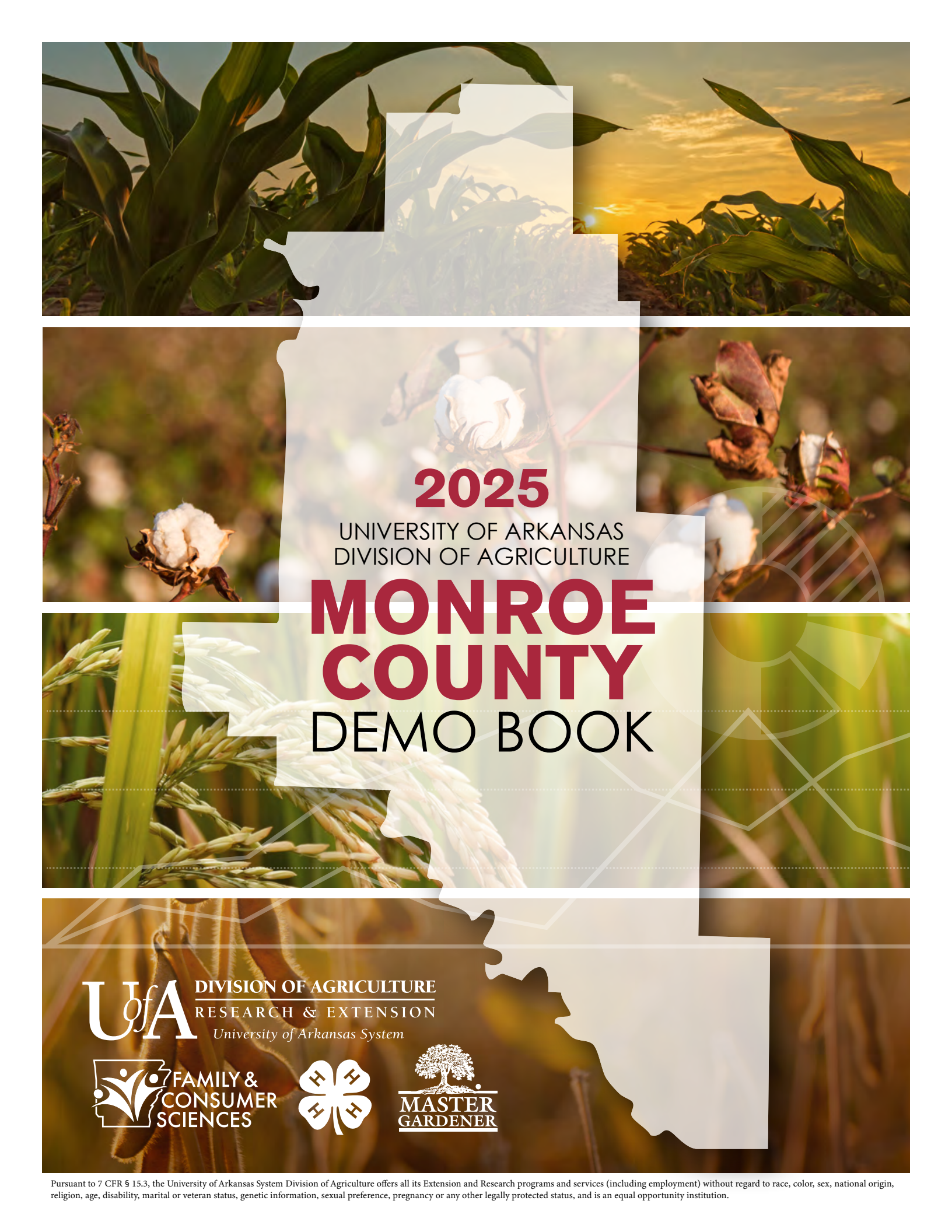




2025

UNIVERSITY OF ARKANSAS
DIVISION OF AGRICULTURE

MONROE COUNTY DEMO BOOK

UofA DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System



The mission of the Cooperative Extension Service is to strengthen agriculture, communities, and families by connecting trusted research to the adoption of best practices. Extension has four major programmatic areas, Agriculture, 4-H Youth Development, Family & Consumer Sciences, and Community, Professional, & Economic Development. . As county extension agents, we take University of Arkansas research-based recommendations combined with practical advice and strive to improve the lives of those in our communities. We work for you.

This demonstration book is for Monroe County producers and for the community. We conduct these demonstrations and research trials every year with the goal of helping and strengthening our local producers and crops. As the county agriculture agent, I work to serve our clientele. I hope you find the information in the report helpful for your operations. If you have any questions, comments, or suggestions please contact our office.

This report highlights the efforts of Monroe County Extension Agents in all four program areas for 2025.

We would like to say thank you to everyone who supports our programs by attending classes, trainings, allowing farm demonstration and so much more. Without constant support from our clientele and volunteers it would be impossible to conduct these programs. We are sincerely grateful; your support does not go unnoticed.

Sincerely,

Valerie Turner

County Extension Agent – Staff Chair
vturner@uada.edu

Dustin North

County Extension Agent – Agriculture
dnorth@uada.edu

2025 Monroe County Extension Education Outreach

- Total Educational Contacts: **18,124** Direct Contacts: **5,871**
 - Direct contacts include demonstrations, single session classes & multi-session series, meetings, trainings, and farm/landowner visits
- Total County Volunteer Hours: **450**
- Value of Volunteer Time (# of Hours X \$ 34.79): **\$15,655.50**

Special Thank You

A special thank you goes to the following individuals, without whose contributions the agriculture demonstrations outlined in this book would not have been possible.

Krysti Gerlach – Office Administrator

Julie McCauley – Cooperator

Fralana Latham – Cooperator

Jon Carroll – Producer

Curtis Nash – Producer

Kyle Fuller – Producer

Mark Hopson – Producer

Chad Hornsby – Producer

Dr. Becky McPeake – UADA Professor

Cade Halbrook – UADA Grad Assistant

Chuck Capps – Corn Verification Coordinator

Sherri Sanders – White County-CEA



Table of Contents

Agriculture Program Overview	4
4-H Program Overview	5
Family Consumer Science Program Overview	7
Community Development Program Overview	9
Monroe County Crop History	10
Crop Management	
Monroe County Corn Research Verification	11
Monroe County Pecan Demo	13
Nutrient Management	
Nitrogen-Soil Test for Rice (N-STaR)	15
Soybean Potassium Monitoring	17
Cornstalk Nitrate Testing	20
Midseason Corn Total Nitrogen Testing	21
Irrigation Management	
Soil Moisture Sensors in Corn	22
Weed Management	
Weed Survey of Monroe County Row Crop Fields	24
Insect Management	
Fire Ant Management in Monroe County	25
Bollworm Moth Trapping in Monroe County	27
Southwestern Corn Borer Trapping in Monroe County	29
Monitoring for Spongy Moths in Monroe County	30
Monitoring for Formosan Termite Alate in Monroe County	31
Wildlife Management	
Multi-County Wildlife Exclusion Fence Demo	32

Overview of Program:

- 4,941 Total Educational Contacts
 - 273 were Direct Contacts
- 60 Farm/Site Visits
- 10 On-Farm Demonstrations
- 176 Volunteer Hours at a \$6,123.04 Value to the County
- 19 Monroe County Master Gardeners
- 2 Monroe County Master Gardener Projects
- Monroe County Master Gardeners reported 978 Volunteer Hours at a \$34,024.62 Value to the County



Pecan Harvest Field Day held in Holly Grove

Key Programs & Activities Conducted:

- 52 Ag update newsletters reached 2,414 contacts
- 622 soil samples submitted which represented 19,615 acres
- 3 producers stated their knowledge increased by attending crop production meetings representing 13,300 acres
- 6,995 acres enrolled in the rice DD50 program
- 2 Pesticide Applicator Trainings held and 19 licenses issued
- Pecan Harvest Field Day held and 14 attended
- 8 new Master Gardeners Trained



Corn Verification Field Demo near Brinkley



4-H member sampling soil

Overview of Program:

- 9,602 Total Educational Contacts
 - 4,046 Direct Contacts
- 22 – 4-H Members
 - 88 Youth Volunteer Hours at a \$3,061.52 value to the County
- 2 – 4-H Clubs and 1 - Project Group
- 6 – 4-H Volunteer Leaders
 - 257 Adult Volunteer Hours at a \$8,941.03 value to the county



Meeting with Rep. Moore while participating in 4-H Day at the Capital

Key Programs & Activities Conducted:

- 4-H Day at the Capital and House Page for a day: 2 participants
- Ross Photo Contest Participants: 2 (6 entries)
- County Monthly Service Projects including
 - Keep Arkansas Beautiful and Great Arkansas Cleanup activities
 - Preparing food for &/or acting as servers for county organizations
 - Farm Bureau, Republican Party Lincoln Dinner, Quorum Court
- BBQ Contest Entries: 1-County, 1-District, 1-State
- Rice is Nice Contest and Dairy Foods Contest: 2-County
- Bumble BBs Team - competed in State 4-H Match (6)
 - State Daisy BB Match (3), & National Daisy BB Match (4)
- O-Rama Participation: 4-County, 3-District
- Food Plot Project: 1-County participant, winning 2nd place State SR
- Poultry Chain: 10 youth entered chickens in the county fair
- County Fair Participation: 14 youth
- Daisy the Cow – Where does our food come from?



Waiting for assignments while serving as a House Page.



Atlatl Throw
ArcheOlympics



Wildlife ID Contest
District O-Rama

The Bumble BBs Team competed in the Daisy National BB Match. Pictured- four members of the team along with coaches



4-H members addressing
the Quorum Court



BB Team telling about their team
and requesting support from the
Monroe County Farm Bureau.



Serving banquet attendees
at Lincoln Dinner



Testing Poultry Chain
Chickens for entry in the fair.



Showing off craft entries for
the county fair.



Learning where our food
comes from and how to milk
a cow.

What to learn more about 4-H & how to join?

Visit

<https://4h.uada.edu/>

Or Contact Valerie Turner at the
Monroe County Extension Office

Overview of Program:

- 2,816 Total Educational Contacts
 - 1,119 Direct Contacts
- 8 Volunteer Hours at a \$278.79 value to the county.
- 142 - SNAP-Ed Participants (unduplicated)
 - 56 - Total educational sessions delivered
 - 8 - Community Partnerships
 - 1 SNAP Program Assistant
 - \$8,163 program funding provided



Educating producers about Soy Products at production meetings.

Key Programs & Activities Conducted:

- Nutrition Education class participants
 - 120 - Youth, 36-Adult
- Powerful Tools for Caregivers
- How to Talk to Your Doctor
- Excite – Vaccination Education Program
- Grown-Up U: Facts for Success Podcast & Online Course
- Estate Planning and Financial Management classes
- Best Care – Early childhood professional development hours
- Educational booths: Soy Products, Farm Stress, Financial Matters
- ServSafe Manager Certification Classes
 - 22 Managers Certifications Earned



Youth taste smoothie creations they learned to make.



Youth taste & learn about new foods.



Educational display on Farm Stress, warning signs, resources on prevention and treatment.



Senior Citizens learn about healthy eating, physical activity and more during monthly classes.

The Monroe County Extension Office, as part of Arkansas Cooperative Extension FCS, is a trusted source of practical education that helps the citizens of Monroe County navigate everyday life. Providing resources and programs in ...



Food &
Nutrition



Food Safety &
Preservation



Health &
Wellness



Financial
Management



Personal/Family
Well-being



Childcare Provider
Education

FCS supports lifelong well-being through community-focused learning. Using research based, unbiased education, we deliver timely, practical solutions that improve health, build financial resilience, strengthen families, and enhance overall well-being at every stage of life, and in every corner of Monroe County.

Contact Monroe County Agent Valerie Turner for more information pertaining to classes and programs related to Family and Consumer Sciences.

Overview of Program:

- 2,607 Total Educational Contacts
 - 496 were Direct Contacts

Key Programs & Activities Conducted:

- Voter Education – displays, handouts, social media updates
- Dissemination of information pertaining to Funding Opportunities, Tax Schools, & training opportunities related to all aspects of Community & Economic Development
- Leadership opportunities with 4-H members

The Monroe County Extension Office, as part of the Arkansas Cooperative Extension Community, Professional & Economic Development (CPED) Department is committed to building resilient communities while enhancing the wellbeing of the citizens of Monroe County.

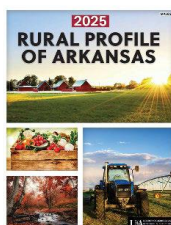
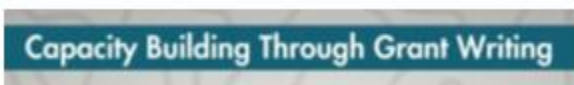
The CPED programs strengthen the capacity of individuals, businesses, organizations, and UADA to build sustainable communities through research-based resources and processes. Providing resources and programs in... **Public Issues Education & Local Government**

Leadership Training

Community, Economic & Workforce Development

Business Development & Support

Agricultural & Natural Resource Education



Check out CPED Blog:
uaex.uada.edu/cpedblog



Monroe County Crop History						
	2020	2021	2022	2023	2024	5 Yr Average
Rice						
County Rice Acres planted	46,200	33,700	35,700	48,000	42,300	41,180
County Avg Rice yield	165	164	160	168	169	165
State Rice Acres planted	1,441,000	1,198,000	1,104,000	1,436,000	1,448,000	1,325,400
State Avg Rice yield	167	170	165	168	170	168
Corn						
County Corn Acres planted	20,800	32,200	25,200	31,700	9,000	23,780
County Avg Corn yield	170	174	168	165	186	173
State Corn Acres planted	605,000	830,000	710,000	850,000	500,000	699,000
State Avg Corn yield	184	184	173	183	187	182
Cotton						
County Cotton Acres planted	14,100	12,700	15,100	na	19,000	15,225
County Avg Cotton yield	1,130	1,157	1,174	na	1,272	1,183
State Cotton Acres planted	520,000	470,000	640,000	510,000	650,000	558,000
State Avg Cotton yield	1,179	1,248	1,189	1,340	1,341	1,259
Soybean						
County Soybean Acres planted	79,200	83,200	90,300	87,600	87,700	85,600
County Avg Soybean yield	51	45	44	49	52	48
State Soybean Acres planted	2,780,000	3,010,000	3,180,000	2,980,000	3,050,000	3,000,000
State Avg Soybean yield	52	51	53	54	55	53
Wheat						
County Wheat Acres planted	1,200	4,500	6,900	5,310	na	4,478
County Avg Wheat yield	61	59	54	60	na	59
State Wheat Acres planted	75,000	155,000	220,000	230,000	130,000	162,000
State Avg Wheat yield	55	58	54	57	56	56

*Data provided by the USDA's National Agricultural Statistics Service (NASS)

https://www.nass.usda.gov/Statistics_by_State/Arkansas/index.php

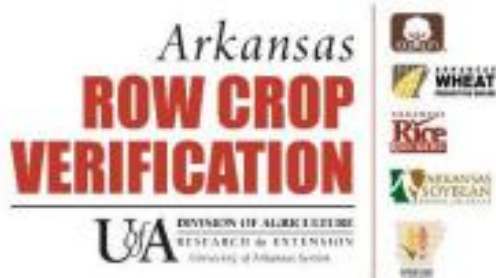


Monroe County Corn Research Verification

The Corn and Grain Sorghum Research Verification Program (CGSRVP) was started in 2000 with the formation of the Arkansas Corn and Grain Sorghum Board. The Board helps fund the program through a corn and grain sorghum checkoff program.

