENCE ON CORN YIELD

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Plant spacing variability and non-uniform emergence in corn (Zea mays L.) is not uncommon in Louisiana corn fields. Variation in planting depth, non-uniform surface crop residue distribution in no-tillage systems, microsite variation in the seed bed condition, and seed vigor are major factors responsible for uneven emergence. Also, planters with low precision in seed placement and careless planting operations can cause uneven spacing. Six plant spacing treatments or variability scenarios at 34,000 plants per acre were evaluated which included: perfect spacing, seed skip, double seeded, seed misplace by 1/4, seed misplaced by 1/2, and seed misplaced by 3/4.The non-ideal planting outcomes compared to the perfect spacing did not always result in lower grain yield. The skip planting outcome was the only one that yielded less. Also, the double planted outcome produced more yield than the other five planting outcomes. There were no differences in yield for perfect spacing, seed misplaced by 1/4, seed misplaced by 1/2, and seed misplaced by 3/4 outcomes. A second study consisted of a zero, two, and four leaf delay in corn emergence. Both the two and four leaf delay treatments reduced yields by 10 and 23%, respectively. The objective of these studies was to quantify the effects of plant spacing variability and non-uniform emergence on grain yield of corn.

COMPARISON OF MECHANICAL REMOVAL AND BASAL BARK HERBICIDE TREATMENTS ON RUSSIAN OLIVE REGROWTH

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Mechanical removal of Russian olive (Elaeagnus angustifolia) without herbicide treatment typically results in a thick stand of root and crown suckers. Herbicide treatment after removal by machinery results in limited success due to the difficulty of finding the resulting stumps and exposed roots. Basal bark treatments kill epicormic buds on the lower trunk of the trees, but do not always kill the upper, central branches of older trees in particular. Root sucker formation arising from Russian olive removal requires the broken roots of removed trees to be at, or close to, the surface in order for adventitious bud development. It was hypothesized that basal bark treatment prior to mechanical removal may significantly reduce the development of epicormic and adventitious suckers. In May 2017, 360 Russian olive trees near Emery City, Utah were set up in a randomized block trial (N=3) with ten subsample trees in each treatment combination. Four removal treatments, skid steer mounted stump grinder, skid steer mounted tree saw, backhoe uprooting, and control (trees left standing), were compared. Removal treatments were crossed with three herbicide basal bark treatments of 20% triclopyr in methylated seed oil (MSO) or diesel fuel (v/v) applied two weeks before mechanical removal and an herbicide control which was left untreated. Final evaluation on August 30, 2018 revealed that all mechanical × herbicide treatments reduced regrowth versus controls. All mechanical removal techniques without herbicide treatment also reduced regrowth versus controls. Basal bark treatments applied before mechanical removal significantly reduced epicormic and adventitious suckers. The most effective treatments were the triclopyr in diesel basal bark treatment with tree saw removal and triclopyr in MSO with stump grinder removal, each resulting in 97% control. These results have been presented to rangeland managers and extension agents in Utah and riparian restoration professionals in the Western US. Adoption of these herbicide treatment and removal techniques would significantly reduce the amount of regrowth and required labor-intensive retreatment of Russian olive after mechanical removal. They may also prove effective in efforts to control autumn olive (Elaeagnus umbellata) in the Eastern and Mid-west regions of the US.

FROM GROUND TO GLASS: EVALUATION OF UNIQUE BARLEY VARIETIES FOR WESTERN WASHINGTON CRAFT MALTING, BREWING AND DISTILLING

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Craft maltsters, brewers and distillers want unique barley varieties and reliable end-use data, particularly regarding flavor, to serve a growing interest in craft beverages linked to place and genetic diversity. The goals of this project were to evaluate the impact of barley variety on distillate flavor compounds, and help farmers cultivate higher value markets. We hypothesized that unique flavors exist in the germplasm in the WSU barley breeding program. Eight breeding lines and a control were evaluated for agronomic and end-use characteristics important to maltsters, brewers, distillers, and farmers. In 2017 and 2018 breeding lines (eight in 2017, three in 2018) were grown on field-scale replicated plots in south Puget Sound. These were evaluated for grain quality, malt quality, response to steep regime, and distilled by Sandstone Distillery in Tenino, WA. Hot

malt steeps as well as unaged distillate were analyzed for flavor compounds using Gas Chromatography Mass Spectrometry (GC/MS) and Liquid Chromatography Quadrupole Time of Flight Mass Spectrometry (LC/QTOF-MS) at the WSU Wine Science Center. Barley lines showed differences in malt quality between lines and compared to the industry control (Copeland). Several lines were competitive with Copeland regarding grain yield, fine extract (alcohol yield potential), and friability, with slightly higher levels of beta glucan in breeding lines as compared to Copeland. A measure of potential alcohol yield, fine extract in Copeland and three breeding lines (107.43, 120.14, and 117.17) were 81.9%, 82.4%, 81.7% and 80.6%, respectively. Altered steep regimes improved malt performance. Flavor compound differences were detected based on breeding line, distillation conditions, and growing location with a 95% confidence margin. Flavor compounds, as well as their relative incidence and potential flavor character (spiciness, fruity), could be assigned to breeding line. Research results will support efforts by farmers and regional craft brewers and distillers to integrate barley flavor attributes, as has been the case with hops, into product development and marketing work. Community sensory evaluation and tastings will be used to raise awareness among the public and craft beverage industry regarding this work.

MANAGING PIUTE GROUND SQUIRRELS IN ALFALFA IN UTAH

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Poster URL: https://www.nacaa.com//posters/uploads/1733.pdf

The Piute ground squirrel, (Urocitellus mollis), populations on agricultural lands in Beaver County, Utah are increasing. It is a small gray squirrel found in Nevada and western Utah. It eats grasses, alfalfa and other agronomic crops. High populations of ground squirrels can compete with livestock for forage; destroy food crops, golf courses, and lawns; and can be reservoirs for diseases such as plague. Their burrowing activities alter irrigation systems. Burrow mounds not only cover and kill vegetation, but can damage haying machinery. These squirrels are currently costing farmers in western Utah hundreds of thousands of dollars in lost crops and in control costs. We implemented a population control program that consisted of prebaiting and then baiting with Zinc Phosphide treated grain; this has seen a decline of efficacy. Recently we experimented with different methods of squirrel control including different active ingredients, timing, and baiting strategies. In this poster, we compare the results of these methods and explore the next steps in creating a squirrel management plan for the region. Because of the research outlined in this poster we were able to get a Section 24(c) Special Local Need Label from the State of Utah for the Rozol Vole Bait for the control of the Piute Ground Squirrel.

SOUTHERN REGION ENTRIES

AN INVESTIGATION INTO SALT INTRUSTION TO COASTAL AGRICULTURAL FIELDS

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In response to producer concerns about crop damage associated with high soluble salts, we began investigating salinity in low elevation fields (<5 ft above sea level) in Camden, Pasquotank, and Hyde counties. We will test the hypotheses that the drivers of saltwater intrusion into agricultural fields include (a) periodic wind induced tides, (b) overwash from storm surge events, and (c) more persistent relative sea-level rise. The storm surge associated with hurricane Florence in 2018 flooded several of these fields. Surface water salinity levels vary regionally with Hyde > Pasquotank and Camden county sites. Initial measurements (Oct-Nov 2018) found surface water salinities in two Hyde county tidal creeks measuring 15-16 ppt, which is higher than levels measured during a year-long 1984/85 study (mean of 7 ppt), and also much higher than a general limit of 2 ppt for acceptable agricultural irrigation water. Water salinity measurements indicate more rapid fluctuations in surface water bodies associated with rainfall events, and more stable levels in shallow groundwater. Surface soil salinity levels have declined following above average rainfall levels during winter 2018/19. Shallow groundwater at the Hyde county site had elevated salinity (4-7 ppt) in February 2019, suggesting that subsurface saline water represents a potential risk to crops due to high evapotranspiration rates that occur during the growing season. Soil salinity is likely to be a persistent problem in low elevation coastal areas, with the severity depending on the hydrology regarding freshwater flows and marine incursions. We have developed an extension publication describing this issue and potential land management alternatives: Soil Facts – Effects of wind-induced sodium salts on soils in coastal agricultural fields.

SMALL GROWER ECONOMIC ANALYSIS OF PECAN PRODUCTION IN GEORGIA

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Poster URL: https://www.nacaa.com/posters/uploads/1812.pdf

High pecan prices over the last several years have prompted many people to plant small acreages of pecans, creating the need for budget information for small scale pecan production. Convening a group of pecan growers, information on production costs was gathered, and a budget formed. Expenses were divided into Pre-Harvest Variable Costs, Harvesting and Marketing Costs, and Fixed Costs. Variable costs included lime, fertilizer, (which included foliar fertilizer), insecticides, herbicides, labor, fuel, and oil. Variable costs also include repairs and maintenance (which included maintenance of the irrigation system), custom shaking, irrigation electricity, and interest on operating capital. Harvesting and Marketing Costs included harvesting (which includes sweeping and hauling), cleaning, drying, labor, brokerage fees, Federal Marketing Order commission, and Georgia Pecan Commission fees. Fixed costs include tractor(s), equipment, irrigation, and part of establishment costs. The budget examined income at different prices and yields. The budget also includes the chances for receiving the best, optimistic, expected, pessimistic, and worst returns, expressed as percentages.

A SIMULATED ECONOMIC ANALYSIS OF GRAZING WARM-SEASON ANNUAL FORAGES AS A CASH CROP ALTERNATIVE

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Row crop farmers in North Florida are searching for ways to further diversify their cash crop rotations and provide new income streams for their business as the current economic environment of low commodity prices offers few economic opportunities. One alternative that row crop producers have shown interest in the evaluation of is integrating livestock into their cash crop rotation. A project was developed to evaluate the profitability of short-term warm-season managed grazing systems that did not compromise future crop production. A simulated economic grazing experiment was developed to evaluate the economics of grazing a warm-season annual forage crop over the last fifteen years. Research data collected from the University of Florida, Auburn University, and the University of Georgia was used to evaluate the potential animal production, revenue, cost, and net returns for stocker cattle grazing warm-season annual forages. Production and economic variables evaluated for the warm-season annual forage system were stocking rate, number of grazing days, average daily gain, death loss, value of gain, cost of production adjusted for inflation, and cost of gain. The warm-season annual forage crop evaluated consisted of sorghum-sudangrass, pearl millet, sudangrass, buckwheat, sunn hemp, and cowpeas fertilized with 100 pounds of nitrogen in two applications over 120 grazing days. Total production costs included the amortization of fencing, water systems, seed, hired labor, fertilizer, feed, machinery and equipment, interest, general overhead, marketing, animal health, mineral, and land rent. The revenue was calculated using USDA feeder calf market prices from the last fifteen years to calculate the estimated value of animal gain during summer grazing and using the animal production per acre collected from university research projects. Over the time period evaluated, grazing a warm-season annual cash crop generated positive returns over total specified costs in seven out of the last fifteen years. Therefore, producers would need to see additional benefits to future cash crops in order include grazing a warm-season annual forages in their cash crop rotation.

ASSESSING BRUNSWICKGRASS (PASPALUM NICORAE PARODI) SENSITIVITY TO HEXAZINONE APPLICATIONS IN BAHIAGRASS (PASPALUM NOTATUM) SEED PRODUCTION FIELDS

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Brunswickgrass (Paspalum nicorae Parodi), is becoming a problematic weed in summer perennial grass pastures in the southeast. In Florida, we have seen increasing pressure to control this weed contaminate as it is becoming a major threat to livestock and bahiagrass seed industries. This rhizomatous grass is refused by cattle and seed could potentially restrict sales of contaminated bahiagrass seed lots. During 2018, this weed contaminate resulted in an economic loss of over $400,000 in a three county area for seed producers. Currently, management options are limited; therefore, the objective of this research is to develop a management plan and potentially eradicate Brunswickgrass in Bahiagrass seed production fields. The purpose for this project was to assess Brunswickgrass sensitivity to hexazinone applications, after field symptomology was observed following a producer application when targeting Smutgrass. Experiments were established at various locations

within Citrus, Sumter and Pasco counties in 2018 to evaluate Brunswickgrass response to the application of hexazinone at 0.13, 0.25, 0.50, 0.75, and 1.0 lb ai/acre. In this herbicide study, hexazinone appears to have significant activity. With an application of 0.50 lb ai/acre 80% Brunswickgrass control was achieved. When the rate was increased to at least 0.75 lb ai/acre control increased to at least 94%. Even though there is still more to be discovered with regards to long-term management, these data sets appear promising for beginning to develop a long-term management plan.

CONVERTING FROM SEEPAGE TO PLASTICULTURE FOR FLORIDA GROWN CABBAGE

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In 2010, as a response to strengthening Florida regulations on water quality and quantity, cabbage growers and University of Florida IFAS Extension agents were seeking information on ways to implement the practice of using plastic mulch and drip irrigation on their farms. This poster presents the results of the last 9 years of work done to address this initial question and the development of a plasticulture system for Florida cabbage. The high population, plasticulture cabbage production system was developed as a best management practice to increase water use efficiency and minimize off-farm nutrient movement. By integrating an increased plant population with more water efficient production practices, we were able to optimize cabbage production while reducing the potential for off-farm nutrient movement as compared to the standard, bare ground, seepage system. Cabbage was grown on 1.2 meter-wide raised beds with black plastic mulch and drip irrigation. Through the use of plasticulture, yield was increased from 33.6 Mg/ha to 59.4 Mg/ha on average over the traditional bare ground production system. Water savings from using plasticulture were estimated at 381 mm during a low rainfall year. High population vegetable crop production systems that maximize water use efficiency, like the system developed for Florida cabbage, have great potential to provide sustainable food production for the future especially when combined with the latest irrigation scheduling and soil moisture sensor technologies. In 2019, two of the largest North Florida cabbage producers, the original collaborators, plan to plant more than 10 acres using the plasticulture system. These two growers will also be using soil moisture sensors and irrigation schedules to better manage their water and nutrients. The true success of this program was in working with the growers, building a strong relationship and develop a solution that helps them remain profitable in an ever-challenging market.

EVALUATING ARTICHOKES: A BUDDING NEW ALTERNATIVE CROP FOR NORTHEAST FLORIDA FARMERS

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Globe artichoke (Cynara scolymus L.) is a thistle-like, perennial plant grown for its high-value edible flower bud. Commercial production in the United States occurs almost exclusively in California, but with the help of Extension, Florida growers are exploring the production potential of the crop, particularly in the Northeast region of the state where potato growers are seeking alternative crops to diversify their farming systems and enhance sustainability in the struggling industry. To support this endeavor, field trials were initiated in Fall 2017 at the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Hastings Agricultural Extension Center's (HAEC) Cowpen Branch farm to evaluate yield potential of selected artichoke cultivars. Seedlings of three cultivars, 'Green Globe Improved,' 'Imperial Star,' and 'Colorado Red Star,' were planted in plastic mulch in single 430-foot rows with 3 inches spacing in early November 2017. Gibberellic acid (20 ppm) was applied twice to induce bud formation, first at 60 days after planting and again at 74 days after planting. Initial harvest began in March with eight total harvests occurring until early May. Both artichoke numbers and weights were recorded for each cultivar. 'Imperial Star' was the highest yielding cultivar at 10,033 lbs per acre, followed by 'Green Globe' at 8,021 lbs per acre, and 'Colorado Red Star' at 6,298 lbs per acre. With a 10,000 lbs per acre yield and current market prices at approximately $24 per 6 lbs box, local growers could see a $40,000 per acre potential with adoption of the 'Imperial Star' cultivar. HAEC artichoke field evaluations have been improved and are ongoing for the 2018-2019 season. These results have continued to spark interest with local growers in hopes that artichokes may be the next budding alternative crop for the area.

EVALUATION OF SOYBEAN VARIETIES IN JAY, FLORIDA

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Poster URL: https://www.nacaa.com//posters/uploads/1767.pdf

Farmers rely on local research to make planting decisions giving rise to the need for crop variety testing. In both 2015 and 2016, producers in northwest Florida harvested approximately 29,000 acres of soybeans. Soybean is not our most popular agronomic crop but it is a significant crop to some area farmers. The objective of this study was to provide farmers with local yield data for soybean varieties suitable for production in northwest Florida. Variety trials were performed at the West Florida Research and Education Center in Jay, Florida. Varieties were planted in replicated plots and in large demonstration plots each year (2015-2017). Growing conditions were recorded each year for both. Plots were harvested and yield data was collected for each variety. Multi-year results were averaged when available. Annually, reports were provided to farmers in 2015, 2016 and 2017. Multi-year grain yields were recorded for six varieties with three of those varieties having three years of data. Consistent top performing varieties include Bayer CZ 7070 RY, Dupont Pioneer P76T54R2, Asgrow AG69X6, and Asgrow AG75X6. Variety trials allows personnel to provide important local yield data to Northwest Florida farmers.

FUNGICIDE EFFICACY ON FOLIAR BLIGHTS OF SWEET CORN IN SOUTH FLORIDA

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Over 1 billion ears are harvested annually from the estimated 35,000 acres of sweet corn annually grown by Florida farmers. The statewide yields for this $160 million dollar industry average 145 CWT on 28-32 inch rows and 6-8 inch seed spacing. One of the major expenses in producing sweet corn exclusively destined for the high-quality demanding fresh-market is disease management. Two diseases of critical importance to Florida sweet corn growers are Southern Corn Leaf Blight (SCLB) and Northern Corn Leaf Blight (NCLB) caused by Bipolaris maydis and Exserohilum turcicum respectively. These diseases not only cause necrosis of the foliage, they also negatively affect the marketability of the crop by infecting ear leaves and husks. Blight symptoms on the ear often result in poor tip fill as well. In south Florida where the majority of the state's sweet corn is grown, the planting season extends from mid-September to mid-February. SCLB can be quite severe on young plants and is prevalent in the fall when warm temperatures and extended periods of leaf wetness exist. Moisture from rain and early morning dew facilitates fungal spore germination and penetration into plant tissues. SCLB often then reemerges as south Florida transitions from the dry, cool winter to the warmer and more humid spring. NCLB is also favored by long periods of dew and leaf wetness but the causal agent prefers more moderate temperatures than that which causes SCLB and is typically prevalent only in the spring crop. Farmers may utilize a combination of protectant, translaminar, and systemic fungicides to mitigate the damage of SCLB and NCLB on their sweet corn crops throughout the growing season. UF/IFAS Research and Extension faculty regularly evaluate the efficacy of existing and new fungicides for such diseases. A recent trial was established in western Palm Beach County to examine the efficacy of several fungicides on foliar blights of sweet corn in south Florida. Analysis of this trial will be completed by the end of the sweet corn growing season and presented along with the results from previous efficacy studies conducted locally.

GIANT SMUTGRASS CONTROL TRIAL

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Situation: Giant Smutgrass (Sporobolus jacquemontii) is a perennial bunch- type grass that produces over 45,000 seeds per plant per year. Weeds in pastures and rangelands cost ranchers and livestock owners in excess of $180 million annually in Florida. Immature smutgrass is palatable to livestock two to three weeks after mowing or burning, but theses control practices tends to stimulate the density and germination of the giant smutgrass plant. Chemical control for smutgrass is a great option for producers and is important to complete during the rainy month since hexazinone is highly dependent on rainfall.

Methods: The smutgrass control trial was completed to determine the percent control of smutgrass using the herbicide hexazinone. The research trial was completed on a 2.0 hectare complete randomized block design with three replications. Each individual plot was 0.093 hectares. The two variables measured a cut and uncut and method of application. The blocks represented a cut wipe method with a 30% solution one direction, uncut wipe 30% solution one direction, cut spray 2.34 L/Ha, uncut spray 2.34 L/Ha, uncut control, and cut control. A visual percent control of plant density was completed by multiple agents before the trials were started. The trial began in August 2018 with recommended rainfall. The visual percent control of plant density was completed 30

and 60 days post treatment. A Smutgrass Control Trial Field Day was hosted as a result of trials to demonstrate to 45 local producers who attended.

Results: At 30 days post treatment the cut wipe method with 30% solution showed the largest percent control at 90.1% control and the uncut wipe with 30% solution was the second largest percent control method. At 60 days post treatment the cut wipe with a 30% solution exhibited the most control. The trial was analyzed via ANOVA 30 and 60 days post treatment. The P value was less than 0.05 and showed a significant difference between the control and chemical application. The cut wiped and cut spray and uncut wiped provided a significant improvement over cut control and uncut spray. Additional measurements will be taken 1 year post application.

ON-FARM RESEARCH DEVELOPS NOVEL METHOD FOR CHARACTERIZING THE IMPACT OF EQUINE MANURE MANAGEMENT PRACTICES ON WATER QUALITY AND OPENS DOOR FOR OUTREACH TO LOCAL HORSE COMMUNITY

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Eutrophication of waterways from nitrogen and phosphorus inputs result in impairments to Florida's water resources. Mitigating nutrient loading to ground and surface waters through proper management of horse manure and stall waste can help protect water quality. One way to mitigate nutrient loading is through effective composting of waste material. Unfortunately, research characterizing the relationship between on-farm equine manure management practices, specifically composting versus stockpiling of stall waste, and water quality is limited. The objective of the current study was to develop methodologies for in-situ characterization of the nutrient profile of ground and surface water runoff from stockpiled equine waste compared to waste that has been effectively composted. Researchers partnered with three equine facilities to install collection equipment at their manure handling sites. Through the innovative use of lysimeters and water runoff collection trenches, researchers were able to develop a cost-effective, easily deployable, and readily adaptable method for characterizing on-farm nutrient losses in leachate and surface runoff from manure storage sites. The methods employed in this study will facilitate data collection in the field that will help guide Best Management Practices for both producers and decision makers. By quantifying the impact that different manure management practices have on freshwater systems, Extension agents will be better able to make science-based recommendations for proper manure handling.

THE EFFECT OF STRESS ON SEVERITY OF TAKE-ALL ROOT ROT ON WARM-SEASON TURF GRASSES

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Rationale: Take-all root rot, is one of the major diseases of warm season turf in Florida. The disease is known to affect all warm season turf grass species. Not all turf species are equally susceptible to take-all root rot and not all species express the same symptoms. Take-all root rot is caused by the fungus Gaeumannomyces graminis var. graminis (GGG). The disease mainly affects roots but is also found on rhizomes and stolons. In Florida, the disease mostly occurs in the wet, humid summer months. GGG is a stress pathogen, therefore the turf must undergo cultural stress such as overwatering, too much nitrogen, high pH soils, or scalping. In the summer of 2018, we did a take-all root rot trial on four species of warm season grasses, two cultivars of each species. St. Augustine: Floratam and Bitter Blue; Bermuda: 419 and Celebration; Zoysia: Empire and JaMur; Bahia: Argentine and Pensacola. Procedure: A completely randomized block design consisting of four replications of square meter plots was established. Each plot was inoculated with oats infected with GGG, 21 days after establishment at a rate of 28.3 grams per plot. Treated plots were scalped, fertilized at two times the recommended rate, and were limed despite a proper pH. The control plots (also infected) were cared for according to BMP recommendations. Data was collected starting 38 days post-inoculation. Percentage decline was collected weekly and later converted to the Horsfall-Barratt Scale. The disease was confirmed via microscopic observation. Results: Treatment resulted in more disease for all species and cultivars compared to the untreated. Cultivars differed significantly in their disease severity over the season. There was no season long interaction between cultivar and treatment (indicating all cultivars were impacted similarly). Individual dates showed some significant

interactions with treated plots having less visible disease for some cultivars, but this seemed to be a temporary effect. Conclusion: Disease severity increases with stress. While Bahia is tolerant, the symptoms expressed closely mimicked the symptoms that we observed in "Bahia Decline". More research will be needed to determine if there is a relationship between take-all and "Bahia Decline".

USDA SARE ON-FARM EVALUATION OF MULTIPLE MULCH MATERIALS FOR LONG-TERM WEED CONTROL IN CONTAINER NURSERIES

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Nursery growers spend large amounts of time and money to keep weeds out of container crops. Estimates range between $500 and $4,000 per acre for supplemental hand weeding, and economic losses due to weed infestations have been estimated at $7,000 per acre (Case et al., 2005). Research has shown that use of organic mulch materials in containers can provide season-long weed control (Cochran et al., 2009; Richardson et al., 2008; Wilen et al., 1999). The objective of our trial was to evaluate use of mulch as a long-term (multi-month) weed management strategy in large sized containers at nurseries in Florida. Trials were conducted in containers (ranging from #7 to #50) at three nursery locations and two Research and Education Centers from 2017 through 2018. Mulch material treatments evaluated included pinebark nuggets (PB), hardwood mulch (HW), and sawdust, both alone and in combination with a tackifier a paper waste slurry, the paper waste slurry + pinebark, a plastic mulch that was wrapped around containers, a granular herbicide control (oxyfluorfen + pendimethalin,) at standard label rates and a non-treated, non-mulched control that was used for comparison. Data was collected monthly for 6 months and all visible weeds were hand-weeded, weighed, and time to pull was recorded. Mean weeding time was greatest in the non-treated control and the herbicide treatment was similar. The highest level of control (90% reduction of weight and time) was observed with plastic mulch with all PB treatments providing similar results (66 to 86). Of the traditional mulch materials that were evaluated, PB generally provided the best control as it degraded more slowly than other materials and due to the larger particles which drained more quickly than HW or sawdust.

USING SMALL UNMANNED AERIAL SYSTEMS (SUAS) AND GROUND-BASED SENSORS TO IMPROVE AND ENHANCE WATER MANAGEMENT

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Situation – Sod production in Florida uses an estimated 57.84 million gallons of water each day (FSAID, 2016). Improved and enhance water management strategies are necessary to conserve water resources while maximizing production and reducing costs. Irrigation scheduling methods used for sod involve deciding when and how much water will be applied. This method results in the same amount of water being applied throughout the entire field regardless of need, soil type and elevation. Irrigating without knowledge of what is needed waste water resources increase plant disease risk and the possibility of non-point source pollution. This research is aimed at assisting the refinement and improvement of aerial mapping in agriculture to support irrigation management.

Methods – Small unmanned aerial systems (sUAS) equipped with optical, multispectral and thermal sensors were used to map three sod farms to determine irrigation scheduling and nutrient loading. In combination sUAS-borne thermal and multispectral imagery, ground-based canopy foliar spectrometry would be compared to determine plant water use and foliar nutrient content.

Results – Results obtained from the handheld hyperspectral spectrometer indicate there is potential for assessing critical chemical traits across entire fields if imagery is available. In addition, models were built to test if sod canopy spectra can be utilized directly to produce estimates of soil nutrients. Results indicate that most soil nutrients have good fits with canopy spectra, and most hold-out samples fall entirely within ±1 RMSE of model fits. However, results from the raw thermal

imagery indicate more data is needed to track soil moisture conditions reliably. While the unavailability of thermal data precluded us from estimating evapotranspiration, we were successful in developing scaling relationships between satellite estimated albedo and UASs (R2 = 0.85). However, more data is needed to estimate evapotranspiration using aerial platforms.

Conclusion – Overall, results from these tests confirm our hypotheses that aerial mapping techniques can help estimate many foliar nutrients, and to a limited extent, can help simultaneously assess soil nutrient status as well. However, more data needs to be collected to develop a good algorithm for plant water stress.

CONTROL OF GLYPHOSATE RESISTANT WEEDS WITH SPRING BURNDOWN HERBICIDES

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Burndown of winter weeds is a proven method of controlling weeds in agriculture fields of Arkansas. Glyphosate has been a primary herbicide used to control these winter weeds. However due to resistance to this herbicide, many weeds are becoming harder to control with this system. The major two winter annual weeds that have exhibited resistance are Horse weed (Conyza canadensis) and Italian ryegrass (Lolium multiflorum). To combat the issue of resistance a series of result demonstrations were conducted in Phillips County, AR to test for both herbicide resistance to specific weed species as well as finding suitable control options for these weeds. Glyphosate alone did not control either weed in the demonstrations. Horseweed had 50% control and Italian Ryegrass had 60% control with the herbicide glyphosate. This proved that both weeds were showing some level of resistance to the herbicide glyphosate. Control for horseweed was obtained with the addition of dicamba, Elevore (halauxifen), 2,4-D and Sharpen (saflufenacil), to the glyphosate. All of these products when mixed with glyphosate showed 99% control of horseweed 29 days after treatment. To obtain adequate control of Italian ryegrass in the burndown demonstration, the herbicide paraquat was needed. Paraquat is a non-selective herbicide that was used to control the ryegrass. Other products did aid in control, but not to the extent of paraquat. All of the information gathered from these result demonstrations was communicated to the producers of the area by use of the annual result demonstration book, published each year. As an added benefit, these demonstrations sites were also used as a training tool for agriculture Extension agents to help improve their skill in making herbicide burndown recommendations. These two weeds will continue to be an issue for area producers in the future. To farther aid in decision making with these resistant weeds, this demonstration will continue into the 2019 burndown season.

EVALUATING PROVISIA RICE TO COMBAT RESISTANT WEEDS IN ARKANSAS RICE PRODUCTION SYSTEM

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Arkansas rice producers continue to combat herbicide resistance, finding it increasingly difficult to achieve adequate weed control. New technologies are needed in order to manage problematic weeds. In 2018, Provisia® rice, a new non-GMO, herbicide-resistant rice type was released that is resistant to quizalofop, an acetyl coenzyme A carboxylase (ACCase)-inhibiting herbicide that will allow for selective grass weed control in rice. During the 2018 growing season in Prairie County, AR, a Provisia Multiplier Field was established in a field with history of resistant red rice, weedy rice, and barnyardgrass on May 10. This field was scouted weekly and applications were made using University of Arkansas System Division of Agriculture Cooperative Extension Service recommendations. Herbicides applied to this field were Facet L and Command at planting. On May 23, Prowl H2O, Londax, and 15.5 oz/A of Provisia were applied. The final application of Provisia was made 3 weeks later at 15.5 oz/A. Harvest was delayed due to wet, rainy conditions. The field was harvested in November averaging 153 bu/A. The producer achieved good control of red rice, weedy rice, and barnyardgrass which were observed during field scouting. Due to the history of resistant weeds, this product was very effective in controlling problematic weed and lower herbicide cost due to its effectiveness on these weeds. Overall, this technology showed to be an effective tool for rice producers in Arkansas with valuable weed control.

HERBICIDE IMPREGNATED FERTILIZER TRIALS

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In 2017 GrazonNext HL (2,4-D + aminopyralid) received a label for fertilizer impregnation for forage weed control. Herbicide impregnated fertilizer has been used successfully in turf weed control for over 30 years. The recommended rate of GrazonNext HL herbicide is 1.5-2.1 pints per acre and a fertilizer rate of at least 200 pounds per acre. The impregnation process is done by the fertilizer/agricultural dealers and is applied to the field with bulk fertilizer buggies. In 2017 and

2018 demonstrations were initiated at 28 sites in 17 counties to compare the effectiveness of GrazonNext HL impregnated fertilizer with traditional foliar applied forage herbicides. The comparison treatments are typical of herbicides used in forage weed control throughout Arkansas and recommended in Pasture Weed Control in Arkansas MP 522. Herbicide demonstration treatments were GrazonNext HL 1 quart per acre impregnated fertilizer, GrazonNext HL 1 quart per acre, Grazon P+D 1 quart per acre, and Weedmaster 1 quart per acre. All foliar treatments were applied with a CO2 backpack sprayer at 15 gallons per acre. In all of the demonstrations, the foliar treatments were as good or better than the GrazonNext HL on fertilizer treatments. GrazonNext HL impregnated fertilizer is effective for broadleaf weed control, but weed control decreased as weed size increased. If weed size is greater than 12" in height, foliar apllied herbicides are recommended over GrazonNext HL impregnated fertilizer.

VITICULTURAL PERFORMANCE OF ?EUR~CHARDONEL?EUR(TM) AND ?EUR~NORTON?EUR(TM) GRAPE CULTIVARS ON SELECTED ROOTSTOCKS IN ALABAMA

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Interest in grape production is expanding in Alabama and the southeast, yet very little is known about the grape rootstock performance in the region, and the potential rootstock impact on vine Pierce's disease (PD) resistance, drought and nematode resistance, phylloxera resistance, and other biotic and abiotic challenges common to the southeastern environment. The main objective of the present study was to determine the best-suited rootstocks for enhanced sustainability of hybrid bunch grape production in Alabama and the southeast. A field experiment with hybrid bunch grape cultivars 'Norton' and 'Chardonel' either grown on their own roots or grafted to 'Paulsen 1103' ('1103P'), 'Kober 5BB' ('5BB'), or 'Teleki 5C' ('5C') was established at Chilton Research and Extension Center (CREC) (32°55'11.6" N, 86°40'25.4" W), USDA Plant Hardiness Zone 8A. Vines were planted in a generalized randomized complete block design comprised of seven replications, with two experimental vines per rootstock-scion combination per replication. Variables measured included vine dormant pruning weight, shoot and berry phenology, total yield/vine, number of fruit clusters, cluster weight, berry weight, soluble solids content (SSC), berry pH and titratable acidity (TA). Total yield per vine of 'Chardonel' grafted on '1103P' was higher than yield of own-rooted vines. No differences were found in titratable acidity and soluble solids content among rootstocks. 'Norton' grafted on '1103P' had the highest pruning weight per vine, while 'Norton' grafted on '5BB' had the lowest. Our results indicate that '1103P' grafted 'Chardonel' vines produced higher yield and larger cluster size as compared to own-rooted 'Chardonel'. 'Norton' grafted on '5BB' did not adapt well based on low survival rate in the Alabama environment. Outcomes of this study will provide viticulture industry in the region with research-based decision making tool for proper scion-rootstock grape selection and contribute to enhanced environmental, social and economic viticultural sustainability.

NORTHEAST REGION ENTRIES

HOPS VARIETY TRIALS IN MARYLAND: THE FIRST THREE YEARS

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In an effort to support Maryland's new and rapidly growing brewing industry, the University of Maryland Extension, in partnership with Flying Dog Brewery, established a one-half acre hop yard at the Agricultural Experiment Station in Keedysville, Maryland. This planting contains 24 varieties selected in consultation with local growers and brewers. All varieties are replicated 3 times and are managed intensively with regard to fertility and irrigation, as well as insect, disease, and weed management using IPM principles. The goal of this trial is to determine what varieties may be best suited for production in Maryland, and what challenges and opportunities Maryland growers may encounter along the entire production chain from growing to pelletization to final product. Compared with current American areas of high hops production, Maryland is hotter, more humid, at a lower latitude, and has a large variety of insect pests and soil types. A handful of varieties stand out among others and provide qualities that are desireable for both farmers and brewers.

SWEET CORN PEST POPULATION TRENDS OVER TEN YEARS IN MAINE

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The University of Maine Cooperative Extension initiated a sweet corn IPM program for Maine Farmers in 1983, which has continued to the present day. Two out of three of the major insect pests of sweet corn, corn earworm and fall armyworm, cannot overwinter in Maine, due to the cold winter temperatures, and must migrate into the state each season from southern regions. This migration can be effectively monitored with pheromone traps for the moths, allowing farmers to more efficiently time and target management strategies, including insecticide applications. Although pest monitoring locations, trap types and pheromone baits have changed over time, a relatively consistent set of data was extracted from five monitoring sites for the past ten years to determine if trends in populations of these two migrating insect pests could be observed. Moths of the two species were monitored with pheromone traps; fall armyworm larvae were also monitored by field scouting. Combining data from the five locations indicates a downward trend for corn earworm moth captures over the past five years, whereas fall armyworm moth captures have risen over the past five years. Date of first capture each season was slightly more variable for corn earworm moths than for fall armyworm moths, although corn earworm was usually caught one to two weeks earlier. The observed fluctuations in the initiation and intensity of these two migrating corn pests from season to season illustrate the importance of effective monitoring and integrated past management strategies to optimize management efficacy and efficiency.

NORTH CENTRAL REGION ENTRIES

ECONOMIC COSTS AND LABOR EFFICIENCIES ASSOCIATED WITH RAISING DAIRY CALVES FOR OPERATIONS USING INDIVIDUAL OR AUTOMATED FEEDING

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The cost of raising dairy replacement calves is a significant cost on Wisconsin dairy farms. To augment individual dairy calf cost of production analysis, the dairy industry also requires a set of benchmark costs. Our objective was to evaluate the economic costs and labor efficiencies associated with raising dairy calves using an individual traditional system (bottle or bucket) compared to those using an automated milk feeding system.

A computer model, Intuitive Cost of Production Analysis (ICPA), was written in 1997 and formally published in 2003. ICPA data was collected, and reports published by the University of Wisconsin-Extension in 1999, 2007, 2013, and 2015. The previous surveys focused on differences in operation types rather than management. Recently, the use of automated milk feeding systems has increased but the cost of operating these systems has not been evaluated in Wisconsin. The current ICPA survey evaluated the cost of production for dairy farms using either individual feeding (n=11) or group feeding with an automated milk feeding system (n=15). Field input data were collected by 12 county based University of Wisconsin-Extension agriculture agents and two University of Minnesota-Extension agents.

Results showed the average cost to raise a calf on automated feeding, not including the value of the calf itself, was $431.19 vs. $419.62 for individual feeding systems. When expenses were categorized, Feed Costs, Housing and Equipment, and Other Variable Costs were greater for automated feeding systems. Paid Labor and Management, and Opportunity Cost of Unpaid labor and Management were greater for individual feeding. Further analysis showed calves on automated feeding consumed greater total amounts of either whole milk or milk replacer than individually fed calves.

The audience for this information included dairy farmers, industry professionals, Extension educators, and exiting dairy farmers considering calf raising. Distribution of information has occurred at regional heifer raising meetings, Wisconsin Farm Technology Days, and World Dairy Expo, and had been published in Hoard's Dairyman which collectively reaches over 80,000 subscribers in the US.

Data from the project has been summarized in a white paper, two factsheets, popular press, and PowerPoint presentations. It is available online at https://eauclaire.extension.wisc.edu/uwex-icpa-project/ or https://fyi.extension.wisc.edu/heifermgmt/rearing-costs/

2018 SOFT RED WINTER WHEAT RESPONSE TO NITROGEN RATE IN NORTHWESTERN OHIO

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Producers rely on university research to apply the proper rate of nitrogen for optimal wheat yields and to reduce the risk of nutrient loss into the environment. Few nitrogen rate studies have been completed in recent years in the Eastern Corn Belt. The objective of this study was to determine the nitrogen rate for optimal yields for soft red winter wheat. Dyna-Gro 9522, a medium-maturity variety, was established in the fall of 2017 on the OARDC Northwest Agricultural Research Station near Custar, Ohio. Eight nitrogen rate treatments were applied as urea-ammonium nitrate between greenup and early stem elongation (Feekes Growth Stage 6). Rates included in the study were 0, 40, 60, 80, 100, 120, 140, and 160 pounds per acre. All treatments received 20 pounds of nitrogen per acre prior to planting. Experimental design was a completely randomized block replicated four times. Analysis was a simple ANOVA. Grain yield, test weight, spike number, and flag leaf nitrogen uptake were measured for each plot. Yields were 50.0, 71.9, 80.1, 84.2, 87.5, 87.2, 89.3, and 88.7 bushels per acre for the 0, 40, 60, 80, 100, 120, 140, and 160 nitrogen rate, respectively. The trend was for grain yield to significantly increase with larger nitrogen rates until the 100 pound per acre rate, $p<0.01$. Yields were similar for treatments larger than the 100 pound nitrogen rate. For this particular study, an optimal spring nitrogen rate would exist between the 80 and 100 pound per acre nitrogen rate.

COMPARING CORN NITROGEN RATES IN MINERAL AND MUCK SOILS

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Nitrogen rates applied to corn have changed over the years. Originally, when the Tri-State Fertilizer Recommendations were released in Ohio, 1.2 pounds of nitrogen was recommended to produce a bushel of corn. Later, that number was reduced to 0.8 pounds of nitrogen, and today that number can be closer to 0.6 pounds of nitrogen to produce a bushel of corn depending on soil types, mineralization, organic matter, and other factors. Corn hybrids today have more starch and less protein compared to hybrids grown 20 years ago. More efficient use of nitrogen can be accomplished by reducing risk of loss, varying application times, and use of modern sampling and application methods. This poster compares three years of nitrogen rate trials in mineral soils to three years of nitrogen rate trials in muck soils with high organic matter content. Five different sidedress rates are compared with three replications in each trial. The results of the studies over three years show the best economic sidedress nitrogen rate in these trials' mineral soils to be 150 lbs per acre with 32 pounds of starter nitrogen. The best sidedress nitogen rate in these trials' muck soils over three years show the best economic rate to be 100 lbs per acre with no starter nitrogen. Although additional nitrogen can increase corn yields, Ohio corn producers are moving toward using the best economic rate as an answer to tighter budgets and environmental concerns. The Maximum Return to Nitrogen method is being recommended in the state with the new update of the Tri-State Fertilizer Recommendations in 2019. On-farm research such as these trials provide evidence of the results of this method for farmers to consider when managing their nitrogen dollars.

CONNECTING PRODUCTION FIELDS WITH POLLINATOR HABITAT USE SURVEY

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A broad pollinator and pest survey was conducted in conjunction with several other states in the North Central region to associate insects found in those habitats with adjacent agronomic and specialty crop fields. The abundance of each insect in the survey could be seen as a proxy for estimating shared ecosystem services between the pollinator habitat and the agricultural field. Seven pollinator habitat survey sites across Ohio were selected based on their proximity to agricultural crops. The sites were monitored starting approximately 1 June for 10 weeks. Pollinator habitat varied from location to location but minimally consisted of a 100m x 1m strip of floral resources. A transect path alongside or within the habitat was walked for a period of 15 minutes each week where 14 taxa of pollinators and pests from the families Apidae, Syrphidae, Nymphalidae, Halictidae, Scarabaeidae, Chrysomelidae, Aphididae, Pentatomidae, and Miridae were monitored and recorded on plants and flowers. The most abundant pollinators were Syrphid flies at 4/7 sites, followed by bumble bees (2/7 sites) and European honey bees (1/7 sites). Japanese beetles were the most abundant pests at 4/7 sites, followed by striped cucumber beetle (2/7 sites) and tarnished plant bug (1/7 sites). Weekly data for each site were uploaded into the Integrated Pest Information Platform for Extension and Education

(iPiPE) website to be shared broadly with other researchers and stakeholders participating in this survey.

IMPACT OF SEEDING RATES ON CORN AND SOYBEAN YIELDS IN TUSCARAWAS COUNTY

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The purpose of this study was to evaluate the effects of varying seeding rates on corn and soybean yields and determine rates that maximize profitability and yield. A randomized complete block design was used in the study. The corn plot included five replications of five treatments. Per acre corn seeding rates were 22,000; 26,000; 30,000; 34,000; and 38,000. Data analysis showed a statistically significant difference in three of the five treatments. Economic analysis showed the 34,000 seeds per acre rate provided the highest return ($658.00) above seed cost, although it was three bushels less than the highest yielding seeding rate. The soybean plot included four replications of five treatments. Per acre soybean seeding rates were 100,000; 125,000; 150,000; 175,000; and 200,000. Data analysis revealed no statistically significant difference in yield between the treatments. The 100,000 seeds per acre rate provided the highest return ($559.00) above seed cost, $51.00 per acre above seed cost greater than the lowest return. The soybean seeding rate study demonstrates the ability for farmers to reduce seeding rates without sacrificing yield.

MECHANICAL WEED CONTROL IN PASTURES

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Managing weeds in pastures and hay fields requires a different approach than weed management in row crops. The Ohio State University Extension Weed Control Guide suggests the best way to control weeds in established forage stands is to maintain a dense healthy forage stand through proper fertilization, cutting management, and insect control. Weeds can become a problem if they interfere with light penetration to the forage plant leaves, if excessive nutrients intended for the forage plants are used, or they take water or growing space from the forage plants. This can directly influence the yield, quality, and length of time a field remains highly productive. The purpose of this study was to determine if weed populations in pastures could be changed or reduced by varying the timing of mechanical mowing during the late spring and summer growing period without the use of herbicides. Treatments in this study consist of: (1) Control (no mowing), (2) June mowing, (3) July mowing, (4) August mowing, (5) September mowing, (6) June/August mowing, (7) July/September mowing, and (8) monthly mowing's; June/July/August/September. Forage dry matter samples were taken near the beginning of each month and each plot was visually rated for broadleaf weed pressure contained at the time of sampling. A scale of 0-9 was used (0 meaning 0% weeds present to a 9, meaning 90% weeds present). Data included for this report is from the fourth year of this multi-year study. Results indicate all of the mowing treatments had significantly less weeds present ($P<0.05$) than the control except for the June only treatment. The two mowing treatments of June/August and the four mowing treatments of June/July/August/September, were significantly less ($P<0.05$) than both the non-mowing treatments and the June only treatment. This study suggests that the June/August mowing was the best option to reduce weeds.

NITROGEN OPTIONS TO INCREASE YIELDS FOR STOCKPILING COOL SEASON GRASSES IN EASTERN OHIO

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Nitrogen (N) has been shown to be effective for stockpiling cool season grass for grazing in the fall and winter. Urea is the most readily available form of nitrogen. One limitation of urea is volatilization if temperatures get above 80°F. There is limited research on using urea with a urease inhibitor (Agrotain®). We conducted an experiment to determine the value of utilizing urease inhibitors as well as different forms of fertilizers available in Eastern Ohio. The purpose of this study was to determine the effects of yield and quality by adding urea, urea with Agrotain®, and ammonium sulfate (AMS) to cool season grasses; predominantly fescue and orchardgrass. This study utilized three sites in Southeast Ohio (Morgan, Noble, and Monroe Counties). Each site had a randomized complete block design with four treatments (control, 100 lbs./A urea, 100 lbs./A urea plus Agrotain®,and 219 lbs./A ammonium sulfate) and four replications per treatment. The application date was August 6, 2018 and the plots were harvested on November 4, 2018. There were no statistical differences between locations or treatments for CP, ADF, or TDN ($P < 0.05$). The control treatment produced significantly ($P < 0.05$) less forage mass than those with N, but yield was

not significantly different between the three N treatments. The three site average for the control was 2219 lbs. DM/A; urea, 2839 lbs. DM/A; urea+Agrotain®, 3190 lbs. DM/A; and ammonium sulfate, 2870 lbs. DM/A. Rainfall in the first 30 days from trial initiation in 2018 ranged from 3.2 to 3.7 inches, and the first significant rainfall (0.11-0.25 inches) was within 30 hours of initiation. This 2018 study highlights the importance of nitrogen application for increased biomass in cool season grasses. The experiment indicates that total nitrogen has an effect on biomass accumulation regardless of form. Additionally, the utilization of a urease inhibitor did not significantly increase the efficacy of urea under these environmental conditions.

UTILIZATION OF GROWTH REGULATORS AND UREA ON COOL-SEASON FORAGES IN EARLY SPRING

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Gibberellins are compounds classified as plant growth regulators. This class of compounds has been shown to regulate multiple plant developmental factors such as breaking seed dormancy, as well as, stem and leaf elongation. Our experimental study focused on the potential to increase spring forage growth in cool-season grass pastures utilizing RyzUp SmartGrass®, a gibberellin based product, and fertilizer as dual growth stimulants during 2017 and 2018. The experiment was conducted from March to April in both years at the Eastern Agricultural Research Station in Belle Valley, Ohio. Data from 2017 suggested a synergistic effect of RyzUp and urea. To further investigate this phenomenon, a follow-up experiment to test a low (0.4 oz.) verses a high dose (1.0 oz.) of RyzUp was conducted. Four treatments were implemented; a control with no added urea or RyzUp, urea applied at 100 lb./ac., RyzUp applied at a 0.4 oz./ac., and both RyzUp and urea applied together in the early spring. A mirrored experiment with 1.0 oz. of RyzUp was conducted concurrently. We hypothesized a synergistic effect utilizing RyzUp SmartGrass® and urea. When tested at the 0.4 oz./ac. rate, the application of RyzUp and urea together showed a significant increase ($P < 0.05$) in biomass versus the other treatments. Regression analysis indicated that the synergistic effects of the growth regulator and fertilizer could be seen independent of environmental variances for separate different years ($r^2 = 0.98$). When tested at the 1.0 oz. /ac. rate of RyzUp in 2018, the treatment interactions matched those observed in 2017 and 2018 at the 0.4 oz./ac. rate. Synergistic effect could be due to a dual stimulus of a hormone (RyzUp) and chemical (urea) acting independently on separate growth pathways.

FORAGE QUALITY TRAITS AND COMPOSITION TRAITS IN RELATION TO FLOWERING TIME AND BIOMASS IN SWITCHGRASS (PANICUM VIRGATUM)

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Switchgrass (Panicum virgatum) is a native prairie grass that has the ability to produce large amounts of biomass under marginal conditions. Anthesis affects biomass yield and cell wall components, and quality traits. The objective of this project was to examine relationships between biomass production, floral development, and cell wall components in switchgrass. Heading and anthesis dates, biomass, and cell wall components were measured for 254 individuals from an F2 population created from a lowland and upland type parents, and comparisons among measurements were made for whole plant, stem, and leaf portion, respectively. Stem to leaf ratio was calculated for the selected individuals based on heading and anthesis dates. Stem portion was found to make up on average 78% of the total plant matter, while leaf matter averaged 21%. Significant positive relationships between anthesis date, total sugar content (SUG), Nitrogen (N), and in vitro dry matter digestibility (IVDMD) for whole plant samples were identified. Significant negative relationships between Acid detergent lignin (ADL) and Acid detergent fiber (ADF) were also identified within the F2 population used. A positive relationship between biomass and ertherified ferulates (FETH), which were strongly correlated with a Pearson correlation coefficient of .983, was identified within switchgrass samples. Anthesis and heading was positively correlated with stem weight ratio and was negatively correlated with leaf weight ratio (LWR). Klason lignin (KL) and ethanol yield (ETOH) were positively correlated with LWR within samples. All results indicated that significant, but complex relationships exist between growth, development, and forage quality.

DOES STARTING TOMATO TRANSPLANTS IN SOIL BLOCKS INCREASE YIELD?

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The last decade has seen many beginning farmers operating diversified vegetable operations. A common reference point for many of these growers is Eliot Coleman's "The New Organic Grower." The book details many aspects of producing vegetables on a small-scale, diversified farm. One practice the book discusses is soil blocking, which is a method of starting transplants in molded cubes of soil as opposed to plastic pots. Coleman suggests the practice reduces root circling, leading to increased yield, earlier harvest, and more resilient plants. Our goal in this trial was to see if starting plants in soil blocks increased yield or decreased the time to harvest, and if so, if it was by enough to offset extra money spent producing the blocks. To test this, six commercially available indeterminate tomato varieties were started either in a traditional pot or in a soil block. These transplants were then either planted in a hoophouse or in the field, and yield was tracked through the growing season. In our trial, the methodology used to start the transplant did not have a significant impact on yield per plant or days to harvest. Instead, variety had the biggest impact on yield and earliness. This means careful variety selection will be the foundation of profitable tomato production on a small farm, though soil blocking is a practice that can be integrated if it supports the farm's values.

MAKING A MOUNTAIN OF A MOLE HILL - ASSESSING LARGE FRUIT CHILE PEPPERS IN MICHIGAN

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Poster URL: https://www.nacaa.com/posters/uploads/1851.pdf

Can we grow and dry chiles in Michigan? Can Michigan-grown and dried chiles compete in the international spice trade? These were questions asked by a local sauce-maker who wanted to make mole (pronounced moh-lay) sauces from Michigan-grown and Michigan-dried chiles. Moles are a Mexican sauce made from fully-ripened large-fruited, sweet and mild-heat varieties, including poblanos, chilacas and guajillos. Indeed, we can grow them similar to sweet bell peppers, but growers must focus early-maturing varieties for our climate. Of thirteen varieties tested, aji, chilaca, guajillo, and guajillo x poblano varieties yielded the most ripe fruit. Poblanos yielded the fewest ripe fruit, and the urge to pick them green must be curbed to allow for the most fruit to mature within our shorter season. Electricity-based drying resulted in a break-even price competitive with some online retailers packaging in 1-pound bags. However, it is not competitive against local ethnic stores that buy in bulk quantities from international brokers and repackage into 1-pound bags. If they are skillfully marketed in a hyper-local fashion using the absolute cheapest heat source available, selling Michigan-grown and -dried peppers can offer a unique shelf-stable item for winter or spring farm markets when few fruiting vegetables are available for purchase among easy-keeping hard squashes, root crops and cold-tolerant leafy greens. Their production may be supported by local food movements thriving in certain regions. Drying and selling peppers may require following licensing, inspections, packaging and labeling regulations under state and federal Food Codes, and other crops may be worthy of consideration to offset costs, such as berries, apples, kale, pumpkin seeds, or tomatoes.

Poster Session

Extension Education

2019 NACAA

104th
Annual Meeting
and
Professional Improvement Conference

Fort Wayne, Indiana

1st Place
CALVIN' FEVER

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Poster URL: https://www.nacaa.com//posters/uploads/1798.pdf

Reducing death loss during calving is a high priority for Montana beef producers. Approximately 33% of all calf losses and 15% of breeding cattle losses are due to dystocia, according to the Cow-Calf Health and Productivity Audit. The purpose of this educational program was to educate ranch women in a welcoming environment on proper calving protocol, prevention of dystocia, and newborn calf care. Participants learned about calving difficulties, bull selection, newborn calf care, and preparing meals in advance for busy times on the ranch, like calving season. This workshop featured a local veterinarian and local Montana State University Extension agents giving presentations and including hands-on learning experiences for the participants. Calvin' Fever provided education and increased knowledge of identifying calving difficulties and assisting with delivery and care of calves. Workshop participants were multi-generational and were comfortable actively participating in this event. Assuming a 1% reduction in calf death loss as a result of Calvin' Fever, an additional 55 calves would be weaned from the group, creating approximately $55,000 additional revenue and resulting in an economic impact of approximately $1,800 per participant yearly. At the end of Calvin' Fever, producers completed a short, written evaluation that was both specific to each presenter and evaluated the day as a whole. Overall, participants rated Calvin' Fever as 4.8 out of 5, indicating high satisfaction among participants. Participants listed several new techniques they had learned that they planned to implement in the 2019 calving season to improve calf and cow health. Attendees of Calvin' Fever also gained confidence with their abilities to assist with calving.

2nd Place
FROM PASTURE TO PLATE 4-H DAY CAMP

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[6]4-H Agent, UF/IFAS Hillsborough County, Seffner, FL, 33584
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[8]4-H Agent, UF/IFAS Polk County, Bartow, FL, 33830
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Poster URL: https://www.nacaa.com//posters/uploads/1784.pdf

The purpose of the workshop was to help youth understand the beef production system and introducing them to Florida's Tailgate Grilling Contest by promoting the use of animal protein in their diet by teaching the art and science of cooking in an outdoor setting. The youth will be able to identify grazing patterns, demonstrate food, location and fire safety, identify beef cuts, gain knowledge on healthy beef recipes and name byproducts from beef cattle. The workshop used multiple delivery methods like interactive games, powerpoint presentations, team building activities, skilathon and demonstrations to disseminate the information. The day camp was evaluated using pre/posttest to document knowledge gain and an overall day camp evaluation to access its effectiveness. A total of 13 youth and 2 adults attended the day camp of which 8 completed the pre/post test and evaluation. 88% (n=8) reported knowledge gain in grazing behavior of beef cattle, soil testing technique, digestive anatomy of beef, body condition score, beef cuts, and healthy beef recipes. 75% (n=8) reported knowledge gain in food, fire and location safety for grilling outdoors. 100% (n=8) of the respondents reported that demonstration, as a method of program delivery, best suited their learning style. This day camp provided a comprehensive knowledge of the beef production system and aimed at developing life skills such as wise use of resources, healthy lifestyle choice, personal safety, critical thinking, leadership and decision making, to create awareness and appreciation of our food systems and environments.

3rd Place
FRUIT TREE EDUCATION FOR HOME GARDENERS AND SMALL GROWERS

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An increasing number of homeowners and small orchards are requesting information on growing, pruning and grafting fruit trees. A series of workshops were offered during the 2018 growing season to give participants an opportunity to learn in the classroom as well as on-site through orchard visits with hands-on experience. Topics presented included fruit tree basics, fruit tree grafting, and fruit tree pruning. Fruit tree basics covered soils, fertility, varieties, planting, pest management, and harvest with a power point. Fruit tree grafting was taught through lecture with demonstration followed by participants grafting of up to three apple varieties onto bare-root root-stock. Fruit tree pruning workshops were taught through lecture, demonstration and participants pruning at home orchards or commercial orchards. Participants learned about pruning tools, techniques, and sanitation measures. Over 70 participants from a 10 county area (from 2 states) attended one or more of the fruit tree workshops. The Participants networked with other growers and extension professionals as well as gained knowledge of valuable resources. In the evaluations, all participants indicated practice changes. These changes ranged from conducting soil tests, irrigating fruit plantings, following a fruit tree spray schedule, planting disease resistant cultivars, proper pruning, and sanitation measures. Participants reported 67% will have a soil test done, 89% will develop a fruit tree spray schedule, 73% will graft trees at home, 89% will prune fruit trees and 36% will plant an orchard.

Finalist

EQUIPPING WOMEN LANDOWNERS AND OPERATORS WITH FARMLAND LEASING KNOWLEDGE AND COMMUNICATION SKILLS

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The USDA estimates that individuals not actively involved in farming own 80% of rented farmland in the US. In many cases, these landowners are women with limited knowledge of farming or farm leases. While women often inherit or assume responsibility for farmland through various life circumstances, women are also principal operators on 12% of Ohio farms (8,702 women). Regardless of their connection to the land or role on the farm, women landowners and producers struggle with rent and other land issues. To better equip women landowners and operators with knowledge and skills to address risk in leasing land, a "Ladies on the Land" workshop was conducted in each of three Ohio counties. Workshops introduced topics on the legal aspects of farm leases in Ohio, communication and negotiation skills when working with tenants, factors affecting cash rental rates, and managing risk in agriculture. The primary goal of the workshop was to increase participant knowledge of leasing land in Ohio and improve participant comfort level in communicating with tenants. A secondary workshop goal was to identify additional educational needs to incorporate in future programming efforts. Thirty-two women attended the workshops and provided feedback on what additional skills and topics would benefit them in their role as a landowner. Identified needs included: components of an enforceable farm lease; factors that most affect land rental rates; how landowner and tenant expectations affect land stewardship, fertility management and water quality; lease arrangements and tax ramifications; succession planning and how to transition to a new tenant. Attendees agreed or strongly agreed that workshop content would help them make decisions in the future (93%), provided resources to improve their knowledge (97%), and increased their confidence in dealing with farm lease issues (93%). Participants also indicated a greater need for more discussion and for delving deeper into farm leasing topics.

Finalist

IMPROVING CROP RISK MANAGEMENT SKILLS

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In 2018 Iowa net farm income was projected to have dropped by more than 50% from the record high in 2013. While Iowa corn and soybean yields have been above trendline every year since 2013, the state average cash price had declined by more than 20% for corn and 34% for soybeans, respectively during this same time frame.

Iowa State University (ISU) Extension of Central Iowa had established 3 successful ag marketing clubs that meet during the winter months more than 15 years ago. In 2010 the Iowa Commodity Challenge web page was developed through a partnership with the Iowa Farm Bureau Federation to provide weekly updates and year-round learning opportunities. The site includes 15 videos, a marketing tools workbook, various learning activities, basis tracking tables updated weekly and encourages the use of written crop marketing plans for both old and new crop bushels.

A goal for 2018 was to improve net farm income of participants by at least $3,000 per farm operator through improved marketing strategies, tools and market planning. Surveys were completed in March of 2018 and March 2019 to measure this impact. A total of 582 participants attended an ag marketing club and/or utilized the Iowa Commodity Challenge web page. Completed survey responses were obtained from 123 respondents in March 2018 and March 2019 to evaluate the effectiveness of these educational efforts.

Respondents indicated that their net farm income resulting from the ISU Extension educational efforts in crop marketing averaged a positive $4,732 per farm operator. Average farm size of respondents was 462 tillable acres of corn and soybeans. Thus, the impact of this educational program was $10.24 per tillable acre and over $500,000 for the respondent farm operators. Plans are to expand the program statewide in 2019 with more videos, an updated of the Marketing Tools Workbook and the addition of an Online Crop Marketing Course.

Finalist

4-H SMALL RUMINANT RESEARCH ACADEMY

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According to the United State Department of Agriculture from 2015-2020 college graduates will find employment opportunities if they have experience in food, agriculture, renewable natural resources, or the environment. An estimated 57,900 jobs will be open for college graduates with expertise in these fields. In the summer of 2018 the University of Maryland Extension 4-H Small Ruminant Research Academy at the University of Maryland's Western Maryland Research and Education Center (WMREC) was piloted. This project was a collaborative effort with the The Maryland Small Ruminant Research team, comprised of University of Maryland Extension Agricultural Educators, 4-H Educators, and faculty members from West Virginia University, and Virginia State University. Within this program youth ages 16-18 were able to observe and learn about small ruminant research. The goal of the Research Academy was for youth to become involved in the scientific process in order for them to gain a better understanding of applied research. Youth completed a literature review focusing on lamb growth, carcass characteristics, and reproductive traits of rams (in-tact males), wethers (castrated males), and short-scrotum rams. Participants utilized their critical thinking skills to formulate a hypothesis. Youth also were able to watch the lambs being weighed and record data, observed carcass scanning, and assisted with collecting data from libido and various reproductive testing. The participants, with help from the Small Ruminant Specialist and 4-H Educator, analyzed the data and created a research poster that was displayed at the Maryland State Fair. The Maryland 4-H Small Ruminant Research Academy was designed with the Experiential Learning Model at its core. This program gives youth the opportunity to experience applied research and careers within research related areas, share their thoughts about the research, and then decide if this would be a career that they would be interested in pursuing as they move towards attending college.

Finalist

BILINGUAL PRODUCE SAFETY EDUCATIONAL PROGRAMMING FOR HISPANIC/LATINO FRESH PRODUCE GROWERS AND FARMWORKERS IN PENNSYLVANIA

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The Produce Safety Rule specifically mandates farm food safety training that is conducted in a manner that is easily understood by those being trained. Currently available Extension resources are predominantly in English; and they are increasingly delivered online and through email networks. Growers and farmworkers have identified that Food Safety topics included in the PSA curriculum are challenging to understand, especially for recent immigrants who do not speak English very well and have little higher education.

In this pilot project, Penn State Extension is working closely with Hispanic/Latino farmers and farmworkers to identify training needs within their communities and develop high-impact bilingual food safety training programming for the Hispanic/Latino community. The grant objectives are:

1. Create Grower and Workforce Focus Groupsin different parts of the State for GAPs education and training.

2. Adapt/develop culturally appropriate outreach and educationalmaterialsthat are effective at reaching and communicating with Spanish speaking growers, supervisors, and farm workers.

3. Collaboratively develop innovative new food safety (GAPs) outreach, education, and trainingprograms in Spanish.

4. Increase knowledge/ adoptionby all trainees of farm food safety practices, requirements, and resources for certification; increase "train-the-trainer" capacity to assist producers

During the first months of this project, we met with growers and stakeholders to determine training needs, priorities for bilingual GAPs materials and programming and also determined audiences for whom GAPs education/ training is a priority. In addition, we assessed, reviewed and

adapted existing educational materials, created new educational materials and delivered trainings in Spanish on topics identified by focus groups

The long-term goals are to increase food safety knowledge using innovative, culturally appropriate educational methodologies within the Hispanic farming community. By developing these food safety skills, this will result in healthier, safer farm conditions and food for Hispanic farmers, and for communities across the Mid-Atlantic region.

Finalist

EDUCATING FARMERS ON THE IMPORTANCE OF MAINTAINING SOIL FERTILITY THROUGHOUT THE LIFE OF AN ORCHARD

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Establishing and maintaining adequate soil fertility levels is a critical component of fruit tree orchard health. It is not clear however that tree fruit growers in New Jersey are monitoring soil their fertility as adequately or frequently as they should. A program was initiated to educate growers on the importance of regular soil fertility and leaf tissue testing, as well as the significance of following soil test and extension recommendations to best enhance soil fertility management. In order to illustrate the benefit of monitoring soil fertility, a total of 25 peach and 58 apple orchards in the Rutgers Integrated Pest Management (IPM) program were sampled for both soil and foliar analysis at 19 farms in 2018. These growers were given an evaluation of their farms' fertility compared to other farms, with optimal fertility levels highlighted for additional contrast. Nutrient analysis included examining pH, macronutrients (nitrogen, potassium, phosphorous and sulfur), and micronutrients (zinc, copper, manganese, boron and Iron). The test results were analyzed and stored in a database to enable efficient tracking of the long-term effects improved fertility management has on yields, tree health, and fertility on these farms. In the spring of 2019 a compilation of the (IPM) sample farm test results of the 2018 soil/leaf tissue analysis were presented to growers throughout New Jersey. Presentations were also given on reading, interpreting and implementing soil and leaf tissue analysis tests, as well as monitoring for symptoms of deficiencies/toxicity.

A survey of growers showed 39% (n=35) do not perform yearly soil or leaf tissue analysis. Of those 39% who took a fertility test, only 58% applied fertilizer in accordance with recommendations given. In post-presentation surveys (n=35), 97% of growers reported they better understood soil fertility, 92% indicated they were more likely to take yearly soil/leaf tissue analysis, and 97% were more likely to fertilize according to extension recommendations.

The survey results show a need for improvement however this educational programming is an effective tool to encourage New Jersey growers to adopt better orchard soil fertility management.

Finalist

A WALK IN THE PARK: EXTENSION TRAINING PROGRAMS ON TURFGRASS MANAGEMENT FOR GWINNETT COUNTY DEPARTMENT OF PARKS AND RECREATION EMPLOYEES

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The Gwinnett County Parks and Recreation Department is the one of the largest county park system in the state. Close to 140 people are employed by the Gwinnett County Parks and Recreation Department to maintain the park grounds. They have hired a substantial number of new employees in the past two years, and many have minimal skills in the management of athletic fields and other turfgrass areas. The Gwinnett County Parks and Recreation Department requested assistance from Gwinnett County Extension in addressing this issue. In 2016 and 2018, UGA Extension Gwinnett organized and coordinated one-day educational programs for the employees. UGA turfgrass specialists, Extension staff and industry representatives gave presentations on maintenance on turfgrass on athletic fields. Topics included water management, disease management, pesticide safety, soil testing and fertility, turfgrass cultivation, and weed control strategies. As a result of the training, a total of 96 employees attended UGA Extension gained a better understanding of the necessary practices required to maintain turfgrasses on athletic fields to keep them in optimum condition.

Finalist

RICHMOND AREA ADVANCED MASTER GARDENER TRAINING

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Extension Master Gardeners are an invaluable group of people: excited to learn new and useful things; passionate about their environment and sustainable plant systems; and eager to

make positive change in their communities. As part of the annual requirements to maintain status as a Virginia Extension Master Gardener, the volunteer must complete at least 8 hours of Continuing Education. In order to help EMG's meet this requirement, a continuing education program has been held towards the endo of their requirement year for Richmond Area Master Gardeners since 2010. Over the years, the program has changed formats as individual local agents have taken the lead and based on the evaluation of the previous years' programs. For the 2018 program, three and a half hours of programming was scheduled. Topics selected included tree and shrub identification, Virginia native bees, and how to be a better public speaker. Fifty-four EMG Volunteers from Henrico, Hanover, Richmond City, Chesterfield and Goochland/ Powhatan Extension Offices attended the classroom style program. Of those completing the class evaluation 100 percent indicated that the training provided them with useful information that they could share with others to further the mission of Extension. Additionally, a public speaking series has since been added to the Hanover EMG program.

Finalist

MASTER GARDENER SCHOOL GARDENING PROGRAMS: INDIVIDUALIZING PROGRAMS TO MEET THE NEEDS OF LOCAL SCHOOLS AND VOLUNTEERS

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School Gardening programs contribute to the health and social well-being of youth (https://www.slowfoodusa.org/). WSU Asotin/Garfield County Master Gardeners have partnered with local elementary schools to deliver school gardening programs to 3rd and 4th grade classrooms. The school gardening program has expanded to currently teach over 130 elementary youth for an hour each week from October through May. Overall goals of each program have been to teach youth how to grow their own vegetables and fruits; and to encourage youth to make healthy eating choices. An additional focus has been to utilize the expertise of Master Gardeners to develop lesson plans that supplement science lessons being taught in individual classrooms. A lesson learned has been that a one-size-fits-all model doesn't necessary meet the needs of all students and classrooms. Three unique school gardening programs that have been developed based upon school needs and the life experiences of the Master Gardeners teaching the curriculum. School one utilizes a shared leadership model with 5 students to each 1 MG to study plant life cycles; and provide taste-testing during weekly lessons. A second school utilizes a single Master Gardener serving as the coordinator to deliver hands-on lessons to 50 low-income students using raised beds and a school greenhouse. The final model uses both Master Gardeners and community volunteers to grow cool-season crops in a small rural school district. Evaluations indicate that all three models increase student's knowledge of growing vegetables; as well as their likelihood to make healthy food choices.

Finalist

SELECT BEEF HEIFER PROJECT

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New Mexico has the highest average age of farmers and ranchers of any state at nearly 60 (USDA Census, 2012). The state's farmers and ranchers are getting older, and there are fewer people standing in line to take their place.

To address this challenge, NMSU Extension in Valencia County developed the Select Beef Heifer Project to encourage youth to consider a career in agriculture. During this 12-month project, youth ages 9 – 18 gain knowledge of the beef industry through hands on workshops, field trips and seminars. Topics explored include genetics, nutrition, business planning, feed lot production, immunology, grass fed beef, fertility, industry and consumer trends. Workshops and trainings were provided in collaboration with veterinarians, university specialists, Extension personnel, association and industry leaders, and community volunteers. Youth select, raise, breed and show a beef heifer under the guidance of producers serving as mentors.

Pre and post tests administered to youth participants indicate an increased knowledge in birthing processes, medication administration, beef grades, and Beef Quality Assurance. Business plans completed by the youth demonstrate applied knowledge gained in the areas of record keeping, finance, and marketing. Youth participants and producer mentors report benefit from the cross-generational engagement. Furthermore, 60% of youth participants reported increased interested in pursuing a career in agriculture.

The program has expanded to include four additional counties with recruitment and fundraising underway for the 2019-2020 program year.

WESTERN REGION ENTRIES

IMPROVING ALFALFA SEED HARVEST

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One of Wyoming's high value cash crops is alfalfa seed, which covers an estimated 6,650 acres in 2018 (down by 2,000 acres from 2017) and is valued around $7.4 million per year ($1,100/acre value). The alfalfa seed crop is desiccated to terminate the active growth for the year and to begin drying the crop for ideal harvest conditions. Uniform desiccation of alfalfa seed crops has been a challenge in Wyoming because of multiple factors; including crop canopy, weather conditions, application equipment, herbicide applications, lodging of crop, and regrowth of the plant after desiccation.

To address this issue, the Alfalfa Seed Industry, University of Wyoming Extension, and University of Wyoming Agriculture Experiment Station collaborated to conduct an applied research trial to answer the question, "Does sprayer speed affect the application of desiccants on alfalfa grown for seed prior to harvest?" An extension bulletin was published highlighting the results of this study and was presented for two consecutive years (winter of 2016-2017 & winter of 2017-2018) at alfalfa seed grower meetings, the 2018 Wyoming Alfalfa Seed Growers Association meeting, and the Commercial Pesticide Applicator Recertification Conference. The presentation and publications were provided to 106 participants, which included alfalfa seed industry, alfalfa seed growers, and commercial pesticide applicators.

The 2018 harvest was the most uniform desiccation that the Wyoming Alfalfa Seed Industry has ever had in the past 10 years. These results were seen for 30 producers, which consists of approximately 4,000 acres total. Grower's changed their desiccation protocols by including a pre-desiccation applications and applying desiccation applications at slower speeds. This new protocol resulted in the harvest occurring 3-5 days earlier than normal and resulted in an estimated 15% - 20% yield increase. The research project and outreach has permanently changed alfalfa seed producer's protocol for desiccating alfalfa seed fields in Wyoming.

WASHINGTON STATE UNIVERSITY EXTENSION ADMINISTRATION TEAM INTERNSHIP: SUCCESSION PLANNING THROUGH HANDS-ON LEADERSHIP DEVELOPMENT

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In 2017, Washington State University (WSU) Extension created an administrative internship to foster the development of internal leadership, provide opportunities for faculty and staff to experience administrative roles, and bring new and essential perspectives to WSU Extension administration. The objectives of the program were to 1) develop future leaders and succession planning for WSU Extension administration, 2) help county faculty understand the roles of administration in extension work, and 3) create a platform for faculty to initiate and move positive systems change forward. The WSU Extension administrative internship requires a minimum of five years employment with WSU Extension as a full-time educator (AP), faculty, area specialist, or state specialist; master's degree or doctorate; and a sincere interest in a future role in WSU Extension administration with a demonstrated interest in leadership. The program was open to three interns, one from each extension program unit to serve an 18-month assignment. Interns were expected to actively participate in extension administration activities including conference calls and face-to-face meetings, and implement a special project. This year, the administrative interns are working on extension communications, with emphasis on impact reporting, as their project.

PREVALENCE OF GENETIC DEFECTS IN MARKET SHOW HOGS IN UTAH

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Junior livestock projects provide excellent opportunities for education and positive agricultural experiences for 4-H youth. As genetic testing advances become widely available to livestock producers, youth benefit by learning the benefits and applications of genetic testing. Porcine stress syndrome (PSS), which springs from the HAL gene, is an inherited neuromuscular disorder in pigs that is triggered by stressful situations, such as exercise, fighting, marketing, vaccination, castration, parturition, hot weather, etc. The symptoms exhibited by pigs experiencing PSS include muscle and tail tremors, labored and irregular breathing, blanching and reddening of the skin, rapid rise in body temperature, collapse, muscle rigidity and eventual death. In addition, Rendement Napole (RN) is a gene is found to cause low ultimate pH and water holding capacity (WHC) in pork. Low water holding capacity results in poor quality meat, referred to as Pale Soft Exudative (PSE) grade meat, which causes dry meat with low palatability when cooked. Unlike the porcine stress syndrome (PSS), the RN- gene appears completely dominant. This dominance implies that a copy of

the RN- gene inherited from even just one parent can cause poor meat quality. The negative effects of the RN gene on pork quality result in economic losses in the pork industry. In 2016, over 1,000 4-H youth participated in Market Hog projects throughout Utah. 150 sampled market hogs that were tested from eleven counties in the State. From these samples, we found that 49% of the hogs sampled expressed genes for poor meat quality. Through scheduled presentations, we have been able to use our findings to impact 4-H youth, market hog producers, and USU Extension Faculty through education on the importance of selecting animals that do not have these genetic flaws and are therefore more likely to produce higher quality meat. Through evaluation, we have seen that nearly all who have attended these trainings have left with a mission to change how they select and breed their animals.

USING COLLABORATION AS A TOOL TO ENABLE CHANGES IN FOREST MANAGEMENT

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Quaking Aspen (*Populus tremuloides*) dominated forests are declining throughout the West from ungulate herbivory and overtopping by conifers due to insufficient stand disturbance (e.g., lack of large fires). Proper management of these forests by USDA-Forest Service (FS) has become difficult due to litigation by "environmental" groups seeking their own goals which do not always align with multiple-use management. The Monroe Mountain Working Group (MMWG) was organized as a collaborative group of 20 stakeholders who have been working for over seven years to develop and implement activities on Monroe Mountain (roughly 175,000 acres) in central Utah to restore aspen. USU Extension faculty played a critical role in the success of the MMWG by serving as members of the working group, designing and conducting original research, providing facilitation and staff support, strengthening relationships with ranchers, and serving as liaisons to county commissioners. The project has achieved significant successes including an infrastructure project to improve rest rotation grazing, completion of an Environmental Impact Statement for approximately 50,000 acres of mechanical thinning of conifers and prescribed fire, initial implementation of the EIS with 10,500 acres treated by the end of 2018, and on-going monitoring of treatment effectiveness. This poster will detail the process used and the successes achieved through the collaborative process.

FARMER TO FARMER MENTORING: MULTI-MEDIA CASE STUDIES BUILD ADAPTIVE CAPACITY FOR PRODUCERS ACROSS THE INLAND PACIFIC NORTHWEST

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Across our region, farmers are adopting innovative practices that increase resiliency in the face of ever-changing market pressures and continuing climate uncertainty. To support farmer to farmer learning, a set of multimedia producer case studies have been developed based on research conducted in the Pacific Northwest with support from the Regional Approaches to Climate Change in Pacific Northwest Agriculture (REACCH-PNA) project.

The main objective of this case study project was to foster farmer-to-farmer learning, which has been shown to enhance adoption of new technologies. Subjects for these case studies were drawn from a longitudinal survey of early adopters of techniques, tools and new technology that may help producers adapt to challenges associated with climate change in agriculture. Each producer agreed to be interviewed and videotaped on a topic specific to their operation, ranging from use of cover crops to increasing crop diversity to using new tools such as stripper headers. A multi-media publication was created from each interview, including a Pacific Northwest Extension Bulletin with hyperlinks to other research projects, detailed photographs, and a short video segment. Sidebars were used to address additional related content in a transdisciplinary manner.

The rationale for developing video segments highlighting each bulletin was to attract attention to these pioneering growers who can really influence others with their actions. In addition to frequent use at farm conferences and meetings, the videos have been viewed extensively on their YouTube

Channel. The colorful bulletins include detailed segments on innovative machinery and ongoing research conducted at the participating research institutions.

Program impacts include increasingly widespread usage of cover crops, particularly for grazing and fumigation; increased awareness of these producers and their expertise on these topics, and demand for them as speakers; and increased usage of no-till and precision agricultural tools. These multi-media bulletins are popular throughout the region, with the face of a farmer presenting new tools and techniques for adapting to change and increasing resilience. With continuing challenges from climate change and market uncertainties, farmers who are already adopting innovative practices can provide direction and insights into their management practices for the rest of the agricultural community.

GROWING THE MASTER GARDENER PROGRAM THROUGH ADVANCED HORTICULTURE AND COMMUNICATION TRAINING

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After successive years of a declining Master Gardener Program in Bonner County, an Advanced Master Gardener program was offered to help retain more volunteers and build their skills. The students from the 2017 Master Gardener basic training program indicated they were interested in continued educational opportunities. Our response was to offer an Advanced Master Gardener training in both 2017 and 2018. The specific topics varied each year to maintain the interest of the volunteers, but both year classes built on to the initial Idaho Master Gardener training. The students were also asked to research a topic and either give a presentation or write an article on that topic to build both their research skills and presentation skills. In 2017, 10 students participated in the Advanced Master Gardener Training. At the completion of the program, all 10 agreed that it was worth their time to attend the Advance Master Gardener Training and that they would be interested in attending the training again. In 2018, the Advanced Master Gardener Training was offered again. This time, the topics were changed to focus solely on fruit and vegetable production. Six of the students from the 2017 advanced class enrolled in the 2018 class. Eight other Master Gardener volunteers participated to form a class of 14 students. Ten of these students indicated that the class was worth their time and 9 students thought they were likely to attend another Advanced Master Gardener Training. Overall retention of volunteers has increased since the implementation of the Advanced Master Gardener training. Prior to the advanced training, just one of the 15 students from the 2015 Master Gardener continues to be active in the program. Since offering the training, we have 5 volunteers from the 2017 basic training and 6 volunteers from the 2018 basic training that continue to be active in the program. All students completed the presentation or article each year. Two participants have scheduled upcoming presentations based on their class presentation and articles will be included in the county's Master Gardener Newsletter.

CITRUS THRIPS (SCIRTOTHRIPS CITRI), AN EMERGING PEST OF MID TO LATE SEASON COTTON IN THE LOW DESERT

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Citrus thrips (*Scirtothrips citri*) has been increasing during the past decade as a low desert cotton pest during the second half of the growing season, appearing from JulyOctober. Thrips numbers and associated feeding damage necessitated insecticide applications to many local fields in 2018. While cotton has been reported as a host for over 50 years, there is no known decsription of feeding injury to cotton. Cotton on field borders is colonized and damaged first, with populations building before dispersing across the field. Tender leaves near ends of terminals are first damaged by citrus thrips feeding, resulting in bronzed and deformed leaves when there is severe feeding injury, including curled leaf tips and tips of boll bracts. Boll losses and associated yield reductions along field edges have been noted, but yield losses have not yet been quantified. Insecticide efficacy trials during 2018 noted no significant control within the first 10 days of sampling.

CHANGING REINS: AZ 4-H HORSE PROGRAMS GALLOP INTO THE FUTURE

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While AZ 4-H Horse programs have been in existence for over 60 years, within the last 3 years, a changing of the

guard of over 80% of 4-H agents and program coordinators in our 15 counties and additions of state specialists and tribal 4-H personnel has occurred. With these changes have come opportunities to realign goals to increase: 1. statewide educational programs, 2. program accessibility to youth without horses, 3. cooperation across county lines to host regional shows for better resources utilization (human and financial), 4. transparency and unification of rules/procedures across all counties, and 5. focus on lifelong learning and career preparation. Horse projects involving competitions at county and state shows are still valued, but the educational activities allow for all levels of 4-H youth to participate regardless of their background, horse experience, ability to keep a horse, or financial means. Since 2016, attempts to develop consistency in horse show rules/requirements across the state have been in process. Much of this effort has modeled Tuckerman's team growth model of forming-storming-norming-performing, with an extra dose of storming due to resistance to change after many years of individual county rules. However, transparency, engagement, and inclusion has paid dividends as weekly "rule book" zoom meetings now have 4-H leaders and volunteers working together with extension faculty. The incorporation of solution oriented and inclusion mentality has produced multi-county and industry partner programs such as "Disaster Days" (Safford and Flagstaff), a Horse Judging Clinic (Phoenix) and State Contest (Tucson), AZ State Horse Contests (Flagstaff, Maricopa), a Groom Squad event at the State 4-H Horse Show (2016-present), and more. Additionally, a significant increase in communication of events/information are being conveyed through the equine website and social media avenues. Inclusion of Arizona 4-H youth in state equine activities is providing opportunity for youth to explore careers in the field and interact with industry members. Other statewide programs are in planning stages (e.g. SCRUB: Science Creating Real Understanding of Biosecurity) as AZ 4-H Horse programming gallops forward with new personnel and direction.

SOUTHERN REGION ENTRIES

BUILDING INTERSTATE PARTNERSHIPS FOR RX FIRE

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Prescribed fire as a management tool for forestland is becoming a vestige of the past as herbicide applications become more commonplace and as insurance rates skyrocket. Yet the loss of this tool is not without consequence as the bulk of diminished species across the southeastern United States is due to the elimination of fire. This limitation is becoming very evident to land managers as the struggle to apply fire as a management prescription faces challenges on many fronts from economic, to regulatory, to absence of workforce and expertise. Concurrently many natural resources efforts are taking place in efforts to restore these diminished ecosystems. As part of that effort Extension specialists and agents have collaborated with multiple partners across the southeastern United States to promote and provide training and technical expertise to landowners who wish to implement this important land management tool. In Virginia we have conducted two Prescribed Fire for Forest Landowners workshops (in 2015 and 2018) which has helped 85 forestland owners and managers increase knowledge and gain some hands-on experience conducting prescribed burns. Fire has been applied to over 820 acres as a result of these programs. A video was produced by one of the partnering agencies and has been effectively used as a tool to encourage other states to host similar workshops. But perhaps more importantly, the myth that fire is always bad for forests has been dispelled for 100 percent of participants and many indirect contacts. Additionally a broad base of regional partners have been brought together around the issue of prescribed burning and many of these partners are demanding and contributing to further outputs.

BUILDING A SUSTAINABLE BUSINESS WORKSHOP SERIES

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The Building a Sustainable Business Workshop Series was an educational workshop over eight weeks to teach Tennessee farmers how to develop a business plan for direct marketing, food processing, and agritourism enterprises. This workshop series was designed for operators of value-added businesses. Participants located in four sites learned business planning strategies over eight weekly evening sessions that provided the training and tools to create a business plan. The multi-site format utilized Zoom technology which enabled the speakers in various locations to be broadcast to all four sites. The sites were located in the three major geographic regions of Tennessee--East, Middle, and West—which enabled producers from across the state to participate. Presenters taught from the SARE publication *Building a Sustainable Business: A Guide to Developing a Business Plan for Farms and Rural Businesses*,

which provided templates and case studies for participants. Specialists were available at each site to provide one on one technical assistance in the development of participants' business plans. Participants ranged from new to farming to over 60 years of farming experience and have value-added enterprises in livestock, poultry, bees, vegetables, vineyards, hemp and agritourism.

DEVELOPING THE SOUTH CAROLINA 4-H JR. NATURALIST PROGRAM

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South Carolina 4-H Jr. Naturalist is a program developed to grow the next generation of environmental stewards through immersive, hands-on learning experiences in nature. As a positive youth-development organization, 4-H empowers youth to become productive, contributing members of society. Jr. Naturalist is a nature-based program that takes place in the outdoors, provides experiential learning, and encourages teamwork and stewardship. The program was initially piloted in Oconee and Pickens Counties in 2017, and since that time, 50 participants representing seven different counties in SC have graduated from the program. Youth who participated in Jr. Naturalist increased their participation in other natural resources programs on the state level, like the SC 4-H Small Garden Project, the SC 4-H Wildlife Food Plot Project, and the SC 4-H Wildlife Habitat Education Program. Of the 50 Jr. Naturalist graduates, 42 were able to complete a post survey during graduation. Results showed 93% of participants strongly agreed or agreed that Jr. Naturalist helped them learn new plants and animals, 88% strongly agreed or agreed that the program gave them a true hands-on 4-H experience that would help them in the future and increased their knowledge of SC natural resources, and 86% indicated that they became better stewards of the environment as a result of participating in the program. Participants reported what they liked best about the Jr. Naturalist Program was the hands-on and outdoor activities, animals, crafts, learning about nature, and being with friends.

INTEGRATED HIGH TUNNEL WORKSHOP

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The purpose of this Extension educational program was to increase the individual profitability and diversification of small scale fruit and vegetable producers in the Upstate of South Carolina. Clemson Extension worked together with the local Natural Resource Conservation Service, Allendale County Soil and Water Conservation District, and a local irrigation supply store & consultant to provide an educational class that spanned the high tunnel process from start to finish. Participants were provided information on the Seasonal High Tunnel Initiative EQIP with NRCS, a high tunnel construction grant through the Allendale County Soil & Water Conservation District, season extension practices and value added crops by Clemson Extension, drip irrigation options for high tunnels by a local irrigation consultant and supplier along with a tour of a local organic small farm that is utilizing a high tunnel sourced through the NRCS EQIP High Tunnel Initiative. Thirteen growers attended the integrated workshop. Evaluations from the training showed 100% approval rate and an average of 90% of participants increased their knowledge by 2 points (out of 5) or more per topic discussed. 71% of the participants indicated they would apply for a NRCS High Tunnel EQIP cost share. Of those growers, one has already applied, received funding and set up a high tunnel for the 2019 growing season. The integration of this educational opportunity allowed growers a true view from start to finish in the addition of a high tunnel to small scale fruit and vegetable production. Because of the success of this program, the cooperating agencies plan to repeat it every two years while funding through EQIP and Allendale Soil & Water Conservation District still exist.

NATURAL HISTORY AND ECOLOGY OF BAD CREEK HYDROELECTRIC STATION AND JOCASSEE GORGES: A 4H2O PROGRAM FOR TEACHERS

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Natural History and Ecology of Bad Creek Hydroelectric Station and Jocassee Gorges is a Clemson University science graduate course available to k-12 in-service school teachers within Duke Energy service areas. Held in the heart of the Blue Ridge Escarpment in northern Oconee County, the course helps teachers learn how to integrate STEM, energy and environmental topics into the classroom as presented in the context of an upstate hydroelectric facility and the surrounding watershed.

By offering this field-based professional development opportunity for South Carolina educators, the Cooperative Extension Service is fulfilling its mission by providing unbiased, research-based information to classroom teachers that will improve teaching quality.

Course activities are a mix of field trips, observations, and collections. Teachers learn about South Carolina's native plants, animals, and insects through field studies and activities that can be translated to the classroom. Clemson Cooperative Extension 4H20 curriculum is included and modeled with a boat trip on Lake Jocassee that provides opportunities for water sampling and discussions of reservoirs and their watersheds. Comparisons of the physical, chemical, and biological characteristics are made between reservoirs, streams, and vernal ponds. Using Bad Creek Hydroelectric reservoir, power house and dam as the example, teachers observe how basic principles and general practices of wildlife and land management ecology were used during construction to minimize and sometimes enhance species populations and diversity.

Since 2013, there have been 77 educators complete the course representing 20 school districts across all grade levels. Teachers report over 11,000 students have been impacted as a result of knowledge gained through the course.

NC AGRITUNITY: REGIONAL CONFERENCE AND TRADE SHOW FOR SMALL AND BEGINNING FARMERS

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NC Agritunity is a one-day regional conference and trade show designed to meet the educational needs of backyard gardeners and small farmers. Extension agents from Iredell, Alexander, Caldwell, Rowan, and Catawba counties contributed to make this a regional event. Program goals were to improve farmer's production systems, provide recommendations for best management practices, and increase profitability of small farms and local agribusiness. To increase accessibility to the public this event is free, which is unique from other small farm conferences in the region. Trade show vendors included agricultural businesses, equipment vendors, non-profits, and service agencies. NC Agritunity offers three concurrent educational tracks in Livestock Production, Alternative Crops and Pest Management, and Small Farm Management. The program utilized NC State Extension specialists, agents, and individuals from agricultural organizations to deliver the education. Continuing education credits for licensed pesticide applicators were available in some of the presentations. In addition, keynote speakers from the agricultural community gave their reflections on successes and challenges of managing small farm operations. From 2017-2019, participants attending (n=349) included small and large farmers, beginning farmers, and backyard gardeners. Post-workshop, Likert-scale self-reflective knowledge gain evaluations were given at the end of each individual session to participants and results were compiled. Survey results indicated: 94% of participants reported improved knowledge in at least one best management practice such as crop rotation, recommended irrigation and fertilization practices, pollinator protection, soil organic matter improvement, risk management, marketing, ruminant parasite management, and Integrated Pest Management. In addition, 87% of participants attending workshops on alternative crops reported they will adopt a new crop in their production systems. Growers reported the future total dollar benefit impact from knowledge gained to be an estimated $70,478.00. Ninety-three percent of participating vendors from 2017 (n=14) reported that the event provided valuable client networking, and 75% of attendees indicated they intend to do business with at least one of the vendors. In addition, a vendor in 2018 reported $45,000 in equipment sales. Increasing engagement with small farmers with programs such as NC Agritunity ensures continued relevance of North Carolina Cooperative Extension in the agricultural community.

BIG WORLD EXPERIENCED BY 8TH GRADERS AT CAREER EXPO

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The career exposition, "Imagine the Possibilities", is a hands-on, interactive event that expands the vision of career options for 8th grade students in Northeast Mississippi. Research shows eighth grade is the most receptive period to capture attention. Younger students do not comprehend the importance and older students fall victim to bias and peer pressures. Agriculture needs to attract bright minds early, before they choose more common disciplines for a career. The U.S. Dept. of Labor assigns each individual job under one of eighteen pathways. We utilize eighteen Pathway Leaders responsible for soliciting company participation and organizing exhibits. All exhibits use an interactive approach to increase attention and showcase exhibitors performing actual tasks. The Agriculture Pathway offered thirteen main exhibits that highlighted over one hundred careers. Between 2015 and 2018, over 24,500 8th grade students and over 4,400 general public, VIP's and teachers have experienced the exposition. Over 5,900 professionals have volunteered to expand the career visions of the students proving community engagement. The Expo has received numerous state and national awards for its contribution to economic development in Northeast Mississippi. Frequent comments by students were "Wow", "That's cool", "I didn't know agriculture did that", and "That's what I want to do". Students witnessed career options they had never imagined and it opened young minds to planning high school coursework for the life they desire.

ENHANCING THE MAGNOLIA BOTANICAL GARDENS AS A DEMONSTRATION/EDUCATION OUTREACH LEARNING CENTER

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Gardening and landscaping trends have been on a steady rise in recent years. These active gardeners have numerous avenues to find their needed horticultural information (Cohen, 2015). Providing these gardeners with a location to learn which plant materials are best suited for their growing regions is a must. Educational outreach programming at the Magnolia Botanical Gardens (Verona, MS) and through the use of social media will be used to teach sustainable practices and technologies that could be implemented in home landscapes and gardens. Participants will be home gardeners, Master Gardeners, youth, and adult consumers who want to learn about the many benefits of specialty crops (aesthetic, culinary, nutritional, sustainability) and how best to install and manage them in their home landscapes. Special efforts to include the millennial generation of gardeners will be made through the use of interactive videos, webinars, twitter and Facebook. An informed public will make better choices and be more successful in their purchase, care and use of ornamental/fruit/vegetable/herb specialty crops in the home garden. This will indirectly have a positive impact on the green industry in Mississippi through their landscape purchases. The Magnolia Botanical Gardens have great potential to impact the industry not only in north Mississippi but across the state (Drake & Lawson, 2015).

WOODS AND WILDLIFE FOR YOUR WALLET

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More than half the state of Kentucky is forested, and 78 percent of that land is owned by private land owners. According to UK Forester, Billy Thomas, Kentucky Woodlands are some of the most productive woodlands in the world if managed properly. Most landowners are unaware of all the management programs that are available to assist them. These services can help develop management plans to ensure proper care and management to carry our woodlands to the next generations.

In Greenup County both the Cooperative Extension and Soil and Water Conservation District want to encourage landowners to become connected with services that can support them. It is also our goal to educate landowners about timber and wildlife management and non-timber forest products.

