

ARKANSAS WHEAT PROMOTION BOARD MEETING

Minutes

July 22, 2025

9:00 a.m.

Member(s) present: Adam Cloninger, Jack Evans, Dusty Hoskyn, Chris Schaefer

Member(s) present via phone: Kenneth Clark

Member(s) absent: Herrick Norcross, Terrance Scott, Tim Smith

Vice Chair Kenneth Clark called the meeting to order and welcomed all members and guests.

The Arkansas Wheat Promotion Board meeting minutes for March 4, 2025 were presented for review and approval.

Moved by Evans, seconded by Cloninger to approve the minutes as presented.

Motion carried.

Inoussa Zaki, Chief Fiscal Officer, presented the financial report covering July 1, 2024 through June 30, 2025, shown as **Attachment 1**.

Zaki stated the beginning fund balance for this period is \$230,907, cash on hand. Total assessment for this period is \$59,325. Net revenue is \$57,545. Total revenue is \$288,453. Total expenditure is \$375, finishing the year with a balance of \$288,077.87.

Moved by Schaefer, seconded by Evans to approve the financial report as presented.

Motion carried.

Jason Kelley, Extension Agronomist, University of Arkansas System Division of Agriculture, gave a wheat crop update. Kelley's presentation showed Arkansas crop acreage 2024 vs. 2025, winter wheat planted area and acres and percent change from previous year, acreage trends and average wheat yields since 1992, and rainfall totals. All additional information is shown in **Attachment 2**.

Discussion followed.

Sherry Seiffert, Managing Attorney, stated in the last legislative session the Arkansas Freedom of Information Act was amended to specify that certain requirements must be met in order for board members who attend remotely to be counted for a quorum and for them to vote on

motions. Seiffert presented the board with a policy to review and approve, shown as **Attachment 3**

Moved by Evans, seconded by Hoskyn to approve the policy as presented.

Motion carried.

The next item on the agenda was presentation of funding proposals. **Attachment 4**

Amy Lyman, Administrator of the Wheat Promotion Board, stated there are three renewal proposals and 3 new proposals.

New proposals were presented by Dr. Bronc Finch, Dr. Bob Scott, presenting for Dr. Jason Norsworthy, and Dr. Mahfuzur Rahman.

Vice Chair Clark asked the board if they would like to consider all proposals new and old at the same time. It was agreed to do so.

Moved by Cloninger, seconded by Schaefer to approve all new and renewal proposals.

Motion carried.

Motion made and seconded to adjourn.

Tim Smith, Chairman

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Moved by Evans, seconded by Hoskyn to approve the policy as presented.

Motion carried.

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Amy Lyman, Administrator of the Wheat Promotion Board, stated there are three renewal proposals and 3 new proposals.

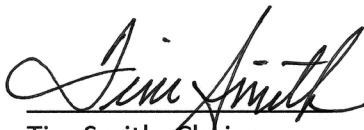
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Vice Chair Clark asked the board if they would like to consider all proposals new and old at the same time. It was agreed to do so.

Moved by Cloninger, seconded by Schaefer to approve all new and renewal proposals.

Motion carried.

Motion made and seconded to adjourn.



Tim Smith, Chairman

**ARKANSAS WHEAT PROMOTION BOARD
FINANCIAL REPORT
FOR THE PERIOD JULY 1, 2024 - JUNE 30, 2025**

	June 2023	June 2024	June 2025	Forecast 2025
Beginning Fund Balance	\$110,022.91	\$170,581.12	\$230,907.87	\$ 230,907.87
Revenue				
Gross Collections	\$97,265.87	\$115,022.35	\$59,325.33	\$ 115,022.35
Refunds				\$ 6,923.07
Rev. & Treas. Dept. 3%	\$3,015.25	\$3,565.68	\$1,779.77	\$ 3,565.68
Transfers to WPB (Net)	\$94,250.62	\$111,456.67	\$57,545.56	\$ 111,456.67
Total Revenue	\$204,273.53	\$282,037.79	\$288,453.43	\$ 349,287.61
Expenses				
University of Arkansas	\$33,692.41	\$50,738.00	\$0.00	\$ 50,738.00
Foundation Seed Plant				
Total Research	\$33,692.41	\$50,738.00	\$0.00	\$ 73,890.58
Wheat Foods Council				
Wheat Quality Council				
Arkansas Foundation Ag				
U.S. Wheat Associates				
Total Promotion	\$0.00	\$0.00	\$0.00	\$ -
Board Expenses				
Board Travel Lodging				
Board Travel Mileage		\$391.92	\$375.56	\$ 752.00
Board Meeting Food Purchase				
Website				
Postage				
Total Board Expenses	\$0.00	\$391.92	\$375.56	\$ 752.00
Total Expenditures	\$33,692.41	\$51,129.92	\$375.56	\$ 74,642.58
Ending Fund Balance	\$170,581.12	\$230,907.87	\$288,077.87	\$ 274,645.03

Wheat Update
Dr. Jason Kelley – Extension Agronomist
University of Arkansas System Division of Agriculture



Attachment 2

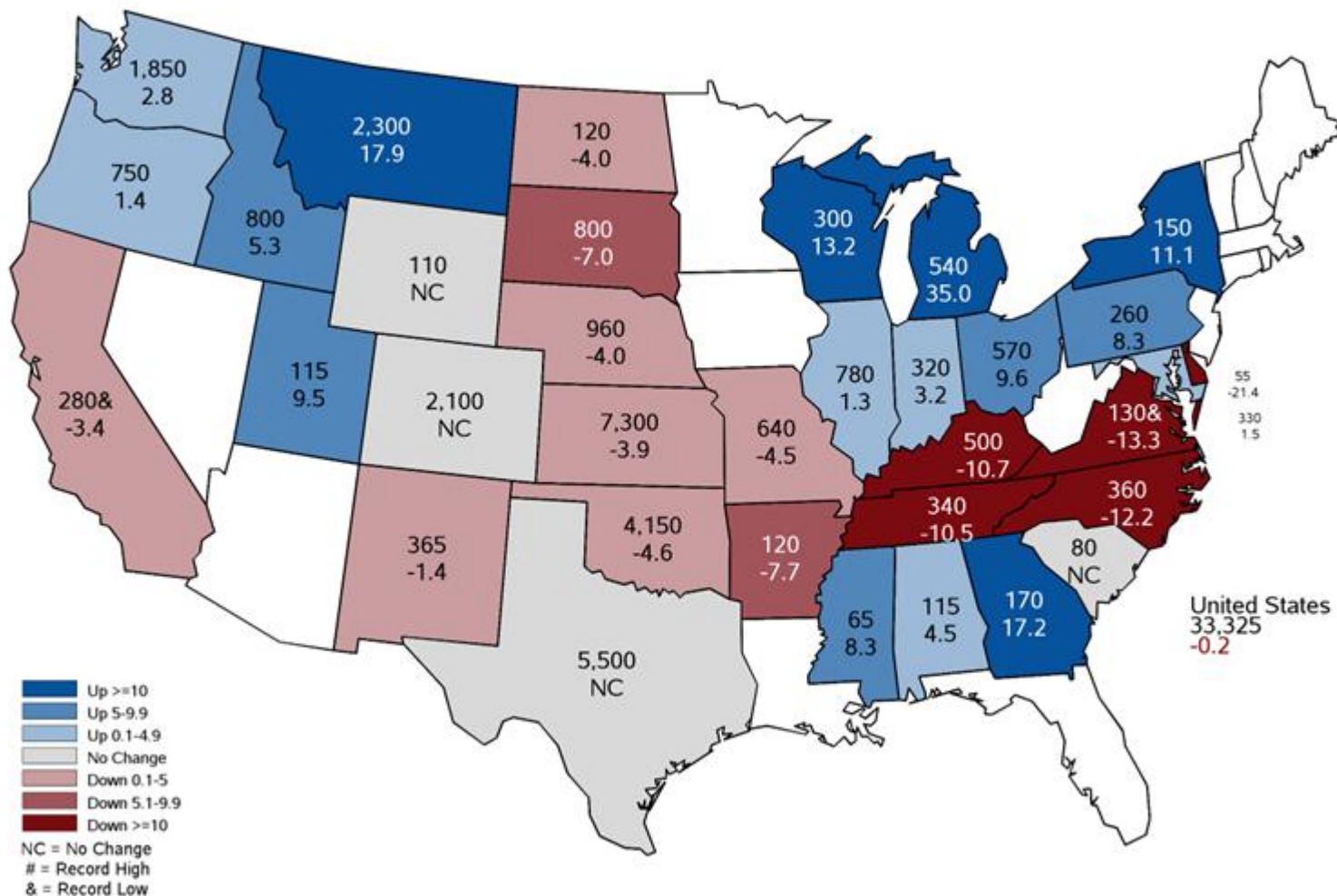


Arkansas Crop Acreage 2024 vs 2025

	2024 Acres	2025 Acres	Acre Change	% Change
Corn	500,000	740,000	+240,000	+48
Cotton	650,000	560,000	-90,000	-14
Peanuts	45,000	46,000	+1,000	+2
Rice	1,448,000	1,261,000	-187,000	-13
Soybean	3,050,000	2,900,000	-150,000	-5
Wheat	130,000	120,000	-10,000	-8
Total	5,823,000	5,627,000	-196,000	-3

