2019 Lower River Valley IPM Results

DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System

Conducted by:

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Acknowledgements:

We would all like to express our sincere gratitude to those who offered their land, resources, and time to help conduct demonstrations. Thank you for supporting Extension educational programs.

Cooperating Producers for Demonstrations

- Austin Thrash
- Turnrow Farms

Cooperating Producers for Moth Trapping

- David Culberson
- Schaefers Brothers
- 3 Brothers Farms
- Hart and Sons Farms
- Randy Pettingill
- Turnrow Farms

Cooperating Producers for Pest Survey Fields

- Austin Thrash
- Schaefers Brothers
- Jerry Pearson
- David Culberson
- Turnrow Farms
- Hart and Sons Farms
- Jim Kellar
- Stobaugh Brothers Farms
- 3 Brothers Farms

Demonstrations in 2019

1 weed demonstration
0 plant disease demonstrations
3 insect demonstrations

Lower River Valley Forage IPM Demonstrations and Projects

- **Enlist Herbicide in Soybeans**
    - The newest technology in soybeans weed control is the Enlist Herbicide Trait. The trait consists of a tolerance to 2,4-D choline. Since this technology is new a demonstration was established on Austin Thrash to show producers some of the control Enlist offers.

- **Heligen on Corn Earworms in Soybeans**
    - Heligen is a new bio insecticide that offers long residual control on corn earworms in soybeans at a low cost to producers. A demonstration was established on Austin Thrash in Faulkner County and Turnrow Farms in Perry County to show producers how long Heligen will last in a soybean field.

- **Corn Earworm Moth Trapping**
    - Two Corn Earworm Moth traps were established in each Faulkner and Conway Counties and one in Perry County. The purpose of the traps were to monitor Corn Earworm moth numbers during the growing year to help producers predict worm outbreaks in soybeans.

- **Southwestern Corn Borer Moth Trapping**
    - Two Southwestern Corn Borer Moth Traps were established in Conway County to monitor Southwestern Corn Borer numbers in the county. Two were going to be established in Faulkner County but after the flood there wasn't any corn in Faulkner County.

- **Nematode Survey**
    - 18 fields were surveyed in the Lower River Valley for root-knot nematodes. Fields sampled were mostly sandy textured fields following soybeans. Out of the 18 fields, 4 had high enough levels of nematodes to cause yield suppression, 2 fields had low populations that needed to be monitored. This information was shared with the producers.

- **Rice Stinkbug Demonstration**
    - A demonstration was set up in Faulkner County to compare the use of Tenchu versus Lambda-Cy on rice stinkbug. The fields were evaluated after treatment and the Tenchu field had controlled stink bugs, but in the Lambda-Cy field, there wasn't any control and nymphs were still present in the field. It was determined there was a spraying error so no further data was collected off the field.

- **Pest Survey**
  - Pest survey fields were set up to monitor weeds, disease, and insects throughout the year.
  - Corn and rice survey fields that were set up early in all counties were destroyed by the flood.
  - 12 soybean fields, 4 corn fields and 4 rice fields were used as survey fields throughout the year. Fields were scouted weekly and reports were sent to the IPM coordinator and were used in weekly updates for producers.
  - Pest Survey fields were used to monitor Redbanded Stinkbug populations. No Redbanded stinkbugs were found in Perry, Conway or Faulkner County.
  - Pest Survey fields were used to monitor frogeye in Perry County. Frogeye was not present this year.

Enlist Herbicide in Soybeans

Cooperator: Austin Thrash
GPS: 34.9960 -92.5624
Treated: July 13, 2019, follow up applications August 2, 2019
Rated: August 2, 2019, follow up applications August 22, 2019

Treatment	Rate	Cost per acre	Percent Control 20 Days after Treatment						
			Pigweed	Morning-glory	Cocklebur	Vines	Hophornbeam Cooperleaf	Grass	Water-hemp
Enlist Duo	3.5 pts	$11.38	90	80	100	70	80	100	100
Enlist One	2 pts	$9.12	90	80	100	70	80	0	100
Enlist One + Roundup	2 pts 23 oz	$14.52	90	80	100	70	80	100	100
Enlist One + Liberty	2 pts 29 oz	$22.46	100	90	100	80	90	20	100
Enlist Duo + Mocassin	3.5 pts 1 pt	$17.76	90	80	100	70	80	100	100