In the past three years Greenup County Extension Service and Soil and Water Conservation District held "Woods and Wildlife for Your Wallet" in conjunction with Kentucky Department of Forestry, University of Kentucky Forestry, KY Department of Fish and Wildlife, KY Woodland Owners Association and many local volunteers. "Woods and Wildlife for Your Wallet" is a program that offers concurrent sessions, such as Beekeeping, wildlife management, growing shiitake mushrooms, Master Logger Program, and encouraging a

healthy forest. It is a great opportunity for landowners to interact with the organizations and individuals who can assist them the most.

UGA GRASSMASTERS: AN EDUCATIONAL PARTNERSHIP TO DEVELOP BETTER GRAZING MANAGEMENT IN GEORGIA

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Forage production is a big part of the farm gate of Georgia, representing approximately $130 million and 4 million acres. The UGA Forage Extension Team, comprised of county agents from across the state, works together to help meet the diverse demands of the clientele of Georgia in the areas of forage programming. In 2016, the UGA Forage Extension Team collaborated with the USDA Natural Resource Conservation Service and the Two Rivers Resource Conservation and Development Council to present a new program to complement existing UGA forage programs. The UGA GrassMasters Program serves as in an in-depth introduction to forage production in Georgia. This program is a seven-week series designed to strengthen existing UGA forage programs and serve as an introduction to more advanced courses, like Grazing School. The UGA Forage Extension Team members created the curriculum. The team along with the NRCS State Grasslands Conservationist teach the training modules based around forage management principles. Since its inception, five UGA GrassMasters series have been held around the state reaching 142 participants. A measure of knowledge gained was evaluated using a Likert-type scale from 5 to 1. A score of 5 indicated that knowledge was greatly improved and a score of 1 indicated no change in knowledge. All topics received a score of 4 or higher. Follow-up surveys indicate that a majority of participants have made changes to their operations and consider the program a major help to attaining their forage management goals.

4-H JUNIOR MASTER GARDENER CLUB, WITH A TWIST - HIGH SCHOOL LEVEL

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Junior Master Gardener programs focusing on elementary and middle school students are a fixture in 4-H youth development in many states. However, statistics have shown that 4-H club retention in high school has become a struggle, but a positive 4-H club experience can help a student find new interests and strengths. Therefore, an innovative 4-H Junior Master Gardener Club was developed and implemented to teach Wewahitchka high school students the benefits of backyard gardening through not only sustainable horticulture techniques, but also from a project management standpoint, as risk management principles were instilled. Horticulture objectives included planning, planting, managing and harvesting of the school garden. While engaged in developing the garden – students also learn fundamentals of backyard gardening including, soil science, plant biology, and garden management (i.e. irrigation, nutrient and pest management). Niche small farm markets were also explored, as the club participated in a shiitake mushroom production workshop. This club also offered classroom training and hands on experience in developing, managing and closing a gardening plan, complete with critical thinking exercises which allowed the students to analyze risk factors, potential impacts and response measures. "Moreover, creative and critical thinking activities prepare youth as innovators and adaptive problem-solvers—roles in high demand in the New Economy" (Kane et al., 1993). Student participants learned to use project management methods, which are recognized as standards worldwide. Skills learned enabled a lifetime of setting and attaining personal and business goals. The results of the pre/post evaluation assessments for the spring club revealed class average of 18% knowledge gained. All 9 participants were awarded 4-H Certificates of Achievement. This 4-H club increased the skill level completing this course will gain lifelong skills in planning, managing and delivering projects as well as managing their own backyard gardens. In conclusion, there is an increasing concern regarding the public's literacy of the food systems. However, 4-H clubs and school gardens have been shown to increase knowledge and awareness about gardening, agriculture, healthy eating and seasonality. The impact of knowledge gained about agriculture from programs like this is a vital indicator of informed decisions made by young consumers.

AGRICULTURAL WORKER SAFETY DAY - A TIME FOR FUN AND GAMES

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Agriculture ranks among the most hazardous occupations for farmers, family members and farmworkers. According to the National Institute, for Occupational Safety and Health (NIOSH) there were over 2 million full-time and 1.4 to 2.1 million hired agricultural workers employed on U.S. farms in 2017. Every day, over 100 workers suffer an injury that results in lost-work-time costing millions of dollars for workers, employers and consumers. In order to help reduce these losses, the University of Florida (UF) Institute for Food and Agricultural Sciences (IFAS) hosts the Agricultural Worker Safety Training Day for the Indian River growing region in early January. Agricultural workers, mostly working in the citrus industry, attend seminars during which speakers share the latest safety standards to help avoid accidents, pesticide exposure and fresh product contamination. This annual bilingual training is designed to help employees work safely to prevent accidents, operate equipment in a mindful manner, be aware of their surroundings to avoid dangerous situations and to satisfy necessary Good Agricultural Practices (GAP) training requirements with food safety and personal hygiene. Other seminar topics include various aspects of Worker Protection Standards, fire safety, and ladder and tractor safety. Participants receive a certificate of attendance needed for third party audits and continuing education units are awarded by Florida Department of Agriculture and Consumer Services for pesticide license holders. The training is culminated by an afternoon of competitions; the Tractor Rodeo and the Citrus Pest and Disease Identification Contest. 1st, 2nd and 3rd place winners are given monetary prizes. Over 450 participants attended the 2018 and 2019 Agricultural Worker Safety Training Days. Survey results found that over 95% of the participants had learned a new safety practice and 100% stated that they would incorporate more safety procedures during the workday. Companies that sent employees in 2018 were surveyed a year later and reported a 30% decrease in farm-related accidents, with the most significant progress being made with tractor and ladder safety. They also reported that 3rd part audits were passed mainly due to the observations of increased personal hygiene and food safety practices that workers had implemented since the training.

COLD TOLERANT CITRUS PRODUCTION FOR N. FLORIDA AND THE SOUTHERN COASTAL PLAIN

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Producers are constantly looking for profitable additions to their farming operation. Currently, citrus greening is destroying the citrus industry in South Florida. New cold tolerant varieties of citrus and growing techniques provide an opportunity for growing citrus in North Florida. **Objective:** Develop an educational program: 1) Provide education on rootstock/scion combinations showing production potential. 2) Demonstrate freeze protection technologies. 3) Inform clientele about the current successful cold tolerant citrus production areas in N. Florida and S. Georgia. **Methods**: Private farm and UF/IFAS REC field days/meetings were conducted to demonstrate citrus production in N. Florida and S. Georgia. Producers were educated on: scion and rootstock characteristics/performance, fertility practices, grove layout, tree spacing variables, packing and marketing strategies, insect and disease control, and yield data. **Results:** Approximately 1,300 producers have attended field days/meetings in Marianna, Perry, Quincy (NFREC), Live Oak (SVEC) Florida, Tifton and Valdosta Georgia over the previous four years. Currently there are approximately 800 acres of citrus planted in N. Florida and it is estimated that an additional 200 acres will be planted this year. Gross returns of nearly $15,000,000 is expected at maturity. **Conclusion:** Utilizing current technologies and the occurrence of average winter weather, N. Florida appears well suited to several cold tolerant citrus varieties for the fresh fruit market gearing production for the fall to Christmas period with profit potential. Fifteen-year-old Satsuma trees in Marianna as well as mature production in Quincy and Live Oak continue to provide validation that production can be done in this region.

CONNECTING COMMUNITY LEADERS TO AGRICULTURE FOR BETTER INFORMED DECISIONS

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Situation: Although it is a county historically dominated by agriculture, Osceola County is rapidly urbanizing. Agricultural lands are being developed to accommodate this rapid growth. However, undeveloped agricultural areas contain green space and wetlands that provide important habitat for wildlife and countless ecosystem services. Many local leaders are focused on county growth and development and are not aware of these benefits of agriculture. With increased agricultural awareness and literacy, leaders can make more informed decisions regarding county land development. **Objectives:** Participants will have a 50% knowledge gain about agriculture in Osceola County as measured by a retrospective pre-/post-survey. Additionally, 75% of participants will report that this knowledge gain will help them make more informed decisions as a community leader. **Methods:** In 2017 and 2018, 44 community leaders from various sectors participated in the Leadership Osceola Agribusiness Day program. The program educated leaders about the cattle ranching and agriculture industry in Osceola County. It consisted of a full day of farm and ranch tours, along with presentations led by local agricultural producers and Extension Agents. A steak lunch and taste testings were used to connect knowledge gain and awareness to participants' daily food supply. Throughout the day, their attention was directed to wildlife, water resources, and green space to re-inforce that rangeland serves as critical wildlife habitat and provides important ecosystem services. **Results:** Evaluation data was collected during the 2017 and 2018 programs. There were 20 program participants in 2017, and 24 in 2018. Over the two years, the participants (N=44) had a 109% knowledge gain about agriculture in Osceola County as measured by a retrospective pre-/post-survey. 100% of participants (N=44) reported that the knowledge they gained will help them make more informed decisions as a community leader. **Conclusion:** Agricultural awareness and literacy have many positive long term impacts for both individuals and the entire community. Exposure to natural areas can better our mental, physical and emotional health. It also increases the non-use value of rural lands, which can lead to more carefully planned development that preserves green space, protects wetlands, and minimizes habitat fragmentation.

DEVELOPING A MODEL FOR EFFICIENT WEEKLY SOCIAL AND ELECTRONIC POSTS

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To be successful in Extension it is essential that new agents build rapport with clients, establish working relationships with specialists, and increase their knowledge base in areas that may lay outside of their comfort zones or educational background. In addition, our clientele is evolving and rely heavily on technology for information. Using social media and electronic communication is critical. In order to be relevant on these platforms, it is recommended to maintain a weekly presence, at a minimum. However, this can be extremely time-consuming for agents. With weed identification and control being a common inquiry for many agriculture agents, presenting a unique opportunity to develop a model for weekly posts. **Objectives:** The objectives were to 1) use "Weed of the Week" as a platform to develop weekly factsheets to educate producers on weed identification and control, and 2) develop an effective and efficient model to create and post weekly educational content that is reviewed by state specialists. **Methods:** Two county agents and one state specialist worked to develop a graphic template. This template was then used to create factsheets that were uniform in content and design to create program recognition and relevancy with clientele. Factsheets would be developed in groups of 6 weekly posts, then reviewed by the state specialist, prior to being posted and shared electronically via social media posts, blogs, and electronic newsletters. **Results:** Over a 6 month period, 27 factsheets were developed and published on a weekly basis. This resulted in over 7,500 views of content, 54 blog or electronic newsletter publications, and 24 social media posts. **Conclusion:** Using a graphic template to create weekly factsheets that are reviewed by state specialists for electronic publications and posts is an effective and very efficient way to tackle the challenge of weekly social media and electronic presence.

ENHANCING EXTENSION PROGRAMMING THROUGH INTERNATIONAL FOOD SYSTEMS CASE STUDIES

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A food system is generally defined as the path that our food travels from field to fork, and integrates food, nutrition, health, community economic development and agriculture. Therefore, exploring unique and innovative food systems creates diverse educational opportunities to enhance Extension programming and create collaborative outreach. In May 2018, with the objectives of increasing our knowledge of successful food systems, improved crop production methods and sustainability practices that could be transferred

to clientele, county Extension and state specialist faculty from the University of Florida attended a Food Systems and Sustainable Agriculture Workshop in Europe. Participating faculty toured several innovative and sustainable farms, vineyards, and ornamental nurseries, and documented local food systems and culture throughout Belgium, Germany and the Netherlands. Significant differences in production practices in Europe were observed when compared to those in Florida. For example, participants increased their knowledge of biodynamic agriculture, a certified form of alternative agriculture very similar to organic agriculture that emphasizes holistic approaches, integrated local production and decentralized distribution, with Germany accounting for 40% of this type of production. Innovative information ascertained on crop rotation, integrated pest management and marketing was incorporated into educational programming for clientele and presented on several occasions. This information could prove especially useful for growers looking to improve farm profitability and sustainability with alternative crops in the United States. Through these experiential learning opportunities, Extension professionals gain new perspectives, increase their knowledge of international food systems and sustainable practices, and can enhance Extension education.

EQUINE FOCUSED WORKSHOPS IMPROVE HORSE FARM MANAGEMENT PRACTICES IN CENTRAL FLORIDA

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A recent study of horse owners uncovered a fundamental lack of knowledge regarding good animal husbandry practices (Williams et al., 2018). This ignorance may cause unintentional mistreatment of animals and leads to higher costs associated with feed and health care. Additionally, mismanagement of horse manure and poor grazing management can contribute to non-point source pollution of fresh water systems, a major area of concern in Florida. The large number of equine enthusiasts in Central Florida presented a prime opportunity for positive intervention by Extension. In 2018, livestock Extension Agents with personal and educational backgrounds in equine management piloted a day-long workshop aimed at increasing the adoption of recommended equine management practices amongst hobby and commercial horse owners in Central Florida. The Agents used a combination of lecture and hand-on teaching to address topics ranging from manure composting and vaccinations to grazing management and equine nutrition. The workshop has been repeated in five counties, with plans to include an additional three counties in 2019, and a total of 139 horse owners have attended workshops to date. Post program surveys found that 100% of respondents indicated intent to adopt one or more recommended practice change as a result of their participation. These practice changes included soil testing prior to applying fertilizer (47%), implementing recommended grazing management practices (66%), and composting manure (48%). Additionally, participants also indicated intent to feed more forage-based diets (65%) and to discuss vaccine protocols (74%) with their veterinarian, two practice changes linked to better health outcomes and lower vet bills. Extension workshops that target horse owners can play a role in increasing horse owner knowledge of recommended management practices. This knowledge gain then leads to the adoption of practices that can result in improved economic and environmental sustainability of horse farms.

Williams, J., Marlin, D., Pal, L., & Randle, H. (2018). Do Horse Owners Know How To Care For Their Horses? Poster session presented at International Society for Equitation Science 2018, Rome, Italy.

ESCAMBIA COUNTY BEEF CATTLE & FORAGE BOOTCAMP PROVIDES PRACTICAL EDUCATION TO LIVESTOCK PRODUCERS IN NORTHWEST FLORIDA

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The Escambia County Beef Cattle & Forage Bootcamp is an annual multi county, multi-state collaboration among Extension agents, specialist, graduate students and livestock producers. Annually, program objectives target reaching approximately thirty individuals to deliver educational programing to beef cattle producers in Northwest Florida. The objectives of the program were to: 1. Increase knowledge of Beef Quality Assurance best management practices within the beef industry, 2. Demonstrate multiple varieties of winter forages to be implemented into beef cattle grazing systems in Northwest Florida, 3. Demonstrate beef cattle pregnancy detection through different technologies 4. Educate producers on beef cattle carcass evaluation for quality. Thirty-nine individual forage demonstration plots were planted from October to

December highlighting growth potential of winter forages and wildlife forage blends. Forage analysis was collected and presented to the clientele. Industry professionals collaborated to deliver hands-on programs demonstrating various production practices to increase profitability, marketability and best management practices. Topics provided by speakers included bovine reproduction management, carcass quality analysis, livestock identification and beef quality assurance. A total of ninety-two individuals attended over two years. University publications were utilized to provide supplemental resources for attendees. A ten-question survey was distributed to clientele to record impact and satisfaction of the program. Evaluation results include the following: 90% (38/42) planned to implement changes based on information, especially in winter grazing supplementation and forage varieties. 88% (37/42) stated that they felt the program was valuable at or above the required attendance fee, and 71% (29/42) of attendees reported that they plan to make a management change based on the information provided in the program. Attendees reporting to make a management change based on the information provided estimate an average costs savings of $200 per operation. Future programs are being planned to include topics suggested through the evaluations. All returned surveys reflected that respondents were very satisfied with the program.

EVALUATING PERENNIAL MIXED FORAGE PASTURE COSTS FOR CATTLE PRODUCERS

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Utilizing forages economically requires prior planning and management. Producers can make more economical management decisions when they use decision aids and enterprise budgets for their operation. An excel spreadsheet was developed to provide a visual for producers to identify economical forage outcomes. The variables included in the analysis were forage cost of production, performance, and utilization during the grazing season. The spreadsheet organizes the information and computes the forage cost per dry matter ton for grazing perennial mixed forage pastures. In the economic analysis conducted, forage production ranged from 4,000 to 20,000 dry matter pounds per acre. The cost of forage production ranged from $25 to $250 per acre. The level of forage utilization was evaluated at 50 percent. The cost per dry matter ton of perennial mixed forage pasture ranged from $5 to $250. The spreadsheet provides users the opportunity to insert their individualized projections for forage cost of production, level of forage production, and forage utilization. Adjusting these parameters allows producers to estimate the impact that alternative forage production practices, forage performance, levels and types of inputs, and grazing strategies would have on the economics of grazing perennial mixed forages pastures. A survey of producers indicated that 78% gained knowledge from the decision aid and that 53% would develop a plan to make improvements to their forage system in the coming year.

EXPLORING MEDITERRANEAN-STYLE AGRICULTURAL PRODUCITON IN SOUTHERN SPAIN FOR USE IN FLORIDA

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The purpose of the International Horticultural Production and Cultural Tour of Southern Spain was to educate University of Florida extension, staff and clientele on the feasibility of adopting Mediterranean-style agricultural production with products that feed Floridians, and to use the findings from this workshop to educate commercial growers in pursuit of profitable alternative sustainable farming. I also wanted to attain contacts to help with logistics in the high-intensity plasticulture industry. I spearheaded a group of UF extension agents, specialists, staff and interested clientele to travel to Spain on a nine day workshop. The goals included discussions with governmental officials on water conservation tactics, urban acceptance in aesthetics of plasticulture, high intensity greenhouse vegetable farming, field visits to observe vegetables, citrus, vineyards and olive groves along with visiting both small and large packing houses and an international plastic mulch manufacturer. Following the trip, I communicated the information on social media, a UF Volusia County blog site, grower meetings and client educational programming. A one month post survey was sent via email to the tour group for evaluation of the workshop. 87.6% of the travelers that responded, rated the grower field visits 'very good-excellent' and 12.5% with as 'good.' All members regarded the quality of the cultural workshop portion at 'very good-excellent.' 93.8% assessed the workshop quality as 'very good-excellent with 6.3% 'good.' 93.8% of the travelers were recommending it to others. The post survey helped asses the workshop effectiveness. This type of international visiting can be adapted to other regions. The agent obtained international resources and contacts in Southern Spain that are eager to cooperate with extension aid to Florida growers in starting their successful ventures in alternative crops.

EXTENSION FARM TOURS INTRODUCE PUBLIC, POLICY MAKERS, TO LOCAL AGRICULTURAL ECONOMY

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Lake County, Florida is experiencing a period of substantial growth with development booming at both ends of the county. The urbanization of traditional agricultural land can lead to conflict as new residents, unfamiliar with agricultural practices, move next-door to farms and ranches. Fostering an awareness of, and appreciation for, agriculture in local communities is an essential element of reducing stresses commonly associated with rural-urban interface. Likewise, it is critical that those responsible for creating and enforcing regulations understand agricultural practices as well as the impact that agriculture has on the local economy. Since 2009, UF/IFAS Lake County Extension agents collaborated to plan, implement, and evaluate annual Farm Tours that expose members of the public, as well as local policy makers, to a variety of local agricultural businesses. A total of 849 individuals, and 14 policy makers, participated in the UF/IFAS Lake County farm tour since it's inception. Post tour surveys found that 94% reported a deeper understanding of common agricultural practices as a result of their participation. Additionally, 88% reported being more aware of the services offered by Extension and 55% indicated an intention to avail themselves of those services. Featured agritourism-oriented farms reported positive follow-up interactions with tour participants who frequently returned with additional guests.

IMPROVING GARDENING ACCESSIBILITY AND PREVENTING INJURY THROUGH ADAPTIVE GARDENING

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Gardening can be a relaxing hobby that improves our physical and psychological health, with benefits including lowering blood pressure, improving motor skills, and reducing stress and depression. Gardening, however, can become an overwhelming, or even harmful activity if inappropriate landscape designs or gardening techniques are used. Gardeners are susceptible to many injuries if they are not using gardening methods, tools, and layouts that are appropriate for them. Many potential or life-long gardeners find themselves unable to perform gardening tasks due to time or space limitations, or physical conditions such as changing flexibility, reduced vision, or injury. Most gardeners have constraints, but that does not have to prevent them from experiencing the enjoyment and therapeutic benefits of gardening. The Agriculture Extension Agent developed an Adaptive Gardening presentation that featured gardening methods that are adaptive to the individual's physical ability or environment. The objective of the program was to teach people how to make their gardening activities easier and safer, ultimately preventing injury and making gardening more enjoyable. The presentation utilizes adaptive tools and multi-media instructional slides, and demonstrates gardening stances and exercises to reduce the physical strain of gardening. Three-hundred Master Gardener volunteers and home gardeners were educated in Adaptive Gardening techniques. In addition to Master Gardeners sharing Adaptive Gardening tips with clients in the Plant Clinic, several Master Gardeners were specially trained to offer the program in the community, further expanding educational outreach efforts. Preliminary follow-up survey results of Adaptive Gardening participants show that they adopted safer gardening practices such as designing lower-maintenance gardenscapes and using tools and gardening methods that prevent injury. Teaching people about the horticultural and environmental side of gardening is valuable, but teaching people how to garden in a practical and safe manner is imperative. Adaptive Gardening education empowers people to care for their health and enjoy gardening.

INCREASING THE SUSTAINABILITY OF SMALL-SCALE RANCHERS THROUGH WINTER SUPPLEMENTATION ALTERNATIVES

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Hay supplementation is both an integral and expensive component of traditional annual livestock production in North Central Florida. In cattle alone, winter supplementation of hay for production females can exceed $300.00 per head. The incorporation of cool-season annual forages into the grazing system can decrease annual cattle costs by up to $170.00 per head by decreasing the quantity of supplements needed, such as hay, molasses, or protein tubs, because of an extended grazing season. However, most cattle producers in Suwannee County are small scale ranches, and owning planting equipment is not economically feasible. The purpose of this presentation was to a) Educate producers on aligning cattle and forage production cycles to decrease winter supplementation costs and b) Demonstrate to producers the decrease in annual cattle costs by utilizing cool-season annual forages in the management system. The extension program was targeted at small-scale ranchers and farmers and clients new to owning and/or managing cattle. Participants spent the morning in a classroom setting learning about weed management in cool-season annual forages, cultivar selection, grazing management, and the economics of utilizing cool-season annual forages. After lunch, participants were taken to the demonstration plots to witness differences in cultivar options, the benefits of mixing varieties, and planting equipment. Seventeen (17) producers representing an estimated 800 head of cattle attended the workshop. Based on evaluations, 78.2% (n=13) indicated an increase in knowledge on cool-season annual forage establishment, management, and utilization and 82.4% (n=14) indicated incorporating cool-season annual forages into their production systems. Attendees also estimated an average annual savings of $120.13 per head by utilizing cool-season annual forages to extend their grazing season. This equates to $96,104 savings per year for the combined cattle represented. By decreasing production costs, producers can maintain sustainable cattle production more efficiently in an unstable market.

INTERGENERATIONAL BUG CAMPS

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The Villages is one of the fastest growing retirement communities in the United States. Every year, The Villages hosts intergenerational days camps called Camp Villages. UF/IFAS Extension Sumter County approached The Villages and has partnered to provide a two-hour Bug Camp. Bug Camp was established in 2013. The primary audience are grandchildren of Villages residents, although grandparents also actively participate in activities. Majority of the youth are from out-of-state. Ages range from 8 to 13. 75 youth attended Bug Camp in 2018.

Bug Camp is a program that was developed to increase the knowledge and importance of common arthropods found in Florida. Youth learn collecting methods, external morphology and harmful insects such as bedbugs. 100% (n=75) have learned how to correctly scout and identify bedbugs as measured by a hands-on identification practical, using a miniature bed and strategically placed bedbugs. Youth were educated on what bedbugs look like and where to find them on a bed. Each participant located and correctly identified the bedbugs placed on the bed mattress and frame. Each youth then demonstrated to their grandparents how to scout for bedbugs. 100% (n=75) of youth have learned to sample insects correctly using sweeping nets and other collecting techniques, as measured by an onsite practical. Each child was given a net and bug catcher kit and was shown how to correctly sweep for insects. Grandparents and grandchildren participated together in collecting.

Youth also participated in Bug Olympics. Each child had the opportunity to race a live lubber grasshopper (*Romalea guttata*). Children learned the three body parts of the grasshopper and what they eat.

In one camp, 25 students also assisted in placing gravid traps for *Aedes aegypti,* the yellow fever mosquito and *Aedes albopictus*, tiger mosquito. Both grandchildren and grandparents learned what diseases mosquitos carry and repellents to use for prevention.

Camp Villages purchases all the supplies that are requested for each camp. Bug Camp, as a part of Camp Villages, has been the most popular camp offered since its creation and has been an overwhelmingly successful event and partnership.

MASTER GARDENERS ACHIEVE GREEN INDUSTRY BMP CERTIFICATION

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Florida's population is growing exponentially and is the third most populous state just behind California and Texas at an estimated 2019 population of 21.6 million people. Florida is characterized by a fragile environment with surface water

and ground water easily compromised by poor environmental practices. Florida is fourth in the percentage of total water withdrawals and second in cumulative percentage of water withdrawals nationally. The Green-Industry Best Management Practices ("GIBMP") certification program which is a part of Florida-Friendly Landscaping™ is a state-wide required program designed specifically for the Green Industry in Florida. The GIBMP program is designed to educate Florida's Green Industry on sound environmental practices which protect water quality including topics such as Lawn and Landscape, Fertilizers, Pesticides, and Irrigation. The Green Industry pursues a separate certification in fertilizer application after achieving GIBMP certification. Green Industry use of the principles of the GIBMP Program and fertilizer certification is intended to lead to reduced impact on Florida's water resources. Master Gardeners have become GIBMP certified as part of Master Gardener initial training. 49 Master Gardeners in four classes achieved an average pre-test score of 85.5, and a post-test score of 94.1 with 100% pass rate demonstrating an average increase in knowledge of 8.6 points. The Green Industry by comparison achieved a 90% pass rate with a final average score of 89%. (Nov. 2017-Oct. 2018) (n=2269) Master Gardeners receiving GIBMP certification provides them with the same basis of knowledge and certification required of the Green Industry which leads to confidence and credibility in their work with the residents of their counties. Master Gardeners in Sumter and Hernando County are required achieve GIBMP certification to pass the Master Gardener initial training. Additionally, as a result of the GIBMP training in the last three years, three Sumter County Master Gardeners have or are becoming trained GIBMP Instructors.

TOBACCO PRODUCTION PROGRAMING IN THE SUWANNEE RIVER VALLEY OF NORTH FLORIDA

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Since the 1920's, the Suwannee River Valley of North Florida has been known for producing premium quality tobacco. Over the years a Tobacco Extension Program has evolved which assists local producers with current production practices, governmental regulations, and industry demands. Objectives: To (1) increase knowledge of improved cultural and production techniques and (2) encourage producers to incorporate new tobacco cultivars and pesticide spray programs. Methods: The Tobacco Extension Program consisting of an annual tobacco production meeting, an on-farm trial, and the Georgia-Florida Tobacco Tour provided tobacco producers the opportunity to gain knowledge of the most current and researched production methods. The success of this Extension program was due to the long-term culmination of traditional classroom Extension trainings with on-farm demonstrations, field consultations, and small group learning experiences. Results: For the past three years, approximately fifty tobacco producers, farm managers and stakeholders from North Florida and South Georgia have attended the annual tobacco production events consistently. Each year, program evaluations demonstrated that producers increased their knowledge after attending meetings. Exit evaluations showed 87% of the attendees (n= 26 of 30) evaluated at annual tobacco production meetings showed an increase in knowledge of disease management and best management practices. At the conclusion of the Georgia Florida Tobacco Tour, 94% (n = 61 of 65) of attendees who completed exit evaluations reported an increase in knowledge of cultivar selection. Impacts: Adopting recommended cultivars have increased yield while reducing the amount of required pesticide applications. This has generated an additional $50.00 per acre in saved production cost and increased yields resulting in $55,000 in the Suwannee River Valley. Conclusions: It was observed that producers attending the tour were more likely to interact with presenters when compared to the traditional classroom meetings. By executing the objectives through program activities, the Extension team was able to contribute to the sustainability of tobacco in the region. Producers have been eager to provide personal feedback on the impact the programs have had on their operations and engage with the Extension team regularly when faced with production problems.

UTILIZING COOPERATIVE UNITS TO FACILITATE 4-H MARKET SWINE PROJECTS

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An estimated 70% (population estimates, July 1, 2017) of the Escambia County, Florida population is concentrated on

the urban southern coast, with limited access to appropriate facilities to raise swine. Escambia County 4-H utilizes a cooperative unit system to increase participation in market swine projects to alleviate the demand of resources, time, and knowledge on individual participants. All group participants house their animals in one location and agree to work chore shifts on specified days, which decreases the travel and time demand placed on the individual. The unit is led by a volunteer unit leader who coordinates and oversees the procurement of the resources needed to raise the swine. The development of life skills for the individual participant is still ensured as the individual is still responsible for the cost of raising their pigs and ensuring that they are ready for show day. Furthermore, youth are required to participate in clinics and seminars which focus on unit standard operating procedures and protocols, swine health, swine showmanship, and safety. In 2017 and 2018, 29 youth participated in the cooperative swine unit program. Currently, there are 25 youth participating in the cooperative swine unit which will conclude in the spring of 2019. Record keeping, communication, and cooperation was demonstrated by 100% of the youth as evidenced by completing a market swine record book, verbal and written communication, and the sharing of observations of the health and progress of project animals. A species specific survey in 2018 revealed that 28 of 29 (96%) of the youth demonstrated knowledge gain. Furthermore, 28 of 29 (96%) of youth demonstrated responsible swine management as observed by extension staff and livestock show boards members. One mother commented, "Without the coop unit, we would not have been able to do a pig project because we do not have the facilities". By lowering the barriers of entry for interested youth, this program creates a safe environment through which youth are introduced to swine production and provided the opportunity to develop life skills in a safe environment.

WATER MANAGEMENT IN ARKANSAS RICE

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Continuously flooded rice systems are a major contributor to global rice production and food security. It has been a struggle for rice producers in Lonoke County and surrounding areas to deal with declining water tables and increases in energy cost associated with irrigation. Research has shown that multiple inlet irrigation can lower water use by 25%. Allowing the soil to dry periodically during the growing season (such as with alternate wetting and drying irrigation - AWD) has been shown to decrease water usage. Traditional flooded rice production utilizes a well or riser in the highest-elevation portion of the field and water spills into lower paddies as the upper paddies are filled. In an alternative method known as multiple-inlet irrigation, rather than discharging directly into the highest paddy, a pipe is connected and gates or holes water each paddy concurrently instead of each receiving overflow from a higher paddy. A flowmeter was installed in the field and the farmer provided yield data. This irrigation demonstration resulted in lower water use without any yield loss. Adaptions of these practices by producers can lead to easing the groundwater shortages being experienced in Arkansas and other rice-producing areas. University of Arkansas recommendations for fertility and crop management were utilized in the trial. Further results of this study will be presented to fellow agents and producers.

2018 ALABAMA GRAZING ACADEMY

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In 2018, the inaugural Alabama Grazing Academy was held at the Tennessee Valley Research and Extension Center in Belle Mina, AL. This program is focused on assisting livestock producers with intensive grassland management. The 1.5 day program consisted of in-class, field tours, and hands-on demonstrations. Sixteen participants attended the workshop and 16 program evaluations were returned. All 16 participants identified as livestock producers; additionally, 3 indicated they were also maintaining wildlife habitat/hunting land, 1 identified as a custom hay baler, and 8 as hay producers. In total 1,232 cattle were represented 78.7% were cows, 9.5% replacement heifers, and 11.8% stockers. All 16 producers already engaged in some level of rotational grazing and represented a total of 2,571 acres throughout North Alabama. There was a 66.7% increase ($P < 0.00001$) in knowledge in forage species and diversity options. Knowledge in grazing management techniques increased ($P < 0.0001$) by 65.9% and knowledge of soil structure and fertility practices increased ($P < 0.0001$) by 60.5%. Participants indicated an average 34 days per year increase in annual grazing days for a total increase of 370 days per year (n = 11). This will result in fewer stored feed needs, as well as less damage to pastures and the surrounding ecosystem due to heavy foot traffic and concentrate of manure during hay feeding. The participants indicated a total of $103,600 in economic impact from attending the meeting, averaging $7,969.23per farm (n = 13). Results indicate that even for producers already using some form of rotational grazing, there is still a need to provide information regarding forage species options, grazing management, and soil management.

NORTHEAST REGION ENTRIES

SPECIAL FORCES FOOD ANIMAL HUSBANDRY PROGRAM

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Special Forces Food Animal Husbandry program began in 2016. Only the top 6-8 Special Forces Medical Sergeant and Special Operations Independent Duty Corpsman candidates are awarded the opportunity to West Virginia University's Health Science Center for a 24 day clinical medicine program. As part of this program, the candidates are exposed to 1.5 day module in the handling and production of livestock species

The module consists of: an introduction to the physiology, behavior, and instincts of livestock species; veterinary examinations; treatment of common animal health issues; comparison of animal and human pharmaceuticals; basic animal husbandry practices (hoof trimming, castration, blood draws, pregnancy diagnosis, etc.); herding techniques; physical restraint; and euthanasia, with beef cattle, sheep, goats, horses/donkeys, and poultry. The training included classroom lecture, table top and practicums.

The groups have been 6-8 in number for each of these intensive trainings. They are all afforded the opportunity to "get dirty" and "learn by doing".

To date, 12 groups have been trained, totaling over 85 participants. A pre-test/post-test evaluation format has been utilized to assess participants' baseline knowledge, and subsequent post-module increase in knowledge, skills, and abilities. 80% of participants indicate that they have had no exposure to livestock beyond their training at the Joint Special Operations Medical Training Center. Increased correct responses have been observed for every question at post-program testing, with the greatest increase for questions concerning animal behavior, herding methodology, and restraint. Furthermore, with 83% identifying their hometown as non-rural, only 5 out of 85 have been in 4-H or FFA and have had prior exposure to food animals or livestock handling experience. This training will add a valuable tool to the medics' extensive skill base.

As a result of the professional expertise and dedication of this team of instructors to mentoring of Special Forces Medical Sergeant and Special Operations Independent Duty Corpsman students, they were recognized by The Commander of the United States Army Special Warfare Medical Group (Airborne), the position of Adjunct Faculty of the *Joint Special Operations Medical Training Center.*

EUTHANASIA TRAINING IN PREPARATION FOR HIGH PATH AVIAN FLU: EXTENSION FIELD DAYS

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Poster URL: https://www.nacaa.com//posters/uploads/1885.pdf

In light of the outbreak of Avian Flu in the Midwest in 2015, a rapid methodology for euthanizing a commercial house of poultry was developed in an effort to stop this highly contagious disease from spreading. The use of fire fighting foam was found to be very effective in euthanasia for floor-based poultry farms. This gave a minimal crew the ability to put down a flock quickly to end the suffering to the birds and control spread of the disease. Considering this, it became apparent that a steep learning curve would occur when running the foam generator and that many rather than a few people would be needed should a disease event occur in the state. The extension poultry team put together a series of field days starting in 2016 where teams from each of the major poultry integrators could learn to run the foam generators and practice high level biosecurity during a disease event. The format consisted of a classroom orientation of biosecurity protocols and procedures followed by a hands-on training on the apparatus. Over 90% of the integrators in the state (over 100 participants) with floor-based flocks have participated in the field days and feel confident in running the equipment. Penn State has worked in conjunction with the state industry association and dept. of agriculture to provide these trainings to prepare the poultry industry to react rapidly should a disease outbreak occur.

FACEBOOK PAGES FOR EXTENSION: COMBINING WEBSITE AND SOCIAL MEDIA PLATFORMS FOR THE FARMING COMMUNITY

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Poster URL: https://www.nacaa.com//posters/uploads/1819.pdf

Access to broadband internet remains a significant challenge for rural communities in the United States. In a study by Penn State Professor Sascha Meinrath, after more than three million speed tests, less than ten percent of Pennsylvania met the FCC's minimum broadband upload and download speeds. According to the 2018 Pew Research Center Report on Social Media, Facebook remains the most frequently accessed in

rural areas. Facebook's mobile interface allows users with a smartphone and a cellular connection easily access their site compared to more traditional websites that may not have an optimized mobile compatible user interface. Facebook pages fuse features of a traditional web page and a social media platform into a single utility making it ideal for transferring information, communicating via their messenger platform, and promoting educational programs. This presentation will focus on how to build an effective Facebook page from the ground up and utilize other web-based tools to manage the page for long-term success.

EXTENSION OUTREACH EFFORTS TO COMBAT HERBICIDE RESISTANCE IN THE MID-ATLANTIC

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Herbicide resistant weeds are becoming an increasing concern in the Mid-Atlantic. Growers in the region have been struggling with herbicide resistant weeds since 1976 and the discovery of triazine resistant smooth pigweed (*Amaranthus hybridus*) in Virginia; however, it wasn't until new herbicide resistant weeds from other areas of the U.S. were introduced, that herbicide resistance became commonplace. There are 13 herbicide resistant weed species across the region, but the main herbicide resistant weeds of concern are common ragweed (*Ambrosia artemisiifolia)* [ALS, glyphosate, and PPO resistance], horseweed (*Conyza canadensis*) [ALS and glyphosate resistance], and palmer amaranth (*Amaranthus palmeri*) [ALS and glyphosate resistance]. During the winters of 2018 and 2019 a series of workshops (eight in Maryland, two in Delaware and one in Virginia) were held to educate farmers, industry personnel, and Extension professionals on the issue of herbicide resistance. The meetings provided an in depth explanation of herbicide resistance mechanisms, integrated weed management (IWM), and individual species of concern in the Mid-Atlantic region. The goal of these meetings was to have participants increase their knowledge of general herbicide resistance, how to control resistant weeds, and how to prevent resistance from forming in other species. A survey was conducted at the end of each meeting to gauge the level of knowledge increase. This survey also asked farmers which herbicide resistant weeds they had on their operations to provide a general idea of where these weeds are being found around the region.

PLANTS TO PIXELS: VIDEO KITS FOR HORTICULTURE EDUCATION

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Extension clientele and the general public increasingly turn to YouTube and other social media to answer their gardening questions, yet many of the resources from Extension are on plain text websites or PDFs. To remain relevant in an increasingly technology-oriented society, Extension must significantly increase the amount resources available in video form. However, many county Extension faculty and Master Gardener (MG) volunteers have limited experience with and equipment for basic video production. Using a small internal grant, MG Coordinators purchased three identical video kits to share around the state for faculty and MG volunteers to shoot and produce video content for both education and program promotion. Each kit cost approximately $1,100 and contained a tripod, wired and wireless microphones, an iPad, accessories and a backpack carrying case. Instruction on use was conducted with Extension faculty at quarterly MG Coordinator meetings, as a session at an in-service training and one-on-one. Videos produced were posted on the Maryland Home & Garden Information Center YouTube channel, local county websites and county MG social media pages.

GROWING GARDENS ONE TOMATO(TM) AT A TIME

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Wanting to increase the number of households that grow food gardens, consume food produced in their garden and recognize the UMaine Extension as a source of garden information, the county adopted the One TomatoTM project. After five years 1,794 plants have been distributed in Piscataquis County. 19% of those receiving the plant had never gardened before and only 21% had only gardened for a couple of years. For 25% of the people, this was their first contact they had with UMaine Extension. What started out to be a project to encourage county residents to grow their own food, by starting a garden with only one tomato seedling, has turned into a great method of also introducing people to UMaine Extension's garden resources including publications, website, social media and e-newsletters. It has also been a great way to get volunteers get involved in funding, distribution and review of the project through the years.

NORTH CENTRAL REGION ENTRIES

AGRICULTURE IN THE COMMUNITY

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With two faces in Clermont and Greene County, Ohio, urban and rural, it is important to address the needs that are provided by agriculture and the community and how they work together to provide the necessary resources for everyday life. Clermont and Greene Counties have a diverse audience that attend the county fair: rural, urban and suburban. To educate the audience, posters (*Ag in the Community*) were created with facts from United States Department of Agriculture statistics, county statistics and various commodity organizations to educate the public on agriculture, natural resources, and community development. Each poster has a QR code or barcode, which may be scanned with a smart device linked to an online blog page for data collection. The audience targeted were the public and exhibitors who attended the Clermont County fairs in 2015 through 2018 and additionally in Greene County in 2018.

The results included approximately 400-viewed QR code at each of the fairs represented. Fair attendance was approximately 65,000 people who could have viewed the educational materials, but not viewed through the QR code. The posters were color printed on 11"x17" paper and laminated before being displayed around the fairgrounds at designated locations. The outcomes of the Agriculture in the Community posters were twofold. Firstly, educate the public on types of agriculture and community development items in Clermont and Greene Counties. Secondly, gather contact data for our newsletters and blog pages in conjunction to find out if a participant knows about Extension or has ever used Extension's services. Consequently, audiences in the county were interested in learning more about agriculture and how it impacts them on a daily basis.

BUCKEYE ISA (INSTITUTION SUPPORTED AGRICULTURE)

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As of 2018, 15.1 percent of Ohio's population, including one out of five children, is "food insecure," meaning they may need to make trade-offs between basic needs and purchasing nutritious foods. The Ohio State University is making a major investment in a systems approach to tackling this challenge by setting the goal of increasing the purchase of locally and sustainably sourced food to 40 percent of the $39 million in annual food purchasing by 2025. With the support of a $750,000 grant from the W.K. Kellogg Foundation, a project to support formation of a network of neighborhood growers, particularly in communities of color, to grow and sell food to Ohio State. The network would be composed of family farmers and one very large buyer, Ohio State, to develop institution-supported agriculture: Buckeye ISA. This project leverages OSU›s deep roots in agriculture, and Extension›s mission of outreach and engagement by collaborating with community organizations embedded in economically challenged neighborhoods identified by the Columbus and Franklin County Local Food Action Plan. A complete food production curriculum including materials support was created. To date, a total of $162,113 in additional government funding has been aligned as a result of the project. Impacts of the program include 31 families with children enrolled in the program, 469 total class participants, 15 separate teaching locations and 10 different local food production topics engaging beginners through advance gardeners with a website created to host content and facilitate shared learning. In 2018, over 800 pounds of produce was grown with successful sales of tomatoes, bell peppers and hot peppers to the Ohio State University dining services that were served to students in the Traditions at Scott dining hall. This first successful year concluded with a post-year analysis from participants that will guide 2019 programming and outreach. Plans for 2019 include small business financial assistance, varietal selection to guide sales and season extension topics to increase production for the full dining service calendar year. This project in institution supported agriculture demonstrates the buying power of a University to positively impact and support local growers

COFFEE WITH THE MASTER GARDENERS: UTILIZING MASTER GARDENER VOLUNTEERS AS TEACHERS

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Utilizing Master Gardener Volunteers (MGVs) has long been touted as a method of reaching out to more clientele and extending the reach of Extension programming (Grieshop and Rupley, 1984). To advance this idea, a program series was developed to empower MGVs to manage and teach horticultural topics throughout the year. The educational objectives for the program series were to: 1) Increase the skill and comfort level of MGVs in teaching horticulture topics; 2) Develop new topics into programs based on volunteer expertise; 3) Improve the knowledge level of gardeners in the community; and 4) Generate revenue for volunteer support and recognition through program fees for programs. The idea and objectives became the basis for the *Coffee with*

the Master Gardeners program in 2015. All sessions would be taught by and supported by the MGVs in the county. To set the stage for this new idea, MGV intern training was updated to include a more detailed teaching activity requirement. The integrity of programming was an initial concern. This concern was addressed by reinforcing the unbiased, research based information foundation of the Extension system as part of MGV intern training. An outline was developed as a requirement for the MGVs who volunteer to teach the programs. The requirement for teaching a program includes a teaching outline, handouts, activities, use of the evaluation, and inclusion of an Extension factsheet or bulletin that supports the information presented. Since 2015, a *Coffee with the Master Gardeners* program has been presented eleven times each year. Participants are charged $15 per program, with an average of 21.4 participants per program in 2018. Evaluations from 2017 and 2018 resulted in an average knowledge improvement of 3.48, on a 10 point scale for the program topic presented. The results and participant comments show both the success of the program and the success of the MGVs as teachers.

COMMUNITY ENGAGEMENT AND EDUCATION ON LOCAL FOOD SYSTEMS THROUGH VIRTUAL REALITY

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Virtual reality (VR) provides an efficient way to transport audiences to destinations on land, sea, and in the air through the use of technology. As an immersive experience, VR is the future of educational field trips and can be used for communication and marketing purposes. In Highland County, Ohio, the Agriculture and Natural Resources/Community Development Extension Educator is using VR technology to educate about local foods and workforce development opportunities. The objective of this project was to create educational VR videos, highlighting a variety of agricultural and tourism locations appropriate for viewers of all ages and educational backgrounds. As it is anticipated that the American Internet content will consist of 82 percent of video content by 2020 and that millennial consumers prefer transparency in their communication about agricultural topics, VR technology is an appropriate choice for Extension Education. The educator created a VR video highlighting various local farms and businesses that was shown using VR goggles at the Highland County Fair in September of 2018. In addition to being shown at the Highland County Fair, the videos were posted online to the Highland County Extension YouTube page and the weekly email blog. Based on YouTube analytics, the VR videos highlighting Highland County have been viewed over 400 times. However, these analytics do not account for views that were accumulated when the videos were downloaded for offline viewing at the Highland County fair due to limited cellular connectivity. The popularity of the videos with community partners has formed new partnerships for future VR video products in the community and region. In conclusion, VR videos are a viable format for Extension Education, especially to reach youth and other technologically savvy individuals.

CREATING EXCITEMENT ABOUT BUYING LOCALLY GROWN PRODUCE AMONG YOUTH

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The Washington County Junior Farmers market program encouraged students and parents to buy produce locally and to increase the consumption of fruits and vegetables in today's youth. Nationally, Ohio ranks 6th in child obesity among 10 – 17 year olds (18.6%) and nearly 40% of Ohio adolescents report consuming fruits and vegetables less than one time a day. The farmers market is a fun and exciting social event that differs greatly from the grocery store experience. The goal of the Junior Farmers Market is to give students an opportunity to experience this excitement and associate it with fruits and vegetables to establish long-term healthy future consumers and having these consumers buy their produce locally. The program was implemented throughout the county with a focus on 4th graders. Each student was given five dollars to purchase fresh local produce at a mobile farmers' market booth during school hours. Three additional booths were implemented which included: "Healthy Soil Equals Healthy people" Soil and Water Conservation District booth, SNAP-Ed's taste tasting both provided healthy samples for students to try while offering recipes to take home and share with their family, and finally FCS (OSU Extension) provided a "Water First for Thirst" booth where students sampled infused water while learning about sugary beverages. Surveys were distributed to students to be completed with their parents. The results are as follows: 99% of the students were excited about the Junior Farmers Market, 93.1% of the students consumed their produce, 84.5% could identify more fruits and vegetables, 79% were more excited about eating fruits and vegetables, and 81% of the parents planned to shop at the Farmers Market. In summary, 313 4th grade students had the opportunity to make healthy choices, consume fruits and vegetables, and learned about farmers' markets and buying local. President of the local farmers' market said there was a significant increase of customers after the program was implement, especially parents with children, until the end of the growing season. The program did exactly what it was intended to do: create excitement among youth for buying local and increase fruit and vegetable consumption.

DO YOU HAVE FOOD $ENSE: BUILDING HEALTHY, RESILIENT COMMUNITIES THROUGH SUSTAINABLE PARTNERSHIPS

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The purpose of the "Do You Have Food $ense Program" is to develop a collaborative partnership between Ohio State University Extension Impact Areas, a faith-based Mobile Food Pantry and a local health care provider to address the food insecurity, health disparities and social determinants of health. The methods used to accomplish the program include building resilient, sustainable partnerships by uniting partners and Extension Impact Areas highlighting common missions. Learn how community partnerships can be used to influence and change health behaviors among limited resource audiences by supporting each other's missions and collaboration. The county Demonstration Community Garden is an integral component of the program and teaching/service strategies will be shared. Produce grown is used in educating participants, 205.5 pounds were raised in 2018 for program use. Food $ense program will be taught via an interactive PowerPoint, lesson demonstration and participant questioning session. The aim of the program is to educate participants from a faith-based Mobile Food Pantry about the importance of planning, even growing, and preparing nutritious meals. Instruction is based on the principles from MyPlate Food Guide and incorporates information from Extension's SNAP-Ed lesson plans. The informal atmosphere of the sessions encourages participants to openly share personal experiences about providing and preparing food for their own families while reducing food insecurity. Teamwork is emphasized between Extension Educators (FCS & ANR) and SNAP-Ed program staff building a program delivering a meaningful message that participants can immediately put into practice. The local health care provider performs bio-metric screenings at each monthly session. Evaluation includes both pre and post-assessment data; both knowledge and food preparation skill gains. Participants documented success stories include; tasted new foods and incorporated them into weekly family menus, now I read labels and perform physical activity more frequently. In conclusion, participants practiced canning skills learned during class in their home kitchens; dialogue about personal cooking experiences; tasted new foods and incorporated them into weekly menus; prepared new recipes using healthy foods in order to improve nutrition and food budgets; requested continuation of classes during future pantry sessions; learned the value of "Living a Healthier Lifestyle" through personal testimonies.

EVALUATING IMPACT OF C.O.R.N. NEWSLETTER

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Poster URL: https://www.nacaa.com//posters/uploads/1756.pdf

The OSU Extension Agronomic Crops Team is a multi-disciplinary team of extension educators, state specialists and researchers from OSU Extension, The Ohio State University and Ohio Agricultural Research and Development Center. The team meets via conference call weekly to produce the Crop Observation and Recommendation Network (C.O.R.N.) newsletter, available online or via email. Currently, there are 4,826 subscribers. The purpose of the newsletter is to provide accurate, timely information; educational opportunities; and share research projects that address the needs of Ohio's agronomic crop industry. The goal of the newsletter is to provide Ohio's crop industry with the quickest, most accurate information to deal with changing crop conditions. The content of the newsletter includes in-season pest observations and predictions, weed control options, insect and disease control information, production technology, crop development issues, integrated pest management guidelines.

Since its inception, the newsletter was only formally evaluated once. The need to re-evaluate the newsletter was identified as a priority in 2018. An online survey asked 7 to 25 questions depending on the occupation of the respondent. Questions about agronomic practices were included. The survey was distributed to 4,286 individuals over email. The response rate was 20.56% (N=992). The results of the survey found that the majority of the respondents found the newsletter content to be very useful or extremely useful (N=738) on a wide variety of subjects including insect, disease, and weed control; fertilizer and nutrients; and crop planting and production. Nearly 20% of farmers indicated the value of information from the newsletter was $10 per acre for corn. 6% of crop consultants agreed. Another 15% of farmers and 12% of crop consultants valued the information at $11 to $20 per acre. The farmers and crop consultants that responded indicated they produced or scouted 807,651 corn acres in 2017.

Feedback indicated a number of respondents would like to see additional information on small grains, soil temperatures, and the incorporation of more technological formats such as webinars or short videos into the newsletter. Overall, responses to the survey indicated subscribers found the newsletter useful to their operation and provides economic value to farmers.

FIFTH GRADERS GET A TASTE OF GARDENING

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Poster URL: https://www.nacaa.com//posters/uploads/1755.pdf

The Garden Tribe began as a collaborative project among the Piqua Chamber of Commerce, OSU Extension, Piqua City Schools, City of Piqua, and many volunteers. The aim of the project was to not only revitalize an empty lot of land, but to teach students the ease and rewards of growing their own food. In just six months, over $20,000 was raised, beds were constructed and students began to plant vegetables. Each fifth grade homeroom was assigned their own raised bed, which aimed to build a sense of ownership among the students.

The Miami County Master Gardeners provided four organized, educational lessons, which introduced or reinforced Ohio's 5th Grade Science Standards, specifically the life sciences focusing on ecosystems and living things. Utilizing a blend of personal experience and the Junior Master Gardener Handbook, lessons were designed and focused on plants, pest management, food webs, soil science, photosynthesis, and plant growth. The garden's design was not to simply teach science or math, but to really incorporate all aspects of learning through this exposure to the natural world.

Since beginning in 2017, over 500 fifth graders participated in each of the four lessons, along with a handful of science teachers, six school volunteers and approximately a dozen Master Gardeners. To date, no formal evaluation has been conducted. However, with the inclusion of this garden, the school earned the designation as "Best of Ohio – Connect to Nature School" which is part of Ohio's Leave No Child Inside Collaborative. Although behavior change was not formally evaluated, Master Gardeners observed students eagerly eating the vegetables grown. One volunteer recalled affectionately, "They attacked the spinach like grasshoppers! They didn't even wait until it was washed to try it!"

HELPING OHIO FARMERS & TAX PROFESSIONALS UNDERSTAND THE TAX CUTS & JOBS ACT OF 2017

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One of the greatest risks farm families face is tax management. One goal of the federal Tax Cuts and Jobs Act passed in December 2017 was to simplify taxes. While general simplifications were made, some would argue that farm taxes have become more difficult. This historical tax reform legislation made significant changes to equipment depreciation, like-kind exchanges, net operating losses, and created a new Qualified Business Income deduction. These changes prompted this team of professionals to develop a comprehensive outreach effort to help educate farm families and tax professionals. This educational effort included offering farm tax meetings across Ohio, conducting three webinars, teaching at 9 tax professional meetings, and authoring tax articles which were published on the Ohio Ag Manager web site (http://ohioagmanager.osu.edu). This poster will provide details of these programs and their impacts. To date, the team has taught 18 sessions for farm audiences reaching over 500 producers with an additional 337 individuals participating in the three webinars. The team also taught 816 attendees of the 2018 Ohio Income Tax Schools on the implications of these changes to farm taxes. These tax professionals prepare a total of 10,337 Schedule F tax returns. The team also conducted a 2 hour train the trainer session for 50 Extension Educators in attendance at the 2018 Ohio Farm Management In-service. Typical evaluation results showed substantial gains in knowledge by the participants. 100% of the participants in the 2019 farmer workshops reported the workshop helped to increase their knowledge of the key provisions of the Tax Cuts & Jobs Act of 2017 and how it may impact their farm operations. In addition, 96.9% indicated they felt more confident in their ability to communicate with their tax professional about farm taxes.

MAINTAINING MARKET ACCESS THROUGH BEEF QUALITY ASSURANCE: A TEAM TEACHING APPROACH

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Recent developments in the beef processing industry have led to a demand for Beef Quality Assurance training programs in Ohio. A cooperative effort by Ohio State University (OSU) Extension, the Ohio Beef Council, the Ohio Cattlemen's Association, and local markets and collection points has provided several opportunities for producers to become Beef Quality Assurance (BQA) Certified. A team teaching model was followed by three Extension Educators to certify producers in a tri-county region and neighboring counties through one cattle auction market location in Zanesville, OH. Auction managers were involved in initial conversations after market changes were made known to OSU Extension, which allowed for early and effective communication to clients by letters delivered from the business. All three instructors completed a train-the-trainer course in January 2018 in order

to begin offering classes in winter 2019 with a common curriculum. Beef Quality Assurance articles and events were also widely distributed through the OSU Extension BEEF TEAM electronic newsletter and individual county outreach. 1,014 individuals completed paperwork for certification over the course of six meetings from March 2018 to January 2019. Evening training sessions were scheduled for the night before livestock sales in order to allow for producers making deliveries to have a convenient training opportunity. Certification information was forwarded to the BQA state coordinator and the Ohio Cattlemen's Association for eventual transfer to the national database. Certified producers received a wallet-sized card for their records. More than 50 percent of participants were age 55 or older and 85 percent had a herd size less than 100. Producers traveled from 28 counties in Ohio and two counties in West Virginia. As of February 27, 2019, there were 7,331 certified producers in Ohio (personal communication).

SUPPORTING LOCAL FOOD COUNCILS, A WIN FOR EXTENSION

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Extension services around the nation support local food work via participation in Local Food Councils. Local food councils go by many names but are generally organizations comprised of community members from various sectors within the food system with the goal of connecting all of the aspects of a local food system (Connect for our Future, 2018). Summit County is an urban county of Ohio with a population of 541,000. It is an economically and racially diverse county with the growing pains of similar Rust Belt Cities with regard to population loss and food access in the city core (Akron) to suburbanization and farmland loss due to development on the fringes on county. In order to address these challenges, Ohio State University Extension Summit County was one of the convening members of the Summit County Food Policy Council (2008). Over the past ten years, the Summit Food Council (renamed in 2017) has morphed from a volunteer-driven group to a formalized organization housed within the Akron Canton Food Bank. The four strategic goals are:

- creating a culture of healthy eating
- supporting the development of a network of food entrepreneurs
- establishing public policies that support healthy local food, sustainable land use, and neighborhood and economic development
- creating year-round, affordable access to nutritious food for every resident

This done through four focus areas: access, education, advocacy, and entrepreneurship. Currently there are over twelve organizations represented on the advisory Board. Extension has participated in the growth of the Summit Food Coalition and has benefitted from the partnerships and relationship formed through participation. Involvement in local food councils help Extension tackle food system challenges that require multi-agency, interdisciplinary approaches.

SUSTAINING THE PERSON WHILE ESTABLISHING AND SUSTAINING THE FARM

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St. Vincent dePaul's Gateway Shelter for Men and the Shelter for Women and Families are the last resort for those seeking a safe place out of the elements but maybe perceived as a place of despair and defeat. Serving three meals a day to 400+ residents is a challenge especially when it comes to sourcing fresh produce in a food desert. In 2017 the University of Dayton's Behavioral Activation Project, an ongoing research project at the shelters, requested collaboration with Ohio State University Extension Montgomery County Agriculture and Natural Resources program to establish the Shelter Farm. The farm's objectives were to implement sustainable agriculture principles of economic viability, environmental sustainability, and social responsibility. Providing fresh produce to the shelter kitchen thereby enhancing nutrition of shelter residents without negatively affecting the shelter food budget was the economic viability component of the project providing over 1800+ pounds of fresh produce to the shelter kitchen. The environmental component was the re-purposing of the unused soccer field using best management practices to enhance urban soils productivity, use of water conservation techniques, and provide a landscape focal point. This component was accomplished by use of irrigation techniques, groundcover, and appropriate fertilizer applications. The social component was an opportunity for shelter residents to obtain job and social skills, and a place to reflect and relax. The flower and rock gardens leading to the production area were designed by shelter residents. Research findings study showed that, when shelter guests work alongside service-learning students on the farm, they experience decreased anxiety and improved wellness. UD Service-learning students who assist with the Behavioral Activation Project show reductions in social stigma, increased self-efficacy for community service, and awareness of self-privilege. Research findings can be used to develop a template for other homeless shelters across Ohio. Research on outcomes for shelter residents and service-learning students has implications for the homeless shelter system and educational pedagogy.

THE KNOX COUNTY AGRICULTURAL AWARENESS DAY

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Our society, both urban and rural, is far removed from agriculture. Knox County, a rural county located in Central Ohio is no different. According to the American Farm Bureau (2015), the average American is at least three generations removed from the farm. Today's youth and adults do not understand some of the basic agriculture production and cultural practices or how agriculture impacts their daily lives. To meet the challenges of the future, youth and adults need to have a basic understanding of agriculture. They need to be informed citizens, consumers, advocates, and decision makers. The Knox County Agriculture Awareness Day was developed to meet this task. Through this free, educational, hands-on event youth are able to learn the impact of agriculture in their everyday lives. All 4th grade classrooms and homeschool programs in Knox County are invited to participate in this program, which is held the second week in May. Once the students arrive at the fairgrounds they are assigned a Junior Fair Board Member as a guide for the entire day. In 2018, 537 students rotated through 24 stations manned by 63 volunteers. Each stations is allotted eight minutes for their presentation. Topics include: orchards, animal safety, llamas, goats, beef, Knox County Agricultural Museum, dairy, swine, drones, popcorn, farm bureau, forestry, composting, poultry, dogs, rabbits, recycling, pelts, maple syrup, and horses. Youth are engaged in hands-on activities at each station and are exposed to many items they have never experienced. This OSU Extension program has become the most requested program by our schools. Each year we are contacted in January for our event date so the 4th grade teachers can plan their spring academic calendars. Participation has grown from 273 students in 2012 to 537 fourth graders last year. Educational stations expanded from 16 in 2012 to 24 stations in 2018. Last year 100% of the students (537) indicated an increase in knowledge in at least one area of agriculture from the stations they attended. Seventy-two percent of the students (386) indicated an increase in knowledge in two or more areas of agriculture.

PALMER AMARANTH WEED WATCH IN NORTH DAKOTA

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Poster URL: https://www.nacaa.com//posters/uploads/1871.pdf

Palmer amaranth, a summer annual broadleaf weed, aggressively competes with row crops, causing reported yield losses from crop interference up to 91 percent in corn (Massinga et al., 2012) and 78 percent in soybeans (Bensch et al., 2003) in Kansas. Palmer amaranth education promotes proactive measures to reduce economic losses in North Dakota.

NDSU Extension developed a program to increase Palmer amaranth awareness and identification prior to August 2018, when Palmer amaranth first was identified in North Dakota. In August 2017, NDSU Extension's program team traveled to Nebraska to learn about Palmer amaranth identification and management in commercial fields from University of Nebraska Extension staff, local agronomists and farmers. Surveyed bus participants reported a 42 percent improvement in their ability to identify Palmer amaranth and a 42 percent improvement in their knowledge of Palmer amaranth management.

Teaching materials, including PowerPoint presentations, problem-based learning scenarios and other activities and resources, were developed based on experience gained from the Nebraska tour. A train-the-trainer workshop for NDSU Extension staff was held in January 2018 to review and introduce the teaching materials. Teaching materials were available to all NDSU Extension staff beginning in February 2018 for educational events. The program goal was to teach farmers, agronomists and other stakeholders across North Dakota how to identify and manage Palmer amaranth.

Extension staff created awareness about the economic loss potential caused by Palmer amaranth and weed identification throughout the 2017-18 meeting season. The estimated number of stakeholders reached through presentations was 7,942.

Of the 7,942, approximately 2,100 evaluations were received. Participants rated their knowledge before and after attending a Palmer amaranth educational event. Participant's awareness of Palmer amaranth competitiveness and adaptive nature increased from 46 percent to 95 percent. Their ability to identify the characteristics of Palmer amaranth increased from

39 percent to 85 percent.

Palmer amaranth was found in North Dakota by diligent farmers and agronomists knowledgeable of the identifying characteristics of Palmer amaranth from NDSU Extension outreach. NDSU Extension aided in confirming Palmer amaranth and providing eradication plans. NDSU Extension staff continues to teach the importance of Palmer amaranth identification and management.

FIELD PEA INDUSTRY DEVELOPMENT IN NEBRASKA

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Grain-type field pea (*Pisum sativum L.)* is a short season legume crop that may be grown as a fallow alternative in wheat-fallow or wheat-corn-fallow rotations throughout the semiarid Great Plains. Objectives of this project were: (1) To evaluate rotational costs and benefits of field pea such as water use, soil health, biodiversity and profitability; (2) To generate recommendations on variety selection, seeding depth, seeding rate, inoculant types, and herbicide programs necessary for successful field pea grain production; (3) To establish field pea crop in southwest NE through outreach and education and build a foundation for sustainable pulse industry development in Central Great Plains. Impact of this project was reflected at Field Pea Production Workshop conducted at Culbertson, NE (2016): The 85% of surveyed participants (92 attended) reported likely to adopt field peas in their crop rotations, 92% reported to be likely to adopt field peas management strategies, and estimating knowledge gain at $30/ac value. As a result of implementing field peas (2019 follow up survey): 35% of the farmers were able to reduce fertilizer and herbicide inputs, 62% increased bio-diversity on the farm, 49% better utilized available water, 35% lowered production risk, 41% increased farm profitability, 38% managed farm more sustainably, 57% improved soil and 19% reported improvements in all listed sustainability parameters. From 2014 to 2018 production of field pea in NE has increased from 30,000 to 80,000 acres and the number of certified seed dealers increased from three to seven. In addition the number of field pea processing facilities in NE has increased to three: New Alliance (Bridgeport, NE), Gavilon (Hastings, NE), and Redwood Group (Venango, NE). In summary, this project highlight the success story of establishing new crop (field pea) in a new growing region (Nebraska).

GROW YOUR FARM

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In 2017 and 2018, University of Missouri Extension offered outreach and education through the 2501 USDA Office of Advocacy and Outreach Grant "*Missouri Outreach and Assistance for Socially Disadvantaged and Veteran Farmers and Ranchers."* In order to assist socially disadvantaged, veterans, and women farmers and ranchers in owning and operating successful farms and ranches the innovative Grow Your Farm (GYF) curriculum was offered in select areas of Missouri, fully funded by the grant. The GYF is a complete farm and financial planning course designed for prospective farmers, beginners with some experience and seasoned farmers who want to make a "new beginning" with alternative farming methods. MU Extension specialists and experienced, innovative farmers teach the sessions.

The Grow Your Farm course helped identify and prioritize personal and family values and use them as the foundation for the farm mission statement and goals. Attendees learned how to "walk the farm" to assess the land and its facilities. They learned to evaluate the feasibility of particular farm opportunities. Coursework helped them understand the components of a business plan and create one. A session taught how to understand financial aspects of a business plan and review popular tools to manage financial records. Programming covered different types of agricultural marketing and drafting of a marketing plan. As the classes progressed, students became familiar with a variety of legal issues that pertain to farming enterprises. Finally, the opportunity to network with farmer presenters helped with lessons learned, social interaction and cultivating productive relationships. Eighteen Grow Your Farm courses (13 English, 4 Spanish and 1 Hmong) were held with 260 individuals attending. 70% of the participants started their draft business plan before the end of the 8-week course. Over 41% of participants applied for a USDA program. In all, 89% completed the GYF course with a draft business plan. Pre- and post-measures in English, Spanish and Hmong were used to measure knowledge gained with 95% change in behavior actions.

HORTICULTURE AND TURFGRASS PROFESSIONAL IMPROVEMENT COMMITTEE

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The NACAA Horticulture and Turfgrass Professional Improvement Committee is a part of the NACAA Professional Improvement Council, and is dedicated to professional development and recognition opportunities for NACAA members conducting extension education and applied research in horticulture. The Horticulture and Turfgrass Committee actively engages members with a diversity of horticultural interests, including general horticulture, commercial vegetable and fruit production, ornamentals and nursery crops, greenhouse management, turf care and green industry, home horticulture, and volunteer driven organizations such as Master Gardeners and Master Naturalists. The Horticulture and Turfgrass Committee emphasizes extension outreach to both rural and urban communities; topics and issues include crop production, plant diagnostics, specialty crops, water management, pesticide use, pest problems, landscaping and online education. The Horticulture and Turfgrass Committee organizes an annual NACAA AM/PIC horticulture pre-tour, coordinates the horticulture oral sessions at the AM/PIC, and provides a program of ongoing professional development and member support opportunities throughout the year.

SOIL TESTING IMPROVES YIELDS AND PROFITS

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Soil testing has guided farmers for many years in fertilizer and lime applications. A 2016 survey of Missouri farmers evaluated the motivations for soil testing and outcomes because of the use of soil testing results. About one third of a little more than 1000 farmers who received surveys completed the survey. Customers with smaller acreages indicated that they used soil testing most commonly to diagnose problems. Farmers with larger acreages used soil testing to increase yields. Larger farms reported soil testing increasing yields, decreasing fertilizer expenses and increasing profits. More than 50 percent of responses indicated that soil testing increased profitability of the farm. This percentage increased with farm size with 81 percent of farms over 120 acres reporting increased profitability. The average increase in profitability due to soil testing was 59 dollars per acre. All those participating in the survey reported high satisfaction with soil test reports. Respondents indicated that they received reports in a timely manner, the data was useful, that reports were easy to understand and that the recommendations were helpful. In 2018, the University of Missouri Soil Testing Laboratory processed about 15,000 field soil samples with about two thirds of those samples coming from University of Missouri Extension Centers.

TURFGRASS SOIL HEALTH: WHAT IS IT AND WHY IS IT IMPORTANT?

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Soil health can be broadly defined as the capacity of a soil to function collectively with environmental and production sustainability (Doran et al. 1994; Karlen et al. 2003). Predicting soil performance requires a better understanding of the relationship between various soil properties and the potential for improved turfgrass management. Mycorrhizae metabolize plant host carbohydrates by associating symbiotically with root systems binding soil particles together with root and hyphae to improve aggregate stability and mobilize nutrients from organic matter for translocation and produce substances to help ward of pathogenic microorganisms. Soil health research and understanding through newer scientific methodologies will continue to improve our comprehensive understanding on various production systems (lorenz et al., 2017). Cultural practices for managing turfgrass such as soil testing, accurate fertility application, selection of resistant varieties, mow height, Aerification for reduced compaction and pest monitoring also benefit soil health. These good cultural practices will improve soil life of invertebrates, earthworms, and microorganisms.

UNDERSTANDING THE ABCS OF USDA

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In 2018, University of Missouri Extension offered outreach and education through the 2501 USDA Office of Advocacy and Outreach Grant "*Missouri Outreach and*

Assistance for Socially Disadvantaged and Veteran Farmers and Ranchers". Understanding the ABCs of USDA is a workshop developed to introduce Socially Disadvantaged and Veteran Farmers and Ranchers to their local USDA service offices and the resources available to them through USDA and through MU Extension. This information helps those in attendance to understand and translate USDA acronyms and "bureaucratic" terms into plain language. The program helped to improve participation among socially disadvantaged and veteran farmers and ranchers in USDA programs by organizing and presenting the Understanding the ABCs of USDA informational workshops in linguistically appropriate formats. This face-to-face engagement opportunity introduced MU Extension professionals to state USDA specialists that work in the USDA service offices, and to the resources available through USDA. Through the contacts and interactions at these workshops and with follow-up technical and one-on-one assistance, relationships were created between USDA's local, state, regional, and National offices, MU Extension Specialists, and current and prospective farmers/ranchers who are socially disadvantaged or veterans. USDA personnel are included in the program, as presenters and as resources. An introduction to USDA gave participants knowledge of the opportunities for assistance. Disaster programs and Farm Loan Programs, including Microloans and other financing options through USDA were integrated into the outreach workshops. Special USDA programs and resources for veterans and socially disadvantaged attendees at these workshops was showcased. Missouri AgrAbility, who has a long history of working with new and beginning farmers/ranchers, educates Veterans about holistic employment and career options through this collaboration of farming and military communities. Over a 12-month period, Extension faculty conducted eight workshops: seven English and one Hmong, on "Understanding the ABCs of USDA Programs." As a result of this Project, 100% of those attended increased their knowledge of USDA Programs and the importance of business plan development

COLLABORATION: MINNESOTA'S SECURE PORK SUPPLY PRODUCER EDUCATION

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A Foreign Animal Disease (FAD) outbreak in the US would devastate the pork industry. Foot and Mouth Disease (FMD) and Classical Swine Fever (CSF) were long ago eradicated. African Swine Fever (ASF) has never occurred here; the US swine population is naïve to these diseases. In preparation for a Foreign Animal Disease (FAD) outbreak in the US, swine producers are asked to create a Secure Pork Supply (SPS) plan for their farm(s). The SPS plan is voluntary, but having a plan in place when an FAD outbreak occurs will allow continuity of movement of pigs and pig supplies.

In Minnesota, the Board of Animal Health (BAH) appointed veterinarian David Wright to coordinate the SPS plan effort with pig farmers. Minnesota's BAH collaborated with Dr. Wright to break the SPS message into seven manageable steps. The "Seven Steps to Participate" were offered through UM Swine Extension online to help swine producers create their own farm SPS plan.

In November & December, 2018, and January 2019, UM Extension and Dr. Wright hit the road to offer 12 face-to-face SPS producer workshops. Goals for the workshops included farmers' creation of their SPS plan with as little inconvenience as possible, and farmers leaving the workshop with their SPS plan complete. The three-hour SPS workshops provided swine personnel materials and instruction to complete farm-specific Secure Pork Supply plans for their herds.

Workshop attendance included swine producers, veterinarians, agency representatives, Extension personnel and feed company swine reps. The workshops led participants through the "Minnesota's SPS Plan: Seven Steps to Participate", which included creation of a farm map, completion of an enhanced written farm biosecurity plan, and familiarization with Foreign Animal Diseases and their symptoms. Most participants left the workshop with their plan finished or nearly complete.

Participation in the Secure Pork Supply program is voluntary and will help producers be prepared for continuity of business in the event of a Foreign Animal Disease outbreak. Post-workshop evaluations indicated that the SPS workshop attendees influence 6,278,900 pigs in Minnesota, Iowa, Nebraska, South Dakota, and North Dakota.

MICHIGAN EFFORTS TO PREPARE GROWERS AND LABS FOR THE PRODUCE SAFETY RULE'S WATER REQUIREMENTS

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The Food Safety Modernization Act's Produce Safety Rule is the first piece of federal regulation dealing with on-farm food safety for fruit and vegetable growers. One of the most contentious and confusing parts of the Food Safety Modernization Act's Produce Safety Rule (PSR) is around water testing. While there has been changes that allow growers

more time to find a lab to do the testing and an expansion in the testing methods available, finding the right lab still isn't easy. Both the hold time of quantitative *E. coli* tests and the technical specificity of these tests can create confusion for both growers and labs. It became apparent that an easily accessible, user-friendly lab map was required for growers. Lab information was collected through both phone calls and a Google Form, and the resulting database was visualized using Google My Maps. This map is easy to update, embed, and share, and growers can use the interactive map to both find a lab and see if it offers the right services. The map will lower the barrier to compliance by allowing growers to plan their trips to the FSMA-ready lab that is closest to them. The map has been viewed over 5,000 times since its launch in April 2018, and 8 states have duplicated our efforts. We also made an effort to educate labs about what the PSR wants from growers, allowing the labs to better field calls and prepare for an influx of testing requests. This effort included an MSUE article for labs to share with staff members and 3 talks at lab association meetings.

RESPONDING TO LIVESTOCK TRANSPORTER ROLLOVER ACCIDENTS TRAINING

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Poster URL: https://www.nacaa.com//posters/uploads/1856.pdf

Millions of animals are transported weekly across the United States for various reasons. With frequent livestock transportation accidents in the news, it is imperative that first responders, along with the livestock industry to be prepared to respond effectively to these situations. Having access to the proper equipment and tools needed when an accident involving livestock occurs, along with a network of trained responders who can be called to take action are two key components for successfully managing these chaotic situations.

Being prepared for the unexpected is critical to the response success in accident situations. Proper emergency response planning and training are key components to this success. Those involved in the transportation process and those that would be responsible for responding to an accident need to be trained to properly coordinate solutions to transportation accidents involving animals. Most first responders lack training in handling large livestock and may not be familiar with aspects of farm animal behavior, livestock trucks, euthanasia methods and the many different people who need to be notified and involved in the response. Improperly handled livestock, especially those uncontained, can be a risk to responders, the public and a company's public relations.

The recent Responding to Livestock Transporter Rollover Accidents Training was impactful with results from the evaluation by participants indicating that the program created awareness and taught/refined a skill set needed to respond to accidents with animals. Over 90% of attendees indicated that they not only learned a skill from attending but would also be sharing this information with their associates that could not attend. Individuals that attended the indicated that they would like to see these types of programs offered in the future, localizing opportunities to allow for the majority of responders to receive training. Furthermore, participants and partners of the program such as County Farm Bureaus have followed up requesting MSU Extension's assistance with developing plans to respond to such emergencies.

WORKING SMARTER, NOT HARDER: USING INNOVATION TO MEET GROWING SOIL TESTING DEMAND FROM GARDENERS

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With a potential gardening audience of almost seven million Michiganders, the needs for soil testing and easy-to-understand, environmentally-sound recommendations are daunting to horticulture and agriculture educators. To address this challenge, the MSU Soil Testing Team turned to technology to increase capacity. As a result, the Soil Test Self-Mailer (STSM) and the MSU soil test interpretation website (homesoiltest.msu.edu) were developed. The secure, accessible website and STSM are two components of the MSU Soil Testing Services for Gardeners. The collective components educate the gardening public about the importance of soil testing and fertilizing plants, while protecting water resources. Several key elements of the user-friendly services include convenient

access to STSMs through online purchase or at local Extension offices, convenient submission of soil samples to the MSU Soil and Plant Nutrient Lab, and a web-based infrastructure to automate custom, plant-specific fertilizer recommendations. Other important support elements are online fertilizer and area calculator tools, relevant tips sheets, email communications with results, and text-ready messaging to ensure that the client opens and receives the email message. Additionally, a group of specially-trained Extension Master Gardeners provide one-on-one support, as needed. The number of samples submitted has steadily increased over 30% in the past 6 years, with 3,201 gardeners in 2018 utilizing the MSU soil testing service. The improved MSU Soil Testing Services for Gardeners reduces staff time involved in making fertilizer recommendations, increases accessibility of soil testing to clients statewide, and improves customer service.

MARSHALL COUNTY YOUTH CONSERVATION DAY

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Poster URL: https://www.nacaa.com/posters/uploads/1764.pdf

Today's youth are often disconnected with nature and therefore are also disconnected with the valuable natural resources that surround us, such as soil and water. Anyone can practice conservation whether young, old, live in town, or in the country. Marshall County's Youth Conservation Day aims to provide education to 6th graders in the county with hands on learning with hopes to provide youth with a passion for nature and conservation efforts. The goal of the day is to create awareness and appreciation for nature and for our natural resources. Students learned about erosion caused by water, stream health, pollinators, history of the area, why burning is necessary to prairie ecosystems, and native trees, plants, and animals through hands on activities like planting native forbs in a buffer strip.

Every school in the county brought their sixth graders to learn about conservation at the abandoned town of Irving, Kansas. Because this area used to be a town, students are able to see that non-native plants, that were once used in landscaping, can outcompete native plants.

Students rotated through eight different sessions throughout the day. Groups ranged from 15– 25 students and rotated every 25 minutes.

AGRONOMY IN THE FIELD: DEVELOPING AGRONOMIC SKILLS FOR WOMEN

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According to the 2012 Census of Agriculture, there are 32,167 women operators in Iowa, representing, 9,102,738 acres, of that group, 7,108 are listed as principal operators, representing 868,909 acres. While Iowa State University Extension and Outreach does not discriminate in agronomic training offered, some studies show women are more comfortable attending workshops designed for female attendance only. Agronomy in the Field is a series of educational workshops for women landowners, farmers, and agriculture service providers to educate women on production and land management to make wise, sustainable decisions using knowledge, experience, and research-based information from experienced women farmers, landowners, and Extension professionals as instructors and leaders.

A cohort learning approach has been used to enable participants to learn from one another and because women often say it is a conducive environment in which to learn. Field session are offered during the growing session and in the winter, sessions are offered remotely via ZOOM, a web conferencing software. Following each session, a "recap" of things discussed in the field, current conditions and access to electronic publications that were distributed in the field as additional teaching and reference guides is sent out. This poster will discuss more about how Agronomy in the Field was developed and expanded in Iowa and the impact it has had on attendees.

CONVERTING A FACE-TO-FACE PROGRAM TO AN ONLINE COURSE: CHALLENGES AND LESSON LEARNED

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In 2015 and 2016 a face-to-face program called Weeds Week was developed and hosted at various sites across Iowa to help educate farmers and agribusiness professionals on how resistance develops to pesticides, specifically herbicides and how to manage herbicide resistance by developing more long-term weed management plans. The face-to-face program was a success, but there was interest in expanding the reach of this program by converting the face-to-face program to an online course. The goal was the create a course that was interactive and self-paced. However, converting a face-to-face program to an online course presented some challenges that provided learning opportunities, especially in making the online course interactive. The online course became available in the spring of 2018 and features narrated presentations, lesson activities, a virtual plot tour, and resources to develop long-term weed management plans to help delay the development of herbicide resistance. This poster will feature how this specific online course was developed and the lessons learned along the way to help other Extension Professionals interested in developing and offering online courses of their own.

WEEDS WEEK - A PROGRAM TO TEACH PEST RESISTANCE MANAGEMENT

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Poster URL: https://www.nacaa.com/posters/uploads/1876.pdf

The development of pest resistance to fungicides, insecticides (including Bt), and herbicides is well documented. In Iowa, waterhemp resistance to Group 2 (ALS inhibitor) herbicides became the norm in the early 1990's. Currently, these Group 2 resistant waterhemp are also exhibiting resistance to both glyphosate and to Group 14 (PPO inhibitor) herbicides more and more frequently. To educate farmers, dealers, and independent crop consultants on preventing and managing pest resistance, a working group of field specialists and campus specialists collaborated to develop a series of one-day workshops, called Weeds Week, to be delivered at five locations across the state in each of two consecutive summers. The curriculum has since been converted to an on-line course. (See the poster about the conversion to an on-line course.). The face-to-face workshops included lectures, worksheets, small and large group discussions, and plot tours. Learn what we did and how we did it and view the curriculum materials. Attendees who stop by will have full access to these materials and may use them as a starting point to develop their own programming.

AG RESEARCH CENTER PROVIDES 100 YEARS OF EXTENSION PROGRAM OPPORTUNITIES

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Pinney Purdue Agricultural Center (PPAC), one of eight ag research farms in Purdue University's system, celebrates 100 years of agricultural research in 2019. This northwest Indiana farm on soils unique to the area has also provided many opportunities for Extension-related programs over the years. This poster will review some of the rich history of both ag research and the opportunities to share that research in practical farming applications with producers. From the early years of crop and livestock research, including development of prize-winning red poll cattle, to more recent testing of agronomic practices of no-till and nitrogen management on sandy soils and high-tunnel vegetable production, PPAC has been an active participant in relevant research and has impacted the local community with Extension programming to share practical research results through reports, field days, workshops and diagnostic training sessions. This celebration of local research history will also demonstrate the relevance and importance of basic research and Extension programming for generations to come.

BEEKEEPING BUZZ IN PERRY COUNTY, INDIANA

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Poster URL: https://www.nacaa.com//posters/uploads/1850.pdf

Growing awareness of the decline of pollinators throughout the world sparked an interest in beekeeping nationwide. This coincided with the local food movement and an increased interest in products that are both local and natural. Additionally, honeybee colony losses are expensive both to beekeepers and to farmers dependent on honeybee pollination for their crops. Lost colonies of bees cost hundreds of dollars per hive in replacement bees and lost honey production. In 2014, Purdue Extension recognized a need for beekeeping education targeted at new and prospective beekeepers in Perry County, Indiana. Numerous new beekeepers populated the county. Local beekeepers traveled an hour to the nearest honeybee club to learn about beekeeping, and there were limited local resources for new beekeepers. To meet this need, Purdue Extension offered an introduction to beekeeping class, followed by additional beekeeping programming with hands-on training targeted at the specific needs of the beekeeping community in Perry County. This resulted in the implementation of monthly beekeeping educational workshops that are currently ongoing.

As a result of five years of regular Extension programming

on beekeeping, beekeepers in Perry and surrounding counties report an increase in the number of hives managed, improvement in hive management, and reduction in hive losses. Beekeepers also reported reduced expenses and increased income from hives as a result of the Purdue Extension beekeeping program in Perry County. Increased awareness of pollinators through the work of Purdue Extension influenced the Perry County Soil and Water Conservation District to apply for a $3000 pollinator grant, which in turn funded pollinator habitat development throughout the county.

FRUITFUL FUTURE FOR STUDENTS: SCHOOL ORCHARDS

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For years, school gardens have been considered as a way for students and their families to increase fruits and vegetables to their diets. Many school vegetable gardens are started and then falter over the summer due to the fact that staff and students are on vacation and maintenance crews don't know how to properly care for the garden. That is where the idea of growing an orchard arose. Orchards need care in March/April for pruning needs and maybe an occasional spray. Then they may need some water the first couple years during the spring and summer. They don't require weeding like vegetable gardens if mulch is applied as they can be mowed around. Therefore, they can be spring planted and then fall harvested with less care than a traditional vegetable garden.

This is being addressed as I was awarded a grant from Indiana State Department of Agriculture for a Specialty Block Grant that will be used to work with Munster High School. We are installing a block of fruit trees and small fruits at their high school during spring break. Classes are being involved in the making of the garden, such as art making a design for the garden and botany working on the care of the plants. There will be over spring break a workshop where students and parents will learn about fruits and how to grow them. They will be exposed to different types of fruit varieties as well that they may not have considered. There will be other programs during the summer and in the fall on care and harvesting fruits. Evaluations will be used during these meetings and classroom presentations to determine knowledge gained and if there are behavior changes that will be collected before the NACAA conference.

GARDEN SEED KIT PROGRAM GROWS ENTHUSIASTIC GARDENERS

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Poster URL: https://www.nacaa.com//posters/uploads/1863.pdf

Due to changes in modern lifestyles many individuals are removed from food production, whether from farm operations or backyard gardens. Individuals have a reduced understanding of the production, nutritional value, and economic benefits of locally-grown foods. This project had the following objectives: 1.) educating residents on successfully growing their own food, 2.) increasing locally-grown food, and 3.) bringing enthusiasm to 4-H and community members wanting to produce their own vegetables.

Since 2017 4-H members have been recruited to participate in a service project to sort donated seed packets and organize garden seed kits. In the past three years, 830 gallon-size kits have been created (42 different seed packets per kit valued at $78, or enough seeds to plant a small garden). Purdue publication materials for growing, harvesting, and exhibiting garden vegetables were included with each garden seed kit. To encourage local gardening efforts seed kits were distributed to 4-H members in ten counties as well as through libraries, food banks, the Office of Hispanic Ministry, Master Gardeners, and in-school educational programs. Methods of instruction included Purdue publications, 4-H leader and Extension Educator presentations, and Purdue on-line gardening sites.

Six months after receiving the seed kits participants were sent paper surveys on their use of the seeds. Surveys in 2017 and 2018 found that of those families responding (N=83), 98% reported planting some of the seeds; 5% had never before grown vegetables from seeds; 79% tried a vegetable they had never before grown; and 100% wanted to grow their own vegetables the following year. When surveyed for use of produce grown from seeds, respondents reported sharing with the following groups: 84% - family; 61% - friends; 11% - church; 4% - food bank; 19% - other; and 8% - not able to share. Testimonials included: "The kids loved this project. The kids planted the seeds and watched them grow, and then helped transplant them."; "Donated vegetables to law enforcement, city workers, postal workers, and library."; and "Great way to encourage better nutrition and education of other vegetables we never would have tried."

INDIANA SMALL FARM CONFERENCE: BUILDING CAPACITY AND NETWORKING FOR SMALL-SCALE FARMERS IN INDIANA

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Small farms, based on acreage, are significant in Indiana. Comparison of 2002 and 2012 U.S. Census for Indiana showed the number of farms with less than 180 acres increased from 42,722 to 43,773, while total farm numbers decreased from 60,296 to 58,695. This increase is due, in part, to people starting small-scale farming enterprises. Many are beginning farmers with limited knowledge of basic agricultural practices and limited connection to traditional farming communities. These farmers are seeking education and networking opportunities.

Since the initial Indiana small farmer and stakeholder gathering in 2011 and the inaugural Indiana Small Farm Conference in 2013, the conference has served as the annual educational and farmer-to-farmer networking event. Conference goals are to: 1) educate and increase awareness among attendees on a variety of topics; 2) increase adoption of best practices; and 3) create a space for networking and increase collaboration.

Each year, attendees complete an evaluation. According to 2017 results, 80% reported that they had shared relevant information learned with others. Most respondents (64%) had used the knowledge gained to help them start or improve their farm operation.

Purdue Extension's Indiana Small Farm Conference supports networking and is an opportunity for sharing new and practical information, and for connecting in a social way to develop and strengthen relationships among farmers.

SEPTIC ISSUES: A COLLABORATIVE SOLUTION

Rodgers, E.[1]
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Poster URL: https://www.nacaa.com/posters/uploads/1746.pdf

DeKalb County Indiana is like many rural counties with hundreds of septic systems not operating correctly resulting in water quality issues and problems with quality of life with raw sewage being dumped in to our ditches and streams. In 2009, DeKalb County Soil and Water Conservation District, DeKalb County Health Department, DeKalb County Planning Department, and Purdue Extension of DeKalb County joined together to start planning ways to help reduce this public health issue across the county. In the 10 years since the group began, we've involved many citizens across the county from septic installers to city planners to bankers to real estate agents to help educate and resolve some of the major issues. In 2013 a report was made identifying 19 areas of concern around the county and which municipalities could incorporate them in to sewer if it became available. Since then a new County Septic Ordinance has been adopted, 4 of the original areas of concern have been addressed, and overall communication between County and City governments has greatly improved. We have also hosted 5 educational sessions for homeowners on care and creation of their septic systems.

THE AGRICULTURE COMMUNITY ENHANCES THEIR TOOLBOX THROUGH PURDUE WOMEN IN AGRICULTURE WEBINARS

Nees, J.[1]; Heckaman, K.[2]; Hudson, N.[3]; Veenhuizen, A.[4]; Farris, E.[5]; Overstreet, B.[6]; Bouslog, L.[7]; Marlatt, G.[8]; Brawner, K.[9]; Alka, A.[10]; Vansickle, B.[11]
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[5]Extension Educator, Purdue Extension, Huntington, IN, 46750
[6]Extension Educator, Purdue Extension, Rensselaer, IN, 47978
[7]Extension Educator, Purdue Extension, Cayuga, IN, 47928
[8]Extension Educator, Purdue Extension, Rushville, IN, 46173

[9]Extension Educator, Purdue Extension, Vernon, IN, 47282
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Poster URL: https://www.nacaa.com//posters/uploads/1792.pdf

Indiana farmwomen and women through the United States are continuing to take a larger role in managing and owning farming operations and diversified agriculture enterprises. To help these women be successful in decision-making, have sound financial management and maintain overall emotional well-being in their operations, educational opportunities directed to this specific audience are necessary. Women involved in agriculture continue to ask for risk management, diversified production, horticulture, and family resource management as programming.

The Purdue Women in Agriculture Team began hosting monthly webinars in 2015 to provide farm families and agribusiness personnel with learning opportunities they could participate in while at home or on the job. Utilizing feedback from surveys and the Midwest Women in Agriculture Conference, topics of interest were identified. Since 2015, the Purdue Women in Agriculture Team has hosted 37 webinars, which has resulted in 785 live viewings, 802 recorded viewings, and 382 downloads. Through follow-up surveys, individuals have indicated they have used the information to begin the succession planning process, practice invasive species control, identify common diseases in houseplants and shrubs, and organize business papers and set up appointments with legal professionals to get their paperwork in order.

Quotes from participants indicate the personal impact the webinars made. One participant stated, "He (John Baker, Iowa State University Beginning Farmer Center) really hit on some of the main points that I've been worried about for years and gave practical ideas/recommendations that will allow me to approach my father about this subject with a bit more confidence. The facts about equal is not always fair really hits home with my situation." Likewise, another participant stated, "The ladies who ran the webinar did a wonderful job of covering common signs and symptoms to look for in plants and shrubs, and I was able to diagnose my plant – my beloved Limelight Dracaena, and start treating it the same day. Houseplant diseases sound like a funny topic for a webinar until it's your plant that needs help!"


NATIONAL ASSOCIATION
COUNTY AGRICULTURAL AGENTS
RESEARCH
EXTENSION
LAND GRANT COLLEGE
NACAA

Award Winners

2019 NACAA
104th
Annual Meeting
and
Professional Improvement Conference

Fort Wayne, Indiana

Agriculture Awareness and Appreciation Award

National Winner

De Broughton
Regional Specialized Agent
UF/IFAS Extension
Suwannee

Broughton, D.*[1], Fenneman, D.*[2], Hochmuth, B.*[3], Athearn, K.*[4], Barrett, C.*[5], Carpenter, B*[6], Glass, B.*[7]
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[2] UF/IFAS Madison County Extension Agent, University of Florida, Madison, FL, 32340
[3] UF/IFAS Regional Specialized Agent, Vegetables, University of Florida, Live Oak, FL, 32060
[4] UF/IFAS Regional Specialized Agent, Agricultural Economics, University of Florida, Live Oak, FL, 32060
[5] UF/IFAS Regional Specilaized Agent, Water Resources, University of Florida, Live Oak, FL, 32060
[6] Young Farmers and Ranchers Chairperson, Madison County, Florida Farm Bureau, Madison, Fl, 32340
[7] Young Farmers and Ranchers Chairperson, Suwannee County, Florida Farm Bureau, Live Oak, FL, 32060

The Suwannee River Valley (SRV) of North Florida encompasses several counties and is home to over 8,800 farms. Due to increasing regulatory pressure surrounding agricultural activities taking place within the SRV of North Florida, an Agricultural Awareness Extension Program was developed to help educate state and community leaders. A needs-assessment from local growers and input from stakeholders helped guide the team effort in delivering the type of information needed to the target audience to generate agricultural awareness and impact. Educational topics of the programs included Best Management Practices (BMPs) being utilized by producers, and highlighting the importance of agriculture to North Florida's economy. Methods included offering two educational Lunch and Learn Programs for community decision-makers and one State Legislators Tour of Suwannee Valley Agriculture. A total of 102 attended the Agricultural Awareness Extension programs during 2018. Approximately 82% of attendees increased their general awareness of agriculture within the Suwannee River Valley, and 83% improved their knowledge of agricultural conservation practices being done in the region after attending all of the Extension programs in 2018. Also, 73% of the agricultural awareness program attendees agreed to change their behavior by purchasing more locally grown farm products. A positive, unintended outcome was the utilization of an educational video developed by the Extension team by other stakeholders. In total, nearly 1,600 people viewed the video in formal classroom-style trainings and meetings. The video was shared via social media by various agricultural supporters a total of 46 times with a reach of over 9,600.