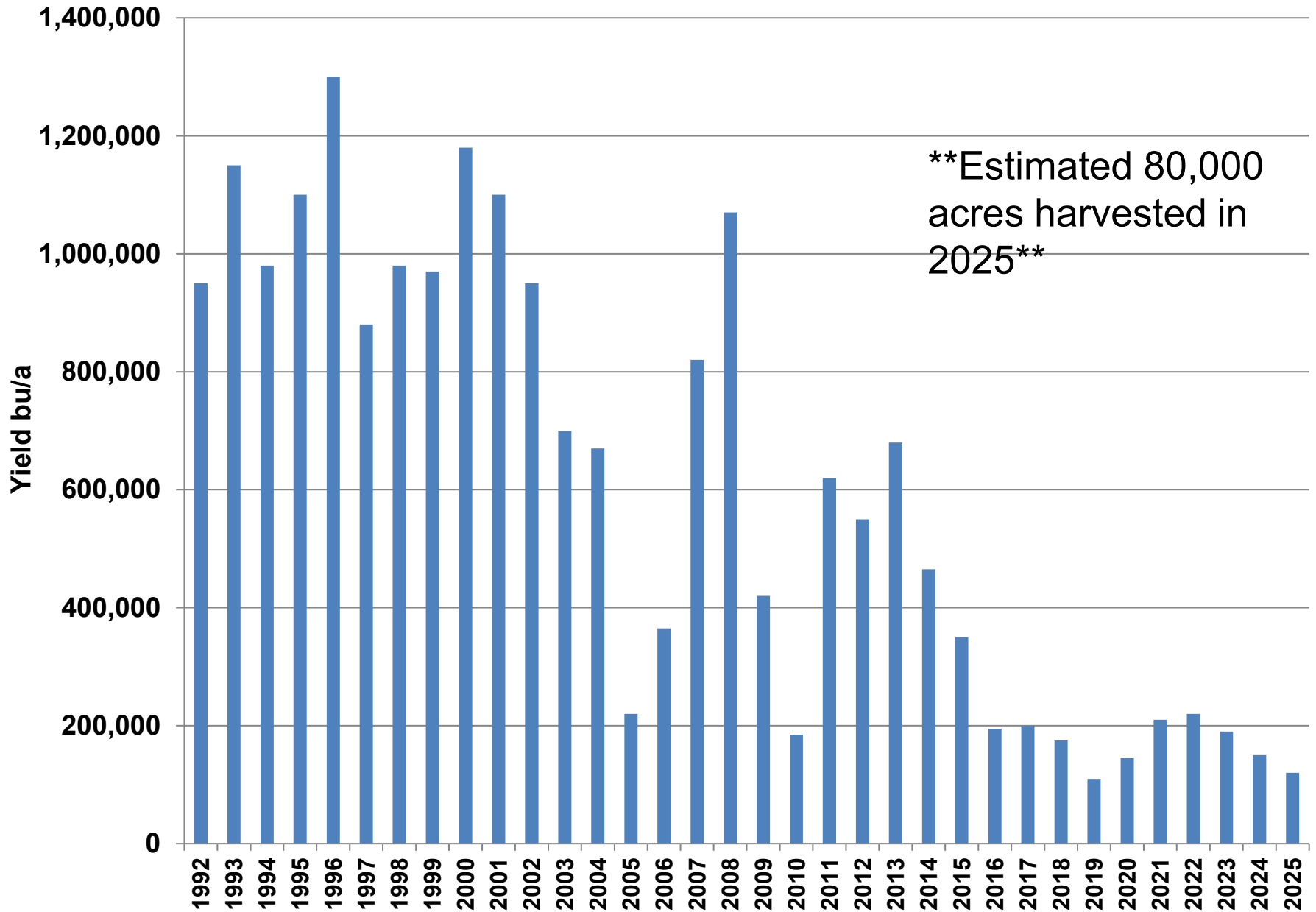
2025 Winter Wheat Planted Area

(000) Acres and Percent Change from Previous Year

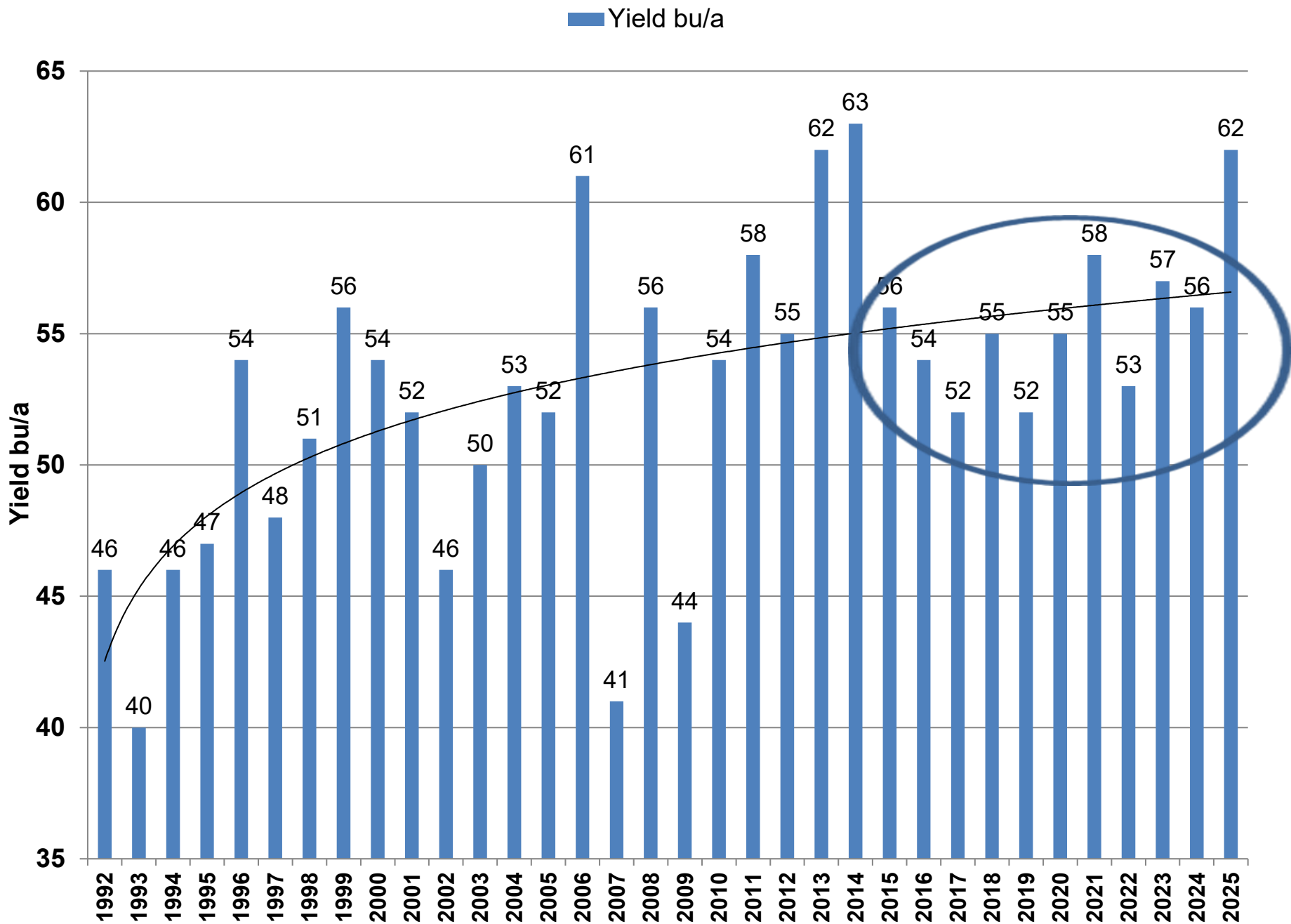


Arkansas Planted Wheat Acreage 1992-2025

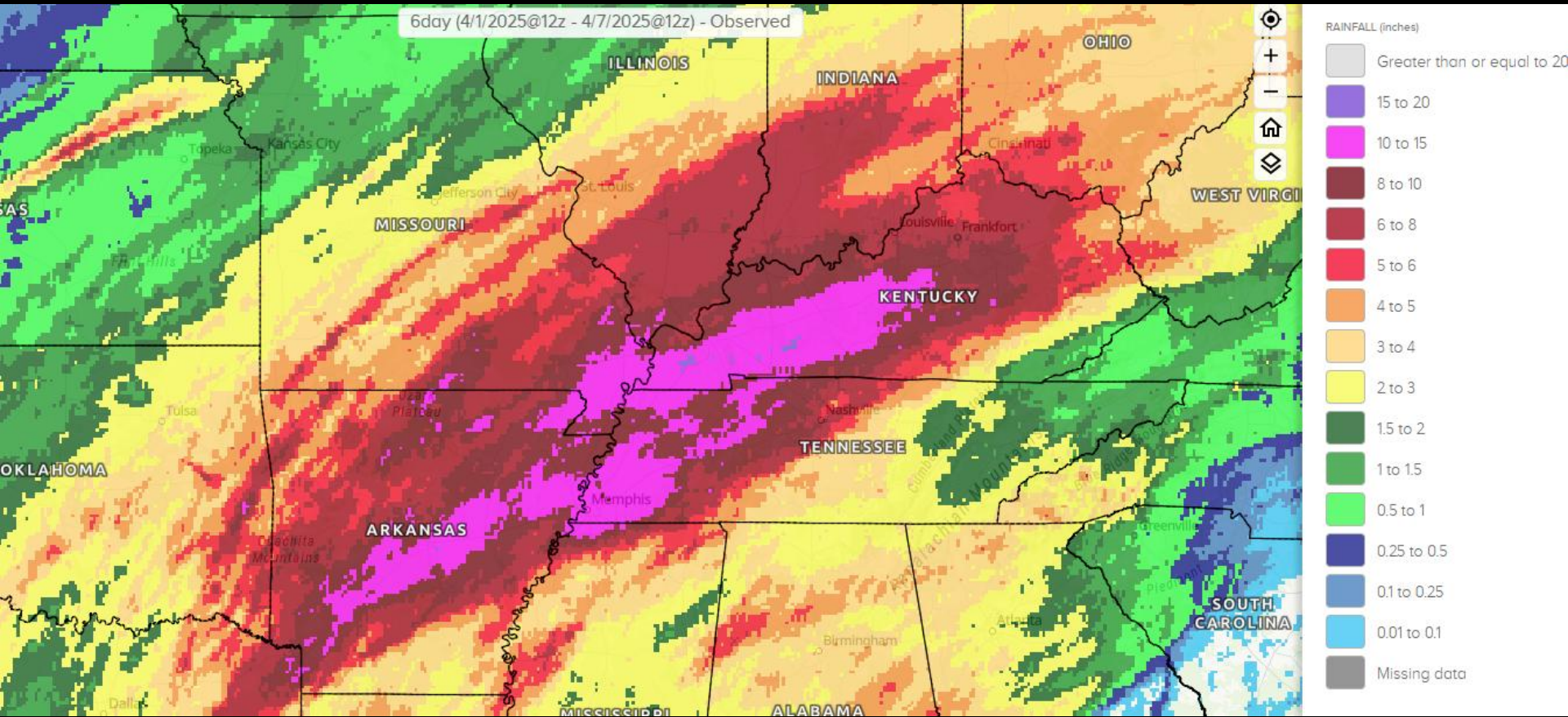
■ Planted Acres



Arkansas Average Wheat Yield 1992-2025



April 1-April 7 Rainfall Totals

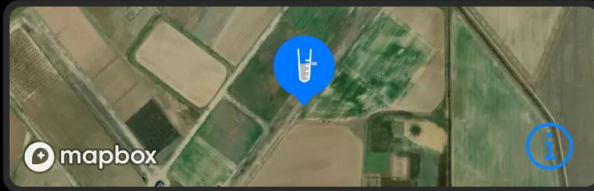
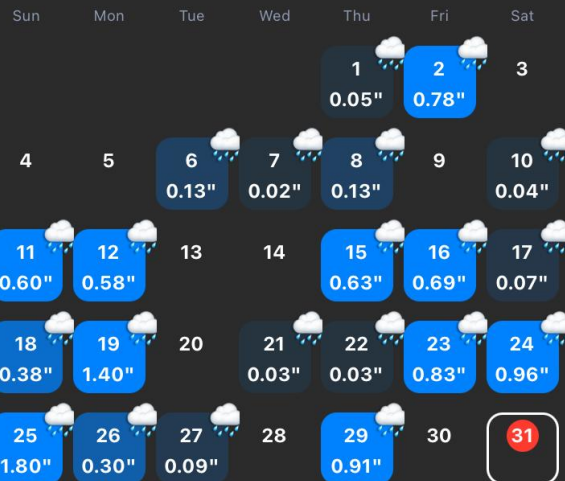


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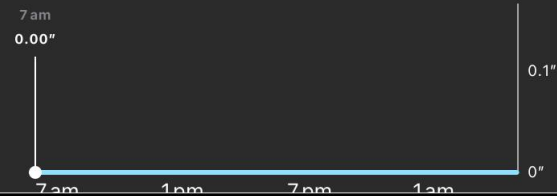
LTE

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Newport

May 2025
10.46"

May 31, 2025



Gauges

Forecasts

Map

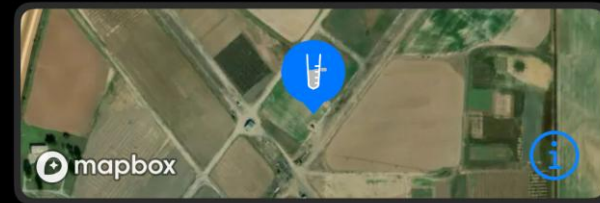
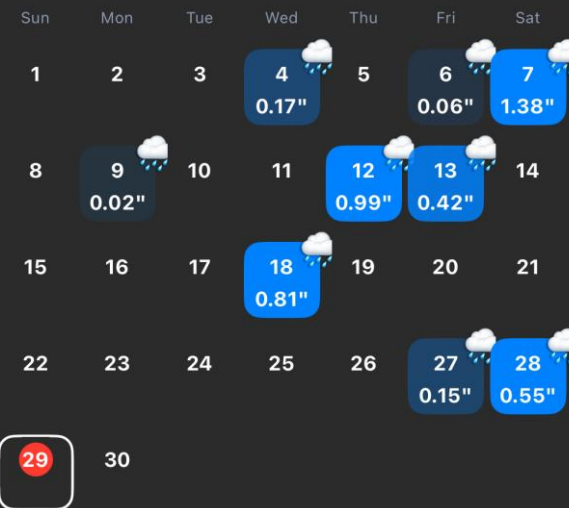
Support

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5G+ 90

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Newport

June 2025
4.56"

June 29, 2025



Gauges

Forecasts

Map

Support



Harvested May 23
No Test Weight Discount



Harvested June 24
Considerable Discount
14 rain events, 8.77 inches

Test Weight vs Harvest Date – Lon Mann Cotton Research Station, Marianna 2025

Harvest Date	Rainy days	Test Wt lb/bu	Test Wt Discount/bu	\$ Lost @75 bu/ac	1000 Kernel Wt (grams)
Variety 1					
May 23	0	59.6	0	0	41.7
June 3	6	55.1	\$0.80	\$60/ac	38.4
June 24	14	52.6	\$2.00	\$150/ac	36.5
Variety 2					
May 23	0	59.7	0	0	40.80
June 3	14	55.2	\$0.80	\$60/ac	38.30

Rainfall- Marianna 2025

May

Date	Hi Temp	Low Temp	Rainfall
15	85	70	0
16	87	72	0
17	84	65	0.1
18	88	65	0.52
19	82	66	0.78
20	84	65	1.05
21	83	58	0.12
22	86	62	0
23	86	62	0
24	79	65	0
25	74	64	0.78
26	82	66	0.92
27	70	65	0.66
28	71	65	0.06
29	78	67	0.07
30	82	63	0.02
31	80	59	0

June

Date	Hi Temp	Low Temp	Rainfall
1	81	62	0
2	85	65	0
3	87	66	0
4	88	70	0
5	88	73	0
6	92	73	0
7	90	70	0.7
8	86	69	0.1
9	90	72	0
10	86	65	0
11	89	67	0
12	87	71	0.01
13	87	70	0.54
14	88	69	3.5
15	88	72	0.1
16	89	71	0
17	87	72	0.46
18	88	73	0
19	89	70	0.85
20	88	70	0
21	94	77	0
22	92	75	0
23	93	75	0
24	95	75	0

May 23-June 24 Rainfall: 8.77
inches with 14 rain events

Wheat Acreage This Fall?

- \$5.98/bu – July 2026 at CBOT – Yesterday
 - Is that competitive with other crops?
 - Harvest time cash bids of ~ \$5.00-\$5.25 not attractive, especially with test weight and damage discounts added on

Arkansas Wheat Promotion Board Policy on Remote Attendance to Meetings

It is the policy of the Arkansas Wheat Promotion Board that Members are permitted to attend meetings of the Arkansas Wheat Promotion Board remotely as provided by Act 505 of 2025, effective on August 5, 2025, and codified as Arkansas Code Annotated § 25-19-106(e). For a Member of the Arkansas Wheat Promotion Board who attends a meeting remotely to be counted for a quorum or to vote, the Arkansas Wheat Promotion Board shall:

1. At the beginning of the meeting, verify the identity of the Member attending remotely;
2. Allow other Members and members of the public, whether physically present at the meeting or attending the meeting remotely, at all times to:
 - a. Hear the Member attending remotely;
 - b. Observe or otherwise understand a vote of the Member attending remotely; and
 - c. Know the identity of the Member attending remotely when that Member is speaking or voting; and
3. Allow a Member attending remotely to hear the other Members in attendance at the meeting and any public comment.

Any Member who attends an Arkansas Wheat Promotion Board meeting remotely, as provided by this policy, shall not receive mileage or per diem for attending the meeting.



2025-2026

Arkansas Wheat Promotion Board Proposals

Submitted to

Department of Agriculture

Arkansas Wheat Promotion Board



Table of Contents for 2025–2026 Arkansas Wheat Proposals

Page	Title	Investigator(s)	Funded 24-25	Request 25-26
1	Evaluation of Nitrogen Management of Winter Wheat Grown for Dual Purpose in Arkansas	Dr. Bronc Finch	0	\$10,000
	Year 1 of 3-New			
5	Arkansas Wheat Research Verification Program	Dr. Jason Kelley	\$14,500	\$14,500
	Year 2 of 3			
9	Evaluation of Safeners to Enable New Herbicide or Uses in Wheat	Dr. Jason K. Norsworthy	0	\$20,000
	Year 1 of 3-New			
13	Diversifying Arkansas Wheat Applications: Chemical- and Water-Free Electrostatic Fractionation	Dr. Mahfuzur Rahman	0	\$17,607
	Year 1 of 3-New			
17	Developing Superior Soft Red Winter Wheat Varieties with Enhanced Yield and Disease Resistance	Dr. Ehsan Shakiba	\$21,832	\$42,005
	Year 2 of 3			
21	Pest Management Using Recommended Wheat Varieties	Dr. Terry Spurlock	\$16,700	\$16,700
	Year 2 of 3			
		Total Proposed		\$120,812

Arkansas Wheat Promotion Board – 2025-2026 Proposal

Title: Evaluation of Nitrogen Management of Winter Wheat Grown for Dual-Purpose in Arkansas

Lead Investigators:

Bronc Finch, Assistant Professor, Extension Soil Fertility Specialist, CSES

Co-Investigators:

Jason Kelley, Professor, Extension Corn and Feed Grains Specialist, CSES

Ryan Loy, Assistant Professor, Extension Farm Finance Specialist, AEAB

Daniel Rivera, Associate Professor, SWREC Director, ANSC

Status: New

Research Areas: Fertility

Stated Goal: Identify the feasibility of reduced nitrogen rates and applications in live animal-grazed dual-purpose winter wheat production.

