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Cooperative Extension Service

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Figure 1. Location of the 2005 SRVP Fields

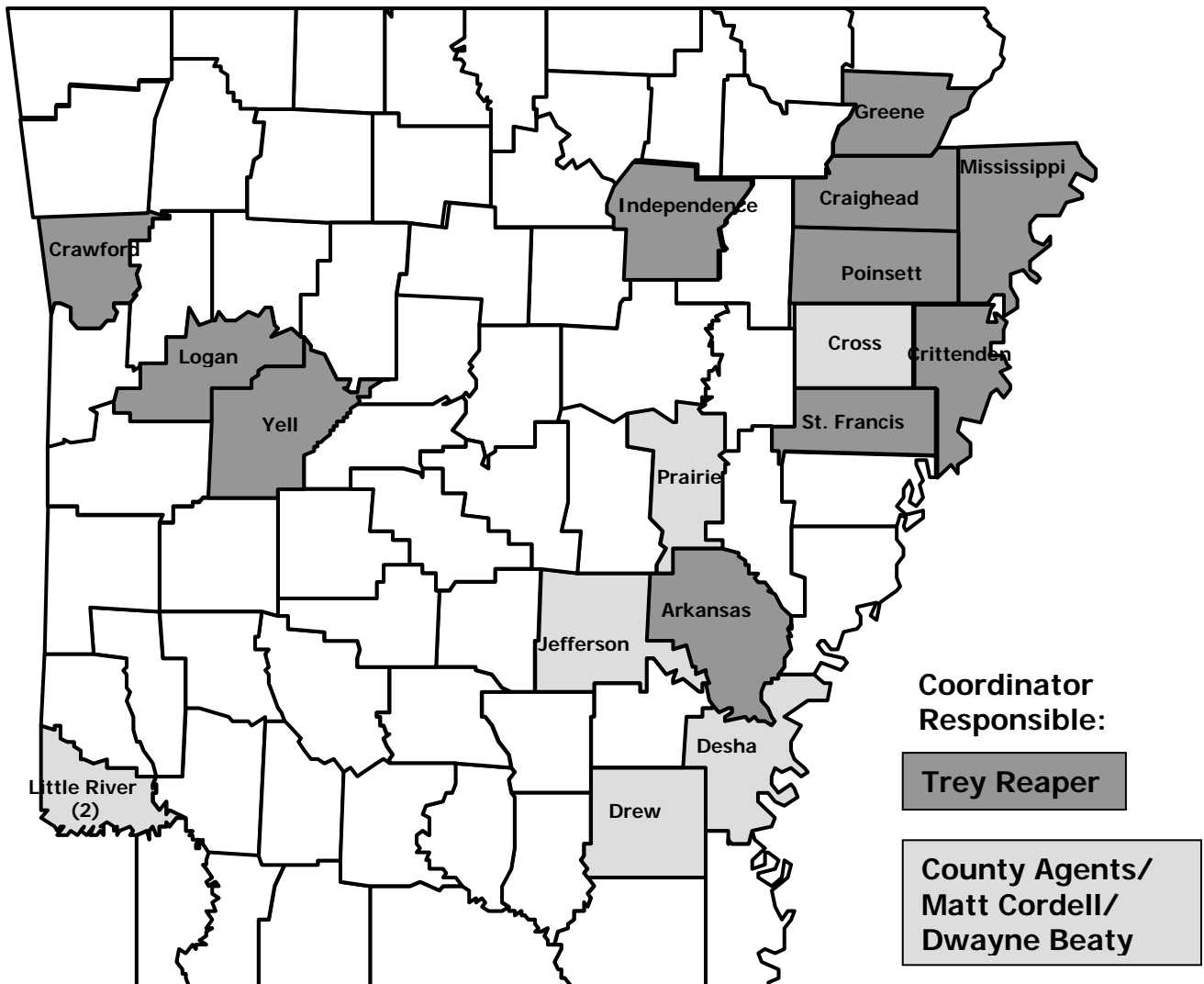


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INTRODUCTION

The University of Arkansas Cooperative Extension Service and the Agricultural Experiment Station enrolled eighteen commercial soybean fields in the 2005 Soybean Research Verification Program (SRVP). A wide range of production systems and various management options were included in the 2005 SRVP. Production systems for the fields were as follows: 5 early season irrigated, 6 full-season irrigated, 2 double-cropped irrigated, 1 full season non-irrigated, and 4 early season non-irrigated. There were no special case study fields for 2005.

