2024
University of Arkansas
Soybean Research Verification Program

Arkansas ROW CROP VERIFICATION

UofA DIVISION OF AGRICULTURE RESEARCH & EXTENSION
University of Arkansas System

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University of Arkansas Division of Agriculture
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Table of Contents

	Page
Authors and Acknowledgements……..	2
Introduction…… ...	4
Figure 1. Location of 2024 Soybean Research Verification Fields…….	5
Field Reviews……...	6
Table 1. Agronomic Information for the 2024 Soybean Research Verification Fields by County…… …..	11
Table 2. Soil Test Results, Applied Fertilizer and Soil Classification for 2024 Soybean Research Verification Fields……..	12
Table 3. Herbicide Rates and Timing for 2024 Soybean Research Verification Fields by County…… …	13
Table 4. Fungicide and Insecticide Applications for 2024 Soybean Research Verification Fields by County……..	14
Table 5. Irrigation and Rainfall Information for 2024 Soybean Research Verification Fields by County……..	15
Economics Analysis…….	16
Table 6. Operating Costs, Total Costs, Costs per Bushel, and Returns for 2024 Soybean Research Verification Fields……..	18
Table 7. Summary of Revenue and Expenses per Acre for 2024 Soybean Research Verification Fields…….	19

SOYBEAN RESEARCH VERIFICATION PROGRAM, 2024

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INTRODUCTION

The growing season was the thirty ninth year for the Soybean Research Verification Program (SRVP). The SRVP is an interdisciplinary effort between growers, county Extension agents, Extension specialists, and researchers. The SRVP is an on-farm demonstration of all the research-based recommendations required to grow soybeans profitably in Arkansas. The specific objectives of the program are:

To verify research-based recommendations for profitable soybean production in all soybean producing areas of Arkansas.

To develop a database for economic analysis of all aspects of soybean production.

To demonstrate that consistently high yields of soybeans can be produced economically with the use of available technology and inputs.

To identify specific problems and opportunities in Arkansas soybeans for further investigation.

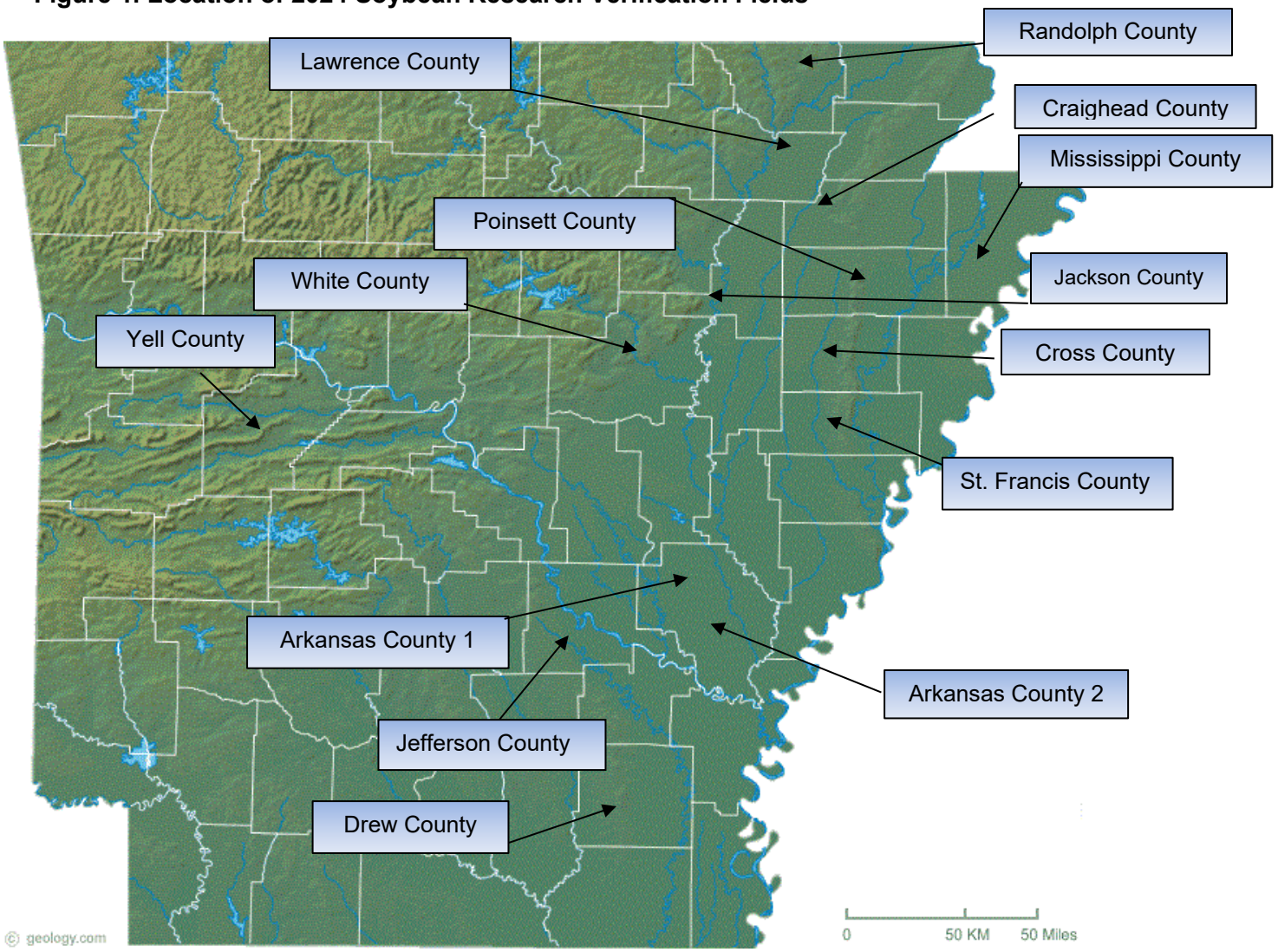
To promote timely implementation of cultural and management practices among soybean growers.