Specific Objectives: 1) Evaluate the impact of nitrogen application rate on livestock performance and grain yield. 2) Evaluate the interaction between nitrogen application rate and split application timing for improving winter wheat forage and grain production in a Dual-Purpose management system. 3) Compare the economic returns of the nitrogen management strategies.

Methods:

These objectives will be evaluated in a randomized complete block design (RCBD) at either the Southwest Research and Extension Center (SWREC) in Hope, AR or the Livestock and Forestry Research Station (LFST) in Batesville, AR. A winter wheat variety intended for dual-purpose production will be planted in 18 2-acre paddocks near mid-September, to be grazed until the occurrence of first hollow stem (FHS). Upon the occurrence of FHS a 0.1-acre area of each paddock will be omitted from grazing to allow for grain maturity. Nitrogen application treatments of combinations of rates and application times (Table 1) will be applied to each paddock, achieving 6 treatments replicated 3 times. Crossbred beef cattle (approximate body weight (BW) = 500 lbs) will be stratified by weight and assigned to grazing paddocks approximately 8 weeks following planting, when wheat is 8 inches tall. Stocking rate adjustments or early removal may occur if available biomass falls below 800 lb dry matter ac⁻¹. Cattle weights will be collected at turnout and removal, and forage biomass will be determined using a rising plate meter at 28-day intervals. In addition to forage biomass, forage samples will be clipped from 1 sq. ft. area in each paddock to be dried in a forced air oven at 100°F for 48 h, and subsequently analyzed for CP, TDN, and ADF using NIR technology. The occurrence of hollow stems will be monitored weekly beginning February 1st by measuring the hollow stem of the main tiller from 3 locations in 3 paddocks. Once the hollow stem of three samples is recorded to be ≥1.5cm in length from the crown, cattle will be removed and weighed. Wheat grain will be harvested using a plot combine from 3 passes of each sub-paddock. Grain weights, moisture, and crude protein will be collected from each sample and averaged for paddock and treatment results. Cattle weights and grain production measures will be used to assess the impact of nitrogen management for maintaining cattle during winter months while not significantly

reducing grain production. Economic analysis of input and returns will further evaluate the feasibility and potential for reduced nitrogen management compared to current practices.

Table 1. Winter Wheat nitrogen application rate (lb N ac⁻¹) at planting and first hollow stem (topdress).

Treatment	Nitrogen Rate (lb N acre ⁻¹)	
	Planting	Top-dress
1	0	0
2	100	50
3	75	75
4	50	50
5	75	0
6	50	0

Planned Milestones:

September	Burndown & Plant 120 lb/ac
November	Begin grazing
February-March	Estimated FHS
May	Harvest wheat

Statement of Projected Value: This project will demonstrate the feasibility and economic returns of dual-purpose winter wheat to encourage its implementation in the state to diversify income by adding value to cattle in the winter months and improve the return on investment of a planted wheat crop. This project will identify nitrogen management strategies for dual-purpose winter wheat production to optimize cattle performance, reduce input costs, and increase the efficient use of planted acres. For cattle producers, dual-purpose wheat provides a high-quality forage grown during the dormant period of warm-season grasses, which have been shown to add economical weight to stocker cattle without the reliance on hay feeding and feed supplementation. Additionally, cattle can be rotated to cool-season grasses in the February/March time frame, after ample forage growth has occurred, allowing winter wheat to mature and fill grain, which can be harvested to increase the return on winter annual acres planted to dual-purpose wheat. For wheat grain producers, dual-purpose wheat provides an opportunity to increase the return on wheat acres by leasing their wheat acres for grazing, while having little impact on grain production potential. Investigation of nitrogen management for dual-purpose systems is needed to ensure the most efficient use of inputs and budget. Live animal grazed systems present unique dynamics to nutrient cycling as livestock consume biomass and re-mineralize much of the nitrogen through urine and manure. This project can improve recommendations for producers interested in dual-purpose, graze and grain, wheat production, while also advocating the use of dual-purpose winter wheat for increasing the return on investment of wheat acres for both grain and cattle producers across the state.

Budget Justifications/Explanation of Travel and Direct Costs: \$10,000 for the year 2025/2026

Station Fees: \$3600, including Research fees (\$1800), Seed Costs (\$1800) to plant 36 acres of wheat at one of the livestock stations (LFST or SWREC). Planting fees and other station expenses could be recouped through livestock gain

Travel: \$1400 for PI and Program Associate to and from research site, and conference travel.

Supplies: \$2,000 for fencing materials, bags, equipment maintenance, etc. needed to conduct research.

Fertilizer/Chemicals: \$3,000 for fertilizer and chemicals needed for treatments and wheat production.

Evaluation of Nitrogen Management of Winter Wheat Grown for Dual-Purpose in Arkansas

Version 7.0

University of Arkansas System Division of Agriculture
Promotion Board Budget

Finch, Bronc

Evaluation of Nitrogen Management of Winter Wheat Grown for Dual-Purpose in Arkansas

Station Maintenance	Statistical Consulting					\$0	\$0	\$0
	Other Direct Costs					\$0	\$0	\$0
	SAREC, Fayetteville	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	CTST, Marianna	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Lonoke County Ext. Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	NERE, Keiser	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	NERREC, Harrisburg	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Jackson County Ext. Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	PTST, Colt	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	RIRE, Stuttgart	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Rosen Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	SEST, Rohwer	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	SWRE, Hope	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	VGSS, Kibler	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	FRSS, Clarksville	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	LFST, Batesville	\$3,600	\$0	\$0	\$0	\$3,600	\$0	\$3,600
	CSES Greenhouse, Fayetteville	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	M & O Total	\$8,600	\$0	\$0	\$0	\$8,600	\$0	\$8,600
	Total for Proposal	\$10,000	\$0	\$0	\$0	\$10,000	\$0	\$10,000

Budget errors delay submission of your proposal. Any proposal submitted with errors in the budget cannot be guaranteed accurate presentation for funding. Please check budgets for accuracy.

Fringe Benefit Rates (as of 7/1/2022)				
Campus	Fulltime	Temp/Hourly	Graduate	Student
AES	28.60%	7.30%	5.10%	0.10%
CES	28.60%	7.30%	5.10%	0.10%

Arkansas Wheat Promotion Board – 2025-2026 Proposal

Title: Wheat Research Verification Program

Lead Investigators: Dr. Jason Kelley, Wheat and Feed Grains Extension Agronomist

Co-Investigators: Chris Elkins, Program Associate
Dr. Terry Spurlock, Extension Plant Pathologist
Dr. Trent Roberts, Soils Fertility
Dr. Bob Scott Extension Weed Scientist
Dr. Glenn Studebaker, Extension Entomologist
Dr. Nick Bateman, Extension Entomologist

Status: Breana Watkins, Extension Economist Program Associate

Research Area: New (Ongoing, Year 2 of 3) Verification

Stated Goal:

Conduct an on-farm educational demonstration program that serves as a hands-on program to help producers, county extension agents, and crop consultants learn proper agronomic, pest management, and production practices that produce high-yielding and economical wheat under Arkansas conditions.

Specific Objectives:

- (1) Verify research-based recommendations for profitable wheat production in Arkansas
- (2) Develop a database for economic analysis of all aspects of wheat production
- (3) Demonstrate that consistently high wheat yields can be economically produced with the use of available technology and inputs
- (4) Identify specific problems and opportunities in Arkansas wheat production that may require further investigation
- (5) Provide hands-on training for county extension agents, consultants, and producers through weekly field visits by the coordinator

Methods:

Producers enroll (or re-enroll) a field in the Wheat Research Verification Program. The producers will receive advice on all aspects of wheat production. The Wheat and Feed Grains Extension Agronomist and verification program coordinator will work with an Extension/Research Advisory Committee to make plans for each individual field.

Weather data, growth stages, and management practices will be evaluated weekly with the assistance of county extension agents to help aid in making management decisions. In addition, cooperating producers may be asked to dedicate a portion of the field for on-farm investigations of ongoing research, such as evaluation of fertility recommendations, seed treatments, pest

management, or other production issues that may arise during the growing season that need more research.

At the end of the growing season, results will be compiled into a report that includes economic analysis, production practices implemented, and performance of each field in the program.

Statement of Projected Value:

Many Arkansas wheat producers can improve yields and profits by implementing research-based practices in a timely manner. Likewise, extension recommendations are designed to improve yields and profits based on the results of unbiased research. The research verification program integrates all of the available information and technology together into a comprehensive demonstration of profitable wheat production in Arkansas.

Additionally, the verification program provides advanced training for county extension agents and cooperating producers. The information gained by county extension agents can then be applied to wheat producers statewide. Cooperators participate in the verification program for two successive years to obtain multi-year data and increase the county extension agents and cooperators' confidence in the program.

Planned Milestones: Each year, an annual report with inputs, yields, and economic analysis will be prepared. Results from the program will be presented at county extension production meetings and included in newsletters, blog postings, and other avenues of information dissemination.

Budget Justification: The total funding request is \$14,500. Salary/benefits and travel account for 95% of the budget.