The CGSRVP is an interdisciplinary effort between growers, county Extension agents, Extension specialists, and researchers. The CGSRVP is an on-farm demonstration of all the research-based recommendations required to grow corn and grain sorghum profitably in Arkansas. The specific objectives of the program are:

1. To verify research-based recommendations for profitable corn and grain sorghum production in all corn and grain sorghum-producing areas of Arkansas.
2. To develop a database for economic analysis of all corn and grain sorghum production aspects.
3. To demonstrate that consistently high yields of corn and grain sorghum can be produced economically with the use of available technology and inputs.
4. To identify specific problems and opportunities in Arkansas corn and grain sorghum production for further investigation.
5. To promote timely implementation of cultural and management practices among corn and grain sorghum growers.
6. To provide training and assistance to county agents with limited expertise in corn and grain sorghum production.



Procedure

The Monroe County corn research verification field was located near Brinkley on Grenada Silt Loam soil. The field was 38 acres, and the previous crop was soybean. A pre-plant fertilizer 70-80-90-10-10 was applied on April 14, followed by bedder/roller. The field was planted on April 15 to Dyna-Gro 58VC74 at 34,000 seeds/acre on 30-inch row spacing. The field emerged on April 23, and the final plant population was 33,800 plants/acre. On May 6, 350 pounds per acre of urea/acre was applied, and 2 quarts/acre of atrazine, plus 3.6 pints/acre of Halex GT, plus 1 pint/acre of crop oil was applied by the producer for weed control. The total fertilizer for this field was 231-80-90-10-10.

Results & Discussion

The field was harvested on August 27 and yielded 228 bushels/acre adjusted to 15.5% moisture.

Economic values based per acre:

Operating Costs	Operating Costs/Bu	Returns to Operating Costs	Total Fixed Costs	Total Costs	Returns to Total Costs	Total Costs/Bu
717.96	3.15	317.16	84.61	802.57	232.55	3.52

The annual Corn and Grain Sorghum Research Verification Program Reports for Arkansas can be found at our website: <https://uaex.uada.edu/farm-ranch/crops-commercial-horticulture/verification/corn-grain-sorghum-verification.aspx>



Picture. Corn being unloaded from grain cart. Taken at Monroe County Corn Research Verification Field near Brinkley

Monroe County Pecan Orchard

Arkansas currently ranks 8th in the U.S. for pecan production with nearly 10,000 acres harvested. Commercial pecan production in Arkansas is primarily located on alluvial soils near most major rivers in central, eastern, and southern Arkansas. Significant production areas are found along the Arkansas, Mississippi, Red, and St. Francis rivers. Several pecan orchards can be found in Monroe County. In 2025, Monroe County extension was called out to observe 3 pecan orchards.

Procedure

In 2025, a 3-acre orchard with 20 mature trees was selected as the demo site. The purpose of the demo was to implement University of Arkansas best management practices for a small-scale pecan orchard. Scouting was achieved on a weekly to bi-weekly basis. The orchard was scouted for the following:

Observation	Category	Means of Control
Soil Sample	Nutrient	Determine if fertilizer application needed
Health of Orchard Floor	Management	Routine mowing, removal of debris, removal of undesirable trees
Status of Trees	Management	Removal of dead limbs, pruning
Scab	Disease	Fungicide applications
Pecan Nut Casebearer	Insect	Trapping & monitoring, Insecticide application if found
Pecan Weevil	Insect	Trapping & monitoring, Insecticide application if found
Aphids	Insect	Monitoring, Insecticide application if found
Leaf Sampling	Nutrient	Collect leaf samples for lab analysis to determine if fertilizer is needed for next season
Drought Stress	Irrigation	Scheduled irrigation

Results & Discussion

The initial site visit in April 2024 resulted in management recommendations to improve the orchard floor by implementing routine mowings and removal of limbs/debris, and to improve the trees by removing dead branches.

In 2025, scab disease was present throughout the growing season. The tree varieties are older and have no resistance to the disease. The disease could have been prevented with routine fungicide applications.

Fortunately, no pecan nut casebearer or pecan weevils were trapped at orchard. The largest pest damage resulted from aphids. An insecticide application could have been made; however, it did not seem to reduce pecan production. The likely reason that the aphid infestation happened was due to the drought conditions experienced in August through October. The trees were also under stress due to the drought conditions. The greatest improvement that could be made to the orchard is to install an irrigation system.

Temperatures recorded:

Month	Average High	Record High	Average Low	Record Low
June	84	91	73	66
July	88	95	76	72
August	87	97	70	59



Picture of Monroe County Pecan Demo Site in Holly Grove, Arkansas

Nitrogen-Soil Test for Rice (N-STaR) in Monroe County

The Nitrogen-Soil Test for Rice, better known as N-STaR, is a unique service provided by the U of A System Division of Agriculture (UADA). N-STaR is a soil-based N test that quantifies the amount of N that will become available to the rice crop during the growing season. Looking at this will improve nitrogen use efficiency for Arkansas rice producers. The goal of the N-STaR program is to provide field-specific N rates that will maximize productivity and profitability regarding your N fertilizer program.

Sampling for the N-STaR is a bit more involved compared to general soil sampling. It should also be mentioned that there is a fee for this test. On average it may cost \$100 per field. For more information you can find everything you need to know on the UADA soil fertility website.

Procedure - Sampling

In 2025, two 70-acre fields in Monroe County were sampled. Each field is composed of silt loam. Field 1 is continuous rice, whereas field 2 is a rotation field that had soybeans the previous year. Ten samples were collected in each field. A cordless drill with a 1-inch ship auger and extension was used to collect the samples at an 18-inch depth. The samples were placed separately in a single quart zip storage bag and labeled. The samples were sent to the N-STaR lab in Fayetteville, AR. An information sheet is required for submitting samples. Information that must be included is the soil series of the field, the ECEC value (provided by general soil test report), previous 3 year crop history, expected variety to be grown, the seeding rate, estimated N application rate, estimated preflood N applications, estimated amount of days it takes to flood, and if there are any levees.

Results & Discussion

The N-STaR Recommendation Reports are shown. Recommended rates for both fields are lower than the expected N rate application. This means that the application rate can be reduced from the amount that has been used for those fields before.

For Field 1 it is recommended that 165 N units be applied (135 at preflood and 30 at boot).

For Field 2 it is recommended that 130 N units be applied (100 at preflood and 30 at boot).

It is also important to note that these 2 fields are side by side with similar soil structure, however, there is still a difference in the recommendations made for each field.

Due to the flooding during spring and constant rains during early summer, the fields could not receive the recommended N rates.