The following videos were created to enhance the Agricultural Awareness Extension Programs of 2018: Farming and Conservation Practices in the Suwannee Valley Agriculture in the Suwannee Valley North Florida Research and Education Center-Suwannee Valley

National Finalists

Edwin M. Lentz
Extension Educator and Professor
The Ohio State University Extension
Hancock County

Lentz, E.M.*[1]
[1] Extension Educator and Professor, The Ohio State University Extension, Findlay, OH, 45840

Hancock County is located in northwestern Ohio. Population is approximately 75,000. About two-thirds of the residents are urban and one third rural. Over half of population resides in Findlay. Manufacturing, distribution centers, and agriculture are its main industries. Eighty percent of the county is cropland. Corn, soybean, and wheat are the main crops. Most of the county residents are not aware of the day-to-day activities in agriculture and are vulnerable to misinformation and misconceptions about agriculture production. A daily radio program, called *Ag Talk,* and a weekly newspaper column, called *County Agent,* delivered agricultural information to the community to increase awareness of the industry. In addition to media, the public participated in programs to observe the day-to-day operations of agriculture. Creation of a pamphlet showed the economic importance of agriculture to the local community. Seventy thousand households heard Ag Talk. Twenty thousand homes in seven counties received the County Agent column. The Ag Tour allowed 55 participants to see what agriculture was doing to be profitable, environmentally responsible, and insuring the health and well-being of livestock. The Farmers' Share Breakfast allowed 320 individuals to learn about the county's agriculture heritage and economic importance. Future leaders of the community learned about the importance of agriculture to the local economy by participating in Hancock Leadership's Ag Day. In summary, residents of Hancock County have become more aware of agriculture by the use of media and programs that occurred throughout the year rather than relying on a one time big event.

Chuck Talbott
Associate Professor
WVU Extension Service
Putnam

Talbott, C.*[1], Jett, L.*[2], Rahman, M*[3], Frank, D.*[4], Danilovitch, M*[5]
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[2] Associate Professor, WVU Extension Service, Morgantown, WV
[3] Associate Professor, WVU Extension Service, Morgantown, WV
[4] Associate Professor, WVU Extension Service, Morgantown, WV
[5] Associate Professor, WVU Extension Service, Morgantown, WV

West Virginia has consistently been in the top five states for obesity for more than five years running (Center for Disease Control, 2011). Our garden learning (GL) program offers a unique opportunity to address this risk factor. Gardening is a healthy activity in itself, but another objective of our school gardens is to introduce nutritious vegetables to our students. Research indicates that if students grow their own food, they are more apt to try it. Preliminary data suggests that (compared to non-GL schools) there may be an increase in consumption of new vegetables due to our GL program. Addressing childhood obesity with better nutrition is a major focus for USDA funding, and is also a good fit for our GL program. Furthermore, in moving towards a National Program for addressing Global Food Security, Food Deserts and Hunger, educators must first examine the food security potential of their own communities. As our farming population ages, the hope for Food Security in our counties and state will rely on **getting our youth excited about agriculture** and learning how to grow their own food. We are interested in enhancing agricultural literacy in our elementary schools while improving our students' scholastic ability. Students may improve their math and science skills using hands-on, experiential learning techniques. i.e. STEM and FOSS. In the first year of our GL program, George Washington elementary school showed significant changes in academic performance. Compared to the previous year's West Test scores (no gardening), our GL curriculum may have contributed to an increase in science and math scores by 19% and 13% respectively. Currently, we are introducing over 2200 students annually from 8 schools to our GL curriculum and good nutrition. After six years of teaching students how to grow their own food, harvest it safely, taste it (many for their first time), sell it to the BOE (over $4,000 so far) and consume it fresh in their school cafeteria……we are convinced that our GL curriculum should be introduced into all WV elementary schools. Our goal is to grow our next generation of WV farmers, horticulturalists, nutritionists and scientists.

Regional Winner

Stewart Runsick
County Extension Agent - Staff Chair
University of Arkansas Cooperative Extension Service
Clay

Runsick, S.*[1]
[1] County Extension Agent - Staff Chair, University of Arkansas Cooperative Extension Service, Corning, AR, 72422

Clay County has over 300,000 acres of farm land which produces rice, soybeans, corn, cotton, grain sorghum and wheat. The county has experienced declining population, declining school enrollment, the loss of industry and retail stores including Walmart. In order to promote agriculture and train youth to be productive future citizens, the Clay County Youth Leadership Program was developed. The Clay County Extension council, local elected officials, school administrators and volunteers planned and implemented the youth leadership educational program to address the issues of training youth and promoting agriculture. This program also brings visibility to the overall Extension Educational program and involves local leaders and volunteers. The agriculture awareness component of the program consists of the following tours: Riceland foods, Peco foods, Leonard Farms poultry and peanut production, Ahrent Farms rice and soybean production, Brown Farms corn and soybean production, First National Bank Ag lenders, Farm Credit Mid-south Ag lenders, MF Block insurance. The purpose of the tours are to introduce students to agriculture in Clay County. Develop an understanding of the importance of agriculture to the local economy. Make students aware of career opportunities in agriculture and instill an understanding how production, marketing, sales, services are all tied together and necessary for sustainability. Farmers and business owners are eager to participate by sharing their experience and talents. Eighty high school juniors have graduated from the program since 2015. Over $13,000.00 has been donated in program support. Local and state elected officials are involved with and support the program. Events and activities are shared and promoted in local newspapers and on social media.

State Winners

North Central Region	
Michigan	Phillip Durst
Wisconsin	Jerry Clark
Southern Region	
Kentucky	Curtis L Dame
North Carolina	Amy-Lynn Albertson
Tennessee	Ryan Blair

Excellence in 4-H Programming

National Winner

Amber Yutzy
Extension Educator
PENN STATE UNIVERSITY

Yutzy, A.*[1], Sandeen, A*[2], Strait, G*[3], Yost, C*[4]
[1] Extension Educator, PENN STATE UNIVERSITY, Huntingdon, PA, 16652
[2] Extension Educator, Penn State Extension, Indiana, PA, 15701
[3] Extension Educator, Penn State University, McConnellsburg, PA, 17233
[4] Extension Educator, Penn State Extension, Chambersburg, PA, 17201

Currently the dairy industry in Pennsylvania is struggling. Milk prices have been at a record low for four years and family farms are going out of business at a record number. It is very important for the future of family dairy farms to stay on the edge of new technologies and efficiencies to keep a farm profitable. It was discovered that youth involved in 4-H were not receiving the type of education they needed to advance their future on the family farm. This was due to more community clubs being formed and more youth living off farm. Penn State Dairy Educators decided to plan a day long hands on workshop that would provide education in areas such as dairy management, health and nutrition. The workshop offered four breakout sessions covering subjects such as reproductive anatomy, heat stress, forage quality, hoof trimming, dehorning etc., as well as, an afternoon "Amazing Dairy Race" challenge with 10 educational obstacles that was completed as a team. Over the course of 12 years this program has reached 1,471 youth from 13 different counties. We have seen the largest growth in our program numbers over the last 3 years. Due to this growth, we expanded our program to two new locations in different parts of the state. 95% (n= 1351) of participants increased knowledge in at least three dairy management topics that were presented. Many of the participants have indicated they implemented skills learned on their home farm as well. Word of mouth has been the most valuable form of advertisement for this program. Each year youth return to our program and bring new friends that have not attended before. In addition, we use email, local newspapers, brochures and state-wide agriculture publications to advertise. The impacts made at the program are important to that individual as well as their family farm. Information is shared by the youth with employers or family members and is implemented to increase overall farm productivity.

National Finalists

Bruce J. Black
Horticulture Educator
University of Illinois Extension, Unit 4 North

Black, B.*[1], Ebbesmeyer, Martha S*[2]
[1] Horticulture Educator, University of Illinois Extension, Unit 4, Sterling, IL, 61081
[2] 4-H Youth Development Educator, University of Illinois Extension, Sterling, IL, 61081

The University of Illinois Extension 4-H Youth Summer Gardens were held at six locations across Carroll, Lee and Whiteside Counties in 2018. This past year, a record high of 202 youth (182 participants' ages 6-12 and 20 participants' ages 4-5) from local summer programs participated. Since the initial Master Gardener and 4-H program started in 2003, this yearly summer program has expanded to reach various youth audiences including first generation 4-H families, minorities and low-income participants across Carroll, Lee and Whiteside Counties. Each week youth learned about specific garden topics in both a garden and classroom setting. Taught by University of Illinois Extension Master Gardeners and Extension Staff, hands-on activities focused on environmental science and horticultural science topics. Summer program coordinators commented that the yearly 4-H Youth Summer Gardens reinforced life skills (teamwork, cooperation, and communication) development and during the lessons, participants were more willing to taste at least one new vegetable that they grew.

Amy Heck
CEA - 4-H/Agriculture

Heck, A.*[1]
[1] CEA - 4-H/Agriculture, , Searcy, AR, 72143

The purpose of this educational program was to empower youth to become self productive members of society who are actively engaged in their communities. Youth were given opportunities to interact with local governments and local government officials. Youth/adult partnerships were created, members of the Teen Leader club educated their local 4-H clubs about youth in governance and 4-H leaders were trained. Citizenship activities and events were conducted throughout the year that encouraged youth to become engaged in their local governments. An educational component was incorporated into each club meeting. Through service learning activities youth learned how to give back to their communities. As a result of this program, White County 4-H had one state officer candidates, 1 state officer elected, 2 new Teen Stars, 4 new 4-H Ambassadors, 4 Congressional Award participants and two state scholarship winners. Ten leadership/citizenship trainings were conducted throughout the year. In addition,

a county wide officer training was conducted in which basic parliamentary procedure was covered as well as the roles and responsibilities of club officers and members. A government appreciation day as well as a county wide block party was held to increase 4-H awareness as well as promote citizenship and leadership in the county. Over 25,000 people were reached as a result of the citizenship and leadership programs in White County.

Nicole Bell
Agriculture and Natural Resources Agent
Universtiy of Kentucky
Marshall County

Bell, N.*[1]
[1] Agriculture and Natural Resources Agent, Universtiy of Kentucky, Benton, KY, 42025

Livestock is a major part of Marshall County Agriculture. Animal related sales makeup 68% of the total agriculture products sold in the county. Unfortunately, livestock related 4-H programming has been absent from the county for some time but after receiving many verbal requests from farm families, Nicole Bell, Marshall County Agriculture and Natural Resources Agent, acted. Even though Nicole has no appointment in 4-H, she volunteered to reestablish the Marshall County Kentucky 4-H Livestock Club. With her 4-H agent's blessing, Nikki started the club in the spring of 2018.

Regional Winners

Colleen C. Larson
Dairy Regional Specialized Agent

Larson, C.*[1], Butler, L.D.*[2], Crawford, S.*[3], Dunlap, A.*[4], Kirby, C.*[5], Moriel, P.*[6], Prevatt, C.*[7]
[1] Dairy Regional Specialized Agent, , Okeechobee, F, 34972
[2] Livestock Agent, UF IFAS, Okeechobee, FL, 34972
[3] 4-H Agent, UF IFAS, Okeechobee, FL, 34972
[4] Range Cattle REC, UF IFAS, Okeechobee, FL, 34972
[5] Livestock Agent, UF IFAS, Okeechobee, FL, 34972
[6] Assistant Professor, UF IFAS, Okeechobee, FL, 34972
[7] Livestock and Forage Economist, UF IFAS, Okeechobee, FL, 34972

Youth who are interested in agriculture have limited opportunities to gain hands-on knowledge of the various segments of the industry. Gaining exposure to various parts of the agriculture industry can lead youths to choose college degrees and/or careers in agriculture. Objectives: To increase knowledge of agricultural activities and careers. Methods: Extension agents, researchers, graduate students and research education center staff join together to provide an educational field day for youth in south and central Florida. Participants rotate through hands on activities, compete in a scavenger hunt, and interact with industry representatives at the trade show. A pre and post test were given to determine knowledge gain and provide feedback. Results: Of the 110 participant that took the evaluations, 96% found the information gained at the event to be useful. Knowledge gained on specific questions ranged from a 5% to 42% increase. Questions evaluated their understanding of technology, physiology, nutrition, management, agriculture careers and natural resources. The survey instrument asked students to rate the presentations as "awesome", "cool", or "okay". The students determined that 54% to 96% of the stations were "awesome" or "cool". Conclusions: The aging population of farmers and ranchers and those in the agriculture industry, require competent replacements. Providing youth with hands-on, pragmatic knowledge and experiences may lead them to consider a career in agriculture. The cooperation of multiple entities provides youth the most exposure to different types of opportunities in production agriculture, agriculture industry careers, and research and education.

Terry Kelley
Director & Tree Fruit Agent
North Carolina Cooperative Extension
Henderson

Kelley, W.T.*[1], Pettis, S.*[2], Sherrill, D.*[3], Blaedow, K.*[4], Worrell, H.*[5], Henson, N.*[6]
[1] County Director & Tree Fruit Agent, North Carolina Cooperative Extension, Hendersonville, NC, 28792
[2] Consumer Horticulture Agent, North Carolina Cooperative Extension, Hendersonville, NC, 28792
[3] Extension 4-H Agent, North Carolina Cooperative Extension, Hendersonville, NC, 28792
[4] Commercial Vegetable & Small Fruit Agent, North Carolina Cooperative Extension, Hendersonville, NC, 28792
[5] Extension 4-H Program Assistant, North Carolina Cooperative Extension, Hendersonville, NC, 28792
[6] Extension Livestock Agent, North Carolina Cooperative Extension, Hendersonville, NC, 28792

In collarboration with the Henderson County Public Schools, Henderson County (NC) Cooperative Extension has begun an annual Eighth Grade School Tour to enhance awareness and interest among our children in all aspects of the agriculture in their county. The inaugural tour took place in 2017 with 25 students from each of the four middle schools in the county. A follow-up tour in 2018 included 50 students from each school and was expanded to two days. The students were able to tour a local vegetable/cattle farm as well as a local research station. Extension faculty went to each school one week ahead of the tour to talk to the classes about careers in agriculture and what they would encounter on the tour. The tour fit well with the STEM curriculum of 8th grade students. They were able to tour a large vegetable operation and actually participated in a contest to pick beans and tomatoes which were donated to a local food bank. In addition they learned about

biodiversity, water quality, and advanced farming techniques including plasticulture, fertigation, soil conservation and stream bank preservation. They also toured the Mountain Horticultural Crops Research Station and got a hands-on look at plant breeding, tissue culture, soil nutrition, conservation tillage, plant diseases and proper research techniques. The local school system paid for the buses, provided lunches as well as the substitute teachers needed to cover classes while their teachers were on the tour. Cooperative Extension provided all the planning and personnel to lead the tour. Half of the students went to the farm in the morning and half to the research station. After they had lunch, they swapped locations. This event has so impressed the Henderson County Board of Commissioners that they plan to provide funds permanently for all 8th graders to participate in the future. Post-tour comments from teachers and students were overwhelmingly positive with students becoming more aware of where food comes from and more interested in careers in agriculture.

Tim Roberts
EXTENSION AGENT
UT Extension
Shelby

Roberts, T.*[1]
[1] EXTENSION AGENT, UT Extension, Memphis, TN, 38120

AgTech Summer Youth Program was established because: In the foreseeable future, agriculture related jobs will be in high demand. In Shelby County, 69% of the youth are educated in inner-city schools. Even in the suburbs of Shelby County, a very small percentage live on a working farm. This indicates that most youth are at least one generation removed from the farm. Many students would not consider a career in agriculture. Another was many companies state that today's youth are unprepared to be in the workforce. Youth also state they are not prepared to handle financial issues after high school.

The program provided youth the opportunity to work in an educational setting. The six-week summer work-study program paid $8.00 per hour. The students were employed for the summer with Agricenter International and UT-TSU Extension.

The curriculum included four skill development components and a community service component. Monday-Thursday included each of the components. Fridays were field trips. The components were: Agriculture and Business Technology, Life-skills, STEM Workshop, Workforce Readiness, and Community Service.

The program was limited to students finishing the tenth grade. Thirteen students were hired. The interns included inner-city and suburb students.

At the start of the program 92% knew little about agriculture and the same knew agriculture was not just farming. 100% were willing to embrace change. Eleven out of 13 considered themselves good team members but 54% thought they work best alone, with 100% being hands-on learners. Pre-surveys were given to understand the dynamics of the group. Some of quotes from the interns: "I have learned how to manage money, become a friendly person, and having a positive mental attitude. This program has definitely been helpful for me, and I can't wait to see how much it will pay off in the long run." "I have learned about agriculture and business. I also have acquired many skills that will be useful throughout my life." "I have learned many important skills that I can apply in my life. The top three most useful things I have learned from this program are people skills, budgeting, and soldering.

Jeannie Layton - Dudding
Extension Agent
Virginia Cooperative Extension
Giles County

Layton - Dudding, J.*[1], Pratt, Sarah*[2], Reasor, Laura*[3], Giles Extension Leadership Council*[4]
[1] Extension Agent, Virginia Cooperative Extension, Pearisburg, VA, 24134
[2] 4-H Agent, Virginia Coopertaive Extension, Pearisburg, VA, 24134
[3] FCS Agent, Virginia Coopertaive Extension, Pearisburg, VA, 24134
[4] , Virginia Coopertaive Extension, Pearisburg, VA, 24134

When do youngsters begin earning extra freedoms and less supervision? Middle school! Emergencies and safety hazards, healthy lifestyles, and decision-making for youth are priority issues brought to the agents from members of the ELC, the FCS Advisory Council, and identified through the 2013 Situation Analysis. This is why the Giles Extension Office and Extension Leadership Council host the "Sixth Grade Safety Celebration" as an interdisciplinary effort.

The target audience is sixth grade in Giles County. This age group are gaining new freedoms like staying home alone, learning to cook, and venturing out in peer groups. These youngsters help at home and engage in activities that involve equipment (lawnmowers and ATVs) with less supervision. Many recreational activities such as swimming, boating, and fishing, involve risk. To support these students as they explore young adulthood, we established this field day focused on safety. Students rotate through stations including food handling, water/swimming safety, domestic animal safety, home-alone safety, ATV/farm equipment safety, internet safety, and personal defense. They hear speakers, see demonstrations, participate in hands-on activities, and receive take-home items.

The main outcome is that students who attended will make better decisions when faced with potential safety hazards. They'll consider their own health, change detrimental behaviors

that put themselves and others at risk, and gain valuable life skills.

490 students and 98 adult volunteers have attended the event over three years. Out of 132 student surveys in 2018, favorite stations included Animal Safety, Swimming Safety, and Internet Safety. 100% of the teachers responded that the information was appropriate for the age group while being engaging. All 9 stations received a rating of excellent or good. Based on teacher and student surveys, gun safety is being considered for 2019. Seventy-seven seventh graders responded to a follow-up survey about the 2017 event. A majority of students agreed they had used information gained at Safety Day in the past year, though only 14 respondents said they had shared information they had learned with someone else. Thirty-eight students responded that they have used Safety Day knowledge to help them make a recent decision.

State Winners

North Central Region	
Ohio	Greg Meyer
Southern Region	
Alabama	Geni L. Payne
Mississippi	Melissa Morgan
Texas	Brock Fry

Search for Excellence in Consumer or Commercial Horticulture

National Winner

Mayerling Tatiana Sanchez
Commercial Horticulture Agent
Alachua

Sanchez, M.T.*[1]
[1] Commercial Horticulture Agent, , Gainesville, FL, 32609

A series of beekeeping classes were developed to fulfill the demand for beekeeping education in Alachua and surrounding counties in north-central Florida. **Objective:** Provide the technical knowledge and practical experience for beginner and intermediate beekeepers, to support their success during the first years. **Methods:** In collaboration with local beekeepers and the University of Florida Honey Bee Research and Extension Lab, four classes were developed: beginner beekeeping, swarm control, honey extraction, and pest and disease management. Each class has specific objectives focused on experiential learning and fundamental concepts for colony survival and wellbeing. Classes last from three to five hours and include educational materials, a short introductory presentation, and interactive, hands-on activities such as discussions, lab exercises, and hive demonstrations. Advertisement is done through listservs, local TV channel and newspaper, county blog, and Facebook. **Results:** Four hundred and thirteen people have attended the series in the last three years and 98% reported the series met or surpassed their expectations. Average knowledge gain was 32%, intention to adopt recommended practices for colony management was 93%, and average skill gain was 37%. A six-month follow-up survey (n=31) indicated that, based on the skills learned, 35% are monitoring for pest and diseases constantly, sample (27%) and treat (46%) colonies for Varroa mite control on a regular basis, always practice good swarming techniques (50%), follow label instructions when treating their hives with pesticides (68%), feed colonies during low nectar sources (54%), and reduce entrance during these periods to avoid robbing (42%). Implementing these practices contributes to a reduction in the number of colonies lost (46% indicated not having any losses in 2018), while maintaining strong and healthy colonies and protecting other apiaries from pests and diseases. **Conclusion:** This series has facilitated access to high-quality beekeeping education in north central Florida. It has been used as a model program to adopt in other counties and its success has drawn people from more than 12 surrounding counties. More than half of the participants have registered their apiaries through the Department of Agriculture, facilitating monitoring and securing a better future for the beekeeping industry at large.

National Finalists

Jacqueline Kowalski
Extension Educator
Ohio State University
Summit County

Kowalski, J.*[1], Neikirk, H*[2]
[1] Extension Educator, Ohio State University, Stow, OH, 44224
[2] Extension Educator, Ohio State University, Massillon,)H, 44646

Community gardening is 90% and 10% gardening (LaManda Joy). Extension can play a vital role in providing education, technical support, and leadership development training in order to empower community garden leaders to maintain and sustain community gardens as important assets in neighborhoods. In partnership with Let's Grow Akron, a 6-7 week Community Garden Leadership training program was developing in order to assist community garden leadership. Participants were recruited via social media, county websites and newsletters, and word of mouth. The following topics were covered during the training: 1. Community assessments and engagement 2. Site selection 3. Soil heath and composting 3. Good Agricultural Practices 4. Risk management 5. County and city rules, zoning

and liability 6. Integrated Pest Management 7. Creating a mission and vision statements for community gardens Over 75 persons have completed the Summit Community Garden Leadership Training Program from 2017-2019. Over the course of three training sessions 100% of participants agreed or strongly agreed that they knew more about community garden infrastructure, risk management, and asset mapping than they did before the training program Participants who completed the program secured over $19,000 of grant funding to support their individual community gardens.

Donna Coffin
EXTENSION EDUCATOR
UMaine Extension

Coffin, D.*[1]
[1] EXTENSION EDUCATOR, UMaine Extension, Dover-Foxcroft, ME, 04426

Wanting to increase the number of households that grow food gardens, consume food produced in their garden and recognize the UMaine Extension as a source of garden information, the county adopted the One Tomato (TM) project.

In the last three years 1,244 plants have been distributed in Piscataquis County. 16% of those receiving the plant had never gardened before and only 21% had only gardened for a couple of years. For 22% of the people, this was their first contact they had with UMaine Extension.

What started out to be a project to encourage county residents to grow their own food, by starting a garden with only one tomato seedling, has turned into a great method of also introducing people to UMaine Extension's garden resources including publications, website, social media and e-newsletters. It has also been a great way to get volunteers get involved in funding, distribution and review of the project through the years.

Amanda Sears
County Agent for Horticulture
UNIVERSITY OF KENTUCKY
Madison

Sears, A.*[1]
[1] County Agent for Horticulture, UNIVERSITY OF KENTUCKY, Richmond, KY, 40476

Madison County residents continue to be overweight (68%) and obese (39%) which exceeds the state average. Extension promotes healthy food choices and eating five or more fruits and vegetables each day to address weight issues and recede the risk of chronic disease The Madison County Extension Agent for Horticulture, other Madison County Agents and staff, as well volunteers (Master Gardener and Master Food Volunteer) conducted the Power of Produce (POP) program at each of the three farmer markets in the county targeting families with children. The POP event was an interactive educational booth at the markets where youth learned about vegetables and the local food system, sampled vegetables, and earned a $2 voucher to purchase produce at the market that day. They were able to earn an additional $2 by completing an activity related to gardening and the farmer's market. Over 400 people visited the booths with over 75 youth earning vouchers. They received recipe and information cards, and were able to learn more about Extension programs (with 78% of those completing surveys requesting additional information about upcoming programs). Of those completing surveys, 31% came to the market that day because of the POP program. Adults sampled recipes with 63% tasting a food for the first time. Nearly 80% of participants either definitely or would most likely purchase produce from the market because of the sample they tried. Farmers reported increased sales and foot traffic on POP days. Discussion will be conducted with market vendors and community partners about continuing and expanding the program next year.

State Winners

North Central Region	
Kansas	Abbie Powell
Southern Region	
Arkansas	Allison Howell
Georgia	Timothy Daly
Texas	Michael R. Hiller

Search for Excellence in Crop Production

National Winner

Amy Tallent
CEA-Agriculture
UofA Division of Agriculture Research & Extension
Prairie

Tallent, A.*[1]
[1] CEA-Agriculture, UofA Division of Agriculture Research & Extension, Devalls Bluff, AR, 72041

Prairie County, Arkansas houses over 275,000 acres of tillable crop land producing rice, soybean, and corn. Eighty five percent of these acres are irrigated. Row-Crop producer's in the county experience water shortages due to lack of rain fall during the summer months and with the alluvial aquifer

depletion. Producers looked to the University Of Arkansas Division Of Agriculture for ways to save water, time, and money. Workshops were put in place to educate the producer about cutting-edge software technology to make irrigating corn, soybean, and rice more efficient. Along with hands-on workshops, one-on-one consultation and applied field demonstrations were done in the county. The increase in producers' knowledge and use of these tools increased from 5% in 2016 to nearly 65% over the course of three years. As a result, the overall irrigation cost saving was over $2.7 million in 2018.

National Finalists

Brad M. Carlson
Extension Professor
University of Minnesota Extension

Carlson, B.M.*[1], Kaiser, DE*[2]
[1] Extension Educator and Extension Professor, University of Minnesota Extension, Mankato, MN, 56001
[2] Associate Professor and Extension Soil Scientist, University of Minnesota Extension, St. Paul, MN, 55108

Nitrogen Smart is a voluntary certification type program for farmers in Minnesota. The program teaches the basics of how nitrogen behaves in the environment and the dynamic nature related to climate and site. The course seeks farmer buy-in to University recommendations by presenting research and science, while empowering attendees to make their own decisions based on their conditions. Training is via a 3-hour in-person workshop that has been conducted 36 times around the state. Past attendees run over 600,000 ac. of land. Outcomes surveys show a reduction in over 2,000,000 lb.N applied annually through rate reductions. Over 75% of attendees have changed at least one practice as a result of attending, and the average attendee sees a profit via increased yield or reduced inputs of over $3,200. Over 90% of attendees say they would recommend attending to another, and 89% say they will maintain their certification.

Christopher Vann
Agriculture/4H Agent
UF/IFAS Extension
Lafayette

Vann, C.*[1], Wynn, K.*[2], Broughton, D.*[3], Moore, J.*[4], Vann, M.*[5]
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[2] Extension Agent, UF/IFAS Hamilton County Extension, University of Florida, Jasper, FL, 32052
[3] Extension Agent, UF/IFAS Regional Specialized Agent, Agronomic Crops, University of Florida, Live Oak, FL, 32060
[4] UGA State Tobacco Extension Agronomist, University of Georgia, Tifton, GA, 31793
[5] NCSU State Tobacco Extension Specialist, Assistant Professor, North Carolina State University, Raleigh, NC, 27695

Since the 1920's, the Suwannee River Valley of North Florida has been known for producing premium quality tobacco. Over the years a Tobacco Extension Program has evolved which assists local producers with current production practices, governmental regulations, and industry demands. Objectives: To (1) increase knowledge of improved cultural and production techniques and (2) encourage producers to incorporate new tobacco cultivars and pesticide spray programs. Methods: The Tobacco Extension Program consisting of an annual tobacco production meeting, an on-farm trial, and the Georgia-Florida Tobacco Tour provided tobacco producers the opportunity to gain knowledge of the most current and researched production methods. The success of this Extension program was due to the long-term culmination of traditional classroom Extension trainings with on-farm demonstrations, field consultations, and small group learning experiences. Results: For the past three years, approximately fifty tobacco producers, farm managers and stakeholders from North Florida and South Georgia have attended the annual tobacco production events consistently. Each year, program evaluations demonstrated that producers increased their knowledge after attending meetings. Exit evaluations showed 87% of the attendees (n= 26 of 30) evaluated at annual tobacco production meetings showed an increase in knowledge of disease management and best management practices. At the conclusion of the Georgia Florida Tobacco Tour, 94% (n = 61 of 65) of attendees who completed exit evaluations reported an increase in knowledge of cultivar selection. Impacts: Adopting recommended cultivars have increased yield while reducing the amount of required pesticide applications. This has generated an additional $50.00 per acre in saved production cost and increased yields resulting in $55,000 in the Suwannee River Valley. Conclusions: It was observed that producers attending the tour were more likely to interact with presenters when compared to the traditional classroom meetings. By executing the objectives through program activities, the Extension team was able to contribute to the sustainability of tobacco in the region. Producers have been eager to provide personal feedback on the impact the programs have had on their operations and engage with the Extension team regularly when faced with production problems.

Bill Burdine
Regional Agronomy Specialist
Mississippi State University
NE District

Burdine, B.*[1]
[1] Regional Agronomy Specialist, MISSISSIPPI STATE UNIVERSITY, New Albany, MS, 38652

Nematodes are estimated to reduce soybean yields in Mississippi by 3.6%. This pest caused a 2017 income decline of $38.5 million to the state's producers. Northeast Mississippi has been hit especially hard and several events were conducted to educate producers on nematode awareness, foliar symptomology, sampling techniques, and management schemes. Field days were hosted to demonstrate the damage nematodes can inflict. Producers witnessed nematode foliar and root symptomology which most producers had erroneously attributed to disease and nutrient issues. After an event, 28 of 29 attendees stated they had the same issues in their fields and wanted more information. A case study looking at sampling techniques and shipping methods demonstrated population counts can be affected by time between sampling and delivery to laboratory. Inter-generational hatching during this period can cause substaintial changes in population count analysis. Numerous presentations at multi-county production meetings help area producers realize how critical this pest can be. Producers are realizing the impact of nematode infestations on yields and are requesting additional Extension support regarding crop rotation, variety selection and seed treatments.

State Winners

Southern Region	
Alabama	William C. Birdsong
Kentucky	Curtis L Dame
Tennessee	Steven Michael Huff
Texas	Michael R. Hiller

Search for Excellence in Environmental Quality, Forestry and Natural Resources

National Winner

Travis Harper
Agronomy Specialist
University of Missouri Extension
Henry

Harper, T.*[1], Quinn, J. T.*[2], Trinklein, D. H.*[3], Edwards, A. D.*[4], Wiggins, C. E.*[5], Duever, V.*[6]
[1] Agronomy Specialist, University of Missouri Extension, Clinton, MO, 64735
[2] Horticulture Specialist, University of Missouri Extension, Jefferson City, MO, 65101
[3] Associate Professor of Plant Sciences, University of Missouri, Columbia, MO, 65211
[4] Education Coordinator, School of Natural Resources, University of Missouri, Columbia, MO, 65211
[5] Beekeeper and Writer, US Forest Service (retired), Rolla, MO, 65401
[6] Ecommerce Volunteer, University of Missouri Extension, Columbia, MO, 65211

Pollinators are crucial to wildlife food supply and many agricultural crops. Their populations are threatened. This program trains to protect them with six classes of three hours. The Master Pollinator Steward Program began as a partnership opportunity with Missouri State Beekeepers Association in 2014. Interest by the public was surging, led by concerns for honeybee hive survival rates and monarch butterfly population declines. A steering committee (comprised of Extension specialists, beekeepers, Master Gardeners, a monarch conservation collaborative, and Master Naturalists) developed this program over three years, with financial assistance from NRCS. Important activities for the program included completing operational guidelines, developing an Extension Webpage, presenting at pollinator conferences, and writing articles for two prominent 'bee' journals. Five publications were created to comprehensively address pollinators.

The program was modeled after Master Gardener program in delivery, using publications on a topic, with a matching presentation, in a classroom. Classes are augmented by hands-on activities, take home assignments or experientially influenced discussions. While each publication can 'stand alone', teaching all is preferred to improve comprehension. The culmination is the final publication, which delves into conservation and habitat issues. Materials relevant to this class (publication, PPT presentation, and hands on activity description) are the supporting documents.

Over 80 individuals were trained in 2018 and 60+ are already taking it or registered in 2019. It is hoped that about 200 will take it annually. Evaluations from 2018 demonstrated its potential: over 90% found it was very worthwhile attending, 100% found the publications of good value, over 90% found the PowerPoints well done, 100% felt the hands-on activities added value, and over 90% thought the presenters shared their knowledge well. When asked "Are you likely 'to do' anything with what you've learned?", over 80% said very likely or absolutely. Examples given were: I'm going to rehab property I recently inherited and needed a plan, my wife is making 3 acres pollinator friendly and now I can help her, as a Master Naturalist I'll advocate there and improve my 210ac farm, I'll now read labels pesticide labels and avoid killing bees.

National Finalists

Erin Frederick
Statewide Master Watershed Steward Coordinator
Penn State Extension
Statewide

Frederick, E.*[1]
[1] Statewide Master Watershed Steward Coordinator, Penn State Extension, Allentown, PA, 18104

The Penn State Extension Master Watershed Steward Program (MWS) transforms citizens into a managed, educated, organized volunteer force addressing local conservation priorities. A key strength of the program is its focus on collaboration, working with a broad partnership of local and state organizations, agencies, and government. People who want to 'make a difference' are given the information and the opportunity to do so, guided by local conservation professionals who organize, supervise, and engage the volunteers to make a positive impact in their communities and their water quality.

The program trains citizens in the basics of water and natural resource science. The MWS program delivers 40 hours of training to participants and connects them with ongoing volunteer opportunities. These opportunities involve working with conservation partners on outreach, education, and on-the-ground projects in their own communities. Since the program was first piloted in 2013, there are now over 302 volunteers in 11 counties. They have contributed 26,747 volunteer hours (valued at $660,383) and educated over 230,000 Pennsylvania residents about water stewardship.

The Master Watershed Steward program is accomplishing the following goals: (1) educating and empowering Pennsylvania residents to engage in conservation efforts; (2) educating the community about water and natural resources; (3) creating partnerships and leveraging resources to increase watershed restoration and awareness efforts; (4) assisting municipalities with MS4 requirements and (5) accelerating the implementation of stormwater best management practices.

Anthony J Savereno
Extension Agent
Clemson Extension
PeeDee

Barnes, J.M.*[1], Carmichael, D.B.*[2], Grimes, P.*[3], Heaton, W.C.*[4], Hook, M.W.*[5], Johnson, P.M.*[6], Krieg, A.*[7], Nanney, J.*[8], Phinney, D.M.*[9], Savereno, A.J.*[10], Sullivan, S.*[11]
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[2] Certified Wildlife Biologist, SC Department of Natural Resources, Columbia, SC, 29202
[3] Regional Game Bird Biologist, Tall Timbers, Tallahassee, FL, 32312
[4] State Wildlife Specialist, Clemson Cooperative Extension, Columbia, SC, 29229
[5] Small Game Project Leader, SC Department of Natural Resources, Columbia, SC, 29202
[6] Extension Agent, Clemson Cooperative Extension, St. George, SC, 29477
[7] Wildlife Biologist, SC Department of Natural Resources, Bishopville, SC, 29010
[8] Quail Focus Area Coordinator, Quail Forever, Whitmire, SC, 29178
[9] Team Leader, Clemson Cooperative Extension, St. George, SC, 29477
[10] Extension Agent, Clemson Extension, Bishopville, SC, 29010
[11] Wildlife Biologist, SC Department of Natural Resources, St. Matthews, SC, 29135

Populations of North American grassland bird species, including northern bobwhites (*Colinus virginianus*), have declined approximately 35-40% over the past 50 years. Most of this decline is directly attributed to loss of habitat through conversion of grasslands to agriculture and other uses, and also to changes in farming and land-management practices that leave little early successional habitat for nesting and rearing broods. There is great desire to bring back the bobwhite, but education is needed to help landowners understand how to create and restore critical habitat. In November 2017 and May 2018, Clemson Cooperative Extension Agents collaborated with SC Department of Natural Resources (SCDNR), SC Bobwhite Conservation Initiative, Quail Forever, and Tall Timbers Research Station to conduct 4 workshops focused on managing habitat for bobwhites. We presented the workshops in Hampton, Darlington, Orangeburg, and Edgefield Counties. Each workshop consisted of morning classroom instruction on topics including bobwhite biology and ecology, incorporating bobwhite management with agriculture and forest management, supplemental feeding, cost-share programs, use of prescribed fire, native vegetation management, and the SC Bobwhite Conservation Initiative. After lunch, participants and instructors traveled to nearby properties where agricultural

and forest management practices beneficial to bobwhite quail were being conducted. Instructors identified native plant species important to bobwhites and discussed why they are important as well as management techniques that support habitat establishment and increase. A total of 109 registrants took part in the 4 workshops, including landowners, land managers, agency personnel, educators, and other interested stakeholders. We sent electronic surveys to attendees following the workshops to gather demographic information, evaluate the effectiveness of the instruction presented in terms of knowledge gained as well as the likelihood of participants applying or incorporating that knowledge, and to determine how future workshops could be improved. All responding participants reported gaining knowledge as a result of having attended the workshops, and 95% indicated that they planned to implement the knowledge and skills gained. The combined acreage owned and/or managed by respondents was 14,719 (13,051 forest/1,668 cropland). As a result of the success of these workshops, we are planning 4 additional workshops in new areas for 2019.

C. Kim Chapman
Extension Livestock Specialist
UTAH STATE UNIVERSITY
Sevier County

Chapman, C.K.*[1], Steven Daniels*[2], Jody A. Gale*[3], Trent Wilde*[4]
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[3] Ag Economic Development Area Agent, Utah State University, Richfield, UT, 84701
[4] AG/NR Agent, Utah State University, Junction, UT, 84740

Quaking Aspen (*Populus tremuloides*) dominated forests are declining throughout the West from ungulate herbivory and overtopping by conifers due to insufficient stand disturbance (e.g., lack of large fires). Proper management of these forests by USDA-Forest Service (FS) has become difficult due to litigation by "environmental" groups seeking their own goals which do not always align with multiple-use management. The Monroe Mountain Working Group (MMWG) was organized as a collaborative group of 20 stakeholders who have been working for over seven years to develop and implement activities on Monroe Mountain (roughly 175,000 acres) in central Utah to restore aspen. USU Extension faculty played a critical role in the success of the MMWG by serving as members of the working group, designing and conducting original research, providing facilitation and staff support, strengthening relationships with ranchers, and serving as liaisons to county commissioners. The project has achieved significant successes including an infrastructure project to improve rest rotation grazing, completion of an Environmental Impact Statement for approximately 50,000 acres of mechanical thinning of conifers and prescribed fire, initial implementation of the EIS with 10,500 acres treated by the end of 2018, and on-going monitoring of treatment effectiveness. Included in the grazing infrastructure project (under a separate Environmental Assessment) was installation of 31 new water troughs along 28 miles of new pipeline, supplied by six new water storage tanks, and 13.5 miles of new fences. This was funded by $800,000 of non-FS money and made the rest rotation system fully functional. Of significance is the fact that all of the successes have been accomplished without any litigation halting the progress. The USDA has recognized the successes of the project with two significant awards; the USFS/NRCS Chiefs' Award and the USFS Chiefs' Honor Award, which were accompanied by significant multi-year funding, bringing the funds raised for this project to nearly $4 million. Extension continues to work in full partnership with all the stakeholders toward full implementation of the management guidelines set forth in the EIS and see the Quaking Aspen forests of Monroe Mountain restored to their former health and range.

Dallas Manning
EXTENSION AREA SPECIALIST

Manning, D.1
1Area Specialist Farm Management, University of Tennessee, Manchester, TN, 37355

In the early nineties a new software program for businesses became available. The name of this software program was QuickBooks Pro, and it was considerably less expensive than many other financial software programs on the market. Many of the nursery businesses in the area were purchasing the program and calling the local extension offices for help. They were requesting help primarily in company set up and report generation. These two requests became my primary teaching objectives in my educational efforts in QuickBooks that has lasted twenty-five years. In 2007 I changed my educational effort from QuickBooks Pro to QuickBooks Premier Manufacturing and Wholesale Edition. Over the last three years my educational efforts in teaching these skills to producers have continued. Many different teaching methods were used. Eight workshops teaching the QuickBooks financial software were held with forty-five participants attending. One hundred and one producers were assisted by office visits, phone calls, and farm visits. A publication was written and used as a teaching tool in this educational program. I prepared and gave presentations at University of Tennessee Inservice Trainings on using the QuickBooks software. I prepared an online educational module, "Using Records to Manage the Modern Day Nursery", to be used in the Advance Master Nursery Producer training. I gave presentations on QuickBooks at the state Pick Tennessee Products Conference, the Grundy County "Growing Your Farm Profits" program, and the Warren County Small Farm Conference. I was a member

of the teaching team that conducted seven value added QuickBooks workshops across the state with 110 producers attending. I prepared and presented the talks on the chart of accounts, items, payroll, inventory management, and sales tax for a value added business. The evaluations showed increased knowledge of company setup, report generation, in using the Quick Books Premier software, and financial management skills, and showed changes occurred in the business.

State Winners

Southern Region	
Arkansas	Rachel Bearden
Georgia	Mary Carol Sheffield
Kentucky	Linda Hieneman

Search for Excellence in Farm and Ranch Financial Management

National Winner

Nathan J Hulinsky
Extension Educator, Ag Business Management
University of Minnesota Extension
Minnesota

Nathan J Hulinsky*[1], David B Bau*[2], C Robert Holcomb*[3], Megan L Roberts*[4], Pauline A Van Nurden*[5]
[1] Extension Educator, University of Minnesota Extension, Saint Cloud, MN, 56301
[2] Extension Educator, University of Minnesota Extension, Worthington, MN, 56187
[3] Extension Educator, University of Minnesota Extension, Marshall, MN, 56258
[4] Extension Educator, University of Minnesota Extension, Mankato, MN, 56001
[5] Extension Economist, University of Minnesota Extension, St Paul, MN, 55108

"Taking Charge of Your Finances; How to Survive and Thrive!" is a University of Minnesota Extension educational program for farm business owners and managers who want to better understand and know their financial statements. This course "Survive & Thrive" covers the fundamentals of farm financial statements. With a case study farm, participants went through a balance sheet, income statement, and cash flow. Participants learned why each document is beneficial and what ratios are calculated on each statement. The course concluded with tips for improving farm recordkeeping and financial decision-making.

Workshops were six hours in length. Participants received a workbook for attending the workshop. The workbook contained the presentation and many other helpful resources. Presentations were interactive and face-to-face in nature. Key educational points of the program include; 1) the components and use of the balance sheet, 2) the components and use of the income statement, 3) the components and use of the cash flow statement, 4) the approach for organizing farm financial records and how to utilize those records, and 5) the use of financial tools in order to incorporate better internal management and financing decision making.

508 participants attended one of the 32 workshops presented between November 2016 and February 2019. Participants represented 415 farm businesses from 281 different communities. There were 16 local business sponsors, 1 regional organization, and 13 local Extension educators involved in marketing and implementing the program.

Participants self-reported increases in knowledge around all five of the program educational points exhibiting program outcomes. Participants were also asked to rate the overall workshop quality and usefulness of the subject matter to their work. 100% of respondents rated my overall knowledge and understanding of financial management increased as a result of attending this workshop. 94.5% were satisfied with the overall quality of the workshop.

National Finalists

Rachael Boyle
District Extension Agent, ANR
K-State Research & Extension
Phillips-Rooks Extension District

Bain, C.*[1], Boor, A.*[2], Boyle, R.*[3], Campbell, S.*[4], Martin, J.*[5], Rippe, A.*[6]
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[2] District Extension Agent, ANR, K-State Research and Extension, Great Bend, KS, 67530
[3] District Extension Agent, ANR, K-State Research & Extension, Stockton, KS, 67669
[4] District Extension Agent, ANR, K-State Research and Extension, Hays, KS, 67601
[5] District Extension Agent, ANR, K-State Research and Extension, Hill City, KS, 67642
[6] Extension Agent, Horticulture and Livestock, K-State Research and Extension, Oberlin, KS, 67749

In Northwest Kansas 69% of the counties have at least 20% of the population that is over the age of 65. There is also a large portion of the population in Northwest Kansas that is involved in agriculture. Many have poorly developed

succession plans which can severely strain relationships between generations, cause loss of income, and negatively impact local communities. The Preserving the Family with Estate Planning workshops was a multi-county effort across Northwest Kansas with Agriculture and Family and Consumer Sciences Agents involved in the planning. A total of 7 workshops were held over the past three years reaching 244 people from 35 different communities. Presentations and discussion with specialists was the main teaching method. Additional handout materials and publications were sent home with participants in a 3-ring binder. Following the workshop participants indicated that they intended to talk with their family about estate planning issues (91% reported) and they also intended to create or review their estate plan and complete or review power of attorneys and advance directives (90% reported). One particular participant commented, "It gave us the motivation to get started. I guarantee that we would not be to this point if it weren't for this workshop." Participants involved in agriculture chose to develop their estate plans to secure the financial future of their farm and/or ranch.

Stewart Runsick
County Extension Agent - Staff Chair
University of Arkansas Cooperative Extension Service
Clay

Runsick, S.*[1], Freeze, D.*[2]
[1] County Extension Agent - Staff Chair, University of Arkansas Cooperative Extension Service, Corning, AR, 72422
[2] County Extension Agent-Agriculture, University of Arkansas Cooperative Extension Service, Paragould, AR, 72450

The County Extension Council determined that a need existed in our communities in the areas of farm planning and financial management. As a result, the Clay and Greene County Extension Services planned and conducted a series of five farm management seminars beginning in January 2018. A planning committee of Extension specialists and local agricultural business leaders was formed to help develop the topics and speakers for the series. An online survey was created and sent to potential participants to provide feedback on meeting time and locations as well as topics. The audience consisted of agricultural producers, farm owners, and agricultural consultants in Clay and Greene Counties. The goal of these educational efforts was to help clientele increase profitability and sustainability while gaining an understanding of farm financial management. We educated 151 people with the average attendance of 30 participants at each session. As a result of the farm management seminar series, participants gained a better understanding of the following topics; developing a business plan, using crop budgets, crop marketing, the farm bill, crop insurance, environmental issues, new technologies, and estate planning. Participants were able to interact and develop a relationship with local leaders like Randy Kingston with Farm Credit Mid-south, Matt King with Farm Bureau, Marty Conley with FSA, Terry Gray with Delaplaine Seed, Attorney H.T. Moore and several others. They were able to meet new Extension professionals and gain confidence in communicating their issues with them. Participants left the sessions with a better understanding of complex issues and learned ways to be more profitable. 85% of the participants surveyed indicated they definitely will use the information learned at this event.

Nelson Brownlee
Farm Management Agent
NC Cooperative Extension
Robeson & Bladen Counties

*[1], Brownlee, N.
[1] Farm Management Agent, NC Cooperative Extension, Lumberton, NC, 28359

Livestock and Specialty Crop farmers need the ability to deal with risks that come with new attractive farming opportunities. This program was conducted during the summer of 2017 and showed how extension agents in Southeastern North Carolina assisted farmers in responding to the challenges. The goal was to assist livestock and specialty crop producers respond to marketing risk. Applied education consisting of three sequential workshops in both Lumberton and Clinton (6 total) supplemented by personal assignments and individualized counseling was delivered to 62 producers via a partnership of subject matter experts and local educators. The primary outcome was for participants to understand marketing principles well enough to establish a written goal for each decision variable of marketing risk specific to their farm, (product, price, place, promotion, place) delineate for each goal at least three specific actions to reach those goals, and commit to follow through and implement their personal marketing plan. Secondary outcomes included: 1) review existing risk management and marketing principles, practices, and tools to familiarize producers. 2) assist producers in conducting an effective marketing assessment of their own farm business. 3) inform producers of alternative marketing strategies. There were 47 participants who completed their personal marketing plans. These producers reported spending an average of 61.8 hours completing homework assignments. At the end of the reporting period 17 participants had accomplished all actions they had specified in their plans, and 32 had completed at least 10 tasks each. Follow-up evaluations with 31 of the participants, conducted during the winter of 2018-19, showed that 94% had increased their profits with the amounts ranging from $500 to $40,000. Some of the actions taken included: creating social media and personal web pages, developing a customer list, selling at local farmers' markets, adding new markets, and becoming GAP-certified. With these tools, local farmers can build the confidence they need to deal with future risks and opportunities.

State Winners

North Central Region	
Ohio	Christine Gelley
Northeast Region	
New York	Joan Sinclair Petzen
Pennsylvania	Robert C Goodling, Jr.
Southern Region	
Alabama	Ken Kelley

Search for Excellence in Livestock Production

National Winner

Adriane Good
Agricultural Extension Agent
Pondera

Good, A.*[1], Lewis, K.*[2], Woodring, K.*[3]
[1] Agricultural Extension Agent, Montana State University Extension, Conrad, MT, 59425
[2] Extension Agent, Montana State University Extension, Cut Bank, MT, 59427
[3] Agricultural Extension Agent, Montana State University Extension, Shelby, MT, 59474

Reducing death loss during calving is a high priority for Montana beef producers. Approximately 33% of all calf losses and 15% of breeding cattle losses are due to dystocia, according to the Cow-Calf Health and Productivity Audit. The purpose of this educational program was to educate ranch women in a welcoming environment on proper calving protocol, prevention of dystocia, and newborn calf care. Participants learned about calving difficulties, bull selection, newborn calf care, and preparing meals in advance for busy times on the ranch, like calving season. This workshop featured a local veterinarian and local Montana State University Extension agents giving presentations and including hands-on learning experiences for the participants. Calvin' Fever provided education and increased knowledge of identifying calving difficulties and assisting with delivery and care of calves. Workshop participants were multi-generational and were comfortable actively participating in this event. Assuming a 1% reduction in calf death loss as a result of Calvin' Fever, an additional 55 calves would be weaned from the group, creating approximately $55,000 additional revenue and resulting in an economic impact of approximately $1,800 per participant yearly. At the end of Calvin' Fever, producers completed a short, written evaluation that was both specific to each presenter and evaluated the day as a whole. Overall, participants rated Calvin' Fever as 4.8 out of 5, indicating high satisfaction among participants. Participants listed several new techniques they had learned that they planned to implement in the 2019 calving season to improve calf and cow health. Attendees of Calvin' Fever also gained confidence with their abilities to assist with calving.

National Finalists

Jennifer Bentley
Extension Dairy Specialist

Winneshiek

Bentley, J.*[1], Clark, Kim*[2]
[1] Extension Dairy Specialist, Iowa State University Extension and Outreach, Decorah, IA, 52101
[2] Dairy Extension Educator, University of Nebraska-Lincoln, Lincoln, NE, 68583

This project provided producers and employees with tools needed to make positive changes in calf health, and employee education, training, and retention. Many dairy operations hire Spanish speaking employees with little to no English proficiency and communication barriers develop between the dairy owner and employees. It is important that employees are fully trained in their native language for success of their job. Eleven on-farm training and educational workshops and four classroom workshops in Iowa and Nebraska were delivered to help employees who manage calves understand the "why" and "how" to test colostrum, importance of low stress handling, proper nutrition from birth to weaning, and hygiene for future animal performance. Forty-two demonstration videos were developed into 3-minute trainings in English and Spanish. Videos became available on flashdrives/DVDs and have been requested by over 300 producers from 20 states and 12 countries. Corresponding factsheets were developed and posted on ISU Extension and Outreach and University of Nebraska-Lincoln websites with over 3,000 downloads. Results of the evaluation received to date include a 50% increase in overall calf health, 85% of dairy owners and managers have written Standard Operating Procedures, 71% have seen an increase in employee retention, and 60% have saved money on medicine.

Long-term outcomes included re-evaluation of calf care standard operating procedures, better training and understanding of calf care, increased employee engagement and retention, better calf performance and increased profitability.

Erin Laborie
Extension Educator
Nebraska Extension
Furnas

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Nebraska Extension delivers a hands-on, interactive learning experience for students in middle school and high school utilizing two mobile beef labs across the state. This educational experience emphasizes the science of the ruminant digestive system, animal well-being, nutritional aspects of beef, and production phases from pasture to plate. Students have the opportunity to observe rumen microorganisms under a microscope and apply science principles using a ruminally fistulated animal. The overarching objective of the beef lab experience is to teach youth the value of beef production in Nebraska and advocate the production of safe, wholesome, high-quality beef. Since its establishment in 2011, 34,900 youth and adults have participated in the beef lab learning sessions. Seventy-eight percent of participants indicated a better understanding of how research animals are protected by research protocol and cared for as teaching animals. Over 95% of youth correctly identified that more than one-half of Nebraska's land mass consists of grasslands which grazing cattle turn into protein and other products for humans. As a result of participating in the beef lab, nearly 98% of youth recognized that Nebraska has the top three beef cow counties in the nation. Additionally, over 95% of students correctly identified that cows are ruminants with a four-compartment stomach. Seventy-five percent of participants reported learning that the cow and rumen microorganisms have a symbiotic relationship. When asked to identify the most important thing they learned, one student responded, "The cow provides the perfect environment for bacteria to break down cellulose in plants." Another participant commented, "Thank you for letting us have this opportunity to learn more about animal science and explore the cow's digestive system." As a result of participating in the beef lab, 66% of youth indicated an increased interest in animal science. The mobile beef lab provides a hands-on, educational experience that applies science-based concepts and aligns with school curriculum.

Taylor Davis
Livestock and Natural Resources Agent
Highlands

Davis, T.*[1], Moriel, P.*[2], Butler, L.*[3], Crawford, S.*[4], Kirby, C.*[5], Larson, C.*[6], Stice, B.*[7], Wiggins, L.*[8]
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[2] Extension Specialist, UF/IFAS Range Cattle Research and Education Center, Ona, FL, 33865
[3] Extension Agent Director/Livestock, UF/IFAS Extension Okeechobee, Okeechobee, FL, 34972
[4] Extension Agent 4-H/Livestock, UF/IFAS Extension Hendry, LaBelle, FL, 33935
[5] Extension Agent Livestock, UF/IFAS Extension Manatee, Palmetto, FL, 34221
[6] Regional Specialized Agent Dairy, UF/IFAS Extension Okeechobee, Okeechobee, FL, 34972
[7] Extension Agent Livestock, UF/IFAS Extension Polk, Bartow, FL, 33831
[8] Extension Agent Livestock, UF/IFAS Extension Hendry, LaBelle, FL, 33935

Reproductive failures in the beef female can be attributed to improper nutrition and thin body condition. To assist beef cattle operators in assessing the nutritional status of their herd and meeting nutritional requirements, the UF/IFAS South Florida Beef Forage Program (SFBFP) offered the Nutrition for Beef Females Program series and the Winter Supplementation Seminar in 2018. **Objectives:** The objective of this program was to increase knowledge of beef cattle operators in determining nutrient requirements of the herd and identifying and sourcing supplements, and to develop skills in assessing the nutritional status of the herd through body condition scoring. **Program Activities:** A total of six educational events were offered at five different locations throughout the fourteen South Florida county area represented by the SFBFP. **Teaching Methods:** Educational events were offered in a classroom setting and included an interactive slide series developed to assist producers in assessing body condition. Each program was conducted by County Extension faculty and seminars were led by Extension Specialists. A bound book was developed and published to supplement materials presented. **Results:** A total of 211 beef cattle operators attended the six nutrition education programs. These producers represent an estimated total 74,475 head of cattle and manage approximately 151,525 acres of grazing land. **Evaluation:** A post-survey assessed knowledge gain and adoption of practices, and a skill assessment measured body condition scoring skill. Survey results indicated that participants increased knowledge by 77% and that 94% of participants plan to implement one or more management strategies. A subset of responding participants were surveyed and indicated that they would expect to increase production in their herd by 6% as a result of adoption of management

principles presented. **Impact:** If participating producers adopt nutritional management strategies to improve reproductive efficiency and see only a 2% increase in calf crop, this could translate to 744,750 additional pounds of weaned calves and an additional $1,160,358 of additional annual income. By improving cow herd productivity, participating producers increase profitability. Producers that are profitable are better poised to maintain their livestock operation that contributes to a global economy and food supply.

State Winners

North Central Region	
Kansas	Christopher G Petty
Michigan	Phillip Durst
Ohio	Glen J. Arnold
Wisconsin	Mark A Hagedorn
Northeast Region	
West Virginia	Brad D. Smith
Southern Region	
Arkansas	Jennifer Caraway
Georgia	Tammy Cheely
North Carolina	Morgan Watts
Tennessee	Matt Horsman
Texas	Michael R. Hiller

Search for Excellence in Sustainable Agriculture

National Winner

Steve Morgan
County Extension Coordinator
University of Georgia
Harris/Northwest

Morgan, S.*[1], Speir, A.*[2], Hicks, R.*[3], Knight, C.*[4], Ray, L.*[5], Kichler, J.*[6], Gates, R.*[7], Meeks, C.*[8], Hancock, D.*[9]

[1] County Extension Coordinator, University of Georgia, Hamilton, GA, 31811
[2] Madison County Extension Coordinator, University of Georgia, Danielsville, GA, 30633
[3] Screven County Extension Coordinator -- Retired, University of Georgia, Sylvania, GA, 30467
[4] Bulloch County Extension Agent, University of Georgia, Statesboro, GA, 30458
[5] Morgan County Extension Coordinator, University of Georgia, Madison, GA, 30650
[6] Colquitt County Extension Coordinator, University of Georgia, Moultrie, GA, 31788
[7] Whitfield County Extension Agent, University of Georgia, Dalton, GA, 30720
[8] Houston County Extension Agent, University of Georgia, Perry, GA, 31069
[9] Extension Forage Specialist, University of Georgia, Athens,, GA, 30602

There are approximately 4 million acres of pasture, hay and silage in Georgia (10% of the state). The associated forage-based livestock systems have a farm gate value of over $1.4 billion. Forage quality is the key to a sustainable livestock operation. Good forage benefits livestock producers, and enhances the ecosystem services that healthy grazing lands provide for water infiltration, nutrient recycling, and carbon sequestration. The way in which a pasture or hay field is managed has a major impact on a producer's bottom line, as well as, the environment. With Georgia only having one extension forage specialist, the UGA Forage Extension Team was created to help advance sustainable forage production across the state. Team members, strategically located throughout the state, are a highly trained, specialized group of Extension Agents selected based on their knowledge of forages.

The UGA Forage Extension Team has the following objectives.
Annually, the Forage Team:
• Will offer The GrassMasters Program to 30 forage producers and 90% will report knowledge gain
• With respect to sustainability, the team will positively influence and affect long term behavior change on the operations of GrassMasters graduates by:
  o Reducing overstocking by 30%
  o Improve producer profitability by 10% whereby increasing sustainability

Since 2016, the UGA Forage Extension Team has made 2773 face-to-face contacts via invited presentations. Also in 2016, the team implemented the GrassMasters program. This 7-week series focusing on sustainable forage production has been held at six training locations statewide and has reached 183 producers face-to-face. Programs are taught collaboratively by UGA Forage Team members and USDA Natural Resources

Conservation Service staff. Through the quarterly newsletter, team members are making a regional impact by providing educational information to over 7200 forage producers and agribusiness professionals. The overall effectiveness of the UGA Forage Extension Program including the Forage Team and GrassMasters was assessed through an online survey during February and early March of 2017. Participants self-reported that their participation in UGA Forage Extension programs was directly responsible for increasing their net farm incomes by an average of 16.1% and net agribusiness income by 17.1%.

National Finalists

Greg Meyer
Extension Educator
Ohio State University Extension
Warren County

Meyer, G.*[1], Bennett, A.*[2], Corboy, J.T.*[3], Neal, N.*[4]
[1] Extension Educator, Ohio State University Extension, Lebanon, OH, 45036
[2] Extension Educator, Ohio State University Extension, Troy, OH, 45373
[3] Extension Educator, Ohio State University Extension, Xenia, OH, 45385
[4] Extension Educator, Ohio State University Extension, Owensville, OH, 45160

The Southwestern Ohio Beekeeper School has been a staple for beekeeper education in the Tri-State area for over 40 years. Media attention to the decline in bee numbers, combined with a renewed interest in sustainable agriculture and local foods has led to a spike in people wanting more information about keeping bees. Registration is capped at 350 people and in 2018, it was completely sold out in six days. The target audience for this school is beekeepers with less than five years of experience, which includes people that have never kept bees. In 2018, 28.3% of the attendees had never kept bees. A "Getting Started" series of four classes is offered to teach individuals about bee equipment, bee biology, installing packages and first year management. Evaluations indicated that 85.1% of people that had never kept bees where more likely to become beekeepers after attending the school. More advanced classes are offered for moderately experienced beekeepers that may have attended the school previously. Classes on seasonal management and honey bee nutrition teach basic animal husbandry skills for bees. Hive mortality and winter survival are major issues for all beekeepers. Classes on hive monitoring and pests are offered. Based upon the evaluation, 93.9% of attendees were more confident in their ability to keep bees and 93.6% of attendees were more knowledge about monitoring their hives for pests and diseases. In total, 16 different class options were available for attendees at the Southwestern Ohio Beekeeper School. In 2018, 99.5% of attendees indicated they learned something new at the school and 97.9% planned to use something they learned. The Southwestern Ohio Beekeeper School is a grass roots program. The planning committee is made up entirely of local Extension educators and volunteer beekeepers.

Allison Howell
CEA - Agriculture
UofA Division of Agriculture Research & Extension
Clay

Howell, A.*[1]
[1] CEA - Agriculture, UofA Division of Agriculture Research & Extension, Piggott, AR, 72454

Clay County is a rural county with various types of agriculture including corn, cotton, grain sorghum, wheat, rice, and soybeans. Over 300,000 acres of row crops are located on both sides of the county with Crowley's Ridge separating eastern and western Clay County. Producers face management and production limitations daily. One main issue is pest management. Clientele look to Extension for educational opportunities on farms and in meeting rooms. Programs are available to help producers make their operations more productive, dynamic, and sustainable. Clay County Extension organized and executed a yearlong multi-faceted educational program to address problems producers face. A rigorous IPM program including field days displaying on-farm demonstrations, in-field pest monitoring/education, and production meetings, were implemented. Producers, industry representatives, and other clientele attended two field days, two production meetings, 17 on-farm demonstrations, and other events to learn how to make their operations more sustainable. The goal of these educational efforts were to help producers increase sustainability and efficiency throughout their operations. Bollworm pressure was low in 2018. Scouted survey fields were reported to growers and consultants which saved 120 area soybean and cotton producers from spraying blanket applications for corn earworm. It saved them $22.00 per acre in yield loss. Southwestern corn borer traps were checked weekly, but never reached treatment threshold allowing corn producers to save insecticide applications on 2,500 acres. A thrips scouting program for cotton was established on 6 farms representing 12,000 acres, helping producers and consultants understand the extent of the thrips pressure. They only treated when necessary versus making excessive insecticide applications. Survey fields were checked weekly for new invasive pests such as the kudzu bug and red-banded stinkbug. They were found late in season and in secluded areas. Producers and consultants were notified that these pests were found and amplified scouting efforts. Variety trials were established on 8 farms providing local yield data potentially effecting 290,000 acres. All of the varieties were evaluated for their resistance to insects and diseases. Locally provided yield data helps growers decide which varieties would grow best on their farms and provide the most resistance to pests.

Bonnie C. Wells
Extension Agent II, Commercial Horticulture
University of Florida
Brevard

Wells, B.C.*[1]
[1] Extension Agent II, Commercial Horticulture, University of Florida, Cocoa, FL, 32926

Alternative crops are defined as agronomic crops unusual for a specific region yet selected for production due to high marketing potential or specialized benefit to the farming system. In Hastings, the 'Potato Capital of Florida', potato acreage is significantly shrinking from low profit margins while growers are seeking alternative crops to improve farm profitability and sustainability. With adoption of alternative crops, opportunity is increased, but risk is as well. Growers are relying on the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Extension to help mitigate the risks of adopting unfamiliar cropping systems. In response, an Extension program in alternative crops was implemented in 2015. To support this program, field research and demonstration trials are on-going at the UF/IFAS Hastings Agricultural Extension Center (HAEC) and on-farm in producer fields exploring the production potential of various alternative crops including Asian vegetables, sweet potatoes, Brussels sprouts, artichokes, and cauliflower. Field investigations have been diverse and include cultivar selection, nutrient management, irrigation needs, and pest management. Since 2015, field trials at the HAEC have yielded a variety of outcomes, most notably the establishment of nutrient standards for select Asian vegetables, adoption of commercial production of purple sweet potato, and increased knowledge and interest in other alternative crops such Brussels sprouts, cauliflower, artichokes, carrots and sweet corn. By utilizing UF/IFAS Extension research and demonstration centers such as the HAEC, agents can help growers transition to alternative crops through demonstrated field success that yields a well-thought out production plan derived from un-biased research.

State Winners

North Central Region	
Wisconsin	Katie L Wantoch
Northeast Region	
New Hampshire	Olivia Saunders
Southern Region	
Mississippi	Bill Burdine
Texas	Michael R. Hiller
West Region	
Alaska	Heidi Rader
Washington	Paul G Carter

Search for Excellence in Young, Beginning, or Small Farmers/Ranchers

Adele Harty
COW-CALF FIELD SPECIALIST
SDSU Extension

Grussing, T.*[1], Harty, A.*[2], Salverson, R.R.*[3]
[1] Cow/Calf Field Specialist, SDSU Extension, Mitchell, SD, 57301
[2] COW-CALF FIELD SPECIALIST, SDSU Extension, Rapid City, SD, 57703
[3] Cow/Calf Field Specialist, SDSU Extension, Lemmon, SD, 57638

beefSD is a one-of-a-kind, 2-year program designed to introduce beginning beef producers to the complexity of the beef industry and provide a comprehensive perspective of how their business can adapt and thrive in the modern beef environment. This program focused on the entire system of beef production, including the various factors that influence success in South Dakota and the future of beef production in the country. beefSD Class 3, started September 2016 and concluded August 2018. Beginning beef producers had to complete a written application to apply for the program. There were 51 participants from 31 operations who completed the program. This program was developed by SDSU Extension and made possible through a grant from the USDA Beginning Farmer Rancher Development Program. Multiple partners contributed to the success of the program, including South Dakota Farm Bureau, South Dakota Cattlemen's Association, South Dakota Stockgrowers Association, First Bank and Trust-Canton, and First Interstate Bank.

Our long-term goal is to equip beginning beef producers with the tools to make wise management decisions leading to economic, ecological and sociological sustainability, and in turn, contributing to ongoing agricultural production, land stewardship, and rural community viability. In order to reach this goal and our educational objectives we incorporated 6 key program activities and teaching methods, which include interactive workshops, case studies of successful beef enterprises, post-weaning calf performance evaluation, mentoring relationships with established ranchers and other

advisors, web-based interactions and travel study trips.

Through an extensive evaluation process, it was determined that as a result of participating in beefSD, participants increased their understanding of the beef industry as a whole along with utilizing tools to incorporate in their own operations to be successful into the future. One participant stated the following, ""To me this was a better version of College! All the meetings were all like crash courses, but it was easier to relate it to our operation as we could ask as many questions as we wanted. Taking this class will be the best asset to my operation. Meeting the people I met and all the things I learned and am implementing on my operation."

National Finalists

Hemant Gohil
Agriculture and Natural Resource Agent
Rutgers Cooperative Extension
Gloucester County

Gohil, H.*[1], Pavlis G.*[2], Ward D.*[3], Oudemans P.*[4]
[1] Agriculture and Natural Resource Agent, Rutgers Cooperative Extension, Clarksboro, NJ, 08020
[2] County Agriculture Agent, Rutgers University, Mays Landing, NJ, 08330
[3] Extension Specialist, Pomology, Rutgers University - NJAES, Bridgeton, NJ, 08302
[4] Extension Specialist, Small Fruit Pathology, Rutgers University, New Brunswick, NJ, 08901

The Wine Grape industry has been one of the fastest growing agricultural sectors in Jersey over the past decade. Given the popularity of wine, agro-tourism, and supporting local agriculture, it too surprising that many vineyard owners are the first generation growers transitioning into agriculture with limited experience. Beginning Wine Grape Growers program was developed hese novice growers to assist them in avoiding costly mistakes with this specialty crop, during the early years. Also a demonstration vineyard was planted in 2016 which saw beginners learning how to prune and manage canopy in the young vineyard. The program saved an estimated $16,000 (at the commercial rate of $200/hr.) for the beginners in private consulting charges. Also, more than 90% of the beginners attended at least one of the educational workshops and made at least two to three critical decisions related to pre- and post-planting, after attending the program. There was a rapid increase in the pruning and canopy management skills following these programs. Total 126 acres of this high value crop were planted or expanded by the beginners, while the awareness of investment and involvement discouraged several of the interested growers from getting in to the business of wine grape production.

Melanie Barkley
EXTENSION EDUCATOR
PENN STATE UNIVERSITY

Barkley, M.*[1], Greg Strait*[2]
[1] EXTENSION EDUCATOR, PENN STATE UNIVERSITY, Bedford, PA, 15522
[2] Extension Educator, Penn State University, McConnellsburg, PA, 17233

Sheep and goat production programs were developed for young, beginning and small farm producers to gain a better understanding of the basics of sheep and goat production. "So You Want to Raise Sheep or Goat Workshops" introduced new and future producers to these concepts. Follow-up workshops were designed to provide more in-depth information on a variety of production topics. These workshops focused on common production practices, reproduction, nutrition, health, marketing and financial management. In addition, the Sheep and Meat Goat Home Study Courses allowed producers the option to study sheep and meat goat production at home in order to accommodate busy schedules that may not allow time to travel to face to face meetings. A post evaluation summary indicated that 99% of participants learned something new, 88% learned a moderate to considerable amount, and 71% planned to use the information to make changes to their operation's management practices. Follow up evaluations conducted at least six months after the programs indicated that producers who attended these programs decreased feed costs an average of $717, saved an average of $150 on health care costs. Producers also improved lamb and kid survival which allowed them to increase income by an average of $1,668.

Adriane Good
Agricultural Extension Agent

Pondera

Good, A.*[1]
[1] Agricultural Extension Agent, Montana State University Extension, Conrad, MT, 59425

According to USDA NASS agriculture is Montana's top producing industry, contributing over $4 million to the state in 2017. The average age of a farmer in Montana is 58.9 and increasing, meaning we will need to rely more on young producers to contribute to agriculture in the coming years. The purpose of this program was to teach beginning producers about crop marketing, soil fertility, integrated pest management, crop scouting and plant staging, crop diversification, and web-based tools to help them make management decisions on their operations. Classes were held one evening per week for six weeks with experts in each subject area either video-conferencing in or coming to Conrad to teach the group. Each class started with dinner, allowing the group to network and share tips with each other from their own experience. The classes were 60 to 90 minutes long and featured presentations by the experts, opportunities to have an open dialogue with presenters, and hands-on activities. A total of 24 people attended this course, including beginning producers, veteran producers, and

agriculture industry professionals. A multiple choice pre- and post-test with questions related to each of the 6 topics was given to all participants; the average score of which was 52% to start and 83% at the end, indicating that participants had increased their knowledge of the subjects taught. Evaluation of Master Farmer consisted of speaker evaluations, an overall evaluation, and one-on-one conversations. When asked if they were planning on making immediate changes on their operations based on what they learned in this course, 77% of participants said they would, although some are not yet in a position to do so. One producer estimated that the knowledge gained could save their farm $50,000 a year. The changes suggested by participants also reflect an improvement in farm sustainability including improving soil health, reducing dependency on pesticides, and incorporating new crops into production. The overall success of this course led to a second level of Master Farmer being planned to further increase crop production knowledge in beginning producers.

State Winners

North Central Region	
Ohio	Timothy McDermott
Southern Region	
Alabama	Ayanava Majumdar
Arkansas	Sherry Beaty-Sullivan
Florida	Bridget Stice
North Carolina	Dan Campeau

Sustainable Agriculture Research Education (SARE)/ NACAA Fellows Program

National Winners

Tom Buller
County Agent
K-State Research and Extension
Douglas County

Sustainable agriculture is a passion that led me to an extension career and drives my work. The SARE/NACAA Fellows program is the perfect opportunity to deepen my knowledge, expand my local programming, and make a long-lasting impact on local agriculture. This opportunity would allow me to connect with innovative producers across the nation, bring lessons-learned back to local farmers and my extension colleagues, and contribute to long-term impacts for Kansas. I am relatively new to extension, so the chance to develop a nationwide peer network with likeminded agriculture educators, to learn how they help producers in their area, and what types of programming they use would have a profound impact on my career.

My interest in sustainable agriculture began in graduate school at the University of Minnesota where I pursued a minor in sustainable agriculture. After graduate school, applied the principles of sustainability on my organic vegetable farm. I developed a deeper passion after my wife and I purchased our current farm property in 2010. It sits on light, sandy loam in the Kansas River Valley that has been intensively farmed for over 100 years. The soil was very low in soil organic matter when we purchased it and the organic systems I learned relied heavily upon tillage to control weeds, which also destroyed the soil's structure and consumed precious organic matter. While I knew that was bad in theory, this lesson really struck home in 2012. The region suffered the worst drought in decades, and in the sandy soil with low organic matter, my crops suffered immensely. We experienced firsthand the linkages between poor soil health and other aspects of sustainability as our farm income suffered dramatic losses. The strain on my family was profound, and I learned hard lessons about the relationships between ecological stewardship, farm finances, and social systems that are foundational to the concept of sustainable agriculture.

After that trying year, I dove into studying sustainable agriculture in greater depth, trying to understand more fully how to improve my farming systems and farm resilience by focusing on soil health. As I was putting what I learned into practice, I received a SARE Farmer/Rancher Grant to study several "no-till" organic methods to produce sweet potatoes (FNC16-1029). My independent research coincided with specialty crop education and outreach I was doing for the

Kansas Rural Center. From those projects, I was drawn to my current role as a county horticulture extension agent focused on fruit and vegetable production. Since becoming a county agent almost two years ago, I have focused as much as possible on teaching sustainable agriculture principles, especially systems thinking, cover crops, and soil health to help other farmers manage the same problems that challenged me. In the past two years, I have worked to coordinate the Soil Health and Cover Crop track at the Great Plains Growers Conference and given numerous presentations on soil health and cover crops in specialty crop production systems around the state.

The Fellows program has broad application for my extension programming in Kansas. For example, we are experiencing a resurgent interest in fruit and vegetable production. This type of farming has been relatively marginal in Kansas in the last 60 years, so the demand for support from extension is great. This presents a great opportunity for fresh ideas and alternative, sustainable farming practices to take a foothold in and influence the development of these growing systems. The timing also provides a key opportunity for what I learn from the Fellows program to make a broad impact on Kansas for both agricultural professionals and farmers.

I have two key goals I hope to achieve through participating in the Fellows program. My first goal is to add richness and breadth to my educational programming in order to help producers in my region increase production and increase sustainability. Much of my current work relies on my own on-farm trials and failures specifically focused on organic systems for vegetable production. The Fellows program would provide me the chance to visit and learn about innovative farming operations using other cropping systems, thereby expanding the concrete examples I could provide local growers.

Second, I plan to incorporate what I learn through the Fellows program to further inform my work with regional partners, there by expanding our local networks' understanding of sustainability and its role in building local food systems. I am currently involved in a number of partnership-based projects that provide opportunities for immediate impact. For example, I work with the Kansas City Food Hub, a local cooperative fruit and vegetable aggregator and distributor, on market development. I help the West Central Missouri Community Action Agency manage a Beginning Farmers Development grant project designed to build local wholesale fruit and vegetable production in the region. I also assist the Kansas Rural Center on risk management through financial education for specialty crop producers. All of these projects work to help farmers manage aspects their operations across environmental, social, and financial sustainability. I serve on the organizing committee with the Great Plains Growers Conference, a regional fruit and vegetable production conference organized collaboratively by extension in Kansas, Nebraska, Iowa and Missouri. The Fellows experience will help me find leading speakers and inspirational farmers from across the nation who I can recruit to speak at events like the Great Plains Growers Conference. I am also connected to a broad array of non-profit organizations such as the Kansas Rural Center and Cultivate Kansas City, which will allow me to reach agriculture professionals beyond the extension system. I will also be able to share my knowledge with other horticulture agents in Kansas through the K-State Research and Extension Horticulture Program Focus team, and I will submit a proposal to lead a session on sustainable agriculture at our K-State Research and Extension Annual Conference. The SARE/NACAA Fellows program will allow me to enrich the work of these partnerships across the state of Kansas and around the region, broadening the impact and influence of the principles of sustainable agriculture

In order to evaluate the success of my education and outreach efforts, I will conduct a pre-then-post survey at workshops in which I cover information developed through the Fellows program. I will also collect stories from individual farmers who have used this information provided to improve their farms' sustainability. This mixture of qualitative and quantitative information will allow me to assess whether I am effectively influencing producers in the region. With the help of the Fellows program, I anticipate that over the next three years, I will be able to directly help over 400 farmers learn more about sustainable production systems, and at least 35 of those will go on to implement some of what the learned on their farm. I will incorporate these short term results into the annual performance metrics I submit to K-State Research and Extension to demonstrate the impact of sustainable agriculture education to the larger statewide system.

The Fellows program will allow me further promote sustainable agriculture in Kansas and throughout the region. In addition to strengthening the programs and partnerships I have, I look forward to potentially discovering new projects or programming ideas from my peers and visits around the country that I can re-create in Kansas.

Dan Severson
Extension Agent - Ag and Natural Resources
University of Delaware
New Castle

I am interested in being a SARE fellow so I may learn unique sustainable agriculture programs from around the United States. I have been an Agriculture Extension Agent serving New Castle County, Delaware for 5 years. During that time, I have been engaging with my producers to develop a trusting relationship with Extension. I came across a quote while reading *Sustainable Agriculture: Basic Principles and Concept Overview* online course designed by USDA SARE that stated "The reality is that effective Extension work is often as much about social interaction as it is technical advice. This is a central aspect of helping farmers and ranchers work toward greater sustainability". I have developed the social interaction aspect of Extension and now I want to enhance my understanding of sustainable agriculture so I may provide new programs

to meet the needs of my clientele and increase awareness of sustainable agriculture to agriculture professionals.

I have had experience with sustainable agriculture through my work with SARE. The first SARE grant that I received was for estate planning and farm succession. Farm succession is the very essence of sustainable agriculture. Our goal was to give producers and our professionals the knowledge to start the conversation and the skills to successfully create a plan for the continuation of the farming operation through multiple workshops. These workshops detailed the steps of estate planning, using the farms of producers in attendance as real world examples.

With the help of other Extension agents and another SARE grant, I have developed a workshop series that is geared towards beginning farmers interested in small fruit and vegetable production. The ability to bring in new farmers is critical to the agriculture industry. The course emphasizes looking at the farm in a holistic manner to create best management practices that are custom for each farm. Sustainable agriculture and the local food movement offer some of the best opportunities for beginning farmers

I have assisted in setting up cover crop workshops and tours. During the fall of 2017 our Extension team planted research plots of various cover crop species and mixtures. Cover crops have been shown to increase crop yields, break through a plow pan, add organic matter to the soil, improve crop diversity on farms, help keep nitrogen and phosphorus in the field, where the crop can use it and attract pollinators. In addition, cover crops improve the structure and water-holding capacity of the soil, suppress weeds, provide suitable habitat for beneficial predator insects, and act as non-host crops for nematodes and other pests in crop rotations. Cover crops seem to be a win-win situation – They help in the face of a drought and in the face of heavy rainfall.

I have participated in soil health workshops and lectures. The University Extension as well other agencies put on learning information sessions to educate producers and other industry personnel on the value of soil health. For example, I serve on New Castle County Soil Conservation District Board of Directors as the secretary where our mission is to conserving soil and protecting water quality. The Conservation District is currently doing a *Soil Health 101* workshop series. Soil health has been defined as "the capacity of soil to function as a vital living system, within ecosystem and land-use boundaries, to sustain plant and animal productivity, maintain or enhance water and air quality, and promote plant and animal health".

Through the Conservation District, I am learning more about healthy soil and that it is the key to making farms more productive, profitable and resilient. Systems used to create healthy soils reduce sediment loss from farms; sequester carbon, and create biodiversity in our rural landscape. Soil health is a holistic approach that goes beyond determining the nutrient status of the soil. It includes assessment of the physical and biological status to determine all important aspects of the soil that can have an effect on its health and sustainability which can affect crop production.

I plan to use the Fellows program information to bring *Reading the Farm* back to Delaware so I may better assist my producers and train my Extension colleagues on how to "read a farm". I would like my colleagues to have the ability to do a Strength, Weakness, Opportunity and Threat (SWOT) analysis and understand how all the components of the farm fit together. I would like to train my Extension colleagues to take an all-inclusive look at a farm and identify the major challenges to a farm's sustainability and help develop an action plan for that particular farm. This program will heighten their ability to better assist agriculture producers.

I would like to use *Reading the Farm* to educate agriculture industry professionals and producers. I want them to find the constraints that are hindering the farms profitability and find a way to overcome those constraints to make the farm more profitable. For example, the use of a cover crop could be used as a source of feed and increase profitability by helping alleviate some of the costs used for purchased feed for a farm's livestock as well as conserving soil. This workshop series would create a complete agriculture professional and farmer. This journey will enrich their understanding of sustainable agriculture and teach them to see the whole story of the farm.

I would use a question/answer survey and feedback forms pertaining to the workshop I conduct to determine skills and knowledge changes. The suggestions and recommendations will be incorporated in following programs to improve program success. In addition, I would conduct pre/post surveys to assess knowledge gain.

Another use of the Fellows program information would be to promote SARE programs that are offered and provide examples from across the United States. Typically, Delaware does not have many applications for SARE grants or our producers are not aware of the vast array of resources provided by SARE. I would like to increase this awareness by having a display table at grower workshops, field days and twilight meetings. For instance, Delaware Extension holds an annual Delaware Ag Week and is attended by over 2000 farmers and agriculture professionals. The use of a display booth would be utilized for the dissemination of sustainable farming benefits to a broad audience.

In closing I would like to participate in the Fellows program so I am better able to strengthen my producer's farm enterprise, the local farm economy, and increase my colleagues understanding of sustainable agriculture. I believe the information I gain by participating in the Fellows program will allow me to bring a new prospective of sustainable farming from different parts of the United States back to Delaware and create learning opportunities for both producers and industry professionals alike.

Mary Love Tagert
Assistant Extension Professor
Mississippi State University Extension Service
State

I would like to participate in the SARE/NACAA Fellows Program because it will be extremely beneficial to see 'complete' examples of sustainable agriculture projects in other areas of the country, outside my home state of Mississippi. I would also like to increase my knowledge about the social and quality of life facets of sustainable agriculture, and from experience, I know how helpful it is to see real-world examples and have an opportunity to talk those involved in the operation. I believe having this opportunity will enhance my current Extension programs and help me develop a new Extension program, and I will benefit from meeting Extension colleagues in other states and learning more about their sustainable agriculture programs and methods of evaluation for those programs. Specifically, I hope this experience will give me more knowledge and resources to develop a new Sustainable Agriculture Extension program for small- and medium-sized producers. We have an increasing number of high tunnels, or hoop houses, being used in Mississippi, and I am receiving more questions and calls from constituents related to irrigation in high tunnels, water quality issues with irrigation water, and identifying the best water source for irrigation. While I have worked jointly with agricultural economists on projects, most of my research and Extension efforts have focused on the environmental stewardship component of sustainable agriculture. I believe the opportunities provided through this Fellowship will provide me with additional and more comprehensive experience related to the economic and quality of life aspects of sustainable agriculture.

In Mississippi, we receive roughly 56 inches of rain annually, but only about 30% of that amount is received during the summer growing season. We also have declining groundwater levels in the Mississippi Delta, where groundwater is the main source of water for irrigation. In other parts of the state, it is not cost efficient to access groundwater. As a result, use of surface water for irrigation is increasing throughout Mississippi for both large- and small-scale operations. I have experience using surface water storage systems and quantifying the dual water quality and quantity benefits of these systems. In addition, I have several extensive experience working with soil moisture sensors to improve irrigation scheduling in corn and soybeans, and I would like to gain a better understanding of irrigation scheduling with fruits and vegetables in high tunnels. I have served as a PI or co-PI on projects funded by USDA-NIFA (surface water storage and tailwater recovery), USDA-FAS (irrigation and drainage), and the Mississippi Soybean Promotion Board (surface water storage and tailwater recovery; using sensors to understand in-field soil moisture variability). When working with one farmer, we analyzed runoff samples at the edge of the field as well as samples from his on-farm surface water storage system. We saw very high nitrate concentrations in edge-of-field samples as compared to the storage pond, with edge-of-field concentrations highest just after a fall poultry litter application and decreasing thereafter during subsequent rainfall events. When we shared this information with the farmer, he began incorporating the poultry litter to decrease nutrient runoff and keep more nutrients on the field for the benefit of his crop the following growing season. In addition to the integrated research and extension projects mentioned above, I have also given numerous presentations at the County level and through field days on topics related to use of high tunnels, irrigation in high tunnels, small-scale irrigation for forage producers, surface water for irrigation, tailwater recovery, and use of soil moisture sensors for irrigation.

As I have received more questions from constituents on small scale irrigation in high tunnels as well as in forages, I have referenced Extension publications from other states. I have been thankful for these great resources, but I would like to develop a new Extension program that is more specific to small agricultural operations in Mississippi. I will use the knowledge gained in the Fellows program to develop a new statewide Extension Program on Sustainable Agricultural Practices for Small Scale Agricultural Systems. For this new program, I will use a Standardized Evaluation Survey that has been developed by Mississippi State University (MSU) Extension Evaluation Specialists, because there is an online database in Qualtrics that is ready to accept data from this survey and generate a report of results. As I develop the new program, I will consult with the MSU Extension Evaluation Specialists to determine if it would be beneficial to customize the Standardized Survey by adding a select number of additional questions specific to the new program.

The expected results from my participation in the SARE/NACAA Fellows Program will be a new Extension program, Sustainable Agricultural Practices for Small Scale Agricultural Systems, to address needs that are currently not being addressed through existing Extension programs in Mississippi. The new program will be implemented jointly by County Extension Agents, myself, and other Extension specialists who might collaborate on the new Extension program. In addition, supplemental resources such as videos and Extension bulletins will be developed to support the new program. The impacts on local Extension sustainable agriculture programs will help new high tunnel users and other small scale producers analyze all aspects of their operation as they work towards environmental stewardship, economic, and quality of life goals. The impact will be a change in thinking so that farmers have a more holistic and comprehensive approach to their operation, which will hopefully result in additional benefits to other components of the local food system.

My participation in the SARE/NACAA Fellows Program will benefit Agents in County Extension offices throughout Mississippi. As a result, there will also be a benefit for their constituents because the Agents will have a new program to offer in their County as well as a resource to use as they field questions and inquiries on topics related to sustainable agriculture. In addition, I will reach out to other Specialists

within the Mississippi State Extension Service as well as colleagues with the Alcorn State Extension Service to see if they would like to partner on both the development and the delivery of the new proposed Extension Program on Sustainable Agricultural Practices for Small Scale Agricultural Systems. I will offer in-service training to Extension Agents in each of the four Extension Districts throughout Mississippi and, finally, I will provide a presentation on my experience and the results of my Fellows experience at the next NACAA AM PIC and the ANREP biennial conference following completion of the Fellows Program.

Tipton D. Hudson

Why you wish to attend

Washington State boasts a unique mix of high-value irrigated agricultural land, native rangeland, and state and national forests. Most ranchers who are economically dependent on livestock production utilize all three land types in their forage supply chain. As livestock grazing becomes increasingly integrated into cropping systems in the Pacific Northwest in pursuit of economic and ecological sustainability, there is a great need for agricultural expertise that spans both fields. My background is primarily in rangeland ecology and I would like to expand my knowledge of sustainable cropping systems and agronomic principles in order to train and advise farmers, ranchers, and natural resource professionals who are engaged in research and outreach that considers both the environment and the livestock industry holistically.

Details of past experience

I have spent the last twenty years promoting sustainable agriculture—two years advocating for ranchers and the next eighteen pushing the art and science of sound rangeland management. Rangeland-based animal husbandry is, by definition, the most sustainable agricultural enterprise. Done well, it produces food and fiber for human flourishing on naturally-occurring plant communities without compromising the simultaneous provision of ecosystem goods and services in the same space. Sustainable ranching is only economically viable when its practitioners capitalize on natural ecosystem processes and minimize expensive exotic/human inputs such as fossil fuel-derived fertilizers and animal pharmaceuticals. Baxter Black once said "There is nothing that comes out of the end of a balling gun or hypodermic needle that can compensate for sub-par animal husbandry." It is expensive to fight nature. The same applies to husbanding land.

In eighteen years as an Extension range and livestock specialist, I have taught regenerative rangeland grazing principles and practices, riparian management for stream function and water quality, ecosystem monitoring for adaptive management, and intensive irrigated pastured beef and sheep production. Most recently, I have begun promoting these concepts nationally and internationally through a state-of-the-art, first-of-its-kind podcast in partnership with the Society of Range Management — the "Art of Range" — you can find it on iTunes and Stitcher.

How you intend to use the Fellows program

Specifically, I am currently engaged in several projects into which I will integrate SARE Sustainable Agriculture Fellows learning. I have a research and outreach project funded through WSU's Center for Sustaining Agriculture and Natural Resources in which we're growing tallgrass prairie warm-season perennial grasses on irrigated pasture in Washington and Idaho to A) determine whether the dominant grasses big bluestem, Indiangrass, eastern gamagrass, and switchgrass will persist in our climate and B) document forage quality characteristics of these species grown and managed as pasture, i.e., under regular, controlled defoliation. The project is using *in situ* digestibility measurements to evaluating forage quality. We hope to pioneer dedicated warm-season grass pastures as a way to level out the forage supply curve through summer, a known critical limiting factor for PNW beef producers. We will survey ranchers in the region to gauge awareness, understanding, and practice adoption. This effort is a classic sustainable agriculture initiative, integrating agronomy and livestock production.

I am also part of a team which has recently produced short film documentaries, with funding from the USDA Climate Hubs, showcasing ranchers in Washington, Idaho, and Oregon who are managing rangelands and dry forest types for high resilience to climate uncertainty. We are pairing these films with case study fact sheets providing scientific backing for the practices implemented by innovative ranchers showcased. The same team is scoping a stocking rate decision support tool in partnership with the USFS and their Rangeland Production Monitoring Service to integrate climate modeling with rangeland forage production toward providing a data-mining prediction inside a real-world decision timeframe. I will promote sustainable agricultural principles learned in the SARE Fellows program through the outreach phase of this project, which will be 2019-2021.

Potential impacts/Expected Results

I am the Washington State Riparian Team lead under the National Riparian Service Team and the Creeks and Communities Network. We are planning outreach activities for 2019-20 focused on sustainable riparian management and livestock grazing with accompanying and supporting publications. These events are a prime opportunity for promoting sustainable agriculture with non-agricultural natural resource professionals.

Finally, I have launched a permanent platform for broadcasting sustainable agricultural principles with the Art of Range podcast.The format is long-form interviews rather than tightly scripted lectures because interactive conversation stimulates listeners' brains to generate their own conclusions from the

discussion more effectively than bullet points succinctly communicated. Listenership is increasing quickly following an October 2018 launch. I'm interviewing the brightest minds in rangeland science, and I will be aggressively marketing the podcast throughout 2019 now that we have a critical mass of valuable episodes. The SARE Fellows program will help shape podcast content into the future. The project is funded by the Western Center for Risk Management Education and is geared toward addressing real ecological, economic, and social risks of Western US ranchers. This project is part of a pilot evaluation effort through the Western Center for Risk Management Education, expanding results-based verification into outreach methods not traditionally used by RME projects.

Potential benefits to others

In summary, what I learn in this program will be transmitted to livestock ranchers, crop farmers, natural resource professionals, other Extension personnel, and university researchers doing work in sustainable agriculture.

State Winners

North Central Region	
Missouri	Kelly McGowan
Northeast Region	
Massachusetts	Elizabeth W. Garofalo
New York	Jason Detzel
Southern Region	
Florida	Matthew Lollar
West Region	
Hawaii	Jensen Uyeda
Montana	Adriane Good
Utah	Mark Nelson
Washington	Jordan Jobe

2019 Service to American/World Agriculture

Dr. Bob Nielsen

Since 1982, Dr. Nielsen has served in his role as Corn Extension Specialist for Purdue University. The vanity license plate on Bob's truck says it all, "Corn Guy", and to corn growers, crop advisers, extension educators, students and others that is exactly who he is.

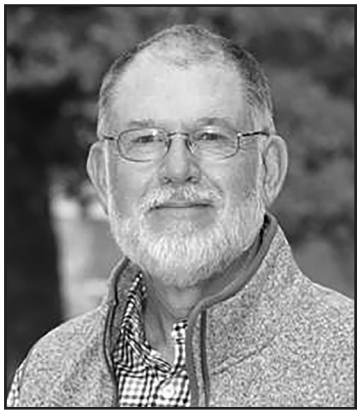
Dr. Bob Nielsen's Extension Program assists corn growers, CCA's, and other allied industry partners in a wide variety of corn management issues including but not limited to: transgenic crops; corn growth and development; understanding the effects of stress on corn; and stand establishment problem solving. In addition, Bob's research and education programs also include: corn replant decision-making; yield limiting factors in crop production; crop trouble-shooting; site-specific crop management technologies; managing yield monitors; and nitrogen management for corn.

Bob has also led the effort to educate and coordinate on farm research activities conducted with farmers, ANR Extension Educators, and agriculture industry partners. These on farm research activities occur throughout the state and generate data that influences corn management recommendations. Bob takes great pride in ensuring that trials are conducted properly. He also leads a campaign to educate others on best management practices for on farm research.

Dr. Nielsen is a founding member of the Purdue Crop Diagnostic Training Center (DTC), which specializes in hands-on training of crop advisers on crop production issues. These unique in field, educational opportunities have been held for over 30 years and use field demonstrations that are designed to illustrate specific field crop growing issues. Attendees from throughout the Midwest observe and learn best management practices for crop production, in the field. Over the last 10 years there have annually been over 25 all day DTC training sessions and Bob participated as an instructor in many of these.