University of Arkansas System Division of Agriculture Promotion Board Budget

Version: 7.0 (11/01/2024)

Year	2025/2026	Project Year	Year 2 of 3	Version: 7.0 (11/01/2024)
Lead Investigator	Kelley, Jason	Co-PI #1		
Co-PI #2		Co-PI #3		
Department	CSES Crop, Soil, Environmental Science			
Commodity Board	Wheat Promotion Board			
Project Title	Arkansas Wheat Research Verification Program			

Budgets are requested in separate columns if separate Worktags for AES and CES will be needed.

Budget for Personnel

	Kelley, Jason				Total Board Funding:		
Select "AES" or "CES" for each PI	CES				Requested	AES Portion	CES Portion

Fulltime Personnel

Position Title	Name <i>(if position is filled)</i>	% Time	Salaries				Total	AES	CES
Program Associate	Chris Elkins	5%	\$3,500				\$3,500	\$0	\$3,500
Program Associate	Vacant	5%	\$3,450				\$3,450	\$0	\$3,450
							\$0	\$0	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
Subtotal: Salaries			\$6,950	\$0	\$0	\$0	\$6,950	\$0	\$6,950

Graduate Student

Tuition to be budgeted in the same ratio as GA stipend time, e.g., full time GA stipend, full year's tuition.	Name (if position is filled)	% Time	Wages				Total	AES Portion	CES Portion
							\$0	\$0	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
Tuition Calculator Information:							\$0	\$0	\$0
Subtotal: Graduate Student			\$0	\$0	\$0	\$0	\$0	\$0	\$0

Hourly

	Wages				Total	AES Portion	CES Portion
Hourly-Personnel					\$0	\$0	\$0
Hourly-Students					\$0	\$0	\$0
Subtotal: Hourly	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Fringe Benefits

	Benefits				Total	AES Portion	CES Portion
Fulltime Personnel	\$1,988	\$0	\$0	\$0	\$1,988	\$0	\$1,988
Graduate Students	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hourly Personnel	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hourly-Students	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal: Fringe Benefits	\$1,988	\$0	\$0	\$0	\$1,988	\$0	\$1,988
Personnel Total	\$8,938	\$0	\$0	\$0	\$8,938	\$0	\$8,938

Travel

	Travel				Total	AES Portion	CES Portion
In-State	\$4,900				\$4,900	\$0	\$4,900
Out-of-State					\$0	\$0	\$0
Travel Total	\$4,900	\$0	\$0	\$0	\$4,900	\$0	\$4,900

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University of Arkansas System Division of Agriculture

Promotion Board Budget

Kelley, Jason

Arkansas Wheat Research Verification Program

		Maintenance & Operations						
		M&O				Total	AES Portion	CES Portion
	Supplies	\$500				\$500	\$0	\$500
	Fertilizer/Chemicals					\$0	\$0	\$0
	Publication	\$162				\$162	\$0	\$162
	Statistical Consulting					\$0	\$0	\$0
	Other Direct Costs					\$0	\$0	\$0
Station Maintenance	SAREC, Fayetteville	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	CTST, Marianna	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Lonoke County Ext. Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	NERE, Keiser	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	NERREC, Harrisburg	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Jackson County Ext. Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	PTST, Colt	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	RIRE, Stuttgart	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Rosen Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	SEST, Rohwer	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	SWRE, Hope	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	VGSS, Kibler	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	FRSS, Clarksville	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	LFST, Batesville	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	CSES Greenhouse, Fayetteville	\$0	\$0	\$0	\$0	\$0	\$0	\$0
M & O Total		\$662	\$0	\$0	\$0	\$662	\$0	\$662
Total for Proposal		\$14,500	\$0	\$0	\$0	\$14,500	\$0	\$14,500
Budget errors delay submission of your proposal. Any proposal submitted with errors in the budget cannot be guaranteed accurate presentation for funding. Please check budgets for accuracy.								

Fringe Benefit Rates (as of 7/1/2022)				
Campus	Fulltime	Temp/Hourly	Graduate	Student
AES	28.60%	7.30%	5.10%	0.10%
CES	28.60%	7.30%	5.10%	0.10%

Arkansas Wheat Board – 2025-2026 Proposal

Title: Evaluation of Safeners to Enable New Herbicide or Uses in Wheat

Lead Investigators: Jason K. Norsworthy

Co-Investigators: Bob Scott

Status: New

Research Area (Weed Control):

Stated Goal: The goal of this project is to build on our knowledge surrounding the recent identification of safeners that enable new herbicide uses in wheat.

Specific Objectives:

1. Evaluate the preemergence-applied Zidua for effectiveness on ryegrass and wheat tolerance with and without a fenclorim seed treatment.
2. Evaluate wheat tolerance to preemergence-applied clomazone and mesotrione alone and with the cloquintocet, mefenpyr, and the combination of seed treatments.
3. Conducting 3-4 field weed control studies in wheat each year focusing on resistant ryegrass and mayweed control. In addition, greenhouse screenings may be conducted to determine resistance levels of new/emerging weed problems such as glyphosate-resistant *Poa annua*. The project will also evaluate any new chemistry for wheat as it becomes available.

Methods:

Standard small-plot research techniques will be employed. Plots will be nine rows by 20 to 25 feet long with four replications per treatment. Crop tolerance and Italian ryegrass control will be rated on a 0 to 100 scale following wheat emergence. Plots will be harvested to determine the impact of improved weed control on grain yield or the effect of the herbicide treatments on yield. The trials will be located at Newport and Fayetteville.

Planned Milestones:

Evaluation of safeners and herbicides that enable safe use of both products in wheat will take place in the fall each year. Results from the evaluations will be made available through quarterly reports and findings shared with growers at county and state-wide production meetings when a commercial product is available, which could be as early as the 2026 growing season.

Statement of Projected Value:

Italian ryegrass remains the most problematic weed of wheat globally and in Arkansas. Zidua is currently labeled for Italian ryegrass control; however, it can only be applied delayed-preemergence. Zidua provides no control of ryegrass plants that germinate before application of the herbicide. Recent research from my program has shown enhanced tolerance of wheat to Zidua when the seed is treated with fenclorim at 1.5 g/kg of seed. Moving the application of Zidua to the preemergence timing ryegrass control should improve without increasing the risk for injury to wheat due to the fenclorim seed treatment.

Clomazone is another herbicide is highly effective in controlling ryegrass but is not currently labeled in wheat. Research conducted in the spring of 2024 identified cloquintocet and mefenpyr as safeners from clomazone use in wheat. Additionally, mesotrione (Callisto) use in wheat was enabled by use of the same seed treatments. These initial research efforts are preliminary, but provide reasonable evidence that these herbicides should provide tremendous improvement in weed control performance and value to the Arkansas farmer.

Expanding the registration of Zidua in wheat with fenclorim would require minimal effort since Zidua currently has a label, and fenclorim would be considered inert by the EPA. Registration of clomazone (Command) or mesotrione (Callisto) would require a 2- to 3-year process for registration in the crop.

Budget Justifications/Explanation of Travel and Direct Costs:

A total of \$12,500 is budgeted for Dr. Norsworthy's program. His program associate, Dr. Rodrigo Botelho, will conduct the research. His time is budgeted at 10% of his annual salary and fringe benefits (\$8000). A total of \$4,500 is budgeted to purchase the safeners (fenclorim, cloquintocet, and mefenpyr), standard small-plot supplies, and wheat seed.

A total of \$7,500 is budgeted for Dr. Bob Scott's program. Budget Justifications/Explanation of Travel and Direct Costs: This budget allocation covers the partial salary (\$5,144) of one program technician and includes labor involved in establishing, evaluating, and analyzing test results. It also includes \$2,256 for supplies including wheat seed, spray equipment, chemicals, fertilizers, and other misc. costs.

Version: 7.0 (11/01/2024)

Year	2025/2026	Project Year	New				Version: 7.0 (11/01/2024)		
Lead Investigator	Norsworthy, Jason	Co-PI #1							
Co-PI #2	Bob Scott	Co-PI #3							
Department	CSES Crop, Soil, Environmental Science								
Commodity Board	Wheat Promotion Board								
Project Title	Evaluation of Safeners to Enable New Herbicides or Uses in Wheat								
Budgets are requested in separate columns if separate Worktags for AES and CES will be needed.									
Budget for Personnel									
			Norsworthy, Jason		Bob Scott		Total Board Funding Requested	AES Portion	CES Portion
Select "AES" or "CES" for each PI									
			X		X				
Fulltime Personnel									
Position Title	Name (if position is filled)	% Time	Salaries				Total	AES	CES
Program Associate	Rodrigo Botelho	10%	\$6,221				\$6,221	\$0	\$0
Program Associate	Megan	10%			\$4,000		\$4,000	\$0	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
Subtotal: Salaries			\$6,221	\$0	\$4,000	\$0	\$10,221	\$0	\$0
Tuition to be budgeted in the same ratio as GA stipend time, e.g., full time GA stipend, full year's tuition.	Graduate Student								
	Name (if position is filled)	% Time	Wages				Total	AES Portion	CES Portion
							\$0	\$0	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
	Tuition Calculator Information						\$0	\$0	\$0
Subtotal: Graduate Student			\$0	\$0	\$0	\$0	\$0	\$0	
Fringe benefits are calculated when salary and wage amounts are entered above.	Hourly								
	Wages				Total	AES Portion	CES Portion		
	Hourly-Personnel				\$0	\$0	\$0		
	Hourly-Students				\$0	\$0	\$0		
	Subtotal: Hourly			\$0	\$0	\$0	\$0	\$0	
	Fringe Benefits								
	Benefits				Total	AES Portion	CES Portion		
	Fulltime Personnel	\$1,779	\$0	\$1,144	\$0	\$2,923	\$0	\$0	
	Graduate Students	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Hourly Personnel	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Hourly-Students	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Subtotal: Fringe Benefits			\$1,779	\$0	\$1,144	\$0	\$2,923	\$0
Personnel Total			\$8,000	\$0	\$5,144	\$0	\$13,144	\$0	\$0
Justify out-of-state travel in proposal.	Travel								
	Travel				Total	AES Portion	CES Portion		
	In-State				\$0	\$0	\$0		
	Out-of-State				\$0	\$0	\$0		
	Travel Total			\$0	\$0	\$0	\$0	\$0	\$0