Treatment	Rate	Cost per acre	Percent Control 20 Days after Follow By Treatment						
			Pigweed	Morning-glory	Cocklebur	Vines	Hophornbeam Cooperleaf	Grass	Water-hemp
Enlist Duo FB Enlist Duo	3.5 pts 3.5 pts	$22.76	100	90	100	80	90	100	100
Enlist One FB Enlist One	2 pts 2 pts	$18.24	100	90	100	80	90	0	100
Enlist Duo FB Enlist One	3.5 pts 2 pts	$20.50	100	90	100	80	90	100	100
Enlist Duo FB Liberty	3.5 pts 29 oz	$24.72	100	100	100	100	100	100	100

Heligen on Corn Earworms in Soybeans

Cooperator: Austin Thrash
GPS: 34.9972 -92.5774
Treated: July 13, 2019
Rated: Weekly throughout the summer

Summary: Heligen was applied at 1.6 oz per acre on July 13 by ground. Heligen was applied with the Liberty application. At the time of application worm levels were low and the worms were small (approx. ¼ inches). Field was scouted weekly and worms were noticed in the field with the infection. Levels never did get above threshold for another treatment during the growing season.

Sweat from infected worm

Infected dead worms found in the field.

Heligen on Corn Earworms in Soybeans

Coordinators: Dr. Gus Lorenz, Dr. Ben Thrash
Cooperator: Turnrow Farms Inc.
Location: Bigelow, AR **GPS:** 34.98651, -92.65095

Application Date: July 26th, 2019

The bio insecticide Heligen offers a long, cheap residual for controlling corn earworms in soybeans. A demonstration was established in Perry County to determine the efficacy of this product. A soybean field on Turnrow Farms reached treatment thresholds of small worms (less than a ¼") making it conducive for a Heligen application. After application, the field was scouted weekly for re- infestation. Worms infected with the Heligen virus were found for up to three weeks. Worm levels never reached treatment threshold the rest of the growing season. The Heligen was ground applied at 1.6 oz per acre at a cost of $5.00/A. The producer also applied round-up later in the field for weed control.

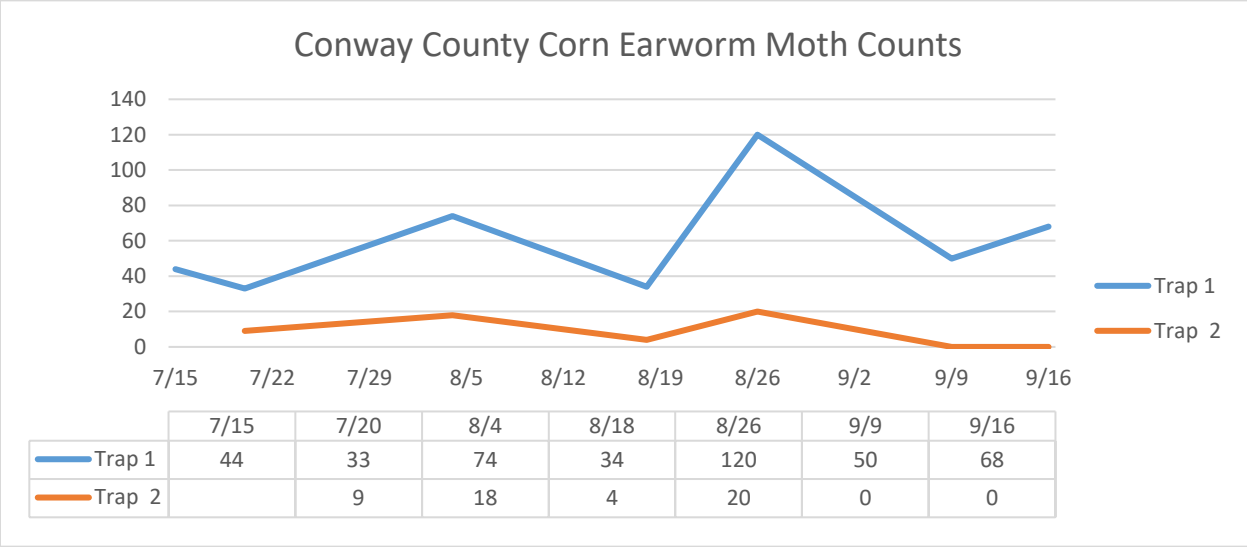
Corn Earworms before heligen application.