Field Information		
2025 Monroe RRVP Bean		
Number of Samples per Field	Soil Texture	Variety
10	Silt Loam	RT XP753
Estimated N Rate		220

N-STaR Recommendation				
	Total N Rate	Preflood N Rate†	Midseason*	Boot*
Single Pre Flood Application	115	115		
2-Way Split Application (95% Relative Grain Yield)	135	105	0	30
2-Way Split Application (100% Relative Grain Yield)	165	135	0	30

Figure 1. N-Star Report for Field 1

Field Information		
2025 Monroe RRVP Rice		
Number of Samples per Field	Soil Texture	Variety
10	Silt Loam	RT XP753
Estimated N Rate		220

N-STaR Recommendation				
	Total N Rate	Preflood N Rate†	Midseason*	Boot*
Single Pre Flood Application	80	80		
2-Way Split Application (95% Relative Grain Yield)	110	80	0	30
2-Way Split Application (100% Relative Grain Yield)	130	100	0	30

Figure 2. N-Star Report for Field 2

Soybean Potassium Monitoring in Monroe County

Potassium (K) is often the most yield-limiting nutrient in soybeans and must be added as fertilizer in greater amounts than other plant essential nutrients for adequate plant growth. Potassium deficiency in soybeans is known to increase disease susceptibility, worsen the effects of drought stress, and significantly reduce grain yield. Previous work done in Arkansas has measured as much as 32 to 40 percent yield loss due to K deficiency. The soybean tissue K monitoring tool was designed by U of A Division of Agriculture to help easily diagnose in-season K deficiencies with trifoliate leaf lab results.

Procedure – Sampling

In 2025, two 40-acre fields were sampled. Each field is silt loam, and 18 random samples were collected from each at 2 different growth stages. If a field has different soil category zone (silt loam, sandy, or clay) each zone must be sampled from separately. Samples collected were trifoliate leaflets (3 leaflets without petiole) from the upper most expanded leaf (roughly 3-4 nodes from the top of the plant). The first set of samples were collected at the R2 growth stage, and the second set at the R4 growth stage.

The samples were sent to the Soil Test lab in Fayetteville, AR. An information sheet is required for submitting samples. Information that must be included is the fertilizer application for the current growing season, previous three-year crop history, soil type, variety, plant date, and growth stage.

Results & Discussion

Both fields required a K application. Looking at the graph in the monitoring, the three lines indicate the critical concentration for relative grain yield goals of 95% (red), 85% (blue), and 75% (black). Any point below the red 95% relative grain yield goal critical concentration is deficient and yield limiting. The 85% and 75% grain yield lines are shown to help the user understand the potential yield loss if left unmanaged. If a field is deficient, an in-season corrective application of granular K fertilizer can correct the deficiency and prevent yield loss when applied correctly.

The granular K fertilizer must be applied and incorporated with irrigation or rainfall within 20 days after R1 growth stage in severely deficient situations and within 44 days after R1 growth stage for hidden hunger to prevent yield loss. Generally, it is recommended to apply 60-120 lbs K₂O per acre depending on the severity of the situation.

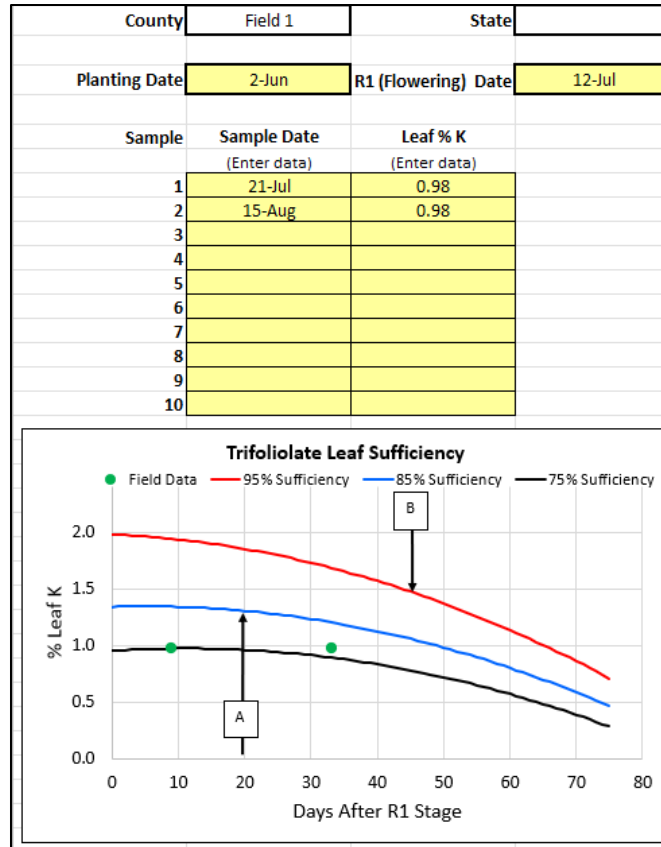


Figure 1. K Monitoring Tool Results for Field 1

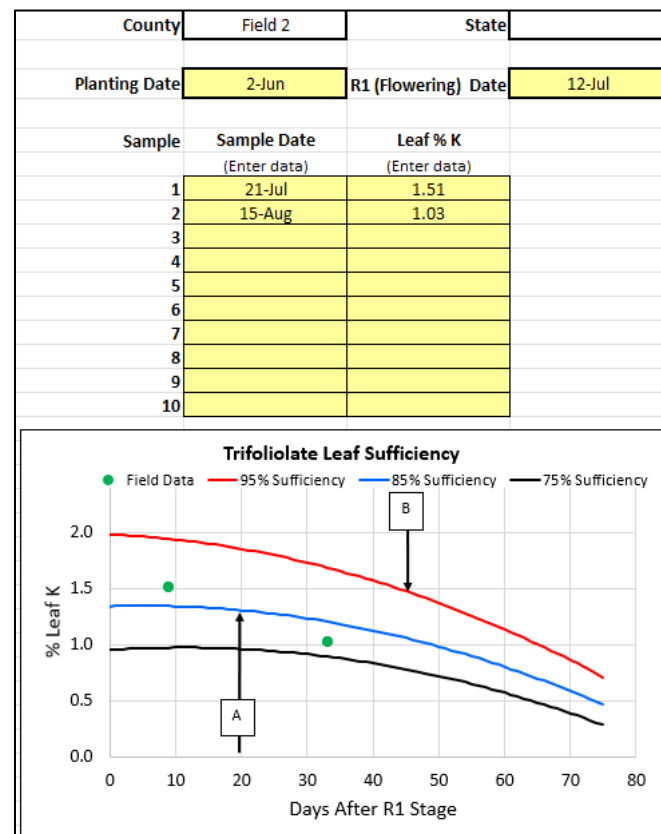


Figure 2. K Monitoring Tool Results for Field 2

Cornstalk Nitrate Testing in Monroe County

Grass crops such as corn and rice often require nitrogen supplementation to achieve maximal grain yields. Due to differences in soil N availability, growing conditions, environment, and N uptake efficiency corn can be overfertilized with little to no adverse effects. When corn is overfertilized, it will store N in the lower portion of the stalk in the form of nitrate. Research from Arkansas has shown that the level of nitrate in the base of the corn stalk can be used to determine if corn was over or under fertilized and help the producer adjust N fertilizer in coming years. It should also be mentioned that there is a fee for this test. For more information you can find everything you need to know on the UADA soil fertility website.

Procedure – Sampling

In 2025, one 30-acre field was sampled. Ten samples were taken following R6 or blacklayer formation and before significant rainfall occurs. The ideal situation is to take samples within two weeks following blacklayer. An 8-inch sample portion of the stalk is taken between 6 and 14 inches above the soil surface. The samples were sent to the Soil Testing lab in Fayetteville, AR. An information sheet is required for submitting samples. Information that must be included is the soil series of the field, the ECEC value (provided by general soil test report), the variety, total N application, N split practice, and soil texture.

Results & Discussion

Stalk nitrate concentrations between 150-1,000 ppm nitrate indicate that corn was properly fertilized.