University of Arkansas System Division of Agriculture
Promotion Board Budget

Norsworthy, Jason

Evaluation of Safeners to Enable New Herbicides or Uses in Wheat

		Maintenance & Operations							
		M&O				Total	AES Portion	CES Portion	
Other Direct Costs	Supplies	\$4,500		\$1,500		\$6,000	\$0	\$0	
	Fertilizer/Chemicals			\$856		\$856	\$0	\$0	
	Publication					\$0	\$0	\$0	
	Statistical Consulting					\$0	\$0	\$0	
						\$0	\$0	\$0	
Station Maintenance	SAREC, Fayetteville	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	CTST, Marianna	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Lonoke County Ext. Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	NERE, Keiser	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	NERREC, Harrisburg	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Jackson County Ext. Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	PTST, Colt	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	RIRE, Stuttgart	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Rosen Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	SEST, Rohwer	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	SWRE, Hope	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	VGSS, Kibler	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	FRSS, Clarksville	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	LFST, Batesville	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	CSES Greenhouse, Fayetteville	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	M & O Total		\$4,500	\$0	\$2,356	\$0	\$6,856	\$0	\$0
	Total for Proposal		\$12,500	\$0	\$7,500	\$0	\$20,000	\$0	\$0
Budget errors delay submission of your proposal. Any proposal submitted with errors in the budget cannot be guaranteed accurate presentation for funding. Please check budgets for accuracy.									

Fringe Benefit Rates (as of 7/1/2022)				
Campus	Fulltime	Temp/Hourly	Graduate	Student
AES	28.60%	7.30%	5.10%	0.10%
CES	28.60%	7.30%	5.10%	0.10%

Arkansas Wheat Promotion Board – 2025-2026 Proposal

Title: Diversifying Arkansas Wheat Applications: Chemical- and Water-Free Electrostatic Fractionation for High-Functionality Wheat Protein

Lead Investigators: Mahfuzur Rahman, Assistant Professor, Department of Food Science, 2650 Young Ave, Fayetteville, AR 72704, USA. Phone: +1 479 575 5737 Email: mahfuz@uark.edu

Co-Investigators: NA

Status (i.e., New, Year 2 of 3, Year 2 of 2, etc.): New

Research Areas (Verification Program, General Agronomics, Diseases, Insects, Fertility, Irrigation, Weed Control, Misc. Projects): Misc. Projects

Stated Goal:

Arkansas stands out as a major producer of soft red winter wheat in the United States, averaging around 600,000 acres planted and yields of 57–58 bushels per acre in recent years. Despite this strong production, the state's wheat industry faces significant challenges, including fluctuating commodity prices, shrinking acreage, and the need to diversify wheat's end uses to sustain farm income and market relevance. While human food remains the primary market, alternative applications such as animal feed, biofuels, and bioplastics are gaining attraction.

Vital wheat gluten, extracted mainly through wet separation methods, is essential for the texture and functionality of baked goods and plant-based foods. However, conventional wet extraction is resource-intensive, consuming large amounts of water and energy, and generating considerable wastewater. Importantly, this process often results in the loss of high molecular weight (HMW) glutenins—key proteins responsible for dough strength and elasticity—due to their low solubility in water and inefficient extraction.

To address these challenges, the proposed project seeks to develop an energy-efficient dry fractionation method, such as electrostatic separation, for isolating vital wheat gluten from Arkansas-grown wheat. This approach eliminates the need for water and chemicals, significantly reducing environmental impact and operational costs. It also preserves the retention and functionality of HMW glutenins for innovative food applications such as meat analogs and specialty bakery products.

Specific Objectives:

1. Develop and optimize an effective electrostatic method separation of the vital wheat gluten
2. Characterization of structural and functional properties of fractionated protein fractions in comparison to conventionally obtained gluten fraction.
3. Evaluation of product development potential of fractionated proteins.

Methods:

Objective 1: 1. Develop and optimize an effective method for electrostatic separation of vital wheat gluten fraction

This objective evaluates the effect of particle size, moisture content, and feed composition on the surface charge of the particles. Milling and pre-treatment processes will be optimized to enhance protein liberation and reduce agglomeration, thereby improving chargeability and separation performance. Additionally, the separator design, including electrode configuration and airflow control, will be refined to minimize material loss and maximize protein enrichment in the gluten fraction. Finally, the optimized method will be validated

by analyzing the protein content, yield, and purity of the separated fractions through appropriate analytical techniques such as mass yield measurements and total nitrogen assessment.

Objective 2: 2. Characterization of structural and functional properties of fractionated protein fractions in comparison to conventionally obtained gluten fraction

The changes in physicochemical and molecular structure (primary, secondary, and tertiary structure) will be evaluated using standard protocols in the PI's lab, including total nitrogen content, proximate analysis, Fourier-transform infrared spectroscopy (FTIR), hydrophobicity, HMW glutenins, and free sulfhydryl content. Ingredient functionalities such as solubility, emulsifying and foaming properties, water- and oil-holding capacity, dough viscosity, and rheology will also be analyzed following established protocols ^{12,13}.

Objective 3: Evaluation of product development potential of fractionated proteins

The fractionated proteins will be evaluated for their quality of product incorporation. A wide range of bread and bakery goods, such as breads, cookies, short pastries etc., will be produced using standard protocols, and their quality will be assessed accordingly for each product.

Planned Milestones:

	Year 1				Year 2			
	1-3 M	4-6 M	7-9 M	10-12 M	1-3 M	4-6 M	7-9 M	10-12 M
Objective 1								
Objective 2								
Objective 3								
Publications and Reports								

Statement of Projected Value:

The projected value of this project lies in its potential to transform Arkansas's wheat industry by enabling more sustainable and efficient production of vital wheat gluten through dry fractionation. By eliminating water and chemical use, this method will significantly support both economic and ecological goals. Enhanced retention of high-molecular-weight glutenins will improve the quality and functionality of wheat protein ingredients, opening up new markets in plant-based foods and specialty baked goods. This innovation will help diversify wheat end uses, stabilize farm income, and strengthen Arkansas's position in value-added agricultural processing. Ultimately, the project aligns with global sustainability initiatives and positions Arkansas as a leader in advanced wheat protein technologies.

Budget Justifications/Explanation of Travel and Direct Costs:

The salary of one graduate student for 25% time is requested for 2 years to complete the project. The student will perform electrostatic separations, fractionate protein and fiber, conduct analytical and functional characterization, and formulate products. Expenses for laboratory supplies, raw materials, maintenance of electrostatic separator, analytical techniques, and chemicals are also requested.

University of Arkansas System Division of Agriculture

Promotion Board Budget

Rahman, Mahfuzur

Diversifying Arkansas Wheat Applications: Chemical and Water Free Electrostatic Fractionation

Version: 7.0 (11/01/2024)

Year	2025/2026	Project Year							
Lead Investigator	Rahman, Mahfuzur	Co-PI #1							
Co-PI #2		Co-PI #3							
Department	FDSC Food Science								
Commodity Board									
Project Title	Diversifying Arkansas Wheat Applications: Chemical and Water Free Electrostatic Fractionation								
Budgets are requested in separate columns if separate Worktags for AES and CES will be needed.									
Budget for Personnel									
		Rahman, Mahfuzur							
Select "AES" or "CES" for each PI		AES					Total Board Funding Requested	AES Portion	
								CES Portion	
Fulltime Personnel									
Position Title	Name (if position is filled)	% Time	Salaries				Total	AES	CES
							\$0	\$0	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
Subtotal: Salaries			\$0	\$0	\$0	\$0	\$0	\$0	\$0
Graduate Student									
Tuition to be budgeted in the same ratio as GA stipend time, e.g., full time GA stipend, full year's tuition.	Name (if position is filled)	% Time	Wages				Total	AES Portion	CES Portion
	To be filled	25%	\$12,000				\$12,000	\$12,000	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
							\$0	\$0	\$0
	Tuition Calculator Information			\$2,495				\$2,495	\$2,495
Subtotal: Graduate Student			\$14,495	\$0	\$0	\$0	\$14,495	\$14,495	\$0
Hourly									
			Wages				Total	AES Portion	CES Portion
Hourly-Personnel							\$0	\$0	\$0
Hourly-Students							\$0	\$0	\$0
Subtotal: Hourly			\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fringe Benefits									
			Benefits				Total	AES Portion	CES Portion
Fulltime Personnel			\$0	\$0	\$0	\$0	\$0	\$0	\$0
Graduate Students			\$612	\$0	\$0	\$0	\$612	\$612	\$0
Hourly Personnel			\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hourly-Students			\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal: Fringe Benefits			\$612	\$0	\$0	\$0	\$612	\$612	\$0
Personnel Total			\$15,107	\$0	\$0	\$0	\$15,107	\$15,107	\$0
Travel									
			Travel				Total	AES Portion	CES Portion
In-State							\$0	\$0	\$0
Out-of-State							\$0	\$0	\$0
Travel Total			\$0	\$0	\$0	\$0	\$0	\$0	\$0

University of Arkansas System Division of Agriculture

Promotion Board Budget

Rahman, Mahfuzur

Diversifying Arkansas Wheat Applications: Chemical and Water Free Electrostatic Fractionation

		Maintenance & Operations							
		M&O				Total	AES Portion	CES Portion	
Other Direct Costs	Supplies	\$2,500				\$2,500	\$2,500	\$0	
	Fertilizer/Chemicals					\$0	\$0	\$0	
	Publication					\$0	\$0	\$0	
	Statistical Consulting					\$0	\$0	\$0	
						\$0	\$0	\$0	
Station Maintenance	SAREC, Fayetteville	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	CTST, Marianna	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Lonoke County Ext. Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	NERE, Keiser	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	NERREC, Harrisburg	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Jackson County Ext. Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	PTST, Colt	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	RIRE, Stuttgart	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Rosen Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	SEST, Rohwer	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	SWRE, Hope	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	VGSS, Kibler	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	FRSS, Clarksville	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	LFST, Batesville	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	CSES Greenhouse, Fayetteville	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	M & O Total		\$2,500	\$0	\$0	\$0	\$2,500	\$2,500	\$0
	Total for Proposal		\$17,607	\$0	\$0	\$0	\$17,607	\$17,607	\$0
Budget errors delay submission of your proposal. Any proposal submitted with errors in the budget cannot be guaranteed accurate presentation for funding. Please check budgets for accuracy.									