This year marks the twenty-third year for SRVP. In that time, 418 commercial soybean fields in 43 Arkansas counties have been enrolled in the program. The stated objectives of the program are as follows:

1. To conduct field trials to verify research-based recommendations in actual field production.
2. To develop an on-farm database for use in economic analyses.
3. To aid researchers in identifying areas of soybean production that require further study.
4. To improve recommendations which contribute to profitable soybean production utilizing both irrigated and non-irrigated production systems.

This program links soybean growers to Extension and Extension to research. Together, a team is formed with the goal of increasing soybean profitability in the State of Arkansas. Results obtained from the SRVP include examination of the University of Arkansas's recommended production practices on commercial size fields, strengthening Extension's knowledge on soybean production, and increased technology transfer as it relates to soybean production efficiency in Arkansas.

SRVP METHODOLOGY

Eighteen soybean fields in 17 Arkansas counties were enrolled in the 2005 SRVP. Participating county Extension agents contacted prospective cooperators and visited prospective fields with an Extension soybean specialist and/or verification coordinator to develop a field-specific plan for the season.

Fields were selected based on three basic criteria. The field had to be large enough to represent actual field production, had to represent a major soil type in that particular county, and had to have adequate surface drainage.

All soybean production practices were implemented at the cooperator's expense under the technical direction of the program coordinators. Extension computerized soil test and variety selection programs and jointly developed Research/Extension weed, insect, disease, and irrigation scheduling programs were utilized to make decisions when appropriate. Complete records of field operations were maintained for economic analysis of individual fields.

Weekly visits by the coordinator and bi-weekly visits by county agents were made to monitor the growth and development of the crop, ascertain what cultural practices needed to be implemented and to monitor type and level of weed, disease, and insect infestation for possible

pesticide applications. Additionally, field inspections by Research and Extension SRVP committee members were utilized to assist in the identification of specific problems.

Tissue samples (pulled from the most mature trifoliolate at early reproductive growth stage) were analyzed for nutrient levels and water samples (from irrigated fields) were pulled for analysis of water quality. Also, soil samples were taken for fertilization recommendations as well as nematodes samples.

Each field was harvested and yields calculated and adjusted to 13 percent moisture. Weigh wagons and/or yield monitors were used to estimate yields of irregularly shaped fields, where any investigative practice was employed in the verification field, or where problem areas within the field had been identified. In nearly all cases, elevator weigh tickets from each truck were used to calculate the yields reported in this publication.

The SRVP program has matured to a point over the last 23 years where data collected is routinely analyzed in multi-year reports. Upon close review of these field reports, it becomes obvious that some SRVP fields fall between two production systems (as an example, where an irrigated field actually received one irrigation when three were recommended). Additionally, the SRVP program has been used to try a “team approach on problem solving” in a couple of special problem fields. After discussion with the SRVP advisory board, it was decided that these fields be put into a category called “Special Case”. This report reflects that 24 of the 418 SRVP fields have been included in the Special Case category.

RESULTS AND DISCUSSION

Early-Season Irrigated

Five early-season irrigated fields were evaluated in the 2005 SRVP (Table 1). Yields ranged from 37.3 to 64.4 bu/A with an average yield of 53.8 bu/A.

