

Small Plot Peanut Fungicide Efficacy Trials in North Florida

Wynn, K.¹, Broughton, D.², Capasso, J.³, Dufault, N.⁴, Fenneman, D.⁵, Hicks, G.⁶, Korus, K.⁷, Vann, C.⁸, Warren, M.⁹, Willis, S.¹⁰

¹Extension Agent, UF/IFAS Hamilton County Extension, Jasper, FL 32052 (NACAA)

²Extension Agent, UF/IFAS Regional Specialized Agent, Agronomic Crops, Live Oak, FL 32060 (NACAA)

³Extension Agent, UF/IFAS Columbia County Extension, Lake City, FL 32055 (NACAA)

⁴UF Associate Professor and Extension Specialist, Gainesville, FL 32611 (Not NACAA)

⁵Extension Agent, UF/IFAS Madison County Extension, Madison, FL 32340 (NACAA)

⁶Extension Agent, UF/IFAS Hamilton County Extension, Jasper, FL 32052 (NACAA)

⁷Extension Agent, UF/IFAS Alachua County Extension, Gainesville, FL 32609 (NACAA)

⁸Extension Agent, UF/IFAS Lafayette County Extension Retired, Mayo, FL 32066 (NACAA)

⁹Extension Agent, UF/IFAS Levy County Extension, Bronson, FL 32621 (NACAA)

¹⁰Extension Agent, UF/IFAS Suwannee County Extension, Live Oak, FL 32064 (NACAA)

Educational Objectives

Peanut is an important commodity crop in the Suwannee River Valley of North Florida. In 2020, 70,000 acres of peanuts were planted in counties surrounding the North Florida Research and Education Center-Suwannee Valley (NFREC-SV). Each year peanut producers are faced with the difficult task of determining the best fungicide spray program to adopt for disease management. The goal of this program was to enable peanut producers the opportunity to learn about the efficacy of the different fungicide spray programs recommended by industry leaders. For the past six years a fungicide trial at the NFREC-SV has been conducted by University of Florida, Institute of Food and Agricultural Sciences (UF/IFAS) specialists and Extension agents. Area peanut producers were encouraged to attend meetings and interact with these specialists and agents to determine an appropriate disease prevention plan to remain sustainable in the peanut industry.

Objectives:

- Annually 95% (190 of 200) of producers attending peanut production meetings in the Suwannee River Valley will increase knowledge of the efficacy of commonly used peanut fungicide programs. Knowledge gain will be measured by post meeting evaluations.
- Annually 90% (180 of 200) of producers attending peanut production meetings in the Suwannee River Valley will adopt pesticide spray programs that will reduce disease pressure. Behavior change will be measured by post season evaluations, field visits, and interviews.
- Annually 100% (9 of 9) of participating Extension agents will increase knowledge of peanut disease identification and remain current on available fungicides used in the Florida peanut production industry. Knowledge gain will be measured by evaluations and interviews.

Program Activities

UF/IFAS Plant Pathologist, Nicholas Dufault and UF/IFAS Hamilton County Extension agent, Keith Wynn collaborated with NFREC-SV staff in 2015 to incorporate replicated small plot fungicide trials at the research and education center in Live Oak, FL. This trial has evolved into a yearly research program that evaluated the efficacy of various fungicide treatments. Dr. Dufault was responsible for determining the fungicides tested, retrieving chemicals, and interpreting data collected from the trials. Local Extension agents were responsible for applying fungicide applications and taking disease ratings. The data collected from these disease ratings and yields were used to generate fact sheets, publications, and presentations that were distributed in production meetings throughout the state. This research allowed Extension agents an opportunity to provide producers with timely information about the efficacy of fungicide products and monitor diseases throughout the season. Because of these trials, producers have seen the benefit of incorporating fungicides into their management programs and have made changes to their disease management plans. Extension agents also received hands-on training with fungicide application methods and disease identification. This increased their confidence when interacting with producers and encouraged peer interaction in the field. Program impacts shared at Extension and research conferences have led to impactful collaboration among agents throughout the southeast.

Teaching Methods

This peanut program provided producers the opportunity to gain knowledge and created a venue for expertise and information exchange about peanut production. The exchange of information not only helped producers make decisions that aided their production systems, but also allowed county and state educators to enhance their efforts through collaboration.

The small plot research trial and results was discussed at production meetings throughout the state over the past six years. PowerPoint presentations, poster displays, factsheets, and field days have each been utilized to disseminate research data and educational information obtained from conducting the trials. Producers had an opportunity to receive this information from the following meetings held throughout the Suwannee River Valley area: Hamilton County Annual Peanut Production Meetings, Hamilton County Annual On-farm Trial Field Days, Tri County Annual Peanut Production Meetings, Suwannee Valley Annual Peanut Harvest Field Days, Tri-County Crop Update, Alachua/Columbia County Annual Field Corn and Peanut Meetings, Agronomic Crop Update, NFREC-SV Corn/Peanut Field Day, and the Tri-State Peanut disease tour. Participating agents have also had an opportunity to discuss the programs impact utilizing oral and poster presentations at state and national Extension conferences.

Results

Annually approximately 200 peanut producers, farm managers, allied industry, crop consultants, and stakeholders from the Suwannee River Valley have attended peanut production events throughout the area. Each year exit evaluations demonstrated that producers have increased their knowledge of peanut fungicide efficacy after attending these meetings.

2015 – 2020 Evaluation Results			
	Knowledge Gain/Likert Evaluation (Hamilton County Peanut Meetings)	Behavior Change/Likert Evaluation (Hamilton County Peanut Meetings)	Behavior Change/ Agent Interview (Suwannee River Peanut Buying Point)
I increased my knowledge of current agronomic methods used in peanut production.	96% (299 of 312)	NA	NA
I increased my knowledge in peanut disease management.	86% (268 of 312)	NA	NA
I increased my knowledge in peanut disease sampling opportunities.	90% (281 of 312)	NA	NA
I intend to apply the information learned to improve my peanut production program.	NA	78% (243 of 312)	NA
Adopted pesticide spray program (six fungicide applications).	NA	NA	100% (180 of 180)
Agents increased knowledge in peanut disease identification and current available fungicides.	Consultations/interviews determined 100% (9 of 9) of participating agents gained knowledge in peanut disease identification, fungicide efficacy, and fungicide application methods.		

Impact Statement

Peanut producers have positively responded to the peanut program offered in the Suwannee River Valley. These producers were active in the learning process and have placed a greater value on the information obtained from these trials due to the proximity of the NFREC-SV compared to previous sources of fungicide information. Disease management is the most expensive input decision made annually. Fungicides that are new often cost more than traditionally used products. Adopting one of the current industry recommended fungicide spray programs has increased annual fungicide product costs by \$60.00 per acre. Data generated from the small plot trials indicate that yields increase greater than 2,000 pounds per acre when supplementing traditional chlorothalonil applications with current fungicides. Adoption of these practices have increased yields over 2,000 pounds resulting in an additional income of \$340 per acre or \$23,800,000 in the Suwannee River Valley.

Evaluation

Each year qualitative and quantitative evaluations were used to determine the peanut programs' significance and was used to determine topics for discussion at future meetings. Adoption and implementation are evaluated through producer farm visits and follow up conversations.

Knowledge gain was assessed with traditional exit evaluations using a Likert scale. Please find some of the evaluation samples that have been used in the past in the supporting documents.