To provide training and assistance to county agents with limited expertise in soybean production.

Each SRVP field and cooperator were selected prior to planting. Cooperators agreed to pay production expenses, provide crop expense data for economic analysis and implement the recommended production practices in a timely manner from seedbed preparation to harvest. Fourteen farms were enrolled in the SRVP in 2024. The fields were located on commercial farms ranging in size from 26 to 95 acres. The average field size was 43 acres.

The 2024 SRVP fields were conducted in Arkansas, Craighead, Cross, Drew, Jackson, Jefferson, Lawrence, Mississippi, Poinsett, Randolph, White, St. Francis, and Yell counties. One Conventional variety (Virtue 4520S), three different Roundup Ready 2 Xtend® varieties, Asgrow AG46X0, Dyna Gro S46XS60, and Pioneer P47A64X.), two Enlist E3® (Pioneer P48A14E, and Pioneer P52A14SE) and five Roundup Ready Flex® varieties (Asgrow AG45XF3, Becks 4885XF, Dyna Gro DG46XF31, NK 49-C2XFS, Pioneer 46A20LX) were planted. Management decisions were based on field history, soil test results, variety, and data collected from each individual field during the growing season.

Figure 1. Location of 2024 Soybean Research Verification Fields



FIELD REVIEWS

Northern Fields

Cross County

The 28 acre field, Collins silt loam, was located in Cherry Valley and followed the previous year's corn crop. Following spring tillage and fertilizer application of 0-0-60-.5B and 1 ton poultry litter, a burndown application of 1 quart/acre glyphosate plus .7 ounces/acre FirstShot was applied. The field was planted on April 5 with Virtue 4250S conventional, Cruiser Maxx treated seed, at 118,000 seed/acre on 30" row seed spacing. On April 5, 1.75 pints/acre Metallis MTZ was applied for pre-emerge weed control. The field emerged on April 16 to a plant population of 99,000 seed/acre. Initial post emerge herbicide application was made on May 14 of 2.25 pints/acre Prefix plus 8 ounces/acre Select. A second post emerge herbicide was applied on May 28 of 8 ounces/acre Select plus .3 ounces/acre First Rate. Disease and insect pressure remained below threshold and no treatment was recommended. The field was furrow irrigated 4 times and harvested on September 21 yielding 76.4 bushels/acre adjusted to 13%.

Craighead County

The 51 acre field, Foley silt loam and Jackport silty clay loam, was located in Cash and followed the previous year's rice crop. A spring fertilizer application of 0-50-60 was applied. The field was planted on May 15 with NK49-C2XFS, Cruiser Maxx treated seed, at 150,000 seed/acre on 30" row seed spacing. On May 16, a pre-emerge application of 1.5 pints/acre boundary was applied. The field emerged on May 23 to a plant population of 121,000 seed/acre. On June 8, 17 acres were replanted due to excess rainfall on low end of the field. A single post emerge herbicide was applied on June 11 of 1 quart/acre glyphosate plus 1 quart/acre Liberty. Disease and insect pressure remained below threshold and no treatment was recommended. The field was furrow irrigated 3 times and harvested on October 13 yielding 57.2 bushels/acre adjusted to 13%.

Jackson County

The 38 acre field, Egam silt loam, was located east of Oil Trough and followed the previous year corn crop. Following spring tillage and fertilizer application of 0-0-75, the field was planted on May 12 with Pioneer P48A14E, Cruiser Maxx treated seed, at 135,000 seed/acre on 30" row seed spacing. A pre-emerge application of 2 pints/acre Enlist One plus 8 ounces/acre Select plus 1.25 pints/acre s-metolachlor was applied on May 19. The field emerged on May 20 to a plant population of 123,000 seed/acre. A single post emerge herbicide application was made on June 13 of 2 pints/acre Enlist One plus 1 quart/acre glyphosate plus 1 pint/acre s-metolachlor. Disease and insect pressure remained below threshold and no treatment was recommended. The field was furrow irrigated 6 times and harvested on October 7 yielding 73.4 bushels/acre adjusted to 13%.