The Purdue Corn Specialist annually makes an additional 60 presentations to farmers and allied industry personnel. Bob is considered a pioneer in the use of new technologies. In the mid -1990s and before the first wide-spread use of internet resources, Bob developed the King Corn website and the Chat'n Chew Café that serve as a library of resources and source of evidence-based recommendations from Land Grant Universities across the country. Farmers and agronomists not only in the United States, but also throughout the world utilize these web-based resources, wherever corn is grown.

Another example of his early adoption of technology is his incorporation of UAVs into his program. Bob was one of the first Purdue Extension Specialists to use UAVs for crop scouting. Bob soon emerged as a leader in our Quad Squad, which was launched in 2018. This group of Extension Specialists and ANR Extension Educators now number over 20 and work throughout the state to not only use UAVs in their program, but to help their clientele with the adoption of UAVs for their farming operations, as well as other kinds of businesses.



Bob grew up on a Nebraska farm and still has interest in the family's farming operation. He did his undergrad work at the University of Nebraska and received his PhD. from the University of Minnesota. In addition to these and other North Central States, Bob has developed professional relationships with growers and crop advisers from all regions of the United States where corn is grown. In fact, requests for speaking at crop conferences far out way the number of available days on his calendar. In addition to speaking requests, Bob receives emails and phone calls from Extension, Industry professionals, and farmers with corn questions on a daily basis.

The Extension Specialist is no stranger to international work. Some of the countries in which Bob has been invited to visit and conduct corn management meetings include: Hungary; New Zealand; Italy; Argentina; Honduras; South Africa; and Russia. In addition to visiting these countries, Bob reciprocates by hosting delegations of farmers and corn specialists from many of these countries and introducing them to Midwestern agriculture and farming practices.

Finally, in addition to all of Bob's national and international travels and contacts we firmly believe that Bob's most important clients are those ANR Extension Educators located in counties throughout Indiana and the United States. Bob eats and drinks extension and thoroughly loves educating and helping farmers prosper. He also gets great satisfaction from helping our staff become better agronomists and watching them grow professionally. Bob truly understands Extension's mission and lives it every day.

2019 Achievement Award Winners

North Central Region

Illinois - Andrew Holsinger, Jr.
Indiana - Robert Kelly
Indiana - Elysia Rodgers
Iowa - Kraig Tweed
Kansas - Jenni Carr
Kansas - Chris Long
Michigan - Ben Werling
Minnesota - Sarah Schieck
Missouri - Kate Kammler
Nebraska - Nicole Stoner
North Dakota - Lindy L Berg
Ohio - Amanda Bennett
Ohio - Jason M Hartschuh
South Dakota - Amanda Bachmann
Wisconsin - Sarah Mills-Lloyd, DVM

Northeast Region

Maine - Colt Knight
Maryland - Andrew Kness
New Hampshire - Elaina Enzien
New Jersey - Salvatore Mangiafico
New York - Richard Toebe
Pennsylvania - Elizabeth Bosak
West Virginia - Chuck Talbott

Southern Region

Alabama - Kevin S. Burkett
Alabama - Lucy E. Edwards
Alabama - Kelly R. Palmer
Arkansas - Terrell Davis
Arkansas - Matt Fryer
Arkansas - Brett Gordon
Florida - Laurie Hurner
Florida - Matthew J. Orwat
Florida - Nicole D. Pinson
Georgia - Joel Burnsed
Georgia - Jason Edenfield
Kentucky - Chelsey Anderson
Kentucky - Levi Berg
Kentucky - Lindie Huffman
Louisiana - Mark Carriere
Mississippi - Jason R Barrett
Mississippi - Suzanne Marie Rogers
Mississippi - Christian Stephenson
North Carolina - Erin R. Eure
North Carolina - Lauren Langley
North Carolina - Matt Lenhardt
North Carolina - Mac Malloy
North Carolina - Jessica Strickland
Oklahoma - Walter White
South Carolina - Kim Counts Morganello
South Carolina - Zack Snipes
Tennessee - Matthew Deist
Tennessee - Thomas Greenlee
Texas - Robert Ferguson
Texas - Roy Flora
Texas - Bobby Mccool
Texas - Gary Roschetzky
Virginia - Theresa Pittman
Virginia - Laura Siegle

Western Region

Alaska - Casey Matney
Arizona - Joshua Sherman
Colorado - JD Sexton
Idaho - Doug Finkelnburg
Montana - Shelley Mills
New Mexico - Bonnie Hopkins
Oregon - Cassie Bouska
Utah - Joshua Dallin
Washington - Stephen G. Bramwell
Wyoming - Jeremiah D. Vardiman

2019 Distinguished Service Award Winners

North Central Region

Indiana - Kenneth J. Eck
Indiana - John E. Woodmansee
Iowa - Terry Janssen
Kansas - Rachael Boyle
Kansas - Kurt Werth
Michigan - Jill O'Donnell
Minnesota - C Robert Holcomb
Missouri - Karisha Devlin
Nebraska - Brandy VanDeWalle
North Dakota - Craig Allen Askim
Ohio - F John Barker III
Ohio - Christopher Zoller
South Dakota - Adele Harty
Wisconsin - Mark A Hagedorn

Northeast Region

Maryland - Charles F Schuster
New York - Elizabeth Claypoole
Pennsylvania - Gregory P. Martin
West Virginia - Jodi Richmond

Southern Region

Alabama - Thomas G. Agee
Alabama - Lawrence C. Fudd Graham
Alabama - Daniel S. Miller
Arkansas - Brad Mcginley
Arkansas - Bill Robertson
Arkansas - Amy Simpson
Florida - Mary Elizabeth Henry
Florida - Brooke L. Moffis
Florida - Shawn T. Steed
Georgia - Gary L. Hawkins
Georgia - Raymond Joyce
Georgia - Monte Stephens
Georgia - Amanda Tedrow
Kentucky - Linda K. McClanahan
Kentucky - Glen Roberts
Louisiana - Andre Brock
Mississippi - James Henderson
Mississippi - Amanda Masholie
Mississippi - Tracy Robertson
North Carolina - Mike Carroll
North Carolina - Tiffanee Conrad
North Carolina - Seth Nagy
North Carolina - Paul W. Westfall
Oklahoma - Brian Freking
South Carolina - Jonathan Croft
South Carolina - Lee Van Vlake
Tennessee - Adam M Hopkins
Tennessee - J.C. Rains
Tennessee - Lena Beth Reynolds
Texas - Jody Bradford
Texas - Virginia Easton-Smith
Texas - Steve Estes
Texas - Jamie Sugg
Texas - Dr. Brian L. Triplett
Virginia - Tim Mize

Western Region

Colorado - Adrian Card
Idaho - Sarah D Baker
Montana - Bruce Smith
New Mexico - Steve M. Lucero
Oregon - Clive Kaiser
Utah - Matt Palmer
Washington - Linda Chalker-Scott
Wyoming - Jeff M Edwards

NACAA Hall of Fame Award

The NACAA Recognition and Awards Committee is proud to present these three recipients with the NACAA Hall of Fame Award. The Hall of Fame Award recognizes one member or life member from each NACAA region. Each state can nominate one individual. Based on a 500 word summary and three letters of support, the state nominees are evaluated on their Extension programming, state and national association activities and humanitarian efforts beyond the normal call of duty.

Our thanks to Pipeline Ag Safety Alliance for sponsorship of the NACAA Hall of Fame Awards

2019
North Central Region
Hall of Fame Award

Bradley T. Brummond

North Dakota
36 Years

Brad began working with North Dakota State University Extension Service in 1982 as an assistant county agent in Traill County. His early career focused on strengthening 4-H programming with an emphasis on developing judging teams. As a county agent in Hettinger and Walsh Counties he conducted extensive programming in crop marketing and crop scouting. Early in his career Brad began providing quality education for clientele concerning non-conventional agriculture practices with a focus on no-till farming. He continues to lead the fight against pest resistance focusing on resistance in Colorado potato beetles, cercospora in sugarbeets, and weeds. He remains hands-on with 4-H programming strengthening local 4-H efforts through judging teams and youth leadership. Brad has been heavily involved with underserved audiences throughout his career and is best known for his work with organic and sustainable agriculture programming in North Dakota. Since the late eighties, he has taken the lead as NDSU Extension's liaison in organic programming. Working directly with organic producers he helped build North Dakota's organic industry into a viable production system. Through 2015 he served as the chair for the North Dakota Department of Agriculture Organic Advisory Council serving through both Democratic and Republican Commissioners of Agriculture. Through his work with sustainable agriculture Brad became more directly involved with the native nations of North and South Dakota and the agricultural challenges they face. In 2009 he began serving on the North Central Regions Sustainable Agriculture Research and Education Program (SARE) Circle of Sustainability outreach. For his work and impact on sustainability in the region he was honored as a North Central Region Sustainable Agriculture and Research Hero. Brad has been a member of NACAA since 1982. He served as President of the North Dakota Association Extension Agents in 2004. In 2004 to 2010 he served as a National Chair of the Search for Excellence Committee and in 2011 was elected North Central Region Director and Vice Director. He served on the original Futuring Committee. In serving as a regional director his passion for diversity was demonstrated in expanded outreach efforts to the 1890 and 1994 land grant universities. Diversity of religion and culture played important roles in his leadership. Brad is the recipient of numerous awards, including the NACAA Achievement Award, Distinguished Service Award and NDSU's diversity award. Brad is active in various community affairs serving on the Park River Area School Board; North Valley Career and Vocational Center Board (chair); Walsh County Arena Commission (president) fighting to keep affordable winter activities available to rural youth; religious educator and lector with St. Mary's Catholic Church; and 4-H volunteer coach for crop and land judging teams. He is an active member of the Sons of the American Legion and Knights of Columbus. He continues to work with low income Latino families within the migrant school system educating on sustainable horticulture practices.

DSA awarded in 2008.

2019
Northeast Region
Hall of Fame Award

James E. Welshans

Pennsylvania
36 Years - Retired

James E. Welshans' Extension career began in 1969 in Clearfield County, Pennsylvania as the 4-H Coordinator. Jim's ability to have major subject matter changes with new clientele added to his 41-year career. Jim's extension philosophy did not change during his tenure; Clients' needs come first.

In 1984, Jim was appointed County Extension Director of Dauphin County. The position included working with the commercial horticulture community. The CED's goal was to upgrade and expand Extension in Dauphin County. In 1988, Extension moved to the Dauphin County Agriculture Center.

This enabled the office to expand by two agricultural agents, one family living agent and two support staff. The Extension program expanded quickly to become one of the top in the state, under Jim's leadership.

In 1986, Jim was contacted by several Amish farmers interested in diversifying their livestock operations to be sustainable in the future. After reviewing several options, vegetable production was the best choice. Visits were made to local markets in Dauphin County, Philadelphia, New York City, and Baltimore. In the first year, the small Dauphin County co-op had seven producers. Tomato grading at the co-op averaged 70% market production. The remaining 30% was provided to food banks, shelters, and local communities. By year three, the number of producers doubled. They also started growing peppers, hand-picked green beans and expanded to processing onions for a local fresh food packaging plant. The processing operation quickly outgrew its original facility. A new processing plant was built and, within 2 years, became the largest onion processor on the east coast, supplying major pizza and fast food companies.

Jim was appointed to Turfgrass Specialist in 1994, covering 9 counties. His responsibility was to develop a program for anyone who worked, managed, or built sports fields. The Keystone Athletic Field Manager Organization was formed. The members were field managers for major & minor leagues, universities, schools, and municipalities. This group of 33 was the core that led a state-wide educational program. Today's membership is 357. Jim became known as "Jim, the Turf Guy". He established turfgrass variety plots at the Penn State Research Center to be used for educational purposes as well as the Capital Area Turf and Horticulture School. These educational classes average over 400 participants each year.

Jim attended his first AM/PIC in 1973 in Baltimore, MD with his county 4-H Jug Band performing in the 4-H Talent Revue. He served as chair for the AM/PIC Annual Awards Banquet in Hershey, PA (1985), and New Brunswick, NJ (1989). He was the NACAA Northeast Director from 1998-1999. Jim also served his state association as president and chair of several committees.

Jim's international service includes two assignments to the Kingdom of Swaziland, helping to establish an extension system. He assisted and lectured to agricultural professionals in Zimbabwe and served as an advisor for a student work study in Puerto Rico.

Jim currently volunteers for the Urban Youth Gardening Program and drives the van for the Elder Express of Hummelstown, providing free transportation to those in need.

DSA awarded in 1993.

2019
Southern Region
Hall of Fame Award

John C. Campbell

Tennessee
35 Years - Retired

John Campbell positively impacted numerous farm families, 4-Hers, colleagues, stakeholders and community members at the local, state and national levels during his 35 year Extension career and in retirement. John's commitment to quality Extension work, association involvement and community service has been a model to others.

For 27 years, John served 9 counties as an Area Farm Management Specialist. He assisted producers with more than 1,200 farm financial management plans and management and marketing decisions, taught more than 300 educational sessions, authored a Web site and newsletters, and produced a monthly milk outlook. For 20 years, John summarized a comparison of feeder cattle tele-auction to weekly auction markets income. John coordinated development of a workshop curriculum for small farmers that has been used statewide. John was the lead author on a goat meat budget publication with accompanying spreadsheets and led a team in developing and teaching management and marketing for the state's Master Goat Producer Program. John began his career as a 4-H agent where he successfully increased local sponsorship and participation at the county, district and state levels.

John has been a dedicated, hard-working member of the state and national associations. He attended 35 of 36 state annual meetings held prior to his retirement. He completed a special assignment as policy advisor to the state board, creating a valuable, detailed document outlining the policies adopted over time. He served as state secretary and district and region secretary/treasurer. John's efforts were recognized with the District Agent-of-Year in Youth and Adult Work Award, District Outstanding Young Agent Award and the TAAA&S/ Hicks Award of Excellence.

John has attended 29 NACAA AM/PICs. John and his wife, Sarah, served on the Life Member Planning Committee for the 2018 AM/PIC and showed their generosity through a $5,000 sponsorship. John served as state chair, region vice-chair, and national chair of the Extension Programs Committee and the Program Recognition Council Chair. He was recognized as National Finalist and Winner in Farm and Ranch Management, National Winner in Young, Beginning or Small Farmers and Ranchers, Regional Finalist and National Finalist in Communications. He participated in the Poster Session, attended the Dow Study Tour and Livestock Hedging

Seminars and is a $1,000 donor to the NACAA Scholarship Foundation.

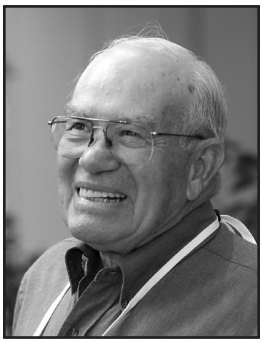
John has also served as a community leader. A Lion member for 40 years, John has held most offices, chaired the committee for the club's 75th anniversary celebration and served for two years as the District Newsletter Editor. He has chaired and served on many committees in his church, including the building committee for a $1 million project, taught Sunday School and served as a leader for youth mission trips. John has also been an active supporter of his fraternity's alumni organization serving as treasurer and director of development. He served as a director for the Middle Tennessee State University Agricultural Alumni and as a 4-H volunteer leader. In retirement, John has volunteered for the Maury County Fair, Volunteers in Tax Assistance, Medicare counseling, and the Marshall County Agriculture Appreciation Breakfast.

DSA awarded in 1997.

2019
Western Region
Hall of Fame Award

Dave Mcmanus

Colorado
36 Years - Retired



Dave McManus began his extension career in 1967 as an assistant extension agent in El Paso County (Colorado Springs, Colorado) where he served for two years there before transferring to Gunnison County, Colorado to serve as the "Agent in Charge" in 1969.

Gunnison, Colorado, is a picturesque mountain community that often "competes" as the icebox of the United States during the long winter months. It is not unusual for temperatures to hover below zero for weeks at a time, even though the sun is shining brightly. It takes a special person to be a successful agent in such a place.

Dave was a valuable resource for 4-H members, leaders and extension agents across the state in the horse project area. He served as the National Western Stock Show Horse Show Superintendent from 1969 to 2000. Later in his career he served as the Colorado State Fair Horse Show Assistant Superintendent from 1987 until 2003. Whenever an agent had questions regarding horse show rule clarification or just needed to vent about a horse parent, Dave was a calm, understanding voice on the other end of the telephone.

During his time in Gunnison, Dave expanded his involvement in NACAA. He received the Achievement Award in 1977, and the Distinguished Service Award in 1981. He served in many state leadership positions in the Colorado County Agent's Association during this time.

In 1982, an opportunity opened-up to serve as an area extension agent about 100 miles west of Gunnison as the 4-H Youth and Agriculture extension agent for a three-county region in Western Colorado, serving Montrose, Grand Junction and Delta, known as the Tri-River area. Dave's leadership in the Horse project area continued throughout his tenure in the Tri-River area up until his retirement in 2003 (and for a few years after his retirement as a valued county fair judge). His skill working with groups of people and with youth was well-known. Dave remained in this role until his retirement in 2003.

He also expanded his leadership roles with NACAA after moving to Montrose. First, he served as the AM/PIC chair for the NACAA national meeting held in Colorado Springs, then only time Colorado has hosted this valued meeting. He served as the national Extension Programs Committee chair in 1995-1997. He also served as the first Extension Development Council Chair upon its inception in 1997-1998. In 1998, Dave was elected as the NACAA Vice-President. His national leadership experience culminated as NACAA President in 2000 at the AM/PIC held in Albuquerque, NM.

He has continued to be an active member of NACAA since serving as a national officer and after his retirement. He was a valued member of the NACAA Educational Foundation Board of Trustees for five years after retirement, and has served the Western Region as a Life Member Vice-Chair as recently as 2012-2014. This year, Dave is attending his 35th AMPIC, often with his wife Kathy also participating. His children were also often active in the Sons and Daughters activities throughout the years.

DSA Awarded in 1981.

2019 ABSTRACTS OF THE NATIONAL WINNERS AND FINALISTS COMMUNICATIONS AWARDS CONTEST

Audio Recording

National Winner

Audio Recording

Jason Lamb
Ag Agent
New Mexico State University
Quay County

Lamb, J.*[1]
[1] Ag Agent, New Mexico State University, Tucumcari, NM, 88401

The "Garden Minute" radio program was created to better inform the community of urban horticultural practices in Quay County and reaches a population of approximately 8500 residents. Through 2014 to 2019 the agent has conducted the bi-weekly radio program which has aired eight times a week on two radio stations. The program educates the public on topics such as lawn irrigation, back yard composting, xeriscaping, insect infestations, and vegetable gardening. The "Garden Minute" is also used to advertise for the local farmer's market and upcoming Extension programs.

The "Garden Minute" program has increased office visits, home visits and phone calls by as much as 40%. Several topics presented on the radio program have generated workshops such as the Quay County Grasshopper Workshop in 2015 and a Sugar Cane Aphid presentation in 2016 at the Quay County Pesticide Applicators Training. The program has increased knowledge in urban horticultural areas. Informed clientele of Extension programs, and increased awareness of the resources available for county residents through the extension office. Most importantly the program keeps extension in the public eye. Which assists with funding and public relations.

National Finalists

Jerry Clark
Agriculture Agent
Division of Extension UW-Madison
CHIPPEWA COUNTY

Clark, J.*[1]
[1] Agriculture Agent, Division of Extension UW-Madison, Chippewa Falls, WI, 54729

The attached audio clip is one of three recordings from an Ask the Expert series I recorded with WAXX 104.5 FM radio in Eau Claire, WI. WAXX has an extensive local news department and large agriculture-based audience. The agriculture news and markets airs from 5:00am to 6:00am Monday through Friday with periodic agriculture market and news updates throughout the day. Listenership with WAXX from 5:00am to 6:00am is estimated to be around 65,000 and reaches a 120 mile radius from Eau Claire. The three segments aired on successive Wednesdays on December 5, 12, and 19, 2018. The segments were recorded in the WAXX radio studio in an interview format. I also have a live weekly segment every Thursday morning on WAXX where I discuss upcoming extension programs and crop production information. The target audience was local alfalfa and forage farmers and agribusiness professionals. The main objective for the recordings was to provide research-based and relevant information that was applicable to the area for quality and profitable alfalfa production. The attached clip was broadcast on December 5, 2018 and addressed the importance of soil pH levels, pH impact of fertility, and effect on input costs. Farmers often contact me for follow up information after hearing my information on WAXX. I view my relationship with WAXX radio as an extensive outreach arm of my educational programming and as a marketing mechanism.

Emelie Swackhamer
Horticulture Educator
Penn State Extension
Montgomery County

Swackhamer, E.*[1]
[1] Horticulture Educator, Penn State Extension, Montgomery County, Collegeville, PA, 19530

An invasive insect, *Lycorma delicatula*, commonly known as the spotted lanternfly (SLF), was discovered in southeastern Pennsylvania in September 2014. SLF is a pest of hardwood trees, grapes, and other plants. Containment and suppression efforts are underway in the affected area. Awareness education and monitoring are increasing in surrounding states. The author was invited to participate in a morning radio show on February 28, 2018 on 98 Rock which is a station in Baltimore, Maryland. The author was interviewed live over the telephone from her office in an unscripted question-and-answer format. Emphasis was on nuisance issues that result from SLF infestation, identification, how to avoid spreading the insect, general awareness of invasive species, how to report it to authorities if it is found in Maryland, management methods, and the potential for biological control. In the year since the interview was recorded, 333 people have visited the interview on the 98 Rock website. The recording is available at: https://soundcloud.com/98online/horitculturist-emilie

Christopher Cooper
Extension Agent II
UT Extension
Shelby

Cooper, C.*[1]
[1] Extension Agent II, UT Extension, Memphis, TN, 38120

Mid-South Viewpoint is a public affairs program addressing concerns that are vital to the Christian community in the Mid-South. Byron Tyler is the host of the show. I was invited to come on the show to talk about gardening and the Extension Service. "How Does Your Garden Grow" was the name of the segment. It aired August 16, 2018 on the Bott Radio Network affiliate 640 AM and 100.7 FM in Memphis, TN at their studio. The broadcast reached the majority of the mid-south area and eight surrounding states (TN, MS, AR, MO, Il, KY, AL and LA). The show was also streaming on Facebook Live. It had a viewership of 529. The conversation about the Extension Service started at the 11:55 minute mark and concludes around the 26-minute mark.

https://soundcloud.com/user-580940489/how-does-your-garden-grow-august-16-2018

Regional Finalists

Eric Anderson
Extension Educator
Michigan State University Extension
St. Joseph County

Anderson, E.*[1]
[1] Extension Educator, Michigan State University Extension, Centreville, MI, 49032

In preparation for a breakfast meeting on May 15, 2018 focused on industrial hemp, I interviewed Marguerite Bolt, a graduate student at Purdue University who had been working on hemp research. The interview was pre-recorded the week before the meeting and was aired the Saturday before the meeting at 10:00 AM on WRBI Radio in Three Rivers, MI. The interview was recorded via Zoom software with Marguerite in West Lafayette, IN and me at the St. Joseph County Extension office in Centreville, MI. The radio station manager asked me to record a lead-in for the interview which I also did via Zoom and then used Camtasia editing software to produce the final product.

David Bau
Extension Educator
University of Minnesota Extension

Bau, D.*[1]
[1] Extension Educator, University of Minnesota Extension, Worthington, MN, 56187

I have entered a tape recording requested for a train the trainer session for agricultural loan officers in a podcast and to be broadcast on radio stations in Central and Northwest Minnesota and North Dakota.

I was asked by AgCountry Farm Credit Services corporate office to complete and interview for Rural Perspective Podcast that would go out to their staff on several radio stations on farmland rent and land values for Minnesota.

Farmland rental rates are the most frequently requested question received by the University of Minnesota Extension's Farm Information Line and most county offices and I personally receive over 600 questions per year.

I taught 43 farmland rental rate workshops across the state in the past year with over 1100 participants, and after one of the workshop we conducted this interview that in whole was 20 minutes, the first 15 minutes have been entered.

The focus of the discussion was on the many topics provided at the farmland rental workshops: farmland rental rate trends, corn and soybean 2019 outlook and budgets along with 2018 assessment; Listing many online resources available including farm record data in the FINBIN database; trends and sources for land values and current sales; trends in types of contract agreements; various form of rental agreements; three worksheets available on University of Minnesota Extension's website, one for the landlord one for the farmer/tenant and one for farmer to determine a breakeven price; I included discussion on negotiations.

This recording provides useful information for landlords, farmers and agricultural professionals determining what is a fair farmland rental rate for 2019.

Judith L Wright
Sr. Agriculture Economic Specialist
Cornell Cooperative Extension
Seneca County

Wright, J.L.*[1]
[1] Sr. Agriculture Economic Specialist, Cornell Cooperative Extension, Waterloo, NY, 13165

This is a weekly recorded contribution focused on an agriculture related topic is written and recorded by Judy Wright. It is submitted as an MP3 file to WGVA in Geneva, NY and was initially aired on Monday, January 28, 2019 at approximately 5:30 am. The recording is made using Audacity software in the educator's office.

Karen Cox
Extension Agent
WVU Extension Service
Ohio

Cox, K.*[1], Lima, Dan*[2]
[1] Extension Agent, WVU Extension Service, Wheeling, WV, 26003
[2] Extension Educator, Ohio State University Extension, St. Clairsville, Oh, 43950

Extension Calling has been on the air for nearly 40 years as a partnership between the West Virginia University Extension Service and the Ohio State University Extension Service. County based educators create and deliver timely content on current events and topics related to the farm, garden, and home via this 30-minute show. Aired weekly, Cox and Lima share expertise and knowledge about timely topics such as legislation, safety, livestock and vegetable production, tree care, food preservation, pasture management, natural resources, risk management, pest management and much more.

During the past few years, the show expanded listener opportunities to multiple times and stations (currently aired on WWVA 1170 AM Friday 8pm, Sunday 5:30 and 7:30am, and WWOV 101.1 FM on Sunday at 3:30pm). Now, listeners can tune in to a live recording of the 30-minute informational talk show — anytime, anywhere — via the Extension Calling podcast. While it is available through any podcasting app, it is also distributed weekly through Facebook and LinkedIn, as well online via WVU Extension Service and Ohio County's website. The podcast provides a new interface where Extension can share real world applications of and interpretations for important research findings. With an objective of sharing research-based information with individuals who work shifts or jobs that don't allow them to attend traditional educational programming, each show is a mini-training. These trainings can be searched by topic, downloaded, and listened to anytime. This flexible format allows people to learn at home, in the car, or on the tractor without taking them away from activities like planting, weeding, or milking.

Impacts and reach are measured by audience feedback both locally and from distant states such as New York and Connecticut. The podcast allows further information by recording the number of downloads, which are now in the hundreds. Feedback has included thanks, thumbs up, requests for programming, topical questions and comments, and specific inquiries for more information. The linked excerpt of the program was originally aired on February 10th, 2019. Edits removed local livestock and hay reports as well as the ending of the program.

Kristin G Hildabrand
Extension Agent for Horticulture
University of Kentucky Cooperative Extension Service
Warren County

Hildabrand, K.G.*[1], Schalk, Chris*[2]
[1] Extension Agent for Horticulture, University of Kentucky Cooperative Extension Service, Bowling Green, KY, 42101
[2] Barren County Extension Agent for Agriculture and Natural Resources, University of Kentucky Cooperative Extension Service, Glasgow, KY, 42141

Get the Scoop with Chris and Kristin is an educational radio program that airs daily on Goober 95.1 FM, Monday through Friday at 5:00a.m. The Barren County Extension Agent for Agriculture and Natural Resources and Warren County Extension Agent for Horticulture work together where they write the scripts and then pre-record the 5 minute shows at the radio station. Goober 95.1 FM radio station is located in Bowling Green, KY where it reaches multiple counties located in the South Central Kentucky area with an estimated total reach of 30,000 people. This radio program has allowed agents the opportunity to disseminate research-based information from the University of Kentucky Cooperative Extension Service to both farmers and gardeners. Since October 2016, agents have recorded more than 200 segments related to Agriculture, Natural Resources, Horticulture, Sustainable Agriculture, and nutritional recipes for the family. Feedback from clients and radio station staff to agents personally has been overwhelmingly positive. The segments submitted for this award include spring vegetable garden information and the Southcentral Kentucky Goat and Sheep Producers, which aired the week of March 11 through March 15, 2019.

Tyler D. Coufal
County Extension Agent- Agriculture
Texas A&M AgriLife Extension
Williamson

Coufal, T.D.*[1]
[1] County Extension Agent- Agriculture, Texas A&M AgriLife Extension, Georgetown, TX, 78626

Tyler Coufal is the Agriculture Extension Agent in Williamson County based out of Georgetown, Texas. The objective of the radio segment was to get information to producers about recent cold spells during corn planting and was conducted by Jessica Domel of the Texas Farm Bureau Radio Network. The purpose was to discuss how farmers are combatting the cold during planting and if they are having issues with seeds being disturbed after they are in the ground. The radio program was produced on Thursday, February 28, 2019 in the Williamson County Extension Office and is broadcasted to over 39 stations across Texas and have between 35,000 to 45,000 listeners at any given time. This is one segment of a three-part disbursement of the interview.

Susan L Carter
Horticulture Agent
CSU Extension, Tri River Area
Grand Junction

Carter, S.L.*[1]
[1] Horticulture Agent, CSU Extension, Tri River Area, Grand Junction, CO, 81502

http://kafmradio.libsyn.com/diggin-the-garden-city-forestry

Diggin' in the Garden is a monthly radio show that we do for KAFM 88.1 FM Grand Junction, which is a community radio station mainly operated by volunteers. Here is one of the shows that I hosted with my guest Randy Coleman, City Forester for the City of Grand Junction, Colorado.

Taun Beddes
Horticulture Agent
UTAH STATE UNIVERSITY
Utah County

Beddes, T.*[1], Caron, M.*[2], JayDee Gunnell*[3], Hansen, S.*[4], Goodspeed, J.*[5]
[1] Horticulture Agent, UTAH STATE UNIVERSITY, Provo, UT, 84606
[2] Extension Horticulturist, USU Extension, Logan, UT, 84321
[3] Extension Horticulturist, USU Extension, Logan, UT, 84321
[4] Extension Horticulturist, USU Extension, Logan, UT, 84322
[5] Extension Horticulturist, USU Extension, Logan, UT, 84322

Utah State University Extension has encouraged faculty to cultivate, build and maintain relationships with local media outlets to reach a broader audience. One of the most successful built with local media is a Saturday morning radio program called the KSL Greenhouse Show. The show is the most listened to Saturday morning program in the Salt Lake City market, with an estimated 50,000 listeners. It has been broadcast for at least 40 years with various Extension cohosts. Over this time, the primary way it remains successful and current is through careful tracking of horticulture questions received through USU Extension offices. Many Extension faculty regularly contribute content and interviews on topics including turf care, fruit production, ornamental plants, using local food in season, food safety, sustainability, and plant problem management. To reach younger listeners, USU Extension recently initiated the creation of social media pages, hosted by the station, on Facebook and Instagram. The program has gained over 4,400 followers. With this, social media has been found to be a useful tool in gauging listener interest in show topics and more information about those who listen, because Facebook shares the demographics of those who interact with posts. We have found that the average listener is 40-65, with 60-70% of these being female. Free podcasts are also available and are currently being more heavily promoted. A continued goal is to increase listenership and exposure to a younger demographic through increased and more effective use of social media.

Use this link to access audio file: https://usu.box.com/s/ocgn6gn4y3raxmkzdfdfs7u6t0nvxa6y

State Winners

Iowa	Paul Kassel
Kansas	Jeanne S Falk - Jones
Nebraska	Aaron J.H. Nygren
Ohio	Dan Lima
South Dakota	Sara Bauder
Southern Region	
Florida	Jennifer Bearden
Georgia	Campbell Vaughn
Mississippi	Dr. Eddie Smith
North Carolina	Steve Pettis
South Carolina	Zachary Snipes

Bound Book

National Winner

Kimberly C. Mullenix
Extension Specialist - Animal Science
Alabama Cooperative Extension System
State

Mullenix, K.C.*[1], Rodning, S.*[2], Kriese-Anderson, L.A.*[3], Elmore, M.*[4], Goodrich, B.*[5], Dillard, L.*[6], Kelly, W.K.*[7], Runge, M.*[8], Tigue, A.*[9], Prasad, R.*[10], Stanford, M.K.*[11]
[1] Extension Specialist - Animal Science, Alabama Cooperative Extension System, Auburn University, AL, 36849
[2] Associate Professor/Extension Specialist, Auburn University/Alabama Cooperative Ex, AUBURN UNIVERSITY, AL, 36849
[3] Professor Emeritus, Auburn University/Alabama Cooperative Extension System, AUBURN UNIVERSITY, AL, 36849
[4] Extension Specialist, Auburn University/Alabama Cooperative Ex, AUBURN UNIVERSITY, AL, 36849
[5] Assistant Professor/Extension Specialist, Auburn University/Alabama Cooperative Extension System, AUBURN UNIVERSITY, AL, 36849
[6] Assistant Professor/Extension Specialist, Auburn University/Alabama Cooperative Extension System,

AUBURN UNIVERSITY, AL, 36849
[7] Regional Extension Agent - Farm and Agribusiness Management, Auburn University/Alabama Cooperative Extension System, AUBURN UNIVERSITY, AL, 36849
[8] Extension Economist, Auburn University/Alabama Cooperative Ex, AUBURN UNIVERSITY, AL, 36849
[9] Regional Extension Agent - Animal Science and Forages, Auburn University/Alabama Cooperative Ex, AUBURN UNIVERSITY, AL, 36849
[10] Assistant Professor/Extension Specialist, Auburn University/Alabama Cooperative Ex, AUBURN UNIVERSITY, AL, 36849
[11] Extension Specialist, Auburn University/Alabama Cooperative Ex, AUBURN UNIVERSITY, AL, 36849

The Alabama Beef Handbook was a collaborative project among Extension specialists and agents on the Alabama Extension Animal Science and Forage Team to provide an "in-hand" quick reference guide book to beef cattle producers. This resource highlights best management tips related to forages, nutrition, herd health, reproduction, genetics, management and marketing economics, environmental stewardship, and meat yield/quality. This resource builds upon the widely used 'Alabama Beef Pocket Guide', which is no longer in print through Alabama Extension. The team sought and garnered support from the USDA Southern Risk Management Education Center, Alabama Cattlemen's, and the Alabama Farmers Federation to fund the project in 2018. 7,000 copies of this new guide were printed in fall 2018 and are currently being used as the base curriculum for beef educational programs in Alabama. The book is 132 pages in length and is printed in full color with text, figures, and photos for highlighting educational concepts to beef farmers. Copies of the book have been distributed at BEEF U (a program for youth interested in beef production), Women in Ag, the Tuskegee Farmers Conference, the Alabama Farmers Federation Beef Commodity Organizational Meeting, the Alabama Cattlemen's Convention, and at producer discussion group meetings around the state. 97% of beef producers surveyed indicated this guide would be useful for making decisions in their operations (n = 278 survey responses), and ranked forages, herd health/reproduction, and management/marketing economics as key topics of importance.

National Finalists

Gary J. Wyatt
Extension Educator, Agroforestry
University of Minnesota Extension
Regional Extension Office

Dombeck, Emily*[1], Gupta, Angela*[2], Rager, Amy*[3], Weber, Megan*[4], Wyatt, G.J.*[5]
[1] Forestry Program Coordinator, University of MN Extension, St. Paul, MN, 55108
[2] Extension Educator, Forestry, University of MN Extension, Rochester, MN, 55904
[3] Extension Educator, Fish and Wildlife, University of MN Extension, Morris, MN, 56267
[4] Extension Educator, Aquatic Invasive Species, University of MN Extension, Andover, MN, 55304
[5] Extension Educator, University of Minnesota Extension, Mankato, MN, 56001

By Land and By Sea: Identification Guide to Non-Native Species for Minnesota was developed to address a growing problem in Minnesota. To meet Extension audiences' demands for high quality, user friendly invasive species information, University of Minnesota Extension educators worked together with key audiences and important state agency partners to create a single field guide for problematic non-native terrestrial and aquatic species. This new resource includes 86 species in seven major categories: Aquatic Animals, Birds, Insects, Worms, Aquatic/Wetland Plants, Herbaceous Plants and Wood Plants. It clearly defines important terms including non-native, invasive, important information about the state Noxious Weed Law and the best methods for reporting invasive species. For each species there are 1-3 high quality images, along with plain language descriptions of the species, life cycle and threat, as appropriate.

This field guide is intended to be used in the field. Its 8"x4" size and waterproof paper makes it easy to fit in a pocket or backpack and durable enough for a rainy day in the field. To enhance usability each page is color coded by major category and includes a quickly identifiable icon, making scanning through the pages easy for the user.

In addition to being a high quality and affordable resource (copies can be purchased for $19.99 at the UMN Bookstore), Extension volunteers including Master Naturalist, AIS Detectors and others contributed almost 600 crowd sources photos and gave the UMN copy and sell rights for a total public value of $5,690. In the 2 months it's been available for purchase 57 copies sold through the UMN Bookstore. This resource will be used by professionals and Minnesota residents.

Elizabeth Hawkins
Field Specialist, Agronomic Systems

Hawkins, E.*[1], Arnold, G.*[2], Badertscher, M.*[3], Barker, F. J.*[4], Bennett, A.*[5], Brown, B.*[6], Bruynis, C.*[7], Clevenger, W.*[8], Colley, R.*[9], Culman, S.*[10], Custer, S.*[11], Dellinger, W.*[12], Dorrance, A.*[13], Douridas, A.*[14], Douridas, N.*[15], Estadt, M.*[16], Ford, K.*[17], Ford, K.*[18], Fulton, J.*[19], Haden, V.*[20], Hartschuh, J.*[21], Khanal, S.*[22], Klopfenstein, A.*[23], Kuether, B.*[24], Landis, E.*[25], Lee, J.*[26], Lentz, E.*[27], Lima, D.*[28], Logan, E.*[29], Loux, M.*[30], McCutcheon, J.*[31], McGuire, K.*[32], Neal, G.*[33], Nye, A.*[34], Penrose, C.*[35], Richer, E.*[36], Ruetz, K.*[37], Ruff, G.*[38], Schoenhals, J.*[39], Shearer, S.*[40], Shoemaker, D.*[41],

Shoemaker, H.*[42], Stachler, J.*[43], Tietje, R.*[44], Tilmon, K.*[45], Tuson, C.*[46], Ward, B.*[47], Wilson, A.*[48], Zoller, C.*[49]
[1] Field Specialist, Agronomic Systems, , Wilimington, OH, 45177
[2] Field Specialist, The Ohio State University Extension, Findlay, OH, 45840
[3] Extension Educator, The Ohio State University Extension, Kenton, OH, 43326
[4] Extension Educator, The Ohio State University Extension, Mt. Vernon, OH, 43050
[5] Extension Educator, The Ohio State University Extension, Troy, OH, 45373
[6] Program Manager, The Ohio State University, Columbus, OH, 43210
[7] Extension Educator, The Ohio State University Extension, Chillicothe, OH, 45601
[8] Extension Educator, The Ohio State University Extension, Defiance, OH, 43512
[9] Precision Ag Manager, Agri-AFC, Mobile, AL,
[10] Assistant Professor, The Ohio State University
[11] Extension Educator, The Ohio State University Extension
[12] Extension Educator, The Ohio State University Extension
[13] Professor, The Ohio State University
[14] Extension Educator, The Ohio State University Extension
[15] Farm Manager, The Ohio State University
[16] Extension Educator, The Ohio State University Extension
[17] Extension Educator, The Ohio State University Extension
[18] Extension Educator, The Ohio State University Extension
[19] Associate Professor, The Ohio State University
[20] Assistant Professor, The Ohio State University
[21] Extension Educator, The Ohio State University Extension
[22] Assistant Professor, The Ohio State University
[23] Senior Research Associate Engineer, The Ohio State University
[24] Student Assistant, The Ohio State University
[25] Student Assistant, The Ohio State University
[26] Student Research Assistant, The Ohio State University
[27] Extension Educator, The Ohio State University Extension
[28] Extension Educator, The Ohio State University Extension
[29] Student Assistant, The Ohio State University
[30] Professor, The Ohio State University
[31] Assistant Director, Operations, The Ohio State University Extension
[32] Program Coordinator, The Ohio State University
[33] Extension Educator, The Ohio State University Extension
[34] Extension Educator, The Ohio State University Extension
[35] Extension Educator, The Ohio State University Extension
[36] Extension Educator, The Ohio State University Extension
[37] Student Assistant, The Ohio State University Extension
[38] Extension Educator, The Ohio State University Extension
[39] Extension Educator, The Ohio State University Extension
[40] Professor, The Ohio State University
[41] Field Specialist, The Ohio State University Extension
[42] Program Coordinator, The Ohio State University Extension
[43] Extension Educator, The Ohio State University Extension
[44] Research Associate Engineer, The Ohio State University
[45] Associate Professor, The Ohio State University
[46] Program Manager, The Ohio State University
[47] Assistant Professor, The Ohio State University Extension
[48] Research Scientist, The Ohio State University Extension
[49] Extension Educator, The Ohio State University Extension

eFields is a research and outreach initiative focused on testing and refining management practices with the goal of increasing farm efficiency and profit while minimizing the environmental impacts of the agriculture industry. eFields consists of field-scale research projects that are planned, designed, and executed in partnership with Ohio farmers. Ohio State researchers and Extension professionals work with partnering farmers to design field experiments that allow them to compare different approaches to solving a problem and choose the solution that offers the best result for their operation. This approach ensures that the research is aimed at answering questions that matter to farmers and the results are relevant to the challenges farmers face in their operations. These factors ultimately increase the potential of this research to drive meaningful change in the industry.

In eFields' second year, this team of 48 Ohio State faculty, Extension professionals, and staff collaborated with more than 53 growers and 39 industry partners on over 95 studies conducted at research sites across 25 counties and more than 5,600 acres. This is a 75% growth in participation and a 110% growth in trials over 2017. The team collected, aggregated, and analyzed the data and summarized and organized the research results reported in the annual eFields Research Report. This report is available both electronically and in print and is distributed to farmers, crop consultants, and industry professionals at traditional Extension events, industry meetings, and via social media platforms including Facebook and Twitter.

Since its release on January 9, more than 8,500 physical copies of the eFields report have been distributed. In addition, an e-version is also published through Issuu.com and BuckeyeBox. The e-version has more than 5,000 interactions. Readers have tapped into the report not only from Ohio but nationally and internationally. This information is effectively being placed in the hands of farmers who can use it to make better decisions that can improve their farm business and increase the sustainability of agricultural production as a whole. Download the 2018 eFields report at: go.osu.edu/eFields.

Kevin Athearn
Regional Extension Agent - Rural & Agribusiness Development
UF/IFAS NFREC-Suwannee Valley
Northeast District, Florida

Henry, M.E.*[1], Perez, J.J.*[2], Treadwell, D.D.*[3], Athearn, K.*[4], Bailey, M.*[5], Campbell, C.G.*[6], DeValerio, J.*[7], Felter, E.A.*[8], Hochmuth, R.C.*[9], Kluson, R.A.*[10], Rogers, E.T.*[11], Sanchez, M.T.*[12], Skvarch, E.*[13], Sullivan, J.*[14], Wooten, H.*[15]
[1] Extension Agent III, UF/IFAS Extension, Polk County, Bartow, FL, 33831
[2] Small Farms Extension Coordinator, University of Florida, IFAS Extension, Gainesville, FL, 32611
[3] Associate Professor & State Extension Specialist, University of Florida, Horticultural Sciences Dept., Gainesville, FL, 32611
[4] Regional Extension Agent - Rural & Agribusiness Development, UF/IFAS Suwannee Valley Agricultural Extension Center, Live Oak, FL, 32060
[5] Extension Agent, UF/IFAS Extension, Marion County, Ocala, FL, 34470
[6] Food Systems Researcher, University of Florida, Program for Resource Efficient Communities, Gainesville, FL, 32611
[7] Extension Agent, UF/IFAS Extension, Bradford County, Starke, FL, 32091
[8] Regional Specialized Agent, UF/IFAS Extension, Apopka, FL, 32703
[9] Regional Specialized Agent, UF/IFAS Extension, Live Oak, FL, 32060
[10] Extension Agent, UF/IFAS Extension, Sarasota County, Sarasota, FL, 34241
[11] Area Specialized Agent, Agriculture - Food Safety, NC State Extension, Lenoir, NC, 28645
[12] Commercial Horticulture Agent, UF/IFAS Extension, Alachua County, Gainesville, FL, 32609
[13] Extension Agent, UF/IFAS Extension, St. Lucie County, Fort Pierce, FL, 34945
[14] Extension Agent - Agriculture, UF/IFAS Extension, Osceola County, Kissimmee, FL, 34744
[15] Extension Agent, UF/IFAS Extension, Seminole County, Sanford, FL, 32773

The Florida Direct Marketing Handbook is a reference on marketing, business, and regulations for farmers selling products directly to customers and for the Extension agents who work with them. Small and beginning farmers need to comply with various state and federal regulations, develop effective marketing strategies, and make sound business decisions to be successful. Information on these topics is scattered and may not apply to Florida. The handbook serves the need for an accessible and comprehensive reference on regulations specific to typical commodities sold in direct markets in Florida. Under the leadership of Dr. Danielle Treadwell and Mary Beth Henry, University of Florida (UF/IFAS) Small Farms and Alternative Enterprises Program (SFAE) co-leaders, a team of Extension faculty and staff affiliated with the SFAE Program developed original written content and visual images, designed, and edited the handbook. Jose Perez, Kevin Athearn, and Catherine Campbell also served as editors. Contributors included 12 Extension agents and four specialists (many of whom are NACAA members), and staff from UF/IFAS and the Florida Department of Agriculture and Consumer Services Marketing Division. The first printing of 500 copies was funded by the UF Department of Horticultural Sciences and UF/IFAS Extension Administration. Those copies were distributed to state and county Extension faculty to support local programming. The second printing of 1,000 handbooks was funded by the SFAE team and sold through the UF/IFAS Bookstore as a revenue enhancement strategy to support the team's programming. Users can elect to receive information updates by email. Critical regulatory updates will also be communicated by social media and the SFAE listserv (2,000 members). We expect the Florida Direct Marketing Handbook to serve as an essential resource for years to come.

Regional Winners

Tina L. Kohlman
DAIRY & LIVESTOCK AGENT
UW-Extension
FOND DU LAC COUNTY

Kohlman, T.L.*[1], Mills-Lloyd, S.*[2], Patton, J.*[3]
[1] DAIRY & LIVESTOCK AGENT, UW-Extension, Fond Du Lac, WI, 54935
[2] Agriculture Agent, UW-Extension, Oconto, WI, 54153
[3] Former Agriculture Agent, UW-Extension, Shawano, WI, 54166

We know the importance of creating an animal health emergency plan. We also know creating an animal health response plan increases the likelihood for a positive experience during a county fair. Based on a request from a local county fair on how to handle emergencies based on being unprepared for a past situation, **The Livestock Emergency Response Guide** we developed by UW-Extension agriculture agents as a proactive plan to provide guidance, instruction, and direction in an event of specific animal-related emergencies and situations at the fair. The guide was designed to increase awareness of animal health issues through communication, education, establish preventative action steps, and designate appropriate responses for everyone in the event of an animal health emergency.

The response guide was used for the 2018 Fond du Lac County Fair, as a training guide for a pre-fair superintendents meeting as well as placed in all livestock barns for the duration of the fair. Each guide was developed with general information regarding animal response and specific contact information for each species (dairy, beef, sheep/goat, poultry/rabbit, swine,

and horse). The guide has been used as an educational tool at five other fairs in Eastern Wisconsin.

The guide format was developed using Microsoft Publisher 2013, with the electronic version showing cut-guides for individual fairs and livestock species to make their own. The cover graphic was developed in-house using Adobe InDesign. The guide was duplicated in-house using a Minolta C455 color copier, on a glossy, coverstock for durability in the barns. The response guide was bound in-house using plastic binding combs.

Guinn Wallover
Extension Agent
Clemson Extension
Charleston, Berkley, Dorchester

Morganello, K.C.*[1], Wallover, G.*[2]
[1] Extension Agent, Clemson Extension, Charleston, SC, 29401
[2] Extension Agent, Clemson Extension, Charleston, SC, 29401

The Ashley Cooper Stormwater Education Consortium (ACSEC) is a collaboration between Clemson Extension and more than 14 city and county government partners, and 20 education partners representing non-profits, government agencies, and higher-education providers in the greater Charleston, South Carolina area. The ACSEC was created to coordinate and implement a regional, watershed-scale education strategy focused on stormwater pollution prevention through education and community involvement. The ACSEC assists its city and county partners with meeting requirements of their US Environmental Protection Agency (EPA) Phase II Small Municipal Separate Stormwater Sewer System (SMS4) permit.

In order to provide a framework to identify and deliver impactful stormwater education in the community, beginning in 2017, the ACSEC partners underwent a year-long creative development process to create its "Stormwater Outreach Strategic Plan: 2018-2023." This strategic plan identified the local stormwater pollution concerns, contributing actions, and target behaviors to encourage through education messaging and programming. The plan also includes a series of five-year timelines for each pollutant that identified new and existing resources, methods of delivery, and evaluation metrics to determine the impact of education efforts in the community towards motivating behavior change. The strategic plan will guide the efforts of the ACSEC as it continues to provide water resource outreach to diverse audiences across Charleston through 2023. The "Stormwater Outreach Strategic Plan: 2018-2023" can be found at the website: www.ashleycooper.org.

Stephen Van Vleet
Regional Extension Specialist
Washington State University
Western

Van Vleet, S.M.*[1], Carter, P.G.*[2]
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[2] Extension Specialist - County Director, Washington State University, Dayton, WA, 99328

Washington, Oregon and Idaho have approximately 3.2 million acres of winter wheat. Over 90% of the wheat produced in the Pacific Northwest is exported. Many private and public institutions develop (breed) multiple varieties of wheat to fit the production zones of these states. Development of varieties is conducted for herbicide resistance, resistance or tolerance to disease/insect pests, increased yield and for exceptional quality characteristics. It is critical for growers to grow the variety of wheat that best fits their production zone. Variety testing programs are conducted by private and public researchers throughout the three-state region on performance of the varieties. The seed industry relies on providing growers with the best information on varieties from the variety testing program that potentially fit the production zone where the grower farms. This information allows the grower to obtain the maximum yield with the highest quality, disease/insect resistant variety available.

Based on needs for a cumulative document on varieties from the seed industry and growers, we developed a Winter Wheat Variety Portfolio with funding from the Washington State Crop Improvement Association. This bound portfolio is developed using data from each variety of winter wheat released and tested within the variety testing trials throughout the state. The portfolio contains information on winter survival, test weight, protein, disease resistance/tolerance, milling/baking quality, precipitation zone and area of adaption for each variety tested. The portfolio is printed and bound and distributed to growers and seed industry representatives throughout the state. This provides the seed industry, to give their customers (growers), recommendations for planting the best (e.g. highest yielding, greatest disease resistant, best quality) wheat variety within the growers' production area. The portfolio is also provided directly to farmers at field days so they can make their own decisions on the variety that works best for them. We have made winter wheat and spring wheat portfolios and will continue to produce these due to the increased need.

State Winners

State Winner	
North Central Region	
Iowa	Denise Schwab
Southern Region	
Arkansas	Jarrod Hardke
Tennessee	Adam M Hopkins
Texas	Kara J. Matheney
Virginia	Theresa Long Pittman

Computer Generated Graphics

National Winner

Sarah Schieck
Extension Educator
University of Minnesota Extension

Schieck, S.*[1], DeWitte, D*[2], Neu, A*[3]
[1] Extension Educator, University of Minnesota Extension, Willmar, MN, 56201
[2] Extension Educator, University of Minnesota Extension, Mankato, MN, 56001
[3] Extesnion Educator, University of Minnesota Extension, Willmar, MN, 56201

"Livestock Biosecurity for 4-H Youth" was developed to share the importance of livestock biosecurity to 4-H youth attending livestock day camps at various locations in Minnesota during the summer of 2018. The development of the presentation was one of the deliverables created as part of a grant funded by the North Central Extension Risk Management Education Center. During the 4-H livestock day camps, biosecurity was one of four sessions to which the youth rotated. During the biosecurity session, youth learned biosecurity basics through the PowerPoint presentation for half of the session and the other half was spent doing a hands-on activity with our Biosecure Entry Education Trailer.

The presentation focused on teaching 4-H youth about biosecurity and why it is important in terms of preventing and reducing disease transfer. To aid our audience in better understanding biosecurity and the importance of it, the presentation defined the terms of biosecurity, foreign animal diseases, zoonotic diseases, virus, and bacteria. The presentation also explained how diseases spread and biosecurity practices the 4-H youth should adopt when working with their 4-H livestock projects.

The principles of biosecurity are the same for all livestock species. Depending on the group of youth and species of livestock they designated, our "Livestock Biosecurity for 4-H Youth" base presentation was altered to be species specific. To date, we have educated 348 4-H youth in the livestock project areas of beef cattle, dairy, horse, meat goat, rabbit, and swine. These youth indicated an average learning gain of 41% on their knowledge of biosecurity in a post-session evaluation. In summer 2019 we plan to use the same base presentation to educate 4-H youth in the remaining livestock project areas.

The presentation was developed using research-based fact sheets from a variety of sources from Land-Grant Institutions in the US and livestock industry groups.

National Finalists

Libby Eiholzer
Bilingual Dairy Specialist
Cornell Cooperative Extension
NWNY Dairy, Livestock & Field Crops

Eiholzer, L.*[1]
[1] Bilingual Dairy Specialist, Cornell Cooperative Extension, Canandaigua, NY, 14424

The workplace culture is different on each individual farm, and has a big impact on employee motivation, employee turnover, and in the end, the farm's bottom line. This rather abstract idea is often overlooked by farm managers, but has been made quite clear to the author through years of witnessing the differences of farm culture between the many farms she works with. The author wanted to present the idea to farm managers in a way that would not overwhelm them, but rather give them a straightforward path to start making small changes to the culture on their farm.

This presentation was prepared by the author for Cornell's Operation Managers Conference on January 22, 2019, and was presented to approximately 80 dairy farmers and members of supporting industry.

Tatiana Sanchez
Commercial Horticulture Agent
Alachua

Sanchez, M.T.*[1]
[1] Commercial Horticulture Agent, , Gainesville, FL, 32609

At some point, every horticulture extension agent must teach about the principles of how plants need nutrients to grow and how to visually asses a plant with nutrient deficiency symptoms. These concepts become even more important when educating about hydroponics. **Objective**: Develop a presentation to inform producers of the role of nutrients as structural components of plants, their biological function, and the symptoms of nutrient unavailability, with the purpose of facilitating the identification and correction of such deficiencies. **Methods**: The graphics were developed by the

author using Adobe Spark, and displayed in Canva, to create a visually appealing presentation. Graphics for each nutrient included its symbol and a summary of the top three roles in either the plant cell or metabolism. On the right side of the slide, it indicated where in the plant a deficiency would be observed (which indicates the nutrient's mobility) and the key diagnostic symptoms. The presentation also included concepts such as macro/micronutrient, pH, and alkalinity. It concluded with a summary and a set of nutrient deficiency pictures to test the audience. **Results**: The presentation has been used in several workshops in the Alachua County Extension Office and is part of the nutrient management module of the UF/IFAS Small Farms Academy Program "Hydroponic Vegetable Nutrient Management" offered in January. Upon request, this set has also been shared with other extension agents to teach about plant nutrition. The agent has taught this presentation to 99 people. Surveys have indicated a knowledge gain of 30% to 40% for this module. Data from two workshops indicated that 85% of the participants were confident or extremely confident to identify major nutrient deficiencies. **Conclusions**: This slide set provides a concise and clear overview of plant nutrition, easy to understand by program attendees, and has shown an increase in knowledge gain for participants.

Justin Ballew
Extension Agent
Clemson University Cooperative Extension Service
PeeDee Reg

Ballew, J.*[1]
[1] Extension Agent, Clemson University Cooperative Extension Service, Mullins, SC, 29574

The purpose of this presentation is to educate the audience on the basic principles and practices of the postharvest handling of produce and maintaining produce quality. The presentation discusses the harvest and transport of fresh produce and some of the factors that lead to quality degredation as well as how to avoid these factors. Pre-cooling, washing, and sanitization is also discuss. Several resources with detailed crop specific postharvest information is included at the end of the presentation. This presentation was viewed by 41 members of a New and Beginning Farmers program in April of 2018.

Regional Winners

Connie Fisk
PSA Northwest Regional Extension Associate
Cornell CALS

Fisk, C.*[1]
[1] PSA Northwest Regional Extension Associate, Cornell CALS, Plattsmouth, NE, 68408

Produce growers are often confused about whether or not their farm is covered under the new Food Safety Modernization Act Produce Safety Rule. The Produce Safety Alliance (PSA) Grower Training is offered by state departments of agriculture and extension educators across the United States to teach growers about the rule and its requirements, but since a registration fee is associated with most course offerings, growers may question if they really need to attend. At the same time, some growers attending the course may complete it and still have questions about where their operation falls (is the farm covered, but specific produce items not covered; are certain produce items exempt because they're going to a processor; do their local food sales count, etc.). Multiple resources are available online that can help growers answer these questions, but they can be difficult to find if the person does not know what they are looking for. Many of these resources are provided in the PSA Grower Training Manual, but different training teams across the country may or may not choose to highlight them during their courses. This video walks through the Food and Drug Administration's flowchart, Coverage and Exemptions/Exclusions for 21 PART 112, a key tool to help growers understand if their farm and produce are covered under the rule. This walk-through is followed by a few scenario based questions to practice using the flowchart. Camtasia was used to record the PowerPoint with audio and the video is posted on YouTube (https://youtu.be/Px_Uk3AOhUE). The slides have also been shared with educators who wish to walk through a similar presentation during their PSA Grower Training courses.

Greg Blonde
Agriculture Agent
UW-Madison Division of Extension
Waupaca

Blonde, G.*[1]
[1] Agriculture Agent, UW-Madison Division of Extension, Waupaca, WI, 54981

As the structure and number of commercial farms continues to change, the opportunity for buying/selling standing hay seems to grow. Unfortunately, there is not an established commodity market for hay like there is for corn or soybeans. Finding reliable hay price information is a challenge, and trying to value standing hay from the field is even more challenging.

To help farmers and Ag professionals identify a fair price or help negotiate the sale or purchase of standing hay, UW-Madison Extension Agriculture Agent Greg Blonde developed a free mobile app that can quickly find hay price information for WI, as well as the other top hay producing states across the country. Mobil app features include:

- Quick link button to WI and USDA hay market prices.
- Calculates price/acre for each cutting and total price for the year.

- Hay yield estimator and cutting schedule options.
- Custom Rate Guide chopping and baling cost reference tables.
- Field loss and weather risk input option for buyers.
- "Share" button to email inputs & results from the field or office.
- Free for Android Apple (iOS) smartphones and tablets.

This tutorial Power Point presentation was developed in 2018 when the original Android version app was updated and released for iOS (Apple) mobile devices. In addition, the Power Point presentation was converted to an on-line YouTube video (https://youtu.be/Gv9bNoq4NJQ) as part of the Extension Ag Technology display during the WI Farm Technology Days event in July 2018 (three-day attendance of 42,000).

This Power Point presentation was also shared during a previous Extension Farm Management Update program for Ag Professionals in northeast WI with strong evaluation results.

To date, the Pricing Standing Hay mobile app has been downloaded more than 2,000 times.

Kelly Nichols
Ag Agent Associate
University of Maryland Extension
Frederick County

Nichols, K.*[1]
[1] Ag Agent Associate, University of Maryland Extension, Frederick, MD, 21702

Farmers work with various organizations that offer educational, financial, and technical assistance. Often, these organizations work together to inform farmers of resources that will best suit their needs. In Frederick County, Maryland, during late February and early March, two different organizations each hosted an event for farmers focused on directing them to available resources. Each host organization asked the Frederick County Extension Office to give a brief presentation about Extension. Kelly Nichols, Ag Agent in Frederick County, developed and presented this presentation which provides an introduction to University of Maryland Extension, educational programming topics, and the Educators and resources avilable for Frederick County farmers. A total of 50 farmers and local businesses were present at the two events.

Susan Boser
Water Resources Educator
Penn State Extension
Beaver County

Boser, S.*[1]
[1] Water Resources Educator, Penn State Extension, Beaver, PA, 15009

Pennsylvania has 18,000+ impaired stream miles and increasing urbanization across the state. Urbanization creates impervious surfaces which allow for stormwater runoff impacts after a precipitation event. Stormwater requirements through the Municipal Separate Storm Sewer System (MS4) program administered under Pennsylvania's Department of Environmental Protection, have elements including public education and outreach that must be incorporated into each municipality's stormwater management program.

To assist municipalities with these public education efforts, Extension's Stormwater Management subteam developed a series of short videos and articles that can be used to help achieve these goals for public education. This particular video entitled *Why Should I Care About Stormwater?* was produced by the award applicant with the assistance of Ag Communications and Marketing, and is part of the *Stormwater Basics* education series. The series can be accessed by PA municipalities and the general public as an outreach tool.

Each short video and corresponding article is available online and can easily be incorporated into a municipality's website or newsletter to help meet their MS4 requirements for public education while also driving traffic to the Penn State Extension website. The videos provide concise and easy to understand information on stormwater and its potential impacts. To date, this particular video has been viewed 194 times via Penn State Extension's webpage and 105 times via YouTube.

To help market this video series, presentations were given at the 2018 Pennsylvania State Association of Township Supervisor's state conference and fall forum meetings around the state, reaching over 120 people, as well as an article in the *PA Township News* magazine.

The narrated video can be found online at http://extension.psu.edu/why-should-i-care-about-stormwater

The entire Stormwater Basics series can be found at http://extension.psu.edu/stormwater-basics

Holly Anderson
County Extension Agent
University of Georgia
Ben Hill/Southwest

Anderson, H.*[1], Baxter, L.*[2], Carter, A.*[3], Edwards, P.*[4], Hancock, D.*[5], Kichler, J.*[6], Knight, C.*[7], Sapp, P.*[8], Sawyer, A.*[9]
[1] County Extension Agent, University of Georgia, Fitzgerald, GA, 31750
[2] University of Georgia Extension Forage Agronomist, , Tifton, Ga, 31794
[3] University of Georgia Extension Ag & Natural Resource Agent, , Valdosta, Ga, 31601
[4] University of Georgia Extension Ag & Natural Resource Agent, , Ocilla, GA, 31774
[5] University of Georgia Professor and Extension Agronomist for Forage Crops, , Athens, GA, 30602
[6] University of Georgia Extension Ag & Natural Resource Agent, , Moultrie, GA, 31788
[7] University of Georgia Extension Ag & Natural Resource Agent, , Statesboro, GA, 30458
[8] University of Georgia Extension Ag & Natural Resource Agent, , Waynesboro, GA, 30830
[9] University of Georgia Extension Ag & Natural Resource Agent, , Rochelle, GA, 31079

The objective of this research was to evaluate the effectiveness of four insecticides on suppressing the BSM. County Agents in eight counties were randomly assigned an insecticide (zeta-cypermethrin, malathion, carbaryl, spinosad [YR 1 only], or chlorantraniliprole [YR 2 only]) to be applied on a grower's field. Agents swept the field for BSM before and after each spray application to determine effectiveness of the chemical. The zeta-cypermethrin and malathion most effectively reduced BSM populations ($P < 0.001$; -89% and -73% reduction, respectively), followed by carbaryl (-47%), spinosad (-9%), and chlorantraniliprole (784%; excluded from statistical analysis).

Heidi Rader
Tribes Extension Educator
UAF COOPERATIVE EXTENSION SERVICE
Tanana Chiefs Conference

Rader, H.*[1]
[1] Tribes Extension Educator, UAF COOPERATIVE EXTENSION SERVICE, Fairbanks, AK, 99701

I created this presentation for the Alaska Master Gardener Online Course. The Online Course is the only way most Alaskans can take the Master Gardener Course because we have few agents in a large state. "Flowers for Alaska Gardeners" is designed to complement additional reading and to provide inspiration and practical knowledge for growing flowers in Alaska. The PowerPoint presentations are often cited as one of students' favorite aspects of the course. It provides them with relevant, research-based training that they can put to use in their communities. In the past ten years, 379 people from 70 communities all over Alaska have participated in Alaska Master Gardener Online Course.

As a result of participating in Alaska Master Gardener Online Course, the number and percentage of survey respondents (up to 81) who said they started, continued, do more than before, or planned to do (within 1 year) is noted in parenthesis.

1. Solve problems in their garden by finding research-based information (81; 100%)
2. Share the information they learned with others (81; 100%)
3. Avoid planting invasive plants (80; 99%)
4. Identify diseases/pests before taking action (79; 97%)
5. Use appropriate amount of fertilizer (organic or chemical; 81; 100%)

Paul G Carter
Extension Regional Specialist
WASHINGTON STATE UNIVERSITY
Columbia County

Carter, P.G.*[1]
[1] Extension Regional Specialist, WASHINGTON STATE UNIVERSITY, Dayton, WA, 99328

The Inland Pacific Northwest region includes vast dryland areas of rich deep soils capable of producing excellent quality and quantities of wheat and rotational crops. The cropping systems are young compared to other regions of the country and soils have only recently (last 30 years) experienced alarming declines in pH. This decline has begun to cause agronomic farming difficulties including increased plant diseases, herbicide inactivity or carryover, crop stand establishment, and other complicating issues. The presentation focuses on relationships between soil acidity and liming effects on essential soil nutrient interactions, crop deficiency symptoms, agronomic effects, and work with on-farm soil sampling and liming trials. The extent of soil acidification issues were identified from his soil survey of farm fields, regional soil sampling results, and work with over 40 on-farm research trials will be presented. Paul will introduce practices for soil pH measurement in the field and talk about opportunities for future work. The presentation was developed for the Extension education of primarily farmers and industry agronomist.

State Winners

State Winner	
North Central Region	
Illinois	Kenneth Johnson
Iowa	Denise Schwab
Kansas	Sandra L.Wick
Michigan	Phillip Durst
Southern Region	
Alabama	Angela S. Treadaway
Arkansas	Jesse Taylor
Kentucky	Susan Fox
Mississippi	Dr. Eddie Smith
North Carolina	Paul Mckenzie
Tennessee	Jason de Koff
Texas	Janet Laminack
Virginia	Kevin Camm

Fact Sheet

National Winner

Emelie Swackhamer
Horticulture Educator
Penn State Extension
Montgomery County

Swackhamer, E.*[1]
[1] Horticulture Educator, Penn State Extension, Colllegeville, PA, 19426

An invasive insect, *Lycorma delicatula*, commonly known as the spotted lanternfly (SLF), was discovered in southeastern Pennsylvania in September 2014. SLF has a wide host range and is a pest of hardwood trees, grapes, and other plants. Pennsylvania ranks first nationally for hardwood production, and fifth for grape production. Containment and suppression efforts are underway in the affected area. The Pennsylvania Department of Agriculture (PDA) has issued a quarantine order for 13 counties that prohibits movement of any living life stage of this insect to areas outside of the quarantined area. The author is working with the PDA to provide residents with information about how to comply with the quarantine order. This article was updated in October 2018 to reflect the new permitting requirements and made into a fact sheet approved by the College. It provides links to information about which counties are included in the quarantine order, pictures of SLF in different life stages, information about best management practices to avoid spreading SLF, and links to regulatory information from the PDA including the new permit requirements. This fact sheet is available on the Penn State and PDA spotted lanternfly websites, as well as websites of many municipalities in the affected area. Since October 2018, 55,956 printed copies have been distributed through Penn State College of Agriculture Publications. Additionally, 2,019 have viewed it or downloaded it from the website file:///C:/Users/exs33/Downloads/ee0232%20(2).pdf. It was printed in the January 2019 edition of the Pennsylvania State Association of Boroughs News Magazine which is sent to 7,000 local officials. This fact sheet is part of a wider effort to inform people about the regulation requirements including the SLF permit that is needed for businesses who move within and out of the quarantined area. As of March 6, 2019, a total of 3,779 people completed the permit training and 128,041 permits were issued for use in individual vehicles

National Finalists

Gary Bachman
Horticulture Specialist
Mississippi State
SE - Biloxi

Bachman, G.*[1], Broderick, Shaun*[2], Coker, Christine*[3], Denny, Geoff*[4]
[1] Horticulture Specialist, Mississippi State, Biloxi, MS, 39532
[2] Assistant Professor, Mississippi State University, Crystal Springs, MS, 39059
[3] Associate Professor, Mississippi State University, Biloxi, MS, 39532
[4] Assistant Professor, Mississippi State University, Mississippi State, MS, 39762

The Mississippi Medallion program was established in 1996 by the Mississippi Nursery and Landscape Association (MNLA). The program is intended to increase awareness of good performing plant materials and to promote sales and production of ornamental plants in Mississippi. Compared to national campaigns such as All-American Selections and Perennial Plant of the Year, the Mississippi Medallion program focuses on plants adapted to the environment in Mississippi to benefit both consumers and the green industry. Over 70 landscape and garden plants have selected as Mississippi Medallion selections.

This publication gives an introduction to the 2018 Mississippi Medallion Plants and is part of a series of publications that promote awareness of these plants.

Nicole D. Sanchez
Horticulture Ext. Field Faculty
Oregon State University Extension Service
Klamath

*[1], *[2], Sanchez, N.D.*[3], Leavell, Daniel*[4], Safell, Brandy*[5]

[3] Horticulture Ext. Field Faculty, Oregon State University

Extension Service, Klamath Falls, OR, 97603
[4] Forestry Ext. Field Faculty, Oregon State University Extension Service, Klamath Falls, OR, 97603
[5] Forestry Natural Resources program coordinator (formerly), Oregon State University Extension Service, Columbia County, OR,

Sanchez detected and confirmed the presence of the Bronze Birch Borer (BBB) in June 2017. This pest, previously unknown in the area, had already caused significant mortality to landscape birch trees when detected.

Sanchez and Leavell partnered to inform homeowners on how to detect BBB, which is a cryptic pest that spends most of its life under tree bark where it cannot be seen. Homeowner Guide to Managing Bronze Birch Borer was published in spring 2018, aligned with the new growing season and when damage could be detected. The document outlines treatment options and guidance for determining whether treatments are likely to be helful based on the damage status of the tree. Copies of the publication, displayed with actual pieces of birch trees that had been killed by BBB, were shared at local libraries, arboretum events, local farmers' market, and the county fair. This exposure resulted in hundreds of homeowner contacts, increasing awareness of BBB in Klamath Falls and beyond.

An accompanying fact sheet focusing on detection and identification is bilingual and designed to help both professionals and consumers determine whether BBB might be present in birch trees. Presentation of the bilingual document at the Jan 2019 Pesticide Applicators' Short Course (Wilsonville, OR) along with management information was recived with multiple compliments on the bilinqual aspect of the document. Since many landscape laborers speak Spanish, pest control professsionals said the bilingual nature of the fact sheet would make early detection of BBB more likely in their service areas.

Michael Caron
Extension Assistant Professor, Horticulture
Utah State University
Utah

Caron, M.*[1], Hansen, S.*[2], Beddes, T.*[3]
[1] Extension Assistant Professor, Horticulture, Utah State University, Lehi, UT, 84043
[2] Extension Assistant Professor, Utah State University, Kaysville, UT,
[3] Extension Associate Professor, Utah State University, Provo, UT, 84606

Redberry mite (Order Trombidiformes, Family Eriophyidae) belongs to the mite family Eriophyidae, which consists of eriophyid ("er.ee.oh.PHY.id") mites that cause galls, distortions, bronzing, and fruit russeting on a wide variety of plants. Redberry mite is a microscopic, wormlike mite that is a pest of wild and cultivated blackberry (Rubus spp.). In the U.S., redberry mite is a threat to commercially grown blackberries and can affect fruit quality, flavor and marketability. In Utah, redberry mite was first reported on blackberry in Davis County in 2017. Redberry mite occurs on many continents and has been documented on other Rubus hosts including whitebark raspberry (Rubus leucodermis Douglas), loganberry (R. x loganobaccus L.H. Bailey), dewberry (R. ursinus Cham. et Schldl.), and boysenberry (R. ursinus x idaeus L.); however, economic damage is only known to occur on blackberry.

Regional Winners

Monica Jean
Crop Production Educator
Michigan State University Extension
Delta Co./U.P.

Jean, M.*[1], Bahrman, A.*[2], Kapp, C.*[3], Quintanilla, M.*[4]
[1] Crop Production Educator, Michigan State University Extension, Escanaba, MI, 49829
[2] Reserach Labor, Upper Peninsula Research and Extension Center, Chatham, MI, 49816
[3] Research Assistant, Upper Peninsula Research and Extension Center, Chatham, MI, 49816
[4] Academic Specialist, Department of Entomology- Michigan State University, East Lansing, MI, 48824

Millet is a versatile crop that can be used as a cover crop or as cattle feed. It is relatively cheap and has a more reliable yield when compared to similar crops like forage sorghum. Monica Jean, Michigan State University Extension Educator of Delta County, conducted research in 2018 on a cooperating seed potato farm to compare millet varieties. The varieties were evaluated on yield, regrowth capability after mowing, and nematode suppression. The goal of this research was to improve soil health in potato production systems, but the yield results are also applicable for cattle producers. To prepare this entry the data was collected and analyzed in SAS. Once the data was summarized, several rounds of peer-review took place. The final product was distributed as a handout at conferences and meetings but also made into an article that was available both on-line, shared on social media and mailed through a newsletter (1,000+ subscribers). I would estimate 1200 copies have been distributed. Monica Jean designed the study, collected and analyzed the data and created the handout.

Tyler Williams
Extension Educator
University of Nebraska-Lincoln
Lancaster County

Williams, T.*[1], Fech, John*[2], Feehan, Kelly*[3], Killinger, Elizabeth*[4], Lott, David*[5], Mueller, Ashley*[6]
[1] Extension Educator, University of Nebraska-Lincoln, Lincoln, NE, 68528

[2] Extension Educator, University of Nebraska, Omaha, NE, 68124
[3] Extension Educator, University of Nebraska, Columbus, NE, 68601
[4] Extension Educator, University of Nebraska, Grand Island, NE, 68801
[5] Extension Educator, University of Nebraska, North Platte, NE, 69101
[6] Extension Educator, University of Nebraska, Fremont, NE, 68025

In the blink of an eye, extreme weather events can wreak havoc on lawns and landscapes, often leaving homeowners and landscape managers at a loss for what to do. To help these people make decisions and take actions prior to and after extreme weather events, the Weather Ready Landscapes team developed a set of eight easy-to-read fact sheets addressing the most frequent and impactful weather events in Nebraska. The team members included a disaster coordinator, climatologist, and four horticuluralists, which provided a unique approach to helping this audience deal with weather extremes.

The two-page fact sheets cover the following weather topics: dormancy breaks, drought, frost, winter desiccation, flood, hail, ice, tornado and wind. On the front page, the weather term and climatology is defined and preventative actions are explained. On the back page, typical damage is shown and corrective actions are covered. Each fact sheet contains photos, which help learners identify the impacts of weather conditions on their lawns and landscapes.

The fact sheets were placed on the Weather Ready Nebraska website to be easily shared on social media and are also formatted for desktop printing and downloading. During these events, Extension Faculty, Master Gardeners, and others were able to utilize and easily share with interested parties. They have been sent out via email and social media updates, incorporated into Master Gardener annual training, promoted on multiple media outlets, and highlighted on UNL news releases. The estimated reach is in the thousands.

One fact sheet is included with this submission, but all eight can be found at this link: https://weather-ready.unl.edu/weather-ready-landscapes

Jacqueline Kowalski
Extension Educator
Ohio State University
Summit County

Kowalski, J.*[1]
[1] Extension Educator, Ohio State University, Stow, OH, 44224

Urban agriculture, particularly within the North Central region continues to gain traction at a time of shrinking Extension budgets and limited staff. Often persons engaged in urban agriculture enterprises are new and beginning farmers, non-English speakers, or are from historically underserved populations. These operators/workers are often coming to the field without baseline information on horticulture, production, or pest management issues. The farms are usually considered "micro-scale" with production limitations with regard to space. Although urban farmers tend to be smaller scale, with diverse cropping systems, pests can be just as problematic as on larger scale farms. Pest pressure along with limited pest management options lead to lower yields and profits.

To address this issue the North Central Great Lakes Urban Agriculture IPM Working Group created a series of information card to provide pest management information for urban farmers and community gardens based on feedback from urban farmer clientele. Groundhogs cause significant damage in urban farms and gardens and control options are limited in urban environments. The objective of this Fact Card is to provide urban growers with scale appropriate information for groundhog management. Ten thousand copies (5.5" x 8", two-sided) have been printed and distributed to working group members in eight states for distribution to clientele. Kowalski contributed 70% authorship to for this publication.

Hemant Gohil
Agriculture and Natural Resource Agent
Rutgers Cooperative Extension
Gloucester County

Gohil, H.*[1], Goffreda J.*[2], Ward D.*[3]
[1] Agriculture and Natural Resource Agent, Rutgers Cooperative Extension, Clarksboro, NJ, 08020
[2] Associate Professor , Tree Fruit Breeding, Rutgers University, New Brunswick, NJ, 08901
[3] Extension Specialist, Pomology, Rutgers University, Bridgeton, NJ, 08302

New Jersey's peach and nectarine industry has declined over the last few decades, mainly due to the competition from other peach growing regions. The focus of Rutgers tree fruit breeding program is to develop unique peach and nectarine varieties that would provide an opportunity for growers to garner more shelf space in retail establishments and provide more choices for consumers at direct markets. Authors evaluated five such advance selections of peach and nectarine varieties, in both test orchards in New Jersey and in the post-harvest lab at Rutgers Agricultural Research and Extension Center (RAREC). Factsheet 'Five New Peach and Nectatine Varieties for New Jersey Commercial and Home Orchardist' (FS 1300) describes fruit and tree characteristics, and post-harvest qualities of these varieties in detail. The relative occurance of these varieties compared to other standard varieties makes it easier for the grower to decide on planting or replacing existing varieties. The content was shared with 426 fruit grower subsribers of the Plant and Pest Advisory newsletter, through the article '*Update Your Peach Harvest Windows*'. The

content was also preseneted by the entrant at the Mid-Atlantic Fruit and Vegetable Convention in Jan 2019; North and South Jersey Tree Fruit Meetings in March 2019, where FS 1300 was distributed to total 218 growers. In the last year, more than 12000 trees of these varieties have been ordered for shipment by the Adams County Nursery (ACN), an exclusive licensee for all varieties developed by the Rutgers Tree Fruit Breeding Program. The FS 1300 is available at: *https://njaes.rutgers.edu/fs1300/*.

Jason Detzel
Livestock Educator
Cornell Cooperative Extension
Ulster

Detzel, J.*[1]
[1] Livestock Educator, Cornell Cooperative Extension, Kingston, NY, 12401

This factsheet was developed in conjunction with a collaborative workshop with Glynwood farm in Cold Spring, New York. The influx of new farmers and the publicity surrounding pastured pigs and woodlot cattle has created a need for information regarding the health of the entire farm system. Silvopasture can be viable enterprise if planned and implemented in a prudent manner. This fact sheet is intended to give producers new to silvopasture the resources to design a system for their particular operation and to make them aware of common mistakes and misconceptions regarding the practice. About 60 of these factsheets have been distributed.

Ken Kelley
Regional Extension Agent
ALABAMA COOPERATIVE EXTENSION SYSTEM

Kelley, K.*[1], Mullenix, M.K.*[2], Brown, P.*[3]
[1] Regional Extension Agent, ALABAMA COOPERATIVE EXTENSION SYSTEM, Brewton, AL, 36426
[2] Extension Specialist, Auburn University, Auburn, AL, 36849
[3] Associate Director, Auburn University, Auburn, AL, 36849

The Fact Sheet "Economic Impact of a New 300-Head Cow-Calf Operation in Alabama" (https://www.aces.edu/wp-content/uploads/2019/03/ANR-2504_CowCalfImpact_101118L.pdf) highlights the impact that livestock agriculture has on the state of Alabama. This publication is designed to increase both awareness and appreciation of agriculture in Alabama. This publication is also designed to be both inspirational and affirming for livestock producers in a time of downturn for agricultural economies. This publication is located on the Alabama Cooperative Extension System (ACES) website, with a reach of thousands of individuals per week. This publication will also be a feature in the Alabama Cattlemen's association magazine, which has a printed reach of 11,000 people per issue.

Luke Harlow
Agriculture/Natural Resources
UF/IFAS
Clay

Harlow, L.*[1]
[1] Agriculture/Natural Resources, UF/IFAS, Green Cove Springs, FL, 32043

Local landowners and natural resource groups frequently seek events to promote Arbor Day celebrations for both the planting and caring of trees throughout the community. However, many of these individuals do not have the knowledge for proper selection and care of local trees and many suggested trees many not be suitable for the region. The objective of this factsheet was to give clients one possible tree option, a longleaf pine tree for planting during Arbor Day celebrations. Tree specifications, potential benefits, and easy step by step planting instructions are provided on this two-page factsheet. Initially created for a Clay County Soil and Water Conservation District National Arbor Day event in 2018, the fact sheet has been used at two additional tree planting celebrations in 2018. Between the three events, the factsheet was distributed along with 600 first generation pine trees that have been planted through the community. These trees represented a full acre of planted pine timber spread through the county, enhancing the nature greenspace, and providing numerous ecosystem services. The factsheet provided all participants to be able to plant and establish their trees easily and successfully. An additional 50 copies have been handed out during Florida Master Naturalist programs and other natural resource events.

State Winners

State Winner	
North Central Region	
Iowa	Kelvin L. Leibold
Kansas	Ariel Whitely Noll
Minnesota	Gary J. Wyatt
North Dakota	Gregory J Endres
Wisconsin	Sarah Mills-Lloyd
Southern Region	
Georgia	Caitlin Bennett Jackson
Kentucky	Traci Missun
North Carolina	Dustin Adcock
South Carolina	Adam Gore
Tennessee	Booker T. Leigh

Feature Story

National Winner

Theresa Badurek
Extension Agent III
UF/IFAS
Pinellas

Badurek, T.*[1]
[1] Extension Agent III, UF/IFAS, Largo, FL, 33774

In 2017 this agent was approached by the editor of *Florida Gardening* magazine to write a series of feature stories for 2018. The editor was open to topics that the agent felt were impactful to the Florida gardener based on Extension programming. The result was a four-part series including the "Palms in Paradise: A Look at Florida's Native Palms" feature story in the March/April 2018 issue, "Gardening Under Your Trees" and "What's Damaging my Lawn" feature stories in the May/June 2018 issue, and "Extreme Gardening" feature story in the July/August 2018 issue. The article chosen for consideration here is the one entitled "Extreme Gardening".

The objective of this article was to teach Florida gardeners about gardening in a changing climate and managing these challenges in sustainable and responsible ways. Frequent questions about climate-related issues at our extension help desk, phone calls, emails, and at presentations served as a needs assessment for this topic. The purpose of illustrating this information further was to make gardeners aware and informed, empowering them to improve the health of their landscapes in the face of our future climate changes.

Florida Gardening magazine is available through subscription and in stores throughout the state of Florida. According to the publisher, *Florida Gardening* magazine has a circulation of nearly 12,000 readers. Due to the nature of publication in a trade magazine, follow-up evaluation by survey is not possible. Several readers have shared with the agent how much they have learned from these articles since publication. The exposure in this magazine has also elevated the awareness of UF/IFAS Extension to the magazine's audience.

National Finalists

Brad M. Carlson
Extension Professor
University of Minnesota Extension

Carlson, B.M.*[1], Vetsch, J.A.*[2], Miller, R. P.*[3]
[1] Extension Professor, University of Minnesota Extension, Mankato, MN, 56001
[2] Junior Scientist, University of Minnesota, Waseca, MN, 56093
[3] Extension Professor, University of Minnesota Extension, Rochester, MN, 55024

This article discusses and summarizes the findings of a three year research project that investigated the use of the Pre-Sidedress Nitrate Test (PSNT) in Minnesota. The project was conducted over 3 years, and was funded by the Minnesota Agricultural Fertilizer Research and Education Council (AFREC). This research summary and discussion of results was solicited by the editors of Crops and Soils magazine for inclusion in a sponsored series on Nitrogen Use Efficiency (note the Sponsor's name and logo appears in the article, but neither the project, nor the authors have affiliation, nor received funding from said sponsor). It appeared on-line in December and was in the print edition of the January – February, 2019 issue. Those that read the article and completed a quiz on the contents were granted 0.5 CEUs toward their Certified Crop Advisor certification. This magazine is distributed to over 14,000 individuals (members of the American Society of Agronomy, and Certified Crop Advisors), with over 20,000 having access to the on-line content. Submitting member wrote the majority of the text, developed the figure, prepared the tables, and took and submitted the photographs used with the article.

Sara Bauder
SDSU Extension Agronomy Field Specialist
SDSU Extension
South Dakota

Bauder, S.*[1]
[1] SDSU Extension Agronomy Field Specialist, SDSU Extension, Tyndall, SD, 57066

Dealing with a wet fall and subsequent late harvest causes numerous issues for farmers; many southeast and south-central South Dakota corn growers were faced with this issue in 2018. Since widespread high moisture corn and winter-time corn harvest are both rare in the area, I chose to focus on this topic as a feature article in the winter of 2018. In an effort to increase knowledge on high moisture corn issues and to provide easy-to-reach resources for farmers, I wrote an article focusing on the basics of wet corn, including harvest decision making and storage tips. This article was produced to the public on the SDSU Extension website on December 27, 2018, and also published to South Dakota media as a press release on the same date. It was picked up by multiple print media sources and was published on social media (reaching 76 people) to increase readership. In addition, it was published in the monthly "Pest and Crop Newsletter" which reaches over 2,700 crop consultants and farmers. Defined readership numbers were not available from the SDSU Extension website at the time of submission due to a website restructure. Although submitted as an online resource, this article's contents were disseminated in print, presentations, and conversations as well.

An online copy of the published article can be found at this link: https://extension.sdstate.edu/wet-corn-storage-and-late-harvest-options.

Emma Erler
Program Coordinator, Education Center
UNH Cooperative Extension

Erler, E.*[1]
[1] Program Coordinator, Education Center, UNH Cooperative Extension, Goffstown, NH, 03045

Early in 2018, the University of New Hampshire Extension Education Center accepted an offer to collaborate with a New Hampshire based magazine, named Fiddlehead, in order to provide important, research-based horticultural education to a wider audience. The mission of UNH Extension is in agreement with that of Fiddlehead magazine, namely by exposing readers to the means by which they can live healthier and support local agriculture. Fiddlehead is distributed to over 500 businesses across six counties, and has a wide readership.

Since January of 2018, Extension's Education Center has contributed articles to a bimonthly feature titled 'Homegrown New Hampshire'. The goal of each featured article is to provide seasonally relevant, research based information that is practical for residents across the state. After a droughty start to the growing season in 2018, the focus of the article in the July/August edition was water conservation in the garden. The article succinctly highlights three key aspects of efficient water use: careful design, the selection of drought tolerant plants, and effective watering practices.

Regional Winners

Sandra L. Wick
District Extension Agent, Crop Production
K-State Research & Extension
Post Rock Extension District #1

Wick, S.*[1]
[1] District Extension Agent, Crop Production, K-State Research & Extension, Smith Center, KS, 66967

Crop production, in the Post Rock Extension District, is one of major agricultural enterprises that is critical for our rural communities. To help producers understand the importance of monitoring climate and weather conditions that can have a significant impact on cropping decisions, I developed a feature, yet informational story, on using the Kansas Weather Data Library and the Mesonet. The objective of my feature story was to educate producers on utilizing all tools available for their cropping enterprise. The purpose was to educate producers on specific data and tools available from the Kansas Weather Data Library and Mesonet along with the importance of this topic. The feature story was written September 28, 2018 and printed in ***eight area newspapers during the week of October 1-5, 2018***.

The story was directed to all producers and was distributed to approximately 20,250 households along with 450 producers on our "Agriculture list-serv". After the information was printed, our District Extension Offices received several inquiries about the Kansas Weather Data Library and the Mesonet. I wrote and prepared all the information using K-State Research and Extension materials. A word processor and a color copier/printer were used for duplication.

Margaret Quaassdorff
Dairy Management Specialist
Cornell Cooperative Extension
NWNY

Quaassdorff, M.*[1]
[1] Dairy Management Specialist, Cornell Cooperative Extension, Batavia, NY, 14020

Each year, as winter temperatures return to the Northeast, farmers often turn to electric heating devices to help keep pipes and waterers from freezing, engines the ability to start, and calves from becoming hypothermic. Often, heating equipment is not inspected before use, people glance over everyday items that serve as ignition and fuel, and rarely are there clear plans in place in case of emergency. Barn fires tragically claim family businesses, property, livestock, and human life in New York every year. The author wrote this article to help farm owners, managers, and employees think about the fire risks on their operations, and encourage use of local resources to prevent and protect against these catastrophic events.

The article was published in the December 2018 issue of the Northwest New York Dairy, Livestock and Field Crops Team's monthly newsletter titled, *Ag Focus*. The newsletter is available on the team's website and is also emailed directly to 229 farmers, Extension educators and members of supporting industry. An additional 240 readers receive a printed hard copy of *Ag Focus* in the mail.

Ginger Fenton
Dairy Extension Educator
Penn State Extension
Mercer County

Fenton, G.*[1]
[1] Dairy Extension Educator, Penn State Extension, Mercer, PA, 16137

As dairy producers face challenging times, they are seeking ways to supplement farm income. Starting a value-added dairy business frequently enters the conversation as a possibility. The objective of this article was to encourage dairy producers to consider some of the often-overlooked aspects of operating a value-added business including added demands on labor, regulatory requirements, food product manufacturing,

motivational factors, and interaction with the public while still maintaining daily production on the farm.

An editor with the dairy magazine, *Progressive Dairyman*, requested an article related to on-farm considerations of value-added dairy following a presentation at a conference by the author. The author was the sole contributor to the article and responsible for submitting an electronic draft to the editor of the magazine. The article was published in several outlets via print and online including *Progressive Dairyman (East)* which has a circulation of 8,817 as well as publication on the website. *Progressive Dairyman -Canada* with a circulation of 8,984 requested to print the article. Additionally, the author granted permission to Cornell Extension in Lewis County, NY to re-print the article in a county extension newsletter. The Penn State Extension Dairy Team shared the article on Facebook where 426 people were reached.

Margaret Ross
Eastern Area Specialized Poultry Agent
NC State Extension
Jones

Ross, M.*[1]
[1] Eastern Area Specialized Poultry Agent, NC State Extension, Trenton, NC, 28585

Having backyard chickens has grown in popularity over the last several years. There are multiple ways to provide housing, feed, and water for birds in your backyard, many of which you can build or construct yourself. This article provides several examples of do-it-yourself projects that can benefit backyard poultry producers. It also gives examples of items you may already have around your backyard that you can use to save money and make the projects as inexpensive as possible. I included the pictures with the article in the event the newspaper had room to run them with the article. The article was sent in to the Sampson Independent which is delivered to 2,000 people per week as newspapers in their boxes, as well as 175,000 people view the paper on the web in Sampson County, North Carolina. I hope this article reached community members who can benefit from the suggestions in the article, which will also improve their backyard flocks.

Guinn Wallover
Extension Agent
Clemson Extension
Charleston, Berkley, Dorchester

Wallover, G.*[1]
[1] Extension Agent, Clemson Extension, Charleston, SC, 29401

Smart irrigation in residential landscapes has many benefits for both the lawn and garden, our water resources, and the homeowner's wallet. The "Smart irrigation saves water" feature story was published in *The Post and Courier's* 'Home and Real Estate" section in Charleston, South Carolina on Sunday, April 22, 2018. The purpose of the article was to encourage residents to use irrigation best management practices to help conserve water and reduce the impacts of runoff on nearby waterways. A series of short tips addressed soil testing, mower height, irrigation timing and volume, irrigation water quality, turf selection, and sprinkler calibration. Readers were directed to the many resources offered through the Clemson Extension service for more information, including their soil and irrigation water testing and the "Home and Garden Information Center (HGIC)" website. Distribution of the Sunday edition of *The Post and* Courier is to 96,005 people living in Charleston, SC and its suburbs in Berkeley, Charleston, and Dorchester counties. The article was written by Guinn Wallover, a Natural Resources Agent with Clemson Extension.

Heidi Rader
Tribes Extension Educator
UAF COOPERATIVE EXTENSION SERVICE
Tanana Chiefs Conference

Rader, H.*[1]
[1] Tribes Extension Educator, UAF COOPERATIVE EXTENSION SERVICE, Fairbanks, AK, 99701

In April 2018 I had the opportunity to visit five farms Homer, Alaska (Southcentral Alaska) to showcase some of the innovative practices they were using, including high tunnels. While I was there I filmed 15 YouTube videos (https://youtu.be/zWtWLZ3yhSE). I also recapped my trip in this feature article written for Interior Alaskans. Alaska is the largest U.S. state and has many different climactic or growing zones. Just as diverse as the climate is the culture around local food. In this article, I wanted to show what it looks like when a community comes together to rally behind local farmers and food. It makes it possible for a small farmer to make a decent living. It means there is delicious, unique food to be had around town. It also adds vibrancy and uniqueness to the community in general. I was hoping to inspire and motivate Interior Alaskans to support their local farmers whether it's by choosing a restaurant that serves local food or by supporting them directly.