The low (<150ppm) test results indicate that there was no excess nitrogen, and the corn crop may have benefitted from more nitrogen fertilizer at the appropriate timings. The N applications for this field included a pre-plant (70 units), and a side-dress (161 units). This field did yield 220 bu/a, however, it may have benefitted making a pre-tassel application. The reason for different timings of applications is to make sure the plants can uptake the nutrients before the nutrients are lost. In this scenario, the N from the side-dress application could have been lost due to the constant rains received during the growing period. A pre-tassel application could have made up for that loss.

While this test does not help in the current production year, the benefit is being able to make nitrogen fertilizer decisions based on historical data on a field-by-field basis. The next time the field is in corn you will know a target range of total nitrogen to apply for that field.

Field Name	2025 Monroe CRVP	Submit Date	8/13/2025
Soil Texture	Number of Samples per Field	Variety Comparative Relative Maturity	
Silt Loam	10		
Total Nitrogen Application Rate	230	Nitrogen Split Practice	PP70 + SD160

Field Name	Rep Number	CSNT Value (mg/kg)
2025 Monroe CRVP	1	117
2025 Monroe CRVP	2	115.5
2025 Monroe CRVP	3	115.5
2025 Monroe CRVP	4	115.5
2025 Monroe CRVP	5	115.5
2025 Monroe CRVP	6	127.5
2025 Monroe CRVP	7	117
2025 Monroe CRVP	8	114
2025 Monroe CRVP	9	126
2025 Monroe CRVP	10	118.5

CSNT Average (mg/kg)
118

Management Suggestion	Excess Nitrogen Application (lb/A)
low- N may have limited yield potential.	

Figure. Cornstalk nitrate report with results.

Midseason Corn Tissue Testing in Monroe County

Grass crops such as corn and rice often require nitrogen supplementation to achieve maximal grain yields. Due to differences in soil N availability, growing conditions, environment, and N uptake efficiency corn can be overfertilized with little to no adverse effects. Mid-season leaf tissue sampling can be done to determine if a pre-tassel application is needed. It should also be mentioned that there is a fee for this test. For more information you can find everything you need to know on the UADA soil fertility website.

Procedure – Sampling

In 2025, one 30-acre field was sampled. Twenty samples were taken at the V15 growth stage. One leaf was taken from 20 different plants across the field. The first fully developed leaf from the top (leaf below the whorl) was collected. The samples were sent to the Soil Test Lab in Fayetteville, AR. An information sheet is required for submitting samples.

Results & Discussion

The total nitrogen level reported was 2.907%. Based on this level, it was recommended to apply 45 N units before the R1 growth stage. Due to the cost of application and fertilizer, it was decided not to apply any more N. The corn field yielded 220 bu/a.



Picture of Corn Leaves Sampled for Testing

Soil Moisture Sensors in Corn

Soil moisture sensors are a great tool to help reduce input costs required for irrigation. While there are several different types of soil moisture sensors, the most common is the **Watermark™** soil matric potential sensors. Tension is a measure of the energy that a plant exerts to extract water from the soil, typically measured in centibars. The values recorded by the sensors can be used to determine irrigation scheduling.

Factsheets 57 – 59 (available on the UADA Extension website) cover how to use the Watermark sensors. Workshops on building and using the sensors are available throughout the state. Contact the office for current workshops available.

Procedure - Installation

In 2025, a set of Watermark sensors were installed in two corn fields (silt loam) in Monroe County. A set of sensors include 4 sensors at depths of 6”, 12”, 18”, and 30”. Installation followed side dress applications to reduce chances of the sensors being in the way of equipment. A slide hammer was used to make holes at the desired depths. The sensors were placed in the rows near the plants to get accurate readings of moisture available to the plants. Wires from the sensors were attached to the recording units.

A manual reader was used for the field near Crossroads, and a telemetry unit was installed at the field near Brinkley. The sensor values of the telemetry unit can be viewed from the **AgSense™** app. The values recorded by the sensors were read weekly and the **Arkansas Soil Moisture Sensor Calculator** app made available by UADA Extension was used to determine irrigation scheduling.

Results & Discussion

Fortunately, in 2025 there were several showers up until mid – July. This saved several early irrigations. The irrigation events results:

Crossroads Field	Irrigation Event
6/23	1
7/3	2
7/22	3

Brinkley Field	Irrigation Event
6/27	1
7/7	2
7/19	3
7/28	4

Both producers expressed interest in adopting the management practice of utilizing moisture sensors on their farms. The benefits of using moisture sensors include the reduction of irrigation events by one to two per season, and the reduction of management stress by knowing how much moisture is in the soil and when to expect the next irrigation event.



Picture. Watermark soil sensors and manual reader installed at field near Crossroads

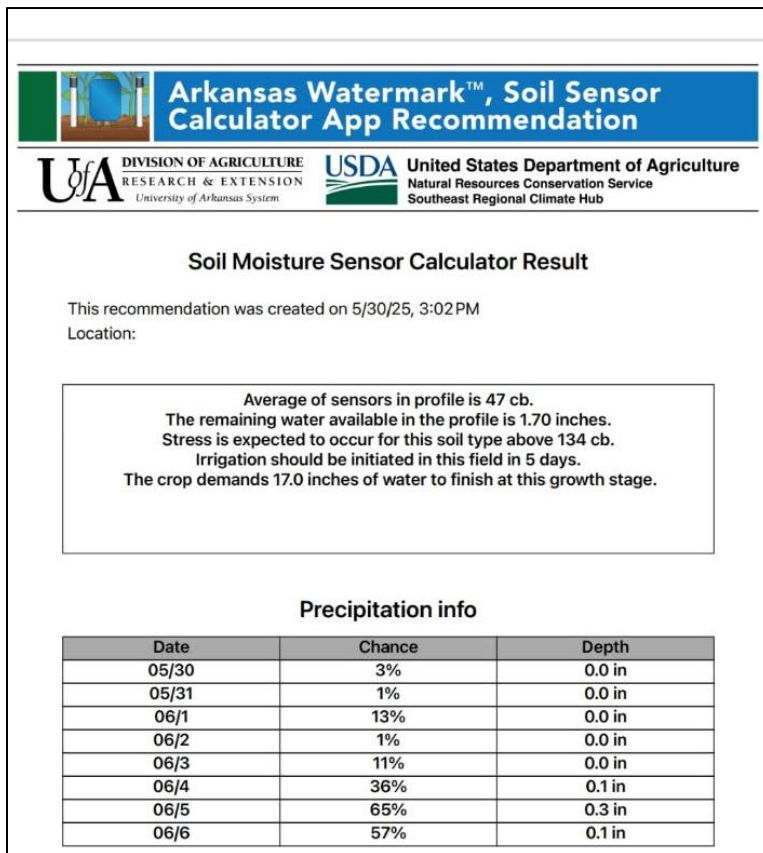


Figure. Arkansas Watermark Soil Sensor Calculator App example. Use readings from sensor to determine irrigation schedule.

Weed Survey of Monroe County Row Crop Fields

Weed management is one of the top priority issues farmers are facing. While there are herbicide products available to control weeds, over time some weeds can become tolerant to those products. If you are having issues with weeds in your field and cannot control them with recommended products and rates, reach our office. We can sample the weeds and send them to Fayetteville to test herbicide tolerance.

In 2025, U of A Division of Agriculture's Weed Science department had a crew of students visit fields across the state to survey weeds in rice and soybean fields.