Lawrence County

The 32 acre field, Jackport silty clay, was located west of Alicia and followed the previous year rice crop. Following spring tillage and fertilizer application of 0-70-120, the field was planted on April 15 with Dyna Gro DG46XF31, Cruiser Maxx treated seed, at 130,000 seed/acre on 30" seed spacing. On April 16, 1 quart/acre Gramoxone plus 16 ounces/acre Medal plus 4 ounces/acre metribuzin was applied for burndown and pre-emerge weed control. The field emerged on April 24 to a plant population of 118,000 seed/acre. The middles were plowed on May 28 and a single post emerge herbicide application was made on May 29 of 1 quart/acre glyphosate plus 1 quart/acre liberty plus 3.25 ounces/acre Zidua plus 8 ounces/acre Select. Disease and insect pressure remained below threshold and no treatment was recommended. The field was furrow irrigated 4 times and harvested on October 8 yielding 80.8 bushels/acre adjusted to 13%.

Mississippi County

The 38 acre field, Sharkey-Steele complex, was located south of Dell and followed the previous year soybean crop. A fall application of 0-0-60 was applied according to soil sample results. The field was planted on April 4 with Becks 4885XF, Escalate treated seed, at 130,000 seed/acre on 38" twin-row seed spacing. On April 12, 1 quart/acre Gramoxone plus 1.5 pints/acre Metalic MTZ was applied for pre-emerge weed control. The field emerged on April 16 to a plant population of 125,000 plants/acre. Middles were plowed on May 15 to improve irrigation efficiency. A single post emerge herbicide application was made on May 22 of 1 quart/acre glyphosate plus 1 quart/acre Liberty plus 1.25 pints/acre s-metolachlor. Disease and insect pressure remained below threshold and no treatment was recommended. The field was furrow irrigated 4 times and a harvest aid of 10.67 ounces Gramoxone was applied. The field was harvested on August 28 yielding 81.9 bushels/acre adjusted to 13%.

Poinsett County

The 35 acre field, Henry silt loam, was located south of Harrisburg and followed the previous year soybean crop. A fertilizer application of 0-0-75 was applied. Following tillage, the field was planted on May 11 with Asgrow AG45XF3, Cruiser Maxx treated seed, at 160,000 seed/acre on 7.5" row seed spacing. The field emerged on May 18 to a plant population of 125,000 seed/acre. Initial post emerge herbicide application was made on June 14 of 22 ounces/acre Xtendimax plus 8 ounces/acre Intensity. A second post emerge herbicide application was made on June 24 of 1 quart/acre glyphosate. Disease and insect pressure remained below threshold and no treatment was recommended. The field was furrow irrigated 3 times and harvested on October 15 yielding 50.7 bushels/acre adjusted to 13%.

Randolph County

The 40 acre field, Bosket fine sandy loam, was located east of Success and followed the previous year soybean crop. A burndown application of 1 quart/acre glyphosate plus 1.5 pints/acre 2,4-D was applied for winter weed control. A spring fertilizer application of 0-50-75 was applied according to soil test recommendation. The field was planted on April 25 with Pioneer P52A14SE, Cruiser Maxx treated seed, at 140,000 seed/acre on 10" seed spacing. A pre-emerge herbicide of 1.5 pints/acre Boundary plus 40 ounces/acre Gramoxone was applied on April 27. The field emerged on May 1 to a plant population of 98,000 plants/acre. A single post emerge herbicide application was made on June 12 of 2 pints/acre Enlist One plus 1 quart/acre Liberty. Aerial web blight reached threshold and 13.7 ounces/acre Miravis top was applied for control on July 25. Insect pressure remained below threshold and no treatment was recommended. The field was pivot irrigated 5 times and harvested on November 26 yielding 65.1 bushels/acre adjusted to 13%.

St. Francis County

The 95 acre field, Calloway & Henry silt loam, was located south of Palestine and followed the previous year corn crop. Following spring tillage and fertilizer application of 0-0-60, the field was planted on May 16 with Pioneer P46A20XF, Crusier Max treated seed, at 135,000 seed/acre on 38" twin-row seed spacing. On May 16, 2 ounces/acre Zidua plus 1.5 pints/acre Boundary was applied for pre-emerge weed control. The field emerged on May 21 to a plant population of 99,000 plants/acre. Initial post emerge herbicide application was made on June 13 of 56.5 ounces/acre Tavium. A second herbicide application was made on June 14 of 1 quart/acre glyphosate. Disease and insect pressure remained below threshold and no treatment was recommended. The field was furrow irrigated 5 times and harvested on October 2 yielding 74.0 bushels/acre adjusted to 13%.

White County

The 30 acre field, Calloway and Calhoun silt loam was located south of Higginson and followed the previous year corn crop. Following spring tillage and fertilizer application of 0-56-111, the field was planted on May 14 with Pioneer P48A14E, at 140,000 seed/acre on 30" row seed spacing. A pre-emerge herbicide was applied on May 16 of 1.25 pints/acre s-metolachlor. The field emerged on May 21 to a plant population of 132,000 plants/acre. A single post emerge herbicide application was made on June 26 of 2 pints/acre Enlist One plus 1 quart/acre glyphosate plus 1.25 pints/acre s- metolachlor. Disease and insect pressure remained below threshold and no treatment was recommended. The field was furrow irrigated 7 times and harvested on October 8 yielding 74.7 bushels/acre adjusted to 13%.