Corn Earworm infected with the heligen virus-

Conway County Corn Earworm Moth Trapping

Cooperator: Randy Pettingill, Hart and Sons
GPS: 35.1186 -92.6795 & 35.1349 -92.5582
Established: July 15, 2019

Summary: Two earworm moth traps were established in the Sand Town Bottoms and Menifee areas of Conway County to monitor moth levels. Monitoring moth counts throughout the growing season allows producers to know when to heighten scouting for corn earworms in soybeans if large flights of moths are observed. Traps were checked weekly and the numbers were provided to the IPM coordinator, producers and surrounding County Agents.

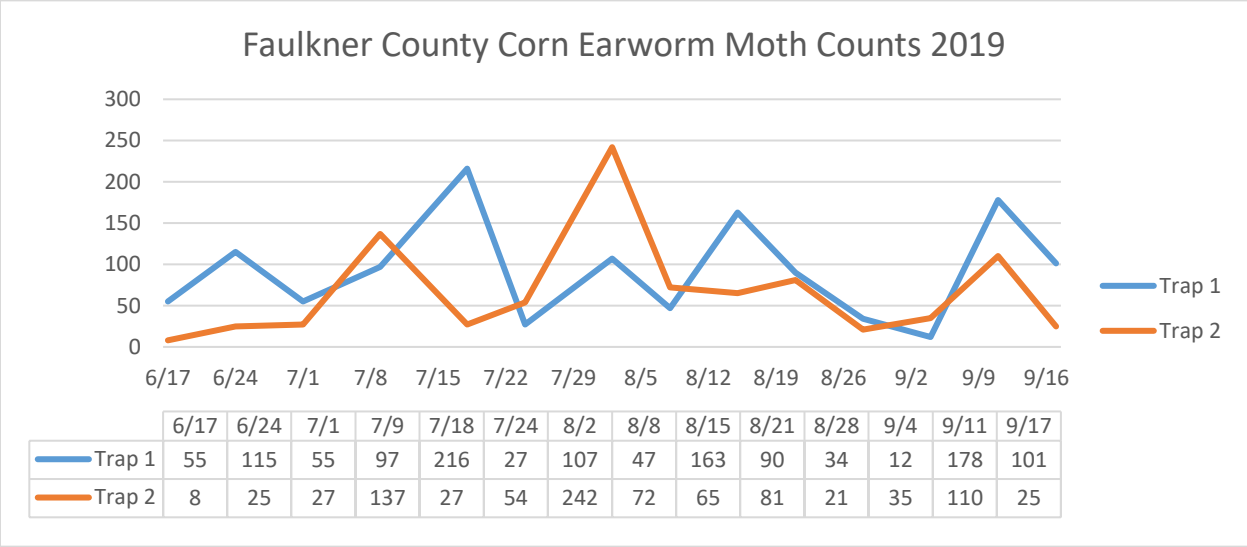


	7/15	7/20	8/4	8/18	8/26	9/9	9/16
Trap 1	44	33	74	34	120	50	68
Trap 2		9	18	4	20	0	0

Faulkner County Corn Earworm Moth Trapping

Cooperator: Schaefers Brothers, David Culberson
GPS: 34.9898 -92.5762 & 35.0175 -92.5490
Established: June 17, 2019

Summary: Two earworm moth traps were established in the Lollie Bottoms area of Faulkner County to monitor moth levels. Monitoring moth counts throughout the growing season allows producers to know when to heighten scouting for corn earworms in soybeans if large flights of moths are observed. Traps were checked weekly and the numbers were provided to producers through weekly agriculture updates, the IPM Coordinator and surrounding County Agents.