Fringe Benefit Rates (as of 7/1/2022)				
Campus	Fulltime	Temp/Hourly	Graduate	Student
AES	28.60%	7.30%	5.10%	0.10%
CES	28.60%	7.30%	5.10%	0.10%

Arkansas Wheat Promotion Board – 2025-2026 Proposal

Title: Developing Superior Soft Red Winter Wheat Varieties with Enhanced Yield and Disease Resistance for Arkansas

Lead Investigators: Ehsan Shakiba

Co-Investigators: Year 2 of 3

Status (i.e., New, Year 2 of 3, Year 2 of 2, etc.):

Research Areas (Verification Program, General Agronomics, Diseases, Insects, Fertility, Irrigation, Weed Control, Misc. Projects): Plant Breeding and Genetics

Stated Goal:

- Develop high-yield potential cultivars and germplasm with durable resistance to biotic and abiotic stresses
- Identify superior wheat genotypes adapted to the Arkansas wheat-growing region via exchange and cooperative testing of breeding material with five university breeding programs, also known as Southeastern University Grains (Sungrains), and participate in the joint release of the new lines
- Develop collaborative research with UofA scientists developing projects to improve wheat yield and its agronomic characteristics.

Learn and present the latest innovative scientific findings/ techniques for developing the wheat breeding program through scientific meetings, workshops, networking, etc

Specific Objectives:

- Develop elite wheat germplasm via field study using appropriate breeding methods.
- Develop superior wheat line via the double haploid procedure.
- Identify genotypes for resistance to Stripe rust caused by the fungus *Puccinia striiformis* via inoculating and screening breeding material and varieties
- Collaborate with Dr. Jason Kelly, a small grain specialist on wheat breeding issues.

Methods:

- Apply all feasible breeding techniques and methods (hybridization, backcrossing, mutation breeding, biotechnology, etc.) to produce elite wheat lines.
- Implement disease screening for evaluating wheat genotypes to select and develop wheat lines with durable resistance to biotic stresses.
- Perform Cooperative testing of wheat lines developed by the University of Arkansas and other Sungrain contributors for adaption in Arkansas. Any high yield wheat line that is strongly adapted to Arkansas growing conditions will be targeted for co-release with developing institutions.
- Continue cooperation and exchange of information and materials within the cooperative breeding network in the USA and abroad.

Planned Milestones:

The time required to produce a new wheat variety ranges from 10 to 12 years, depending on the variability in the genetic materials used to make the cross. Plant breeding is an ongoing continuous process. During the life of a program, lines will be in stages of development from early to advanced generations. Thus no time limit is suggested, but the release of varieties should occur through the funding period, and specific yearly objectives have been defined. However, utilizing molecular analysis for marker-assisted selection can reduce the cost the breeding procedures. Moreover, methods such as double haploid are applied to speed up the process of

accessing specific traits. In addition, new wheat genotypes will be introduced into our germplasm to improve genetic diversity and fill the areas where the program was lacking.

Statement of Projected Value:

Arkansas is one of the wheat producers in the U.S. For the 2023 planting season, wheat was planted in over 150 thousand acres of Arkansas farmland and was harvested with an average of 55 bushels/ acre. According to USDA, Arkansas winter wheat production for 2022 was 9.12 million bushels. In 2021, about 145 thousand wheat, an average of 58 bu/ac, were harvested. In 2020 Arkansas winter wheat produced 4.125 million bushels (247.5 million pounds), showing a more than 59 percent increase compared to 2019. The harvested area for 2020 reached 75,000 acres, a 25,000-acre increase from the previous year. Moreover, the state average yield for 2020 improved to 55 bushels per acre, about three bushels more than in 2019. Arkansas wheat acreage is still less than a decade ago when growers planted about 680,000 acres in 2013. However, increasing grain prices was essential in growers' decision to plant more winter wheat in 2020. As a result, Arkansas' winter wheat acreage in 2020 reached 180,000 acres, the highest since 2017. Despite the narrow window for planting wheat, developing elite wheat cultivars, implementing successful field management, and increasing wheat premiums can contribute to wheat production in Arkansas.

Budget Justifications/Explanation of Travel and Direct Costs:

- **Agro-lab Tech** (\$18000): I plan to hire a full-time employee for the program. Currently, we don't have any full-time employees in our program. The 18000 will be for 50% of his activities.
- **Hourly Worker** (\$6,000): Plant breeding is labor-intensive. We plan to have an hourly worker for the field, lab, and greenhouse activities.
- **Travel** (\$3,500): Travel will be used for 1) visiting U.A. stations for field activities. We will plant some of our lines in Marianna and Fayetteville for yield evaluation, which requires more travel to these locations.
- **Computer** (\$2000): I am requesting funding for a new laptop, as my university-issued device—now over ten years old—has stopped working. This equipment is essential for my research supporting the development of the wheat industry.

University of Arkansas System Division of Agriculture

Promotion Board Budget

Shakiba, Ehsan

Developing Superior Soft Red Winter Wheat Varieties with Enhanced Yield and Disease Resistance for Arkansas

Version: 7.0 (11/01/2024)

Year	2025/2026	Project Year	Year 2 of 3					
Lead Investigator	Shakiba, Ehsan	Co-PI #1						
Co-PI #2		Co-PI #3						
Department	CSES Crop, Soil, Environmental Science							
Commodity Board	Wheat Promotion Board							
Project Title	Developing Superior Soft Red Winter Wheat Varieties with Enhanced Yield and Disease Resistance for Arkansas							
Budgets are requested in separate columns if separate Worktags for AES and CES will be needed.								
Budget for Personnel								
	Shakiba, Ehsan							
Select "AES" or "CES" for each PI	AES							
Fulltime Personnel								
Position Title	Name (if position is filled)	% Time	Salaries			Total	AES	CES
Agro-lab tech	TBA		\$18,000			\$18,000	\$18,000	\$0
						\$0	\$0	\$0
						\$0	\$0	\$0
						\$0	\$0	\$0
						\$0	\$0	\$0
Subtotal: Salaries			\$18,000	\$0	\$0	\$18,000	\$18,000	\$0
Graduate Student								
Tuition to be budgeted in the same ratio as GA stipend time, e.g., full time GA stipend, full year's tuition.	Name (if position is filled)	% Time	Wages			Total	AES Portion	CES Portion
						\$0	\$0	\$0
						\$0	\$0	\$0
						\$0	\$0	\$0
						\$0	\$0	\$0
						\$0	\$0	\$0
	Tuition Calculator Information					\$0	\$0	\$0
Subtotal: Graduate Student			\$0	\$0	\$0	\$0	\$0	\$0
Hourly								
			Wages			Total	AES Portion	CES Portion
Hourly-Personnel			\$3,800			\$3,800	\$3,800	\$0
Hourly-Students						\$0	\$0	\$0
Subtotal: Hourly			\$3,800	\$0	\$0	\$3,800	\$3,800	\$0
Fringe Benefits								
			Benefits			Total	AES Portion	CES Portion
Fulltime Personnel			\$5,148	\$0	\$0	\$5,148	\$5,148	\$0
Graduate Students			\$0	\$0	\$0	\$0	\$0	\$0
Hourly Personnel			\$277	\$0	\$0	\$277	\$277	\$0
Hourly-Students			\$0	\$0	\$0	\$0	\$0	\$0
Subtotal: Fringe Benefits			\$5,425	\$0	\$0	\$5,425	\$5,425	\$0
Personnel Total			\$27,225	\$0	\$0	\$27,225	\$27,225	\$0
Travel								
			Travel			Total	AES Portion	CES Portion
In-State			\$3,000			\$3,000	\$3,000	\$0
Out-of-State						\$0	\$0	\$0
Travel Total			\$3,000	\$0	\$0	\$3,000	\$3,000	\$0

University of Arkansas System Division of Agriculture

Promotion Board Budget

Shakiba, Ehsan

Developing Superior Soft Red Winter Wheat Varieties with Enhanced Yield and Disease Resistance for Arkansas

		Maintenance & Operations						
		M&O				Total	AES Portion	CES Portion
Other Direct Costs	Supplies	\$1,000				\$1,000	\$1,000	\$0
	Fertilizer/Chemicals					\$0	\$0	\$0
	Publication					\$0	\$0	\$0
	Statistical Consulting					\$0	\$0	\$0
	computer	\$2,000				\$2,000	\$2,000	\$0
Station Maintenance	SAREC, Fayetteville	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	CTST, Marianna	\$6,600	\$0	\$0	\$0	\$6,600	\$6,600	\$0
	Lonoke County Ext. Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	NERE, Keiser	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	NERREC, Harrisburg	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Jackson County Ext. Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	PTST, Colt	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	RIRE, Stuttgart	\$2,180	\$0	\$0	\$0	\$2,180	\$2,180	\$0
	Rosen Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	SEST, Rohwer	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	SWRE, Hope	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	VGSS, Kibler	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	FRSS, Clarksville	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	LFST, Batesville	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	CSES Greenhouse, Fayetteville	\$0	\$0	\$0	\$0	\$0	\$0	\$0
M & O Total		\$11,780	\$0	\$0	\$0	\$11,780	\$11,780	\$0
Total for Proposal		\$42,005	\$0	\$0	\$0	\$42,005	\$42,005	\$0
Budget errors delay submission of your proposal. Any proposal submitted with errors in the budget cannot be guaranteed accurate presentation for funding. Please check budgets for accuracy.								