Yell County

The 36 acre field, Roellen silt loam, was located east of New Neely and followed the previous year rice crop. Following spring tillage and fertilizer application of 0-70-0, the field was planted on May 30 with Pioneer P48A14E, Crusier Maxx treated seed, at 150,000 seed/acre on 30" row seed spacing. The field emerged on June 7 to a plant population of 111,000 plants/acre. A single post emerge herbicide application was made on June 26 of 2 pints/acre Enlist One plus 1 quart/acre glyphosate plus 1.25 pints/acre s-metolachlor. Disease and insect pressure remained below threshold and no treatment was recommended. The field was furrow irrigated 2 times and harvested on October 17 yielding 46.3 bushels/acre adjusted to 13%.

Southern Fields

Arkansas County 1

The 64 acre field, Dewitt silt loam, was located east of Stuttgart and followed the previous year's soybean crop. Following spring tillage and fertilizer application of 0-50-120 was applied. The field was planted on April 18 with Pioneer 47A64X, Crusier Maxx treated seed, at 140,000 seed/acre on 30" row seed spacing. On April 18, 28 ounces/acre Antares Complete was applied for pre-emerge weed control. The field emerged on April 29 to a plant population of 109,000 seed/acre. A single post emerge herbicide application was made on May 29 of 26 ounces/acre Round up Power Max III plus 10 ounces/acre Sinister plus 2.5 ounces/acre Zidua. Disease and insect pressure remained below threshold and no treatment was recommended. The field was furrow irrigated 5 times and harvested on September 25 yielding 79.1 bushels/acre adjusted to 13%.

Arkansas County 2

The 52 acre field, Stuttgart silt loam, was located in Dewitt and followed the previous year's soybean crop. Following spring tillage and fertilizer application of 0-27-54 was applied. The field was planted on May 1 with Pioneer P48A14E, Crusier Maxx treated seed, at 135,000 seed/acre on twin row 38" seed spacing. On May 2, 1.5 pints/acre Boundary was applied for pre-emerge weed control. The field emerged on May 8 to a plant population of 130,000 seed/acre. A single post emerge herbicide application was made on June 11 of 1 qt/acre glyphosate plus 1 quart/acre Enlist plus 1.25 pints/acre s-metolachlor. Disease and insect pressure remained below threshold and no treatment was recommended. The field was furrow irrigated 5 times and harvested on October 2 yielding 82.8 bushels/acre adjusted to 13%.

Drew County

The 26 acre field, Calhoun silt loam, was located east of Monticello and followed the previous year's soybean crop. A spring fertilizer application of 0-50-50 was applied. The field was planted on April 12 with Asgrow AG46X0, Cruiser Maxx treated seed, at 140,000 seed/acre on twin row 38" seed spacing. The field emerged on April 22 to a plant population of 123,000 seed/acre. Initial post emerge herbicide application was made on May 6 of 12.8 ounces/acre Engenia Follow by 1 quart glyphosate applied on May 7. On June 3 an in-season application of 0-0-60 fertilizer was made. Final post emerge herbicide was applied on June 10 of 1 quart/acre glyphosate plus 2 pints/acre Prefix. Disease and insect pressure remained below threshold and no treatment was recommended. The field was furrow irrigated 5 times and harvested on September 19 yielding 61.4 bushels/acre adjusted to 13%.

Jefferson County

The 33 acre field, Rilla silt loam, was located south of Pine Bluff and followed the previous year's rice crop. The field was planted on April 18 with Dyna Gro S46X60, Apron Max plus Molly seed treatment, at 150,000 seed/acre on 38" twin row seed spacing. The field emerged on April 29 to a plant population of 132,000 seed/acre. On May 1, 1 quart/acre glyphosate plus 1.25 pints s-metalchlor was applied for grass control and broadleaf pre-emerge. On May 27 a fertilizer application of 0-0-100 was applied and middles plowed. A post emerge herbicide application of 12.8 ounces/acre Engenia was made on May 29. A final herbicide application was made on May 30 of 1qt. glyphosate plus 1.25 pints/acre s-metolachlor. Disease and insect pressure remained below threshold and no treatment was recommended. The field was furrow irrigated 4 times and harvested on September 23 yielding 51.0 bushels/acre adjusted to 13%.

Table 1. Agronomic information for the 2024 Soybean Research Verification Fields.