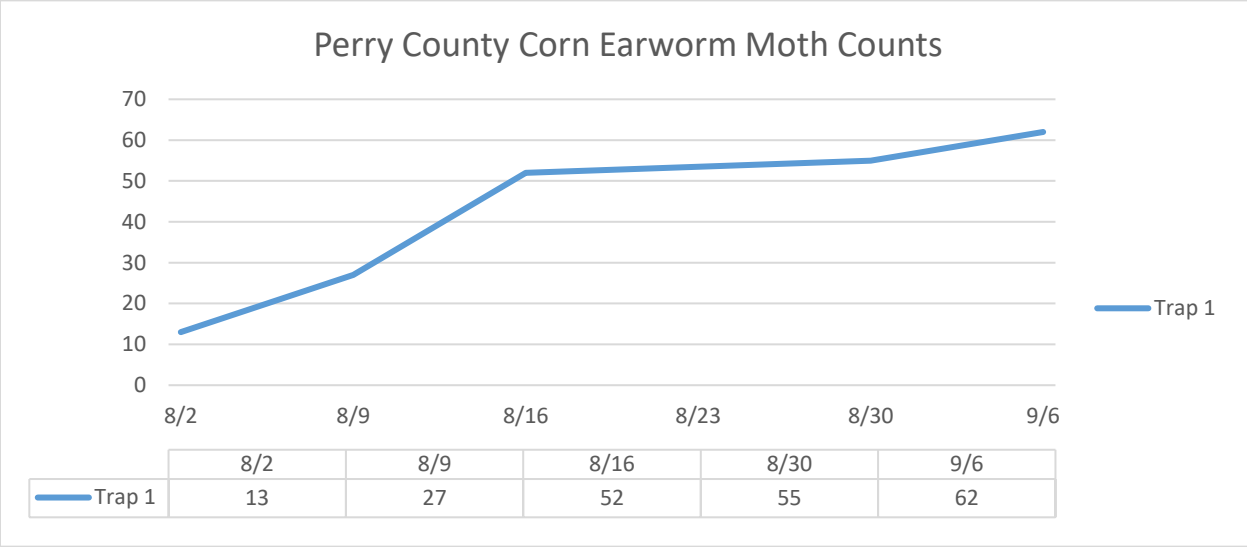


	6/17	6/24	7/1	7/9	7/18	7/24	8/2	8/8	8/15	8/21	8/28	9/4	9/11	9/17
Trap 1	55	115	55	97	216	27	107	47	163	90	34	12	178	101
Trap 2	8	25	27	137	27	54	242	72	65	81	21	35	110	25

Perry County Corn Earworm Moth Trapping

Cooperator: Turnrow Farms
GPS: 34.9897 -92.6561
Established: August 2, 2019

Summary: One earworm moth traps was established in the Bigelow area of Perry County to monitor moth levels. Monitoring moth counts throughout the growing season allows producers to know when to heighten scouting for corn earworms in soybeans if large flights of moths are observed. Traps were checked weekly and the numbers were provided to producers, the IPM Coordinator and surrounding County Agents.