Rice Field Weed Survey Results

Three fields were surveyed in Monroe County. The most found weeds are listed here:

1. Weedy Rice
2. Barnyard Grass
3. Sprangletop
4. Whitemargin Sedge
5. Yellow Nutsedge

Soybean Field Weed Survey Results

Three fields were surveyed in Monroe County. The most found weeds are listed here:

1. Palmer Amaranth (Pigweed)
2. Barnyard Grass
3. Prickly Sida (Teaweed)



Fire Ant Management in Monroe County

Imported fire ants (IFA) were accidentally introduced into the United States from South America about 70 years ago. The first documented infestation of these ants in Arkansas was in El Dorado in 1958. Currently, they infest much of southern Arkansas and have been found in the more northern reaches of the state.

Procedure – Baiting & Monitoring

In 2025, Monroe County Extension tested 3 ant bait products – Amdro Fire Ant Bait, Extinguish Plus, and Advion – at a 2-acre lot near Rich (SE of Brinkley). Each product was applied at 1.5 pound per acre rate in 0.3-acre plots (13,068 sq ft.). A control (no product applied) plot was used for comparison.

Monitoring fire ants included mound counts, and forage ratings. For mound counts, each plot was observed, and visible ant mounds were counted. For forage ratings, six quarter inch pieces of hot dogs were distributed across the plots. After 30 minutes, the pieces of hot dogs were observed and a rating of 0 – 4 was given. A rate of 1 is less than 10% of the hot dog covered by ants, a rate of 2 is a range of 10 – 30% coverage, a rate of 3 is a range of 30-50% coverage, and a rate of 4 is over 50% coverage.

Monitoring began on May 12. The application of the bait was made on May 22. The bait was applied by using a handheld broadcaster. Observations were made on June 5, June 26, July 17, August 7, and August 28.

Results

An average of 15 ant mounds and a forage rating of 4 were observed among the 4 plots on the initial visit on May 12. On May 22, observations could not be made due to flooding. The following observations for June to July were made:

MOUND COUNT				
PLOT	PRODUCT	6/5	6/26	7/17
1	Amdro Fire Ant Bait	10	4	2
2	Extinguish Plus	2	3	0
3	Advion	5	4	1
4	UT	16	9	2

FORAGE RATING				
PLOT	PRODUCT	6/5	6/26	7/17
1	Amdro Fire Ant Bait	3	2	0
2	Extinguish Plus	2	2	0
3	Advion	2	3	0
4	UT	4	3	1

For August, few ants were present, however, due to the heat and dry conditions there was not much activity. It was not until September after a few rains before any mounds began to be observed again. Control can be maintained from mid-May until September.

Recommendations

As the product labels read, control is maintained for up to 3 months. That is true for the demo this year. The products performed similarly, with Extinguish Plus having quicker control. This product contains two modes of action, so it would be expected to have better control. What is important is to rotate products so that the chances are reduced for ants building resistance to the products.

Guidelines for Applications:

- Apply when ants are foraging/active (when soil temperatures are above 60°F, May – October)
- Best time of day to apply is early morning or late afternoon
- Rainfall or irrigation within 8 hours after application may reduce effectiveness and a repeat application within 7 days may be necessary to achieve the desired level of control
- Use different products every year or 2 to maintain control of ants and to reduce chances of ants building resistance to the products



Picture. Harvester ant taking the bait, just 30 minutes after application

Bollworm Moth Trapping in Monroe County

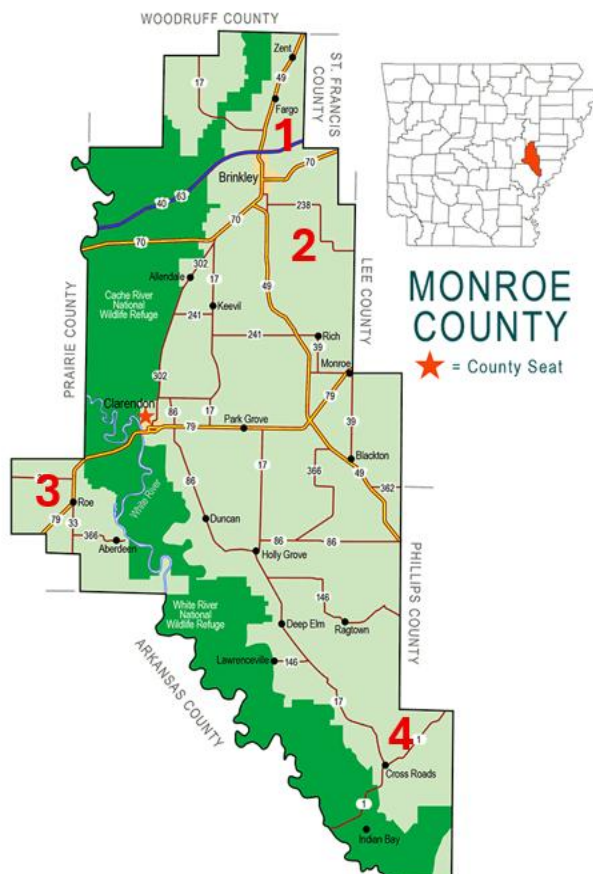
The cotton bollworm is a perennial and significant agricultural pest across Arkansas. While its name suggests a singular focus, this highly destructive insect is also known as the corn earworm (*Helicoverpa zea*), tomato fruitworm, and soybean podworm, highlighting its broad and damaging host range throughout the state. The cotton bollworm is arguably the most economically damaging caterpillar pest in Arkansas cotton production. The movement of moths from corn (which is often silking earlier) to cotton, especially in mid-to-late summer, poses a constant threat.

Procedure – Trapping

In 2025, Monroe County Extension placed 4 traps. Trap 1 was placed north of Brinkley, Trap 2 SE of Brinkley, Trap 3 NW of Roe, and Trap 4 near Cross Roads (as shown on the map). Hartstack traps were used with pheromone lures to attract moths during their flights at night. The traps were checked and emptied weekly. The traps were deployed in late May and monitoring continued until mid-August.

Results

Bollworm moth counts were a bit lower this year compared to 2024. The greatest numbers occurred from June 18th until July 2nd. The most caught number of moths was 500 in Trap 1 (north of Brinkley). Trap 4 (near Cross Roads) had the fewest moths all season, averaging below 50 moths.



Picture. Monroe County map
 with location of traps (red
 numbers)