County	Variety	Field size (ac)	Previous crop	Production system[1]	Seeding rate (seeds/acre)	Stand density (plants/ac)	Planting date	Emergence date	Harvest date	Yield adj. to 13% moisture (bu/ac)
Arkansas 1	Pioneer 47A64X	64	Soybean	ESI	140K	109K	4/18	4/29	9/25	79.1
Arkansas 2	Pioneer P48A14E	52	Soybean	FSI	135K	130K	5/1	5/8	10/2	82.8
Craighead	NK 49-C2XFS	51	Rice	FSI	150K	121K	5/15	5/23	10/13	57.2
Cross	Virtue 4520S	28	Corn	ESI	118K	99K	4/5	4/16	9/21	76.4
Drew	Asgrow AG46X0	26	Soybean	ESI	140K	123K	4/12	4/22	9/19	61.4
Jackson	Pioneer P48A14E	38	Corn	FSI	135K	123K	5/12	5/20	10/7	73.4
Jefferson	Dyna Gro S46XS60	33	Rice	ESI	150K	132K	4/18	4/29	9/23	51.0
Lawrence	Dyna Gro DG46XF31	32	Rice	ESI	130K	118K	4/15	4/24	10/8	80.8
Mississippi	Becks 4885XF	38	Soybean	ESI	130K	125K	4/4	4/16	8/28	81.9
Poinsett	Asgrow AG 45XF3	35	Soybean	FSI	160K	125K	5/11	5/18	10/15	50.5
Randolph	Pioneer P52A14E	40	Soybean	FSI	140K	98K	4/25	5/1	11/26	65.1
St. Francis	Pioneer P46A20XF	95	Corn	FSI	135K	99K	5/16	5/21	10/2	74.0
White	Pioneer P48A14E	30	Corn	FSI	140K	132K	5/14	5/21	10/8	74.7
Yell	Pioneer P48A14E	36	Rice	FSI	150K	111K	5/30	6/7	10/17	46.3
Average		**43**			**140K**	**118K**	**4/29**	**5/7**	**10/4**	**68.2**

[1]Production Systems: ESI = Early Season Irrigated; FSI = Full Season Irrigated; FSNI = Full Season Non-irrigated; LSI = Late Season Irrigated; LSNI = Late Season Non-irrigated

State Avg. – 55 bu/ac
SRVP Avg. – 68.2 bu/ac

Table 2. Soil tests results, applied fertilizer and soil classification for the 2024 Soybean Research Verification Fields

	Soil Test Results (ppm)			Applied Fertilize N-P-K (lb/acre)	Soil Classification
County	pH	P	K	Pre-plant	
Arkansas 1	23	122	6.2	0-50-120	Dewitt Silt Loam
Arkansas 2	10	112	7.5	0-27-54	Stuttgart Silt Loam
Craighead	25	156	6.9	0-50-60	Foley Silt Loam & Jackport Silty Clay Loam
Cross	27	192	6.5	0-0-60-.5B, 1 Ton Poultry Litter	Collins Silt Loam
Drew	13	76	5.3	0-50-110	Calhoun Silt Loam
Jackson	12	155	6.5	0-0-75	Egam Silt Loam
Jefferson	56	105	5.9	0-0-100	Rilla Silt Loam
Lawrence	15	107	6.4	0-70-120	Jackport Silty Clay
Mississippi	23	133	7.3	0-0-60	Sharkey- Steele Complex
Poinsett	20	55	6.6	0-0-75	Henry Silt Loam
Randolph	22	112	6.5	0-50-75	Bosket Fine Sandy Loam
St. Francis	58	132	6.6	0-0-60	Henry & Calloway Silt Loam
White	13	64	5.9	0-56-111	Calloway & Calhoun Silt Loam
Yell	9	341	6.0	0-70-0	Roellen Silty Clay

Table 3. Herbicide rates and timings for 2024 Soybean Research Verification Program fields by county.

	Herbicide	
County	Burndown/Pre-emergence	Post-emergence
Arkansas 1	Pre-emerge: 28 oz. Antares Complete	1st: 26 oz. Round Up PowerMax III + 2.5 oz. Zidua + 10 oz. Sinister
Arkansas 2	Pre-emerge : 1.5 pts. Boundary	1st: 1 qt. glyphosate + 1 qt. Enlist One + 1.25 pts. S-metolachlor
Craighead	Pre-emerge: 1.5 pts. Boundary	1st: 1 qt. glyphosate + 1 qt. Liberty
Cross	Burndown: 1 qt. glyphosate + .7 oz. FirstShot Pre-emerge: 1.75 pts. Metallis MTZ	1st: 2.25 pts. Prefix + 8 oz. Select 2nd: 8 oz. Select + .3 oz. First Rate
Drew		1st: 12.8 oz. Engenia 2nd: 1 qt. glyphosate 3rd: 1 qt. glyphosate + 2 pts. Prefix
Jackson	Pre-emerge: 8 oz. Select + 1 qt. Enlist One + 1.25 pts. S-metolachlor	1St: 1 qt. glyphosate + 1 qt. Enlist One + 1 pt. S-metolachlor
Jefferson	Pre-emerge: 1 qt. glyphosate + 1.25 pts. S-metolachlor	1st : 12.8 oz. Engenia 2nd: 1 qt. glyphosate + 1.25 pts S-metolachlor
Lawrence	Pre-emerge: 1 qt. paraquat + 16 oz. Medal + 4 oz. metribuzin	1st : 1 qt. Liberty + 1 qt. glyphosate + 3.25 oz. Zidua + 8 oz. Select
Mississippi	Pre-emerge: 1 qt. Gramoxone + 1.5 pts Metalic MTZ	1st : 1 qt. glyphosate + 1 qt. Liberty + 1.25 pts. S-metolachlor
Poinsett	Burndown: 1 qt. glyphosate + 1 oz Sharpen	1st : 22 oz Xtendimax + 8 oz. Intensity 2nd : 1 qt. glyphosate
Randolph	Burndown: 1 qt. glyphosate + 1.5 pts 2,4-D Pre-emerge: 40 oz. Gramoxone + 1.5 pts. Boundary	1st: 1 qt. Enlist One + 1 qt. Liberty
St. Francis	Pre-emerge 1.5 pt. Boundary + 2 oz. Zidua	1st: 56.5 oz. Tavium 2nd: 1 qt. glyphosate
White	Pre-emerge: 1.25 pts. S-metolachlor	1st: 1 qt. glyphosate + 1 qt. Enlist One + 1.25 pts. S-metolachlor
Yell		1st: 1 qt glyphosate + 1 qt. Enlist One + 1.25 pts. S-metolachlor

Table 4. Fungicide and insecticides applications in 2024 Soybean Research Verification fields by county.