State Winners

State Winner	
North Central Region	
Illinois	Doug Gucker
Iowa	Kapil Arora
Michigan	Monica Jean
Ohio	Timothy J Malinich
Wisconsin	Stephanie Plaster
Southern Region	
Alabama	Norman V. Haley, III

Arkansas	Jan Yingling
Georgia	Campbell Vaughn
Kentucky	Nicole Bell
Mississippi	Jeffrey Wilson
Tennessee	Jason de Koff
West Region	
New Mexico	Jeff Anderson

Learning Module

National Winner

Amber Yutzy
Extension Educator
PENN STATE UNIVERSITY

Yutzy, A.*[1]
[1] Extension Educator, PENN STATE UNIVERSITY, Huntingdon, PA, 16652

Producing a high quality product on a dairy farm can be very challenging. Quality control is a major factor in the productivity and profitability of a farm. Use of consistent milking practices that emphasize teat cleanliness, udder massage and rapid milking is one of the most important jobs on your dairy farm. Consistency of milking affects cow well-being, mastitis risk and milking speed. It is often hard to keep milkers engaged in the milking process and usually requires refresher training of why each step is important. Consistent use of standardized milking practices such as predipping, forestripping, drying teats with a single-use towel, unit alignment, and rapid unit attaching and detaching at the right time are essential to quality milk production. This online learning module was developed to reach those that feel more comfortable learning in their own environment and at their own pace, while still getting the necessary education they need. This module was also translated and is available in Spanish to reach the ever-growing Hispanic population on dairy farms. This module is available at: https://extension.psu.edu/best-milking-practices-online To access the module you will need the code: MILK-REVIEW

National Finalists

Brad M. Carlson
Extension Professor
University of Minnesota Extension

Carlson, B.M.*[1], Miller, R.P.*[2], Bongard, P.M.*[3], Kaiser, D.E.*[4]
[1] Extension Professor, University of Minnesota Extension, Mankato, MN, 56001
[2] Extension Professor, University of Minnesota Extension, Rochester, MN, 55904
[3] Educational Content Specialist and Communications Specialist, University of Minnesota Extension, Farmington, MN, 55024
[4] Extension Soil Scientist, University of Minnesota Extension, St. Paul, MN, 55108

This submission is for the on-line version of Nitrogen Smart. The Nitrogen Smart Program at the University of Minnesota is in its fourth year, and has trained over 800 individuals, and has documented outcomes of a reduction in over 2,000,000 lb. of applied N annually, and improved profits of over $3,000 per farmer attendee. The three hour in-person curriculum was adapted to an on-line format for 2018. This training uses the web-based Qualtrics survey tool to lead participants through a series of videos and interactive questions and tools in order to ensure active participation and enhance the learning experience. In addition, the experience is customized based on the geographic location of the participant, and the crops they produce. The training went live in mid-December, with promotion beginning in earnest in late January. To date 41 individuals have completed the training. The training can be found at: https://extension.umn.edu/event/nitrogen-smart-online

Amanda Bennett
Ext. Educ., ANR
Ohio State University Extension
Miami County Ext. Office

Bennett, A.M.*[1], Douridas, A.R.*[2], Bruynis, C.L.*[3], Brown, B.P.*[4]
[1] Ext. Educ., ANR, Ohio State University Extension, Troy, OH, 45373
[2] Ext. Educ., ANR, Ohio State University Extension, Urbana, OH, 43078
[3] Ext. Educ., ANR, Ohio State University, Chillicothe, OH, 45601
[4] Program Manager, The Ohio State University, Columbus, OH, 43210

Sound risk management decisions begin with an assessment of an operation's ability to enter into risk. Lower grain profit margins have increased producer and lender interest in risk mitigation practices in grain production. This project built on existing curriculum to meet the learning objectives of the project. Interactive exercises for producers to assess their risk were included.

Ohio State University Extension delivered five multi-session workshops across western Ohio to improve producers' marketing risk management skills. In addition, a two-session webinar with the same content is set for March 2019. Lastly, online modules are being created and housed on the web for producers to access at-will. The target audience was grain producers from all sectors of the farm population, including new, beginning, minority, and traditional farmers. A total of 55 producers participated in the in-person workshops in 2019.

Registrations are still open for the March 2019 webinars.

The learning module was professionally duplicated. In addition to the participants of the in-person workshops and the webinar, thirteen copies were distributed to participants in a local Annie's Project. More copies will be distributed to county educators and participants of grain marketing workshops in the winter of 2020.

The members of this team contributed approximately 80% of the final product. The remaining 20% was gathered from other sources to enrich the program for participants.

Dan Campeau
Specialized Area Poultry Agent

Campeau, D.*[1], Campeau,Daniel, C*[2], Mobley, Martha, L.*[3]
[1] Specialized Area Poultry Agent, , Pittsboro, NC, 27312
[2] Regional Small Flock Processing module, North Carolina, Liberty, NC, 27298
[3] Livestock Agent, Franklin Co. Cooperative Extension Agent-NCSU, Louisburg, NC,

Team members include Martha Mobley, Livestock Agent from Franklin County, NC and Dan Campeau, Area Specialized Agent, from Chatham County, NC.

The objective of the meeting was to fulfill contractual grant obligations to host annual educational events on the topic of on-farm poultry processing using Mobile processing unit owned by the Tar River Poultry Initiative, LLC. The Mobile Unit was purchased with grant monies for rural economic development with the agreement that their group with the help of NCSU Extension would host educational events for at least five years.

In 2018 Martha Mobley and I organized the one day event. We also presented short programs and topics that were included that day. Please see attached flyer. We also included a Notebook that we passed out that held all the programs/ topics and materials that were presented over the day of our workshop. We printed 35 copies using NCSU Agricultural Publications department at NCSU. It also included a list of resources that small scale farmers could use to further their education on this subject and also equipment that may be needed to build a mobile poultry processing unit of their own.

Partners included North Carolina Department of Agriculture, The Livestock Conservancy, Tar River Poultry Initiative, North Carolina Prestage Poultry Science Department, NC Choices and the NC Cooperative Extension Service.

The Notebook was used by the 18 participants as a valuable resource. According to our Evaluations, the small scale producers really gained knowledge on this subject. In most cases applied this knowledge to their farm management.

Regional Winners

Jason de Koff
Specialist
Tennessee State University
Central Region

de Koff, J.*[1]
[1] Specialist, Tennessee State University, Old Hickory, TN, 37138

In July 2018, I passed the remote pilot certification exam. In January and February 2019, I developed a drone certification training module to train Extension agents and teachers to help them pass the remote pilot certification training and use drones in their programming. This module included 5 units (General Information, The Aircraft, Weather, Physiological Factors and Risk Assessment, and Airport Operations and Charts), two activities, and an example exam with answer key. The example exam is offered by the FAA and was not created by me. I developed the activities which focus on weather reporting (METAR) and how to read aeronautical charts to provide additional opportunities for participants to learn some of the more technical information. These activities were used during the training period and provided an active group learning experience. A portion of the example exam was used as a pre-test/post-test to identify direct changes in knowledge. The module was implemented in three separate training sessions in each of the three regions of Tennessee in February/March 2019. A total of 58 agents and teachers were trained in the material and received all of the presentation slides, notes, activities, exam and answer keys. Based on the results of the pre/post knowledge exam, 88% increased their scores. The average pre-test score was 70% and the average post-test score was 81%. From the overall program questionnaire, 96% of participants indicated an increase in their knowledge of aeronautical charts and METAR, 94% increased their knowledge of FAA regulations. There were 90% and 100% of participants who had some level of agreement (somewhat agreed, agreed, or strongly agreed) that the aeronautical chart and METAR activities, respectively, were helpful for learning the material. Also, 73% of participants indicated an increased likelihood of getting their drone certification. Since developing the drone certification training module, the CTE and curriculum program managers for Tennessee have sought my advice for creating a statewide drone certification training program that teachers can implement for students involved in multiple applications (i.e. agriculture, construction, transportation, law and public safety, arts and AV).

Edward Olsen
Extension Agent
Virginia Cooperative Extension
Henrico County

Olsen, E.*[1]
[1] Extension Agent, Virginia Cooperative Extension, Henrico, VA, 23273

Extension Master Gardeners are a special group of people: excited to learn new and useful things; passionate about their environment and the essential role plants play; and eager to make positive change at whatever level they can. Advanced EMGs take this a step further by specializing in one broad area so they can increase their value as a community resource. In Virginia there are three Advanced EMG programs of which Tree Stewards is one. To support the Advanced Extension Master Gardener Tree Steward Training Programs across Virginia, a manual has been used since 1996. This manual was essentially an organized collection of professional journal articles and extension publications on tree care. There was no cohesiveness between topics and many of the topics covered in the manual were incomplete, owning to gaps in publications or journal articles, or were out of date due to recent research. This manual remained in use and was not updated during its 20 year history. In preparation for Tree Stewards Advanced Master Gardener Training at the 2018 Virginia Master Gardener College, it was determined that a new training manual should be produced. This would allow the manual to be updated and include current research based tree care information. Additionally, the manual would be easier to read and work better in conjunction with the recently updated Virginia Master Gardener Handbook (2015). After more than a year of work by a dedicated committee of Master Gardeners, Extension Agents and Extension Specialists, the beta draft of the manual was used to train a local unit in the winter of 2018. Based on comments and feedback from this beta group, the manual received a final edit; with the final publication being employed for training during the June 2018 Master Gardener College event. The agent was responsible for writing Chapter 8 of the completed manual titled: Selecting, Siting and Planting. Twenty-three Virginia Master Gardeners used the manual at the June 2018 training.

Ashley Lauren Hall
Area Assistant Agent, Agriculture and Natural Resources
University of Arizona Cooperative Extension
Gila County

Hall, A.L.*[1], Andrew Brischke*[2], Perry, Charles*[3], Despain, Del*[4]
[1] Area Assistant Agent, Agriculture and Natural Resources, University of Arizona Cooperative Extension, Globe, AZ, 85501
[2] Area Assistant Agent, University of Arizona Cooperative Extension, Kingman, AZ, 86401
[3] Research Specialist, Senior, University of Arizona School of Natural Resources and the Environment, Hurricane, UT, 84737
[4] Research Scientist, University of Arizona School of Natural Resources and the Environment, Hurricane, UT, 84737

Vegetation GIS Data System (VGS) is a free software application designed for recording and managing ecosystem sampling data. The application provides: 1) a data repository for organizing and managing data, photos, documents, positional coordinates and other information associated with an unlimited number of study sites or locations, 2) electronic tools for recording data in the field (using tablet PCs) as well as historical data in the office and 3) reports and tools for summary and presentation of results in the field and in the office. Data forms are available for a variety of vegetation sampling methods and can be designed for specific protocols and needs. VGS is used by University of Arizona (UA), Utah State, Texas A&M, and University of Idaho Extension faculty and staff with programming focusing on natural resource and rangeland management. Outside of the Cooperative Extension System, rangeland management professionals with the Forest Service (all Regions except Alaska), Bureau of Land Management (Nevada, Arizona, Utah), Natural Resource Conservation Service (20 offices and growing), private ranches, consulting firms and foundations are currently using the program. Due to the widespread use of VGS, video tutorials are needed to provide around-the-clock service and support users as they work through basic issues. The current series of tutorial videos is for VGS version 4.0 is divided into brief sections that cover specific help topics and that are a maximum of 10 minutes. The videos were created using a screen recording and video editing program Camtasia. All aspects of the videos, including script writing, recording and editing, was done by Hall, Brischke, and Perry, with Despain providing critical feedback as the creator of VGS. The tutorial videos are distributed on a YouTube channel (https://www.youtube.com/channel/UC-yp3X3SVqZVcLx_R6NgElQ). The YouTube channel can also be accessed through the UA Cooperative Extension publication website (https://extension.arizona.edu/pubs/vegetation-gis-data-system-40-video-series - these tutorials are peer reviewed) and VGS website (https://vgs.arizona.edu/ - where users download the program and can find additional program information). Since the tutorials were posted online in August 2018, they have cumulatively had over 600 views.

State Winners

State Winner		
North Central Region		
Missouri	Travis Harper	-
Nebraska	Katie Pekarek	-

Southern Region	
Alabama	Ayanava Majumdar
Florida	Nicole D. Pinson
Kentucky	Adam Huber
Mississippi	Brady Self
South Carolina	Ryan Bean

Newsletter Individual

National Winner

Libby Eiholzer
Bilingual Dairy Specialist
Cornell Cooperative Extension
NWNY Dairy, Livestock & Field Crops

The Dairy Culture Coach is a bilingual newsletter created to better serve dairy farm managers and their Hispanic employees in New York State. Included in the quarterly issues are articles offering tips to help employers and employees with language learning, educational materials to teach employees about the many aspects of working on a dairy farm, information to support managers› understanding of the cultures and countries that their employees come from, and dairy-related vocabulary. In the past few years, there has also been an increased focus on human resource management and labor law compliance, which are topics that readers frequently ask the author about.

Now in its 6th year, the newsletter is distributed via email to 150 dairy producers, Extension educators, and members of supporting industry statewide. It's also offered on Cornell Cooperative Extension's Northwest New York Dairy, Livestock and Field Crop Team's website (www.nwnyteam.cce.cornell.edu) and shared via the Team's Facebook page.

In a recent survey, DCC readers commented that they use it to "help explain training topics, such as water control in the parlor," and that the articles "are great ways of getting workers to think about things differently and start a discussion on the farm, instead of workers feeling like they're being scolded without understanding what's going on." Managers appreciate that this resource addresses everyday things that they may overlook, but have a big impact on the farm business's bottom line.

National Finalists

Edward Brown
Extension Educator, Agriculture & Natural Resources
Ohio State University Extension
Athens County

The newsletter was created for and distributed to everyone interested in growing plants and animals. The current subscription list includes 86 digital editions and 25 print copies with new subscribers being added on a regular basis.

The intent is to provide helpful information to both experienced farmers as well those just getting started.

Amanda Sears
County Agent for Horticulture
UNIVERSITY OF KENTUCKY
Madison

In 2007, the Extension Service added an Agent for Horticulture to meet the change in Madison County agriculture. The Horticulture Agent quickly initiated the Pay Dirt newsletter. The newsletter disseminates timely horticulture information and advertises upcoming education opportunities. The research-based information is provided by the Horticulture Agent and University of Kentucky Specialists from horticulture, entomology, plant pathology, plant and soil sciences and other departments, as well as farmer's market and SNAP-ED information. The newsletter is distributed electronically and by mail, reaching over 2,000 people. The audience includes homeowners and commercial growers.

An on-line survey of newsletter recipients indicated that the newsletter has influenced them to:
• Tested soil and interpreted soil analysis report: 44%
• Identified insect pests and treated as recommended by Extension: 44%
• Visited a farmer's market: 33%
• Identified plant diseases and treated as recommended by Extension: 33%
These changes of practice have:
• Improved the quality of their lawn and garden: 39%
• Reduced the use of chemicals: 33%
• Tried a new food or recipe: 22%
• Saved money or decreased cost: 17%
• Added value to my home: 17%

According to one client, "the newsletter answers questions I didn't even know I had." Another person commented that they had started a personal reference library with the newsletters.

Tom Guthrie
CEA-AG MILLS CO.

In 2016, the Mills County Agriculture Committee felt a need to better reach and educate a clientele that consisted of many new and absentee landowners that are technology driven. The newsletter proved to be a great success and has been continued ever since. The goal is to provide up to date and relevant topics that relate to the residents and landowners of Mills County on a more personable level. Most of the information is written through the Mills County Extension Office. 281 email addresses are in the Mills County Agriculture newsletter database. Two versions of the newsletter are

utilized. One version is made in publisher and another version is made utilizing mail chimp in order to make it easier to read for mobile devices. In addition the newsletter is posted on the Mills County Agriculture Facebook page, which has 263 followers.

Regional Winners

Jeremy Jubenville
Extension Floriculture & Greenhouse Educator
Michigan State University Extension
Kalamazoo

Consistent communication is one of the best ways to maintain stakeholder engagement. Efficient communication methods are also a necessity with multi-county coverage areas and statewide responsibilities. "Southwest Michigan Greenhouse News & Notes" is a digital newsletter distributed to a list of greenhouse growers, allied industry representatives, and protected agriculture enthusiasts. I use Mailchimp to send out email campaigns every 1-2 weeks during spring production season (December through June) and every 2-3 weeks during the slower times of year. Each newsletter contains news and announcements, insect and disease reports, upcoming events, and links to information resources. I sent a total of 35 email newsletters in 2018 to recipients in 18 Michigan counties. I started the year with 147 recipients and ended the year with 166 for a net gain of 19 new recipients. A grand total of 5414 email newsletters were successfully delivered over the course of the year with 1951 unique opens. The open rates ranged from 23% to 57% with an overall average open rate of 36.3%. There were 5373 total opens, which suggests that recipients came back to the emails for reference at a later date.

While efficient, digital communication has a propensity to be impersonal. To promote a feeling of connection with my growers, I make it a point to imbue these newsletters with a healthy dose of personality and passion. The attached files are two examples of my newsletter converted to pdf format. Archived newsletters, designed for viewing on traditional computers and mobile devices, are available online. The April 11, 2018 newsletter can be found here: https://mailchi.mp/1252dbc61e8c/southwest-michigan-greenhouse-special-edition-on-xanthomonas?e=[UNIQID] and the February 27, 2019 edition can be found here: https://mailchi.mp/0b0625d55988/southwest-michigan-greenhouse-news-and-notes?e=[UNIQID]

Claire Lacanne
University of Minnesota Extension

This e-newsletter goes out to an audience of stakeholders in Rice and Steele counties. It's intended to deliver county and University resources as well as inform followers of upcoming ag, food, and natural resource-related programming. I also do my best to address current issues and respond quickly to local questions, concerns, and occasionally, emergencies. Recently, I released a special edition newsletter to address a string of tornadoes that hit Rice County. The special edition contained emergency resources, helplines, contacts for the emergency management department, and information on emergency funding for local farmers.

Because my background is in entomology, every newsletter highlights a particular insect or insect-related topic. This section often applies to farmers and homeowners/gardeners.

I prepare this newsletter once every two months and compile stories, events, resources, and articles I've written for the final product. Recipients include farmers and other producers, agribusinesses, county commissioners, and landowners. It is distributed electronically via email using Constant Contact. The recipient list is 182 and growing. The average open rate is 64%, compared to an industry average of 19%.

David T. Handley
Vegetable & Small Fruit Specialist
University of Maine Cooperative Extension

Over 100 Maine berry farmers receive the University of Maine Cooperative Extension StrawberryIPM Newsletter every year. Since 1993 this letter has encouraged farmers to adopt integrated pest management (IPM) strategies by providing fresh data every week during the growing season about emerging pest pressure in local berry fields. This data and the recommendations that accompany it help growers optimize pest management efficacy and efficiency. Farmer volunteers help collect the weekly insect population data reported in the newsletter, which is passed on to subscribers to help them scout their own fields and determine optimal strategies to manage strawberry pest problems as they arise. The weekly newsletter is designed to be short and readable, and has constantly adapted to emerging technologies. It is now available as surface mail (~20%) and e-mail (~80%), as well as being posted on our web page and as a blog with color pictures (https://extension.umaine.edu/highmoor/blog/2018/05/18/strawberry-ipm-newsletter-no-1-may-18-2018/). The web-based edition of the newsletter received over 900 views from 2016-2018. Recent post-season surveys of farmers subscribing to the Strawberry IPM Newsletter indicate that using the information helped reduce pesticide applications to their fields by 20-50%; reduced pest management costs by $80-$200 per acre, and improved crop quality and profitability ($400-$1500 per acre).

Karen Cox
Extension Agent
WVU Extension Service
Ohio

The special edition of our office's newsletter: Spring ANR Events focuses on Agriculture and Natural resources and is organized and produced independently of the other agents in the office. It is mailed to our agricultural interest mailing list which includes 439 homes in Ohio County and the surrounding areas.This newsletter is also distributed to our local agricultural suppliers.

The original purpose of the original spring event special in 2018 was to deliver timely information on upcoming events in the region. Initially published in February of 2018 it covered events through May of 2018. However, this year's special edition, published in March of 2019, also shares timely agricultural information from our specialists.This year's article on hay supplementation was followed by a newspaper article in the Wheeling Intelligencer and multiple calls from producers seeking aid in finding hay as well as suppliers notifying us of bales for sale.

We have received strong feedback from our Special Edition – Spring Event newsletter. Listed programs have had multiple cross enrollments between states. Recipients have reported keeping their newsletter for reference and using it to set up their schedules.

Alana W. West
COUNTY EXTENSION 4-H AGENT
CLEMSON EXTENSION SERVICE
Newberry County

The Newberry County 4-H Clover Clips Quarterly Newsletter was started in the fall of 2010 as a way to disseminate information about clubs, project guidelines and deadlines, youth camps, upcoming fundraisers and events, member recognition, contests, and various other 4-H happenings on the local, state, regional, and national levels. The Clover Clips Newsletter, originally developed in Microsoft Publisher, is now published using Mailchimp once every quarter: March, June, September, and December. Publication dates were chosen to coincide with 4-H programs, projects, and deadlines. Now in its tenth calendar year, the newsletter is sent in color via Mailchimp format to anyone, youth or adult, who has previously or is currently participating in or interested in anything 4-H: programs, clubs, or projects; in school, after school, or community wide; sponsorships or donations; active or alumni; county council and other stakeholders. The existing distribution list consists of 363 email addresses, and continues to grow. A link to the current newsletter is posted on the Newberry County 4-H website: https://mailchi.mp/193c50df6495/newberry-county-4-h-clover-clips-quarterly-newsletter, as well as on the Newberry County 4-H Facebook page: www.facebook.com/NewberryCounty4H. A copy is also printed in color and posted on the informational board in the Newberry County Extension Office. Because everything is done electronically no cost is incurred.

State Winners

State Winner	
North Central Region	
Indiana	John L. Hawley
Iowa	Paul Kassel
Kansas	Shad Marston
Missouri	Wayne Flanary
North Dakota	Katelyn Hain
Northeast Region	
Pennsylvania	Skylar Peters
Southern Region	
Alabama	Phillip L. Waters, Jr.
Arkansas	Terrell Davis
Florida	Taylor Davis
Georgia	Hailey Robinson
Mississippi	Alex Deason
North Carolina	William Terry Kelley
Oklahoma	Trent Milacek
Tennessee	Matthew Webb
Virginia	Edward Olsen
West Region	
Oregon	Silvia I Rondon

Newsletter Team

National Winner

Alicia Halbritter
Agriculture & Natural Resources Agent
UF/IFAS Baker County Extension
Baker

Halbritter, A.*[1], Barrett, C.*[2], Barry, S.*[3], Cant, J.*[4], Tomlinson, A. P.*[5], Wynn, K.*[6]
[1] Agriculture & Natural Resources Agent, UF/IFAS Baker County Extension, Macclenny, FL, 32063
[2] Regional Water Resources Agent, University of Florida, Gainesville, Fl, 32603
[3] Regional Sea Grant Agent, University of Florida, Gainesville, Fl, 32603
[4] Duval County Agriculture & Small Farms Agent, University of Florida, Gainesville, FL, 32603
[5] Columbia County Livestock & Natural Resources Agent, University of Florida, Gainesville, FL, 32603

[6] Hamilton County Agriculture & Livestock Agent, University of Florida, Gainesville, FL, 32603

North East Florida is a bustling center of agriculture and as a result, a hub for extension agents focusing on agricultural topics. The NE Florida Farm & Ranch newsletter is an effort by extension agents in NE Florida to create broader impacts, reduce the burden on agents to maintain individual newsletters, and to reach a wider range of clientele. The newsletter is set up to address the main topics of interest to extension's agricultural centered clients by providing a specific 'page' dedicated to the topic: Livestock, Crops, Natural Resources, & Pastures. Any agent, whether county, regional, or state faculty, can choose to write an article on research-based information by filling in their topic on a shared spreadsheet that is segmented by page topic area & edition. Articles for every edition are due by mid-December, after which, Alicia Halbritter proof-reads and edits the articles. Then, Alicia designs every edition, implementing color schemes, high quality photos, and emphasis on certain phrases, using Microsoft Sway. This unique approach helps reduce stress on agents through-out the year by providing an outlet for timely information in advance of the demand for that information. Individual newsletters are no longer a necessity for each agent, and they can provide their clients with far-reaching information from experts from across the region. Using Microsoft Sway was an important decision as it provides an interactive viewing experience for the reader and is easily edited throughout the year if an important topic needs to be added to an edition or corrections need to be made, without having to redistribute or redesign the newsletter. Sway also offers internal in-depth tracking which allows the editors to see how many people view the newsletter, how long they spend reading, and how many times they revisit. Editions are published bi-monthly using an electronic mailing list, social media, and agent's county contact lists. The 2019 January/February edition has been viewed 296 times and the recent March/April edition has been viewed 47 times. On average, 47% of viewers read through the entire newsletter. 33 clients have suscribed to the electronic mailing list.

January/February- https://sway.office.com/B5ysS8Uic3rBkQT1?ref=Link

March/April- https://sway.office.com/SJiI69RRb9s2v44v?ref=Link

National Finalists

Abby Neu
Extension Educator, Poultry
University of Minnesota
Minnesota

Neu, A.*[1], Martinson, Krishona*[2]
[1] Extension Educator, Livestock, University of Minnesota, Willmar, MN, 56201
[2] Horse Extension Specialist, University of Minnesota, St. Paul, MN, 55313

In recent years, e-newsletters have been used as an effective and affordable method of information dissemination. In 2005, University of Minnesota Equine Extension developed a monthly, electronic, peer-reviewed newsletter with the objective of providing brief, timely, research-based information to horse owners, equine professionals and allied industry members in Minnesota and western Wisconsin. Sections of the newsletter include upcoming Extension programs, ask the expert, research update, and one or two content articles each month. Web links to additional information often accompany the content. Contributing authors have included University of Minnesota Extension personnel, graduate students and faculty in the Animal Science and Agronomy Departments and College of Veterinary Medicine, as well as colleagues across the nation. The newsletter began as a two-page PDF sent through an email listserv and transitioned to the email marketing software, Constant Contact in late 2016. The account is hosted by University of Minnesota Extension. The transition to Constant Contact provided opportunity to include full-color photographs or figures with each article and allowed additional sections to be added such as featured YouTube video or infographic which began in August 2018. This transition has allowed for the collection of metrics, including "open" and "click" rates and better management of the distribution list. More than 3,200 subscribers received the e-newsletter each month in 2018.The average "open" rate was 33%, double the average performance metrics reported by Constant Contact. Desktop computers were used by 64% of the readers and the remaining 36% viewed the e-newsletter on a mobile device. The primary author who submitted this application is a frequent contributor and reviewer to the e-newsletter and served as co-editor in 2018.

Donna Aufdenberg
Field Specialist in Horticulture

Aufdenberg, D.*[1], Kammler, K.J.*[2], Denkler, S*[3]
[1] Field Specialist in Horticulture, University of Missouri, Bollinger County, Marble Hill, MO, 63764
[2] Horticulture Specialist, University of Missouri Extension, Ste. Genevieve County, Ste. Genevieve, Mo, 63670
[3] Horticulture Specialist, University of Missouri Extension, Butler County, Poplar Bluff, Mo, 63901

The Garden Spade newsletter is a monthly publication created to inform gardeners of timely issues such as garden practices, plant maintenance, insect pests, disease pathogens, and upcoming events. It is sent to over 2000 Master Gardeners, garden club members, agriculture educators, and garden enthusiasts. It is sent via email and is available on our county University of Missouri Extension webpages. Hard copies are available by paid subscription. While there are three main contributors, articles from other horticulture professionals and Master Gardeners are encouraged. The newsletter is 8 to 10 pages in length and contains a cover story, gardening calendar, event calendar, trending topics, plant of the month, or other horticultural related articles. It is prepared using Microsoft Publisher, edited by Donna Aufdenberg, proofread by Sarah Denkler and Katie Kammler and is converted to PDF format before release. Each specialist sends the newsletter to their distribution lists and places it on web links. The newsletter disseminates horticulture information to the public and creates awareness for Extension. It is a great method to advertise upcoming workshops and programs. We are receiving more requests for this newsletter. Recipients continue to express how happy they are to have a resource full of gardening information.

Elizabeth Higgins
Business Management and Production Economics Specialist
Cornell Cooperative Extension
ENY

Basedow, M*[1], Bornt, C*[2], Donahue, D*[3], Grundberg, E*[4], Higgins, E.*[5], Hodgdon, E*[6], Ivy, A*[7], McDermott, Laura*[8], Meyers, J*[9], Rusinek, T*[10], Stewart, Crystal*[11], Stewart, Crystal*[12], Ullrich, M*[13]
[1] Tree Fruit Production Specialist, Cornell Cooperative Extension, Plattsburgh, NY,
[2] Vegetable Production Specialist, Cornell Cooperative Extension, Troy, NY, 12180
[3] Tree Fruit Production Specialist, Cornell Cooperative Extension, Highland, NY, 12528
[4] Vegetable Production Specialist, Cornell Cooperative Extension, Middletown, NY, 10940
[5] Business Management specialist, Cornell Cooperative Extension, Highland, NY, 12528
[6] Vegetable Production Specialist, Cornell Cooperative Extension, Plattsburgh, NY,
[7] Vegetable Production Specialist, Cornell Cooperative Extension, Plattsburgh, NY,
[8] Berry Production Specialist, Cornell Cooperative Extension, Hudson Falls, NY, 12839
[9] Grape Production Specialist, Cornell Cooperative Extension, Ossining, NY, 10562
[10] Vegetable Production Specialist, Cornell Cooperative Extension, Highland, NY, 12528
[11] Vegetable Production Specialist, Cornell Cooperative Extension, Johnstown, NY, 12095
[12] Vegetable Production Specialist, Cornell Cooperative Extension, Johnstown, NY, 12095
[13] Vegetable Production Specialist, Cornell Cooperative Extension Orange County, Middletown, NY, 10940

The Produce Pages is a monthly newsletter sent out by the Cornell Cooperative Extension Eastern NY Commercial Horticulture Team during winter months (November to April) to commercial fruit and vegetable farmers in 17 counties in Eastern New York (Albany, Clinton, Columbia, Dutchess, Essex, Fulton, Greene, Orange, Montgomery, Putnam, Rensselaer, Saratoga, Schenectady, Schoharie, Ulster, Warren and Washington Counties). The newsletter covers the results of research trials conducted during the prior growing season in the region, ag business topics and other information relevant to NY fruit and vegetable farmers. The newsletter is primarily distributed electronically, but growers can pay for hard copies. Over 1500 copies are distributed per month between November and April. Additional, hard copies are sent to each of the CCE County Offices in the region for distribution to the public. All of the extension specialists, contribute to the content.

Regional Winners

Katie L Wantoch
Agriculture Agent Specializing in Economic Development
UW-Madison Division of Extension
Dunn County

Wantoch, K.L.*[1], Clark, Jerry*[2], Hagedorn, Mark*[3]
[1] Agriculture Agent Specializing in Economic Development, University of Wisconsin-Extension, Menomonie, WI, 54751
[2] Agriculture Agent, University of Wisconsin-Extension, Chippewa Falls, WI,
[3] Agriculture Agent, University of Wisconsin-Extension, Altoona, WI,

The UW-Extension Chippewa Valley Agricultural Extension Report newsletter is a newsletter published for the UW-Extension offices in Chippewa, Dunn and Eau Claire counties in Northwest Wisconsin. This newsletter is produced and distributed two or three times each year. Newsletters are emailed by this educator to over 300 email addresses in the combined listserv utilizing MailChimp (online email marketing and list manager program) and mailed by the Dunn County office to over 1,000 individuals and businesses. The newsletter is also posted to the Dunn County UW-Extension website for available download by the public. This educator along with Jerry Clark (Chippewa County) and Mark Hagedorn (Eau Claire County) draft articles for the newsletter based on research conducted by UW-Extension state specialists; recent concerns by clientele; and proposed changes in the agriculture industry that clientele need to be made aware of. Newsletters may also include program promotional materials, information and calendars for upcoming UW-Extension related workshops

and events. This educator works with Microsoft Publisher to insert articles into the pre-formatted document, and the newsletter is finalized into an Adobe Acrobat *.pdf file for publication.

Newsletter can viewed at the Extension Dunn County website - https://dunn.extension.wisc.edu/2019/02/22/spring-edition-of-the-chippewa-valley-agricultural-extension-report/ and https://dunn.extension.wisc.edu/2018/09/06/fall-edition-of-the-chippewa-valley-agricultural-extension-report/

Dan Severson
Extension Agent - Ag and Natural Resources
University of Delaware
New Castle

Severson, D.*[1], Severson, Dan*[2], Truehart, Susan*[3], Kung, Limin*[4], Truehart, Susan*[5]
[1] Extension Agent - Ag and Natural Resources, University of Delaware, Newark, DE, 19716
[2] Extension Agent, Delaware, Newark, DE, 19716
[3] Extension Agent, Delaware, do, ,
[4] Professor Animal Science, Delaware, Newark, DE, 19716
[5] Extension Agent, Delaware, Dover, DE, 19901

The Delaware Dairy Newsletter is a newsletter that is sent out quarterly to dairy producers in Delaware and surrounding states. This newsletter is a cost-effective tool for building communication with our producers and industry professionals. With the dairy sector decreasing rapidly, the access to quality information is difficult to obtain. This is where Extension can fill the void and offer a newsletter that presents unbiased and proven scientific based material.

The intent of the newsletter is to keep dairy producers and industry professionals up to date on industry developments and keep them informed on topics that are relative to the dairy industry. In addition, the articles offer technical and education content that is aimed at improving performance and profitability. The newsletter strives to offer substance that is useful and easy to digest.

The newsletter is created in Microsoft Publisher and saved as a PDF so that it can be sent out as an electronic version and a print version. The print version has a mailing list of 73 producers, industry professionals and past exhibitors of the Delmarva Dairy Day and those who have requested a hard copy over an electronic version. The electronic version has a mailing list of 44 contacts which include Maryland and New Jersey Extension offices where they can distribute to their clientele via electronic or as a hard copy. Furthermore, this version allows the subscribers to read and save the newsletter to their computer or smart phone. The newsletter is also posted on the University of Delaware's Dairy Extension web site and is free for viewing: https://canr.udel.edu/anfs/dairy-science-research-teaching-and-extension/dairy-extension-resources/

Robert C Goodling, Jr.
Extension Associate
Dept of Animal Science, Penn State University
Penn State Extension

Beck, T.J.*[1], Goodling, Jr., R.C.*[2], Ishler, V.A.*[3], Schmidt, C.*[4], Swartz, D.L*[5]
[1] Extension Educator, Penn State Extension, York, PA, 17402
[2] Extension Associate, Dept. of Animal Science, Penn State University, University Park, PA, 16802
[3] Extension Dairy Specialist, Dept. of Animal Science, Penn State University, University Park, PA, 16802
[4] Asistant Professor, Dept. of Economics, Sociology, and Education, Penn State University, University Park, PA, 16802
[5] Assistant Director, Animal Systems Programs, Penn State Extension, University Park, PA, 16802

The Dairy Outlook is a near-monthly Extension website newsletter produced by the Penn State Extension Dairy Team. It was redesigned in the summer of 2017 after the retirement of a key faculty member that provided similar updates in a basic, letter and email format. The objective of the newsletter is to provide a brief synopsis of the current market conditions in Pennsylvania related to dairy profitability, update on national and global issues that are interacting with the conditions in Pennsylvania, as well as try to predict future milk price and feed cost directions for a few months ahead. The newsletter is web-based with an option to download as pdf, and a link is distributed via an email listserv. The listserv in 2018-2019 average 1210 subscribers, which are comprised of Pennsylvania dairy producers, industry constants, and financial lenders and officers. There are also national and international subscribers to the list but are difficult to quantify given the nature of the listserv. the nominee is responsible for updating graphs and tables, providing revised price projections, writing the initial market summary, designing newsletter issue sites, and disperse published issue links to distribution list. Ten issues were released from March 2018 thru March 2019. The two example issues selected for this application generated 4 requests to present them at producer meetings. These four requests reached 575 dairy producers and industry professionals in the spring of 2019. Future iterations of this newsletter include making the graphs and tables dynamic so viewers can create their own long range or short ranges views of the provided data in consistent tables and graphics.

Example 1: September 2018: https://extension.psu.edu/dairy-outlook-september-2018

Example 2: February 2019: https://extension.psu.edu/dairy-outlook-february-2019

Traci Missun
Agriculture & Natural Resources Agent
University of Kentucky Cooperative Extension Service
Oldham County
Oldham County, Kentucky

Missun, T.*[1], Boice, M.*[2], Fernandez, L.*[3]
[1] Agriculture & Natural Resources Agent, University of Kentucky Cooperative Extension Service – Oldham County, Lagrange, KY, 40031
[2] Horticulture Assistant, University of Kentucky Cooperative Extension Service – Oldham County, La Grange, KY, 40031
[3] Program Assistant, University of Kentucky Cooperative Extension Service – Oldham County, La Grange, KY, 40031

Extension newsletters covering all program areas are sent to our entire mailing list on a quarterly basis. The purpose of including all program areas is to reach a broader audience with farm, landscape, and garden information. Many of our 4-H'ers have parents who farm, and many families have lawn and garden interests as well. Additionally, the quarterly newsletter provides all residents with some understanding of agriculture activities in the county. This serves to promote better understanding among suburban residents and neighboring farmers. The agriculture portion of the newsletter includes information relevant to farmers, home gardeners, and all residents. I write the agriculture and natural resources portion of the newsletter, with home lawn and garden information written by our horticulture assistant. Our program assistant edits and designs the newsletter in our office, and then it is professionally printed and mailed. 3,911 people receive our quarterly newsletters through U.S. mail or email notification. Newsletters are also delivered to 707 4-H'ers through school clubs. The newsletter is available on our county extension website and blog.

Cary Sims
CEA-AG ANGELINA CO.
Texas AgriLife Extension Service
Angelina County

Sims, C.*[1], Joel Redus*[2], Merrel, Ryan*[3], Whiteman, Sandi*[4]
[1] CEA-AG ANGELINA CO., Texas A&M AgriLife Extension Service, Lufkin, TX, 75901
[2] CEA - Family and Community Health, Texas A&M AgriLife Extension Service, Lufkin, TX, 75901
[3] CEA- 4-H, Texas A&M AgriLife Extension Service, Lufkin, TX, 75901
[4] Administrative Assistant, Angelina County Extension, Lufkin, Tx, 75901

Every month our office sends out a joint newsletter from all three disciplines in our office. To better communicate successes with county clientele, we decided to have a quarterly newsletter that showcases prior, successful events that we have held in addition to listing the upcoming events. The submitted newsletter showcases the results of events already held in FCH, 4-H and Ag/NR programming areas but still retains the "upcoming events" for constituents to plan to attend.

State Winners

State Winner	
North Central Region	
Iowa	Rich Wrage
Kansas	Ariel Whitely Noll
Ohio	Lee Beers
South Dakota	Adam Varenhorst
Southern Region	
Alabama	D. Eddie McGriff
Arkansas	Jarrod Hardke
Mississippi	Brady Self
North Carolina	Morgan Watts
Oklahoma	Trent Milacek
South Carolina	Alana W. West
Tennessee	Justin Stefanski
Virginia	Jeannie Layton - Dudding

Personal Column

National Winner

Timothy J Malinich
Assistant Professor, EXTENSION EDUCATOR, HORTICULTURE
OHIO STATE UNIVERSITY EXTENSION
Erie County

Lorain and contagious counties are a mixture of developed urban and suburban areas next to farmland. The majority of land is in farming while the bulk of the population is in the developed areas. This monthly column serves as a forum to address horticulture issues for this diverse population. The reach of the Chronicle Telegram includes Lorain country as well as portions of Ashland, Medina, Erie, Huron and Cuyahoga counties.

Topics include current issues such drought and invasive weeds, while others are more hobby-oriented such as vegetables, lawns, pantry pests, tool sharpening, cacti, and Holiday plants. Articles are written in a light and chatty style but with no shortage of technical information—readers can read too which ever depth they seek. Each column is meant to provide firm technical data and engage the reader to seek more information by making the topic interesting as well as entertaining.

The author is solely responsible for providing text for the 750 to 1000 word article. Photos are optional but this author always

provides one or two images with captions to accompany the article—the editors normally accept one, but two have been used on occasion. The author takes his own photos and edits each image in Adobe Photoshop to meet the size and density requirements of the publisher. The publisher provides color copy for about half of the articles and about one-third to one-half a page of copy.

This space is shared/rotated with four other agencies: Farm Bureau; Soil and Water Conservation District; Farm Services and Parks Department. The column is published monthly. Circulation is around 24,000 physical copies as well as online publication.

National Finalists

Emily Wilmes
Extension Educator
UMN Extension-Stearns County
Stearns

The attached articles were published in the Dairy Star on two separate dates. The Dairy Star is a newspaper published in Minnesota that is sent to every dairy farmer (and many agribusinesses) in Minnesota, as well as parts of Iowa, South Dakota, and Wisconsin. The Dairy Star has a great working relationship with UMN Extension, and each issue (published every two weeks) features a "U of MN Dairy Connection" section, which has two articles from members of the UMN Dairy Extension Team. I contribute articles to this column 4-5 times per year. My main objectives are to provide timely, relevant information that is applicable to Minnesota dairy farmers and to bring awareness to Extension and University resources.

The two articles I selected to submit were published on April 28, 2018 and January 12, 2019. The April article is about easy tweaks producers can make to lower their somatic cell count (SCC). SCC is an important measure of milk quality and most creameries will pay a premium for low SCC and penalize farms for high SCC. In talking with local producers, I learned just how high some of these penalties can be; in times of low prices, maximizing every milk check is crucial. My objective was to offer easy, inexpensive changes producers can make to help lower their SCC and, thus, raise their milk check.

The January article was about mental health. With low prices, and many other stressors, concern about farmer stress and mental health is high. This is a topic that I'm very passionate about, and I want to play a role in breaking down the stigma around it. By encouraging farmers to think about their mental health, I hope to open up conversations about this important topic. Since the article published, I have received several contacts from producers thanking me for discussing the topic and sharing that it has encouraged them to help others or themselves find help.

I complete my articles three weeks prior to publish date. They are edited by the UMN Extension Dairy Team Leader and an Administrator in the UMN Department of Animal Science.

James J. Barrett
Ag & Natural Resources Extension Agent
WVU Extension Service
Wood

The Backyard Gardener is a weekly horticulture and home gardening column published in the Parkersburg News and Sentinel in Parkersburg, WV. It reaches over 26,000 people in the Mid-Ohio Valley on a daily basis. This is a great tool to disseminate research-based information to the public, who are eager to learn home horticlture and gardening tips and receive lawn care advice. The column focuses on timely recommendations during the growing season and mixes in local themes as well as personal stories to engage readers. As an unbiased source of information, Extension must continue these avenues of communication to a mass audience. The column generates numerous phone calls and e-mails to the Extension Office for citizens who request follow-up information. The column covers various topics and this year included planting buckwheat and tillage radishes for cover crops, transplanting vegetables, weed control, native plants (butterfly weed)insect identification and control tips (stinkbugs, wooly adelgid), growing vegetables (Swiss chard, beets), cultivating herbs (sage), soil fertility recommendations and landscaping with ornamentals. "Beets for the Fall Garden" and "The American Chestnut" are prime examples of the columns appeal to farmers, home owners and avid gardeners to take some of the information and apply it to their home garden or property.

Heidi Rader
Tribes Extension Educator
UAF COOPERATIVE EXTENSION SERVICE
Tanana Chiefs Conference

I write a monthly column that is published in *The Fairbanks Daily Newsminer* and *The Council* newsletter. *The Fairbanks Daily Newsminer* is read throughout Interior Alaska and *The Council* is primarily read by the 37 Federally Recognized Tribes in Interior Alaska and is the newsletter of the Tanana Chiefs Conference. As the Tribes Extension Educator in the region, through both of this avenues, I'm reaching most of the Alaska Natives in Interior Alaska. When I write this column, I try to make them seasonally appropriate, enjoyable to read, and based on research. I also often draw attention to resources or opportunities available from Cooperative Extension.

Regional Winners

Katie L Wantoch
Agriculture Agent Specializing in Economic Development
UW-Madison Division of Extension
Dunn County

"EXTending a Hand" is a bi-monthly column in the Sunday edition of The Dunn County News. This local newspaper has a print readership of 4,000 and is available online at http://chippewa.com/dunnconnect/. Bi-monthly articles are written by UW-Extension Dunn County educators to provide research-based, educational information and provide timely advice to county clientele. Articles are written and emailed to the newspaper editor for review and publication. I submit six articles each year related to various agriculture topics, ranging from farmland rental and lease agreements, the Master Gardener Volunteer program, crop progress reports during season, upcoming events and educational workshops. I receive positive verbal and written feedback from this column by both the local agriculture and non-farm, local community audience. In addition, requests for more information from columns have been received via email, phone and office visits to our Extension office. Column articles by this agent have been provided as .pdf files and can be viewed online at https://chippewa.com/dunnconnect/news/local/extending-a-hand-spring-crop-report/article_72a8b448-1f9d-55c5-a844-23985854a375.html and https://chippewa.com/community/dunnconnect/news/master-gardener-volunteers-give-back/article_08e28b39-3129-56e2-9cc1-4419d409c619.html

Judith L Wright
Sr. Agriculture Economic Specialist
Cornell Cooperative Extension
Seneca County

I write a weekly column entitled EcoTalk for the local daily newspaper. The primary focus of the column is on the environment; however, I do sneak some topics on agriculture through. The first on manure is designed to give an understanding that manure has been a part of agriculture for centuries and only recently has been replaced by commercial fertilizers. In central New York, manure has been blamed as the primary cause of nutrient enrichment of the Finger Lakes resulting in harmful algal blooms. The second column is on Maple Syrup Weekend and intended to get people out to learn more about this unique product and hopefully connect with local producers.

Thomas Butzler
Horticulture Educator
Penn State Cooperative Extension
Clinton/Northeast

I have a column, in Lock Haven's *The Express,* under the standing line "*Keeping It Green*". I always include several photographs, many of which I have taken, with the written column to add a visual component to attract the reader to the article. I let it up to the editor to determine which ones they want to show. My information is submitted via *The Express*'s virtual newsroom; therefore, it never prepared with letterhead. At times, I try to pick topics which most readers might observe in their landscape or within their communities. From there, I try to insert some facts about the subject and use it as a teachable moment. The August 11th column started with information on the record-breaking rainfall experienced in central Pennsylvania. This opening then allowed me to delve into issues surrounding mosquitoes. The picture with the mosquito taking a blood meal was taken by the author (wearing no DEET and balancing camera with free hand), a question that occasionally comes into the extension office. The February 16th column was a review of the most popular session at the 4-day 2019 Mid-Atlantic Fruit and Vegetable Conference. Several facts on pumpkin production in Pennsylvania were utilized to explain how important this crop is for area growers. I did not have a picture of the speaker/giant pumpkin grower from Ohio and had to correspond with him to procure a catchy photo (the squash bug photo was mine). A Nikon D3100 was used for submitted pictures. *The Express* has a daily circulation over 10,000. Small town and rural central Pennsylvania affords me the opportunity to interact with readers on a regular basis and I receive many positive comments on the column.

Donna Hamlin Beliech
Area Horticulture Agent
Mississippi State University Extension
SW - Rankin

The Mississippi Gardener Magazine is distributed through home subscriptions and is available for purchase at 24 nursey, greenhouse, farm or hardware stores throughout Mississippi. The magazine is published 9 times annually, with Jan./Feb., July/Aug., Nov./Dec. being combined months. A free monthly e-newsletter is also available.

I provide information that is of specific interest to gardeners in Central Mississippi, which is in Plant Zone 8. The article must be 850-900 word count and are written 3 months in advance of the publishing date due to time needed for printing and distribution. For many years I keep a monthly plant diary and was surprised at how consistent plant development is annually, i.e.; red quince and Bradford pear are always in bloom the 2nd week of Feb. Unusual or late weather events especially during the blooming period, a freeze when peaches are blooming or multiple days of rain when pecans are pollinating, are noteworthy occurrences because they have long lasting effects, such as no fruit or nuts produced that year. The monthly garden magazine allows me to forewarn gardeners of upcoming local edible product shortages.

I write about basic home garden activities (lawn and plant care tips, planting, fertilizing, pest control, etc.) that should be performed that particular month on flowers, shrubs, turf, and vegetables. In each issue, I try to add an extra plant topic appropriate for the season. In the Sept., 2018 article planting wildflowers and lawn chores were the seasonal interest subjects. In the Oct., 2018 article I focused more on selection and caring for mums and holiday cacti.

Katie Altman
Water Resources Extension Agent
Clemson Extension
Sumter County

The Keeping Sumter Beautiful column in The Sumter Item newspaper is published weekly. The column's mission is to advise readers on "keeping Sumter beautiful" through horticulture, environmental stewardship, community involvement, and more. The subject of the column varies widely from week to week but may include Extension program announcements, updates regarding local events, or the sharing of educational resources and knowledge.

Christopher Cooper
Extension Agent II
UT Extension
Shelby

Monthly topics for the Collierville Herald are determined by frequently asked gardening questions and the time of year. Current and "hot" horticulture information is a big part of creating these monthly columns. The columns impact 9,000 citizens of this Shelby County suburban area monthly.

State Winners

State Winner	
North Central Region	
Illinois	Elizabeth Wahle
Indiana	John E. Woodmansee
Kansas	Ariel Whitely Noll
Michigan	Marianne Buza
Southern Region	
Florida	Molly Jameson
Georgia	Michael Abney
Kentucky	Eric Baker
North Carolina	Bryant M Spivey
Texas	Katherine L. Whitney

Program Promotional Piece

National Winner

Jane Elizabeth Cant
Agriculture and Small Farms
UF/IFAS
Duval

Cant, J.E.*[1]
[1] Agriculture and Small Farms, UF/IFAS, Jacksonville, FL, 32254

Hay supplementation is both an integral and expensive component of traditional annual livestock production in North Central Florida. In cattle alone, winter supplementation of hay for production females can exceed $300.00 per head. The incorporation of cool-season annual forages into the grazing system can decrease annual cattle costs by up to $170.00 per head by decreasing the amount of supplements needed, such as hay, molasses, or protein tubs, because of an extended grazing season. However, most cattle producers in Suwannee County are small ranches, and owning planting equipment is not economically feasible. The purpose of this promotional piece was to a) Draw attention to the topic by using attractive colors and pictures and b) Contain enough information to entice attendees without becoming cluttered or difficult to read. The extension program was targeted at small-scale ranchers and farmers, and the promotional flyer was placed in five local feed stores, six agriculture businesses, and advertised on two social media platforms. Seventeen (17) producers representing an estimated 800 head of cattle attended the workshop. Based on evaluations, 78.2% (n=13) indicated an increase in knowledge on cool-season annual forage establishment, management, and utilization and 82.4% (n=14) indicated incorporating cool-season annual forages into their production systems. Attendees also estimated an average annual savings of $120.13 per head by utilizing cool-season annual forages to extend their grazing season. This equates to $96,104 savings per year for the combined cattle represented. By decreasing production costs, producers can maintain sustainable cattle production more efficiently in an unstable market.

National Finalists

Jeremy Jubenville
Extension Floriculture & Greenhouse Educator
Michigan State University Extension
Kalamazoo

Jubenville, J.*[1]
[1] Extension Floriculture & Greenhouse Educator, Michigan State University Extension, Kalamazoo, MI, 49007

Managing arthropod pests is a consistent challenge for greenhouse growers. This is due largely to exponential population growth rates, a propensity for developing

insecticide resistance, and life stages that are either inaccessible or more protected from conventional management methods (i.e. foliar sprays and systemic drenches). Although biological control can overcome these challenges, the methods are based on a fundamentally different philosophy than conventional techniques (preventative -vs- reactive). Transitioning to a biological approach does not happen instantaneously and several seasons are often needed before practitioners begin to master the nuances of working with live organisms to control their plant pests. For many growers, it's a new way of doing things and requires guidance from experienced people to learn how to do it efficiently and effectively.

To help meet this need, I developed an all-day short course on greenhouse biological control and hosted the event on August 21, 2018 in Kalamazoo, MI. The agenda featured presentations by an international biocontrol expert, myself, and technical representatives from two biological control supply companies.

The promotional material is a two-page flyer in pdf format. The first page is a fully functional standalone piece designed for easy distribution and posting. The second page contains the course agenda, registration specifics, sponsorship acknowledgement, and other important details. I designed the layout, determined the content, composed the text, took two of the four photos (the other two are in public domain), and created the piece using vector graphic software.

The flyer was distributed to stakeholders and external partners, primarily through electronic newsletters and email, and reached more than 500 contacts. There were a total 40 participants from 10 Michigan counties, one neighboring state (OH), and one Canadian province (Ontario). Evaluation results show that 94% of respondents believe the course will help them improve their biological control program and 24% expect to see a reduction in both pesticide usage and insecticide-resistant pest populations at their greenhouse.

Tina L. Kohlman
DAIRY & LIVESTOCK AGENT
UW-Extension
FOND DU LAC COUNTY

Kohlman, T.L.*[1]
[1] DAIRY & LIVESTOCK AGENT, UW-Extension, Fond Du Lac, WI, 54935

Market volatility has been and continues to be a common theme is the dairy sector. With the recent adoption of the 2018 USDA Farm Bill, there is an opportunity to utilize various new tool, including the new Dairy Margin Coverage program, to assist farmers in dairy risk management. Marketing Brief: Dairy Risk Management Program will provide answers to new programs, expected returns, and decision making tools to make better, informed decisions.

Market Brief: Dairy Revenue Protection Program was a promotional piece developed by this agent to promote a dairy revenue protection program informational meeting for farmers and the agri-business community. The purpose of the meeting was to share with farmers and agri-businesses updates to the UDSA Farm Bill with regards to dairy risk management tools, including the Dairy Revenue Protection Program (DRPP) and the Dairy Margin Coverage (DMC) program. As a joint program with UW-Extension Fond du Lac, Ozaukee, and Washington Counties, and financial support provided by Fond du Lac County Farm Bureau, this promotion piece was created by this agent using Microsoft Publisher 2013 and duplicated in-house with a Minolta C554 color copier. The promotional piece was distributed via direct mailing to over 300 dairy farmers in the three county area as well as inclusion in county-based newsletters, email blasts, and social media promotion. With an original 45 individuals registered for the meeting, which was cancelled due to a snowstorm, 22 individuals were in attendance at the re-scheduled meeting.

Kari Lewis
Glacier County

Lewis, K.*[1]
[1] Cut Bank, MT, 59427

Ranchers in the county had requested a program to explain a current predatory animal control petition. To draw additional interest in the program and increase the educational value of the day to producers, the Rancher Roundtable was offered. The objective of the workshop was to provide information on predatory animal control and provide education related to calving management and spring grazing. The promotional material was designed as a flyer which was distributed via email to 125 producers, posted on Facebook as a shareable photo, and was posted at various agriculture businesses in the community. The flyer format was modified to create a Facebook event header that portrayed a consistent look in promotion. The flyer reached 1,098 people via Facebook, and program attendees said Facebook and the direct flyer e-mail was most effective in informing them of the program. Fifteen ranchers attended the program, and overall rated the event 4.9/5. The flyer and Facebook event header were designed using the free online program, Canva.

Regional Winners

Michael J O'Donnell
Extension Educator, Organic & Diversified Agriculture
Purdue Extension
Indiana

O'Donnell, M.J.*[1], Robinson, E*[2]
[1] Extension Educator, Organic & Diversified Agriculture, Purdue Extension, Muncie, IN, 47305
[2] Senior Communications Specialist, Purdue University, Agricultural Communication Service, West Lafayette, IN, 47907

The annual Indiana Organic Grain Farmer Meeting has grown from an informal meeting in a farm shop in northwest Indiana in 2016 with less than 20 participants, to a two-day conference that hosted over 200 unique particpants at the Beck Agricultural Center in West Lafayette, Indiana on March 6 and 7, 2019. The program serves as an annual educational and networking opporutnity for farmers and agricultural professionals to connect around the topic of organic grain production.

For the 2019 program, a promotional strategy was developed with Purdue Agricultural Communications (AgComm), which including a series of HTML emails, a news release, a social media campaign, and distribution of printed rack cards. The 4"x9" rack cards were printed in full color with glossy finish, giving a very professional, eye-catching, and attractive look. The rack cards were distributed just prior to online registration going live the second week of January, 2019. Nearly 500 rack cards were distributed to key organic industry contacts, farmers, extension educators, and partnering agency staff (e.g., NRCS, SWCD, etc). These contacts were encouraged to distribute extra copies of the rack cards to their contacts who may benefit from the educatoinal program.

The 2019 Meeting was a success with over 90 in attendance on March 6 and over 180 participating on March 7. Twenty-six organizations particpated as exhibitors, allowing attendees to network with organic industry representatives.

The rack card was crucial to spreading the word in a time when our clients are inundated with emails and congestion on social media platforms can limit exposure. By asking key contacts to distribute the rack card to their clients, neighbors, colleagues, and others, it provided a more personal touch to the promotional effort. In addition, it allowed for word to reach many farmers in Amish-Mennonite communities who may otherwise would have missed the wider promotional effort.

Maegan A Perdue
Agent Associate
Worcester County

Perdue, M.A.*[1]
[1] Agent Associate, , Snow Hill, MD, 21863

The purpose of this educational seminar was to create awareness of common goat illnesses and the importance of the veterinary-client-patient relationship when treating goats with medications not labeled for their use. Goats are becoming increasingly popular as an alternative to larger livestock as well as pets. This seminar was designed for novice goat owners who lack experience in recognizing sick animals. This program was held at a local farm supply store. Flyers were posted at the store where the seminar was held. The flyer was also posted on the University of Maryland Extension-Lower Eastern Shore Facebook page and local goat group pages. The original post was shared 109 times with over 13,000 people reached from all over the United States. This post was not boosted. There were 16 people in attendance for the first seminar which was the maximum number of attendees the meeting space could hold. Due to the overwhelmingly positive response to the program, two additional dates were scheduled in alternative locations. An additional 21 participants attended at the other locations. All feedback I have received from this program has been positive. Since I continue to receive requests for this program, it will be repeated in 2019.

Steven Yergeau
Environmental & Resource Management Agent
Rutgers Cooperative Extension
Ocean County

Yergeau, S.*[1]
[1] Environmental & Resource Management Agent, Rutgers Cooperative Extension, Toms River, NJ, 08755

The objective of this program promotional piece was to educate residents, specifically homeowners, from throughout southern New Jersey on the need to conserve water and to provide ways they could start saving water. The flyer is included as part of several free standing water conservation displays that are exhibited in towns within Ocean, Atlantic, and Cape May Counties. The flyer was developed by Dr. Yergeau to be both eye-catching and informative. From June 2018 through March 2019, the combined display and flyer have been exhibited at 11 towns and/or events in southeastern New Jersey. An accompanying website was also developed, http://ocean.njaes.rutgers.edu/ag/save-water.html, to provide detailed information on conserving water and to provide additional resources. Since June 2018, 639 flyers were distributed throughout Ocean, Atlantic, and Cape May Counties, and through our website.

Stacie Hritz
Assitant Extension Educator

Centre County

Hritz, S.*[1], Anderson, P. G.*[2], Hall, L.*[3], Rice, J.*[4]
[1] Assitant Extension Educator, , Bellefonte, PA, 16823
[2] Area Extension Educator 4-H Youth, Penn State Extension, Clarion, PA, 16214
[3] 4-H Youth Development Educator, Penn State Extension, West Chester, PA, 19380
[4] Assistant Director, 4-H Youth Development Programs, Penn State Extension, University Park, PA, 16802

This piece is focused on promoting a new 4-H program called the Pennsylvania 4-H Science of Agriculture Challenge. The target audience of this piece is potential partners who could become sponsors of the program.

To date, this piece has been given to approximately 10 potential partners and has assisted us in securing at least $3,000 in sponsorship. As this piece was just recently developed, we plan to distribute it to other potential sponsors to bring in additional monies.

Amy Scaroni
Water Resources Extension Associate
Clemson Extension
Statewide

Scaroni, A.*[1], Wallover, G.*[2], Altman, K.*[3], Comeau, E.*[4]
[1] Water Resources Extension Associate, Clemson Extension, Charleston, SC, 29401
[2] Water Resources Extension Agent, Clemson Extension, Charleston, SC, 29401
[3] Water Resources Extension Agent, Clemson Extension, Sumter, SC, 29105
[4] Water Resources Extension Agent, Clemson Extension, Beaufort, SC, 29906

Bacteria is the leading cause of water quality impairment in South Carolina, and pet waste is often the culprit. Previous surveys across South Carolina indicate that the majority of residents know that leaving pet waste on the ground impacts water quality, but only a fraction of them pick it up every time. A commonly identified barrier to proper disposal is forgetting to bring a bag on walks. Targeting this audience that picks up pet waste sometimes, but not every time, our billboard encourages them to always bring a bag, to create the desired behavior change of always picking up pet waste to protect water quality. We used a Community-Based Social Marketing/Behavior Change planning process to identify our audience and message, and then tested several versions of graphics and text using a focus group of South Carolina dog owners for feedback. Results indicated the billboard was both understandable and motivational, and also simple enough to read while viewed briefly from a passing vehicle. In fall of 2018, seventeen copies of the billboard were installed around the state for a greatly reduced cost, through a Public Service Announcement partnership with the Outdoor Advertising Association of South Carolina. These billboards are viewed weekly by a combined total of over 1.5 million people, and will remain up for several months. The billboard is part of a larger pet waste outreach strategy that includes the development of commercials, pledge cards, rack cards, pet waste dispenser installations, and bag giveaways.

Whitney Grantham
CEA-NR
Texas A&M AgriLife Extension Service
BELL

Grantham, W.*[1]
[1] CEA-NR, Texas A&M AgriLife Extension Service, Belton, TX, 76513

The Bell-Milam Youth Agribusiness Tour flyer was used to promote an interactive tour of local production agriculture to 4-H members in Bell County. A second version of the flyer was created for promotion to Milam County 4-H youth with different departure times and locations. This promotional piece targeted 6th to 12th grade youth in Bell and Milam counties as well as their parents, and mentors. The flyer was created through Canva and published as a PDF and JPEG for uploading purposes during promotion. The flyers were advertised through Facebook, 4-H email blasts, and the 4-H Focus Newsletters in Bell and Milam Counties. Interested youth were asked to request an online application link from their Extension agent. Through an application process, 16 youth were selected to participate in the two-day, career focused and interactive tour of local production agriculture. Key educational components from the ten stops included discussion of farm equipment, row crop production, bulk and custom feed rations, trade, commodity markets, seedstock and commercial cattle, bee management and honey production, ag finance, livestock harvesting and fabrication, and the importance of ag advocacy. Talking points from the Path to the Plate curriculum were provide to the students to assist them in recording a short video to share their educational experiences and promote agriculture. Capital Farm Credit, DataMars, and Purina sponsored lunch, transportation, and refreshments for the youth. There was no cost for 4-H members to attend the tour. 38 total youth, volunteer leaders, and speakers were apart of the tour.

Heidi Rader
Tribes Extension Educator
UAF Cooperative Extension Service
Tanana Chiefs Conference

Rader, H.*[1]
[1] Tribes Extension Educator, UAF Cooperative Extension Service, Fairbanks, AK, 99701

This is a flier I created to advertise workshops on growing flowers in remote communities in Alaska. Fliers are an important ways to get the word out in these small communities. Some villages in Interior Alaska are only 30 people while others are up to 500 people. With so few people, advertising and getting the word out is very important.

State Winners

State Winner	
North Central Region	
Illinois	Ashley Belle
Indiana	James Wolff
Iowa	Kapil Arora
Kansas	Rachael Boyle
Minnesota	Diane Dewitte
Missouri	Patrick L Byers
Nebraska	Connie Fisk
Ohio	Eric E. Barrett
South Dakota	Sara Bauder
Northeast Region	
New York	Jason Detzel
West Virginia	Emily Morrow
Southern Region	
Alabama	Joshua B. Elmore
Arkansas	Rachel Bearden
Georgia	Hailey Robinson
Kentucky	Nicole Bell
Mississippi	Bill Burdine
North Carolina	Margaret Ross
Tennessee	Thomas Greenlee
Virginia	Ursula Deitch
West Region	
Utah	Helen E Muntz

Publication

National Winner

Jeff M Edwards
Pesticide Applicator Training Coord/Small Acre Hort Specialist
University of Wyoming
Wyoming

Edwards, J.M.*[1]
[1] Pesticide Applicator Training Coord/Small Acre Hort Specialist, University of Wyoming, Lingle, WY, 82223

This publication discusses all aspects of integrated pest management. It includes garden and greenhouse pest identification and identifies sources for biological and chemical management practices.

National Finalists

Kenneth Johnson
Horticulture Educator
University of Illinois Extension, Calhoun/Cass/Greene/Morgan/Scott unit
Central

Johnson, K.*[1], Wahle, E*[2], Smith, M.A.*[3], Nixon, P*[4], Robson, D*[5]
[1] Extension Educator, Horticulture, University of Illinois Extension, Unit 15, Jacksonville, IL, 62650
[2] Commercial Agriculture Educator, Horticulture, University of Illinois Extension, Collinsville, IL, 62234
[3] Extension Educator, Horticulture, University of Illinois Extension, Unit 7, Milan, IL, 61264
[4] Extension Entomologist (retired), University of Illinois, Champaign, IL,
[5] Extension Specialist, PSEP (retired), University of Illinois, Champaign, IL,

The public has become increasingly aware and interested in the plight of pollinators and are continually seeking information on how to make their landscapes more hospitable for them. This publication was created as part of a grant to provide educational materials at Illinois interstate rest areas portraying the importance of pollinators to the agricultural industry and ecology of Illinois and is geared toward the general public. The first section discusses the importance of pollinators, particularly when it comes to food. The second section discusses pollinator syndromes or the flower features that certain types of pollinators tend to prefer. The third section covers bees commonly found in Illinois. The final section covers different things people can do in their landscapes to make them more attractive to pollinators. This publication is made available to the public via QR codes that can be accessed at interstate rest stop kiosks across Illinois (http://pollinators.cropsciences.illinois.edu/). In total there are 42 kiosk displays set up at interstate rest areas. According to the Illinois Department of Transportation 36 million (36,000,000) people visit Illinois' rest areas each year. The publication has also been made available to Extension employees thorough out the state to use with local programming. The submitter was the primary author of the publication and worked in conjunction with other authors to develop, review, and finalize the publication.

Ashley R Pierce
Senior Resource Educator Commercial Livestock

Capital Area Agriculture and Horticulture Program

Pierce, A.R.*[1]
[1] Senior Resource Educator Commercial Livestock, Cornell

Cooperative Extension, Troy, NY, 12180

This handbook serves as both a hard copy and digital workbook to educate new and beginning farmers in New York State and beyond. It includes live links, videos, and websites for online users, as well as many options for those working with a hard copy. This handbook has been used by several beginning farmer classes and individuals. It was written both as I was a graduate student of Green Mountain College in the Masters of Sustainable Food Systems program, as well as an Agriculture Educator for Cornell Cooperative Extension Albany County. It was also developed with the guidance of Capital Area Agriculture and Horticulture Program Team Leader, Steve Hadcock, who served as an adviser to this project.

Paula J. Burke
County Extension Coordinator
University of Georgia
Carroll/Northwest

Burke, P.J.*[1]
[1] County Extension Coordinator, University of Georgia, Carrollton, GA, 30117

The Farm and Food Resource Guide is a tri-county resource for consumers to identify local farm and food products in Carroll, Haralson, and Heard Counties in Georgia. The guide includes forty-one farms with a brief farm description and location, a location map, information about why consumers should buy from local farms, six ways to buy local, farmers' market information, and a "What's in Season?" chart. Five thousand copies of the guide were printed and distributed to the public through the Extension office, the Carroll County Chamber of Commerce and other locations in the community. The guide is also online at http://www.tanner.org/media/file/FarmGuide-2018-FINAL.pdf and has had 123 page views since September 2018. Paula Burke's role was to recruit farms to be included in the free guide, to organize their submitted information, write the buy local food information, solicit and provide photos and assist with final proofing. Burke collaborated with Tanner Health System who designed and printed the guide through their Get Healthy, Live Well initiative.

Regional Winners

Monica Jean
Crop Production Educator
Michigan State University Extension
Delta Co./U.P.

Jean, M.*[1], Kapp, C.*[2], Bahrman, A.*[3]
[1] Crop Production Educator, Michigan State University Extension, Escanaba, MI, 49829
[2] Research Assistant, Upper Peninsula Research and Extension Center, Chatham, MI, 49816
[3] Reserach Labor, Upper Peninsula Research and Extension Center, Chatham, MI, 49816

Small grains like oats and triticale are grown with peas as an alternative forage to alfalfa and silage corn. This alternative forage is popular in the Upper Peninsula region as a stand-alone forage crop and nurse crop for perennial forage seedings. Newly developed varieties in both pea and small grains have become available for farmers, so research into yield and quality was needed. The purpose of the study was to evaluate species, variety and mixture effects of pea, oat and triticale on forage yield and quality. The goal of this research was to improve awareness of available varieties and increase adoption of the best varieties. The audience was primarily farmers and agribusiness professionals. Monica Jean, Michigan State University Extension Educator of Delta County, conducted research in 2018 at the Upper Peninsula Research and Extension Center in Chatham, MI. Twenty-two entries were donated by local seed dealer, representing what was currently available to the farmers. To prepare this entry, the data was collected and analyzed in SAS. Once the data was summarized, several round of peer review took place. The final product was distributed as a handout at conferences and meetings but also made into an article that was available both on-line, shared on social media and mailed through a newsletter (1,000+ subscribers). I would estimate 1300 copies have been distributed. Monica Jean designed the study, obtained grant money, collected and analyzed the data and created the handout.

Anne Nelson
Extension Educator, Ag Water Quality Protection
University of Minnesota Extension

Nelson, A.*[1]
[1] Extension Educator, Ag Water Quality Protection, University of Minnesota Extension, St.Cloud, MN, 56301

Best management fact sheet generated for farmers in Ottertail County, MN. Specifically farmers in or near Parkers Prairie township, which is in the Southeast corner of Ottertail County. Parkers Pairie is one township in the county that has high nitrates in groundwater, this can affect drinking water, and is usually caused by over or improper application of nitrogen fertilizer on sandy soils. This fact sheet highlights the University of Minnesota's Best Management Practices of Nitrogen Fertilizer for that area in one document instead of several documents by crop, cutting down on the amount of reading material and making it more relatable to farmers with these specific soils.

Made by Anne Nelson in Word, using the University of Minnesota's multiuple page fact sheet template, which includes the design, font type, and colors for graphs. Graphs were made in Excel and pasted into Word. Audience of farmers and agency staff. Distrubed to approximatley 55 people,

through paper copies handed out in person at a meeting as well as emailed to a larger group. Has been used by farmers as a reference and for the Soil and Water Conservation District staff as a reference for a nitrogen use survey.

Laura Kenny
Equine Environmental Stewardship Educator
Montgomery

Kenny, L.*[1]
[1] Equine Educator, Penn State Extension, Collegeville, PA, 19426

https://extension.psu.edu/how-to-make-rotational-grazing-work-on-your-horse-farm

This publication was written for horse farm owners and managers to help them understand the concepts behind proper rotational grazing and tips for implementing this grazing system. Horse farm managers often have little knowledge of rotational grazing, and when they learn how to use it, assume that it would not be a good fit for their farms. I wrote this article and created the illustrations to explain the concepts and to get straight to the questions and objections that I hear most often while teaching this topic. The publication is posted on the Penn State Extension website as an article. Since it was published in June 2018, it has been viewed over 1,700 times.

Clay Cooper
Agriculture and Natural Resource Agent
UF/IFAS Extension Citrus County
Citrus

Cooper, C.*[1], Clamer, Stephanie*[2]
[1] Agriculture and Natural Resource Agent, UF/IFAS Extension Citrus County, Lecanto, FL, 34461
[2] Community Resource Development Program Assistant, UF/IFAS Extension Citrus County, Lecanto, FL, 34461

Citrus County is a popular tourist destination located on the west coast of Central Florida. In 2018 more than 500,000 tourist visited Citrus County which was over an 8 percent increase from the previous year. Even though Citrus County is known for its iconic coastal attractions, it is still home to many more highly sought destinations that make it truly a unique place to visit. When you venture off the beaten path, you can find many diversified operations that focus around food, farms and fun, while providing something for the whole family to do. Seeing the opportunity to enhance agricultural awareness, community resource development and extend the stay of guests visiting Citrus County, the agent along with a committee group designed, developed and published a brochure highlighting all of the ag-ventures that Citrus County has to offer.

This publication was developed as a resource to highlight Agri-businesses in Citrus County and serve as a guide for both local and visiting guests alike. In 2018, 1,000 copies were published and disseminated at fairs, festivals, expos and through a strong partnership with the Citrus County Tourism Bureau. As a result, many local businesses have indicated a positive response and several additional businesses have requested to be included in the next round of publications.

Justin Ballew
Extension Agent
Clemson University Cooperative Extension Service
PeeDee Reg

Ballew, J.*[1]
[1] Extension Agent, Clemson University Cooperative Extension Service, Lexington, SC, 29072

The purpose of this publication is to educate the reader on the importance of calibrating a fertilizer and dry chemical spreader and how to accurately do so. The intended audience is landscape professionals and homeowners who spread their own fertilizer and dry chemicals. The publication provides a step by step guide to calibrating and calculating fertilizer and chemical rates. A section is included with sample calculations with blanks for readers to fill in their own values. As of April of 2018, the publication is accessible on the Clemson Extension Home and Garden Information Center website and has been viewed over 1200 times. It is also distributed at local Extension pesticide calibration and safety worshops.

Silvia I Rondon
Extension Entomologist Specialist
Oregon State University

Rondon, S.I.*[1], Josephine Antwi*[2], Rodney Cooper*[3]
[1] Extension Entomologist Specialist, Oregon State University, Hermiston, OR, 97838
[2] Assistant Professor, Saint Mary University, Virginia, Vi,
[3] Entomologist, USDA-ARS

Lygus bugs feed on over 300 species of plants around the world. In the Pacific Northwest, the pest affects numerous crops including small fruits, tree crops, forage crops and row crops including potatoes. Although rarely a pest on potatoes in the past, current abundance and distribution are causing alarm to potato growers. This publications was developed with the intent to provide up to date information related to Lygus bugs and the potential implications not only for potato production but for other crops.

Helen E Muntz
Extension Assistant Professor
Utah State University
Weber & Morgan

Muntz, H.E.*[1]
[1] Extension Assistant Professor, Utah State University, Ogden, UT, 84404

https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article

=2862&context=extension_curall

There is increased interest in sustainable and waterwise landscaping across the US, particularly in more arid regions. Many resources are available on waterwise and locally adapted landscape plants, but many homeowners and landscapers struggle with plant options for dry, shady areas. Therefore, Extension saw the need to provide a resource for the public on plants that will thrive in dry shade. A comprehensive plant list was compiled and an online survey was sent to public gardens throughout the state to rate each plant on the list. The survey allowed participants to choose the plants they had experience, what conditions they were grown (i.e. full shade, partial shade, low water, moderate water). This bulletin includes the top 15 plants that fit each category, are readily available at local nurseries, as well as includes detailed information on each plant. This bulletin was published spring of 2018, and has been downloaded by 36 institutions and in 33 countries.

State Winners

State Winner	
North Central Region	
Kansas	John J Forshee
Missouri	Travis Harper
Ohio	Eric E. Barrett
South Dakota	Adam Varenhorst
Wisconsin	Adam A. Hady
Southern Region	
Alabama	Leanne Dillard
Arkansas	Jarrod Hardke
Kentucky	Kristin G Hildabrand
Mississippi	Brady Self
North Carolina	Carl R. Crozier
Tennessee	David Hughes
Virginia	John Benner
West Region	
Arizona	Paula Rivadeneira
Idaho	Carmen Willmore

Published Photo

National Winner

Danielle Sprague
Agriculture and Natural Resource Agent
UF/IFAS Extension Jefferson County
Jefferson

The purpose of this educational photo was to increase awareness of honey bees and their role in our ecosystem. The agent captured this photo using a Nikon D3400 camera. The photo was uploaded and shared to the UF/IFAS Jefferson County Extension's Facebook page during the University of Florida's 2018 Bug Week. Bug Week is one week of the year that has been set aside to raise awareness of the role insects play in society. This photo was one from a series of photos published to Facebook by the agent during Bug Week. Each day during Bug Week, the agent published a photo of a beneficial insect and a caption explaining the benefits that specific insect provides. Each caption also included a link to a page with more information about the insect. This particular photo and Facebook post of a worker honey bee pollinating carinata reached 102 Facebook subscribers. As a result of this week long educational outreach, the agent received several office visits regarding insect identification.

National Finalists

Elizabeth Burdolski
Burleigh County ANR Agent
NDSU Extension
NC

This photo was published as the cover for the September/October 2018 edition of the Journal of Soil and Water Conservation. This publication is a multidisciplinary journal of natural resource conservation research, practice, policy, and perspectives, including peer-reviewed research papers. It is shared digitally and in print with the more than 3,000 members of the Soil and Water Conservation Society and other subscribers. These include researchers, administrators, planners, policymakers, technical advisors, teachers, students, farmers, and ranchers. The caption for this photo is "Hearty barley in a continuous no-till system in North Dakota". Taken on a soil health field tour in central North Dakota, this barley field was flourishing in a continuous, multi-year no-till system, with high plant diversity and cover crops. As we neared the end of the tour, the awns of this crop were illuminated in the light of the setting sun and shone as a beacon for conservation in North Dakota. This photo provides a snapshot of the beauty that can be found in a diverse, regenerative agriculture system.

Melanie Barkley
EXTENSION EDUCATOR
PENN STATE UNIVERSITY

This photo was published in the Dorset Connection as part of a feature story directed toward commercial sheep producers. The photo illustrates that producers should pay close attention to birth weights because it can impact lamb survival. The photo shows a set of triplets born with average birth weights. The digital photo was taken in January and published in the Spring/Summer 2018 edition of the magazine. This magazine is published by the Continental Dorset Club, the national registry organization for Dorset sheep. The magazine is published three times per year and sent to over 1,000 members of the registry association. Entrant took the

photo, wrote the feature story, and sent them electronically to the Executive Director of the registry association.

Gary Bachman
Horticulture Specialist
Mississippi State
SE - Biloxi

CAPTION 1: Royale Cosmo lantana is a new addition to the Luscious series, which produces a seemingly endless amount of flower clusters. (Photo by MSU Extension/Gary Bachman)

I took this image using a Nikon 7200 DSLR using a Nikon DX VR AF-S Nikon 18–300mm 1:3.5-6.3 lens, F-stop f/7.1 and 1/800 sec exposure time. The Southern Gardening column is picked up by newspapers across Mississippi on a weekly basis with a subscription base of greater than 1.6 million.

Regional Winners

Katie Pekarek
Extension Educator-Water Quality
University of Nebraska-Lincoln Extension
Southeast

Caption: "Lake with toxic algal bloom"

The University of Nebraska State Museum - Morril Hall opened a new gallery with the objective of helping visitors "Cherish Nebraska." This photo is used in the new gallery on permanent display with the caption "Lake with toxic algal bloom" as support in an exhibit which invites visitors to investigate both natural and man-made contributions to surface water pollution. In addition to the photo and caption, there is a "reading" and activities.

The gallery opening occured in late January, 2019.

Timothy McDermott
Ext. Educ., ANR
Franklin County Ext. Office

This is a photograph that was taken at 6:51pm on Wednesday September 19th at Seminary Hill Farm on the campus of the Methodist Theological School of Ohio (MTSO). Seminary Hill Farm is a sustainable organic urban farm that provides food for the college and is mostly staffed by student farmers. I was facilitating a tour of the farm for beginning and intermediate urban farmers from Franklin County as part of the support curriculum for the Mid-Ohio Food Bank's Urban Agriculture Grant of which I am the educational lead. The photograph was shot from ground level with an iPhone 8 looking towards the sun over the raised beds towards the caterpillar tunnels used for season extension. What appears to be front lit mixed green lettuce is actually back lit by the setting sun. This picture accurately and dramatically portrays the visually striking and well kept Seminary Farm grow site. The photograph was uploaded to Instagram as part of the social media interaction thank you that attendees used to thank the farmers for their time and expertise. Captioned: "A huge thanks to Seminary Hill Farm for their knowledge and time. #vegetables @smileyfarmgirl lol see how I rock hashtags." The caption is more whimsical than scientific and was obviously not constructed with any sort of future award submission as the intended goal but instead reflects the social media interactions that are common between friends and was intended as an inside joke to Noel Deehr, (@smileyfarmgirl) one of the farm managers. My hope is that the picture itself tells the story of the farm and the farmers work better than any caption could. Website location, @talkinghocking on Instagram (https://www.instagram.com/p/Bn7eX1wFEcU/)

Jeannie Layton - Dudding
Extension Agent
Virginia Cooperative Extension
Giles County

With the growing interest in local foods, the global issue of a rising demand for more food to feed an increasing population, and the climbing age of the American farmer, the need for young people in the agriculture industry could not be greater. In recognizing this, Giles County utilized fallow land behind and adjacent to Giles High School to develop a working farm. This farm is currently utilized by students at Giles and Narrows High School, Virginia Cooperative Extension programs, 4-H, Virginia Tech Ag Technology program, and other community based groups.

Since breaking ground in 2011 and active production since 2015, there is now ~35 acres of fenced pasture, ~40 acres of hay land, a small barn, a storage shed, cattle handling facilities, and 15 head of cattle. There is a 12,000sq.ft garden, which provides produce for the summer lunch program. Over 3,000 pounds of beef have been provided to the school lunch program. The program has fostered 15 interns over the past four summers in addition to an average of 80 students per week during the school year. Through the partnership with Extension, we have engaged multiple Extension Specialists, Virginia Tech faculty, and industry professionals to complete some amazing projects and programs such as the VFGC Fall Fencing School and involvement in Dr. John Fike's Conservation Innovation Grant project working with the conversion of wild-type fescue pastures. The future of this program is promising and it serves as a role model for programs across the Commonwealth of Virginia.

We have captured many great photos of students learning by doing through activities at the Land Lab. This particular picture was published on the Giles County Agriculture Land Lab Facebook page, received 20 likes (average for most of the pictures on that page), and was shared by seven others including the Giles/Bland Agriculture Extension. Through the shares on the Giles/Bland Agriculture Extension page, it reached 144 people with 55 people actively engaged. Individual

shares received 41 additional "likes". The photo was captioned "Students were able to see a heartbeat and measure the fetus to determine this calf was 54 days old."

State Winners

State Winner	
North Central Region	
Michigan	Monica Jean
Minnesota	Brad M. Carlson
Wisconsin	Lyssa Seefeldt
Northeast Region	
New York	Jason Detzel
Southern Region	
Arkansas	Rachel Bearden
Georgia	Kimberly Kester
Mississippi	Heather Jennings
North Carolina	Lauren Langley
South Carolina	Ryan Bean
Tennessee	Justin Stefanski
West Region	
New Mexico	Jeff Anderson
Washington	Stephen G. Bramwell

Video Presentation

National Winner

Libbie Johnson
EXT AGT II, AGRICULTURE
UF
Cantonment

Johnson, L.*[1], Waters, K.*[2], Williamson, A.*[3], Bainum, C.*[4], Clem,T.*[5], Griffin, J.C.*[6], Hochumuth, R.C.*[7], Korus, Kevin*[8], Lollar, Matt*[9], Rice, R.*[10], Sanchez, Tatiana*[11], Shuffitt, M.*[12], Stauderman, K.*[13]

[1] EXT AGT II, AGRICULTURE, UF, Cantonment, FL, 32533
[2] Extension Agent, UF/IFAS Extension, Bonifay, FL, 32425
[3] Video Editor and Script Producer, UF/IFAS Extension, Gainesville, FL, 32644
[4] Extension Agent, UF/IFAS Extension, Ocala, FL, 34470
[5] Extension Agent, UF/IFAS Extension, Gainesville, FL, 32609
[6] Extension Agent, UF/IFAS Extension, Live Oak, FL, 32604
[7] Extension Agent, UF/IFAS Extension, Live Oak, FL, 32060
[8] Extension Agent, UF/IFAS Extension, Gainesville, FL, 32609
[9] Extension Agent, UF/IFAS Extension, Milton, FL, 32570
[10] Extension Agent, UF/IFAS Extension, West Palm Beach, Fl, 33415
[11] Extension Agent, UF/IFAS Extension, Gainesville, Fl, 32609
[12] Extension Agent, UF/IFAS Extension, Ocala, FL, 34470
[13] Extension Agent, UF/IFAS Extension, Deland, FL, 32724

Like all Extension services, UF/IFAS Extension is one of the state's best kept secrets, but the members of the Florida Association of County Agriculture Agents (FACAA) are always trying to tell our story. The idea for this video grew out of a promotional video developed for the 2022 Florida bid to host the Annual Meeting/Professional Improvement Conference (AMPIC). After viewing the video, agents asked for the creators of the AMPIC video to modify it and make it available for use. The **Objective** was to create a succinct video utilizing Extension agents to communicate the value of agriculture and natural resources to be shared with the public, school groups, elected officials, and others. The **Purpose** of the "The Florida We Know" video is to showcase the diversity of agriculture, horticultural, livestock, and natural resource industries in Florida and the role that agents play keeping these industries viable and environmentally sensitive. The **preparation** of this video included agents and media professionals. A core team of four agents (led by Libbie Johnson) and a UF intern developed the original concept and script in the spring of 2018. Ten agents from throughout the state were selected as spokespeople to represent their industries. A professional videographer and an editor from the University of Florida (UF) worked with team to select locations and finalize the script. Portions of the video were filmed by the agents on office-owned cameras, while other segments utilized professionals from south Florida. The professionals from UF/IFAS Information and Communications Services provided the bulk of the agent video, along with UF stock videos and photographs. Agents, including Johnson as narrator and project manager, worked with the UF editor over the course of 7 months to create the final version. Additional footage was filmed to cover Residential Horticulture as the full story of FACAA couldn't be told without including them. The video is available for distribution electronically on the UF/IFAS Extension Solutions for Your Life YouTube channel: https://www.youtube.com/watch?v=r707uGokl9Y&feature=youtu.be

National Finalists

Jennifer Bentley
Extension Dairy Specialist

Winneshiek

Bentley, J.*[1]
[1] Extension Dairy Specialist, , Decorah, IA, 52101

Evaluation of Colostrum Quality video is one of 36 training videos offered in both English and Spanish. These videos were developed as part of a calf care and management

training offered through the Iowa State University Extension and Outreach Dairy Team and University of Nebraska-Lincoln Dairy Extension. Bentley worked with local dairy farms to provide on-farm training to hired employees taking care of dairy calves from time of birth to two months of age. During the on-farm trainings, video and pictures were captured by Bentley while demonstrating calf management care and techniques. These were then used to create short training videos to focus on segments of calf care that are most important for training new employees. The trainings became available on video via flashdrives/DVDs, ISU Dairy Team's you-tube channel, and UNL Dairy Extension webpage at the end of 2018 to early 2019. 259 flashdrives have been mailed to farms in the United States and 25 farms Internationally. Prior to viewing the video, dairy farm managers felt their employees understanding of how to evaluate colostrum for quality was low to moderate. These farm managers will use the training videos as part of the on-boarding process of new employees and at regular employee trainings and meetings. Farm managers hope employees will implement the use of colostrum quality testing tools prior to feeding colostrum to ensure high quality and optimal health for the newborn calf. Farm managers stated their employee turnover rate of: 0-5% (40%), 5-10% (35%), 10-20% (20%). Utilizing the training videos, they anticipate a reduction in employee turnover rate, helping to provide more confidence in job responsibility and health of the animals the employees are taking care of. A post evaluation will be emailed and mailed to all that have requested training materials for further follow-up on impact of employee management and calf health. Bentley and Dairy Team continue to utilize these training videos when delivering on-farm training workshops.

Julie E Weisenhorn and Gail Hudson
Extension Educator, Horticulture
University of Minnesota Extension

Weisenhorn, J.E.*[1]
[1] Extension Educator, Horticulture, University of Minnesota Extension, St.Paul, MN, 55108

Video link: https://www.youtube.com/watch?v=TlZWfFHoUmk&list=PLD937D4B916AF6C51&index=3

"No need to be so tidy" has become a recommendation from our Extension Horticulture team when speaking about cleaning up home yards and gardens for winter as we encourage more pollinator friendly landscapes. But sometimes it has been difficult to explain how to handle fall clean up and still provide habitat for bees. This video serves as a visual how-to guide on leaving leaf litter as overwintering habitat, leaving stems for stem-nesting bees, and even building a simple bee house. Since its being published Nov. 4, 2018, the video has 758 views on the UMN Extension Yard and Garden YouTube channel and was part of a Yard and Garden News blog post (11/05/19). I co-authored and starred in this video which was shot and produced by Gail Hudson, Extension Communication Specialist for Horticulture.

Joanna Coles
County Extension Agent for Agriculture and Natural Resources
UK Cooperative Extension Service

Coles, J.*[1], Hildabrand, Kristin*[2]
[1] County Extension Agent for Agriculture and Natural Resources, UK Cooperative Extension Service, Bowling Green, KY, 42101
[2] County Extension Agent for Horticulture, UK Cooperative Extension Service, Bowling Green, KY, 42101

The Kentucky Farms, Kentucky Flavor project goals are to enrich the connection of the producer and consumer in the area of specialty crops. The objectives are: 1) to educate farmers about consumer trends to help increase their profitability 2) to educate consumers of the health benefits and availability of specialty crops in South Central Kentucky and provide recipes of how to utilize specialty crops. This video presentation is the second episode of the third season highlighting specialty greens and Sunny Point Gardens. The farm and local farmer's market has already noticed a response from the project in increased sales in specialty greens, new signups for their CSA, and increased following on their social media sites. The segment was posted on You Tube, the Kentucky Farms, Kentucky Flavor (KYF2) Facebook page, the Warren County Agriculture's You Tube Channel, and aired on the local ABC affiliate and cable channel. Facebook reach was 7659 with 4400 video views. The You Tube video had almost 300 views and the reach was 20,000 people each day it aired on the ABC affiliate and 5000 on the cable network. The Warren County Agriculture Agent and Horticulture Agent is the co-host and co-producer of the video presentation. Miles Media Solutions shot the footage, edited and produced the segment. The video can be found at https://youtu.be/BNsYTNkw7O4.

Regional Winners

Mark Allen Badertscher
Agriculture and Natural Resources
OSU Extension
Hardin County

Badertscher, M.A.*[1], Smith, Jacci*[2], Leeds, Rob*[3], Johnston, Kenzie*[4]
[1] Agriculture and Natural Resources, OSU Extension, Kenton, OH, 43326
[2] Extension Educator ANR/4-H, Ohio State University, Delaware, OH, 43015
[3] County Director, ANR Educator, Ohio State University, Delaware, OH, 43015
[4] Extension Educator, ANR/CD, Ohio State University, Delaware, OH, 43015

On-farm research offers the potential for Extension to address localized issues of concern to multiple stakeholders. In order to have practical impact, research findings must be available in formats that appeal to audiences that play a role in solving these issues. To have practical application to a diversity of stakeholders with differing needs, interests, and learning styles, it may be more effective to present information in multiple formats. The video created has helped program participants learn in an unconventional method.

We filmed different parts of the video from July-December of 2018 and released the video in December of 2018. The video was created in Adobe Premiere Pro and the footage was shot with a HERO 7 White go pro and a Nikon 3500 camera. Our intended target audience is farmers who are looking to make the best economic decisions for their farms.

The purpose of creating short and engaging on farm research videos is to develop material around an experience that is entertaining and engaging while being professional and academically acceptable. In our on-farm research videos series we have reached over 100,000 people by having 40 Ohio Extension Educators share the video during meetings and post on social media platforms.

This on-farm research trial highlights Ohio State Extension Educator, Mark Badertscher, working with Hardin County farmer, Paul Ralston. Badertscher and Ralston created the trial to determine yield response of corn to sidedress nitrogen rates at different corn growth stages. They work together to measure the effect of applying various rates of late season sidedress nitrogen at different growth stages to determine which combined rate and growth stage provides the best economic return.

The video we have created uses on-farm research as a foundation to build relationships, and inspire human to human learning. By creating on-farm research videos we are able to show Extension's ability to connect with Ohioans to solve real world problems. We strive to highlight engaged, approachable and accessible Extension professionals. As a team, we worked to develop research based educational material that immerses the learner in a bold, exciting and entertaining learning experience.

http://go.osu.edu/nitrogentiming

Leslie Forstadt
Child and Family Development Specialist
University of Maine Cooperative Extension
Maine

Forstadt, L.*[1]
[1] Child and Family Development Specialist, University of Maine Cooperative Extension, Orono, ME, 04469

Growing Maine is a video series from the University of Maine Cooperative Extension that features farmers and food producers in Maine. The purpose of the series is to tell the personal stories of and highlight the people who are farmers and food producers. *Growing Maine* is designed for the general public to understand more about why the person cares about farming or food production. This selected video tells the story of 16-year-old Jaelin Roberts and her food business, Simply Macarons. It is one facet of the food system, and other videos feature farmers, 4-Hers, and families. Additional reach includes showings to over 30 people at the 2019 Agricultural Trades Show in Maine, 15 teachers at the 2018 meeting of the Maine Association of Family and Consumer Science (MAFCS), and over 70 staff at the 2017 annual meeting of UMaine Extension. Within the last year, Simply Macarons and other videos were used in a project called "Growing Aspirations." This project was a collaboration between six Maine Family and Consumer Science teachers and two staff members from UMaine Extension 4-H, and Extension's Child and Family Development Specialist (Leslie Forstadt). Leslie facilitated retreats where the teachers and staff developed classroom lessons for middle and high school students. The project was funded by Maine Ag in the Classroom to teach about careers in agriculture and the food system, and use the videos as tools within the lesson to explore Habits of Mind and vocational aspirations within the food system.

Stacie Hritz
Assitant Extension Educator

Centre County

Hritz, S.*[1], Anderson, P.*[2], Hall, L.*[3], Alexander, H.*[4], Rice, J.*[5]
[1] Assitant Extension Educator, , Bellefonte, PA, 16823
[2] Area Extension Educator 4-H Youth, Penn State Extension, Clarion, PA, 16214
[3] 4-H Youth Development Educator, Penn State Extension, West Chester, PA, 19380
[4] 4-H Youth Development Educator, Penn State Extension, Clearfield, PA, 16830
[5] Assistant Director, 4-H Youth Development Programs, Penn State Extension, University Park, PA, 16802

Video Link: https://www.youtube.com/watch?v=-onUqtSBS_M

The video project was focused on promoting a new 4-H program called the Pennsylvania 4-H Science of Agriculture Challenge. The purpose of the program was to demonstrate to teens and adults that this new project can successfully engage youth into a project relating to agriculture and how the youth can impact this diverse industry.