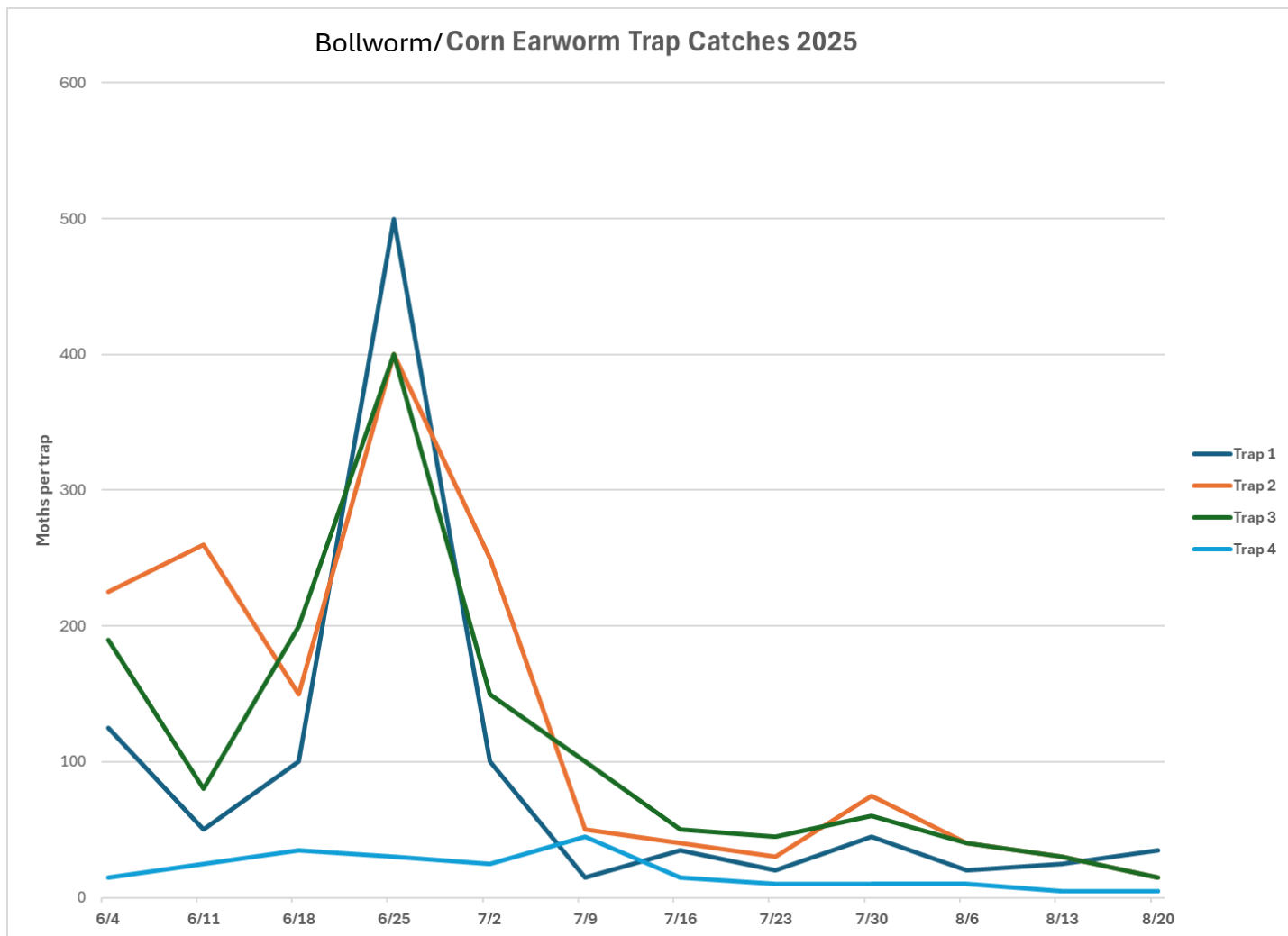


Figure. Trap catch numbers from June until August.

Southwestern Corn Borer Moth Trapping in Monroe County

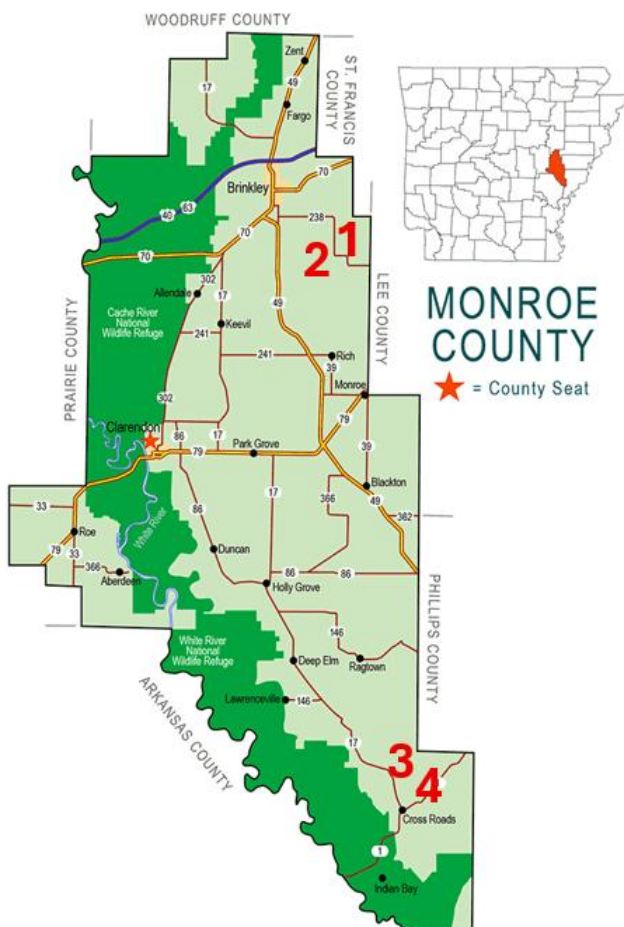
The Southwestern Corn Borer (SWCB), *Diatraea grandiosella*, stands as one of the most consistently damaging insect pests to corn crops across Arkansas. This invasive moth, originally from Mexico, causes significant yield loss primarily through its larval tunneling, which weakens the stalks, impedes nutrient flow, and ultimately leads to stalk lodging, making mechanical harvesting nearly impossible.

Procedure – Trapping

In 2025, Monroe County Extension placed 4 traps. Traps 1 and 2 were placed SE of Brinkley, Traps 3 and 4 near Cross Roads (as shown on the map). Bucket traps were used with pheromone lures to attract moths during their flights at night. The traps were checked and emptied weekly. The traps were deployed in late May and monitoring continued until mid-August.

Results

SWCB moth counts were lower this year compared to 2024 and treatment applications were not needed. The trap counts remained under 10 for all traps during the 2025 season.



Picture. Monroe County map with location of traps (red numbers)

Monitoring for Spongy Moths in Monroe County

The spongy moth is an invasive species introduced in 1869 that is a major pest to hardwoods in the Northeastern United States. As of this report, 19 states are known to have this pest. The areas range from Maine to Wisconsin, south to Illinois and generally in a southeasterly line from Illinois to northeastern North Carolina. Oaks trees are at the top of their preferred host species.

The U of A Division of Agriculture has historically participated in the Spongy Moth Trapping Program managed by the USDA – Animal and Plant Health Inspection Service (APHIS) and the Arkansas State Plant Board.

Procedure – Trapping

In 2025, Monroe County Extension placed 5 traps across the county. The trap is an orange, triangular box. There are small openings at both ends of the box, and glue inside to capture the moths. A Spongy Moth plastic strip pheromones lure is attached inside the trap to attract any nearby moths. The traps are hung in trees using zip ties.

Three traps were placed in Brinkley near gas stations and camping grounds. One trap was placed in Clarendon near a camping ground. One trap was placed at Maddox Bay near a camping ground. The traps were deployed in May and monitoring continued until first of September.

Results

No Spongy Moths were found in Monroe County in 2025. Fortunately, at this time, the species has not been reported in Monroe County.



Picture. Spongy moth trap in place near Maddox Bay.

Monitoring for Formosan Termite Alate in Monroe County

Considered one of the most aggressive and economically devastating termite species in the country, Formosan subterranean termites were introduced to the United States in 1956. This invasive species has been found in 11 states, including those that border Arkansas – Mississippi, Louisiana, Tennessee, and Texas.

Procedure – Trapping

In 2025, Monroe County Extension placed one trap in Clarendon. The trap is a white sticky card attached to a ground stake. The trap was placed near a lumber company in town, under a streetlight so that the white sticky card will receive and reflect light to attract the termite alates (reproductive members of a colony). The trap was checked and replaced weekly. The first trap was deployed in April and monitoring continued until first of September.

Results

No Formosan Termite Alates were captured in Monroe County in 2025. Fortunately, at this time, the species has not been found in Arkansas, however, monitoring will continue in the future.