County	Aerial Web Blight	Frogeye	Bollworm/Defoliators	Stink Bug
Arkansas 1				
Arkansas 2				
Craighead				
Cross				
Drew				
Jackson				
Jefferson				
Lawrence				
Mississippi				
Poinsett				
Randolph	13.7 oz. Miravis Top			
St. Francis				
White				
Yell				

Table 5. Irrigation and rainfall information for the 2024 Soybean Research Verification Fields.

County	Irrigation Type	Number of Irrigations	Irrigation Water Used (acre inches/acre)*	Rainfall (in)
Arkansas 1	Furrow	5	25.9”	14.9
Arkansas 2	Furrow	5		13.9
Craighead	Furrow	3		15.4
Cross	Furrow	4		13.5
Drew	Furrow	5	11.5”	14.3
Jackson	Furrow	6		9.5
Jefferson	Furrow	4		13.7
Lawrence	Furrow	4		9.8
Mississippi	Furrow	4		16.6
Poinsett	Furrow	3		11.0
Randolph	Pivot	5	3.89”	19.2
St. Francis	Furrow	5		10.7
White	Furrow	7	15.6”	14.3
Yell	Furrow	2		14.1

*Irrigation water use determined using flow meters installed for entire season. Not all fields had flow meters.

ECONOMIC ANALYSIS

This section provides information on production costs and returns for the 2024 SRVP. Records of field operations on each field provided the basis for estimating production costs. The field records were compiled by the SRVP coordinators, county extension agents, and cooperators. Cooperators/county agents for 14 fields were identified for the 2024 program. Production data from the 14 fields were applied to determine costs and returns above operating costs, as well as total specified costs. Operating costs and total costs per bushel indicate the commodity price needed to meet each costs type.

Operating costs are those expenditures that would generally require annual cash outlays and would be included on an annual operating loan application. Actual quantities of all operating inputs as reported by the cooperators are used in this analysis. Input prices are determined by data from 2024 Soybean Crop Enterprise Budgets published by the UA Division of Agriculture Cooperative Extension Service, Southeast Arkansas input providers, and information provided by producer cooperators. Fuel and repair costs for machinery are calculated using a budget calculator based on parameters and standards established by the American Society of Agricultural and Biological Engineers. Machinery repair costs should be regarded as estimated values for full service repairs, and actual cash outlays could differ as producers provide unpaid labor for equipment maintenance.

Fixed costs of machinery are determined by a capital recovery method, which determines the amount of money that should be set aside each year to replace the value of equipment used in production. Machinery costs are estimated by applying engineering formulas to representative prices of new equipment. This measure differs from typical depreciation methods, as well as actual annual cash expenses for machinery.

Operating costs, fixed costs, total costs, operating and total costs per bushel, and returns above operating and total specified costs are presented, by field, region, and statewide in Table 6. Costs in this report do not include management, land costs, or other expenses and fees not associated with production. Averages in the final row of Table 6 are simple averages across all SRVP fields in the state program. Averages by North and South geographic areas are also provided. Total Operating costs per acre range from $289.80/acre for the Arkansas-2 field in Arkansas County to $528.05/acre for Lawrence County, while operating costs per bushel range from $3.50/bu. for the Arkansas-2 field in Arkansas County to $6.61/bu. for Craighead County. Total costs per acre (operating plus fixed) range from $400.96/acre for Jefferson County to $709.20/acre for Lawrence County, and total costs per bushel range from $4.99/bu. for Mississippi County to $8.78/bu. for Lawrence County. Returns to operating costs range from $207.53/acre for Yell County to $620.83/acre for the Arkansas-2 field in Arkansas County. Returns to total costs range from $106.86 for Yell County to $492.28/acre for Mississippi County.

A statewide summary of yield, soybean price, revenues, and expenses by expense type across all SRVP fields is presented in Table 7. Averages by North and South geographic areas are also provided in Table 7. Averages in the final three columns of the table are simple averages for the SRVP fields represented in that table. The Average Soybean Yield for the 2024 SRVP is 68.20 bushels, but ranged from 46.3 bushels/acre for Yell County to 82.8 bushels/acre for the Arkansas-2 field in Arkansas County. The second and third highest yields are Mississippi

County at 81.9 bushels/acre and Lawrence County at 80.8 bushels/acre. Market Price for soybean used in this analysis is $11.00/bushel, the Arkansas average cash price estimated from January 1, 2024 through October 31, 2024 daily price quotes of the cash market price or cash booking price. The 2024 price is $2.44/bushel lower than the same period average in 2023. Use of market prices across this entire period of time is justified since we assume Arkansas producers set the price for portions of their crop at various times throughout the year.