The target audience is multifaceted. We seek to show teens that they can engage in a project that they are passionate to create change in their community. We are also appealing to adults who may wish to engage as a volunteer mentor with youth and create change in a community or influence youth in

their career paths.

This program features the opportunity for the youth select a topic related to agriculture. They are charged with identifying a "problem" as it relates to some aspect of agriculture in their community. This problem is then put into the scientific method and the hypothesis is researched to create a solution to the problem. The topic that the youth select is then placed into a category in the American Farm Bureau "Pillars of Agriculture". These pillars are about agriculture and the relationship with the six separate pillars of Economy; Lifestyle; Food, Fiber and Energy; Technology; Animals; and Environment.

The youth then compete in a "shark-tank" type environment within their selected pillar. The winning team in each pillar then competes to be ranked in the top three teams to be awarded scholarship money to support their post-secondary education experiences. This money is held until the youth receives their high school diploma and decides on the educational institution for their post-secondary education. This support can be cumulative over their 4-H career starting in sixth grade.

The cost of production for this video was $2,475. It was accomplished through our team story-boarding the experience with a videographer and working with our youth and adult volunteer participants.

Emily Morrow
Extension Agent
West Virginia University Extension Service
Jefferson

Morrow, E.*[1]
[1] Extension Agent, West Virginia University Extension Service, Kearneysville, WV, 25430

This video is part of the So You Want to Farm in WV Series for beginning farmers provided by the West Virginia University Extension Service Small Farm Center. The topic is how to navigate a social media page for a farm, including the specific benefits and limitations of using Facebook as a business page.

https://www.youtube.com/watch?v=M4sztiby67Y&t=2s

Gary Bachman
Horticulture Specialist
Mississippi State
SE - Biloxi

Bachman, G.*[1], Allison, Tim*[2], Parrish, Jonathan*[3]
[1] Horticulture Specialist, Mississippi State, Biloxi, MS, 39532
[2] Senior Extension Specialist, Mississippi State University, Mississippi State, MS, 39762
[3] Extension Associate I, Mississippi State University, Mississippi State, MS, 39762

Southern Gardening Television is a weekly (52 segments per year), 1 1/2 to 2 minute television segment designed to air within Mississippi television newscasts and available on the Mississippi State University Extension Service's web portal, http://extension.msstate.edu/shows/southern-gardening/video

Southern Gardening Television is also a part of the weekly MSU Extension Agriculture show Farmweek aired in Mississippi on Mississippi Public Broadcasting and RFD-TV. Weekly viewers within the state of Mississippi number in excess of more than 450,000. Segments are designed for persons interested in lawn and garden care and seasonal interest. The goal of Southern Gardening Television is to educate and inspire the home gardener in Mississippi.

The following segments are being submitted as examples of the body of work for Southern Gardening Television segments.

Southern Gardening: Terrariums

http://extension.msstate.edu/southern-gardening/video/2019/terrariums

Southern Gardening: Mississippi Citrus

http://extension.msstate.edu/southern-gardening/video/2018/mississippi-citrus

Southern Gardening: Gulf Muhly Grass

http://extension.msstate.edu/southern-gardening/video/2018/gulf-muhly-grass

Southern Gardening: Gary's Hellstrip

http://extension.msstate.edu/southern-gardening/video/2018/garys-hellstrip

Southern Gardening: Salvia Farinacea

http://extension.msstate.edu/southern-gardening/video/2018/salvia-farinacea

Southern Gardening: Hanging Ferns

http://extension.msstate.edu/southern-gardening/video/2018/hanging-ferns

Heidi Rader
Tribes Extension Educator
UAF COOPERATIVE EXTENSION SERVICE
Tanana Chiefs Conference

Rader, H.*[1]
[1] Tribes Extension Educator, UAF COOPERATIVE EXTENSION SERVICE, Fairbanks, AK, 99701

Video Link: https://youtu.be/GqZm2W-ACns

In this video, Emily Garrity, owner of Twitter Creek Gardens in Homer, Alaska showcases her passive solar greenhouse and describes what she uses it for. Garrity uses a variety of innovative practices that work for her environment

which is cool and rainy. The angle of the glass is designed to optimize solar and light gain. There is also a lot of thermal mass in the structure that retains heat. Further using her space wisely, in the spring she uses scaffolding in the ceiling which is extra warm for her seedlings. The video has been viewed nearly 10,000 times and seems to be meeting a desire to find sustainable solutions for growing food in cold, Northern environments.

Susan L Carter
Horticulture Agent
CSU Extension, Tri River Area
Grand Junction

Carter, S.L.*[1], Fahey, Barbara*[2], Rose, Mark*[3], Shonle, Irene*[4]
[1] Horticulture Agent, CSU Extension, Tri River Area, Grand Junction, CO, 81502
[2] Retired CSU Ext Jefferson County Natural Resource Agent, CSU Extension, Boulder, CO, 80309
[3] CSU Multimedia Producer, CSU Extension, Fort Collins, CO, 80523
[4] CSU Extension Director and Agent, Gilpin County, CSU Extension, Black Hawk, CO, 80422

https://www.youtube.com/watch?v=rxX4PVdNbEM&feature=youtu.be

I am one of the speakers. Please consider all or just my parts. Retired Barbara Fahey and Agent Irene Shonle are also main speakers. Video was shot and edited by Mark Rose from CSU Campus. We have a Native Plant Masters Program of which I am a leader in Western Colorado for four counties. Landscape Sustainability is one topic we cover during our Native Plant Classes.

Bonnie Hopkins
County Extension Agent/Agriculture
New Mexico State University
San Juan County

Hopkins, B.*[1], Allen, Greg*[2]
[1] County Extension Agent/Agriculture, New Mexico State University, Aztec, NM, 87410
[2] , San Juan Safer Communities Initiative, Farmington, NM,

In June 2018, San Juan County NM was designated the D4 exceptional drought status, which would turn out to be the driest year on record. The San Juan County, NM agriculture Extension agent met with the community surface water stakeholders monthly and determined a significant need for water conservation education throughout the year. The agent hosted an agricultural water-users workshop in May 2018 but there was an additional need for homeowner education. Homeowners water consumption increases annually during the summer months by over 50% compared to other seasons. The projections from the municipal water authorities estimated that if residents continued to use water at the summer peak rate the current water supply would last only 90 days. Working in partnership with the San Juan County Safer Communities Initiative the agent filmed a lawn care video designed to reach the broad homeowner audience that was placed on mandatory water restrictions across San Juan County. The objective of the video was to educate homeowners on water conservation strategies in an effort to reduce the overall municipal water consumption. The video utilized NMSU turfgrass research based information from the turfgass research department. The video was viewed over 5,800 times and received positive viewer feedback and widespread viewing. The City of Farmington was able to reduce their water consumption to meet the 30% reduction in use goals for the month of July because of the homeowner reduction in water consumption. The video can be viewed here: https://youtu.be/1TJhgc3x40w and is currently posted on the San Juan County Extension website as well as the Facebook pages for the SJC Extension office and San Juan Safer Communities Initiative. The agent has responded to feedback and filmed a second view featuring the SJC Master Gardeners highlighting drought mitigation strategies in the spring.

State Winners

State Winner	
North Central Region	
Indiana	Elysia Rodgers
Kansas	Cassie Homan
Michigan	Eric Anderson
Nebraska	Connie Fisk
South Dakota	Taylor Grussing
Wisconsin	Heather Schlesser
Northeast Region	
New Jersey	Nicholas Polanin
New York	Elizabeth Higgins
Southern Region	
Alabama	Taylor A. Reeder
Arkansas	Tyler Caston
Georgia	Campbell Vaughn
North Carolina	Paul Mckenzie
South Carolina	Ryan Bean
Tennessee	Justin Stefanski
Texas	Paul Winski, Winsk
Virginia	Edward Olsen

Web Site

National Winner

Mary Elizabeth Henry
Extension Agent III
University of Florida IFAS Extension Polk County
Polk County

Henry, M.E.*[1], Treadwell, D.*[2], Perez Orozco, J.*[3], Athearn, K.*[4]
[1] Extension Agent II, University of Florida IFAS Extension Polk County, Bartow, FL, 33831
[2] Associate Professor, Univerisity of Florida IFAS Extension, Gainesville, FL, 32611
[3] Specialty Crops Coordinator, Univerisity of Florida IFAS Extension, Gainesville, FL, 32611
[4] Regional Extension Agent - Rural & Agribusiness Development, UF/IFAS NFREC-Suwannee Valley, Live Oak, FL, 32060

The objective of the University of Florida's (UF/IFAS) Small Farms and Alternative Enterprises (SFAE) program website (http://smallfarms.ifas.ufl.edu/) is to provide practical and engaging research-based information to clientele. The SFAE team created a new website edition, adopting simplified site architecture in the T4 platform. The site features 30 content pages stemming from four core subject pages: Production; Planning & Management; Direct Marketing & Value Added and Beginning Farmer. Aesthetics were improved using original and copyright verified photos and fresh graphics, complimenting an updated UF compliant branding scheme. IFAS blogs, Facebook and YouTube accounts were fully integrated to better align with current trends in internet use and 27 new playlists were created to improve access to video. The site addresses ADA accessibility, uses improved Search Engine Optimization and features new state and regional Google calendars connected to county offices to simplify posting procedures. I provided leadership for site architecture and led five subject area teams, reviewing existing educational materials, and creating or sourcing new materials to meet emerging needs. I was trained as a T4 editor and oversaw content assembly by IFAS Communications, partially funded by a state Specialty Crop Block Grant. The SFAE website is the only comprehensive source of farming information designed to meet the unique needs of Florida's small farmers. Google analytics report 1.5 K users in 2019 and we expect the mobile-friendly format and interactive delivery methods will improve site relevancy and accessibility to the next generation of internet users.

National Finalists

Nancy Kreith
Horticulture Educator
University of Illinois Extension, Unit 6
North

Kreith, N.*[1]
[1] Horticulture Educator, University of Illinois Extension, Unit 6, Matteson, IL, 60443

A local program website page for Conservation@Home (C@H) was developed to market a certification program for Cook County, Illinois home gardeners that practice sustainable landscaping. The website includes contact information, process for applying and link to application, program fees and perks, upcoming programs and events, public program registration forms and information that will assist home gardeners in implementation of environmentally friendly landscapes practices. Downloadable facts sheets are listed as tabs and subject matter includes, soil and water conservation techniques, garden design and selection of native plant species, supporting pollinators and wildlife, invasive plant species control, IPM, natural lawn care and local resources for purchasing native plants. Program partners are included and their efforts along with Illinois Extension efforts are highlighted on C@H website. Certification criteria is also clearly listed and can be downloaded before applying to the program. This allows home gardeners to review an essential checklist before applying. Home gardeners are encouraged to contact Illinois Extension staff for advice on how to work their way towards certification if they are not quite ready. Since 2016, over 80 gardens throughout Cook County have been C@H certified and nearly 20 more are currently in the consultation phase. In 2018, the program was piloted with school gardens and a new criteria has been posted for schools wishing to certify. Additionally, C@H website serves as a resource for Master Gardeners and Master Naturalists that volunteer as evaluators, as they are the ones conducting home garden visits to determine certification status. Cook County includes City of Chicago and many suburban communities that are in dire need of native plant and wildlife habitat restoration due to fragmentation. Forest Preserves of Cook County is one of the largest and most diverse ecosystems in the U.S. The goal of this program is to bring awareness to the restoration programs of the Forest Preserves, educate residents and recognize home gardeners that aid in efforts to restore natural lands. C@H website averages 300 hits per month and greatly assist in extending outreach both from a marketing and educational standpoint.

URL: https://web.extension.illinois.edu/cook/conservationhome/

URL: https://web.extension.illinois.edu/cook/conservationhome/

Abby Neu
Extension Educator, Poultry
University of Minnesota
Minnesota

Neu, A.*[1], Martinson, Krishona*[2]
[1] Extension Educator, Poultry, University of Minnesota, Willmar, MN, 56201
[2] Horse Extension Specialist, University of Minnesota, St. Paul, MN, 55108

In 2010, the University of Minnesota Extension horse team developed a social media presence using Facebook. The objective was to increase audience awareness and expand the reach of the Equine Extension program by providing brief, timely, research-based information to horse owners, equine professionals and allied industry members in Minnesota and western Wisconsin. The number one fastest growing demographic of Facebook users are women between the ages of 40 and 60, which mirrors Minnesota's equine audience which was determined by a thorough needs assessment. In order to have consistent interactions with fans, daily posts are composed and scheduled to include research updates, YouTube videos, tip of the week, general content which are all accompanied by an image or graphic. A funny cartoon or meme is posted as a "Friday Funny" to end each week. Users are encouraged to follow links to original internet content. These consistent efforts resulted in generating a total annual reach of 2.9 million individuals in 2018. The page ended 2018 with 10,394 "Likes", an increase of 2,098 in the calendar year. The primary author who submitted this application is a frequent contributor and served as an editor of the Facebook page in 2018. You can view the Facebook page at facebook.com/UMNHorse.

Joshua Sherman
Horticulture Extension Agent
The University of Arizona
Cochise, Graham, Santa Cruz, Pima counties

Sherman, J.*[1]
[1] Extension Agent, The University of Arizona, Willcox, AZ, 85643

In order to address the emerging needs of disbursing information quickly, and to a broader audience, University of Arizona Cooperative Extension ANR Agent, Joshua Sherman of Cochise County, along with the support and approval of the Arizona Pecan Growers Association Board, spearheaded the creation of www.arizonapecan.com. The website URL was secured through the website building site, GoDaddy.com. Agent Sherman, along with the support and expertise of Esteban Castillo of Fearluz Studios, created this website to offer a destination for beginning pecan growers, as well as seasoned producers. With the assistance of Mr. Castillo, Agent Sherman, aided in the creation of the design, organization, and the content for this new innovative website. The site went live in June 2018 and has since been the 'go-to' for Arizonans interested in learning more about pecan production.

The purpose of arizonapecan.com was and continues to be, an avenue for Agent Sherman and other experts in the field of pecan production to educate the general public, and producers alike. Instead of individually educating the increasing number of growers and those interested in growing throughout Arizona, this site provides information needed for any experience level and allows learners to explore specific needs at their own pace. It offers everything from links to annual conference registration, to various content concerning soil and nutrients, to culture and weed management, to pests and disease information, as well as many additional resources. Agent Sherman continues to maintain the site by providing content updates every quarter. This level of attention ensures that readers receive the most up-to-date and accurate information on an ongoing basis.

Advertising for the site has taken place through marketing on Extension announcements and conference handouts, online and in print. Since its launch date in June 2018, it is now the #1 result displayed when searching Arizona pecan. It has been clicked on from search engine results 10,063 times and 125 individuals have visited the site. Of those that visit arizonapecan.com, 4 resource pages on average are clicked per visit. It is projected that ~300 individuals will have visited the site at the one-year mark in June 2019.

Regional Winners

Amy K. Stone
Extension Educator
Ohio State University
Lucas

Andon, J. E.*[1], Bennett, P. J.*[2], Boggs, J. F.*[3], Chatfield, J. A.*[4], Crook, J. S.*[5], deHass, T. B.*[6], Draper, E. A.*[7], Jagger, C. J.*[8], Kaminski, C*[9], Kulhanek, A. L.*[10], Rhodus, T.*[11], Scheckelhoff, B.*[12], Snyder, P.*[13], Stachler, J. M.*[14], Stone, A. K.*[15], Titchenell, M.*[16], Veil, J.*[17], Witney, E. G.*[18], Young, C. E.*[19]
[1] Program Manager, Ohio State University, Pesticide Safety Education Progam, Columbus, OH, 43210
[2] Extension Educator, Ohio State University, Clark County, Springfield, OH, 45505
[3] Extension Educator, Ohio State University, Hamilton County, Cincinnati, OH, 45223
[4] Assistant State Specialist, Ohio State University, Horticulture and Crop Science and Plant Pathology, Wooster, OH, 44691
[5] Program Coordinator, Ohio State University, Hamilton County, Cincinnati, OH, 45223
[6] Extension Educator, Ohio State University, Lake County, Painesville, OH, 44077
[7] Extension Educator, Ohio State University, Geauga County,

Burton, OH, 44021
[8] Extension Educator, Ohio State University, Morrow County, Mt. Gilead, OH, 43338
[9] Program Coordinator, Ohio State University, Pesticide Safety Education Progam, Columbus, OH, 43210
[10] Extension Educator, Ohio State University, Medina County, Medina, OH, 45891
[11] Professor, Ohio State University, Horticulture and Crop Science, Columbus, OH, 43210
[12] Extension Educator, Ohio State University, Putnam County, Ottawa, OH, 45875
[13] Program Coordinator, Ohio State University, Secrest Arboretum, Wooster, OH, 44691
[14] Extension Educator, Ohio State University, Auglaize County, Wapakoneta, OH, 45895
[15] Extension Educator, Ohio State University, Toledo, OH, 43615
[16] Program Specialist, Ohio State University, School of Environment and Natural Resources, Columbus, OH, 43210
[17] Curator, Ohio State University, Secrest Arboretum, Wooster, OH, 44691
[18] Systems Developer / Engineer, Ohio State University, Horticulture and Crop Science, Columbus, OH, 43210
[19] Extension Educator, Ohio State University, Van Wert County, Van Wert, OH, 45891

The Buckeye Yard and Garden Line (BYGL) is a user-friendly, interdisciplinary, source of information provided in a timely manner about Ohio's growing conditions, pest, disease, and cultural problems using an "alert" approach. The BYGL is distributed in real-time via email and posted online at: bygl.osu.edu . The BYGL can also be received as a weekly summary of posts if subscribers prefer a newsletter-like format or a collection of alerts. Articles and supporting photos are created by members of the Extension, Nursery, Landscape and Turf (ENLT) Team to benefit those who are managing commercial nurseries, garden centers, or landscape businesses, Extension professionals, volunteers including Master Gardeners Volunteers (MGV) and Ohio Certified Volunteer Naturalists (OCVN) or someone who has an interest in horticulture and a passion for plants. From March 16, 2018 through March 15, 2019, nearly 200 alerts were posted, written by a team of 18 authors. There are currently over 3,000 email subscribers.

In the same time period, there were over 235,645 visits to the BYGL website which included 327,509 page views. Once at the site, readers searched for information 5,698 times, using 2,434 unique keywords. There were 1,751 downloads from the site.

In addition to the website, the alert email notifications, and the weekly newsletter format, content is also posted via Facebook and Twitter.

It is common for readers to reach out to individual authors with additional questions or their own observations, or request to use the information presented in other venues including the text and/or photos. The BYGL continues to evolve and improvements are made as technology changes to rapidly communicate what is happening in Ohio in real-time.

URL: https://bygl.osu.edu/

UME Home & Garden Information Center

Principal Agent & Director, Home & Garden Information Center
University of Mayland Extension

Carignan, C.*[1], Adler, D.*[2], Traunfeld, J.*[3]
[1] Coordinator, Digital Horticulture Education, UME Home & Garden Information Center, Ellicott City, MD, 21042
[2] Website & Communications Manager, UME Home & Garden Information Center, Ellicott City, MD, 21042
[3] Principal Agent & Director, Home & Garden Information Center, MARYLAND COOPERATIVE EXTENSION, Ellicott City, MD, 21042

Maryland Grows (https://marylandgrows.umd.edu/) is the blog of the University of Maryland Extension's (UME) Home & Garden Information Center (HGIC). Launched in July 2017, the blog is an online communications platform that educates Maryland residents about sustainable gardening practices. Blog articles are written by UME faculty, staff, and volunteers, published once or twice each week, and disseminated via social media. Blog objectives:

- Connect Maryland residents to UME HGIC via timely gardening topics in an informal, engaging tone;
- Direct readers to the UME HGIC website for more comprehensive gardening information (fact sheets, videos, web pages);
- Increase awareness and use of our Ask an Expert online service;
- Increase visibility of UME HGIC content in search engine results to drive more traffic to the UME HGIC website.

Maryland Grows expands upon the former UME Master Gardener "Grow It Eat It" blog to include a broader variety of topics. Educational content from "Grow It Eat It" was migrated into the Maryland Grows blog.

Audience

Our target audience is the Maryland general public with an interest in yard and garden topics, techniques, and solutions. We reach beginner gardeners as well as more advanced readers such as Master Gardeners.

Distribution
All blog articles are published on two of HGIC's social media platforms, Facebook and Twitter, which have 3,093 and 1,764 followers, respectively, as of February 2019. The blog has 398 direct followers via email and Wordpress subscriptions. Maryland Grows articles have been disseminated further (re-posed) by:

- UME Master Gardeners, in their county-based monthly newsletters and social media sites;
- Social media groups including the Extension Master Gardeners national Facebook group, Maryland Department of Natural Resources, Maryland Native Plant Society Discussion Group, Capital Naturalist, Delaware Native Plant Information and Exchange, and numerous local garden clubs.

The blog receives 6,000-10,000 views monthly during the growing season. It was one of the top-ten referring sources of traffic to the UME HGIC website in 2018.

Primary Contributors & Roles

- Christa Carignan: Project manager, writer and editor
- Dan Adler: Designer, posts articles and video content
- Jon Traunfeld: Writer on food gardening and soils topics

Olivia Saunders
Extension Field Specialist, Food & Agriculture
UNH Cooperative Extension
Carroll County

Saunders, O.*[1]
[1] Extension Field Specialist, Food & Agriculture, UNH Cooperative Extension, Conway, NH, 03818

I formed the NH Honeybee Diagnostic Network formed after a need was expressed by New Hampshire beekeepers. The website was initially set up to be a resource for information, diagnostic tools, and a chat room for diagnostic volunteers after a training I held. A private log in to the site exists, allowing diagnostic volunteers to input disease data into our statewide database, and access testing protocols. We added to the site as a response to a need to improve diagnostic tools for beekeepers across the state. We now have additional information regarding how to do a CSI type investigation on a dead hive, and information on mite testing including protocols and video tutorials. The site has been very popular with both the hobby beekeeper to access educational information, and also with statewide leaders in the beekeeping industry who were looking for assistance in helping beekeepers access accurate, science-based, regionally focused information. We hope the tool we created will be a resource for beekeepers in our state for years to come.

https://www.nh-honeybee-health.com/

login to the "diagnosticians login" button at the bottom of the page is SAREgrant

Jason Detzel
Livestock Educator
Cornell Cooperative Extension
Ulster

Detzel, J.*[1]
[1] Livestock Educator, Cornell Cooperative Extension, Kingston, NY, 12401

This is a general farm blog that seeks to educate the public about the difficulties, realities, and triumphs of farming in the Northeast.

Link to Jason Detzel Farm Animal Blog

S. Leanne Dillard
Forages Extension Specalist
Alabama Coopertaive Extension System
Statewide

Dillard, S.L.*[1], Mullenix, M.K.*[2], Stanford, M.K.*[3], Marks, M. L.*[4], Dixon, M.K.*[5], Mason, K. M.*[6], Tigue, D.A.*[7], Palmer, K. A.*[8]
[1] Forages Extension Specalist, Alabama Coopertaive Extension System, Auburn University, AL, 36849
[2] Extension Specialist, Alabama Cooperative Extension, Auburn, AL, 36830
[3] Extension Specialist, Alabama Cooperative Extension, Crossville, AL, 35962
[4] Regional Extension Agent, Alabama Cooperative Extension, Crossville, AL, 35962
[5] , Auburn University, Auburn University, AL, 36849
[6] Graduate Student, Auburn University, Auburn University, AL, 36849
[7] Regional Extension Agent, Alabama Cooperative Extension, Auburn, AL, 36849
[8] Regional Extension Agent, Alabama Cooperative Extension, Bay Minette, AL, 36507

Facebook has become a location for people of all ages and backgrounds to connect and find quick information in their areas of interest. For this reason the Alabama Forage Focus Facebook page was created in 2012 to provide timely information to livestock and forage producers and stakeholders in Alabama and throughout the world. To date, the Facebook page has over 1,200 likes, reaching over 700 producers each week. The content presented on the page is a mixture of timely tips, event announcements, short videos, national magazine links, and research/programmatic announcements. The site averages 3 posts per week and the average engagement is 145 per post. The Facebook page link is https://www.facebook.com/Alabamaforages/. The site content is added by Animal

Science and Forage Extension specialists, regional Extension agents, and county agents throughout the state.

Dr. Eddie Smith
Extension Agent/County Coordinator
Mississippi State University
SE - Pearl River

Brzuszek, B.*[1], Drackett, P.*[2], Smith, E.*[3]
[1] Professor, Mississippi State University, Starkville, MS, 39762
[2] Assisant Extension Professor & Director, Crosby Arboretum, Mississippi State University, Picayune, MS, 39466
[3] Extension Agent/County Coordinator, Mississippi State University, Poplarville, MS, 39570

This website was created to provide information on how to create Smart Landscapes. A Mississippi Smart Landscape is not just a good-looking and low maintenance yard, it's an environment that encourages wildlife, uses water wisely, lowers our energy costs, and benefits both our home and our neighborhood. A Mississippi Smart Landscape uses tried and trusted methods with a little artistic flair to create an attractive and ecologically sound garden that will complement your home and neighborhood. http://extension.msstate.edu/smartlandscapes

Jeramy McNeely
Fremont Extension Director
Colorado State University Extension
Fremont

McNeely, J.*[1]
[1] Fremont Extension Director, Colorado State University Extension, Canon City, CO, 81212

The Fremont County Extension Blog was developed in an effort to get agriculture, horticulture, finance, natural resource, and other information out to Fremont County Producers. Every effort is taken to provide research based information as conveniently and efficiently as possible. After an entry is submitted, it goes out in an email blast. The entry is also uploaded to the Fremont County Extension Facebook Page. Content is also available on the Fremont County Website. Statistics show the blog has over 3000 pageviews from the Continental U.S., Peru, and Europe.

https://fremontcountyextension.blogspot.com/

Kari Lewis
Glacier County

Lewis, K.*[1]
[1] , , Cut Bank, MT, 59427

Death camas is a toxic rangeland plant that was reported within the county by a producer who had lost two healthy calves presumably to death camas. To quickly reach producers with information regarding identification and management of death camas, a blog post was utilized. The post included pictures of the death camas bulb, stalk, and flower to aid in identification along with a description of the plant. Management recommendations were shared for producers who find death camas in their pastures related to livestock grazing to minimize toxicity potential. Chemical control recommendations were included, along with the suggestion to flag or GPS spots with death camas for control in the following spring. Additional death camas resources were included in the article along with a link to local Montana State University Extension offices where producers can receive confirmation of suspect death camas plants. The blog post was viewed 2,755 times, effectively reaching a large sector of area ranchers. https://northcentralmsuextension.blogspot.com/2018/06/death-camas-in-glacier-county.html

State Winners

State Winner	
North Central Region	
Iowa	Paul Kassel
Kansas	Ariel Whitely Noll
Michigan	Marissa Schuh
Wisconsin	Lyssa Seefeldt
Northeast Region	
New Jersey	Steven Yergeau
West Virginia	Karen Cox
Southern Region	
Arkansas	Kevin Lawson
Georgia	James L. Morgan
Kentucky	Joanna Coles
North Carolina	Jared Dustin Adcock
South Carolina	Millie Davenport
Tennessee	David W. Hughes
Texas	Paul Winski, Winsk
West Region	
California	Zheng Wang
Utah	Helen E Muntz

NACAA Member Presentations

2019 NACAA

104th
Annual Meeting
and
Professional Improvement Conference

Fort Wayne, Indiana

4-H & Youth

CULTIVATING A NEW GENERATION OF FOODIES

Presenters: Bennett, A., Ext.Educ.,Anr, Ohio State University Extension, Troy, OH 45373

Barton, A.N., Ext.Educ.,FCS, Ohio State University Extension, Troy, OH 45373

Woods, D., Ext.Educ.,4H, Ohio State University Extension, Troy, OH 45373

Many youth today are two generations removed from households where healthy food is prepared from fresh ingredients. This makes food preparation and nutrition education for today's youth important. In order for youth to make informed, healthy decisions about their food, they need to have skills and knowledge about nutrition and cooking. Research has found youth are most interested in learning cooking and food safety skills through interactive, fun cooking demonstrations.

The county extension office offered two three-hour cooking sessions for youth ages 6 through 12. Youth spent time during the session in discussions centered around the USDA's myPlate nutrition guidelines and Four Steps of Food Safety (clean, separate, cook and chill). Participants then moved through five stations where they practiced the steps of following a recipe, demonstrated food and kitchen safety practices, learned basic knife skills, identified common and unique kitchen equipment, interactively engaged in hands-on food preparation, and sampled prepared foods.

The objectives for the sessions were to: introduce food safety concepts utilizing an interactive format; build skills to be an active participant in the preparation of family meals; and encourage youth to become involved in their own food choices. Survey results indicated 88% of participants demonstrated skills learned during the session at home. New camp recipes were utilized by 94% of participants after the cooking session. Facilitators observed campers correctly place food into myPlate categories; and express enthusiasm for new skills learned.

Attendees of this presentation will be able to create a local session focused on cooking and nutrition education for youth utilizing interactive methods shared during the presentation. Attendees will be provided with a web link to access a program planning toolkit which includes: a detailed list of supplies, recipes, marketing materials, handouts, room set-up, planning timeline and other information so that this session can be replicated in their community.

YOUTH DAIRY DAY

Presenter: Yutzy, A., Extension Educator, Penn State University, Huntingdon, PA 16652

Currently the dairy industry in Pennsylvania is struggling. Milk prices have been at a record low for four years and family farms are going out of business at a record number. It is very important for the future of family dairy farms to stay on the edge of new technologies and efficiencies to keep a farm profitable. It was discovered that youth involved in 4-H were not receiving the type of education they needed to advance their future on the family farm. This was due to more community clubs being formed and more youth living off farm. Penn State Dairy Educators decided to plan a day long hands on workshop that would provide education in areas such as dairy management, health and nutrition. The workshop offered four breakout sessions covering subjects such as reproductive anatomy, heat stress, forage quality, hoof trimming, dehorning etc., as well as, an afternoon "Amazing Dairy Race" challenge with 10 educational obstacles that was completed as a team. Over the course of 12 years this program has reached 1,471 youth from 13 different counties. We have seen the largest growth in our program numbers over the last 3 years. Due to this growth, we expanded our program to two new locations in different parts of the state. 95% (n= 1351) of participants increased knowledge in at least three dairy management topics that were presented. Many of the participants have indicated they implemented skills learned on their home farm as well. Word of mouth has been the most valuable form of advertisement for this program. Each year youth return to our program and bring new friends that have not attended before. In addition, we use email, local newspapers, brochures and state-wide agriculture publications to advertise. The impacts made at the program are important to that individual as well as their family farm. Information is shared by the youth with employers or family members and is implemented to increase overall farm productivity.

POISON PREVENTION PROGRAM FOR FIRST GRADERS

Presenter: Christ, G., Extension Educator, Penn State Extension, University Park, PA 16802

The purpose of this educational program is to introduce first grade students to pests, integrated pest management (IPM) control methods, chemical safety, and poison prevention with Mr. Yuk. The students learn about different types of pests and problems caused by pests. They also gain a basic understanding of the following IPM control tactics: cultural, mechanical, biological, and chemical. Additionally, students are introduced to Mr. Yuk, signal words on household products, and poison prevention practices. Thirty minute lessons are conducted in first grade classrooms by Penn State Extension Master Gardener Volunteers and myself. Each first grader

is sent home with a Student Packet that contains a parent letter, activity sheet, and Mr. Yuk stickers. In 2018, the Poison Prevention Program reached 14,839 first graders from 197 school districts in 27 counties across the state of Pennsylvania. The Penn State Extension Pesticide Education Program has been facilitating the Poison Prevention Program with the Master Gardeners since 2011. From 2011-2018, we've reach approximately 100,200 first grade students and their families.

ONA YOUTH FIELD DAY

Presenter: Larson, C.C., Dairy Regional Specialized Agent, UF IFAS Extension, Okeechobee, F 34972

Youth who are interested in agriculture have limited opportunities to gain hands-on knowledge of the various segments of the industry. Gaining exposure to various parts of the agriculture industry can lead youths to choose college degrees and/or careers in agriculture. Objectives: To increase knowledge of agricultural activities and careers. Methods: Extension agents, researchers, graduate students and research education center staff join together to provide an educational field day for youth in south and central Florida. Participants rotate through hands on activities, compete in a scavenger hunt, and interact with industry representatives at the trade show. A pre and post test were given to determine knowledge gain and provide feedback. Results: Of the 110 participant that took the evaluations, 96% found the information gained at the event to be useful. Knowledge gained on specific questions ranged from a 5% to 42% increase. Questions evaluated their understanding of technology, physiology, nutrition, management, agriculture careers and natural resources. The survey instrument asked students to rate the presentations as "awesome", "cool", or "okay". The students determined that 54% to 96% of the stations were "awesome" or "cool". Conclusions: The aging population of farmers and ranchers and those in the agriculture industry, require competent replacements. Providing youth with hands-on, pragmatic knowledge and experiences may lead them to consider a career in agriculture. The cooperation of multiple entities provides youth the most exposure to different types of opportunities in production agriculture, agriculture industry careers, and research and education.

ENHANCING STUDENT AGRICULTURE AWARENESS AND APPRECIATION THROUGH EMBRYOLOGY

Presenter: Cant, J. E., Agriculture And Small Farms, UF/IFAS, Jacksonville, FL 32254

The disconnect between the general public and agriculture production continues to increase, creating strife between consumers and producers and threatening the sustainability of food production in the United States. Even in rural areas, many members of the community have little to no idea of current issues facing agriculture, how food is grown, and the best management practices utilized by producers to increase the sustainability of their operations. To reduce the disconnect between the consumer and their food source, the Agent implemented an Embryology in the Classroom program to reach elementary age students and increase their understanding of local and national food production. Suwannee County is home to numerous large-scale poultry producers, and by receiving a National Agriculture in the Classroom Grant the Agent was able to purchase and create embryology kits to be used by local classrooms. The kits consist of everything needed to hatch eggs, as well as standards-aligned curriculum that can be utilized by the teacher. Eggs were purchased from local breeders and included multiple breeds to help students learn about the diversity in poultry production. Chicks were adopted in pairs for a charge and that money was used to purchase replacement equipment and eggs. The Agent provided a teacher training on equipment use, an introductory lesson for the students, and an exit lesson when chicks were picked up from the school. In the first year with four kits, ninety-eight (n=98) students in kindergarten, second, and fifth grade were reached. Based on pre- and post-test results, students experienced an average 78% increase in their understanding of food production and source, and 73% of students were able to experience animal husbandry for the first time. Fifty-two chicks were adopted at $6.00 per pair, generating $156.00 dollars to purchase additional eggs and equipment. At the end of the grant, 8 kits will be available for use. This has served as an excellent way for Agent to build relationships with both youth and adults and increase the local appreciation for agriculture.

FROM PASTURE TO PLATE: INTRODUCING YOUTH TO BEEF MANAGEMENT AND FOOD SAFETY

Presenter: Rivera-Melendez, F. P., Small Farm Agent, UF/IFAS, Seffner, FL 33584

The purpose of the workshop was to help youth understand the beef production system and introducing them to Florida's Tailgate Grilling Contest by promoting the use of animal protein in their diet by teaching the art and science of cooking in an outdoor setting. The youth will be able to identify grazing patterns, demonstrate food, location and fire safety, identify beef cuts, gain knowledge on healthy beef recipes and name byproducts from beef cattle. The workshop used multiple delivery methods like interactive games, powerpoint presentations, team building activities, skillathon and demonstrations to disseminate the information. The day camp was evaluated using pre/posttest to document knowledge gain and an overall day camp evaluation to access its effectiveness. A total of 13 youth and 2 adults attended the day camp of which 8 completed the pre/post test and evaluation. 88% (n=8) reported knowledge gain in grazing behavior of beef cattle, soil testing technique, digestive anatomy of beef, body condition score, beef cuts, and healthy

beef recipes. 75% (n=8) reported knowledge gain in food, fire and location safety for grilling outdoors. 100% (n=8) of the respondents reported that demonstration, as a method of program delivery, best suited their learning style. This day camp provided a comprehensive knowledge of the beef production system and aimed at developing life skills such as wise use of resources, healthy lifestyle choice, personal safety, critical thinking, leadership and decision making, to create awareness and appreciation of our food systems and environments.

"GARDENING WITH CHILDREN" MASTER GARDENER DEMONSTRATION GARDEN PROGRAMS

Presenter: Flahive DiNardo, M., County Agent, Rutgers Cooperative Extension of Union County, Westfield, NJ 07090

Rutgers Master Gardeners maintain a 1.5 acre demonstration garden for the Union County NJ Parks and Recreation Department, an ideal outdoor classroom to teach youth about horticulture, entomology and natural resources. In cooperation with the Parks Department's summer camp program, Master Gardeners offer educational programs based on the camp themes for youth in grades 1 -4. During each of the 2.5 hour sessions, campers rotate to different stations manned by Master Gardeners for hands-on activities related to the camp theme. The "Bugs and Beyond" participants go on a walk looking for insects on ornamentals and vegetables; learn how chick embryos develop during a presentation on birds; and study insect samples and catch butterflies with nets for the grand finale – a butterfly release. During the "Nature Crafts" program, campers create a "pizza pin", using herbs harvested from the garden; color with flower petals; and go on a scavenger hunt. "Green Team" activities focus on environmental issues such as "How are We Going to Clean Up Messy Town?" (non-point source pollution); planning a town in a watershed; and a tour of rain gardens and a cistern located in the garden. The "Branching Out" program, geared towards younger campers, features seed planting, an activity on soil texture and tree identification. The Master Gardeners created some of the lesson plans and craft activities used for sessions. Master Gardeners also hosted school groups and a YMCA camp. Since 2015, 375 youth and 89 adult camp counselors, chaperones and teachers have participated in the programs. As one teacher wrote "From the moment we pulled up and saw all those cars and then realized they were all volunteers there for us, I knew it was going to be a special day. The prep time that the Master Gardeners put into the workshops was quite evident. Everything ran smoothly and in an organized manner - Everyone was so patient, cheerful, and helpful with our scholars. It was so evident that these Gardeners were exceptional people who love the land and want to share this passion with the next generation."

KIDS GROWING WITH GRAINS: IMPROVING AGRICULTURAL, ENVIRONMENTAL, AND NUTRITION LITERACY IN YOUTH

Presenters: Travis, A., 4-H Extension Educator, University Of Maryland Extension, Boonsboro, MD 21713

Rachel Bayer, 4-H Extension Educator, Co-Author, Frederick, MD 21702

A survey conducted by U.S. Farmers & Ranchers Alliance (USFRA) found that 72 percent of consumers know nothing, or very little about farming and ranching. As our world, and our country, continue to rapidly urbanize, consumers are becoming farther removed from agriculture, and the role it plays in their daily lives. The Washington and Frederick County 4-H Youth Development Programs, a part of the University of Maryland Extension (UME), present Kids Growing with Grains, an agricultural education program made available to all schools in Frederick and Washington Counties. The program targets 3rd and 4th grade students and successfully scaffolds instruction across grade levels. The 3rd grade portion of the program is conducted as a school enrichment program, and the 4th grade program is conducted as a field trip to the Western Maryland Research and Education Center, which is maintained and operated by Maryland Agricultural Experiment Station (MAES). MAES is part of the research component of the University of Maryland, College of Agriculture and Natural Resources. In addition to collaborating with the Western Maryland Research and Center and its staff, both counties also partner with local FFA chapters, County Farm Bureaus, and the Maryland Grain Producers to make the program a success. Since 2012, 5,556 students have taken part in this field trip, which has provided over 33,336 contact hours of positive youth development and experiential agricultural education. The program is comprised of topic areas: Grain Anatomy and Identification, Grain Nutrition, Grains and Livestock, and Grains and the Environment. This educational experience helps to increase the connection and understanding between agricultural areas and urban/suburban areas, as well as enlighten youth to the health benefits and importance of wise food decisions. 97.49% of youth who attended the program in 2018 understood that grains were important ingredients in the foods they eat daily, 92.18% understood that animals consume grains and in turn provide products and by-products for consumers, and 91.91% understood how their actions can impact the environment. Long-term impacts are achieved through students understanding the lifelong health benefits of consuming grain, and the importance of agriculture in their daily lives.

JUNIOR FARMERS MARKET: CREATING HEALTHY AND INFORMED FUTURE FARMERS MARKET CONSUMERS

Presenters: Mccartney, M., Ext.Educ.,Anr, Ohio State University Extension, Marietta, OH 45750

Kristin McCartney, WVU Public Health Specialist and SNAP-Ed Director, West Virginia Univeristy Extension, 5309 Braun Rd, OH 45714

The Washington County Junior Farmers market focuses on two issues in the community: (1) encouraging students and parents to buy produce locally; either through a farmers' market or directly off the farm and (2) increase the consumption and awareness of fruits and vegetables in today's youth. Nationally, Ohio ranks 6th in child obesity among 10 – 17 year olds (18.6%) and nearly 40% of Ohio adolescents report consuming fruits and vegetables less than one time a day. The farmers market is a fun and exciting social event that differs greatly from the grocery store experience. The goal of the Junior Farmers Market was to give students an opportunity to experience this excitement and associate that excitement with fruits and vegetables with hopes of establishing long-term informed and healthy future consumers and having these consumers buy their produce locally. The program was implemented in all six county school districts with a focus on 4th graders. Each student was given five dollars to purchase fresh local produce at a mobile farmers' market booth at their school during school hours. Beside the farmers' market booth, three additional booths were implemented to give students an increased educational opportunity which included: "Healthy Soil Equals Healthy people" Soil and Water Conservation District booth, SNAP-Ed's taste tasting both provided healthy samples for students to try while offering recipes to take home and share with their family, and finally FCS (OSU Extension) provided a "Water First for Thirst" booth where students sampled infused water while learning about sugary beverages. Surveys were distributed to students to take home and complete with their parents. The results are as follows: 99% of the students were excited about the Junior Farmers Market, 93.1% of the students consumed their produce, 84.5% could identify more fruits and vegetables since participating, 79% of the student were more excited about eating fruits and vegetables, and 81% of the parents planned to shop at the Farmers Market. In summary, 313 4th grade students had the opportunity to make healthy choices, consume fruits and vegetables, and learned about farmers' markets and buying local. The president of the local farmers' market said there was a significant increase of customers after the program was implement, especially parents with children, until the end of the growing season. The program did exactly what it was intended to do: encourage the community to buy produce locally and create a positive attitude among youth regarding fruits and vegetables.

ADDRESSING CHILDHOOD OBESITY IN OUR WV YOUTH: ESTABLISHING A "GARDEN LEARNING" CURRICULUM IN OUR ELEMENTARY SCHOOLS

Presenter: Talbott, C., Associate Professor, WVU Extension Service, Winfield, WV 25213

According to the Center for Disease Control, West Virginia has consistently been in the top five states for obesity for more than five years running. Our garden-learning (GL) program offers a unique opportunity to address this risk factor. Research shows that if kids grow their own food they are more likely to consume it. Furthermore, students may improve their math and science skills using hands-on, experiential learning techniques. i.e. STEM and FOSS. Additionally, there is evidence if foods are marketed to students in the classroom, cafeteria and lunchroom, they are more likely to eat it. We are interested in enhancing agricultural literacy in our schools while improving our students' scholastic ability. In the first year of our GL program, George Washington elementary school showed significant changes in academic performance. Compared to the previous year's West Test scores (no gardening), our GL curriculum may have contributed to an increase in science and math scores by 19% and 13% respectively. Since 2014, our GL schools have received over $4,000 from the Farm to School program for the produce they have sold. Over 2200 students from six elementary schools are essentially growing their own food, safely harvesting it, documenting how much they grew, evaluating whether they liked or disliked it (a new vegetable) and learned a little bit about nutrition and business. Preliminary data suggests that (compared to non-GL schools) there may be increased consumption of new vegetables due to our GL curriculum program and nutrition education. For the GL schools (4 schools; 192 students total) that received the Junior Master Gardener Kale Taste Test survey and nutrition education, 14% of the students (27) increased their consumption of kale (>75% consumed), compared to the first Pre-Test survey. There was a -5% shift for the control schools.

CLASSROOM HYDROPONICS FOR ELEMENTARY STUDENTS

Presenter: Camm, K., Extension Agent, Anr/4-H, Virginia Cooperative Extension, Lynchburg, VA 24504

Presentation for the Excellence in 4-H and Youth – 2019 NACAA AM/PIC

The Lynchburg 4-H / ANR Extension Agent developed a hydroponic presentation, which is hands on and engaging. It also incorporated United States and World history in terms of hydroponics being used in Babylon, the Aztecs, US soldiers, and in the future with space/planet exploration. Lynchburg 4-H, through its programming, have experienced countless times where Lynchburg youth do not know / understand

where their food comes from. Furthermore, the seven food deserts, living in an urban area and 24% poverty rate are also encumbering Lynchburg youth as it pertains to agriculture. Youth had the opportunity to learn about and grow food in a way that is scientifically sound, which incorporates agriculture, STEM education and Virginia Standards of Learning (SOL's). Most importantly, this project exposed youth as to where there food comes from, how they could grow it, and how science interacts with food production. Hydroponic gardening is an instructive way to learn about plants. In school hydroponic education is a great way to introduce children to the study of nature as it pertains to plants, water, and the components of soil. Hydroponics is the growing of plants in water instead of soil. To do this successfully, the water must be enriched with nutrients as well as oxygenated. In addition, the plants must be placed in some type of inert medium to anchor the roots. Lynchburg 4-H incorporated hydroponic Gro-Tank's in the 4th and 5th grade science classes of ten elementary schools in the spring of 2018. The students not only grew and harvested over 50 pounds of lettuce, they also learned about the history and importance of hydroponics throughout the year. Students were also able to incorporate hydroponics into their learnings for scientific inquiry and in one case, the 4-H Science Fair.

MASTER GARDENER SCHOOL GARDENING PROGRAMS: INDIVIDUALIZING PROGRAMS TO MEET THE NEEDS OF LOCAL SCHOOLS AND VOLUNTEERS

Presenter: Heitstuman, M., Extension Director, Washington State University, Asotin, WA 99402

School Gardening programs contribute to the health and social well-being of youth (https://www.slowfoodusa.org/). WSU Asotin/Garfield County Master Gardeners have partnered with local elementary schools to deliver school gardening programs to 3rd and 4th grade classrooms. The school gardening program has expanded to currently teach over 130 elementary youth for an hour each week from October through May. Overall goals of each program have been to teach youth how to grow their own vegetables and fruits; and to encourage youth to make healthy eating choices. An additional focus has been to utilize the expertise of Master Gardeners to develop lesson plans that supplement science lessons being taught in individual classrooms. A lesson learned has been that a one-size-fits-all model doesn't necessary meet the needs of all students and classrooms. Three unique school gardening programs that have been developed based upon school needs and the life experiences of the Master Gardeners teaching the curriculum. School one utilizes a shared leadership model with a 5 to 1 MG to student ratio to study plant life cycles; and provide taste-testing during weekly lessons. A second school utilizes a single Master Gardener serving as the coordinator to deliver hands-on lessons to 50 low-income students using raised beds and a school greenhouse. The final model uses both Master Gardeners and community volunteers to grow cool-season crops in a small rural school district. Evaluations indicate that all three models increase student's knowledge of growing vegetables; as well as their likelihood to make healthy food choices.

Agricultural Economics & Community Development

ENHANCING CATTLE PRODUCTION PROFITIABILITY IN THE SOUTHEAST THROUGH THE INCORPORATION OF WINTER-ANNUAL FORAGES

Presenters: Cant, J. E., Agriculture And Small Farms, UF/IFAS, Jacksonville, FL 32254
Prevatt, C.G., State Beef Cattle and Forage Economist, UF/IFAS, Ona, FL 33865

Hay supplementation is both an integral and expensive component of traditional annual livestock production in North Central Florida. In cattle alone, winter supplementation of hay for production females can exceed $300.00 per head. The incorporation of cool-season annual forages into the grazing system can decrease annual cattle costs by up to $170.00 per head by decreasing the quantity of supplements needed, such as hay, molasses, or protein tubs, because of an extended grazing season. However, most cattle producers in Suwannee County are small scale ranches, and owning planting equipment is not economically feasible. The purpose of this program was to a) Educate producers on aligning cattle and forage production cycles to decrease winter supplementation costs and b) Demonstrate to producers the decrease in annual cattle costs by utilizing cool-season annual forages in the management system. The extension program was targeted at small-scale ranchers and farmers and clients new to owning and/or managing cattle. Participants spent the morning in a classroom setting learning about weed management in cool-season annual forages, cultivar selection, grazing management, and the economics of utilizing cool-season annual forages. After lunch, participants were taken to the demonstration plots to witness differences in cultivar options, the benefits of mixing varieties, and planting equipment. Seventeen (17) producers representing an estimated 800 head of cattle attended the workshop. Based on evaluations, 78.2% (n=13) indicated an increase in knowledge on cool-season annual forage establishment, management, and utilization and 82.4% (n=14) indicated incorporating cool-season annual forages into their production systems. Attendees also estimated an average annual savings of $120.13 per head by utilizing cool-season annual forages to extend their grazing season. This equates to $96,104 savings per year for the combined cattle represented. By decreasing production costs, producers can maintain sustainable cattle production more efficiently in an unstable market.

TEXAS A&M AGRILIFE EXTENSION SERVICE EMERGENCY RECOVERY STRIKE TEAM EFFORTS

Presenter: Ott, J. and B. Davis, Cea-Ag, Texas A&M AgriLife Extension Service, Robstown, TX 78380

AgriLife Extension is uniquely positioned to assist with emergency planning, response, and long-term recovery due to its statewide network of educators, volunteers, and offices serving all 254 Texas counties. The agency can rapidly deploy specialized professionals to impacted areas during natural disasters, and it supports state agencies in emergencies as a member of the Texas Emergency Management Council. The agency has responded to the needs of communities across the state affected by wildfires, tornadoes, and hurricanes. Following Hurricane Harvey and the creation of the Governor's Commission to Rebuild Texas, AgriLife Extension assumed a new, larger role in emergency response and recovery.

Post Hurricane Harvey, AgriLife Extension stationed strike teams at 12 Animal Supply Points (ASPs) across impacted areas of South Texas. These supply points served as staging areas to receive donated hay and feed. Donations valued at $1.3 million were distributed to storm impacted livestock owners, through the generous giving of other producers, industry, and commodity association partners.

In the aftermath of Hurricane Florence and the Camp Wildfire, AgriLife Extension responded to Emergency Management Assistance Compact requests for mutual aid outside Texas. These were unique deployment experiences for AgriLife personnel unlike previous in-state deployments.

Strike Teams deployed to Sampson County, North Carolina supported local and state efforts to establish ASPs in multiple counties for 9 days. North Carolina Department of Agriculture's initial estimates for crop damage and livestock losses in that state were expected to exceed $1.1 billion. As with Harvey, ASPs provided temporary relief to livestock owners requiring hay and feed resources as a result of the storm.

Notably, the Butte County, California Camp Wildfire deployment was the first time AgriLife Extension personel joined the Texas A&M University – Veterinary Emergency Team (TAMU-VET) to provide support to companion animal sheltering efforts. TAMU-VET and AgriLife personal worked for 28 days over the holidays to care for impacted animals and provide a path to suspend the temporary animal sheltering facilities that had been established. This was critical for providing closure to the impacted community and residents.

JUDGING SCHOOL VIRGINIA - BUILDING A COMMUNITY OF CERTIFIED FAIR JUDGES

Presenter: Layton - Dudding, J., Extension Agent, Virginia Cooperative Extension, Pearisburg, VA 24134

Have you ever wondered what it takes to have that prize-winning jar of green beans or loaf of bread at the local fair? Are you interested in learning how to judge in the Arts and Home Goods sections of our local fairs?

Every year we get phones calls seeking judges for the home goods sections of our county and regional fairs. Every year it seems we hear about disagreements in how judging was completed at our local fairs. As a result, Judging School Virginia is a program that was designed to educate and certify judges utilizing a standardized system in order to bring uniformity to the judging process at our fairs.

The purpose of the judging school is to train and certify judges for county fairs, the State Fair of Virginia, and other related competitions throughout the Commonwealth. This is an excellent opportunity to gain practical knowledge of fair judging and a greater understanding of county fairs.

Course objectives:
- To prepare individuals for evaluating indoor exhibits.
- To help individuals gain a greater understanding of state and local fairs and the educational opportunity which they present.
- To increase the knowledge of state and local fair judges regarding different evaluation systems and procedures.
- To create awareness in judges regarding a positive experience for the exhibitors at fairs and other events.
- To develop a pool of certified judges.

The program offers a minimum of four trainings every year around the commonwealth. At each of these trainings, participants take a judging ethics course and then select from three possible judging categories to take seminars in for that day. Examples of topics include but are not limited to photography, food preservation, fruits and veggies, quilting, job interview, scrapbooking, and baked goods. Topics are selected for each day program based on needs in that region as determined by local fair boards and superintendents. A certified judge for each category teaches the specific seminars. After participants conclude the daylong program, they must complete an apprenticeship where they sit with a certified judge at a fair. Once they have completed their hours of apprenticeship, they are added to our list of certified judges.

Our database of certified judges grows every year. Through this program, we are helping to standardize judging criteria and judging systems in order to avoid conflict and maintain strong home goods sections of our local fairs. This program was

developed based on a similar program in Maryland and utilizes Georgia Cooperative Extension materials. This program could easily be replicated in other states.

Judging School Virginia is a partnership of the Virginia Association of Fairs, Caroline County Agricultural Fair, Inc. and Virginia Cooperative Extension.

ASSISTING CITRUS GROWERS PASS 3RD PARTY AUDITS VIA FRESH FRUIT GAP AND SAFETY TRAINING PROGRAM

Presenters: Kelly-Begazo, C. A., County Ext Dir & Agriculture Agent III, UF IFAS Indian River County Extension, Vero Beach, FL 32960
Ritenour, M., Professor, UF IFAS Indian River Research and Education Center, Ft. Pierce, FL 34945

Good Agricultural Practices (GAPs) have become the global norm for agricultural producers to ensure that fruits and vegetables are handled properly to minimize the risk of food safety concerns. In the Indian River Citrus District along the eastern coast of Florida, citrus buyers, nationally and internationally, require producers to provide accurate documentation that verifies strict adherence to GAPs, including documented training of all workers. To address this training requirement, regional extension faculty developed a bilingual Fresh Fruit Program that delivers GAP and safety curriculum to growers, supervisors, managers and agricultural workers (packinghouse & grove). Topics included Worker Protection Standards (WPS), Global Harmonization System, food safety, personal hygiene, tractor and ladder safety, workplace health & seasonal flu and citrus disease identification. Training is performed by separating the participatory groups by language (Spanish and English) and directing instruction in their chosen language via presentations, videos and experiential learning. Visual prompts are utilized (laminated citrus disease ID sheets, models of infected leaves, plastic fruit with diseases depictions) which stimulate learning for non-traditional students. Personal protective equipment (PPE) dress-up is occasionally incorporated into the training, as well as role-play, and mock pesticide spill activities. Over the past 5 years, more than 5750 participants, representing 58 different companies attended a Fresh Fruit training program. Industry would have to pay outside consultants at an average fee of $50/per person per class in order to meet this requirement. Value to industry can be estimated at approximately $1,150,000 over the 5-year period. Based upon survey results from 2014-2018, participants indicated a 85% increase in knowledge gain, 95% indicated that they understood the importance of correct hand washing and its impact on food safety, and, more importantly, 95% stated they had, or will, share food safety information with other workers, friends and family members. Observed behavioral change by auditors is one component of GAP certification. If training is not effective, companies would be prevented from competing in the foreign market, thereby losing millions of dollars in projected revenue. Of the companies surveyed, 98% had passed their 3rd party audits and gave credit to the Fresh Fruit training program.

BUCKEYE ISA (INSTITUTION SUPPORTED AGRICULTURE)

Presenter: Mcdermott, T., Ext.Educ.,Anr, OSU Extension, Franklin County, Columbus, OH 43215

As of 2018, 15.1 percent of Ohio's population, including one out of five children, is "food insecure," meaning they may need to make trade-offs between basic needs and purchasing nutritious foods. The Ohio State University is making a major investment in a systems approach to tackling this challenge by setting the goal of increasing the purchase of locally and sustainably sourced food to 40 percent of the $39 million in annual food purchasing by 2025. With the support of a $750,000 grant from the W.K. Kellogg Foundation, a project to support formation of a network of neighborhood growers, particularly in communities of color, to grow and sell food to Ohio State. The network would be composed of family farmers and one very large buyer, Ohio State, to develop institution-supported agriculture: Buckeye ISA. This project leverages OSU's deep roots in agriculture, and Extension's mission of outreach and engagement by collaborating with community organizations embedded in economically challenged neighborhoods identified by the Columbus and Franklin County Local Food Action Plan. A complete food production curriculum including materials support was created. To date, a total of $162,113 in additional government funding has been aligned as a result of the project. Impacts of the program include 31 families with children enrolled in the program, 469 total class participants, 15 separate teaching locations and 10 different local food production topics engaging beginners through advance gardeners with a website created to host content and facilitate shared learning. In 2018, over 800 pounds of produce was grown with successful sales of tomatoes, bell peppers and hot peppers to the Ohio State University dining services that were served to students in the Traditions at Scott dining hall. This first successful year concluded with a post-year analysis from participants that will guide 2019 programming and outreach. Plans for 2109 include small business financial assistance, varietal selection to guide sales and season extension topics to increase production for the full dining service calendar year. This project in institution supported agriculture demonstrates the buying power of a University to positively impact and support local growers.

ENHANCING PRODUCER'S FINANCIAL RECORDKEEPING SKILLS THROUGH QUICKBOOKS DESKTOP PRO

Presenter: Mayer, K., County Extension Agent, ANR, K-State Research & Extension, Alma, KS 66401

Today, lenders expect more information than ever from operations of every size. Consequently, producer requests to Extension professionals statewide indicate a growing need for increasing knowledge of financial tools. QuickBooks Desktop Pro is an effective financial tool for small businesses, agriculture in particular. Although the financial software was not originally designed for agriculture, a team from Kansas State University built a QuickBooks-based Extension program geared directly toward the agriculture industry. When utilized, QuickBooks Desktop Pro generates applicable reports for both managers and lenders including, but not limited to, Profit and Loss Statement, Balance Sheet, and Cash Flow Statement. Furthermore, QuickBooks generates invoices and statements for businesses providing custom services and/or selling product. In a one-half day, hands-on workshop, participants work through ag-based scenarios on individual computers utilizing QuickBooks Desktop Pro. Additionally, a 100+ page manual was developed to utilize during the workshop and as a reference manual for each workshop attendee. Workshop size is typically limited (6-12 people) to facilitate more interactive, one-on-one conversations between participants and instructors. Since February 2017, three instructors provided 265 agriculture producers and other small business owners the opportunity to learn to customize QuickBooks to fit their individual operations. Due to the flexible nature of both Extension educators and QuickBooks Desktop Pro, non-agriculture small businesses also attend the workshops and find the content appropriate within their realms of operation. Of surveys completed, 100% of attendees found the workshop Valuable or Very Valuable. The workshop reaches many audiences, those who currently utilize Pencil and Notepad for recordkeeping to those who already use QuickBooks and look to enhance their skillsets. From workshop attendees who regularly use Pencil and Notepad or Farm Account Books, 87% reported they intended to begin using QuickBooks Pro in the future. Furthermore, attendee feedback indicated the desire for additional QuickBooks Pro training. Subsequently, the team recently initiated Advanced QuickBooks training and seeks to expand current programming through additional locations and instructors.

SUMMMIT COUNTY COMMUNITY GARDEN LEADERSHIP TRAINING PROGRAM

Presenter: Kowalski, J., Extension Educator, Ohio State University, Stow, OH 44224

One strategic initiatives that communities are encouraging to battle the complicated issues surrounding food security is the development of community gardens. However, the sustainability of community gardens is precarious especially when gardens are initiated by those outside the immediate neighborhood or by organizations and non-profits that experience high employee attrition. Community gardens are often established and then abandoned after a couple of years. While Extension doesn't currently have the capacity to initiate and manage community gardens, Extension can play a vital role in providing education, technical support, and leadership development training in order to empower community garden leaders to maintain and sustain community gardens as important assets in neighborhoods.

In collaboration with Let's Grow Akron (an urban agriculture organization located in Akron, OH), a seven-week training program was developed to address community garden sustainability issues. The program was advertised via the County Extension website and the Facebook pages of several community partners. This program provided training on community garden development, assess mapping, grant writing, risk management and other related topics. Guest speakers included other Extension personnel, city officials, and the County Land Bank. The program culminated with a panel discussion with experienced community garden leaders.

The Community Garden Leadership Training program has been offered in Summit County, Ohio for the past three years with 75+ graduates. Graduates have been able to secure over $19,000 in funding to help support individual community gardens. The objectives of this presentation are: 1) describe the facets of the Summit Community Garden Leadership Training, 2) discuss successes and challenges encountered during the program, and 3) examine best practices for Extension collaboration and engagement in developing community garden leadership.

This project was made possible via funding from the 2016 Ohio State University Connect and Collaborate Implementation Grant program.

PERCEPTION OF DECREASED ANXIETY AND INCREASED SELF-EFFICACY FOR COMMUNITY SERVICE LINKED TO AGRICULTURAL ACTIVITIES

Presenters: Mills-Wasniak, S., Extension Educator, Ohio State University Extension, Dayton, OH 45417
Reeb, R., Professor, University of Dayton, Dayton, OH 45469
Penrose, C., Professor and Extension Educator, The Ohio State University Extension, McConnelsville, OH 43756
Bergefurd,B., Extension Specialist and Extension Educator, The Oho State University Extension, Piketon, OH 45661
Gibbons, K., Graduate Student / Graduate Research Assistant, University of Dayton, Dayton, OH 45469

Homeless shelters affiliated with St. Vincent DePaul (Dayton, Ohio) are the last resort for those seeking a safe place out of the elements, but residents may perceive shelters as a places of despair and defeat (e.g., the Men's Shelter was previously a prison workhouse). Serving three meals a day for over 400 residents is a challenge, especially when it comes to sourcing fresh produce in a food desert. In 2017, the University of Dayton's (UD's) Behavioral Activation Research Project, an ongoing project that strives to enhance psychosocial functioning of residents and provide them with opportunities to overcome homelessness, requested collaboration with Ohio State University Extension Montgomery County Agriculture and Natural Resources program to establish the Shelter Farm. The farm's objectives were to implement sustainable agriculture principles of economic viability, environmental sustainability, and social responsibility. Providing fresh produce to the shelter kitchens and thereby enhancing nutrition of shelter residents without negatively affecting the shelter food budget was the economic viability component. Overall, the team harvested over 1800 pounds of fresh produce for the kitchens of the shelters. The environmental component was the re-purposing of the unused soccer field using best management practices to enhance urban soils productivity, conserve water, and provide a landscape focal point. This component was accomplished by use of irrigation techniques, groundcover, and appropriate fertilizer applications. The social component was an opportunity for shelter residents to obtain job skills, social skills and support, and stress-management. The flower and rock gardens leading to the production area were designed by shelter residents. Psychological research showed that, when shelter guests work alongside UD service-learning students on the farm, they perceived a decrease in anxiety and an improved sense of wellness. UD service-learning students who assist with the Behavioral Activation Project show reductions in social stigma, increased self-efficacy for community service, and awareness of self-privilege. The research provides a template for other homeless shelters across Ohio. Research on outcomes for shelter residents and service-learning students has implications for the homeless shelter system and educational pedagogy. Findings are considered within the context of the Behavioral Activation Project.

TECHNIQUES FOR DETERMINING EQUITABLE PASTURE LAND LEASES

Presenter: Painter, K., Extension Educator Small Farms, University Of Idaho Extension, Bonners Ferry, ID 83805

What is a fair rate for pasture rental in my area? This is a very common inquiry in Extension offices around the country. In this presentation, I will cover recommended methods in use for calculating pasture land leases and provide resources to find publically available data for learning about your land and average pasture rent values. Many factors affect pasture rent values, from the composition and quality of the stand to the condition of the fences, availability of water, and location of the pasture itself. Techniques for determining pasture rent values include estimating current market rates, value of the forage, carrying capacity of the pasture, or calculating rent based on pounds of gain.

In this presentation, you will learn how to access publically available data for pasture rent values from the USDA National Agricultural Statistical Survey database. You will also learn how to use the Web Soil Survey (WSS), created by the USDA Natural Resources Conservation Service (NRCS), for finding data on basically any land in the United States. You can find data by soil mapping unit including yield potential by crop, soil texture, soil pH, and many other physical and chemical characteristics. In terms of potential lease values for property in which you are interested, you can view rangeland production values by soil mapping unit in terms of pounds of forage per acre or carrying capacity, expressed in Animal Unit Months (AUMs), for favorable, normal and unfavorable years. This is a valuable tool for determining equitable pasture land leases.

Producers are excited to learn how to access publically available data for their own land as well as land they are interested in. The WSS is not particularly user friendly, so this presentation has been very helpful for encouraging producers to learn more about their land in this way. Response has been very positive and producers have gained confidence in their ability to access and use publically available data to validate their pasture rental rates.

A SIMULATED ECONOMIC ANALYSIS OF GRAZING WARM-SEASON ANNUAL FORAGES AS A CASH CROP ALTERNATIVE

Presenter: Prevatt, C., State Specialized Agent, UF/IFAS, Ona, FL 33865

Row crop farmers in North Florida are searching for ways to further diversify their cash crop rotations and provide new income streams for their business as the current economic environment of low commodity prices offers few economic opportunities. One alternative that row crop producers have

shown interest in the evaluation of is integrating livestock into their cash crop rotation. A project was developed to evaluate the profitability of short-term warm-season managed grazing systems that did not compromise future crop production. A simulated economic grazing experiment was developed to evaluate the economics of grazing a warm-season annual forage crop over the last fifteen years. Research data collected from the University of Florida, Auburn University, and the University of Georgia was used to evaluate the potential animal production, revenue, cost, and net returns for stocker cattle grazing warm-season annual forages. Production and economic variables evaluated for the warm-season annual forage system were stocking rate, number of grazing days, average daily gain, death loss, value of gain, cost of production adjusted for inflation, and cost of gain. The warm-season annual forage crop evaluated consisted of sorghum-sudangrass, pearl millet, sudangrass, buckwheat, sunn hemp, and cowpeas fertilized with 100 pounds of nitrogen in two applications over 120 grazing days. Total production costs included the amortization of fencing, water systems, seed, hired labor, fertilizer, feed, machinery and equipment, interest, general overhead, marketing, animal health, mineral, and land rent. The revenue was calculated using USDA feeder calf market prices from the last fifteen years to calculate the estimated value of animal gain during summer grazing and using the animal production per acre collected from university research projects. Over the time period evaluated, grazing a warm-season annual cash crop generated positive returns over total specified costs in seven out of the last fifteen years. Therefore, producers would need to see additional benefits to future cash crops in order include grazing a warm-season annual forages in their cash crop rotation.

IMPROVING CROP MARKETING SKILLS

Presenter: Johnson, S. D., Farm & Ag Business Management Specialist, Iowa State University Extension, Altoona, IA 50009

Iowa State University (ISU) Extension of Central Iowa had established 3 successful ag marketing clubs that meet during the winter months more than 15 years ago. The clubs are coordinated by county Extension directors. In 2010 the Iowa Commodity Challenge web page was developed through a partnership with the Iowa Farm Bureau Federation to provide weekly updates and year-round learning opportunities. The site includes 15 videos, a marketing tools workbook, various learning activities, basis tracking tables updated weekly and encourages the use of written crop marketing plans for both old and new crop bushels.

A goal for 2018 was to improve net farm income of participants by at least $3,000 per farm operator through improved marketing strategies, tools and market planning. Surveys were completed in March of 2018 and March 2019 to measure this impact. A total of 582 participants attended an ag marketing club and/or utilized the Iowa Commodity Challenge web page. Completed survey responses were obtained from 123 respondents in March 2018 and March 2019 to evaluate the effectiveness of these educational efforts.

Respondents indicated that their net farm income resulting from the ISU Extension educational efforts in crop marketing averaged a positive $4,732 per farm operator. Average farm size of respondents was 462 tillable acres of corn and soybeans. Thus, the impact of this educational program was $10.24 per tillable acre and over $500,000 for the respondent farm operators. Plans are to expand the program statewide in 2019 with more videos, an updated of the Marketing Tools Workbook and the addition of an Online Crop Marketing Course.

AREA SECTOR ANALYSIS PROCESS (ASAP) IN CENTRAL UTAH

Presenters: Gale, J. A., Associate Professor/Extension Faculty, Sevier County & Southern Region Area, Utah State University, Richfield, UT 84701

Albrecht, D. E., Professor/Director, Western Rural Development Center at Utah State University, Logan, UT 82722

The Area Sector Analysis Process (ASAP) is a facilitated, collaborative planning program that takes local elected official, business leaders, and interested citizens through a process to identify targeted, sustainable, economic development opportunities. Facilitators help communities identify sectors of their economy that are both "compatible" and "desirable". ASAP program results can be used to guide local and regional economic development programs. In Utah the ASAP process was introduced to prospective groups by Utah State University (USU) Extension and the Western Rural Development Center (WRDC) at USU. We were assisted by the University of Nevada Cooperative Extension and University of Nevada Center for Economic Development who developed ASAP. County and regional programs were funded by county government, Utah Governor's Office of Economic Development, and an Economic Development Administration (EDA) grant. Local ASAP steering committee were organized with members nominated by elected officials, economic development directors and business leaders with assistance from USU Extension, WRDC, Associations of Governments (AOG's), and other economic development interest groups. The ASAP method includes several facilitated two-hour meetings of the steering committee completing six modules. Participant input and a community wide survey instrument were used to identify economic development "sectors" of their local economy by North American Industry Classification System (NAICS) codes. Most of the committee time was used to work through ASAP survey output of "compatible" industry sectors that are also "desirable" by the community. They determined their priorities from survey results and which industries, by NAICS code, to guide their short and long term economic development

programs. ASAP has been successfully completed or is being provided by Extension and the WRDC in many counties in several states including; Alaska, Arizona, California, Idaho, Montana, Nevada, and Utah.

Ag Issues & Public Relations

JUST TELL ME THE TRUTH: IS ROMAINE LETTUCE SAFE TO EAT?

Presenter: Rivadeneira, P., Assistant Specialist, University of Arizona, Yuma, AZ 85364

In spring 2018, romaine lettuce grown in Yuma, Arizona was implicated in an E. coli outbreak in which over 200 people got sick and 5 people ultimately died. The FDA took months to investigate the potential sources. Eventually they found a match to the outbreak strain in canal water that they believe became contaminated from a nearby feedlot. However, they never recovered any scientific evidence demonstrating a link between the feedlot and the outbreak strain of the bacteria. Just a few months later, another E. coli outbreak occurred and it was linked to romaine lettuce grown in California. This time it was the same strain that was implicated in romaine lettuce from the same area in 2017. But the root cause of the outbreaks were never confirmed. So with no answers to the question regarding where the E. coli came from, what do we tell our stakeholders and the public when they ask us if it's safe to eat romaine lettuce?

SOUTHEAST DAIRY STEWARDSHIP PROGRAM

Presenter: Colleen C. Larson, Dairy Regional Specialized Agent, UF IFAS Extension, Okeechobee, FL 34974

Animal care on dairy farms has been under scrutiny from the public and processors. Research in this area continues to provide opportunities to improve animal stewardship practices. Objectives: To increase knowledge of dairy stewardship practices and adoption of management practices. Methods: Presentations, hands-on practice, question and answer, and panel discussion are used to provide stewardship training. Calf care, milk quality, cow comfort, and lameness are the first 4 topics covered through the Southeast Dairy Stewardship Program. Meetings are held every three months on consecutive days in Georgia and Florida. Results: Program evaluations indicated that 62% of producers increased their knowledge of cow comfort and milk quality methods and 36% planned to make changes to improve cow comfort in the next 2 years. Observations showed that 100% of participants mastered lameness correction techniques and 50% of participants reported that they learned a new skill they planned to use at the farm to prevent or correct lameness. The participants increased their knowledge of calf care by 65% based on a post reflective survey. 39% of participants indicated that they planned to implement at least one new calf care method. Conclusions: Stewardship and animal care affect the farms immediate financial position as well as their furture ability to market and sell milk. From a $300 case of lameness, to the $12 million of additional milk that could be produced by healthier, more comfortable cows in south Florida, to the $2000 cost to raise a calf from birth to calving, there is instant reward for dairy producers to follow proper stewardship recommendations. Providing training and documentation of that training also leads to more secure markets for the dairy products being produced. Stewardship is an area that has the potential to improve a dairy farm's financial position in addition to their perception from consumers.

DEVELOPING A COMMUNITY GARDEN IN A MAXIMUM SECURITY PRISON

Presenter: Anderson, J., Extension Agronomy & Horticulture Agent, Nmsu, Las Cruces, NM 88001

Few programs are allowed to venture into the maximum security area of the Southern New Mexico Correctional Facility, where inmates were former violent gang members within the state. The Dona Ana County Extension Agriculture Agent was petitioned by the SNMCF for assistance in developing an educational program to help reduce recidivism in this state institution. New Mexico has the second highest rate of recidivism in the nation, with half of its former inmates returning back to prison within three years. For inmates to participate in this program, selection is made from level 3 offenders who apply for positions based on their applications and their conduct status within the prison. Inmates are also chosen based on interest and willingness to participate in this program. Once inmates are chosen they must live within the designated pod living unit and conform to all regulations of participation in this program. Inmates are then taught skills in vegetable production, soil health, pest management, watering and nutrition. Inmates are also educated in landscape maintenance and how to start a farmer's market produce business. Hands on training is provided in an outside vegetable production area designated by the prison for teaching. This program is in its second year and has already begun to show changes within the inmates. One on one conversations with participating inmates has shown changes in attitudes towards each other, increased expressions of concern and care for their families and a desire to make significant changes in their lives to prevent a return to prison life. The inmates have attributed these changes to participation in the G.O.A.L. (Guidance, Opportunity, Accomplishment and Learning) Program, which was started by former inmates as a way to help other inmates develop skills to reintegrate back into society and reduce recidivism state-wide.

EAT WELL VOLUNTEERS STRENGTHEN SELF-SUFFICIENCY SKILLS OF FOOD PANTRY USERS

Presenter: Peronto, M., Extension Educator, University of Maine Cooperative Extension, Ellsworth, ME 04605

To address food insecurity, Maine's Master Gardener Volunteers grow and glean over 200,000 pounds of produce for food pantries and soup kitchens each year. Making free produce available does not, however, guarantee that it will be used. A 2013 survey of Maine food pantry managers indicated that many clients did not take fresh produce because they lacked knowledge and confidence regarding how to use it. The purpose of this educational program was to improve food self-sufficiency skills of food pantry users. UMaine Extension's Eat Well Volunteers (EWVs) underwent 12 hours of training in nutrition, food safety, cooking and preserving fresh produce, and cultural sensitivity. Once trained, they conducted weekly hands-on lessons in four food pantries, teaching clients simple ways to use fresh produce when preparing meals. They provided recipes, taste tests, and food safety/preservation fact sheets while distributing fresh fruits and vegetables grown by Master Gardener Volunteers. EWVs reached approximately 200 food pantry users per year. After five years, long-term follow up surveys showed food pantry users made positive shifts in food selection behaviors and food resource management skills. 82% of survey respondents (n = 57) stated that as a result of interacting with Eat Well Volunteers, they prepared healthier meals. 85% were likely to choose fresh fruits and vegetables when available at the food pantry. 88% were confident they could convince their family to eat more fresh vegetables and fruits. 78% were confident they could safely freeze fresh vegetables for future use. 61% felt healthier as a result of our program. Food pantry managers have asked us to continue our programming since its inception in 2013, as their facilities have been transformed from simple food distribution sites to learning locations. Eat Well Volunteers have formed powerful bonds with food pantry clients, and eagerly continue their outreach every year.

WORKING WITH AMISH

Presenter: Engleking, S., Extension Educator, Purdue Extension, Lagrange, IN 46761

LaGrange County, Indiana is home to the third largest Amish population in the United State. The demographics of the county show that it's population is about 45% Amish.

Amish farms are small farms. The 2012 US Census of Agriculture reported that the county had 2419 farms ranking it first in Indiana. Of this number, 2,308 farms were less than 180 acres. The county ranked number one in the state in several different categories in the Census: rotational grazing, all cattle and calves, farms milking cows and milking goats, dairy replacement heifers, horses and ponies, farms in poultry production, forages, farms producing vegetables, honey, and maple syrup. These numbers and rankings are all driven by the number of small farms of which the vast majority are Amish.

in 1995, LaGrange County led the state of Indiana in accidental farming related deaths with 7. All of them were Amish and five were children. Seeing a great need of safety education, Extension took the lead in calling together a collaborative group of local leaders, including Amish, and safety personnel. The group formulated an educational plan which was facilitated by Extension. Impacts of the educational programs showed a significant decrease in accidental farming deaths and also non-fatal farming accidents. After a few years, the safety program was picked up by the local Amish community and continues independently.

The ANR Educator was new to the county in 1995. He sought advice from extension educators in other counties from other states on working within the Amish values. From conversations with a Geauga County, Ohio educator, a National Conference in Working in Amish and Other Anabaptist Communities was developed to help Extension personnel in developing working relationships with their Plain communities. The first of three conferences was held in Shipshewana in Lagrange County in 1998.

The teachable moment for the local community also created a teachable moment for the LaGrange County ANR Educator. As a result of this education, skill development, and ,now 24 years of experience working in this community, the ANR educator has been sought out for advice from newer educators many times. The local Amish frequently seek the services of Purdue Extension, as well.

INAUGURAL WOMEN IN AGRICULTURE GATHERING CONNECTS UNTAPPED MINORITY FARMER AUDIENCE TO PEERS, RESOURCES, AND INSPIRATION

Presenters: Henley, R., Extension Agent, Virginia Cooperative Extension, Powhatan, VA 23139
Sharpe, S., Extension Agent, Virginia Cooperative Extension, Greene, VA 22973
Siegle, L., Extension Agent, Virginia Cooperative Extension, Amelia, VA 23002

Historically farms have been principally operated by males. Based on the 2012 Census of Agriculture, over 780,000 principal operators in Virginia are women. However, programs for female farm operators have typically been limited in number. Existing programs for women in Virginia include curriculum from American Farmland Trust and Annie's Project; these programs target farm transition audiences, landowner audiences, and women seeking to improve specific

enterprise management skills. However, women in Virginia remain an underserved minority farm audience facing unique needs.

On March 24, 2018, in partnership with Virginia Farm Bureau, a group of Virginia Cooperative Extension agents conducted the inaugural Women in Agriculture Gathering in Richmond, Virginia. The theme of the conference was "Prepare to Be Inspired," and sessions were each designed to provide encouragement, networking, and innovative ideas to attendees. The event consisted of a keynote address and a series of breakout sessions covering topics ranging from equipment operation, vegetable production, livestock care, and agritourism to effective social media communication.The conference was advertised state-wide and was purposefully targeted at beginner farmers, experienced farmers, and farmers interested in varied production methods and enterprises as a means to create a one-of-a-kind diverse learning and peer networking environment.

Approximately 100 women from several regions in the state attended the event. Of approximately fifty-five respondents to a post-program evaluation, all indicated that they wished to return to a 2019 conference. To further the ongoing mission to meet the needs of this underserved audience and in response to audience interest and requests, the Women in Agriculture Gathering will be held again in spring of 2019. Numerous attendees commented that they valued the networking and connections they formed at the 2018 conference, and stemming from their requests, the Gathering facilitators created a Women in Agriculture Gathering Facebook group, which will provide a platform for attendees to stay connected following the 2019 conference. Attendee comments during and after the conference confirmed that this event met untapped needs for both female-focused agriculture content and the social and personal connections and impacts that female farmers seek to support their work. Stakeholder comments provide insight into the success of the program--one attendee noted, "I love it. Perfect. Need help networking." Another said, ""It was great to be with so many powerful women! Thank you for putting on this event."

EXPLORING LOCAL CUISINE FROM THE ROOTS UP: A FOOD SYSTEMS APPROACH TO FIGHTING FAKE NEWS

Presenters: Moffis, B., Residential Horticulture Agent, UF/IFAS Extension, Lake County, Tavares, FL 32778
Mann, M., Livestock & Natural Resources Agent, UF/IFAS Extension, Lake County, Tavares, FL 32778
Wilchcombe, M., Family and Consumer Sciences Agent, UF/IFAS Extension, Lake County, Tavares, FL 32778
Popenoe, J., Muti-County Fruit Crops Agent, UF/IFAS Extension, Lake County, Tavares, FL 32778
Singleton, L., County Extension Director & Commercial Horticulture Agent, North Carolina Cooperative Extension, Wilmington, NC 28403

Most U.S. citizens are removed from direct involvement with agriculture and may hold misconceptions about modern farming practices (Duncan and Broyles, 2006). This distance, and lack of understanding, can contribute to decreased trust in modern agriculture (Duncan and Broyles, 2006). Confounding this mistrust is an abundance of misleading "documentaries", sensational media coverage, and the ease with which anyone can publish false information online. These issues present a major challenge to Extension agents who are charged with sharing research based, non-biased, information. To meet this challenge UF/IFAS Lake County Extension Agriculture and FCS Agents collaborated to pilot a food systems program entitled "Exploring Local Cuisine from the Roots Up." Each session of "Roots Up" featured a different locally grown agricultural product. Agriculture agents discussed the production of the featured livestock or crop from start to finish, with a focus on addressing common misconceptions and providing a scientific context to what consumers may have heard in the media. Agents also discussed marketing labels and their meanings. The second half of class transitioned "from farm to table" by shifting the focus from production to consumption and focused on nutrition, recommended serving sizes, and culinary uses of the featured product. Since its inception a total of 18 "Roots Up" classes have been taught to 515 participants. Participants reported increasing their consumption of the featured foods and developed a better understanding of both marketing and nutritional labels. Encouragingly, participants also reported sharing some of the "myth-busting" information they learned through their participation with others in the community.

DRIVING LEADERSHIP AND CULTIVATING COLLABORATION FROM FARM TO TABLE

Presenters: Wooten, H., Sustainable Agriculture, UF/IFAS, Sanford, FL 32773
Felter, L., Regional Specialized Agent, Food Systems, UF/IFAS, Apopka, FL 32703

Situation: Florida produces the second highest vegetable value in the United States, and agriculture is the state's second largest industry. Despite Florida's agricultural productivity, USDA-ERS estimates 14% of Florida's households are food insecure lacking available and affordable options for nutritious food. Farms in urbanizing counties face special challenges making it difficult to find sustainable long term solutions. Methods: UF/IFAS Extension and the local food policy council, Good Food Central Florida, targeted an audience of community leaders and elected officials including Congressman and Commissioners. The all- day tour hosted 40 participants on a charter bus. The tour featured farmers and food system experts at large rural farms, smaller urban operations, processors, distributors, educational facilities, and a striking display of

food waste. Results: The tour hosted 40 participants. Day of, post tour evaluations (n= 40) indicated 100% of participants increased knowledge about the local food system, 98% identified barriers in the local food system, and 80% identified economic development opportunities related to the local food system. 7 month follow up evaluations (n= 16) indicate: 100% increased knowledge about the local food system, 100% identified barriers in local food system, and 87% identified potential solutions in the local food system. Additionally, 81% increased knowledge about resources for community food production, 81% expanded network of community partners involved in food system, and 56% consider food systems when planning and decision making. Conclusion: Touring the local food system and targeting community leaders is an effective educational approach. Tour participants report initiating community garden projects, hosting farm tours, new farm project partners, applications of sustainable community and building design, academic food system research, and concern for food waste. Exposing challenges and successes from production, processing, distribution, and waste creates prospects for real solutions.

BREAKFAST ON THE FARM – COMMUNITY COLLABORATION TO IMPACT CONSUMER CONFIDENCE IN MODERN FOOD PRODUCTION AND ENVIRONMENTAL STEWARDSHIP IN NORTHWEST OHIO

Presenters: Richer, E. A., Assistant Professor, Ohio State University Extension, Agriculture and Natural Resources, Wauseon, OH 43567
Rupp, M.J., Extension Educator, Ohio State University Extension, Family and Consumer Sciences, Wauseon, OH 43567
Miller, K. M., Extension Educator, Ohio State University Extension, 4-H Youth Development, Wauseon, OH 43567

In the summers of 2015 and 2019, consumer focused Breakfast On The Farm educational farm tours were conducted at two dairy farms in Fulton County, Ohio. A group of volunteers representing agriculture, family & consumer sciences and youth development coordinated the events including the design of the educational stations. Approximately 3,000 participants attended each event in each year. Exit surveys were collected from both events to measure impact and data will be shared in the presentation.

In 2015, 578 participants completed impact surveys and 60% of the respondents had not visited a dairy farm in their adult life. Upon exiting the tour, participants were asked what they felt their level of trust was on topics "before" and "after" the tour on a 5-point scale from 1 being very low to 5 being very high trust. First-time visitors' level of trust in modern food production had a mean of 3.82 before and 4.45 after with an increase of .63 (after-before). First-time visitors' level of trust that dairy farmers will do the right thing with regard to caring for the environment had a mean of 4.06 before and 4.64 after with an increase of 0.58. First-time visitors' level of trust that dairy farmers will do the right thing with regard to caring for food-producing animals for before, after and change, were 4.00, 4.64, and 0.64. First-time visitors' level of trust that dairy farmers will do the right thing with regard to protecting water quality for before, after and change were 3.92, 4.60, and 0.68. Mean increases for all questions were significant at < 0.001 using a paired-t test. Before values for all respondents tended to be higher than for first-time visitors. Forty-seven percent of all respondents rated the openness of the tour as a major factor for increasing their trust.

The concerted cross program effort of this event yielded significant impact within the community and demonstrated the modern value of Extension to the public.

IS CLIMATE CHANGE REAL?

Presenter: Williams, T., Extension Educator, University Of Nebraska-Lincoln, Lincoln, NE 68528

Many Extension professionals deal with audiences who are skeptical about climate change and are likely skeptical about climate change themselves. This topic is often challenging to understand and is often avoided due to this skepticism and the extreme politicization that comes with it. Understanding the science, the uncertainties, and the best way to communicate this topic are very useful when bringing it to Extension clientele. Extension professionals who work with agricultural audiences will often face the highest rate of skepticism, but this audience is the most dependent on climate and weather, thus may be the most impacted with any climatic changes. There is also the potential for agriculture to play a very important role in climate change mitigation. For example, crop land in the United States has the greatest potential for carbon sequestration than nearly any place on earth, which is mutually beneficial to the environment and the quality of the soil.
This presentation will focus primarily on Midwest/Plains agriculture, but methods and approach would be useful to any region and audience. I will provide a brief background into the science of climate change, why skepticism and confusion exist, how to best communicate with skeptical audiences, and how you can help your clientele.

SAFE RELOCATION FOR VENOMOUS REPTILES AND PEOPLE FOR FARM AND URBAN AREAS.

Presenter: Robinson, M. L., Horticulture Specialist, University Of Nevada Cooperative Extension, Las Vegas, NV 89123

Human populations continue to expand in urban areas with housing, and in rural areas with farms, ranches and vineyards. As a result conflicts between humans and venomous

reptiles continue to grow. Heightened respect for snakes has led to a desire to relocate rather than kill venomous reptiles. However, venomous snake relocations can be dangerous to both humans and reptiles. It may ultimately result in the death of the reptile. To address a need for a sound safety and science based training, I have been working with the local Department of Wildlife, South West Partners for Amphibian and Reptile Conservation (SWPACR) and Extension, developing and teaching a program on venomous retile capture and relocations. To date, we have implemented the training at mines, national parks, schools, factories, and local herpetology clubs. The program has several elements: (1) Introduction, Overview of Venomous Retiles, and Habitat Modifications (2) Science of Moving and Relocating Venomous Reptiles, Moving only for Legitimate Safety Risks, Relocation Distances, (3) Safe Capture and Transport, Tools of the Trade, Hands-on Training, (4) Pets and Venomous Reptiles, (5) First-aid and Emergency Protocols, (6) Release Forms, Certificate of Training and Attendance. The end goal of the program is to develop a standardized program for Extension and PARC through a working group and provide training to interested parties.

BEYOND THE CLASSROOM: PUTTING PRODUCE SAFETY CONCEPTS TO PRACTICE

Presenters: Rogers, E. T., Area Specialized Agent, Food Safety-Fresh Produce, North Carolina State University, Lenoir, NC 28645
Blaedow, K., Extension Agent, Agriculture - Vegetable and Small Fruit, NC Cooperative Extension, Hendersonville, NC 28792

The correct implementation of food safety practices at produce farms is a source of concern in the fresh produce industry. From an educational standpoint, food safety programming in Extension has focused on helping growers comply with food safety audits and more recently to prepare for inspections under the Food Safety Modernization Act Produce Safety Rule usually in a classroom setting. The challenge educators often face is trying to provide foundations, explain complex terminology, and having enough time and resources to include demonstrations to enrich the content discussed. Adult learners often prefer hands-on experiential learning to classroom type settings in order to process and learn information. To address this issue in produce safety programs in Western NC, hands-on demonstrations were developed to enhance the delivery of the Produce Safety Alliance Grower Training Module 6- "Postharvest Handling and Sanitation" and three workshops were developed to cover: proper cleaning and sanitation practices, enhancing employee training and monitoring water used in post-harvest operations. Tools and equipment with different price points were purchased or acquired from industry partners to discuss its use. During the workshops, stations were created so that growers could use the tools and better understand the connection with effective employee training programs. Evaluations from the workshops confirmed that growers prefer hands on programs because they are often unfamiliar with the tools and technologies discussed during food safety programs. Despite the increased time to prepare and set up and resources, there was more interaction between growers and instructors and more opportunities to discuss advantages or problems growers find as they use tools and new technologies on their farms. These programs have helped growers identify industry providers and see the wide variety of tools and equipment available depending on the size and scope of their farming operation. As the fresh produce safety program in Western NC moves forward, the priority will be to focus on experiential learning methods and put food safety to practice.

EXTENSION FARM TOURS INTRODUCE PUBLIC, POLICY MAKERS, TO LOCAL AGRICULTURAL ECONOMY

Presenters: Moffis, B., Residential Horticulture Agent, UF/IFAS Extension, Lake County, Tavares, FL 32778
Mann, M., Livestock & Natural Resources Agent, UF/IFAS Extension, Lake County, Tavares, FL 32778
Wilchcombe, M., Family and Consumer Sciences Agent, UF/IFAS Extension, Lake County, Tavares, FL 32778
Popenoe, J., Muti-County Fruit Crops Agent, UF/IFAS Extension, Lake County, Tavares, FL 32778

Lake County, Florida is experiencing a period of substantial growth with development booming at both ends of the county. The urbanization of traditional agricultural land can lead to conflict as new residents, unfamiliar with agricultural practices, move next-door to farms and ranches. Fostering an awareness of, and appreciation for, agriculture in local communities is an essential element of reducing stresses commonly associated with rural-urban interface. Likewise, it is critical that those responsible for creating and enforcing regulations understand agricultural practices as well as the impact that agriculture has on the local economy. Since 2009, UF/IFAS Lake County Extension agents collaborated to plan, implement, and evaluate annual Farm Tours that expose members of the public, as well as local policy makers, to a variety of local agricultural businesses. A total of 849 individuals, and 14 policy makers, participated in the UF/IFAS Lake County farm tour since it's inception. Post tour surveys found that 94% reported a deeper understanding of common agricultural practices as a result of their participation. Additionally, 88% reported being more aware of the services offered by Extension and 55% indicated an intention to avail themselves of those services. Featured agritourism-oriented farms reported positive follow-up interactions with tour participants who frequently returned with additional guests.

SOYBEAN GALL MIDGE: A NEW PEST OF SOYBEAN

Presenters: Varenhorst, A., Sdsu Extension Field Crop Entomologist, Sdsu Extension, Brookings, SD 57006
Strunk, C., Plant Pathology Field Specialist, South Dakota State University, Sioux Falls, SD 57103
Rozeboom, P. A., Integrated Pest Management Coordinator, South Dakota State University, B,

In 2018, numerous reports of soybean gall midge infestations were received by extension specialists in South Dakota. Fields that were infested by soybean gall midge had dead soybean on the edges of the fields. Observed yield losses due to soybean gall midge ranged from 10-100% on the edges of the field and 10-50% for the field averages. This pest was first observed in Nebraska in 2011 and in South Dakota in 2015. However, it has become a serious pest of soybean.

A COMPARISON OF TWO YEARS OF E. COLI SAMPLES ON UTAH'S FREMONT RIVER

Presenter: Wilde, T., Extension Associate Professor, Utah State University Extension, Junction, UT 84740

In 2016 an E. coli (Escherichia coli) sampling plan was implemented at ten sites along Utah's Fremont River by the Utah Division of Water Quality. Samples were taken once a month at each of the ten sites in 2016 and 2017. The 2016 samples were collected by a Utah Water Watch volunteer, and the 2017 samples were taken by Utah State University Extension. The IDEXX Colilert 18 method was used to test the samples for E. coli. The samples from 2016 were compared to the samples in 2017 to identify similarities and inconsistencies.

SUPPORTING FARMERS DURING CHALLENGING TIMES

Presenter: Wantoch, K. L., Agriculture Agent Specializing In Economic Development, University Of Wisconsin-Extension, Menomonie, WI 54751

With the challenging financial and emotional situation plaguing farm families in our communities, UW-Extension has hosted quarterly half day meetings for the past two years to assist agri-business professionals and agency staff in feeling more comfortable and confident working with families in distress. This presentation will discuss the topics that have been discussed at these workshops (cost of production, dairy farm profitability, mental health, Extension and Farm Service Agency resources, etc.) and continued efforts to meet the needs of their audience. Additional topic specific workshops have also been held for professionals, including a session lead by attorneys on farm workouts, bankruptcy and foreclosures. Agri-business professionals have appreciated these timely and relevant educational offerings. Evaluations have indicated the information that was presented is very much valued and found it very informative.