Picture. Tools for Formosan Termite Alate monitoring. Picture includes white, sticky trap cards, ground stake, and plastic freezer

Multi-County Wildlife Exclusion Fence Demo

Pest management for crops, gardens, and food plots may usually be thought of as for insects and diseases, but another one to consider is wildlife. Means of control for wildlife damage is a bit trickier compared to pesticide applications made for other pests. One type of management practice is exclusion fencing. Its primary importance lies in preventing herbivores like deer, rabbits, and racoons from decimating a plot overnight. By establishing an electrified perimeter, fencing ensures that the time, effort, and resources invested in cultivation are not wasted.

Procedure

Evidence from prior field demonstrations imply electric fencing can be a practical and cost-effective means for protecting vegetation from wildlife for gardening, small fruit and vegetable production, food plots, and other uses. In order to test this a single-layer, three strand fence (i.e., 3x0) (8", 11", 24"), a double-layer, two strand fence for repelling whitetail deer (*Odocoileus virginianus*) (i.e., 2x1) (10", 24") (18"), and a double-layer, three strand fence for repelling both wild pigs (*Sus scrofa*) and deer (i.e., 3x1) (8", 11", 24") (18") were compared.

Several county extension agents in Arkansas constructed 50'x50' plots of each fence design in December-March 2023-24, and 2024-25 at the Pine Tree Research Station near Colt, Arkansas. Plots were pre-baited with corn a week prior to fence installment and then inside a 3 ft-square at plot center. A trail camera was aimed parallel to each fence row closest to the tree line, and another inside each plot aimed at the bait pile. A 15-minute interval between images defined a new visitation. Tracks were recorded weekly within 10 ft of fence perimeter and inside fence.

Results

For all field seasons, wild pigs were recorded to have 37 encounters with the plots along the fencerow with only 2 encroachments in the 3x0 fence. One hundred and nine deer were recorded along the fencerow with 21 visitations inside the 2x1, 11 in the 3x0, and 7 in the 3x1 plot. All fences were effective to some degree, with the 3x1 having slightly fewer encroachments than the 3x0. The 2x1 fence repelled the fewest deer and wild pigs but also had voltage issues both seasons and flooded frequently in 2024-25. When analyzing visitations of non-target terrestrial species, raccoons encroached all fences especially the 3x1 design to feed upon corn bait.

An economic comparison of fixed and variable costs for 50'x50' plots is as follows: 3x1

\$600, 2x1 \$530, 3x0 \$493. (Fixed costs include solar fence energizer, voltmeter, ground rod; variable costs include electric turbo wire, step in posts, t-posts, insulator pins, and flagging.)

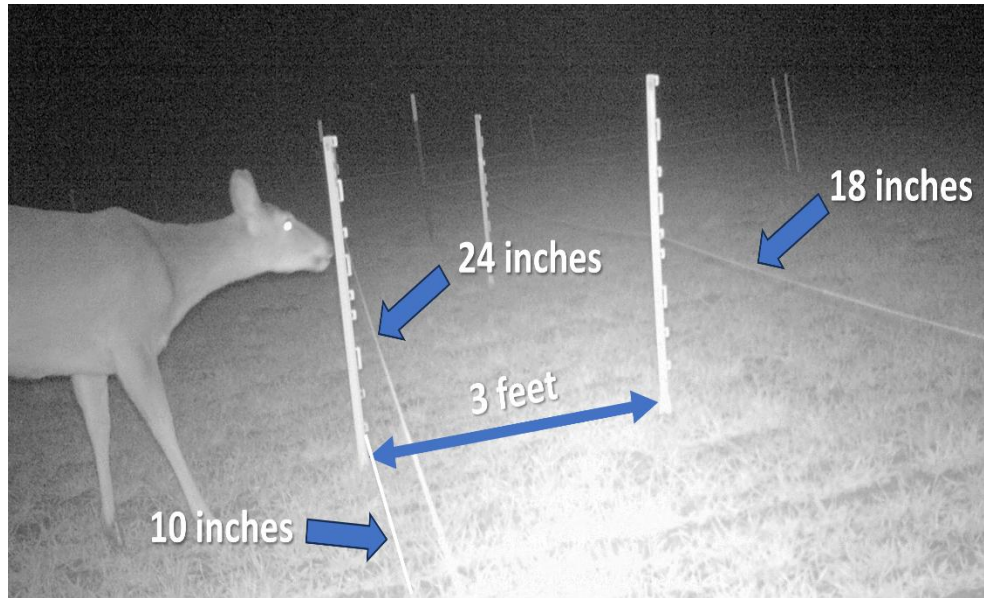


Figure 1. Deer approaching a 2x1 fence with measurements.

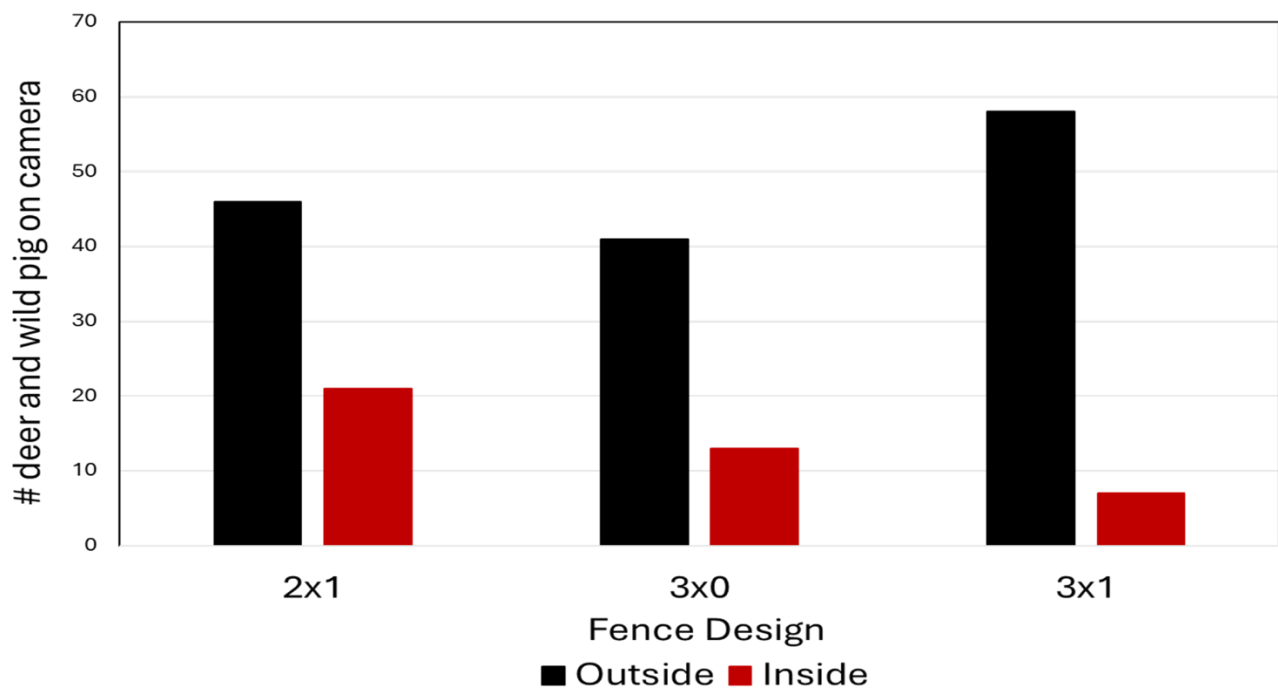


Figure 2. Number of deer and wild pigs viewed on camera images detected along fencerow and inside fence when comparing electric fence designs for combined field seasons, 2023-2025.