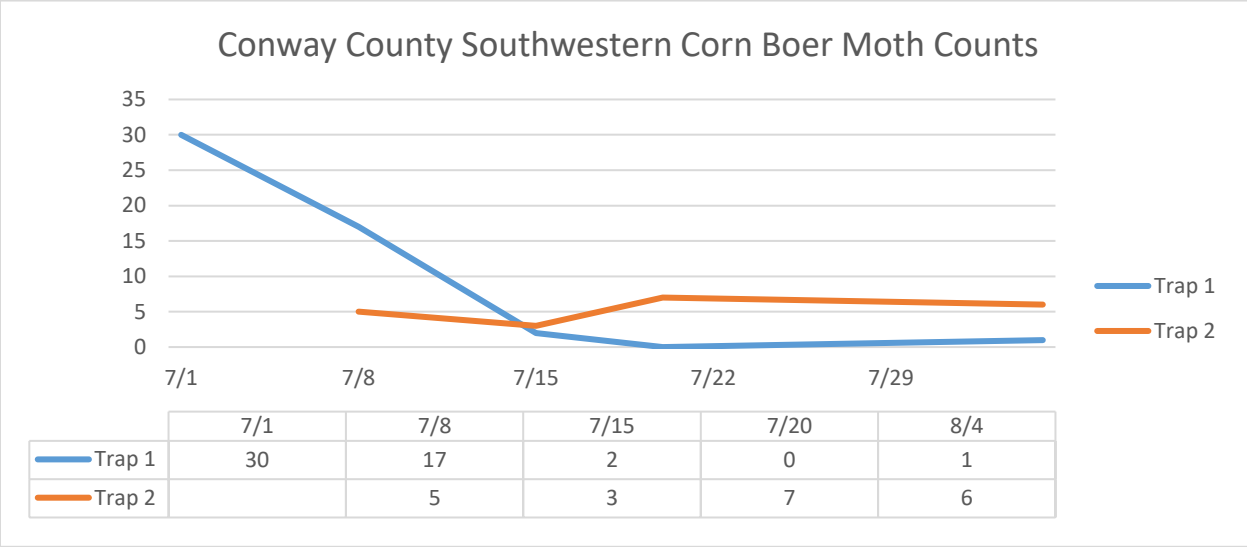


	8/2	8/9	8/16	8/30	9/6
Trap 1	13	27	52	55	62

Conway County Southwestern Corn Borer Moth Trapping

Cooperator: 3 Brothers Farms, Hart and Sons
GPS: 35.1216 -92.6426 & 35.2796 -92.4846
Established: July 1, 2019

Summary: Two Southwestern Corn Borer moth traps were established in the Plumerville Bottoms and Mallet Town bottoms areas of Conway County to monitor moth levels. Monitoring moth counts throughout the growing season allows producers to know when to apply insecticides to corn for southwestern corn borer in non-Bt hybrids. Traps were checked weekly and the numbers were provided to the IPM coordinator, producers and surrounding County Agents.



	7/1	7/8	7/15	7/20	8/4
Trap 1	30	17	2	0	1
Trap 2		5	3	7	6

Row Crop IPM Meetings

- **River Valley Row Crop Production Meeting**
    - The River Valley Row Crop Production meeting was held in Morrilton on February 21, 2020. 57 participants were on hand to be educated on the latest soybean and corn IPM information for the upcoming crop year. A River Valley Row Crop Demonstration Book was handed out to all participants which had the IPM demonstrations results in it.

- **River Valley Rice Meeting**
    - A River Valley Rice Meeting was held on January 28, 2020 and 37 participants learned more about rice IPM including insect, disease, and weed issues that were noticed in the pest survey fields in 2019.

- **River Valley Row Crop Tour**
    - The Row Crop Tour was held on August 2, 2020 in Lollie Bottoms and 40 producers and industry leaders toured the Enlist Herbicide and Heligen demonstrations. Producers got to see firsthand the new technologies that were available in soybeans. 84% of participants said they were provided considerable new information. 53% and 58% of the participants respectively said they would make changes and use Enlist and Heligen in their soybean programs.

- **Farm Bureau**
    - All agents gave updates of IPM projects to their respected Farm Bureau Boards throughout the growing season.

- **Quorum Court**
    - Zach Gardner gave an update to the Perry County Quorum Court on the demonstrations and pest survey fields.
    - Kevin Lawson gave an update to the Faulkner County Quorum Court on demonstrations going on in the county.

Additional Outreach

- **Social Media**
    - Updates about all of the demonstrations were placed on social media. Zach Gardner, Kevin Lawson, and Kevin Van Pelt all have Facebook Accounts. Kevin Lawson also placed information on Twitter
    - 20,236 indirect contacts and 2010 direct contacts were reached on all of the social media platforms over the year.

- **Demonstration Books**
    - Faulkner and Perry County established Demonstration Summary Books that were used to promote the program. These books were handed out to Quorum Court (26 contacts) and County Farm Bureaus (40 contacts). They are also placed on the website. All three counties contributed to a River Valley Row Crop Demonstration Summary Book that was handed out at the Row Crop Production Meeting (75 books published).

- **Impact Statements**
    - Faulkner County used the Enlist Herbicide Demonstration as an Impact Statement that is used by Extension to promote our programs to clientele and legislators.

- **County Agents Association**
    - Kevin Lawson created a poster from the Enlist Herbicide Demonstration that has been submitted for the National County Agent Association Meeting in July.

- **Weekly Agriculture Updates**
    - Faulkner County sent out Weekly Agriculture Updates every Friday. 21 updates went out with useful IPM information like corn earworm moth trap counts, reports from pest survey fields, insect, weed and disease information in 2019. The updates are emailed out every week to 215 contacts, placed on the website, placed on social media and texted out to 88 contacts.