Fringe Benefit Rates (as of 7/1/2022)				
Campus	Fulltime	Temp/Hourly	Graduate	Student
AES	28.60%	7.30%	5.10%	0.10%
CES	28.60%	7.30%	5.10%	0.10%

Arkansas Wheat Promotion Board – 2025-2026 Proposal

Title: Pest Management Using Recommended Wheat Varieties

Lead Investigators: Terry Spurlock

Co-Investigators: Jason Kelley and Nick Bateman

Status: Year 2

Research Areas: Disease management, insect management, grain quality, extension and outreach

Stated Goal: To develop a group of recommended wheat varieties annually to better manage pests such as Fusarium head blight, stripe rust, and other foliar diseases, and rice stink bug, and increase grower profits.

Specific Objectives:

1. Create a list of recommended wheat varieties using results from the Arkansas Wheat Variety Testing Program.
2. Determine the economic value of a single scab preventative fungicide application on a resistant variety and varieties known to be susceptible to scab, leaf rust, and stripe rust.
3. Develop an economic threshold for rice stink bug in wheat using a sweep net.

Methods Objective 1: Drs. Spurlock and Kelley will rate foliar disease severity at the Official Variety Trial (OVT) locations, Keiser, Kibler, Lon Mann, Rohwer, and Pine Tree, and use the data to create a list of recommended varieties annually.

The list of recommended varieties will be determined as follows:

1. Included in the latest two years of the variety testing program
2. Moderately resistant to Fusarium head blight
3. Moderately resistant to stripe rust
4. Resistance/tolerance to leaf rust, Septoria tritici blotch, and bacterial leaf streak
5. In the 'higher yielding' group

Methods Objective 2: A trial will be planted at Rohwer Station and another at Lon Mann. Plots will be 20ft long and 5ft wide and treatments arranged in a randomized split-plot and replicated. Treatments will be a variety tolerant to scab, stripe rust, and leaf rust (Ex. Delta Grow 1200), a variety susceptible to scab, stripe rust, and leaf rust and fungicides applied to each variety at the proper timing to prevent scab (full bloom). At least two different fungicides will be applied, each representing a different cost tier. A non-fungicide treated control will be included in each replication for each variety.

Fungicide treatments will be applied using a ground driven sprayer (10 gallons water per acre, 40 psi) at flowering (Feekes 10.5.1) for scab timing. Plots will be rated for disease incidence (the percentage of plants in the plot with disease) and disease severity (the amount of disease on the plants that have it) of each unique disease that occurs beginning at disease onset and until harvest. Plots will be harvested using a combine equipped with a research weight system and data will be analyzed by analysis of variance and mean separations of fixed effects done using Tukey's honest significant difference test.

Methods Objectives 3: The current threshold for rice stink bug is based on visual counts. We would like to compare the current threshold to a sweep net threshold. In all other crops, growers and consultants are using a sweep net to determine insect pest densities. The current visual count threshold will be compared

to multiple sweep net thresholds in trials containing insecticide treatments. Yield and quality will be measured at the end of the season to determine if a sweep net threshold is viable.

Planned Milestones: A recommended variety list will be made available to growers via social media and other outreach after the Arkansas Wheat Update has been published and prior to planting the following year. At the completion of each research year, the results will be disseminated at county meetings and presented at regional conferences and working groups.

Statement of Projected Value: Foliar disease pressure on Arkansas wheat is largely underestimated by many growers. Growers could greatly reduce losses due to foliar diseases and improve grain quality by simply choosing a variety with resistance to the major diseases that we see most years in this state. We feel that our labs should continue the disease ratings of the OVTs, develop a list of recommended varieties from those data, and immediately disseminate that information to the growers since we each receive numerous phone calls and take many field visits throughout the state to assist growers with disease management each year.

Also, and because many growers WILL spray a preventative application for scab regardless of the variety, it is important to help growers understand the economic value of these applications and their impact on damage caused by other diseases that may develop later in the season.

Growers have questions about insect management as well. We aim to develop a rice stink bug threshold to help answer these questions and guide more profitable IPM.

Budget Justifications/Explanation of Travel and Direct Costs: The budget allocates funds for field calls to assist growers, labor to plant, spray, harvest, and maintain the fungicide trials, supplies associated with these activities, and travel to rate the OVT locations.

University of Arkansas System Division of Agriculture

Promotion Board Budget

Spurlock, Terry

Pest Management Using Recommended Wheat Varieties

Version: 7.0 (11/01/2024)

Year	2025/2026	Project Year	Year 2 of 3			Version: 7.0 (11/01/2024)			
Lead Investigator	Spurlock, Terry	Co-PI #1	Kelley, Jason						
Co-PI #2	Bateman, Nick	Co-PI #3							
Department	ENPL Entomology and Plant Pathology								
Commodity Board	Wheat Promotion Board								
Project Title	Pest Management Using Recommended Wheat Varieties								
Budgets are requested in separate columns if separate Worktags for AES and CES will be needed.									
Budget for Personnel									
		Spurlock, Terry	Kelley, Jason	Bateman, Nick					
Select "AES" or "CES" for each PI		CES	CES	CES			Total Board Funding Requested	AES Portion	CES Portion
Fulltime Personnel									
Position Title	Name (if position is filled)	% Time	Salaries			Total	AES	CES	
Program technician	Robert Hoyle	10%	\$4,500			\$4,500	\$0	\$4,500	
						\$0	\$0	\$0	
						\$0	\$0	\$0	
						\$0	\$0	\$0	
						\$0	\$0	\$0	
Subtotal: Salaries			\$4,500	\$0	\$0	\$0	\$4,500	\$0	\$4,500
Graduate Student									
Tuition to be budgeted in the same ratio as GA stipend time, e.g., full time GA stipend, full year's tuition.	Name (if position is filled)	% Time	Wages			Total	AES Portion	CES Portion	
						\$0	\$0	\$0	
						\$0	\$0	\$0	
						\$0	\$0	\$0	
						\$0	\$0	\$0	
						\$0	\$0	\$0	
	Subtotal: Graduate Student			\$0	\$0	\$0	\$0	\$0	\$0
Hourly									
			Wages			Total	AES Portion	CES Portion	
Hourly-Personnel			\$1,000	\$1,750		\$2,750	\$0	\$2,750	
Hourly-Students						\$0	\$0	\$0	
Subtotal: Hourly			\$1,000	\$1,750	\$0	\$0	\$2,750	\$0	\$2,750
Fringe Benefits									
			Benefits			Total	AES Portion	CES Portion	
Fulltime Personnel			\$1,287	\$0	\$0	\$0	\$1,287	\$0	\$1,287
Graduate Students			\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hourly Personnel			\$73	\$128	\$0	\$0	\$201	\$0	\$201
Hourly-Students			\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal: Fringe Benefits			\$1,360	\$128	\$0	\$0	\$1,488	\$0	\$1,488
Personnel Total			\$6,860	\$1,878	\$0	\$0	\$8,738	\$0	\$8,738
Travel									
			Travel			Total	AES Portion	CES Portion	
In-State			\$2,000	\$2,000		\$4,000	\$0	\$4,000	
Out-of-State						\$0	\$0	\$0	
Travel Total			\$2,000	\$2,000	\$0	\$0	\$4,000	\$0	\$4,000

University of Arkansas System Division of Agriculture Promotion Board Budget

Spurlock, Terry

Pest Management Using Recommended Wheat Varieties

		Maintenance & Operations							
		M&O				Total	AES Portion	CES Portion	
	Supplies	\$864	\$618			\$1,482	\$0	\$1,482	
	Fertilizer/Chemicals		\$450			\$450	\$0	\$450	
	Publication					\$0	\$0	\$0	
	Statistical Consulting					\$0	\$0	\$0	
	Other Direct Costs					\$0	\$0	\$0	
Station Maintenance	SAREC, Fayetteville	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	CTST, Marianna	\$0	\$770	\$0	\$0	\$770	\$0	\$770	
	Lonoke County Ext. Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	NERE, Keiser	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	NERREC, Harrisburg	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Jackson County Ext. Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	PTST, Colt	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	RIRE, Stuttgart	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Rosen Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	SEST, Rohwer	\$1,260	\$0	\$0	\$0	\$1,260	\$0	\$1,260	
	SWRE, Hope	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	VGSS, Kibler	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	FRSS, Clarksville	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	LFST, Batesville	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	CSES Greenhouse, Fayetteville	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	M & O Total	\$2,124	\$1,838	\$0	\$0	\$3,962	\$0	\$3,962	
Total for Proposal		\$10,984	\$5,716	\$0	\$0	\$16,700	\$0	\$16,700	
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CES	28.60%	7.30%	5.10%	0.10%