The Average Total Operating Expense for all 14 SRVP fields is calculated to be $362.35/acre for the 2024 program (Table 7). Average Total Operating Expense is $5.59/acre higher in 2024 than 2023. Seed remains the largest share of Total Operating Expenses on average (23.22%). The second highest percentage of operating expenses comes from fertilizers & nutrients (20.57%) with herbicides third (14.44%). All other categories were less than 8.00% of operating expenses. The 2024 Average Return to Operating Expenses for the 17 fields is $387.71/acre, a decrease of $95.53/acre from 2023. The 2024 Average Return to Operating Expenses ranges from $207.53/acre for Yell County to $620.83/acre for the Arkansas-2 field in Arkansas County. The Average Return to Total Specified Expenses (Total Costs) for the 14 fields was $272.29/acre, a decrease of $126.08/acre from 2023, and ranging from $106.86/acre for Yell County to $492.28/acre for Mississippi County.

Table 6. Operating Costs, Total Costs, and Returns for Soybean Research Verification Program, 2024

County	Operating Costs ($/acre)	Operating Costs ($/bushel)	Returns to Operating ($/acre)	Fixed Costs ($/acre)	Total Costs ($/acre)	Returns to Total Costs ($/acre)	Total Costs per Bushel ($/bushel)
Craighead	378.13	6.61	250.96	121.80	499.93	129.16	8.74
Cross	393.33	5.15	446.92	110.35	503.68	336.57	6.59
Jackson	324.91	4.43	482.34	119.16	444.07	363.18	6.05
Lawrence	528.05	6.54	360.59	181.15	709.20	179.44	8.78
Mississippi	314.60	3.84	586.14	93.86	408.46	492.28	4.99
Poinsett	301.65	5.95	255.95	104.24	405.89	151.71	8.01
Randolph	417.71	6.42	298.26	69.56	487.27	228.70	7.48
St. Francis	368.33	4.98	445.52	115.67	484.00	329.85	6.54
White	394.65	5.28	426.90	126.80	521.45	300.10	6.98
Yell	301.68	6.52	207.53	100.67	402.35	106.86	8.69
North Avrg.	**372.30**	**5.57**	**376.11**	**114.33**	**486.63**	**261.79**	**7.29**
Arkansas-1	380.90	4.82	489.04	122.26	503.16	366.78	6.36
Arkansas-2	289.80	3.50	620.83	144.57	434.37	476.26	5.25
Drew	378.75	6.17	296.53	105.24	483.99	191.29	7.88
Jefferson	300.44	5.89	260.46	100.52	400.96	159.94	7.86
South Avrg.	**337.47**	**5.10**	**416.72**	**118.15**	**455.62**	**298.57**	**6.84**
SRVP Program State Average 2024	**362.35**	**5.44**	**387.71**	**115.42**	**477.77**	**272.29**	**7.16**

Table 7. Summary of Revenue and Expenses per Acre, Soybean Research Verification Program, 2024 (1)							
	Arkansas-1	Arkansas-2	Craighead	Cross	Drew	Jackson	Jefferson
Receipts							
Yield (bu.)	79.1	82.8	57.2	76.4	61.4	73.4	51.0
Price	11.00	11.00	11.00	11.00	11.00	11.00	11.00
Total Crop Revenue	**869.94**	**910.63**	**629.09**	**840.25**	**675.28**	**807.25**	**560.90**
Seed	77.00	84.00	121.84	53.20	77.00	80.64	82.39
Fertilizers & Nutrients	115.58	23.93	79.38	95.20	110.15	45.25	61.54
Herbicides (2)	50.62	39.11	32.62	68.20	41.98	64.72	46.94
Insecticides (2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fungicides (2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Chemicals (2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom Applications	8.00	0.00	8.00	48.00	0.00	8.00	0.00
Diesel Fuel (3)	25.83	29.72	25.02	26.21	19.45	22.31	20.42
Repairs & Maintenance	21.43	24.91	18.47	18.21	20.45	20.98	16.06
Irrigation Energy Costs	8.52	14.43	25.87	11.54	43.11	12.88	11.54
Labor, Field Activities	8.67	10.33	8.94	7.99	7.22	8.64	8.20
Interest	11.98	8.85	12.13	12.43	12.11	10.15	9.58
Other Inputs & Fee, Pre-harvest	26.53	26.53	26.53	26.53	26.53	26.53	26.53
Post-harvest Expenses	26.74	27.99	19.33	25.82	20.75	24.81	17.24
Custom Harvest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Operating Expenses	**380.90**	**289.80**	**378.13**	**393.33**	**378.75**	**324.91**	**300.44**
Returns to Operating Expenses	**489.04**	**620.83**	**250.96**	**446.92**	**296.53**	**482.34**	**260.46**
Capital Recovery & Fixed Costs	122.26	144.57	121.80	110.35	105.24	119.16	100.52
Total Specified Expenses	**503.16**	**434.37**	**499.93**	**503.68**	**483.99**	**444.07**	**400.96**
Returns to Specified Expenses	**366.78**	**476.26**	**129.16**	**336.57**	**191.29**	**363.18**	**159.94**
Operating Expenses/Yield Unit	4.82	3.50	6.61	5.15	6.17	4.43	5.89
Total Expenses/Yield Unit	6.36	5.25	8.74	6.59	7.88	6.05	7.86