Agronomy & Pest Management

EVALUATING INTEGRATED CONTROL METHODS FOR MANAGING BRUNSWICKGRASS (PASPALUM NICORAE PARODI) IN BAHIAGRASS (PASPALUM NOTATUM) PASTURES

Presenters: Cooper, C., Agriculture And Natural Resource Agent, UF/IFAS Extension Citrus County, Lecanto, FL 34461
Sellers, B.A., Extension Weed Specialist and Professor, UF-IFAS Range Cattle Research and Education Center, Ona , FL 33865

Brunswickgrass (Paspalum nicorae Parodi), is becoming a problematic weed in summer perennial grass pastures in the southeast. In Florida we have seen increasing pressure to control this weed contaminate as it is becoming a major threat to livestock and bahiagrass seed industries. This rhizomatous grass is refused by cattle and seed could potentially restrict sales of contaminated bahiagrass seed lots. During 2018, this weed contaminate resulted in an economic loss of over $400,000 in a three county area for seed producers. Currently, management options are limited; therefore, the objective of this research is to develop a management plan and potentially eradicate Brunswickgrass in Bahiagrass seed production fields. Two experiments are currently underway with one evaluating the effectiveness of mechanical cultivation and annual crop rotations, while the other focuses on herbicide efficacy. Research was initiated in Citrus County monitoring the difference in conventional- vs. no-tillage in the implementation of four separate crop rotations in 2017. In addition, experiments were established at various locations within Citrus, Sumter and Pasco counties in 2018 to address Brunswickgrass response to the application of hexazinone at 0.13, 0.25, 0.50, 0.75, and 1.0 lb ai/acre. In the crop rotation study, there was less Brunswickgrass regeneration in no-tillage vs. conventional tillage plots. Also, less Brunswickgrass was observed in the plots that had been planted in bahiagrass and annual grasses versus broadleaf crops. In the herbicide study, hexazinone appears to have significant activity. With an application of 0.50 lb/acre 80% Brunswickgrass control was achieved. When the rate was increased to at least 0.75 lb/acre control increased to at least 94%. Even though there is still more to be discovered with regards to long-term management, these data appear promising for beginning to develop a long-term management plan.

CASE STUDY: COLLECTION METHODOLOGY AND SAMPLE HANDLING EFFECTS ON NEMATODE ANALYSIS

Presenter: Burdine, B., Regional Agronomy Specialist, Mississippi State University, New Albany, MS 38652

Nematode issues are frequently misdiagnosed due their minute size and gradual yield declines. Yield losses from nematodes have been increasing across NE Mississippi since 2010 but growers interpret yellow, stunted plants as suffering from a disease or low fertility. The few growers who sample often receive a below-threshold analysis yet still have nematode damage. This case study looked to determine if collection methodology (Extension Specialist vs Grower) and sample handling (0-hr, 30-hr and 78-hr storage in hot vehicle) affected nematode analysis results. The Extension Specialist located higher root-knot populations than growers but higher populations of soybean cyst were found at random. Extreme sample care and immediate delivery (0-hr) had lower populations than samples stored in a hot vehicle for 30 or 78 hours. Nematode populations are clustered within a field due to factors such as soil type, moisture, temperature and species which makes accurate sampling difficult. This case study suggests that training and sample care does not always provide an accurate analysis and receiving a false-negative below-threshold report is entirely possible.

AGRONOMY IN THE FIELD: DEVELOPING AGRONOMIC SKILLS FOR WOMEN

Presenter: Vittetoe, R., Extension Field Agronomist, Iowa State University Extension, Washington, IA 52353

According to the 2012 Census of Agriculture, there are 32,167 women operators in Iowa, representing, 9,102,738 acres, of that group, 7,108 are listed as principal operators, representing 868,909 acres. While Iowa State University Extension and Outreach does not discriminate in agronomic training offered, some studies show women are more comfortable attending workshops designed for female attendance only. Agronomy in the Field is a series of educational workshops for women landowners, farmers, and agriculture service providers to educate women on production and land management to make wise, sustainable decisions using knowledge, experience, and research-based information from experienced women farmers, landowners, and Extension professionals as instructors and leaders.

A cohort learning approach has been used to enable participants to learn from one another and because women often say it is a conducive environment in which to learn. Field session are offered during the growing session and in the winter, sessions are offered remotely via ZOOM, a web conferencing software. Following each session, a "recap" of things discussed in the field, current conditions and access to electronic publications that were distributed in the field as additional teaching and reference guides is sent out. Learn more about Agronomy in the Field and how this type of approach might be used in other types of extension programming. Attendees will have access to lesson plans and example recaps that were distrusted to participants.

CONVERTING A FACE-TO-FACE PROGRAM TO AN ONLINE COURSE: CHALLENGES AND LESSON LEARNED

Presenter: Vittetoe, R., Extension Field Agronomist, Iowa State University Extension, Washington, IA 52353

In 2015 and 2016 a face-to-face program called Weeds Week was developed and hosted at five sites across Iowa to help educate farmers and agribusiness professionals on how resistance develops to pesticides, specifically herbicides, and how to manage herbicide resistance by developing more long-term weed management plans.

The face-to-face program was a success, but there was interest among several of the extension field agronomists in expanding the reach of this program by converting the face-to-face program to an online course. The goal was the create a course that was interactive and self-paced. However, converting a face-to-face program to an online course presented some challenges that provided learning opportunities, especially in making the online course interactive. The online course became available in the spring of 2018 and features narrated presentations, lesson activities, a virtual plot tour, and resources to develop long-term weed management plans to help delay the development of herbicide resistance.

Learn more about this online course as well as the lessons that were learned in creating an online course during this presentation. Attendees will also get a chance to view the online course during this presentation.

DRONE USES IN ROW CROPS: BENEFITS AND CHALLENGES

Presenter: Van Pelt, C., Agriculture and Natural Resources Extension Educator, Purdue Extension, Angola, IN 46703

Purdue Extension is leading Indiana's way in technology outreach through the agricultural use of unmanned aerial vehicles (UAVs). Extension personnel are learning how to help farmers and agricultural professionals more easily analyze and apply data from UAVs. Also known as drones, UAVs can improve precision, efficiency and depth of information. They are cost-effective and provide numerous benefits to Indiana's environment and economy. In 2018, Purdue Extension trained and equipped 17 Agriculture & Natural Resources Educators

to fly UAVs over crops, forests, buildings, and ponds across Indiana. Extension Educators quickly found ways to help farmers and land and business owners gather data that are more precise and translate it into efficient, profitable and long-term success.

Over the winter of 2018 and 2019, I presented to several crowds where I reached over 325 farmers and stakeholders with information regarding the real uses, challenges, and benefits of using UAVs in agriculture. UAVs were also a focus of Purdue Extension's educational booth at the annual three-day Fort Wayne Farm Show, where fellow Extension Educators and I engaged more than 250 individuals that were interested in the technology. Of the farmers surveyed during the educational sessions, less than 20% reported using drones or aerial imagery on their operations. Of those not using the technology, over 80% would like to use the technology in the future. There will be a follow-up survey in 2019 to gauge the level of adoption after learning more about the technology and to also see what additional information growers need as they use the technology.

A GROUP APPROACH TO CONTROLLING NEW INVASIVE WEED POPULATIONS – A COMMUNITY PULLING TOGETHER.

Presenters: Barker, F. J., Extension Educator, Agriculture, Osu Extension Knox County, Mt.Vernon, OH 43050
Leeds, R.P., Extension Educator, Agriculture, OSU Extension Delaware County, Delaware, OH 43015
Smith, J.E., Extension Educator, ANR/4-H, OSU Extension Delaware County, Delaware, OH 43015
Johnston, K.M., Extension Educator, ANR/CD, OSU Extension Delaware County, Delaware, OH 43015

A new, invasive, herbicide resistant weed Palmer Amaranth (Amaranthus palmeri) has been identified in Knox County, Ohio. Once identified an educational program with multiple components was created. The goal of this program was to teach farmers how to identify, control and eradicate this devastating new weed species. The age of our farming population varies from low 20's to upper 70's. Each age group exhibits different learning styles. Multiple teaching methods were developed to meet our clienteles differing educational needs and desires. Traditional field days, newsletters, media releases, classes and workshops were supplemented with social media posts, a new agronomic blog, a new YouTube channel, email blasts and on-line videos. Estimates show that annual herbicide costs could double once palmer amaranth becomes established. Educational programs aimed at proper identification and control could potentially save Knox County farmers more than $4,450,000 annually in additional herbicide costs. 326 farmers attend educational programs where weed identification and control options were taught. Live weed species of palmer amaranth, redroot pigweed and waterhemp were used in these classes. Pre and post meeting evaluations show a 127% improvement in weed identification due to knowledge gained in these trainings. Behavior and management approaches have changed. Scouting frequency has increased and farmers are encouraging their neighbors to check suspicious weed populations. Four educational videos were created to assist with palmer amaranth education, identification and control. These videos were shared through many social media sites and are accessible via Quick Response (QR) codes embedded in educational materials. During the 2018 growing season these videos had nearly 2,000 views. A Community pulling together - An unanticipated outcome of this program. After the initial field day neighbors decided to assist the farmer in removing palmer amaranth from his fields. This type of community involvement shows that in times of need and when challenged, the local farm community pulls together to help each other. This story was featured on the front page of the September 13, 2017 issue of the Mount Vernon News. This issue also contained an editorial praising Knox County agriculture and reminding everyone the importance of good neighbor relations.

EVALUATING CORN SEEDING RATES THROUGH AN ON-FARM RESEARCH NETWORK

Presenters: Bennett, A., Ext.Educ.,Anr, Ohio State University Extension, Troy, OH 45373
Hawkins, E., Assistant Professor, Field Specialist, Ohio State University Extension, Wilmington, OH 45177
Custer, S., Ext.Educ.,Anr, Ohio State University Extension, Greenville, OH 45331
Douridas, A., Ext.Educ.,Anr, Ohio State University Extension, Urbana, OH 43078
Estadt, M., Ext.Educ.,Anr, Ohio State University Extension, Circleville, OH 43113
Ford, K., Ext.Educ.,Anr, Ohio State University Extension, Washington Court House, OH 43160
Gahler, A., Ext.Educ.,Anr, Ohio State University Extension, Fremont, OH 43420
Griffith, M., Ext.Educ.,Anr, Ohio State University Extension, London, OH 43140
Hartschuh, J., Ext.Educ.,Anr, Ohio State University Extension, Bucyrus, OH 44820
Richer, E., Ext.Educ.,Anr, Ohio State University Extension, Wauseon, OH 43567
Zoller, C., Associate Professor and Ext.Educ.,Anr, Ohio State University Extension, New Philadelphia, OH 44663
Fulton, J., Associate Professor, FABE, OSU Extension, Columbus, OH 43210

Ohio State University Extension has a long standing tradition of using on-farm research to enhance education through collaboration with farmers. Recently, to address the need for improved communication and sharing of research results, a team of Extension educators and researchers came

together to formalize an on-farm research network. The program, eFields: Connecting Science to Fields, aims to be the premier source of research-based information in the age of digital agriculture. The program began in 2017 with 45 field-scale trials including high speed planting, corn and soybean seeding rate trials, corn nitrogen trials, and side dressing corn with manure using a drag hose. In 2018, over 95 trials were conducted in 25 counties. Analysis was expanded to include the economics of seeding rate, nitrogen rate and nitrogen timing studies to help farmers improve input decision making. Research results are reported in an annual publication that is available as a printed book and an electronic version at go.osu.edu/eFields.

This presentation will highlight eFields on-farm research trials that examined corn seeding rates. The objective of the studies were to understand the yield impact of varying corn seeding rates within Ohio considering in-field variability and cultural practices implemented. Nineteen trials were conducted in 2017 and 2018. Target seeding rates across all locations ranged from 22,000 seeds/acre to 44,000 seeds/acre. At most locations, yield increased as seeding rates were increased. However, differences in yield response to seeding rate were observed based on field variability at several locations. Economic analysis was conducted to help understand if there was potential for variable rate seeding to provide a return when yield response varied on a sub-field level. Information from these trials will be used to improve management recommendations for growers throughout Ohio and to understand how variable-rate seeding may impact field-by-field profit.

USING ON-FARM RESEARCH TO MAKE SOYBEAN SEEDING RATES RECOMMENDATIONS

Presenters: Custer, S., Ext.Educ.,Anr, Ohio State University Extension, Greenville, OH 45331
Hawkins, E., Assistant Professor, Field Specialist, Ohio State University Extension, Wilmington, OH 45177
Badertscher, M., Ext.Educ.,Anr, Ohio State University Extension, Kenton, OH 43326
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On-farm research is useful in providing valuable, local information. Traditionally, producers place more confidence in on-farm research results rather than small plot research results as they perceive them to be more applicable to their farm. With the inclusion of precision agriculture technologies in on-farm research, the amount of data collected and analyzed is increased. By aggregating this data into large on-farm research datasets, it can be used to mine valuable agronomic information specific to differing productivity level variations in the field. This information can lead to improved recommendations regarding site-specific management practices including variable rate seeding prescriptions. Challenges exist when selecting what data should be collected and how it is aggregated, managed, analyzed, and shared. However, once standardized, this data could be used to create or improve current decision-making tools and processes.

As soybean costs have become similarly priced to corn seed in the past decade, producers are not buying soybeans by the seed rather than the pound. In addition, precision planting technologies allow for better seed placement and plant emergence. Nonetheless, many producers have continued to plant soybeans at a rate of 160,000 - 180,000 seeds per acre. Results of soybean seeding rate studies in 2017 and 2018 concluded that soybean yields were not statistically different in most of the 33 trials within the 50,000 to 240,000 plant population planted. Based on this data, if producers choose to plant 120,000 seeds per acre instead of 160,000 seeds per acre and suffer no yield losses, the savings in seed costs is estimated at $17.12 per acre based on $0.428 per 1,000 seeds. For the 5.1 million acres of soybeans in Ohio, the economic impact would be more than $87 million in input costs for farm managers. In addition, variable rate seeding has gained interest among soybean growers due to the promise of optimizing yields by matching plant populations with variation in soil productivity. Preliminary analysis shows field variability is rarely significant enough to produce a yield response for soybean production.

EXTENSION OUTREACH EFFORTS TO COMBAT HERBICIDE RESISTANCE IN THE MID-ATLANTIC

Presenter: Morris, M. J., Agent, University Of Maryland Extension, Frederick, MD 21702

Herbicide resistant weeds are becoming an increasing concern in the Mid-Atlantic. Growers in the region have been struggling with herbicide resistant weeds since 1976 and the discovery of triazine resistant smooth pigweed (Amaranthus hybridus) in Virginia; however, it wasn't until new herbicide resistant weeds from other areas of the U.S. were introduced, that herbicide resistance became commonplace. There are 13 herbicide resistant weed species across the region, but the main herbicide resistant weeds of concern are common ragweed (Ambrosia artemisiifolia) [ALS, glyphosate, and PPO resistance], horseweed (Conyza canadensis) [ALS and glyphosate resistance], and palmer amaranth (Amaranthus palmeri) [ALS and glyphosate resistance]. During the winters of 2018 and 2019 a series of workshops (eight in Maryland, two in Delaware and one in Virginia) were held to educate farmers, industry personnel, and Extension professionals on the issue of herbicide resistance. The meetings provided an in depth explanation of herbicide resistance mechanisms, integrated weed management (IWM), and individual species of concern in the Mid-Atlantic region. The goal of these meetings was to have participants increase their knowledge of general herbicide resistance, how to control resistant weeds, and how to prevent resistance from forming in other species. A survey was conducted at the end of each meeting to gauge the level of knowledge increase. This survey also asked farmers which herbicide resistant weeds they had on their operations to provide a general idea of where these weeds are being found around the region.

SIMULATED GRAZING TIMING AND REGROWTH OF ANNUAL CEREAL FORAGE COVER CROPS

Presenter: Willmore, C., Extension Educator Livestock & Forages, University Of Idaho Extension, Shoshone, ID 83352

Many growers utilize cover crops in their cropping systems with growing popularity. Because of the versatility of cover crops, growers are also experimenting with grazing cover crops using management intensive grazing. In spring 2018, the research team, planted 5 varieties of forage cereals to determine the potential regrowth and longevity of cereals as part of a cover crop mix. The varieties being investigated were: forage barley, winter wheat, triticale, forage oats, and annual ryegrass. Planting was done on April 9, 2018, using a small plot 5' drill with 5" row spacing. Plots were "grazed" with a forage harvester in a series where one set of plots was grazed 4 times, the next set of plots grazed 3 times, 2 times and once. From our preliminary data, it would appear maximum quality and yield result when forage cereals are harvested four times. This leads us to believe that cereals have much more regrowth potential than what we originally thought. However, further investigation into varieties and how they respond to grazing is needed. In general, the forage oats and forage triticale need to be grazed before they go to boot, once they do they do not send up new tillers and are done growing for the season. In our study we planted two winter varieties which allowed for the plants to regrow instead of going to boot early in the season. Overall, Triticale performed well early in the season but quit by July. The goal of this study is to determine which forage cereal varieties are best suited for intensive grazing and what potential they have for regrowth. The ultimate outcome will be to provide this information for producers. Producers will be able to use this information to make decisions about what cereal forage varieties would be best to incorporate into their seed mixes when using cover crops as a feed source for livestock.

COMPARISON OF MECHANICAL REMOVAL AND BASAL BARK HERBICIDE TREATMENTS ON RUSSIAN OLIVE REGROWTH

Presenters: Patterson, R. K., Horticulture/agriculture Educator, University Of Idaho, Idaho Falls, ID 83402
Ransom, C., Extension Weed specialist, Utah State University, Logan, UT 84322
Price, S., Agriculture Agent, Utah State University, Price, UT 84501
Worwood, D.R., Retired, Utah State University, Ferron, UT 84523

Mechanical removal of Russian olive (Elaeagnus angustifolia) without herbicide treatment typically results in a thick stand of root and crown suckers. Herbicide treatment after removal by machinery results in limited success due to the difficulty of finding the resulting stumps and exposed roots. Basal bark treatments kill epicormic buds on the lower trunk of the trees, but do not always kill the upper, central branches of older trees in particular. Root sucker formation arising from Russian olive removal requires the broken roots of removed trees to be at, or close to, the surface in order for adventitious bud development. It was hypothesized that basal bark treatment prior to mechanical removal may significantly reduce the development of epicormic and adventitious suckers. In May 2017, 360 Russian olive trees near Emery City, Utah were set up in a randomized block trial (N=3) with ten subsample trees in each treatment combination. Four removal treatments, skid steer mounted stump grinder, skid steer mounted tree saw, backhoe uprooting, and control (trees left standing), were compared. Removal treatments were crossed with three herbicide basal bark treatments of 20% triclopyr in methylated seed oil (MSO) or diesel fuel (v/v) applied two weeks before mechanical removal and an herbicide control which was left

untreated. Final evaluation on August 30, 2018 revealed that all mechanical × herbicide treatments reduced regrowth versus controls. All mechanical removal techniques without herbicide treatment also reduced regrowth versus controls. Basal bark treatments applied before mechanical removal significantly reduced epicormic and adventitious suckers. The most effective treatments were the triclopyr in diesel basal bark treatment with tree saw removal and triclopyr in MSO with stump grinder removal, each resulting in 97% control. These results have been presented to rangeland managers and extension agents in Utah and riparian restoration professionals in the Western US. Adoption of these herbicide treatment and removal techniques would significantly reduce the amount of regrowth and required labor-intensive retreatment of Russian olive after mechanical removal. They may also prove effective in efforts to control autumn olive (Elaeagnus umbellata) in the Eastern and Mid-west regions of the US.

APPLICATION OF CROP MANAGEMNT PRACTICES TO FORAGE PRODUCTION

Presenter: Butler, L., County Extension Director/ Livestock Agent, UF/IFAS Extension Okeechobee, Okeechobee, FL 34972

Florida boasts more than five million acres of grazing land, making cattle ranchers just as skilled at raising grass as they are raising cattle. Florida ranchers use a myriad of forages species, from tropical grasses to subtropical legumes. The performance of such forages is highly dependent on management and education opportunities. The purpose of this educational program was to deliver research based information to agriculturalists that would increase the efficiency and sustainability of their land and resources. The program was divided into two sections: tours and classroom presentations; the program was led by University of Florida faculty and local landowners. The tours highlighted good management practices, including fertilization and harvesting techniques, new grass and cover crop varieties, and practical applications. The classroom portion of the program included presentations from faculty on soil health, planting, harvesting, appropriate forage varieties, management and establishment, weed control, nutrition, wildlife integration and ranching economics. Of the program participants from the South Florida Forage Tour and Workshop, it was reported that 45% of participants (ten producers) oversee between one and 700 acres of land and manage up to 500 head of cattle. Fifty percent (50%) of the participants, (11 producers) indicated that they would make a profit by changing their production practices based on this program, and 32% (seven producers) indicated that they could profit between two and ten percent. Program attendees indicated that they would make behavior changes in the areas of weed and pasture management, tissue testing for nutrient content, manipulation of stocking rates of animals, and supplementation based on forage nutrient content. The average cost for a producer to fertilize 700 acres with a 16-4-8 blend fertilizer, at a rate of 350 pounds per acre and a cost of $74 per acre, would be $51,800. Every extra pound of fertilizer will cost a producer $150, the equivalent of one medium to large framed steer calf weighing between 500 and 575 pounds. By completing soil and tissue tests, producers can target their fertilizer nutrient make-up and overall fertilization need. By consistently applying learned concepts cattle producers continually improve their forage production efficiency.

USING LIBERTY® HERBICIDE IN SOYBEANS TO COMBAT GLYPHOSATE RESISTANT WEEDS

Presenter: Crawford, J., Field Specialist In Agricultural Engineering, University of Missouri Extension, Rock Port, MO 64482

Herbicide resistance weeds, particularly to glyphosate products, have become a major issue for row crop growers. Waterhemp, marestail and palmer amaranth no longer respond to conventional herbicide programs leaving many growers to resort to tillage or very expensive post emerge - in excess of $60 per acre - and not as effective herbicide programs to control these weeds. One of the alternative chemistries offered to combat these and other weeds is Liberty® Herbicide. Using multi-year research conducted at the University of Missouri Graves-Chapple Research Center, two of the concerns producers have regarding the use of this chemistry in soybeans are addressed. The first study addresses the concern of is there a yield drag compared to glyphosate tolerant soybeans. The study compares yield for 53 varieties of RR® and 53 varieties of Liberty® soybeans over a 3-year period. All inputs were identical except for the post emergent herbicide applications. The average yields for all 53 varieties for the two chemistries were identical over the 3 years.

The second concern is if Liberty® is effective at controlling weeds. Early use of the product had very mixed results, leading many growers to shy away from the technology. However, it is our hypothesis that the varied results were due to improper application. Unlike glyphosate products that are applied at 8-10 gallons of mixture per acre, Liberty® needs to be applied at 15-20 gallons per acre. This trial compared three different carrier application rates; 10, 15 and 20 gallons per acre, and their efficacy on weeds. The higher volume rates showed a significant increase in weed control, 98% vs the lower volume rate of 65%.

Input costs for both trials were calculated allowing producers to compare the costs for the practices used. Using this information, growers can make an informed decision regarding the viability of using this technology on their operations.

THE VALUE OF CALCIUM CARBONATE APPLICATION IN LOW PH SOIL CONDITIONS

Presenters: Esser, A. D., Regional Extension Specialist, Washington State University, Ritzville, WA 99169
Schmidt, C., Area Producer, , Rosalia, WA 99170

Farmers across the wheat producing region of eastern Washington are seeing declining soil pH caused by ammonium-based fertilizer application. Farmers who have adopted conservation tillage may also observe a stratification of strongly acidic soils within the band of fertilizer application. When soil pH is low, microbes, fertility and soil chemistry shift creating an environment adverse to soil and crop health. Liming materials, such as calcium carbonate (CC), are applied to increase soil pH, however this is not a common practice across the region. In the spring of 2015, a 3-year project was started to examine the benefits of CC applications in a strongly acid soil (pH as low as 4.9). An on-farm trials was established examining three treatments; 1. a no CC check, 2. CC at 31 gal/ac and, 3. CC at 59 gal/ac. Each gallon provides 12 pounds of CC. The treatments were applied on April 17, 2015 and incorporated. The trial was then seeded to spring wheat with a Horsh direct seed drill. Chickpeas were seeded in the spring of 2016 and winter wheat was seeded in the fall of 2016. Soil pH changes was within the top 3 inches of the soil profile where pH increased from 5.09 to 5.37 after one year. Averaged over all three years, no difference in yield was detected, and return over investment was greatest with the check with $380/ac compared to $354/ac with 32 gal/ac and only $317/ac with 31/ac. Overall, more pounds of lime are needed to change soil conditions and improve yield potential over time.

TOOLS FOR IRRIGATION DECISION MAKING USING SOIL MOISTURE SENSORS

Presenter: Barrett, C., Regional Specialized Agent, UF|IFAS Extension, Live Oak, FL 32060

The purposes of this presentation are to describe the program used to educate county agricultural agents and growers on the basics of soil moisture sensor use for irrigation decision making, and to demonstrate the soil moisture sensor tools to increase the capacity of NACAA members.
County Extension faculty work with growers to help them grow crops more efficiently and more profitably. Growers look to these agents for information on, and guidance with, adopting new technologies that aim to conserve expensive inputs. County Extension faculty often have the difficult job of researching answers to advise growers and obtaining new technologies and expertise at the same time. Soil moisture sensors are being used all over the United States to improve water use efficiency, but their cost, combined with a lack of information on their benefits and uses, can a barrier to adoption. To overcome this barrier, demonstrations were conducted on-farm and tools were developed to explain the principles of soil moisture sensor use. Irrigation schedules, handouts and displays were used to teach beginners how to interpret soil moisture sensor data for use in decision making. The tools cover crop rooting depth determination, irrigation scheduling with soil moisture sensors, determining crop maturation prior to senescence, crop water use and evapotranspiration. In all, irrigation schedules for 17 crops were developed and a training with 12 agents was conducted. The agents that participated in the training scored 25% higher on tests administered after the training compared to tests taken prior to the training. After the training the agents were given access to soil moisture sensors to use with growers on their farms. The agents used 22 sensors with 20 growers and nearly 80% of the growers that participated in the program purchased soil moisture sensors the following year. Many of the growers reported that the most meaningful benefit of the sensors was that it gave them "piece of mind". Agents reported having more confidence with the technology and that having sensors to offer growers to try, provided them with more opportunities to interact with growers about all aspects of their operations.

ENGAGING FARMERS THROUGH ON FARM RESEARCH COHORTS

Presenter: Richer, E. A., Assistant Professor, Ohio State University Extension, Wauseon, OH 43567

Extension has long been regarded as the source for unbiased, research based information for making best management decisions in agricultural production. As farmers examine new enterprises to diversify their operations, farmer-to-farmer peer learning groups may have a place for collaborative learning and research.

From 2017 to present, a winter barley learning cohort was established in Northwest Ohio. In anticipation of a growing demand for specialty malt to supply the craft brewing industry, a group of farmers worked with local Extension educators and other agricultural professionals to evaluate the possibility of growing this newly re-introduced small grain.

The research cohort focused on two primary questions:
1) Can we produce high quality, high yielding winter malting barley in Northwest Ohio?

2) What will the double crop soybeans yield after winter barley?

Farmers met regularly and shared concerns, questions and practices with each other. In 2018, a group of eight barley farmers produced baseline production data (simple averages) of 86.5 bu/ac dry grain yield, 13.6% harvest moisture, and a June 26th harvest date. Quality data were also averaged to show 11.6% protein, 87.7% plumpness, 98.5% germination and .5 ppm DON.

Additionally, four of those farmers contributed to the average double crop soybean after barley data. The research showed yields of 59 bu/ac for first crop soybeans, 37 bu/ac for double crop soybeans after barley, and 20 bu/ac for double crop soybeans after wheat.

Field tours, farmer panels, and regional research meetings were conducted to throughout 2018-2019 to transfer the knowledge from the research cohort to other farmers.

SOFT RED WINTER WHEAT RESPONSE TO SULFUR IN NORTHWESTERN OHIO

Presenter: Lentz, E. M., Extension Educator And Professor, The Ohio State University Extension, Findlay, OH 45840

Each year the atmosphere has deposited less sulfur on the land. As a result, producers are concerned that the soil will no longer provide adequate sulfur for high yielding wheat. The objective of this study was to determine if supplemental sulfur would increase wheat yields. Dyna-Gro 9522, a medium-maturity variety, was established in the fall of 2017 on the OARDC Northwest Agricultural Research Station near Custar, Ohio. Urea and urea-ammonium nitrate alone were compared to five supplemental sulfur sources. Sulfur sources included gypsum and elemental sulfur applied in the fall and ammonium sulfate, ammonium thiosulfate, and gypsum applied in the spring. Fall treatments were applied at planting. Spring applications were applied the same time as nitrogen between green-up and early stem elongation (Feekes GS 6). Sulfur sources were applied at 20 pounds per acre rate. All treatments received the equivalent of 20 pounds of nitrogen prior to planting and 100 pounds per acre of nitrogen in the spring. Experimental design was a completely randomized block replicated four times. Analysis was a simple ANOVA. Grain yield, test weight, spike number, and flag leaf nitrogen uptake were measured for each plot. Yields were 87.2, 84.3, 84.9, 83.2, 82.5, 84.4, and 84.8 for urea alone, UAN alone, ammonium sulfate, elemental sulfur, fall gypsum, spring gypsum, and ammonium thiosulfate, respectively. Yields were not increased with the addition of sulfur, $p<0.01$. At this location, soils were able to provide adequate amounts of sulfur for optimum yields.

AG RESEARCH CENTER PROVIDES 100 YEARS OF EXTENSION PROGRAM OPPORTUNITIES

Presenter: Matzat, E. A., Extension Educator-Ag& Natural Resources, Laporte County, Laporte, IN 46350

Pinney Purdue Agricultural Center (PPAC), one of eight ag research farms in Purdue University's system, celebrates 100 years of agricultural research in 2019. This northwest Indiana farm on soils unique to the area has also provided many opportunities for Extension-related programs over the years. This presentation will review some of the rich history of both ag research and the opportunities to share that research in practical farming applications with producers. From the early years of crop and livestock research, including development of prize-winning red poll cattle, to more recent testing of agronomic practices of no-till and nitrogen management on sandy soils and high-tunnel vegetable production, PPAC has been an active participant in relevant research and has impacted the local community with Extension programming to share practical research results through reports, field days, workshops and diagnostic training sessions. This celebration of local research history will also demonstrate the relevance and importance of basic research and Extension programming for generations to come.

THE ECONOMIC IMPACT OF GRAZING STOCKPILED WARM-SEASON PERENNIAL FORAGES ON NORTH FLORIDA FARMS

Presenter: Prevatt, C., State Specialized Agent, UF/IFAS, Ona, FL 33865

Many cow-calf operations in North Florida begin feeding hay in early November and continue through late March. Feeding stored hay is one of the most expensive costs associated with beef production. A production practice that could reduce the amount of hay needed and beef production costs is grazing stockpiled forage. Stockpiled grazing is the practice of allowing forage to grow during the late summer and early fall for grazing after the growing season has ended. Therefore, profitability of could be increased by adopting this production practice during the critical winter-feeding time period. Bahiagrass is a common warm-season perennial grass in Florida. While traditionally it is not the best-suited forage species for stockpiled grazing, it is the most abundant forage species available to Florida's producers. Stockpiling demonstrations were conducted on three North Florida farms using stockpiled bahiagrass to feed beef cows during the late fall and early winter. The objectives of this project were to determine the economic and nutritive value of stockpiling bahiagrass and the duration of which stockpiled bahiagrass can be grazed. Bahiagrass was stockpiled beginning in August and grazing was deferred until early November at which grazing began. The average number of stockpiled forage grazing days was 42. Producers saved an average of $24 per beef cow by grazing stockpiled bahiagrass instead of feeding hay over the duration of the grazing period. Forage samples collected from October through January indicated that crude protein content of the forage remained above 8% and total digestible nutrient content was greater than 49%, both of which were as good as most of the hay harvested in Florida during the fall. Overall, the three demonstration sites saved $11,300 and each farm is committed to utilizing stockpiled forage in the future.

AN UPDATE ON BLUE ALFALFA APHID

Presenter: Rethwisch, M. D., Farm Advisor - Crop Production And Entomology, University Of California Cooperative Extension, Blythe, CA 92225

The blue alfalfa aphid has been controlled primarily by alfalfa varieties for the past 40 years. Australian research early this decade had identified a new biotype of this aphid species that was highly virulent on previously resistant alfalfa varieties. In 2013 and subsequent years alfalfa in the southwestern US has experienced high populations of blue alfalfa aphid, causing growers and others in the industry to wonder if the US is also experiencing this biotype. Damage estimated to be as much as $6 million in individual counties in Utah. Other states have noted reduced yields combined with additional insecticide costs. Insecticide efficacy data for registered and potential new products will be presented in relationship to alfalfa yields.

Animal Science

GRILL SMART: PROTECTING PALATABILITY WITH CONSUMER EDUCATION

Presenter: Ruff, G.R., Extension Educator, ANR, The Ohio State University, Napoleon, OH 43545

Livestock producers work to provide consumers with a high quality product, with the end goal of providing a positive eating experience. However, many times a less than desired result is associated with consumer preparation and cooking methods, more than the meat product itself. Grill Smart is a program designed to teach consumers the science behind successfully creating a safe, wholesome, and palatable eating experience when cooking outdoors, specifically on a grill. The goal of the Grill Smart program is to have attendees accomplish the following primary learning objectives 1) match the appropriate cooking methodology with a particular muscle or cut to produce a wholesome and palatable product 2) become familiar with potential food safety issues when preparing meat and other food products; and 3) develop a general understanding of sensory evaluation with regards to palatability. Utilizing hands-on learning, Grill Smart begins with selecting a heat source and meat preparation, concluding with sensory evaluation of meat products prepared by participants. The first round of Grill Smart programs were completed in the fall of 2018. At the conclusion of the program, a written survey instrument was used to gauge changes in knowledge and skill among program participants. Participants of those initial programs demonstrated knowledge gain at a rate of 79% for grill preparation, 83% for meat cut selection, 79% for food safety, and 76% for understanding palatability. Participants also rated the value of the material presented and instructional practices used. Day of program testimonials including, "This is the best pork chop I've ever had," continue to support the idea that preparation and cooking methods vary from household to household. In addition, participants were asked for information regarding their meat buying habits, meat thermometer use, grill preference, and information sources regarding meat products. This data set along with demographic information will be summarized as we continue to teach Grill Smart in the coming years.

SOUTHWEST ARKANSAS CATTLEMEN'S COLLEGE

Presenter: Beaty-Sullivan, S., Cea-Agri/staffChair, University of Arkansas, Ashdown, AR 71822

The Southwest Arkansas Cattlemen's College was designed to give young and beginning ranchers the tools they need to be successful in their ranching operation. We targeted young and beginning ranchers, in an eight-county area of Southwest Arkansas. Many were older producers who had been away from the farm for several years but are looking to retire and come back home to the family farm and were wanting it to be successful. Others were young and brand new to ranching and needed information to help them be successful full-time operators. The cost per participant was $50, many of the counties found sponsorships to award scholarships to their participants.

The design of the program was to have four daylong sessions, once a month with both classroom and experiential learning experiences. Topics were taught by County Extension Agents and Extension Specialist. Each day of the series was divided into topic areas:

1) Pastures and Forages- Classroom topics: Forage IPM, Weed Control, Herbicide Classes & Mode of Action, Incorporating Cools and Warm Season Grasses in Your Pasture. Experiential Activities- Calibrating Sprayers, Calibrating Drills, Reviewing the Winter Annual Variety Demonstration.

2) Genetics and Reproduction-Classroom topics: Using Production Records & Replacement Females, Artificial Insemination vs. Using a Bull, Using EPD 's and Sire/ Semen Selection. Experiential Activities-AI Simulation with reproduction tracts, Ultrasound for pregnancy, and tail-bleeding for pregnancy

3) Health and Facilities Classroom topics: Vaccination and De-worming programs, External and Internal Parasites, Forage Toxicities and Bloating Issues. Experiential Activities- Perimeter and Cross-fencing, Working facility layouts.

4) Nutrition and Producer's Choice (Heifer Selection). Classroom topics- Beef Nutrient Requirements, Using Commodity Feeds, Supplemental Minerals. Experiential Activities- Computer Ration Program, Keep/Cull Heifer Selection.

A total of 18 producers graduated from the series. From the

evaluation, 87% of the producers indicated that they would implement 3 or more new practices that they learned about from this series.

THE UNIVERSITY OF MAINE PASTURE POULTRY PROJECT

Presenter: Knight, C., State Livestock Specialist, University Of Maine Cooperative Extension, Orono, ME 04473

An increasing number of small farms are including pastured broiler production into their business model in Maine. However, few science and data driven studies are available to help producers make management decisions. A field trial was conducted to compare growth rate, feed efficiency, feed and water intake, forage utilization and mortality data on 5 slow-growing breeds and 1 conventional breed of broilers on pasture, so that University of Maine Cooperative Extension could make informed pastured poultry recommendations. Chicks were hatched 5-6 June, 2017 and received in Orono, Maine on 7-8 June 2017. Chicks were immediately placed into a brooder room (24.4-32.2 °C) based on breed until they had sufficient plumage to be moved to the tractor. After a 5 d acclimation period, tractors were moved to a recently mowed Timothy-grass hay pasture (Phleum pretense). Tractors were moved daily to fresh grass, and daily pen feed, water, and forage utilization monitored. Temperature and humidity were recorded daily. Birds were raised to a tractor average of 2.4 kg. Turken necks (TN) were removed from the study during week 9 due to very slow growth rates. Lifetime water intake per bird appeared highest for IR, 12.51±0.16 L when compared with RF, BF, CC and IS with 10.66±0.14, 10.13±0.12, 10.65±0.18, and 10.63±0.16, L respectively. Average individual feed consumption was similar across breeds with RF, BF, CC, IR, and IS consuming 111±65, 93±52, 126±90, 109±62, and 107±66 g/d, respectively. Cornish Rock Cross birds were processed at 46 days old, RF and IS at 60, BF at 61, and IR at 62 days. Live weights of birds did not differ ($P > 0.05$) among breeds at slaughter. However, CC birds had a higher ($P < 0.05$) dressing percentage (75%), compared with the other breeds (68±3%), yielding approximately 202 g more per carcass. Gain appeared similar for all groups (2.94±0.24). No differences in forage utilization were apparent among breeds, (10.6±6.9 g/d). While forage utilization was similar across breeds, the CC tractor required 71-82 m^2 less land than RF, BF, IR and IS tractors due to shorter growth period. No lameness or breast abrasions were observed across breeds.

SHEEP AND MEAT GOAT HOME STUDY COURSES

Presenters: Barkley, M., Extension Educator, Penn State University, Bedford, PA 15522
Strait, G, Extension Educator, Penn State University, McConnellsburg, PA 17233

Sheep and goat production courses were developed for young, beginning and small farm producers to gain a better understanding of the basics of sheep and goat production. Sheep and Meat Goat Home Study Courses allow producers the option to study sheep and meat goat production at home in order to accommodate busy schedules. Many producers may not be able to travel to face-to-face meetings not held in their area of the state. The home study courses allow them to study sheep and goat production at their leisure. These courses cover lessons in basic production practices, reproduction, nutrition, health, marketing and financial management. Each lesson includes a worksheet that allows producers to analyze their own operation, or future operation. The instructors provide comments and recommendations to improve their operation or allow them to be successful with a new operation. A post evaluation summary (N=70) for the past three years indicated that 90% of participants learned something new, 71% learned a moderate to considerable amount, and 79% planned to use the information to make changes to their operation's management practices. Follow up evaluations (2016-2018) conducted at least six months after the programs indicated that 48% of the producers decreased feed costs an average of $717 and 14% of producers improved lambing or kidding survival which allowed them to increase income by an average of $1,668 per year.

IOWA COW-CALF PRODUCTION - EXPLORING DIFFERENT MANAGEMENT SYSTEMS

Presenter: Schwab, D., Beef Program Specialist, Iowa State University Extension, Vinton, IA 52349

The Iowa Beef Cow Systems project worked with 28 cooperators across the state to examine the cost of production, feed utilization and land use of three different cow calf production systems; limited grazing, traditional grazing and extended grazing systems. The objective of this presentation is to provide an overview of the project results, encourage beef producers to further study the results published in the manual, and to compare their own operation against the benchmarks provided in the manual. This presentation was shared with more than 200 beef producers at 4 workshops in northeast Iowa, and was expanded and used in 4 other presentations in other parts of the state. Parts of this presentation were also used in 5 other presentations to almost 100 producers in eastern Iowa. As this project and manual were just released in February of 2019, evaluations have not been analyzed at the time of this submission.

CENTRAL FLORIDA PASTURE MANAGEMENT SCHOOL

Presenters: Bainum, C., Agriculture Agent, University of Florida, Ocala, FL 34470
Shuffitt, J.M., Livestock Agent, University of Florida, Ocala, FL 34470
Hersom, M., State Beef Cattle Extension Specialist, University of Florida, Gainesville, FL 32603
Wallau, M., State Forage Extension Specialist, University of Florida, Gainesville, FL 32603
Silveira, M., Associate Professor, Soil Fertility and Water Quality, Universtiy of Florida, Ona, FL 33865
Bosques, J., Agriculture Agent, University of Florida, Wauchula, FL 33873
Strickland, J.S., Agriculuture Agent, University of Florida, Kissimmee, FL 34744
Justesen, B., Livestock Agent, University of Florida, Kissimmee, FL 34744
Mann, M., Livestock Agent, University of Florida, Tavares, FL 32778
Yarborough, J.K., Livestock Agent, University of Florida, Orlando, FL 32812
Jennings, E., Livestock Agent, University of Florida, Bronson, FL 32621
Cooper, C., Livestock Agent, University of Florida, Lecanto, FL 34461
Walter, J., Livestock Agent, University of Florida, Cocoa, FL 32926
Gamble, S., Livestock Agent, University of Florida, Deland, FL 32724
Rivera, F., Agriculture Agent, University of Florida, Seffner, FL 33584
Mudge, D., Agriculture Agent, University of Florida, Deland, FL 32724
Wilson, T., Agriculture Agent, University of Florida, St. Augustine, FL 32092

Recognizing the unique advantage an environment conducive to year-round grazing provides to livestock producers in the state of Florida can greatly affect the bottom line of their operation, as supplemental feed can account for a large proportion of cow cost each year. This two-day intensive pasture school was developed by the Central Florida Livestock Agent's Group in an effort to improve pasture management for utilization in livestock operations. The program was held at the UF/IFAS Plant Science Research and Education Center which allowed producers to connect with University research and extend the overarching mission of Extension. This program provided producers with fundamental training on forage basics to enhance all areas of their production, centered on a 365-day pasture base. The learning objectives were knowledge increase on the topics of soil health, forage establishment and management with regard to warm and cool-season pasture, weed control, grazing strategies, and matching cattle nutrient requirements with available forage. These topics were delivered by UF/IFAS Livestock Extension Agents and State Extension Specialists. Each day included a combination of classroom lectures and hands-on experiential learning opportunities such as herbicide spray rig calibration, analyzing soil composition changes, calculating herbage availability in the field, and touring research plots of various Florida forages. This program had 34 attendees, representing over 20,000 acres of pasture land. Pre and post tests were administered which indicated a 52% knowledge gain on soil health topics, an 82% increase in knowledge of grazing management, and a 72% increase in knowledge related to cattle nutrition. This program is planned for spring of 2019.

IMPROVING HUMAN RESOURCE MANAGEMENT ON DAIRY FARMS

Presenter: Eiholzer, L., Bilingual Dairy Specialist, Cornell Cooperative Extension, Canandaigua, NY 14424

The need for improved human resource management (HRM) practices on dairy farms is a challenge that farm managers are struggling to address. The need is especially critical for farms with Hispanic employees. Communication and cultural barriers make day-to-day management more difficult, and the different methods that managers use to overcome these barriers lead to varying levels of success. Some of the resulting problems are protocol drift, misunderstandings about pay and benefits, poor upkeep of worker housing, and ultimately, disengaged employees and high employee turnover. This is especially concerning at a time when many dairy farms are facing a labor shortage.

The Extension Educator completed a grant-funded project titled "Improving Human Resource Management on Dairy Farms with Hispanic Employees" in order to:

1. Help six farm managers in Western New York to identify the top areas for improvement in HRM on their farms.
2. Collaboratively work with the six project farm managers to develop and consistently implement the highest priority HRM practices on their farms.

HRM topics that farms implemented in this project included job descriptions, standard operating procedures, employee onboarding, employee housing inspections and sharing performance metrics with employees. The presentation will focus on the barriers farm managers face in implementing HRM practices, practical solutions for Extension educators to help with implementation, and the benefits perceived by farms after implementation.

SPECIAL FORCES FOOD ANIMAL HUSBANDRY PROGRAM

Presenter: Smith, B, Ag & Natural Resources Extension Agent, Wvu Extension Service, Petersburg, WV 26836

Special Forces Food Animal Husbandry program began in 2016. Only the top 6-8 Special Forces Medical Sergeant and Special Operations Independent Duty Corpsman candidates are awarded the opportunity to West Virginia University's Health Science Center for a 24 day clinical medicine program. As part of this program, the candidates are exposed to 1.5 day module in the handling and production of livestock species.

The training is part of the Army's Special Forces Qualification Course and was developed to teach practical animal husbandry that could be used to create opportunities for them to interact and build relationships with indigenous peoples.

The module consists of: an introduction to the physiology, behavior, and instincts of livestock species; veterinary examinations; treatment of common animal health issues; comparison of animal and human pharmaceuticals; basic animal husbandry practices (hoof trimming, castration, blood draws, pregnancy diagnosis, etc.); herding techniques; physical restraint; and euthanasia, with beef cattle, sheep, goats, horses/donkeys, and poultry. The training included classroom lecture, table top and practicums.

The groups have been 6-8 in number for each of these intensive trainings. They are all afforded the opportunity to "get dirty" and "learn by doing".

To date, 12 groups have been trained, totaling over 85 participants. A pre-test/post-test evaluation format has been utilized to assess participants' baseline knowledge, and subsequent post-module increase in knowledge, skills, and abilities. 80% of participants indicate that they have had no exposure to livestock beyond their training at the Joint Special Operations Medical Training Center. Increased correct responses have been observed for every question at post-program testing, with the greatest increase for questions concerning animal behavior, herding methodology, and restraint. Furthermore, with 83% identifying their hometown as non-rural, only 5 out of 85 have been in 4-H or FFA and have had prior exposure to food animals or livestock handling experience. This training will add a valuable tool to the medics' extensive skill base.

Agent Smith is a valuable part of the team of educators that have worked with this group. His role has been an instructor, facilitator and creator of the curriculum. He has used his skills to teach the SFMS, who are limited in food animal handling, basic animal veterinary practices and other animal husbandry exercises. He states "It is an honor to be able to compliment the learning of these highly trained heros."

As a result of the professional expertise and dedication of this team of instructors to mentoring of Special Forces Medical Sergeant and Special Operations Independent Duty Corpsman students, they were recognized by The Commander of the United States Army Special Warfare Medical Group (Airborne), the position of Adjunct Faculty of the Joint Special Operations Medical Training Center.

Other presentation included: a presentation about this program effort for WVU's Ruby Memorial Hospital, Davis College and Extension Administrators, and Commanders from Fort Bragg, and an abstract was prepared and a poster presented about this training effort to the Special Operations Medical Association (SOMA) 2018 Scientific Assembly.

USING YOUTUBE, CONSTANT CONTACT, AND TRADITIONAL METHODS TO TEACH BACKYARD POULTRY PRODUCERS

Presenters: Jones, J., Area Agricultural Economics Specialist, Oklahoma Cooperative Extension Service, Ada, OK 74820
Freking, B., Area Livestock Specialist, Oklahoma Cooperative Extension Service, Ada, OK 74820
Zook, D, Area Livestock Specialist, Oklahoma Cooperative Extension Service, Ada, OK 74820

Several trends such as Farm to Table, Local Foods, and Sustainable Organic or Natural Production have caused an increased interest in small flock poultry production. Both traditional and non-traditional producers are trying to capitalize on these trends. Producers are trying to produce eggs and meat not only for their own use, but also for consumers. There are multitudes of challenges that these producers now face. The general lack of knowledge of general production practices, financial budgeting, marketing, state and federal regulations regarding selling eggs and meat, and liability issues when selling eggs and meat are some of those challenges.

Traditional poultry education programming when it exists, typically caters to large scale production operations. Most times, small flock poultry is considered a hobby and a not for profit operation. The Managing Risk for Oklahoma's Small Flock Poultry Producers conducts educational programming geared towards these small-scale operations. The goals are to educate producers about the risk management skills need to be successful, profitable and legal. In addition to traditional production practices, this project also educates producers about the qualifications and production practices required to be considered natural and/or organic. These educational programs are being delivered using both traditional face-to-face workshops and videos on YouTube.

This project is also using the e-mail marketing platform

Constant Contact to help deliver timely news articles, marketing of upcoming workshops and videos, and evaluate the effectiveness of programming. This program allows us to do more than just deliver e-mails. This program has the capability of creating web-based surveys that can be used to evaluate programming efforts months after being delivered. The program keeps tract of e-mails delivered, opened, surveys clicked on, and results of the surveys both on an individual and group basis.

CATTLE MINERAL NUTRITION FOR PRODUCERS

Presenters: Harty, A., Cow-CalfField Specialist, Sdsu Extension, Rapid City, SD 57703
Block, J., Livestock Specialist, NDSU Extension, Hettinger, ND

Cattle mineral nutrition is complex and mineral status of feedstuffs can vary widely based on multiple factors including soil type, management, grazing systems, forage type and water. Cattle producers in South Dakota and North Dakota are faced with specific production challenges regarding minerals and mineral interactions, including deficient to toxic levels of selenium, high sulfur in water and by-products and high iron levels. Beginning in 2017, a mineral nutrition program for livestock producers was held in western South Dakota with representation from 20 operations. In 2018, it was held in central South Dakota and western North Dakota, with producers from 10 operations and 7 industry professionals attending. This program utilizes local and distance education to provide tools and information for sample collection for laboratory analysis. Program leaders then work with participants individually to interpret results and determine mineral deficiencies, toxicities and interactions. By analyzing specific ranch data, producers are able to make informed decisions in purchasing minerals that better match livestock needs and result in improved cattle health and performance. A total of 66 forage, 22 water and 2 mineral package samples have been analyzed over the two year period. Producers from 7 operations made significant changes to their mineral program based on results and observed improvements in herd health and/or reproduction. Plans are in place to continue to grow and expand the program on a regional level to provide producers with tools to make better management decisions regarding mineral nutrition and the impact on cattle health, reproduction and performance.

BEEF CATTLE BASICS - A SERIES FOR NEW PRODUCERS

Presenter: Mauldin, M. D., Agriculture & Natural Resources Agent, University Of Florida, Chipley, FL 32428

The rural inland areas of Northwest Florida are experiencing a steady influx of individuals leaving the southern or coastal parts of the state. Many of these individuals are embracing their new rural settings and attempting to begin cattle operations. These new operations often begin with a vision and an adequate supply of disposable income. However, the operators are often greatly lacking in the knowledge and experience necessary to realize their visions. Beef Cattle Basics was developed and presented to help these new operations get started with a solid foundation of knowledge. Beef Cattle Basics was a series of six classroom sessions and five hands-on practicums. Each month, one topic was covered during the classroom session and reinforced during a hands-on practicum. Sessions were on Thursday evenings with the corresponding practicum the following Saturday morning. Topics covered included: 1) Forage Selection and Establishment, 2) Herd Reproductive Management, 3) Herd Health, 4) Pasture Management, 5) Marketing, 6) Nutrition. To better reach clients throughout Northwest Florida the classroom sessions were made available for viewing live online, via video conference at two remote sites (one east and one west), and in-person at the central site. The practicums were each held at different locations with the attendees all meeting at the central site and traveling together from there. Due to the associated time commitment, Beef Cattle Basics did not lend itself to high attendance. It was designed to provide those who attended the entire series with a thorough introduction to beef cattle production. Total attendance for Beef Cattle Basics was 148; classroom sessions averaged 16 individuals per session, practicums averaged 11. Ten individuals attended all 11 events. Client surveys indicate 100% (n=13) knowledge gain, 92% (n=12) intended practice change, 77% (n=10) confirmed practice change, and 85% (n=11) reported financial benefit. The clients represented in these surveys are primarily involved with new/beginning operations, making it difficult to quantify how great the long-term impacts of their knowledge gains will be.

HELPING DAIRY FARMS STAY COMPETITIVE USING THE 15 MEASURES OF DAIRY FARM COMPETITIVENESS

Presenters: Hartschuh, J. M., ANR Extension Educator, The Ohio State University, Bucyrus, OH 44820
Zoller, C, Associate Professor, ANR Extension Educator, The Ohio State University, New Philadelphia, OH 44663
Shoemaker, D, Associate Professor ,Field Specialist, The Ohio State University, Canfield, OH 44406
Eastridge, M., Professor and Extension Dairy Specialist, The Ohio State University, Columbus, OH 43210
Weiss, B., Professor and Extension Dairy Specialist, The Ohio State University, Wooster , OH 44691
Lewandowski, R., ANR Extension Educator, The Ohio State University, Wooster , OH 44691

Dairy Farms across the country have been struggling to maintain profitability since 2014. In Ohio, 182 dairy farms

have ceased milk production in the last 15 months, while others are trying to expand their business. For either group of farms, the decision is difficult; one is leaving a profession that they have poured their life into, and the other is betting that the industry will quickly return to profitability. The 15 Measures of Dairy Farm Competitiveness is a resource developed by Ohio State University Extension to help dairy farms gauge their competitiveness compared to similar dairy farms. This resource helps farms evaluate which parts of their operation are doing well and areas for improvement. Originally published in 1997, the measures were updated in 2019 to reflect major changes in the dairy industry. Farm business analysis data from major dairy areas were used to update levels of financial competitiveness for dairy farms. The 15 Measures of Dairy Farm Competitiveness offers farms 15 benchmarks in 9 areas: rate of production, cost control, capital efficiency, profitability, liquidity, repayment schedule, solvency, mission, maintain family's standard of living, motivated labor force, and manure management. We help producers look back over the past 20 years of dairy farming and process how herd size, production level, and price have changed.

For each production and financial measure, the publication offers a competitive level, shows how to calculate the measure with an example, and discusses factors influencing the competitive level, implications of not achieving the measure, and recommendations to consider. "A Fork in the Road" discusses strategies for managers who wish to become competitive and what a farm can do if becoming competitive is not an option.

In this presentation, we will discuss the 15 Measures and how you can use this tool with your dairy farmers to help them evaluate where they are and determine their farm's strategy for the future.

MANAGEMENT INTENSIVE GRAZING COVER **CROPS WITH SPAYED HEIFERS**

Presenter: Willmore, C., Extension Educator Livestock & Forages, University Of Idaho Extension, Shoshone, ID 83352

Producers are showing a greater interest in cover crops as a forage source for grazing livestock. Cover crops can be intensively managed as a high-quality forage source, but with some caution and considerations. In a recent Western SARE project, a Blaine County producer was looking at the use of cover crops as a forage source for stocker cattle from June – October. The targeted outcomes of the project were to determine how to integrate cover crops as a rotation, management intensive grazing (MIG), and no-till into mustard, alfalfa, cereal grains crop rotation. To accomplish this, a 148-acre pivot was seeded using a no-till drill with a cool-season mix of forage barley, forage oats, forage peas, common vetch and purple top turnip the second week of May. Following the first grazing of the cool-season mix the producer planted a warm-season mix to add additional late summer forage and to provide high-quality fall grazing. This mix was no-tilled into the grazed paddocks starting July 1. To implement MIG, 213 heifers of an average weight of 600 lbs. were incorporated into the system 40 days after the initial cool season seeding. Forage samples were collected from the pasture prior to and immediately after grazing. Dry matter production and forage quality were determined from the samples collected. Estimated forage production was 6,020 lbs. DM/acre over the growing season. Forage consumption per acre over the season was 2,408 lbs. DM/acre. This is a low estimate due to insufficient stocking rate but is based off 40% of available forage with an average intake of 2.5% body weight. From June-July the forage provided 16.2% crude protein (CP) and 58.6% total digestible nutrients (TDN), meeting the requirements for a 600 lbs. yearling gaining 2.5 lbs./day for protein (11.8%) however it was lacking in TDN (66%). Technical observations of cover crop growth and response to grazing indicated the warm season mix was not needed and wasn't able to compete with the regrowth from the cool season species to significantly contribute to the forage dry matter. In the cool season mix, the cereal varieties responded well to grazing and would send up new tillers in response. As the grazing season progressed feed value did drop and in August averaged 9.3% CP and 61.4% TDN. The feed currently was lacking in both CP and TDN for an 800 lbs. yearling at 2.5 lbs./day gain requiring 9.7% CP and 66% TDN. On August 24th, 2017 the cattle were weighed, and 68 head were shipped averaging 805 lbs./head. The remaining cattle were put back on the cover crop field with an additional 42 head for a new total of 184 head. The final group of cattle was weighed off on October 10, 2017, with an average gain of 2.6 lbs./day for 47 days. Using cover crops in a management intensive system is a novel idea but if executed well can give you good gains on growing cattle while benefiting your fields. In this project, we saw adequate gains from spayed heifers while maintaining a growing cover crop from June – October. In subsequent years soil health measurements will be collected to determine long term impacts this system will have on the productivity of the field. We would like to acknowledge much of this information are a result of a Western SARE Farmer/Rancher Research and Education Grant and would like to thank the Purdy family and Picabo Livestock for sharing this information and knowledge.

EQUINE FOCUSED WORKSHOPS IMPROVE HORSE FARM MANAGEMENT PRACTICES IN CENTRAL FLORIDA

Presenters: Bainum, C., Livestock Extension Agent, University Of Florida, Ocala, FL 34470
Justesen, B., Livestock Extension Agent, University of Florida, Kissimmee, FL 34744
Mann, M.N.B., Livestock Extension Agent, University of Florida, Tavares, FL 32757

Wilson, T., Agriculture Extension Agent, University of Florida, St. Augustine, FL 32092
Bennett, L., Livestock Extension Agent, University of Florida, Dade City, FL 32525
Yarborough, J.K., Livestock Extension Agent, University of Florida, Orlando, FL 32812

A recent study of horse owners uncovered a fundamental lack of knowledge regarding good animal husbandry practices (Williams et al., 2018). This ignorance may cause unintentional mistreatment of animals and leads to higher costs associated with feed and health care. Additionally, mismanagement of horse manure and poor grazing management can contribute to non-point source pollution of fresh water systems, a major area of concern in Florida. The large number of equine enthusiasts in Central Florida presented a prime opportunity for positive intervention by Extension. In 2018, livestock Extension Agents with personal and educational backgrounds in equine management piloted a day-long workshop aimed at increasing the adoption of recommended equine management practices amongst hobby and commercial horse owners in Central Florida. The Agents used a combination of lecture and hand-on teaching to address topics ranging from manure composting and vaccinations to grazing management and equine nutrition. The workshop has been repeated in four counties, with plans to include an additional three counties in 2019, and a total of 139 horse owners have attended workshops to date. Post program surveys found that 100% of respondents indicated intent to adopt one or more recommended practice change as a result of their participation. These practice changes included soil testing prior to applying fertilizer (47%), implementing recommended grazing management practices (66%), and composting manure (48%). Additionally, participants also indicated intent to feed more forage-based diets (65%) and to discuss vaccine protocols (74%) with their veterinarian, two practice changes linked to better health outcomes and lower vet bills. Extension workshops that target horse owners can play a role in increasing horse owner knowledge of recommended management practices. This knowledge gain then leads to the adoption of practices that can result in improved economic and environmental sustainability of horse farms.

Williams, J., Marlin, D., Pal, L., & Randle, H. (2018). Do Horse Owners Know How To Care For Their Horses? Poster session presented at International Society for Equitation Science 2018, Rome, Italy.

BEEFSD: ENHANCING KNOWLEDGE AND SUCCESS OF BEGINNING BEEF PRODUCERS THROUGH MENTORSHIP AND TRAINING

Presenters: Salverson, R., Cow-Calf Field Specialist, SDSU Extension, Lemmon, SD 57638
Harty, A., Cow-Calf Field Specialist, SDSU Extension, Rapid City, SD 57703
Grussing, T., Cow-Calf Field Specialist, SDSU Extension, Mitchell, SD 57301

beefSD is a unique, 2-year program designed to introduce beginning beef producers to the complexity of the beef industry and provide a comprehensive perspective of how their business can adapt and thrive in the modern beef environment. It was conducted collaboratively by a partnership of SDSU Extension, 4 South Dakota producer organizations, 3 rural banks, and 6 beefSD alumni couples. The program was comprised of instructional workshops, case studies of alternative beef production systems and management practices, evaluation of post-weaning performance of participants' calves, mentoring from peers, established beef cattle producers and agriculture professionals, web-based interaction using social networking and webinars, and travel-study trips to observe marketing alternatives and other segments of the beef cattle industry. There were 51 participants that completed Class 3 (2016-2018). The program has continued to grow and evolve since Class 1 in 2010 to enhance the learning experience of the participants including a structured alumni mentorship component. Highlighted results: 54% developed a management team and are using that team to make business decisions; 57% developed financial statements to help achieve goals; 60% utilized marketing plans to make management decisions; 50% of the participants started the estate planning process with their family; 79% found meeting with their peer mentor group beneficial to extremely beneficial. Value of the program to a participant: "Priceless, we covered a variety of topics and learned how to run our operation like a business instead of a hobby. Knowledge gained from BeefSD is going to save my family's farm/ranch."

AN OUNCE OF PREVENTION: PREVENTING ILLNESS AND FOSTERING GOOD RELATIONSHIPS BETWEEN GOAT OWNERS AND VETERINARIANS

Presenter: Perdue, M. A., Agent Associate, University of Maryland Extension, Snow Hill, MD 21863

With the implementation of the veterinary feed directives, a valid veterinary-client-patient relationship is now more important than ever for livestock owners. Small ruminant producers understand the struggle of this relationship as many effective medications and anthelmintics are not labeled for use in goats. With few large animal veterinarians available

in many areas, this relationship can be quite challenging for many goat producers. Some goat owners are also not aware of this requirement and rely on the internet and social media to diagnose their animals. Since many of the symptoms of common goat diseases can be subtle and the diseases can quickly become fatal, early recognition is critical. To address these problems and stress the importance of utilizing a veterinarian, a series of seminars were scheduled to teach novice goat owners about goat health. The seminar, Goat 911, was designed to teach goat owners the difference between sick and healthy animals. These seminars were held in local farm supply stores and a local extension office. Information was presented in a PowerPoint presentation. Electronic copies of the presentation as well as factsheets for some of the diseases were provided to attendees. Common goat illnesses were discussed, including symptoms, treatment and prevention. These seminars also included information on how to find a large animal veterinarian and become an established client. The seminar was advertised by posting flyers in the store and sharing the flyer on social media. The social media post was shared 109 times with over 13,000 people reached from across the United States. This post was not boosted. All feedback for the program has been positive with interest in repeating it in 2019.

THE IMPACT OF CORN SILAGE HARVESTING AND FEEDING DECISIONS ON INCOME OVER FEED COSTS

Presenter: Goodling Jr., R. C., Extension Associate, Penn State Extension, University Park, PA 16802

Feeding and cropping management practices are critical to the profitably of a dairy business. For harvest years 2016 and 2017, 25 farms were sampled for corn silage and their total mixed ration. These farms monitored monthly income over feed cost (IOFC) and completed an annual financial analysis. The objective was to work with producers and their advisors to examine the whole farm system. Decisions made in one area can have a significant impact in other management areas. Project farms were categorized by their net return over labor and management (profit) and then compared for differences with IOFC. High net return groups averaged greater milk production, average components, and average gross milk price when compared to medium and low groups. The high group had lower feed costs regardless if based on home raised costs or standardized market costs. Medium net return farms had the lowest average milk production by group, but had the highest milk components, which improved their overall milk price. Farms in the medium return group experienced drought conditions in 2016 resulting in reduced feed inventories and increased overall feed costs for 2017. Consultants and producers were surveyed over the two harvest years (2016 and 2017). Most of the respondents implemented changes after the first harvest year. Out of nineteen responses (producers and consultants) over 73% implemented changes in evaluating corn silage quality for fiber, starch, particle size and kernel processing score. Sixty-eight percent regularly checked their total mixed ration (TMR; formulated versus actual) and adjusted as needed. Fifty-eight percent performed a TMR audit. Over 75% included cost of production in routine management decisions and monitored IOFC monthly.

BIO-SECURITY TRAINING FOR THE SWINE INDUSTRY IN NORTHWEST IOWA

Presenter: Stender, D., Swine Field Specialist, Iowa State University, Cherokee, IA 51012

An educational program was developed with the purpose to increase understanding of the importance of consistent, well executed bio-security concepts. Studies show that common bio-security mistakes are often made in day to day livestock operations.

The importance of effective bio-security is growing. The cost of disease has always been an issue, as value of livestock increase so does the cost of a disease outbreak. Additionally, antibiotic resistance is an increasing public issue with livestock usage often blamed for the problem (assume that improved bio-security will reduce antibiotic usage), and now the threat of African Swine Fever is an ever growing reason to learn how to make bio-security more effective. Plus, enhanced bio-security will be a required component of a secure pork (or beef/poultry/dairy) plan in the event of a foreign animal disease crisis.

The educational program had significant industry reach and impact through innovative education. Working interdisciplinary with Vet Med and Animal Science information, 14 workshops were held in Northwest Iowa reaching 205 participants. The participants included producers, territorial managers, regional field staff and consultants. The influence on these key individuals was huge and the program was successful for both large and small producers.

To teach how to minimize common bio-security mistakes we used a simple germ simulation dust (GloGerm) and a black light flashlight (less than $30 cost). The medical profession uses GloGerm to train staff as a scientific method for improving bio-security. Educating with this hands on method was highly effective. Visually seeing the spread of potential disease was eye opening. Results speak for the program as 6 month follow-up reported 18 changes made or planned from 15 survey responses. About half the changes were more effective employee entry from the training. The other half was about implementing clean dirty line technology and/or a bench. The changes implemented by the participants had a self-reported value totaling $46,775. Per participant value was over $4,250. If all 205 participants achieved similar results the annual value of the program could be estimated around 870,000 dollars.

IMPACT OF VARIOUS COOLING SYSTEMS ON COW BODY TEMPERATURE ON MICHIGAN DAIRY FARMS

Presenter: Buza, M., Dairy Extension Educator, Michigan State University Extension, Bad Axe, MI 48413
Buza,* M.H.[1], Lee, K.[2]
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Dairy farms invest money, time, and effort into cooling systems to prevent heat stress which increases body temperature and decreases milk production and fertility in dairy cows. This descriptive study assessed body temperatures in lactating dairy cows across types of facilities in Michigan. We gathered data from an intravaginal temperature monitoring device used in sentinel groups of cows, in conjunction with temperature and humidity data loggers and wind speed measurements to describe the variation in heat stress levels of dairy herds. Normal cow body temperature is 100.5-101.5°F. Heat stress is experienced when the vaginal temperature is above 102.5°F and severe heat stress when body temperature is 104°F and above. This project collected data from 14 farms statewide. This study used the Temperate Humidity Index (THI) to see the risk of stress based on the THI value in the freestall barns. For this study, a THI of less than 72 equaled no risk of heat stress, 72-79 there was risk, 80 or above there was a severe risk of heat stress. A summary of all herds showed that 46% of the time, the THI was 72 or above meaning risk for heat stress, but cows only experienced heat stress 33% of the time. This shows that the cooling systems have some impact on decreasing heat stress in Michigan.

BY FOCUSING ON SUSTAINABILITY, THE UGA FORAGE EXTENSION TEAM INCREASES KNOWLEDGE AND PROFITS FOR FORAGE PRODUCERS THROUGHOUT THE SOUTHEAST

Presenter: Morgan, S., Harris County Extension Coordinator, University Of Georgia, Hamilton, GA 31811

There are approximately 4 million acres of pasture, hay and silage in Georgia (10% of the state). The associated forage-based livestock systems have a farm gate value of over $1.4 billion.

Forage quality is the key to a sustainable livestock operation. Good forage benefits livestock producers, and enhances the ecosystem services that healthy grazing lands provide for water infiltration, nutrient recycling, and carbon sequestration. The way in which a pasture or hay field is managed has a major impact on a producer's bottom line, as well as, the environment. With Georgia only having one extension forage specialist, the UGA Forage Extension Team was created to help advance sustainable forage production across the state. Team members, strategically located throughout the state, are a highly trained, specialized group of Extension Agents selected based on their knowledge of forages.

The UGA Forage Extension Team has the following objectives. Annually, the Forage Team:
• Will offer The GrassMasters Program to 30 forage producers and 90% will report knowledge gain
• With respect to sustainability, the team will positively influence and affect long term behavior change on the operations of GrassMasters graduates by:
o Reducing overstocking by 30%
o Improve producer profitability by 10% whereby increasing sustainability

Since 2016, the UGA Forage Extension Team has made 2773 face-to-face contacts via invited presentations. Also in 2016, the team implemented the GrassMasters program. This 7-week series focusing on sustainable forage production has been held at six training locations statewide and has reached 183 producers face-to-face. Programs are taught collaboratively by UGA Forage Team members and USDA Natural Resources Conservation Service staff. Through the quarterly newsletter, team members are making a regional impact by providing educational information to over 7200 forage producers and agribusiness professionals. The overall effectiveness of the UGA Forage Extension Program including the Forage Team and GrassMasters was assessed through an online survey during February and early March of 2017. Participants self-reported that their participation in UGA Forage Extension programs was directly responsible for increasing their net farm incomes by an average of 16.1% and net agribusiness income by 17.1%.

AN ECONOMIC EVALUATION OF FEEDER CALVES PRECONDITIONED ON WARM-SEASON ANNUAL FORAGES IN THE SOUTHEASTERN USA

Presenter: Prevatt, C., State Specialized Agent, UF/IFAS, Ona, FL 33865

Preconditioning is specifically defined as having feeder calves weaned for a minimum of 45-days, bunk broke, and received a comprehensive health program. Research has well documented that by reducing the stress during the weaning phase feeder calves will have less sickness and death loss, a higher level of performance, and hang a higher quality carcass. Thus, cattle buyers can pay higher prices for preconditioned feeder cattle. During 2018 data was collected to evaluate the economics of preconditioning feeder calves on Warm-Season

Annual Forages in the Southeastern USA. An excel spreadsheet was then developed to assist producers in evaluating the economics of preconditioning feeder calves on Warm-Season Annual Forages. The variables evaluated in the spreadsheet were: forage production costs, feeder calf performance during the preconditioning period, supplemental feed and mineral costs, yardage, cost of animal health program, death loss, shrink, and price margin between preconditioned (weaned) and non-preconditioned (unweaned) feeder calves. The levels of animal and forage production, cost of preconditioning, projected revenue, and net return for preconditioning feeder calves on Warm-Season Annual Forages were calculated by the excel spreadsheet. The spreadsheet was then shared with a group of elite producers to help evaluate their current level of performance, alternative levels of profitability, and gain a better understanding of the sensitivity of their production variables. A survey of producers showed that all twelve producers involved gained knowledge and developed a plan to make improvements to their preconditioning program in 2019. The most sensitive variables were forage costs, average daily gain, and price margin. While the economics of preconditioning will depend on each producer's individual situation, our analysis suggests that preconditioning feeder calves on Warm-Season Annual Forages can be a viable economic option for producers in the Southeastern USA.

WORKFORCE DEVELOPMENT TRAINING FOR THE MEAT INDUSTRY

Presenter: Schweihofer, J. P., Senior Meat Quality Extension Educator, Michigan State University Extension, Port Huron, MI 48060

Meat cutters are in high demand for both industry processors and in meat departments of grocery stores. There was no formal training or certificate program available for meat cutters in Michigan and many jobs available. Finding qualified workers has been an existing challenge for the industry for several years. This presentation will describe the project that created a pilot training for meat cutters utilizing a combination of webinar sessions and in-person hands-on training. The results of the pilot training will be used to create a permanent meat cutting certificate training available to the meat industries new and existing employees. Feedback from the pilot training participants and employers has been used to determine the appropriate length and type of training that is needed. Project investigators worked with industry association partners to create the training and provide the majority of participants. Participants all indicated some level of improved knowledge and skills for various areas of meat cutting. The level of increase depended on their previous experience. Carcass breakdown is consistently one of the most useful reported knowledge and skill gained by participants. Participants obtain hands-on experience with sanitation and through instruction learn the value of a proper and thorough sanitation program. Additional positive feedback and knowledge gained increased from the online lectures. There is much interest in the Meat Cutter Training Course.

Early Career Development

YOU, TOO, CAN PUBLISH AN ARTICLE IN THE JOURNAL OF THE NACAA

Presenters: Stivers, L., Retired, Outgoing Editor of J of NACAA, From Penn State Extension, California, PA 15419 D.A. Llewellyn, Livestock Extension Specialist, Incoming Editor of J of NACAA, Washington State University, Pullman, WA 99164

One of the most valuable, gratifying and unassailable things that you can do to build your resume and establish yourself as a scholar in Extension is to publish in a peer-reviewed journal. Even if you have never published a paper before, it may be closer to your reach than you realize. Most successful Extension professionals are conducting research or programming that has the potential for publication in the Journal of NACAA. This facilitated discussion, co-led by the Journal of NACAA's outgoing editor and the incoming editor, will cover identifying article ideas, planning for successful publication, where to find assistance, what reviewers are looking for, and navigating the online submission process.

WHAT NOT TO DO AS A NEW EDUCATOR

Presenter: Lindberg, H. M., Greenhouse Extension Educator, Michigan State University Extension, West Olive, MI 49460

There are many resources that will instruct you about how to be a successful Extension educator: how to reach audiences, how to do program evaluation, and how to write impact reports. However, there are many practical lessons that you will begin to learn as you launch your Extension career. Attendees will learn about common mistakes of new educators (eg., not dressing for the day's activities, not budgeting a program correctly) or pitfalls that will hamper their performance in the long-term. Examples will include some personal experiences as an early career agricultural educator and experiences of others in similar roles.

THE WHO, WHAT, WHEN, WHERE, WHY, AND HOW OF SUCCESSFUL FARM VISITS

Presenter: Zoller, C., Extension Educator ANR, Ohio State University Extension, New Philadelphia, OH 44663

Farm visits are an important role of many county agriculture Extension professionals. These visits can be beneficial for the Extension agent or educator and clientele. In my 27 years, I have conducted countless visits with farmers and farm families on a variety of topics from farm management to livestock to

crop production. As a new Extension professional this can be an intimidating part of the job, but it doesn't have to be. In fact, farm visits can be one of the most rewarding parts of the job. New agents or educators have many questions – did the previous educator or agent conduct farm visits? If so, how did clientele benefit? How do I begin? Where do I begin? What is the purpose? What is my role? How do I justify being away from the office? What do I do during and after these visits? This presentation will address the who, what, when, where, why, and how new agents or educators can conduct successful farm visits from which they and clientele benefit.

EXTENSION BEST PRACTICES FOR EARLY CAREER SUCCESS

Presenter: Brown, S. C., Agriculture/Horticulture Agent, University of Alaska Fairbanks, Palmer, AK 99645

To a very large degree, success in Extension programming depends on the depth of your relationships rather than the depth of your subject matter knowledge. For example, prompt returning of phone calls or emails – even if to say you don't have the answer yet – buys a lot of good will. Many Extension inquiries are made by people seeking the answer to a problem. Knowing that problem has been acknowledged, even if it hasn't been worked on yet, reduces a client's stress and forms a good relationship. This is just one of many topics that will be addressed. Others include cell phone etiquette, social media pitfalls, the importance of weddings and funerals, knowing what to leave undone, knowing when to say "I" and much more. This presentation is an updated version of the classic 1914 Kansas State University publication by T. J. Talbert "The Extension Worker's Code."

BUILDING RAPPORT WITH CLIENTS AND SPECIALISTS AND INCREASING TECHNICAL KNOWLEDGE THROUGH COLLABORATIVE PROJECTS- A TOOL FOR NEW AGENTS

Presenters: Cant, J. E., Agriculture And Small Farms, UF/IFAS, Jacksonville, FL 32254
Waters, K.M., County Director and Agriculture Agent, UF/IFAS, Holmes, FL 32425

To be successful in Extension it is essential that new Agents build rapport with clients, establish working relationships with specialists, and increase their knowledge base in areas that may lay outside of their comfort zones or educational background. Weed identification and control is a common inquiry for many agriculture Agents and presents a unique opportunity for Agents to address all three of those challenges. By creating a consistent channel of communication, such as a weekly or monthly factsheet, and sharing that information via social media, email, online sources, and hard copies, Agents can 1) increase rapport with clients by providing science-based information in a timely manner, 2) Establish working relationships with specialists to provide input and technical expertise, and 3) build the Agent's knowledge base in an area that is not their specialty to increase their ability to serve their clientele. The Weed of the Week factsheet increased program awareness among clientele, provided the Agent an opportunity to work directly with the specialists on a long term collaborative project, and increased the Agent's understanding of weed identification and control. In two years, twenty seven (n=27) factsheets have been created by a collaborative effort between one state specialist and two early-career agents. The factsheets have been utilized by clients over 7,500 times. As a result of stronger working relationships among collaborators, publications, demonstrations, and more advanced programming have been developed. Additionally, Weed of the Week has directed clientele to the respective extension agents through the use of social media and an increased online presence.

LESSONS LEARNED FROM AN OLD BULL IN A NEW PASTURE

Presenter: Marrison, D. L., Associate Professor, The Ohio State University, Coshocton, OH 43812

New Ag Educators often ask more experienced Educators the question, if you had to start your career over again, what would your advice be to me and what would you do differently if you had to start all over again? This presentation, taught by an Educator with 22 years of experience, will focus on answering these two questions from a unique perspective. This unique perspective is that the presenter is living the question of "what would you do differently if you had to start over again" as a new marriage has prompted him to move across the state to start his Extension career over again in a different county. This old bull will share strategies on conducting a community need assessment and how to get to know the county which you have been hired to serve. Learn strategies for balancing life and work, how to develop innovative and diverse Educational programs, and how to market yourself and your programs. Learn what to leave behind and how to focus on the needs of your community. It is true, old bulls can thrive in new pastures.

DEVELOPING PROFESSIONAL AND COMMUNITY MENTORSHIP FOR SUSTAINED SUCCESS: A NEW EDUCATOR'S PERSPECTIVE

Presenter: Bignell Jr., H., Sr.Program Coordinator, Rutgers Cooperative Extension Njaes, Belvidere, NJ 07823

There are many components and expectations for an agricultural extension position. As a new educator straight out of school or from a different career path, this may be overwhelming with the whirlwind of new and exciting responsibilities one will face. Some universities provide new educator trainings along with assigning mentors to help pave the path of success in the cooperative extension field. Even if you are not assigned an official mentor, acquiring an un-official mentor that has been in

your shoes before will be able to provide invaluable advice and guidance. Since extension educators are immersed in their local communities, finding an established and well respected leader in the agricultural community can be beneficial and rewarding to your extension career. These types of mentorships are not assigned but can help strengthen your relationship with the community by providing educational services that are needed.

Having a mentor is not a one way street. The mentor already has a successful career, and as the mentee, it is our responsibility to contribute to this relationship to form a successful partnership. I have been fortunate enough to have worked in multiple cooperative extension systems for the past four years. I have benefited immensely by having official and unofficial mentors to advise and support my efforts while establishing my program area. In this presentation, I will share my experiences from the mentee's perspective on how to get the most of the mentorship process as an extension professional.

SCALE INSECTS IN CRANBERRIES: AN EDUCATIONAL APPROACH TO PROBLEM SOLVING

Presenter: Bouska, C., Agriculture Ext Field Fac, Or State Univ.Ext.Serv., Myrtle Point, OR 97458

The southern Oregon cranberry industry experienced an outbreak of two species of scale insects in 2015: brown soft scale (Coccus hesperidum) and greedy scale (Hemiberlesia rapax). These two species have very different life cycles requiring separate treatment approaches. In order to educate growers on identification, scouting, and treatment of the scale insects, four educational events were held in which growers were taught the difference between the two species, scouting methods, treatment timings, and treatment chemistries appropriate for each. In addition, greedy scale required monitoring for precise treatment application timing, as optimal pesticide applications coincided with crawler emergence. This was projected to occur at approximately the same time as cranberry bloom, posing a problem, as the only pesticide known to be effective against the crawler stage and labeled for use in cranberries was diazinon, an organophosphate. Toxicity to bees precluded the use of diazinon during bloom. Extension personnel conducted extensive monitoring of greedy scale to watch and track crawler emergence for initial pre-bloom treatment and provided weekly monitoring reports to growers. As a result of these educational outreach events and the monitoring program, 94% of growers reported being able to distinguish between the two scale species. 60% of growers increased their pest scouting efforts; 43% of growers who experienced greedy scale outbreaks reported shifting their spray timing to match crawler emergence timing; and 100% of the growers who had greedy scale insects on their farm reported making at least one less pesticide application as a result of the monitoring reports Extension personnel provided. Scale insect populations were managed successfully due to this work without harming pollinators in the process.

ENHANCING ENGAGEMENT IN AGRICULTURE & NATURAL RESOURCES EXTENSION PROGRAMS

Presenter: Vines, K., Continuing Professional Education Specialist, Ag, Leadership&communi, Virginia Tech, Blacksburg, VA 24061

Cooperative Extension and higher education are emphasizing greater program engagement in order to remain relevant in a changing world. Challenges in today's society are often more complex that in 1914 when Cooperative Extension was established. These complex problems often require greater emphasis on not only multi-disciplinary approaches, but also shared learning and shared expertise that recognize the importance of context in development of solutions. Examples of successful agriculture and natural resource program demonstrating strong engagement in Cooperative Extension will be provided in the workshop. Attendees will also have opportunity to share from their experience. Through this interactive workshop, participants will evaluate and consider ways they might increase engagement in their programs.

MISSION POSSIBLE: COMMUNICATION TOOL FOR MOVING FARM FAMILIES FORWARD

Presenter: Plaster, S., Agriculture Educator, UW-Extension, West Bend, WI 53095

This presentation aims to increase the professional capacity of extension agriculture educators by improving their communication and facilitation skills with the clientele they serve by introducing them to the Motivational Interviewing communication technique. The presentation was designed specifically to improve educator skills and ability to engage in conversations with stressed farmers, farm families, and agribusiness professionals on critical and time-sensitive topics of farm transition, succession, and closure; however, it will be relevant to colleagues across all programs who work with clients working towards a commitment to change. Motivational Interviewing (MI) is a collaborative, goal-oriented communication technique for strengthening a person's own motivations to change, and has been used extensively in health care. The adoption of MI will serve as a tool to complement and enhance the work of extension educators. Educators who can successfully use some of the tools utilized in motivational interviewing will have the ability to ask open-ended questions, affirm authentically, utilize reflective listening techniques, summarize statements made, and encourage participants to own their outcomes. The MI technique emphasizes listening and affirming the client perspective and recognizing that the motivation for change stems from the client.

This presentation was developed by S. Plaster & T. Kohlman as part of the Mission Possible Development Team (J. Kirkpatrick, T. Wagner, K. Wantoch, S. Plaster & T. Kohlman).

NEW EDUCATOR MENTORING - FOUR GENERATIONS OF AG EDUCATORS IN NE OHIO

Presenters: Beers, L., Extension Educator, Ohio State University, Cortland, OH 44410
Marrison, D., Extension Educator, Ohio State University, Coshocton, OH 43812
Holden, A., Extension Educator, Ohio State University, Jefferson, OH 44047

Successful mentoring of new Extension Educators by more experienced colleagues within the first year of employment can decrease the time needed to acclimate new employees to their role. Mentoring also reduces stress on new employees as this arrangement assists them in properly prioritizing tasks and goals for the first weeks. Unfortunately, approaches for orientation and mentoring for new Agriculture and Natural Resources (ANR) Extension Educators in Ohio have been inconsistent; mentors have at times been assigned by supervisors, were identified by the new Educator themselves, or have been absent altogether. In Northeast Ohio, ANR Educators have developed a culture of working together to mentor new Educators through the first years of employment. This presentation will discuss some of the strategies used by this team that worked, as well as some that failed. The discussion will come from both perspectives- the mentor and the mentee- with tips that will assist both sides during the mentoring process.

Horticulture & Turfgrass

WORKING SMARTER, NOT HARDER: USING INNOVATION TO MEET GROWING SOIL TESTING DEMAND FROM GARDENERS

Presenters: Donne, I.M., Consumer Horticulture Educator, Michigan State University Extension, Howell, MI 48843
Imboden, L.A., Consumer Horticulture Supervising Educator, MSU Extension - Oakland Co., Pontiac, MI 48341
Bhakta, B.R., Natural Resources Educator, MSU Extension - Oakland Co., Pontiac, MI 48341
Dahl, J.G., Senior Specialist-Manager - MSU Soil and Plant Nutrient Laboratory, MSU, East Lansing, MI 48824
Finneran, R.E., Consumer Horticulture Senior Educator, MSU Extension - Kent Co., Grand Rapids, MI 49503
Wilson, M.A., State Coordinator – MSU Extension Master Gardener Program and Consumer Horticulture Senior Educator, MSU Extension, Novi, MI 48377

With a potential gardening audience of almost seven million Michiganders, the needs for soil testing and easy-to-understand, environmentally-sound recommendations are daunting to horticulture and agriculture educators. To address this challenge, the MSU Soil Testing Team turned to technology to increase capacity. As a result, the Soil Test Self-Mailer (STSM) and the MSU soil test interpretation website (homesoiltest.msu.edu) were developed. The secure, accessible website and STSM are two components of the MSU Soil Testing Services for Gardeners. The collective components educate the gardening public about the importance of soil testing and fertilizing plants, while protecting water resources. Several key elements of the user-friendly services include convenient access to STSMs through online purchase or at local Extension offices, convenient submission of soil samples to the MSU Soil and Plant Nutrient Lab, and a web-based infrastructure to automate custom, plant-specific fertilizer recommendations. Other important support elements are online fertilizer and area calculator tools, relevant tips sheets, email communications with results, and text-ready messaging to ensure that the client opens and receives the email message. Additionally, a group of specially-trained Extension Master Gardeners provide one-on-one support, as needed. The number of samples submitted has steadily increased over 30% in the past 6 years, with 3,201 gardeners in 2018 utilizing the MSU soil testing service. The improved MSU Soil Testing Services for Gardeners reduces staff time involved in making fertilizer recommendations, increases accessibility of soil testing to clients statewide, and improves customer service.

TREE STEWARDS, VOLUNTEER TREE PRUNING PROGRAM

Presenter: Figart, L., Ext.Agent II, Urban Forestry, University of Florida, Jacksonville, FL 32254

Objectives: The Objective of the Duval County Tree Steward Program is to train and equip a group of Master Gardener Volunteers whose mission is to improve and restore the tree canopy in local parks. Methods: The Duval County Urban Forestry Agent recruits, trains, and retains an active group of Master Gardener Volunteers to become Tree Steward Volunteers. This training is held every other year and includes 25 hours of advanced training in subjects such as pruning, identification, selection, and maintenance of trees. Results: Since 2015, sixty one volunteers have been trained to properly prune trees by removing co-dominant stems, improving structure, removing rubbing and crossing limbs, and increasing park user safety by keeping limbs above eye level along sidewalks. The trees pruned are typically less than 20 feet tall. The Duval County Tree Stewards donated over 1,160 hours of time pruning trees during 41 work projects in City of Jacksonville parks. Over 2000 trees have been properly pruned by removing structural defects therefore improving public safety and increasing the likelihood that the trees will grow structurally sound. In an annual survey of tree steward volunteers 97% feel more confident pruning younger trees, 76% feel more active by working outside, 76% enjoy the social

aspect of working together, 97% enjoy learning about trees, and 93% feel they are making a difference improving the Urban Forest. Conclusions: The tree steward model used in Duval County provides new opportunities for volunteer service and could be adapted for use in other counties.

SOLVING IRON DIFFICENCY IN TURF

Presenter: Palmer, M., Agriculture/4-HYouth Agent, Utah State Universtiy, Ephraim, UT 84627

Many turf grass managers in Utah and throughout the arid western U.S. struggle with chronic yellow leaf blades. To diagnose the causes of this issue requires soil samples, tissue samples, pest and other turf diseases lab analysis. When a proper diagnosis of Iron Chlorosis is reached, the next step is to determine the best solutions including supplementation and improved cultural practices. There are many iron supplements with new products being developed. We developed and conducted a study to determine which products (Iron Ferraplus (IFP), Iron Gro (IG), Iper Fer Marathon (IFM)) increases Iron into the grass blades more efficiently on a large turf grass area, properly diagnosed with Iron Chlorosis. Results indicate the Iron Gro incorporated Iron into the plant tissue significantly more efficiently than IFP or IFM.

GROWING GARDENS ONE TOMATO(TM) AT A TIME

Presenter: Coffin, D., Extension Educator, Umaine Extension, Dover-Foxcroft, ME 04426

Wanting to increase the number of households that grow food gardens, consume food produced in their garden and recognize the UMaine Extension as a source of garden information, the county adopted the One TomatoTM project. After five years 1,794 plants have been distributed in Piscataquis County. 19% of those receiving the plant had never gardened before and only 21% had only gardened for a couple of years. For 25% of the people, this was their first contact they had with UMaine Extension.

What started out to be a project to encourage county residents to grow their own food, by starting a garden with only one tomato seedling, has turned into a great method of also introducing people to UMaine Extension's garden resources including publications, website, social media and e-newsletters. It has also been a great way to get volunteers get involved in funding, distribution and review of the project through the years.

SEED STARTING PROGRAM WITH MASTER GARDENER VOLUNTEERS TO SUPPORT FREE FARMERS' MARKETS FOR SENIORS

Presenter: Wagner, K., Horticultural Faculty, Utah State University, Salt Lake City, UT 84114

Utah State University (USU) Extension in Salt Lake County coordinates a Master Gardener program for approximately 250 active volunteers. One of the largest Master Gardener supported programs in Salt Lake is dissemination of fresh produce to seniors in need through pop-up farmers' markets held at Salt Lake County senior centers. In 2018, volunteers grew and harvested over 12,700 pounds of garden produce to supply the markets; approximately 2,000 seniors took home free produce during 36 free markets.

Currently Salt Lake County Master Gardeners manage approximately 1.5 acres of garden space at a popular Salt Lake County Parks and Recreation park. One challenge the program faces is acquisition of vegetable and herb transplants of specific crops and varieties that cannot be direct seeded in Utah's climate. Currently USU Extension in Salt Lake County does not have access to greenhouse space and purchase of select vegetable starts is expensive and limited in terms of availability of specific varieties.

To address this difficulty, horticulture faculty developed the "Grow a Row for a Senior" program to acquire high quality transplants and enrich the learning experience of participating volunteers. Volunteers were encouraged to earn volunteer service hours by starting transplants indoors from seed to donate to the garden areas or exchange with one another during a spring seedling swap. In 2019, 55 volunteers committed to grow 1,500-2,300 transplants indoors from seed. USU Extension utilized Master Gardener funds to purchase seed and seed starting supplies to offset the cost for participating volunteers. A pre/post survey was administered through Qualtics to evaluate transplant success rate, uncover problems experienced by participants and evaluate overall volunteer satisfaction with the seed starting experience. Program evaluation is on-going and results will be presented at the 2019 NACAA AM/PIC.

ENCOURAGING SMALL SCALE FOOD PRODUCTION IN THE ARCTIC REGIONS OF ALASKA AND NORTHWEST CANADA

Presenter: Brown, S. C., Agriculture/Horticulture Agent, University of Alaska Fairbanks, Palmer, AK 99645

It has been well documented that residents of the Arctic regions of Alaska and Canada have increasingly poor diets. This is due to a complicated set of reasons that include a decrease in hunting/gathering subsistence activities, the extremely high

cost of shipping fresh and nutritious foods to remote areas and junk food being relatively cheap. This presentation will show two different approaches to increasing the production of fresh vegetables in Alaska, Yukon and Northwest Territories. The University of Alaska Fairbanks Cooperative Extension Service conducted multi-day workshops with subjects ranging from how to create soil with beach sand and peat to growing potatoes in totes. The Canadian government agreed to provide a community greenhouse to Arctic villages that agreed to send two volunteers for a 5-day training on greenhouse growing conducted by the University of Alaska Fairbanks Cooperative Extension Service at Inuvik, Northwest Territories. Lessons learned extend beyond the Arctic and could be applied to many different locations.

STAYING IN THE KNOW: UGA EXTENSION GWINNETT EDUCATION PROGRAMS ADDRESSING ISSUES OF CONCERN OF GREEN INDUSTRY PROFESSIONALS

Presenter: Daly, T., County Extension Agent, University Of Georgia, Lawrenceville, GA 30046

Gwinnett County has a population of 900,000, which is the second highest in Georgia. It has many significant commercial and residential developments that provide clientele for more than 400 green industry enterprises. An attractive, well-maintained landscape can significantly contribute to the property values and economic potential of a community. The industry is becoming more competitive, and professionals are turning to Cooperative Extension for specialized training and required certifications. These changes require continuous educational updates to keep employees informed of new methods and technologies. Green industry professionals who apply pesticides for pay must have the Georgia commercial applicator pesticide license issued by the Georgia Department of Agriculture, which requires them passing an exam and then receiving ten credit hours every five years to stay in compliance. A preparatory class has been developed to help them take and pass the test, and also educational events that offer continuing education credits. Since 2016, UGA Extension Gwinnett has offered 20 programs for 742 participants. Written and verbal methods were used to query program participants as to the effectiveness of the material presented and instructional practices used. Extension evaluated the participant's apparent demand to determine if more educational opportunities were needed. In a post-class survey, 90% of the participants said that they felt confident in passing the exam because of the program. Several wrote favorable comments on the evaluation including "The instructors were confident in their knowledge of the subject material and offered suggestions on where to locate other useful information."

MASTER OF GARDENS: AN INTENSIVE INTERNATIONAL COURSE FOR LANDSCAPE PROFESSIONALS IN COSTA RICA

Presenters: Leonard, D. J., Horticulture Agent, University Of Florida IFAS Extension, Defuniak Springs, FL 32433
Albertin, A., Regional Specialized Agent, Water Resources, University of Florida/IFAS Extension, Quincy, FL 32351
Bolques, A., Assistant Professor, Florida A&M University (FAMU) Extension, Quincy, FL 32352
Hunsberger, A., Urban Horticulture Agent, University of Florida/IFAS Extension, Miami-Dade County, Homestead, FL 33030
Mayer, H., Commercial Urban Horticulture Agent, University of Florida/IFAS Extension, Miami-Dade County, Homestead , FL 33030
McConnell, J., Horticulture Agent, University of Florida/IFAS Extension, Bay County, Panama City , FL 32401
Unruh, J.B., State Extension Specialist, University of Florida/IFAS West Florida Research and Education Center (WFREC), Jay, FL 32565
Vergot, P., District Extension Director, University of Florida/IFAS Extension, Quincy, FL 32351

The Guanacaste Province on Costa Rica's Northern Pacific coastline is home to both intensely managed private resorts serving the vital tourism industry and fragile native ecosystems requiring the use of sustainable agricultural and horticultural practices for preservation. Because of this balance, a partnership was formed between EARTH University in Costa Rica, University of Florida/IFAS Extension and the Reserva Conchal Beach Resort, Golf, and Spa to share Extension's extensive experience regarding innovative horticulture practices with the local landscape professionals charged with maintaining the delicate balance between local ecology and tourism interests. In January and February of 2019, seven UF/IFAS Extension Faculty with diverse fields of horticultural expertise delivered a 4-week intensive horticulture training program, titled Master of Gardens, which contained both classroom and hands-on field components to 45 primarily Spanish-speaking landscape professionals. The training program was divided into two sections; the first section met Monday and Tuesday each week and was comprised of 22 landscape and golf course crew members. The second section met on Thursday and Friday each week and contained 23 resort grounds supervisors, independent subcontractors, and local landscape architects. Class session topics included soil and fertilizer science, botany, right plant, right place, entomology and integrated pest management (IPM), landscape pruning, irrigation principles, and turfgrass management. Of the 45 course participants, 36 completed end of course evaluations. All 36 (100%) of the class participants who completed evaluations qualified the information they received through the course as excellent and stated they had learned new horticultural practices that they could use in their

jobs. In addition, 35 of the 36 (97%) participants indicated that they will change at least one of their horticultural practices to a more sustainable practice based on the information provided in the course. Due to the success of the 2019 program and the positive ongoing collaboration between UF/IFAS Extension, EARTH University, and Reserva Conchal, the Master of Gardens training program team is planning to offer subsequent editions of the program in the future and hopes to expand to include other area resort grounds crews.

SEVEN YEARS SHAPING GROWER EXPERIENCES: EXTENSION WALKS WITH VIRGINIA HOP INDUSTRY THROUGH ONGOING CHALLENGES AND NEW OPPORTUNITIES

Presenter: Siegle, L., Extension Agent, Virginia Cooperative Extension, Amelia, VA 23002

Extension faculty are uniquely positioned to identify emerging issues in industries and to coordinate responses leading to long-term, meaningful impacts. Extension has supported the emerging Virginia hops industry nearly from its inception, shaping the way most growers in the state now make decisions and gather information. Hop production in Virginia remains challenging due to environmental and cultural conditions, pests and diseases, a dearth of region-specific resources, obstacles to production at larger scales, and the absence of commercial production and processing infrastructure. Virginia Cooperative Extension Agents and specialists have conducted dozens of of outreach, education, and technical support projects since 2013 to address grower challenges including educational meetings, webinars, publications, a website, a Facebook page, campus research projects, an annual grower survey to track industry progress and needs, laboratory services, and a pest management guide. Faculty have fielded hundreds of phone calls and emails and have partnered closely with regional grower organizations. Furthermore, Extension efforts have culminated with the development of the annual South Atlantic Hops Conference, a collaboration between Virginia Cooperative Extension faculty, North Carolina Cooperative Extension faculty, and the regional industry. Virginia hosted the conference in 2018 and added several new grower educational components including an interactive hops room. While many industry challenges remain, most growers now readily utilize Extension in hops decision-making processes. Through Extension's reaction to the formation of a new industry, hop growers are better equipped with services and resources essential to their success in a small-scale production state where resources would be otherwise limited. The experiences of the last seven years walking alongside growers and responding to an emerging need provide ample opportunity to reflect on lessons learned and strategies for agents who find themselves facing similar emerging needs surrounding this crop.

UTILIZING COMPOST IN TURFGRASS MANAGEMENT

Presenter: Schuster, C. F., Extension Educator, University Of Maryland Extension, Derwood, MD 20855

The use of turf nutrients is important in turf care and maintenance. Customers and site managers are looking to improve turf quality and utilize a great amount of organic materials, especially composted materials. Some local governments are placing restrictions on products used in turf grass to maintain local water quality. The use of compost to provide some of the needed nutrients is growing in many areas. At what rate should the material be used? What considerations need to be reviewed? What other benefits can be gained with the use of composted materials in turf care? A carefully guided plan to determine how one can make use of organic materials, especially compost is important so decision makers can improve soil quality and provide needed inputs including nutrients is explained. Step by step procedures are reviewed utilizing the compost analysis, the soil analysis, and turf nutrient recommendations are used to determine the appropriate rates of application for established lawns. A review of how to have a material tested, where to send the organic material to for evaluation and how to actually apply the product are covered.

50 PEOPLE IN A ROOM WITH KNIVES-LEADING A GRAFTING CLASS FOR THE PUBLIC

Presenter: Fuder, J., County Extension Agent, University Of Georgia, Canton, GA 30114

In 2018 the Cherokee County Extension office offered an evening grafting workshop. The program was advertised modestly through local agents, social media, and various homesteading groups. The class filled to capacity at 45 individuals from eleven counties, nearly all of which had no prior experience grafting. Participants were provided with five rootstocks and a wide selection of scion material. Post training evaluation found that approximately 80 percent of grafts were successful and 100 percent of participants indicating the training was "excellent".

From an agent perspective this was a great fit in Extension programming and has led to improved client relationships, local and state recognition and a second training in 2019. This presentation will summarize the details of our success and provide details on timelines, budgets and lessons learned.

EVALUATION OF LOW-COST, NON-INVASIVE HIVE MONITORING TOOLS FOR OVERWINTERING HONEYBEE HIVES

Presenter: Jones, K. M., County Director, Colorado State University Extension, Salida, CO 81201

Overwinter colony loss is a significant concern for large and small beekeeping operations. To care for colonies with a prolonged winter confinement period, beekeepers must learn how to recognize and promptly deal with colony health and queen problems during the summer and fall, with an eye to ensuring that colonies enter winter clustering in the best possible condition. Evaluating how these management decisions have affected overwintering bees is difficult in extreme weather without risking bees' health. Low cost tools such as digital meat thermometers, infrared thermometers, humidity gauges, acoustic meters and lower cost thermal cameras were tested in six apiary locations across the northern United States and Canada to determine their efficacy in monitoring overwintering hive health.

GARDEN MYTH BUSTING FOR EXTENSION EDUCATORS

Presenters: Chalker-Scott, L., Extension Specialist And Associate Professor, Washington State University, Puyallup, WA 98371
Downer, A.J., Farm Advisor, University of California, Ventura, CA 93003

Horticultural myths, found extensively in print and online resources, are passed along by uninformed gardeners, nursery staff, and landscape professionals. Occasionally myths are so compelling that they make their way into Extension publications, used by Master Gardeners as educational resources. Recently we published an article in the Journal of NACAA (https://www.nacaa.com/journal/index.php?jid=885) on this very topic. In this presentation we will deconstruct additional, widespread gardening myths; participants are encouraged to submit suggestions by email to the presenters before the conference. We will also provide scientifically sound alternatives to these gardening practices and products.

GRANT OPPORTUNITIES FOR WORKING WITH FARMERS' MARKETS

Presenters: Baker, T.P., Principal Investigator (PI), Field Specialist in Horticulture (Northwest), University of Missouri Extension, Gallatin, MO 64640
Fowler, T.R., Co-PI, Field Specialist in Horticulture (Northwest), University of Missouri Extension, St. Joseph, MO 64507
Kelly, D.A., Co-PI, Field Specialist in Horticulture (Urban East), University of Missouri Extension, Hillsboro, MO 63050
Aufdenberg, D.I., Field Specialist in Horticulture (Southeast), University of Missouri Extension, Marble Hill, MO 63764
Balek, R.M., Field Specialist in Horticulture (Southwest), University of Missouri Extension, Carthage, MO 64836
Benedict, H.R., Former Agronomy Specialist (Northwest), University of Missouri Extension, Bethany, MO 64424
Byers, P.L., Field Specialist in Horticulture (Southwest), University of Missouri Extension, Marshfield, MO 65706
Campbell, D.L., County Engagement Specialist in Agriculture and Environment (Northeast), University of Missouri Extension, Lancaster, MO 63548
Creed, C.A., Field Specialist in Horticulture (Urban West), University of Missouri Extension, Kansas City, MO 64153
Denkler, S.R., Field Specialist in Horticulture (Southeast), University of Missouri Extension, Poplar Bluff, MO 63901
Harper, T.W., Field Specialist in Agronomy (West Central), University of Missouri Extension, Clinton, MO 64735
Hethcote, L.A., Director of Education, Tres Estrellas Organic Farm and Garden, Rancho La Puerta, Tecate, Mexico, MX
Hoorman, R.G., Retired Agronomy Specialist (Urban East), University of Missouri Extension, St. Peters, MO 63376
Kammler, K.J., Field Specialist in Horticulture (East Central), University of Missouri Extension, Ste. Genevieve, MO 63670
Massengale, S.H., County Engagement Specialist in Community Economic Development (East Central), University of Missouri Extension, Salem, MO 65560
Mecham, K.S., Field Specialist in Horticulture (Northwest), University of Missouri Extension, Carrollton, MO 64633
Nwadike, L.S., State Extension Food Safety Specialist, University of Missouri Extension/ Kansas State University, Kansas City, MO 64106
Schutter, J.L., Field Specialist in Horticulture (Northeast), University of Missouri Extension, Kirksville, MO 63501

Declining budgets at many universities make it difficult to expand programs to new and existing clients. To alleviate this situation, grants are often encouraged by university administrators. In 2015, three agricultural specialists at MU Extension applied for a grant to promote farmers' markets, administered by the USDA Agricultural Marketing Service. The grant would award up to $100,000. Our proposal for $97,000 was successful, and our project started in September, 2015.

Our goals were to help vendors to more effectively market their produce. These goals were addressed by visits to farmers' markets to demonstrate safe food sampling practices, working with vendors one-on-one at those markets, and providing winter meetings to teach better marketing techniques.

Visits to farmers' markets and individual vendors focused on teaching safe produce sampling techniques. In Missouri, food safety in these situations is governed by state law, with local health departments overseeing the law's implementation and conducting inspections. In addition, each county may add to

the rules as they like. We found that some counties did not add any new regulations, while others totally prohibited any farmer providing samples of his own produce. In some situations, food sampling was allowed if it was conducted by Extension personnel. We found that many growers had not considered sampling their produce, and where allowed, they were amazed at the increased sales.

The winter meetings included topics such as creating effective displays, food safety procedures for sampling produce, selling at farmers' markets, resources available from the Missouri Department of Agriculture, Food Safety Modernization Act updates, using EBT machines at farmers' markets, marketing with social media, farm liability concerns, weed control, insects, optimizing food storage & handling, and similar topics.

Our results from this grant included increased sales for vendors, safer food handling techniques for those participating in sampling, and more effective displays. We reached almost 1400 consumers and vendors. We also handled several inquiries about starting a farmers' market, two of which were established.

ORGANIC INSECTICIDES, PREMIXES, AND TANK-MIXES AS PART OF TRUE IPM STRATEGY

Presenter: Majumdar, A., Extension Specialist, Alabama Cooperative Extension System, Auburn University, AL 36849

Organic and naturally grown vegetable production systems in the Southeast can face 50 percent of more crop loss from chewing and piercing insect pests that include caterpillars and leaffooted bugs. Climate variability, poor persistence, and inadequate spray timing can lead to rapid increase in pest populations and control failure resulting in widespread crop failure. This presentation with provide a broad overview of IPM research in Alabama related to the three levels of pest management, namely, cultural control, pest exclusion, and bioinsecticides in summer (tomato, squash) and winter vegetables (brassica crops). The major focus of the presentation will be the use of stand-alone, premix, and tank-mixes of bioinsecticides with plenty of handouts and interactions that will be very informative for all participants. Participants will also be able to see results of several on-farm trials and grower testimonials regarding true IPM strategies. After the presentation, attendees will be able to use the new IPM slide charts and online Extension resources in a confident manner.

ASSESSING NEW HARD CIDER APPLE VARIETIES TO PROMOTE HARD CIDER INDUSTRY GROWTH IN NEW JERSEY

Presenter: Muehlbauer, M., Hunterdon County Agricultural Agent, Rutgers Cooperaitve Extension, Flemington, NJ 08822

Hard apple cider is a fairly novel value-added product gaining interest in the Northeastern United States. As of 2019, a total of 38 hard cider mills have been built in the three states surrounding New Jersey alone. In stark contrast, New Jersey is home to only two on farm cider mills. With the current revenue of small hard cider brands across the nation steadily increasing (30% in 2017), hard cider apple orchards appear to be a potential lucrative venture for New Jersey fruit growers. A study was initiated to evaluate hard cider apple varieties under New Jersey growing conditions. In the spring of 2018, a total of 28 hard cider apple varieties were grafted onto clonal rootstock established in a completely randomized block at the Snyder Research and Extension Farm in Pittstown, NJ. The varieties are being evaluated for multiple traits including, bloom time, vigor, and disease resistance. The most vigorous grafted varieties thus far, as assessed by diameter 12 inches above the graft union, were shown to be Stoke Red and Dabinett (~14 inches). Stoke Red also resulted in the greatest height after one growing season (~70 inches), closely followed by Calville Blanc. In addition to evaluations of growth characteristics, these trees are being utilized to demonstrate how to transition new apple cultivars onto an established orchard using top-working (grafting) techniques. This trial has provided critical information on how to reinvigorate an orchard through top-working, while also providing preliminary information on which cider apple cultivars are best suited to New Jersey growing conditions.

THE FIRST-EVER EXTENSION MASTER GARDENER NATIONAL STRATEGIC PLAN

Presenters: Bennett, P., State Master Gardener Volunteer Program Director, Associate Professor, Ohio State Univeristy Extension, Springfield, OH 45505
Bumgarner, State Specialist, University of Tennessee Extension, Knoxville, TN 37996

The Extension Master Gardener (EMG) program started in the U.S. in 1972. Volunteers are trained through Extension and are required to donate hours of service back to Extension on projects such as garden helplines, backyard garden demonstrations, community gardens and others.

Today, there are EMG programs in 50 states and the District of Columbia. However, prior to 2006 there was not a national organization or effort to support the EMG program among states. The EMG National Committee (EMGNC) was formed in 2006 in order to facilitate national collaboration to avoid

redundancy in development of educational training materials for EMGs as well as volunteer management training resources, and expedite collaboration with federal agencies, funders and professional organizations for input and funding for national issues and priorities. As of early 2018, the EMGNC was a fully functioning committee, with updated by-laws, elections of regional representatives, monthly meetings and discussions of key needs for the overall program. A task force was formed in 2016 to look at data collection nationwide and develop a method to capture impact information nationally. In June 2018, several committee members determined that a more formal plan was required to move the committee efforts ahead in a planned, strategic manner.

Seven committee members met face-to- face in California in January 2019 and participated in a facilitated strategic planning process. The meeting took place from Wednesday noon to Friday noon and as a result, the first-ever national strategic plan was developed for the EMG program.

This presentation will be a discussion of the strategic planning process as well as an introduction to the final strategic plan as well as the roll-out timeline for the national EMG State and County Coordinators or Program Directors.

FRUITFUL FUTURE FOR STUDENTS: SCHOOL ORCHARDS

Presenter: Witkowski, Nikky, Extension Educator, ANR, Purdue Extension, Valparaiso, IN 46383

For years, school gardens have been considered as a way for students and their families to increase fruits and vegetables to their diets. Many school vegetable gardens are started and then falter over the summer due to the fact that staff and students are on vacation and maintenance crews don't know how to properly care for the garden. That is where the idea of growing an orchard arose. Orchards need care in March/ April for pruning needs and maybe an occasional spray. Then they may need some water the first couple years during the spring and summer. They don't require weeding like vegetable gardens if mulch is applied as they can be mowed around. Therefore, they can be spring planted and then fall harvested with less care than a traditional vegetable garden.
This is being addressed as I was awarded a grant from Indiana State Department of Agriculture for a Specialty Block Grant that will be used to work with Munster High School. We are installing a block of fruit trees and small fruits at their high school during spring break. Classes are being involved in the making of the garden, such as art making a design for the garden and botany working on the care of the plants. There will be over spring break a workshop where students and parents will learn about fruits and how to grow them. They will be exposed to different types of fruit varieties as well that they may not have considered. There will be other programs during the summer and in the fall on care and harvesting fruits. Evaluations will be used during these meetings and classroom presentations to determine knowledge gained and if there are behavior changes that will be collected before the NACAA conference.

THE URBAN RESEARCH CENTER IN SOUTHERN NEVADA THE FIRST 25 YEARS

Presenter: Robinson, M. L., Horticulture Specialist, University Of Nevada Cooperative Extension, Las Vegas, NV 89123

An urban research center is a unique idea, one that can benefit both urban and rural agricultural communities. Over the past 25 years, the Center for Water Conservation has engaged in several different research programs. The center began as a collaborative effort between the city of North Las Vegas, the University of Nevada Las Vegas and the University of Nevada Cooperative Extension. Since its inception, the orchard has been planted with over 650 fruit trees and a small vineyard consisting of over 200 grape vines. Observations are made on how well the trees and vines grow, as well as the production and quality of fruit. The center is also used as a teaching tool for the care of fruit trees and vines. Hands-on classes such as correct pruning, mulching, fertilization, irrigation and other cultural practices are taught. A large crew of volunteers, primarily Master Gardeners, are an essential part of this facility. A hops growing program has been introduced, demonstrating that this crop could be grown in southern Nevada and utilized by local breweries. New cultivars are being tested including a Native American one.

As the center continues to develop new avenues for research and teaching projects, such as testing of new grapevine rootstocks (USDA grant), a new sustainable grant for continuing and expanding the hops research program is being applied for. A major goal of the center is to begin testing of new crops desired by local chefs, and other crops that can be grown both on small urban farms (a third of an acre to 3 acres) and larger rural farms. In 2018 new research project began. This project is to determine if the tomato-growing season can be extended by shading. We are extending our educational outreach into the community The goal of this center is to continue bringing research-based sustainable crop production concepts and methods to both urban and rural communities in southern Nevada.

NICHE CROP PRODUCTION FOR SMALL AND HOBBY GROWERS

Presenter: Malinich, T. J., Assistant Professor, Extension Educator, Horticulture, Ohio State University Extension, Sandusky, OH 44870

There is an increasing number of people growing niche crops as a side line to supplement income or as an outlet for a hobby farm. These very small farms are able to sell locally and can market directly to meet local needs. Additionally, larger operations are exploring outlets for niche crops by directly marketing to craft brewers, wine makers and local foodies. The educational materials gleaned by growers regarding these crops is a combinations of research based material along with a large helping of anecdotal information taken from hobbyist websites. Elderberries, blackberries, currants (and other Ribes), and even figs have been grown to a some extent in northern Ohio. This presentation will look at small scale production of these and other niche crops for small to medium operations and hobby farms. Production hurdles for the aforementioned crops will be covered. Barriers to reaching the specialized buyer will be discussed. These crops can be produced, but the feasibility of producing them profitably depends on cost of inputs and availability of buyers.

DEMYSTIFYING HYDRANGEAS: CURRICULUM MATERIALS FOR TEACHING HYDRANGEA PROGRAMS

Presenter: Barrett, E. E., Assistant Professor, Ohio State University Extension, Canfield, OH 44406

Hydrangeas are one of the most popular plants in the horticultural industry today. While popular, many gardeners struggle to successfully grow different types of hydrangeas in the garden. Most gardeners do not understand how hydrangeas grow and what their basic needs are. By simply planting hydrangeas in the proper location, with proper soil conditions and adequate space for the plants, most diseases can be minimized (Penn State University Extension, 2017). The same requirements can improve plant survival, faded bloom color and other aspects of plant success. Observational research on hydrangeas was completed to determine success with different types of hydrangeas and different cultivars. A chart concept was developed to explain the main types of hydrangeas in a way home gardeners could easily understand. This hydrangea chart was the foundation for a factsheet publication, Selecting Hydrangeas for the Home Landscape. The goal was to educate home gardeners, landscapers and others about hydrangeas in today's marketplace. In less than eight months, this publication has had 1,513 Views from 1,209 users at ohioline.osu.edu. A curriculum was developed to extend outreach across Ohio. To date, just over 2,000 people have received instruction based on the factsheet, with 24 Ohio counties offering programs taught by the author. Participants included home gardeners interested in growing hydrangeas, landscape and garden center employees, Extension personnel, and Master Gardener Volunteers. Program evaluations from 2018 show an average improvement of 3.9 on a 10 point scale for participants rating their ability to choose the right hydrangea for their garden, and an average improvement of 4.11 for their ability to care for their hydrangeas. This presentation will focus on sharing the program and curriculum, along with an overview of the presentation on hydrangeas.

YACON A POTENTIAL NEW SPECIALTY CROP FOR MID-ATLANTIC FARMERS

Presenter: Nitzsche, P. J., County Agent I, Rutgers Cooperative Extension of Morris County, Morristown, NJ 07963

Yacon or Peruvian ground apple (Smallanthus sonchifolius) is a crop which has been traditionally grown in South America for its edible storage roots. There is recent interest in yacon in the United States due to it's unique sweet flavors as well as the potential health benefits from its consumption. Yacon tubers contain fructooligosaccharides (FOS) which also been linked to digestive health. Yacon is typically eaten raw although it can also be dried, roasted, used in smoothies, or made into a syrup. Until recently there was very little information on yacon's cultural requirements and market potential in the Mid-Atlantic region. Field research trials were conducted in 2017 and 2018 to examine the growth, yield and edible root quality of six cultivars of yacon in southern and northern New Jersey. Post-harvest studies examined the nutritional components of yacon roots during storage. Yacon roots were shared with a Rutgers University chef for flavor evaluations and the development of recipes to assist with the marketing of yacon. Three grower collaborators were enlisted to conduct on farm trials of yacon and examine the market for yacon with their customers. The field and grower trials demonstrated that yacon can be grown successfully in northern and southern New Jersey however the yield, flavor and nutritional components of the six varieties varied. The grower cooperators reported interest by health conscience consumers but faced marketing challenges due to a lack of familiarity with the crop. The results of this project were presented to growers at winter meetings and generated interest in cultivating yacon.

UNDERSTANDING TURF FERTILITY NEEDS, FROM SOUP TO NUTS

Presenter: Rosenkranz, V., Extension Educator, Commercial Horticulture, University Of Maryland Extension, Salisbury, MD 21802

Turfgrass is supposed to be a lush dark green color and cover the soil evenly like a living carpet. A healthy turfgrass will provide a dense fibrous root system that filters dust and stabilizes soil preventing erosion. Healthy turfgrass has the ability to absorb, filter and conserve water preventing runoff. Turfgrass engages in a cooling process, transpiration, and captures carbon dioxide for carbon sequestering. Healthy turfgrass is safer for people to play on than artificial and it is truly lovely to look at. With all that turfgrass does for us, it is not unusual for a lot of money to be spent on fertilizer and a lot of time and energy going towards maintaining a green lawn each year in every state. Timing of the application of fertilizer is critical to the species of turfgrass and the age of the turfgrass can also be a guide on how much fertilizer is used. The question then becomes, what does turfgrass need to grow and why. Learn how the various 16 nutrients necessary for turfgrass are used to promote healthy, strong plants so they can perform all the duties that they are so qualified to accomplish.

HOW LYCORMA DELICATULA, THE SPOTTED LANTERNFLY, HAS AFFECTED THE GREEN INDUSTRY AND EXTENSION'S ROLE

Presenter: Swackhamer, E., Horticulture Educator, Penn State Extension, Colllegeville, PA 19426

An invasive insect, Lycorma delicatula, commonly known as the spotted lanternfly (SLF), was discovered in southeastern Pennsylvania in September 2014. SLF is a pest of hardwood trees, grapes and other plants and is a nuisance in landscapes. The landscape nursery industry in Pennsylvania is valued at 944 million dollars annually. Nursery producers in the affected area have increased their use of insecticides to protect their crop. Tree care professionals are offering SLF management programs to their customers. Companies are also required to comply with regulations enacted and enforced by the Pennsylvania Department of Agriculture to stop the spread of SLF. As part of the Penn State Extension Spotted Lanternfly team, the author has been assessing the needs of the industry, conducting applied research, providing research-based information as it becomes available, helping businesses learn about best management practices and providing information to help them come into compliance with the quarantine order. In 2018, the author made 33 presentation about the spotted lanternfly to a combined audience of 2,133 people. Three thousand seven hundred and seventy-nine individuals have completed the required permit training which was developed by the Penn State team. As the range of SLF has increased to surrounding states, the educator is sharing fact sheets with other extension colleagues and teaching at regional educational events.

Leadership & Administrative Skills

WASHINGTON STATE UNIVERSITY EXTENSION ADMINISTRATION TEAM INTERNSHIP: SUCCESSION PLANNING THROUGH HANDS-ON LEADERSHIP DEVELOPMENT

Presenter: Mcmoran, D. W., Agriculture And Natural Resources Extension Faculty-Director, Washington State University, Burlington, WA 98233

In 2017, Washington State University (WSU) Extension created an administrative internship to foster the development of internal leadership, provide opportunities for faculty and staff to experience administrative roles, and bring new and essential perspectives to WSU Extension administration. The objectives of the program were to 1) develop future leaders and succession planning for WSU Extension administration, 2) help county faculty understand the roles of administration in extension work, and 3) create a platform for faculty to initiate and move positive systems change forward. The WSU Extension administrative internship requires a minimum of five years employment with WSU Extension as a full-time educator (AP), faculty, area specialist, or state specialist; master's degree or doctorate; and a sincere interest in a future role in WSU Extension administration with a demonstrated interest in leadership. The program was open to three interns, one from each extension program unit to serve an 18-month assignment. Interns were expected to actively participate in extension administration activities including conference calls and face-to-face meetings, and implement a special project. This year, the administrative interns are working on extension communications, with emphasis on impact reporting, as their project.

YOUNG CATTLE PRODUCERS CONFERENCE BUILDS LEADERS IN IDAHO

Presenter: Willmore, C., Extension Educator Livestock & Forages, University Of Idaho Extension, Shoshone, ID 83352

There is a strong need for young leaders in the beef industry. Over the past thirty years, the average age of farm operators in the United States has been on the rise. In the most recent census of agriculture, only 6 percent of primary operators were under 35 years old, 61 percent were 35 to 64 years, and 33% were 65 years and older (USDA, NASS 2012). And in Idaho, the cattle industry is seeing this. Because of this, in 2015, University of Idaho (UI) College of Agriculture and

Life Science (CALS) administration charged the Animal and Veterinary Sciences (AVS) Department and Extension faculty to develop a Beef Program of Distinction (Beef POD). Extension faculty hosted listening sessions across Idaho and gathered input from cattle producers to identify Extension programs and research that meet the needs of the beef cattle industry. One issue identified was the need to educate young beef producers about all aspects of the beef industry and the importance of becoming involved in the industry. A committee of Extension faculty, beef cattle producers and allied industry representatives were formed to address this issue. The committee developed a three-day conference called the Idaho Young Cattle Producer Conference (YCC), which was held in Twin Falls in 2017 and Caldwell in 2018. The conference was limited to 20 participants, who had to be nominated and selected by the committee, and between 20-40 years of age. The YCC's primary objective was to develop leadership qualities in young cattle producers and expose them to all aspects of the beef industry through educational presentations, hands-on learning, and industry tours. Topics from the YCC included: an overview of the cattle industry, meat cutting demonstration, issues facing young cattle producers, financing a cattle operation, risk management, herd health, public land grazing, and becoming involved in the industry. Tour stops included a cow-calf operation, packing house, feedlot, and purebred Angus operation. Twenty young cattle producers participated in YCC each year and evaluated the program upon its completion. All of the participant surveyed indicated they would recommend this conference to others. On a scale of 1 – 5 (1 = not at all; 5 = very likely), the average response of participants was 4.9 when asked "Will what you learned and experienced at YCC provide economic value to your operation?" and "Do you intend to put any of what you learned to use in your operation?". With the beef industry changing so rapidly, identifying and educating leaders to help guide and strengthen the industry has never been so important. With the excellent evaluations and feedback from industry, the University of Idaho Extension will continue to take the lead in educating and providing opportunities to young cattle producers in the state of Idaho for years to come.

CREATION AND LEADERSHIP OF REGIONAL EXTENSION TEAMS: AN EXAMPLE IN CLIMATE EDUCATION

Presenter: Schmitz, H. F., Extension Educator, Purdue Extension, Mt. Vernon, IN 47620

Climate variability continues to be a defining factor in agriculture and water quality in the North Central Region of the United States. Various extreme weather events and their increasing frequency impact crop production and prevent water bodies from fulfilling their designated uses. Farm management practices and their interaction with typical climates of a region also can influence water quantity, water quality, and sustainable water management. Meanwhile, farmers and Extension professionals desire education in climate science and climate change to inform shifts in management practices, which can help farmers more easily meet goals in nutrient loss reduction strategies, efficiently utilize agricultural inputs, and maintain economic profitability.

The North Central Region is defined as a 12-state area including Kansas, Nebraska, South Dakota, North Dakota, Minnesota, Iowa, Missouri, Illinois, Wisconsin, Michigan, Indiana, and Ohio. Dominant agricultural commodities in the region include corn, soybean, wheat, and alfalfa and other forages. The North Central Region Water Network is a 12-state collaboration designed to enhance connectivity across regional and state water projects, develop and carry out integrated outreach and education efforts, and coordinate projects with measurable short and long-term environmental and social impacts.

Under the funding and direction of the North Central Region Water Network, a team of extension professionals and representatives of partner agencies with experience at the connection between agriculture and climate has been identified. This North Central Climate Collaborative (NC3) utilizes their expertise to create and manage education around agriculture, water, and climate in the region. To better develop and promote climate education resources as they are developed, the team meets on a regular basis. Also, with Extension systems in each state having varying capacity for resource promotion, the NC3 team increases efficiencies by producing materials that will serve multiple states.

Outputs of our activities include further dissemination of results from the USDA-funded Corn Systems CAP and Useful to Usable (U2U) initiatives including fact sheets, webinars, and YouTube videos. Desired outcomes include a more informed Extension community comfortable providing programming at the intersection of agriculture, water, and climate. Longer term, the educated clientele from these programs will be better equipped to recommend and institute farm management practices that conserve resources and enhance productivity in a variable climate.

Our presentation will cover the leadership opportunities and challenges of beginning a regionally-based climate education community. From hosting webinars to regional conferences, the mixed approaches to education professional development will be discussed. Impact assessment and communication of impact are essential components to building rapport within the Extension system and with external clientele. Challenges and recommendations for creating a trusted climate communication network will be both shared and solicited.

THE POLITICS OF BEING APOLITICAL: BEING CARRIERS OF RESEARCH-BASED INFORMATION IN THE AGE OF FAKE NEWS

Presenter: Clark, N. A., Extension Agent, Virginia Cooperative Extension, Courtland, VA 23837

Genetically Modified Organisms (GMOs) versus organic, herbicide tolerant crops versus neighbors, solar farms versus row crops, honeybees versus pesticides, carbon storage versus habitat, fertilizers versus the bay, municipal water quality (i.e., Flint water crisis), farm rent, hunting regulations, any land-based regulations; and the list goes on of agricultural related issues that become politicized and that county agents are asked to weigh in on. Often local stakeholders (on either side of an issue or both) request our support, either for our access to knowledge or the authority of the logo on our shirts. Extension agents are employed to be purveyors of research-based information. That is the mission of the land-grant institutions and the foundation of our enabling legislation. Although we have access to vast amounts of research, it is the application of these findings to the livelihoods of the local citizens that becomes viewed as our impact at the local level. This is also where agents can be caught off-guard and pulled into a firestorm. This presentation shares some case studies and lessons learned related to contentious matters with hopes of keeping fellow agents from getting burned.

ACTIVE LISTENING

Presenter: Camm, K., Extension Agent, Anr/4-H, Virginia Cooperative Extension, Lynchburg, VA 24504
Presentation for the Professional Improvement Sessions – 2019 NACAA AM/PIC

As Extension Agents, Specialists, Directors, and staff, we are often presented with a variety of information from many different people from the community and in our office. Through effective communication, it is our responsibility to take their questions, comments, and concerns and provide reasonable answers to them. Yet of all the communication skills, listening is the least often taught and practiced. The people who are the most effective at building relationships at work are those who are the best listeners. Active listening is a skill that agents need to have in both their professional and personal lives. Communicating with someone does not just depend what you hear from them, but acknowledging to them that you are listening to them. In this interactive presentation, you will learn and practice steps for active listening. It is the hope that you will leave with a greater appreciation for the importance of listening and be better prepared to be an effective listener. This presentation provides participants with a starting point for exploring the knowledge and skills needed to learn more about active listening; understanding people better and being able to determine better solutions; and acquire techniques to diffuse conflict.

MISSION POSSIBLE: COMMUNICATION TOOL FOR MOVING FARM FAMILIES FORWARD

Presenter: Plaster, S., Agriculture Educator, UW-Extension, West Bend, WI 53095

This presentation aims to increase the professional capacity of extension agriculture educators by improving their communication and facilitation skills with the clientele they serve by introducing them to the Motivational Interviewing communication technique. The presentation was designed specifically to improve educator skills and ability to engage in conversations with stressed farmers, farm families, and agribusiness professionals on critical and time-sensitive topics of farm transition, succession, and closure; however, it will be relevant to colleagues across all programs who work with clients working towards a commitment to change. Motivational Interviewing (MI) is a collaborative, goal-oriented communication technique for strengthening a person's own motivations to change, and has been used extensively in health care. The adoption of MI will serve as a tool to complement and enhance the work of extension educators. Educators who can successfully use some of the tools utilized in motivational interviewing will have the ability to ask open-ended questions, affirm authentically, utilize reflective listening techniques, summarize statements made, and encourage participants to own their outcomes. The MI technique emphasizes listening and affirming the client perspective and recognizing that the motivation for change stems from the client.

This presentation was developed by S. Plaster & T. Kohlman as part of the Mission Possible Development Team (J. Kirkpatrick, T. Wagner, K. Wantoch, S. Plaster & T. Kohlman).

Natural Resources & Aquaculture

SEPTIC ISSUES: A COLLABORATIVE SOLUTION

Presenter: Rodgers, E., Extension Educator, Purdue Extension, Auburn, IN 46706

DeKalb County Indiana is like many rural counties with hundreds of septic systems not operating correctly resulting in water quality issues and problems with quality of life with raw sewage being dumped in to our ditches and streams. In 2009, DeKalb County Soil and Water Conservation District, DeKalb County Health Department, DeKalb County Planning Department, and Purdue Extension of DeKalb County joined together to start planning ways to help reduce this public health issue across the county. In the 10 years since the group

began, we've involved many citizens across the county from septic installers to city planners to bankers to real estate agents to help educate and resolve some of the major issues. In 2013 a report was made identifying 19 areas of concern around the county and which municipalities could incorporate them in to sewer if it became available. Since then a new County Septic Ordinance has been adopted, 4 of the original areas of concern have been addressed, and overall communication between County and City governments has greatly improved. We have also hosted 5 educational sessions for homeowners on care and creation of their septic systems.

IF THEY GROW IT, DO THEY LEARN? AN INVESTIGATION INTO THE EFFICACY OF VOLUNTEER OYSTER GARDENING PROGRAMS AS A VEHICLE FOR LEARNING

Presenters: Waters Jr., P. L., Extension Specialist - Aquatic Resources, Alabama Cooperative Extension System, Mobile, AL 36602
William C. Walton, Associate Professor & Extension Specialist, Auburn University, Alabama Cooperative Extension System, Dauphin Island, AL 36528
Daniel Petrolia, Professor, Mississippi State University, Stennis Space Center, MS 39529
James Witte, Professor, Auburn University, Auburn University, AL 36849
Russell Wright, Associate Professor & Extension Specialist, Auburn University, Alabama Cooperative Extension System, Auburn University, AL 36849

Volunteer Oyster Gardening Programs (OGPs) often include education as a key programmatic objective, defined and measured by change in knowledge. We investigated the efficacy of OGPs as a tool for knowledge transfer. Employing an original questionnaire, we evaluated the ability of these citizen science programs to foster an increase in perceived understanding of oysters and their larger role in an estuarine system. Volunteer oyster gardeners from eleven OGPs located in seven states along the US Gulf of Mexico and Atlantic coasts were asked to report their perceived knowledge prior to and following participation in their local OGP using a 5-point Likert scale. The construct of knowledge for this work was defined by oyster reproduction, feeding, ecologic role, habitat, water quality impact and erosion impact. Respondents were grouped by their home program as well as regionally, defined as the Gulf of Mexico, Atlantic (less Chesapeake Bay) and Chesapeake Bay.

Intra-program analysis determined that a statistically significant increase in reported median knowledge occurred in seven of eleven programs ($p<.043$). Small sample size was likely a contributor to the lack of statistical significance in the remaining four programs. Intra-regional analysis determined that a statistically significant increase in reported median knowledge occurred following participation in a local OGP ($p<.001$ for each region). Inter- regional analysis demonstrated a statistically significant difference in change in knowledge of oysters ($p=.034$) when considering seven predictor variables (income, education, employment status, age, gender, time in OGP and region). Of the seven, only gender and region were statistically significant. These findings demonstrated that a change in knowledge of oysters can be achieved by participating in an oyster gardening program.

GENERATION NEXT: KEEPING LAND INTACT, IN FOREST AND IN FAMILY OWNERSHIP

Presenters: Downing, A., Forestry & Natural Resources Extension Agent, Virginia Cooperative Extension, Madison, VA 22727
Santucci, M, Assistant Director of Forestland Conservation, Virginia Department of Forestry, Charlottesville, VA 22903
Biasiolli, K., Forest Conservation Specialist, Virginia Department of Forestry, Charlottesville, VA
Clark, N., Forestry & Natural Resources Extension Agent, Virginia Cooperative Extension, Courtland, VA 23837
Fisher, J., Forestry & Natural Resources Extension Agent, Virginia Cooperative Extension, Halifax, VA 24558
Fotinos, A, Forest Conservation Specialist, Virginia Department of Forestry, Selem, VA 23415
Gagnon, J., Extension Associate, Virginia Tech, Blacksburg, VA 24061
Scheps, A, Forest Conservation Specialist, Virginia Department of Forestry, Providence Forge, VA 22903
Worrell, B, Forestry & Natural Resources Extension Agent, Virginia Cooperative Extension, Lebanon, VA 24266

Most forestland in the United States is privately owned. In Virginia, forestland owners 65 years and older own 41% of our 10 million acres of private forestland. High land values and taxes force many heirs to sell land to meet financial obligations; a major force behind an annual loss of 16,000 forested acres. Virginia, like the rest of the country, is on the cusp of the largest intergenerational transfer of family forests ever and landowners need to know how to protect their land. A common barrier to estate planning is using planning tools and having confidence in knowing where to start.

To generate initial awareness of this issue, landowner programs have included brief conservation planning sessions and mass media informed the general public. Focusing on Land Transfer to Generation "NEXT", a 12-hour in-depth short course, was piloted in in 2009 and has since be delivered 14 times across the State. Program design draws from national curricula and utilized local experts to develop new material and initiate participant planning. Four-hundred and seventeen individuals representing 292 family units have completed a workshop which utilizes the expertise of private legal and financial professionals, conservation specialists and extension agents.

Following short-course participation, landowners can better articulate their land transfer goals and have begun planning. Participants indicated the program would increase the likelihood of their property staying intact (81%), in the family (78%) and in woodland (78%). Follow-up surveys reveal that in the 6 months following the short-course, 85?% have begun estate planning. Participants estimate an average family savings of $300,000 as a result of this program. As these landowners continue executing their plans, nearly 120,000 acres of land is expected to remain open and family owned. The program has been recognized as one of the most successful land-transition program in Virginia by the Department of Agriculture and Consumer Services and fellow educators have adopted this model beyond Virginia.

SMALL ACRES CAN MAKE A BIG DIFFERENCE

Presenters: Downing, A., Forestry & Natural Resources Extension Agent, Virginia Cooperative Extension, Madison, VA 22727
Kays, J., Extension Specialist, University of Maryland Extension, Keedysville, VA 21756
Highfield, C., Director, Forests for the Bay Program, Alliance for the Chesapeake Bay, Annapolis, MD 21403
Clark, N, Forestry & Natural Resources Extension Agent, Virginia Cooperative Extension, Courtland, VA 23837

The importance of extension programming with owners of small forest parcels (i.e., less than 10 acres) in the Eastern United States (59% of the forest properties) only increases as parcelization further divides properties and landowners logically have mostly non-timber objectives. While the overall acreage involved in these ownerships is relatively small (8% of for forest base), these owners represent a growing underserved audience and potentially have significant political influence that could lead to increase support for forestry programs. Traditionally, forest stewardship programs target forest landowners with more than 10 acres, and it is unlikely that state or consulting foresters are going to shift their interests to small properties.

Extension foresters in Maryland, Pennsylvania, and Virginia designed and produced a high-quality, color, self-assessment manual entitled, "The Woods in Your Backyard: Learning to Create and Enhance Natural Areas Around Your Home" in 2006. It uses a step-by-step process (and case study) that includes detailing objectives, mapping, inventorying and planning activities. It has a two-prong focus on converting lawns to forest as well as managing existing natural areas The success of the effort and lessoned learned lead to an updated manual in 2016 that continues to direct people to make informed decisions that ensure clean water, viable populations of native wildlife, recreational opportunities, and forest health. Since its release in September 2006 over 5000 copies have been sold.

Programs have also been extended to landscape contractors and arborists to encourage them to become service providers for this nontraditional audience. A survey to asses interest and needs of green industry professionals was conducted in 2007 which led to numerous programs. Efforts are now underway to develop a companion guide targeting green industry professionals with information, skills and connections to add small acreage type work to their services. This presentation will share the results of surveys with landowners, volunteers, and landscape and arborist professionals. It will also provide insights and assessments on approaches that are most effective based on experience, as well as new partnerships that have been developed to reach this underserved audience.

WATER CONSERVATION ON DISPLAY

Presenter: Yergeau, S., Environmental & Resource Management Agent, Rutgers Cooperative Extension, Toms River, NJ 08755

With an increasing population already at over 9 million residents, New Jersey places a high demand on its limited water resources. Despite ample rainfall, potable water sources in the state are stressed by both the demands of multiple users/uses and the impacts to its water quality. In addition, changing climate has the potential to increase the number of dry and/or drought days, further reducing the means to replenish New Jersey's water supplies. The current need is for water conservation outreach targeted at residents to reduce their daily consumption of water and ensure plentiful supplies in the future. The 'Save Water, Every Drop Counts!' program was started with a series of free standing displays that are exhibited throughout towns in Ocean and Atlantic Counties. Objectives of this project are to increase the awareness of residents in Ocean and Atlantic Counties on water consumption and educate them on practices they can use to conserve water. An additional objective is to assist Ocean and Atlantic municipalities in becoming Sustainable Jersey certified by fulfilling their requirement for the Water Conservation Education Program action item. The displays consist of a presentation playing on a digital picture frame mounted onto a 55-gallon rain barrel. The presentation will provide information outlining what people can do every day to save water at home. A flyer accompanies the display so that people who view it can take the information and start work at saving water at home. The displays have been exhibited at eleven towns and/or events throughout Atlantic, Ocean, and Cape May Counties in southeastern New Jersey. Using these water conservation educational displays, 629 flyers have been distributed to residents in the municipalities and at the events where exhibited. This presentation will cover the practical aspects of developing and constructing the displays, and how we measure impact from remote educational programs.

VENISON 101

Presenters: Straight, A., Ag & Natural Resources Extension Agent, Wvu Extension Service, Moorefield, WV 26836
Richmond, J., Ag & Natural Resources Extension Agent, Wvu Extension Service, Princeton, WV

In 2018, deer hunters in West Virginia harvested 108,856 whitetail over all seasons. For many West Virginians, venison is a valuable and economical protein source and a healthier choice of low-fat meat compared to beef having fewer calories and nearly five times less fat than the equivalent serving of beef. Many hunters are finding that they can save money and increase their personal enjoyment by butchering their own deer. Commercially, the cost of processing a deer is roughly $0.90/lb, comparably beef is $0.42. A new generation of hunters is entering the woods wanting to learn the safe and proper method of handling deer harvested for food. WVU Extension's Venison 101 program is a collaboration between the Division of Natural Resources (WVDNR), WVU Extension Ag & Natural Resources unit and the Family and Community Development Unit to improve food resources by utilizing proper food-safety basics and techniques such as canning, dehydration, and pressure cooking as well as animal processing techniques from the field (gutting and skinning) to the table (carcass breakdown and retail cutting). Information is provided on deer herd management and health regulation by the DNR and recipes are offered with participants tasting samples of deer jerky, chili, bbq, and/or snack sticks. Videos of skinning and gutting are available if needed but attendees participate can participate all phases of the processing if the site allows. Over 800 participants have increased their knowledge of deer management and processing skill through the Venison 101 program in WV.

HEAVY WINTER PATCH GRAZING AS AN ALTERNATIVE TO FIRE ON THE NORTHERN GREAT PLAINS

Presenter: Harty, A., Cow-CalfField Specialist, SDSU Extension, Rapid City, SD 57703

Much research has focused on patch burn grazing as a means of creating heterogeneity on the landscape, by altering vegetation structure, and livestock grazing patterns. Though fire is seen as a healthy disturbance in grassland ecosystems, many landowners in the Northern Great Plains have an aversion to fire due to concerns over loss of forage and property. A study was conducted in 2016-2018 at the Cottonwood Research Facility in South West South Dakota, to test the effectiveness of heavy winter patch grazing to simulate fire. Within each pasture, patches were also created by intensively grazing cows during the dormant season in winter of 2015 and 2016 to reduce standing dead forage and vegetation structure to mimic the effects of fire. Following a wildfire in October 2016 at the research station, the study was continued to also include a patch burn treatment. Three pastures each contained a winter grazed patch, a burned patch, and an ungrazed control patch. Height measurements of standing live and dead vegetation were taken across transects in the spring to assess the impact of each treatment on vegetation structure. Satellite imagery was also acquired to compare NDVI values across each treatment to assess differences in greenness of vegetation. Livestock grazing patterns were assessed with the use of GPS collars outfitted with motion sensors outfitted on a subset of steers within each pasture. Results show winter patch grazing was effective in creating structural heterogeneity on the landscape. Livestock showed a higher preference for burned areas over the winter patch when given the choice, however preferred winter patch areas in the absence of fire. Given the unlikelihood of having both treatments in a management strategy, results of this study show heavy winter grazing can be used as a surrogate for fire to create heterogeneity and shift grazing on the landscape.

STEMMING THE TIDE OF THE EMERALD ASH BORER INVASION IN UNION COUNTY, NJ

Presenters: Flahive Dinardo, M., County Agent, Rutgers Cooperative Extension of Union County, Westfield, NJ 07090
Bakacs, M., County Agent, Rutgers Cooperative Extension of Union and Middlesex Counties, Westfield, NJ 07090
Nichnadowicz, J., County 4-H Agent, Rutgers Cooperative Extension of Union County, Westfield, NJ 07090
Zipse, P., Outreach Coordinator, Rutgers Urban Forestry Program, New Brunswick, NJ 08901

The goal of this project is to develop a model for using volunteers to help government agencies inventory and manage Ash trees in the face of the current Emerald Ash Borer (EAB) invasion. EAB, a non-native insect pest that infests and kills all species of Ash trees, was discovered in New Jersey in in 2014. Rutgers Cooperative Extension (RCE) of Union County was approached in 2017 by the county manager to help develop an Ash tree management plan for the county park system, which manages 6,760 acres of land in a suburban / urban environment. Informational sessions for municipal and county public works employees were held in cooperation with the NJ Department of Agriculture. Parks employees (43) were trained on EAB and Ash Tree identification. The county requested assistance with creating an inventory and maps of Ash trees in county parks and documentation of their status. RCE Agents implemented a volunteer training program to conduct the inventory. Faculty worked with the county Geographic Information Systems Bureau (GIS) to develop a survey for volunteers to use when inputting data for the inventory using a Cartegraph, a GIS software program used for asset inventories and work order requests. Volunteers were recruited from the Master Gardener, Environmental Stewards, and 4-H Master Tree Steward Programs. Twenty volunteers were trained in

EAB biology, basic botany and Ash identification, assessing tree canopy condition (an indicator of EAB infestation) and tree health, measuring tree size, mapping protocol and procedures, and use of iPads for data collection. Volunteers were tested on these skills. Funding for project supplies was provided by the Phillip Alampi Fund. Volunteers, supervised by faculty, were assigned to specific sections of priority parks and conducted inventories in teams throughout the late spring and summer of 2018. High traffic areas such as playgrounds, parking lots, sports fields, and trails were targeted. The teams inventoried 741 trees in seven county parks. Agents are using the Purdue EAB Cost Calculator and the USDA Forest Service i-Tree programs to analyze the data collected by the volunteers.

BRINGING NATURE HOME - WORKSHOP FOR NATURAL RESOURCES PROFESSIONALS

Presenter: Matzat, E. A., Extension Educator-Ag& Natural Resources, Laporte County, Laporte, IN 46350

Extension professionals and other agency partners who work with agriculture often have many resources to assist their clients with agronomic issues, but these resources are limited when dealing with forestry, wildlife and wetland topics. In 2018, a natural resources workshop was planned and conducted inviting Extension educators and other agency professionals who work with natural resources. The presenters included Purdue University forestry and wildlife specialists, Department of Natural Resources district forester, and a professional botanist who led the participants in hands-on discussions of selected topics. Participants learned about identifying trees, native and non-native plants; wildlife management in woodland, wetland and restored native prairie settings; wetland development; and woodland management for timber and controlling invasive species. The setting was the 160-acre farm of a local Extension educator with excellent examples of the topics discussed. In fact, later in the year, one of the workshop participants encouraged the workshop hosts to apply for a local conservation land trust award and they received the "Bringing Nature Home" award that demonstrates wise use of native plants in home landscaping. Participants stated that they gained useful knowledge for management of land areas tailored to objectives, effective prairie management for wildlife, dealing with invasive plants in woodland areas, and identifying native sedges in a northern Indiana climax forest. This presentation will share ideas on how a similar workshop can be planned, publicized and conducted effectively by other Extension professionals.

Sustainable Agriculture

EXPLORING MEDITERRANEAN-STYLE AGRICULTURAL PRODUCTION IN SOUTHERN SPAIN FOR USE IN FLORIDA

Presenter: Stauderman, K. M., Commercial Horticulture Extension Agent Ii, University Of Florida, Sorrento, FL 32776

The purpose of the International Horticultural Production and Cultural Tour of Southern Spain was to educate University of Florida extension, staff and clientele on the feasibility of adopting Mediterranean-style agricultural production with products that feed Floridians, and to use the findings from this workshop to educate commercial growers in pursuit of profitable alternative sustainable farming. I also wanted to attain contacts to help with logistics in the high-intensity plasticulture industry. I spearheaded a group of UF extension agents, specialists, staff and interested clientele to travel to Spain on a nine day workshop. The goals included discussions with governmental officials on water conservation tactics, urban acceptance in aesthetics of plasticulture, high intensity greenhouse vegetable farming, field visits to observe vegetables, citrus, vineyards and olive groves along with visiting both small and large packing houses and an international plastic mulch manufacturer. Following the trip, I communicated the information on social media, a UF Volusia County blog site, grower meetings and client educational programming. A one month post survey was sent via email to the tour group for evaluation of the workshop. 87.6% of the travelers that responded, rated the grower field visits 'very good-excellent' and 12.5% with as 'good.' All members regarded the quality of the cultural workshop portion at 'very good-excellent.' 93.8% assessed the workshop quality as 'very good-excellent with 6.3% 'good.' 93.8% of the travelers were recommending it to others. The post survey helped asses the workshop effectiveness. This type of international visiting can be adapted to other regions. The agent obtained international resources and contacts in Southern Spain that are eager to cooperate with extension aid to Florida growers in starting their successful ventures in alternative crops.

EXPLORING ALTERNATIVE CROPS TO IMPROVE FARM PROFITABILITY AND SUSTAINIBILITY

Presenter: Wells, B. C., Extension Agent II, Commercial Horticulture, University of Florida, Cocoa, FL 32926

Alternative crops are defined as agronomic crops unusual for a specific region yet selected for production due to high marketing potential or specialized benefit to the farming system. In Hastings, the 'Potato Capital of Florida', potato acreage is significantly shrinking from low profit margins while growers are seeking alternative crops to improve farm profitability and sustainability. With adoption of alternative crops, opportunity

is increased, but risk is as well. Growers are relying on UF/IFAS Extension to help mitigate the risks of adopting unfamiliar cropping systems. In response, an Extension program in alternative crops was implemented in 2015. Field research and demonstration trials are on-going at the UF/IFAS Hastings Agricultural Extension Center (HAEC) and on-farm in producer fields exploring the production potential of various alternative crops including Asian vegetables, sweet potatoes, Brussels sprouts, artichokes, and cauliflower. Field investigations have been diverse and include cultivar selection, nutrient management, irrigation needs, and pest management. Since 2015, field trials at the HAEC have yielded a variety of outcomes, most notably the establishment of nutrient standards for select Asian vegetables, adoption of commercial production of purple sweet potato, and increased knowledge and interest in other alternative crops such Brussels sprouts, cauliflower, artichokes, carrots and sweet corn. By utilizing UF/IFAS Extension research and demonstration centers such as the HAEC, agents can help growers transition to alternative crops through demonstrated field success that yields a well-thought out production plan derived from un-biased research.

OFFERING EXTENSION PROGRAMS IN REMOTE, RURAL ALASKA

Presenter: Rader, H., Tribes Extension Educator, Uaf Cooperative Extension Service, Fairbanks, AK 99701

In this presentation, I'll discuss some of the unique challenges of serving 37 villages scattered across Interior Alaska and how and why I use innovative educational practices to better serve the region. The region I serve is the size of Texas. These villages range in size from just a dozen or so residents up to about 500 residents in the two largest communities--Fort Yukon and Galena. Although no longer nomadic, the Alaska Natives of the region still hunt, fish, and gather a significant and valuable amount of food each year. For example in 2015, the TCC villages Alatna, Allakaket, Beaver, Dot Lake procured 274, 520, 359, 119 pounds of edible food per person from the land, respectively (Guettabi, Greenberg, Little, & Joly, 2016). Twenty-seven TCC villages are off-road and rely on small-aircraft as their primary means of transportation. Boats in the summer and snow machines in the winter provide a less reliable mode of transportation. From Fairbanks, the closest off-road village is Steven's Village (~100 miles away) and Holy Cross is the furthest away (~420 miles). With respect to Fairbanks, Nenana is the closest village on the road system (60 miles away) and Eagle is the furthest (380 miles away; summer only). Travel is expensive and time consuming in the region. For these reasons, online trainings and other innovative uses of technology are vital for providing continuity in between face-to-face visits.

TESTING FIRE BLIGHT RESISTANT APPLE ROOTSTOCKS FOR SUSTAINABLE APPLE PRODUCTION IN ALABAMA

Presenter: Coneva, E. D., Extension Specialist, Alabama Cooperative Extension System, Auburn University, AL 36849

Newly released fire blight resistant apple rootstocks can aid in disease management and improve production sustainability. As part of the multistate NC-140 cooperative research project, an apple rootstock study was established at the Chilton Research and Extension Center near Clanton, Alabama in 2014 aiming to assess 14 newly developed fire blight resistant and size-controlling rootstocks. Low-chill 'Aztec Fuji' apple was the scion cultivar used. The following rootstocks were tested: B.10, G.11, G.202, G.214, G.30, G.41, G.935, G.969, M.26 EMLA, M.9-T337, V.1, V.5, V.6, and V.7. Trees are arranged in a RCBD with ten single tree replications and trained to the highly efficient Tall Spindle training system which has not been tested in Alabama before. Tall Spindle is designed to control the vegetative vigor and optimize the crop production especially in the early stage of tree establishment, while providing early returns to the grower. Our fifth-year results suggest trees grafted on 'V.7', 'G.969', and 'V.5' produced the highest cumulative yield/tree. In general, the Vineland series of rootstocks 'V.5', 'V.6', and 'V.7' had high productivity, and were the most vigorously growing rootstocks in the present study based on data for trunk cross sectional area. Trees on 'G.11' consistently produced the largest mean fruit size ranging between 180 and 206 g through the seasons. 'Aztec Fuji' trees grafted on the weak 'G.214' rootstock had the highest yield efficiency of 1.18 kg/cm2 at the end of the fifth season, while trees grafted on 'V.6' and 'V.7' rootstocks had the lowest efficiency of 0.54 and 0.60 kg/cm2 respectively. Research is going to continue to assess the production efficiency and fruit quality as a way to achieve more efficient land use and sustainable apple production.

This project was supported by the Alabama Agricultural Experiment Station and the Hatch program of the National Institute of Food and Agriculture, U.S. Department of Agriculture.

STATE AGENCY COLLABORATION TO PROMOTE THE ADOPTION OF BEST MANAGEMENT PRACTICES ON EQUINE OPERATIONS

Presenters: Bainum, C., Livestock Extension Agent, University of Florida, Ocala, FL 34470
Wickens, C., State Equine Extension Specialist, University of Florida, Gainesville, FL 32603
Wallau, M., State Agronomy Extension Specialist, University of Florida, Gainesville, FL 32603

Adoption of agricultural Best Management Practices (BMPs) has remained voluntary in the state of Florida until 2018, when it was mandated that agriculture enterprises located within a basin management action plan area be enrolled in the state BMP program by commodity to reduce water quality impairment. Ocala, FL, known as "Horse Capital of the World", is targeted for much of the agriculture sector's nitrate responsibility in the surrounding watersheds, primarily due to mismanagement of manure and fertilizer applications coupled with a lack of forage management. Adoption of equine operation Best Management Practices has been minimal and priority has been placed on extension educational efforts to stress the urgency of these practices. A farm management field day was developed by the Marion County Livestock Agent in coordination with State Extension Specialists and state agency partners to provide an experiential learning opportunity to facilitate equine BMP adoption. Learning objectives were to increase BMP awareness and increase manure and pasture management competency by 70%. Educational activities consisted of a rotation of the following learning stations; manure management through composting with a working compost demonstration, how-to: take a soil test and interpret a soil analysis, and grazing management strategies. BMP stakeholder and farm owner interaction was a primary objective of this program. The following state agency stakeholders were in attendance; the Florida Department of Environmental Protection (FDEP), Florida Department of Agriculture & Consumer Services (FDACS), regional water management districts, and UF/IFAS state and county faculty. Of the 55 horse farm owners/managers in attendance, 27 individual farm consultations were conducted by the agent after this program which resulted directly in nutrient and pasture management BMP compliance. 100% of participants (n=55) indicated increased proficiency of the learning objectives. Considering the success of this initial field day, this program will be conducted annually.

IMPLEMENTING DRONE BASED TECHNOLOGY TO IMPROVE CROP MANAGEMENT FOR SUSTAINABLE AGRICULTURE

Presenter: Wang, Q., Vegetable & Pesticide Extension Agent, UF/IFAS, Homestead, FL 33030

The application of drone based technology has shown a great potential in agricultural industry. The great advantage using drone in field survey is to provide real-time information, such as seed germination, plant growth, nutrient and water stress, pest damage, in order for growers to take timely action for management to reduce the yield loss. This presentation is to showcase up-to-date technologies with a popular type of drones – DJI Phantom 4 Pro with a Sentera double 4k multispectral sensor specifically for agriculture. The presentation includes basic understanding of terminologies, data parameters, flight setup, mapping, data processing, and some examples of its implementation in various vegetable fields. The result showed that quick mosaic images in different layers can be generated simultaneously in a single flight. Besides color photographs, images of Near-Infrared (NIR), Normalized Difference Vegetation Index (NDVI), and Normalized Difference Red Edge (NDRE) are sensitive indicators for plant healthy status. With a tool for Management Zones, it can provide real time information to growers, such as seed germination rate, plant missing patches, nutrient and water stresses, and pest damages. Therefore, such a technology can improve the Best Management Practice due to the accuracy and timely importance, which is an important approach for the development of sustainable agriculture.

SCAVENGING AND RECYCLING NITROGEN WITH DEEP-ROOTED COVER CROPS

Presenter: Hirsh, S. M., Agent, University Of Maryland, Princess Anne, MD 21853

In the Mid-Atlantic USA, substantial mineral nitrogen (N) remains in the 0-2 m soil in September, which is at risk to leach over winter. We hypothesized that deep-rooted cover crops planted by early-September could capture residual N, and potentially recycle this N for following cash crops. We performed on-farm experiments in Maryland and Pennsylvania investigating the effects of cover crops (winter cereal, forage radish, mix of radish + winter cereal + crimson clover) on N uptake and inorganic N distribution within 0-210 cm soil in late-fall and early-spring, and the following corn crop's growth and yield. By late-fall, radish reduced soil nitrate to 90 cm deep, while winter cereal or mix cover crops reduced nitrate to 60 cm. In the spring, radish released nitrate on the soil surface (0-30 cm), but resulted in greater nitrate from 30-150 cm deep compared to winter cereal. Winter cereal resulted in the lowest soil nitrate from 0-210 cm. Mix was more effective than winter cereal and as effective as radish at ensuring available nitrate on the soil surface (0-30 cm), and was as effective as winter cereal in reducing nitrate from 30-210 cm. The V5 stage corn biomass and N content differed according to previous cover crop treatment, specifically radish > mix = control > winter cereal. At the farmers' standard N fertilizer application rate, corn yield following radish or control was higher than winter cereal. Cover crops were effective at scavenging and accumulating N, and in some cases supplied N for subsequent crops.

HANDS-ON EDUCATION FOR URBAN FARMERS AND COMMUNITY GARDENERS

Presenter: Barrett, E. E., Assistant Professor, Ohio State University Extension, Canfield, OH 44406

The growth of community gardens and urban agriculture over the past decade has created an opportunity for Extension

programming in urban centers due to the high demand for technical assistance (Oberholtzer, Dimitri, & Pressman, 2014). Extension realized the unmet demand for technical assistant in Youngstown, Ohio, through interactions with urban farmers and community gardeners. Growers expressed a desire to gain new skills in the production of fruits and vegetables. Extension responded by developing the Local Flavor Program, a weekly tour of urban farms and community gardens throughout the growing season and across all areas of the city. The program goals were to improve fruit and vegetable production skills of city residents and to promote the growing of local foods. The program started in 2012 and has grown each year since its inception. Extension personnel developed the curriculum and trained Master Gardener Volunteers to assist with leading the weekly program. These local experts share advice on growing and caring for fruits, vegetables, flowers and herbs. A kit with curriculum and evaluation materials was developed for the program. The kit includes tools, samples and other props to conduct hands on demonstrations based on the weekly site. Growing practices, helpful tips, the importance of soils, weed control, insect identification and other tools for success are shared each week. The program attracted 1,627 gardeners and aspiring urban farmers from 2012-2018. Through the program evaluations, participants reported new skills and knowledge gained, including understanding the need for soil testing, irrigation methods, improving crop yields, adopting practical weed control and sharing gardening skills with others. Just over 96% of participants in the Local Flavor Program marked an increase of at least one point on a ten point scale, shoring an increase in knowledge of vegetable gardening from before to after the program.

FIELD PEA INDUSTRY DEVELOPMENT IN NEBRASKA

Presenter: Stepanovic, S., Extension Educator, University of Nebraska-Lincoln, Grant, NE 69140

Grain-type field pea (Pisum sativum L.) is a short season legume crop that may be grown as a fallow alternative in wheat-fallow or wheat-corn-fallow rotations throughout the semiarid Great Plains. Objectives of this project were: (1) To evaluate rotational costs and benefits of field pea such as water use, soil health, biodiversity and profitability; (2) To generate recommendations on variety selection, seeding depth, seeding rate, inoculant types, and herbicide programs necessary for successful field pea grain production; (3) To establish field pea crop in southwest NE through outreach and education and build a foundation for sustainable pulse industry development in Central Great Plains. Impact of this project was reflected at Field Pea Production Workshop conducted at Culbertson, NE (2016): The 85% of surveyed participants (92 attended) reported likely to adopt field peas in their crop rotations, 92% reported to be likely to adopt field peas management strategies, and estimating knowledge gain at $30/ac value. As a result of implementing field peas (2019 follow up survey): 35% of the farmers were able to reduce fertilizer and herbicide inputs, 62% increased bio-diversity on the farm, 49% better utilized available water, 35% lowered production risk, 41% increased farm profitability, 38% managed farm more sustainably, 57% improved soil and 19% reported improvements in all listed sustainability parameters. From 2014 to 2018 production of field pea in NE has increased from 30,000 to 80,000 acres and the number of certified seed dealers increased from three to seven. In addition the number of field pea processing facilities in NE has increased to three: New Alliance (Bridgeport, NE), Gavilon (Hastings, NE), and Redwood Group (Venango, NE). In summary, this project highlight the success story of establishing new crop (field pea) in a new growing region (Nebraska).

POTENTIAL FOR AND ECONOMIC IMPLICATIONS OF RESTORING SOIL HEALTH IN NUTRIENT DEPLETED HAY FIELDS USING PASTURED MEAT-TYPE POULTRY

Presenter: Cox, K., Extension Agent, Wvu Extension Service, Wheeling, WV 26003

Utilizing an integrated farming system, we attempt to address multiple issues in the northern panhandle of West Virginia. Farmland for sale is scarce and expensive creating a barrier for new farmers. Many fields have been continually hayed without inputs creating poor soil and forage quality. Finally, there is an unfilled consumer demand for locally produced food.

This project investigates the potential for beginning farmers to earn a profit with the low input farming practice of raising poultry on pasture in floor-less movable pens. Additionally, we believe pastured production will improve soil quality, forage quality, and forage quantity on depleted hay fields. Soil and forage are analyzed to determine the impact of the meat-birds regarding soil fertility and future hay production to inform conservation management planning. Economic inputs and returns for raising poultry in floor-less moveable pens is also investigated to determine profitability.

Preliminary results of this multi-year study will be presented.

EATING WHAT YOU GROW: ENHANCING SOCIAL RESPONSIBILITY, IMPROVING WELLNESS, AND SOCIAL SKILLS

Presenters: Mills-Wasniak, S., Extension Educator, Ohio State University Extension, Dayton, OH 45417
Reeb, R., Professor, University of Dayton, Dayton, OH 45469
Penrose, C., Professor and Extension Educator, The Ohio State University Extension, McConnelsville, OH 43756
Bergefurd,B., Extension Specialist and Extension Educator,

The Ohio State University Extension, Piketon, OH 45661
Gibbons, K., Graduate Student / Graduate Research Assistant, University of Dayton, Dayton, OH 45469
Andrews, R., Director, St. Vincent DePaul, Dayto, OH 45409

St. Vincent DePaul's Gateway Shelter for Men and the Shelter for Women and Families are the last resort for those seeking a safe place out of the elements but may be perceived as a place of despair and defeat. Serving three meals a day to 400+ residents is a challenge especially when it comes to sourcing fresh produce in a food desert. In 2017 the University of Dayton's Behavioral Activation Project, an ongoing research project at the shelters, requested collaboration with Ohio State University Extension Montgomery County Agriculture and Natural Resources program to establish the Shelter Farm on what was once a prison workhouse. The farm's objectives were to implement sustainable agriculture principles of economic viability, environmental sustainability, and social responsibility. Providing fresh produce to the shelter kitchen thereby enhancing nutrition of shelter residents without negatively affecting the shelter food budget was the economic viability component of the project. Over 1800 pounds of fresh produce was harvested and served to shelter residents. The environmental component was the re-purposing of the unused soccer field using best management practices to enhance urban soils productivity, use of water conservation techniques, and provide an aesthetically pleasing landscape focal point. This component was accomplished by use of irrigation techniques, groundcover, appropriate fertilizer applications, and flowers. The social component was an opportunity for shelter residents to obtain job and social skills, and a place to reflect and relax. The flower gardens with painted rock borders leading to the production area were designed and installed by shelter residents. Research findings showed that, when shelter guests work alongside service-learning students on the farm, they experience decreased anxiety and improved wellness. UD Service-learning students who assist with the Behavioral Activation Project show reductions in social stigma, increased self-efficacy for community service, and awareness of self-privilege. Research findings can be used to develop a template for other homeless shelters across Ohio. Research on outcomes for shelter residents and service-learning students has implications for the homeless shelter system and educational pedagogy. The findings are considered within the context of the Behavioral Activation Project.

Teaching & Educational Technologies

UTILIZING ONLINE TOOLS TO TRACK AND SHARE YOUR IMPACT

Presenters: Schuh, M., Extension Educator, Michigan State University Extension, Adrian, MI 49221
Phillips, B, Extension Educator, Michigan State University Extension, Saginaw, MI 48607

Struggling to track stakeholder consultations? Looking to crowd-source geographic relationships? Making notes you'll need later in easily forgotten locations? There are a variety of online programs that are intuitive to learn, easily customized, and work well on the go. In this session we will talk about different ways tools from Google, Microsoft, and Qualtrics can capture the varied information extension professionals work to collect. We will highlight how these platforms can be used on both desktop and mobile to track and present the information you are after in an easy, organized way.

CREATING, LAUNCHING, AND MAINTAINING A MOBILE APP AS AN EXTENSION AGENT

Presenter: Rader, H., Tribes Extension Educator, UAF Cooperative Extension Service, Fairbanks, AK 99701

"Wouldn't it be nice if there was an app where gardeners could rate how well different vegetable varieties did where they live so other gardeners and farmers in the same location could see what grew best?" This was my train of thought that started a journey to develop a mobile app to do just that. Public funding for agricultural research declined from 2001 to 2009 when adjusted for inflation (USDA ERS, 2012). But even continued funding for two Agriculture Experiment Stations in Alaska does not offer the broad geographic data collection possible with citizen science. Alaska is 570,640 square miles; USDC CB, 2014), encompasses 13 UDSA Plant Hardiness Zones (from Zone 1a in Interior Alaska to 7b in Southeast Alaska; USDA, 2012), and sees dramatic variations in the number of frost-free days, day lengths, precipitation, and wind events which effect climactic growing zones (Stevenson et al., 2014).

Mobile apps that help fulfill Extension's mission present tremendous opportunities as well as significant challenges. Most Americans use smartphones in addition to the Internet. Native apps optimize the smart phone experience and make use of some of the unique capabilities of smart phones. While the apps are smooth and look simple, they are expensive and complex to develop. If developed for Android devices, iOS devices, and as a Web page, the cost can triple. Then there are maintenance considerations. Once an app is developed, there are costs for web hosting, keeping it active on the app stores, fixing bugs, and adding features. While most companies

are free to use the full suite of revenue generation tools (in-app purchases, charging for the app itself, ect.) to recoup these costs, Universities may prohibit generating revenue in those ways. While apps are an exciting way for Extension to connect with clientele, development and maintenance can be prohibitively expensive. In this presentation, I'll discuss lessons learned when I created the Grow&Tell app (for iOS, Android, and as a website) as well as what I see as the pros and cons of developing a mobile app as an extension agent. The Grow&Tell app is being used all over the U.S. and even internationally and has been downloaded by almost 4,000 users.

BACKYARD AGRICULTURE LIVE - EXTENDING THE CLASSROOM/EXPANDING THE AUDIENCE

Presenters: Williams, S., Extension Educator, University of Idaho, Salmon, ID 83467
Hoffman, K., Extension Educator, University of Idaho, Salmon, ID 83467

The Salmon Local Foods education committee, coordinated by UI Extension Educator Shannon Williams recognized a need for horticulture classes for the citizens of Lemhi County. A Master Gardener course is offered every other year, so they focused on the "off" years for educational programming. Backyard Agriculture workshops were offered February through September. Attendance February through April was 10 to 35 people. May through September, during peak gardening season, attendance was under 8 and some classes were canceled. The committee felt strongly about hosting classes during the growing seasons and teaching from gardens, so people could see and experience new things, but participants schedules did not allow for them to attend.

The committee began utilizing Facebook Live video streaming option to host and record workshops. Katie Hoffman, committee member and UI Extension Educator, had utilized this platform successfully to reach busy families with educational materials about healthy eating.

The videos were recorded during a live broadcast on the University of Idaho Extension Lemhi County Facebook page and viewers could watch live. There are 479 followers of the UI Lemhi County Extension Facebook Page. The video was then saved on the page, so followers could view it at a later time. Comments and questions could be posted under the videos both during the live broadcast and at a later date and were responded to by UI Extension staff.

Backyard Agriculture Live expanded the attendance from face-to-face workshops to a high attendance of 35 to an average view of 923. It also extended the classroom beyond a single indoor location with PowerPoint presentations to 11 different on-site locations without participants having to travel. Backyard Agriculture Live participants can return to the video to review the information if needed. The videos created have also been utilized in other workshop presentations.

IMPROVING COMMUNICATION WITH STAKEHOLDERS THROUGH E-NEWSLETTERS

Presenter: Lindberg, H. M., Greenhouse Extension Educator, Michigan State University Extension, West Olive, MI 49460

In an increasingly online world, e-newsletters can be a successful mode of quick communication with your stakeholders. Learn how you can use email management software (MailChimp or Constant Contact) to market events, store lists of attendees, remind stakeholders of events, and provide up-to-date news. Also, learn what type of reports are available to evaluate your open- and click-rates.

SHEEP AND MEAT GOAT HOME STUDY COURSE

Presenters: Barkley, M., Extension Educator, Penn State University, Bedford, PA 15522
Strait, G, Extension Educator, Penn State University, McConnellsburg, PA 17233

Sheep and goat production courses were developed for young, beginning and small farm producers to gain a better understanding of the basics of sheep and goat production. Sheep and Meat Goat Home Study Courses allow producers the option to study sheep and meat goat production at home in order to accommodate busy schedules. Many producers may not be able to travel to face-to-face meetings not held in their area of the state. The home study courses allow them to study sheep and goat production at their leisure. These courses cover lessons in basic production practices, reproduction, nutrition, health, marketing and financial management. Each lesson includes a worksheet that allows producers to analyze their own operation, or future operation. The instructors provide comments and recommendations to improve their operation or allow them to be successful with a new operation. A post evaluation summary (N=70) for the past three years indicated that 90% of participants learned something new, 71% learned a moderate to considerable amount, and 79% planned to use the information to make changes to their operation's management practices. Follow up evaluations (2016-2018) conducted at least six months after the programs indicated that 48% of the producers decreased feed costs an average of $717 and 14% of producers improved lambing or kidding survival which allowed them to increase income by an average of $1,668 per year.

LEARNING HOW AN EXTENSION FACULTY MEMBER FOUND AN OPPORTUNITY TO SERVE AS AN ADVISOR FOR A UNIVERSITY STUDENT ORGANIZATION WITH AN INTERNATIONAL AGRICULTURAL MISSION

Presenter: Myers, R. D., Principal Agent, Agriculture, University Of Maryland Extension, Gambrills, MD 21054
Myers*, R. D.1

In September 2017, an extension faculty member was invited by University of Maryland students in the College of Agriculture and Natural Resources to serve as the faculty advisor for the formation of UMD ROOTS Africa. ROOTS is made up of undergraduate students from varying disciplines, that strive to combat hunger and poverty in Africa by promoting innovative and sustainable agricultural practices working in partnership with local communities, farmer organizations, and colleges. ROOTS became a sanctioned University of Maryland student organization in November 2017, and established a partnership with the Liberian International Christian College (LICC) in Ganta, Liberia. The goal for this collaboration was to form an intercultural partnership that encouraged identifying and developing solutions to agricultural challenges faced by farmers in Liberia. Over the course of the Fall 2017 semester, the students and faculty advisors from both UMD and LICC met weekly via video-conferencing in Google Hangouts and WebEx. The ROOTS student team determined to travel to Liberia raised over $20,000 in less than two months, covering all expenses. During Spring Break 2018, six students, the Extension faculty advisor and the AGNR photographer traveled to Ganta, Liberia. While in Ganta, the UMD and LICC students conducted three farmer workshops: soil health, IPM, and business management in the villages of Gbedin, Flumpa and Kpein, with approximately 30 farmers attending at each site; at the LICC campus in Ganta, conducted one women's group session on maternal health and food safety with 40 attendees; and a full-day agriculture business development conference with 136 attendees. In 2019, UMD ROOTS Africa continues to grow and has spawned the creation of a new college course AREC 360 Global Agriculture: Developing Extension Education & Agriculture Technologies in Africa. The highlights of the UMD ROOTS Africa project Liberia are available online at: https://extension.umd.edu/sites/extension.umd.edu/files/_docs/ROOTS%20Liberia%20Report%202018%20Final.pdf

ENTERTAINING, BOLD DIGITAL EXPERIENCES: INSPIRING HUMAN TO HUMAN LEARNING

Presenters: Leeds, R., County Director, Anr Educator, The Ohio State University Extension, Delaware, OH 43015
Smith, J., Anr Educator, The Ohio State University Extension, Delaware, OH 43015
Johnston, K, Anr Educator, Ohio State University Extension, Delaware, OH 43015
Leggett, R., Program Assistant, Ohio State University Extension, Delaware, OH 43015
Custer, Sam, Anr Educator, Ohio State University Extension, Greenville, OH 45331

On-farm research offers the potential for Extension to address localized issues of concern to multiple stakeholders. In order to have practical impact, research findings must be available in formats that appeal to the different audiences that play a role in solving these issues. To have practical application to a diversity of stakeholders with differing needs, interests, and learning styles, it may be more effective to present information in multiple formats, and through a variety of presenters. The video format offers farmer audiences to hear from their peers as well as Extension professionals. The videos created have helped program participants learn in an unconventional method. Participants are more likely to gain information through videos than through reading fact sheets alone.

The purpose of creating short and engaging on farm research videos is to develop material around an experience that is entertaining and engaging while being professional and academically acceptable. The material demonstrates that OSU Extension is committed to the land grant mission, working with Ohioans to solve the problems keeping them from reaching their personal and community goals.

The videos we have created uses on-farm research as a foundation to build relationships, and inspire human to human learning. By creating on-farm research videos we are able to show Extension's ability to connect with Ohioans to solve real world problems. We strive to highlight engaged, approachable and accessible Extension professionals. We work to develop research based educational material that immerses the learner in a bold, exciting and entertaining learning experience. By making videos we are able to encourage farmers to tell their story.

The research based videos have been used in Educational meetings throughout Ohio. With over 500 farmers surveyed 32.86% of respondents reported learning best using videos. 2.86% of respondents reported learning best using fact sheets. 64.29% of respondents reported learning best using both. 40% of respondents report they are more likely to partner with OSU Extension to conduct research as a result of watching video.

SOCIAL MEDIA TO WORK FOR AG AGENTS: A WASTE OF TIME OR A WORTHY RESOURCE INVESTMENT?

Presenter: Siegle, L., Extension Agent, Virginia Cooperative Extension, Amelia, VA 23002

People of all ages rely increasingly upon social media as a source of information and news, creating novel opportunities

for agents to engage with the public online for the purposes of disseminating educational information, creating additional Extension users, or increasing the reach of event and program details. While many agents or regions maintain at least a basic social media presence—typically a Facebook page—perception often remains that social media may be a waste of agent time, or at best, simply an additional means for disseminating event information that can be moderately successful for certain programs or certain audiences. With a particular focus on the use of Facebook in agricultural Extension work, this presentation will explore the questions, "Can social media generate a return to justify my use of Extension time and resources?" and, "How can I use social media to its fullest potential to meet my objectives in my work as an ag agent?" Using lessons the author learned from personal experiences, lessons derived from neighboring agents conducting social media outreach, and lessons learned from case studies of social media efforts conducted by peers in other facets of the agriculture industry, the author will explore opportunities for using social media to achieve outcomes that justify expending valuable agent time and resources.

CITIZEN SCIENCE - IMPROVING CRITICAL THINKING SKILLS

Presenter: Chalker-Scott, L., Extension Specialist And Associate Professor, Washington State University, Puyallup, WA 98371

The increase in unfiltered information available on the web has created a need for university Extension programs to assist its state citizens in developing critical evaluation skills. This is particularly important for individuals involved in garden-, nursery-, and landscape-related professions or avocations, where anecdotal information and aggressive product marketing can adversely influence decision making. This presentation will introduce participants to a free, peer-reviewed WSU Extension Manual (http://cru.cahe.wsu.edu/CEPublications/EM100E/EM100E.pdf) on scientific literacy that could be used for Master Gardener training, professional workshops, and other public education venues.

FACEBOOK PAGES FOR EXTENSION: COMBINING WEBSITE AND SOCIAL MEDIA PLATFORMS FOR THE FARMING COMMUNITY

Presenter: Bosak, E., Field & Forage Crops Educator, Penn State Extension, Dauphin, PA 17018

Access to broadband internet remains a significant challenge for rural communities in the United States. In a study by Penn State Professor Sascha Meinrath, after more than three million speed tests, less than ten percent of Pennsylvania met the FCC's minimum broadband upload and download speeds. According to the 2018 Pew Research Center Report on Social Media, Facebook remains the most frequently accessed in rural areas. Facebook's mobile interface allows users with a smartphone and a cellular connection easily access their site compared to more traditional websites that may not have an optimized mobile compatible user interface. Facebook pages fuse features of a traditional web page and a social media platform into a single utility making it ideal for transferring information, communicating via their messenger platform, and promoting educational programs. This presentation will focus on how to build an effective Facebook page from the ground up and utilize other web-based tools to manage the page for long-term success.

ENHANCING EXTENSION PROGRAMMING WITH TECHNOLOGY: AN INTRODUCTION TO USEFUL TOOLS

Presenter: Halbritter, A., Agriculture & Natural Resources Agent, UF/IFAS Baker County Extension, Macclenny, FL 32063

Extension programming is often feared to be on the verge of extinction. With the onset of the internet, information at your fingertips, competition from other organizations, and sometimes funding issues, how do extension services stay relevant? The answer; Technology. Free to use and paid programs can be utilized to enhance program marketing, delivery, and evaluation techniques in unique and interesting ways. Our world is becoming increasingly visual, spending, on average, less than 3 seconds on a piece of material. How do we grab their attention in such a short amount of time? Using programs to create high-quality flyers, power points, social media posts, and more, can increase Extension's relevance in a world that is drawn to eye-catching, flashy materials. Emphasizing graphic design also helps create more effective layouts, increases interaction with material, and can result in higher program attendance. For example, after increasing focus on graphic design and consistent social media posts, the followers of a Facebook page I manage has increased by 63% in a one year period (228 followers to 360 followers). As a result, more people are seeing program announcements, interacting with page content, and seeing research-based information fill their social media. By outlining free-to-use and some paid programs available to Extension Agents, I will be able to show how to best implement these services into other program's marketing, delivery, and evaluation to increase the effectiveness of these methods. Every agent, whether early-career or nearing retirement, can have the ability to create effective program materials which will increase Extension's relevance as a whole, and allow Extension to compete with other organizations.

USING LIVE SOCIAL MEDIA VIDEOS TO INCREASE THE REACH OF YOUR EXTENSION PROGRAMMING

Presenters: Waters, K., Agriculture and Natural Resources Agent, University of Florida/IFAS Extension Holmes County, Bonifay, FL 32425
J. Cant, Agriculture and Natural Resources Agent, University of Florida/IFAS Extension Duval Co, Jacksonville, FL 32254

Developing an effective communications channel to reach clientele is critical for an agent's success. Social Media has introduced tools which have allowed agents to increase their reach through live video interaction. Facebook LIVE videos have six times as many interactions as traditional videos and have 3 times the watch length. This gives agents a powerful and unique opportunity to reach producers through Facebook LIVE videos. Objectives: The objectives of using Facebook LIVE to educate producers were 1) to use live social media videos as a platform to educate producers on current/relevant topics, 2) use videos as a nontraditional platform to reach producers who would not typically be exposed to Extension programming, and 3) develop a model for agents to use that is effective at increasing the reach of their programming in an efficient manner. Method: Ten Facebook LIVE videos, on various topics, were recorded live, in the field while the agents were performing field visits. These videos were recorded on an established Facebook page and then shared to groups with corresponding interests to increase reach. Results: These videos resulted in a total reach of 103,380 with 41,707 clients viewing the videos. These videos were shared 181 times and resulted in 10,624 engagements. Conclusion: Facebook LIVE is an effective tool that allows agents to increase their reach to clientele in an effective way and should be implemented into all social media programming to remain as a relevant platform in today's society.

STRATEGIES FOR TEACHING AN ENGAGING CLASS

Presenter: Duggan, S. J., Livestock Agent, Oregon State University, Prineville, OR 97754

Have you taught a class and felt like the audience was not engaged? Would you like to improve your teaching skills and better engage clients in your classes? This class is for Extension professionals who want specific tools and strategies to deliver an engaging lesson. Upon completion of this workshop, participants will leave with specific examples of how to prepare for and teach an interactive and engaging class.

This class is for Extension faculty who want techniques for improving their teaching skills and competency. Providing information to clients in a format they can understand is critical for educational programming and reaching Extension's target audience. With increased competition from the internet, it is imperative for Extension faculty to deliver quality educational programming that attracts and retains clientele.

The targeted outcomes for participants will include how to prepare an interactive lesson plan, techniques and ideas for engaging learners, and presentation tips for speaking and teaching to a diverse audience. Instructional techniques include demonstrating how to lead a successful group activity, teaching and practicing strategies for incorporating active learning into power point lessons and providing real world examples of how to engage and keep students engaged in the class.

This class presents information and teaching skills in a condensed, easy to implement set of strategies that Extension field faculty and others can take home and utilize in their classes. Anyone involved in Extension who wishes to improve their teaching and presentation skills can benefit from this class.

USING THE IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE FOR EXTENSION PROGRAMMING

Presenters: Nygren, A.J.H., Extension Educator, University Of Nebraska, Schuyler, NE 68661
Taylor, M., Extension Educator, University of Nebraska, Columbus, NE 68601
Mueller, N, Extension Educator, University of Nebraska, Fremont, NE 68025

Do you struggle finding ways to quickly test learners or to make evaluation interesting? We all know that proper evaluation of learners knowledge gain is a critical component of extension programming. However, it can also be time consuming and frustrating for both the learners and extension personnel. The Immediate Feedback Assessment Technique, also known as IF-AT, offers a novel and interesting way to engage learners and provide better feedback to the instructor. This system, which consists of scratch cards with one correct answer, provides immediate feedback to the learner on what the correct answer is to a question. At the same time, the system can be used to evaluate learner's actual knowledge of a subject and evaluate their knowledge both before and after a program. Participants will learn more about the IF-AT system, examples of how it can be used during extension programming, and some helpful tips when using the system.

IMPROVING ACCESSIBILITY THROUGH WEBINAR TECHNOLOGY

Presenters: Isleib, J., Field Crops Educator, Michigan State University Extension, Munising, MI 49862
Anderson, E., Field Crops Educator, Michigan State University Extension, Centreville, MI 49032
Jean, M., Field Crops Educator, Michigan State University Extension, Escanaba, MI 49824

Holding in-person meetings is a fundamental approach to Extension education. However, utilizing webinar technology can improve your reach and accessibility. Jim Isleib, Michigan State University Extension Field Crops Team member, recognized that educational needs of novice farmers as an audience in his area were not being adequately addressed. Working with a group of MSU Extension colleagues, he initiated the ongoing Beginning Farmer Webinar Series in 2012. The program has grown into a state-wide effort, involving a broad group of Extension professionals, farmers and others. Since 2012, the series delivered 100 webinars in 14 categories with 1,628 registered participants and 11,553 webinar views. Annual evaluations from 2015-2018 indicated that the program contributed to the start-up of 87 new businesses and creation of 44 new jobs.

The Field Crops Team also recognized the limitations on in-person meetings imposed by travel distance and schedule conflicts. A committee was formed to develop an annual Field Crop Webinar Series on relevant topics beginning in 2013 targeting underserved farmers across Michigan. The series consists of 6 or 7 weekly webinars in late winter featuring MSU Extension specialists and educators. A total of 39 webinars have been delivered by 20 presenters. Evaluation results from 2016-2018 indicated 304 total program registrations, 1,266 webinar views, an average of 29,000 acres impacted annually, and an average of $195,823 in added revenue or saved annually. Lastly, in the spring of 2018, a speed meeting called "Virtual Breakfast" was developed in response to a statewide needs assessment to provide farmers and agribusiness with critical, in-season information. The program was available both as a live webinar and a recorded podcast, convenient for the busy growing season. Each session included a Field Crops Team specialist or educator addressing a timely issue, a weather update from our state climatologist, and time for discussion. Weekly online attendance was low in 2018 but archived recordings were viewed over 300 times. Promotional efforts are underway to increase awareness of the program. Over 250 names and email addresses of those requesting direct communication were collected over the winter, and further promotional materials will be created as the program develops.

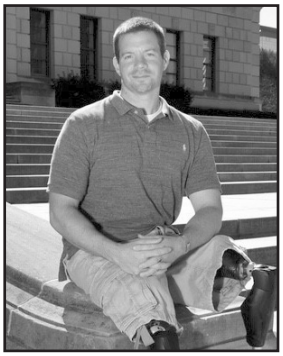
UTILIZING GOOGLE DRIVE TO FACILITATE INCREASED AGENT COMMUNICATION

Presenter: Fimon, L. T., Extension Agent, Virginia Cooperative Extension, Lunenburg, VA 23952

For years, Virginia Cooperative Extension agents have struggled to share information quickly and easily and to not re-invent the wheel by developing the same resources and programs in individual counties across the state. In order to improve the communication of ideas and resources, agriculture and natural resources extension agents in the Central District worked together to develop a series of Google Drive folders through which they share presentations with the group, upload contacts logs from programs, offer articles for other agents newsletters, provide flyers and brief descriptions for all of their upcoming programs, and more! Though adaptation was limited to a few younger agents at first, now much of the district participates in regularly updating the Running Calendar of Events and uploading flyers. The sharing of program information alone has allowed agents to compile a district-wide agriculture newsletter monthly for clients. This too is stored in Drive and then the link shared on social media and in emails while agents still snail mail paper copies to less tech-saavy producers. Join Central District in exploring the many uses of Google Drive for the ag agent!

2019 AM/PIC SPEAKER PROFILES

Marine Corporal Joshua Bleill



Marine Corporal Joshua Bleill, graduated from high school in Greenfield, Indiana, and attended Purdue University. He joined the Marine Corps Reserves in 2004 and was activated for a tour of duty in Iraq in 2006. He was conducting combat patrols in Fallujah on October 15 of that year when his vehicle was struck by an improvised explosive device. He suffered multiple injuries, including the loss of both of his legs. Bleill moved home to Indiana in August 2008 and married his wife, Nikki, in 2009. He resides in Anderson, IN with Nikki and their two children. His remarks will cover patriotism, service, and the role of family in everyday life.

Damian Mason

Damian Mason is a Businessman, Agriculturist, Speaker, Podcaster, Writer, and Consultant.

Damian speaks on the two subjects he knows best: Business and Agriculture. Since 1994, he has spoken to nearly 2,000 audiences in all 50 states, 5 provinces, and 7 foreign countries. Damian delivers crisp, current, Ag commentary packed with humor. In addition to speaking at Ag meetings, Damian produces and hosts "The Business of Agriculture" podcast. He's also extremely active on social media discussing Agriculture and occasionally fighting with Ag's online opponents.

Damian was raised on a diary farm, owns and manages 300 acres of farm and timber land , and has a degree in Agricultural Economics from Purdue University. He also studied comedy writing and improvisation at The Second City - Chicago. Damian is a member of the Screen Actors Guild and the National Speakers Association. He is one of less than 1000 public speakers in the world to hold the Certified Speaking Professional designation.

When he's not traveling for work, Damian can be found on his Indiana farm with his wife Lori, or escaping from winter at their Arizona residence.

Scott & Ali Ferry

2014 National OYF Winners (Michigan)

We are the Ferrys: Scott, Ali, and the most fantastic crew working alongside us! Our family farm started in 1906 and we are the fourth generation owner/operators. We are crop farmers, dairy farmers, and beef farmers. We think we have the best job in the world. Our favorite part is that we get to put a seed in the ground each spring, nurse it into high-quality feed for our animals, then watch them use it to produce the foods and drinks that we get to put on our family's table and the tables of families all around our community. That's the most rewarding!

OUR MISSION STATEMENT

To produce a high quality product while being stewards of the environment and providing a high quality of life for our employees and families.

ANNUAL MEETING AND
PROFESSIONAL IMPROVEMENT FUTURE CONFERENCE DATES

2020

Virginia Beach, Virginia....July 19-24

2021

Philadelphia, Pennsylvania.....July 4-8

2022

West Palm Beach, Florida.....July 17-22

2023

Des Moines, Iowa.....August 12-17

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