1. Does not include land costs, management, or other expenses and fees not associated with production.
2. Combined as Chemicals in some previous year reports
3. Listed as Fuel & Lube in previous year reports

Table 7. Summary of Revenue and Expenses per Acre, Soybean Research Verification Program, 2024 (2) - CONTINUED							
	Lawrence	Mississippi	Poinsett	Randolph	St. Francis	White	Yell
Receipts							
Yield (bu.)	80.8	81.9	50.7	65.1	74.0	74.7	46.3
Price	11.00	11.00	11.00	11.00	11.00	11.00	11.00
Total Crop Revenue	**888.64**	**900.74**	**557.60**	**715.97**	**813.85**	**821.55**	**509.21**
Seed	79.42	85.40	97.36	84.00	81.98	84.00	89.88
Fertilizers & Nutrients	131.28	36.20	45.25	88.43	36.20	116.00	58.88
Herbicides (2)	75.05	59.08	42.10	67.72	66.77	43.96	33.67
Insecticides (2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fungicides (2)	0.00	0.00	0.00	20.82	0.00	0.00	0.00
Other Chemicals (2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom Applications	54.25	17.00	8.00	40.50	32.00	8.00	0.00
Diesel Fuel (3)	43.18	17.50	21.97	5.99	19.18	28.71	24.98
Repairs & Maintenance	26.01	17.80	18.27	12.89	18.84	19.52	15.83
Irrigation Energy Costs	34.49	10.54	7.90	32.74	43.11	20.20	17.24
Labor, Field Activities	13.60	7.17	7.51	2.71	7.10	9.99	9.35
Interest	16.93	9.70	9.62	13.38	11.61	12.49	9.67
Other Inputs & Fee, Pre-harvest	26.53	26.53	26.53	26.53	26.53	26.53	26.53
Post-harvest Expenses	27.31	27.68	17.14	22.00	25.01	25.25	15.65
Custom Harvest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Operating Expenses	**528.05**	**314.60**	**301.65**	**417.71**	**368.33**	**394.65**	**301.68**
Returns to Operating Expenses	**360.59**	**586.14**	**255.95**	**298.26**	**445.52**	**426.90**	**207.53**
Capital Recovery & Fixed Costs	181.15	93.86	104.24	69.56	115.67	126.80	100.67
Total Specified Expenses	**709.20**	**408.46**	**405.89**	**487.27**	**484.00**	**521.45**	**402.35**
Returns to Specified Expenses	**179.44**	**492.28**	**151.71**	**228.70**	**329.85**	**300.10**	**106.86**
Operating Expenses/Yield Unit	6.54	3.84	5.95	6.42	4.98	5.28	6.52
Total Expenses/Yield Unit	8.78	4.99	8.01	7.48	6.54	6.98	8.69

1. Does not include land costs, management, or other expenses and fees not associated with production.
2. Combined as Chemicals in some previous year reports
3. Listed as Fuel & Lube in previous year reports

Table 7. Summary of Revenue and Expenses per Acre, Soybean Research Verification Program, 2024 (3) - CONTINUED			
	North	**South**	**SRVP Program State Average**
Receipts			
Yield (bu.)	**68.05**	**68.58**	**68.20**
Price	**11.00**	**11.00**	**11.00**
Total Crop Revenue	**748.41**	**754.19**	**750.06**
Seed	**85.77**	**80.10**	**84.15**
Fertilizers & Nutrients	**73.21**	**77.80**	**74.52**
Herbicides (2)	**55.39**	**44.66**	**52.32**
Insecticides (2)	**0.00**	**0.00**	**0.00**
Fungicides (2)	**2.08**	**0.00**	**1.49**
Other Chemicals (2)	**0.00**	**0.00**	**0.00**
Custom Applications	**22.38**	**2.00**	**16.55**
Diesel Fuel (3)	**23.51**	**23.86**	**23.61**
Repairs & Maintenance	**18.68**	**20.71**	**19.26**
Irrigation Energy Costs	**21.65**	**19.40**	**21.01**
Labor, Field Activities	**8.30**	**8.61**	**8.39**
Interest	**11.81**	**10.63**	**11.47**
Other Inputs & Fee, Pre-harvest	**26.53**	**26.53**	**26.53**
Post-harvest Expenses	**23.00**	**23.18**	**23.05**
Custom Harvest	**0.00**	**0.00**	**0.00**
Total Operating Expenses	**372.30**	**337.47**	**362.35**
Returns to Operating Expenses	**376.11**	**416.72**	**387.71**
Capital Recovery & Fixed Costs	**114.33**	**118.15**	**115.42**
Total Specified Expenses	**486.63**	**455.62**	**477.77**
Returns to Specified Expenses	**261.78**	**298.57**	**272.29**
Operating Expenses/Yield Unit	**5.57**	**5.09**	**5.43**
Total Expenses/Yield Unit	**7.28**	**6.84**	**7.16**

1. Does not include land costs, management, or other expenses and fees not associated with production.
2. Combined as Chemicals in some previous year reports
3. Listed as Fuel & Lube in previous year reports