The break-even prices for specified operating and ownership costs ranged from \$3.04 to \$5.27 per bushel with an average of \$3.65 per bu (Table 2). Assuming a 20 percent crop share rent and the season average price for Arkansas of \$5.72 per bu, the returns above total specified costs ranged from \$16.79 to \$164.55 per acre with an average of \$119.23 per acre.

When the 2005 data is included into the 23-year average, consisting of 20 early-season irrigated fields, the 50.4 bu/A average yield reveals the continued success and stability of this cropping system (Table 3). The 2005 average total specified operating and ownership costs of \$188.39 per acre is higher than the 23-year average of \$180.94. Returns above total specified cost this year equaled \$119.23 which is significantly higher than any of the previous years for this production system. The SRVP continues to show the benefits of early planting and intense management in this production system.

Full Season Irrigated

Six full-season irrigated fields were evaluated in the 2005 SRVP (Table 4). Yields ranged from 45.3 to 68.7 bu/A with an average yield of 52.1 bu/A.

The break-even prices for specified operating and ownership costs ranged from \$2.35 to \$3.72 per bushel with an average of \$3.00 per bu (Table 5). Assuming a 20 percent crop share rent and the season average price for Arkansas of \$5.72 per bu, the returns above total specified costs ranged from \$51.15 to \$161.46 per acre with an average of \$86.69 per acre.

When the 2005 data is included into the 23-year average, consisting of 204 full-season irrigated fields, the 49.3 bu/A average yield reveals the continued success and stability of this cropping system (Table 6). The 2005 average total specified operating and ownership costs of \$211.42 per acre is higher than the 23-year average of \$180.13. Returns above total specified costs this year equaled \$86.69 that is higher than last year due to a higher seasonal price received this season.

Double-cropped Irrigated

Two double-cropped irrigated fields were enrolled in the 2005 SRVP (Table 7). Yields ranged from 27.0 to 40.2 bu/A with an average yield of 33.6 bu/A.

The break-even prices for specified operating and ownership costs ranged from \$3.36 to \$4.95 per bushel with an average of \$4.16 per bushel (Table 8). Assuming a 20 percent crop share rent and the season average price for Arkansas of \$5.72 per bu, the returns above total specified costs averaged \$15.76 per acre.

Early-Season Non-irrigated

Four Early-Season Non-irrigated fields were evaluated in 2005 (Table 10). Yields ranged from 23.2 to 45.1 bu/A with an average yield of 32.7 bu/A.

The break-even price for specified operating and ownership costs ranged from \$1.67 to \$2.66 per bushel with an average of \$2.37 per bushel (Table 11). Assuming 20 percent crop share rent and the season average price for Arkansas of \$5.72 per bu, the returns above total specified costs ranged from \$39.35 to \$150.29 with an average of \$82.48 per acre.

Comparison of the 2005 data to the 14-year average for all 30 early season non-irrigated fields indicated the second-highest return in the history of the SRVP (Table 12).

Full-Season Non-irrigated

One Full-Season Non-Irrigated fields was evaluated in the 2005 SRVP. Yield of this field was 21.8 bu/A (Table 13).

The breakeven price for specified operating and ownership costs was \$4.90 per bushel (Table 14). Assuming a 20 percent crop share rent and the season average price for Arkansas of \$5.72 per bu, the returns above total specified costs averaged \$17.93 per acre.

The returns above total specified costs for the 2005 field was nearly equivalent to the weighted average of 39 fields over 14 years (Table 15). Despite a positive return, this production system remains the most risky of those represented in the SRVP.

Double-cropped Non-irrigated

The Double-cropped Non-Irrigated production system was not represented in the 2005 SRVP. Yearly averages (1992-2002) of the Double-cropped Non-Irrigated SRVP are included in this report (Table 16).

Special Case

There were no fields included in the Special Case category in 2005. Twenty-four fields in the SRVP have been classified as a special case (Table 17).

Additional Information

Various specified operation costs of the 2005 Soybean Research Verification Fields are listed in Tables 18 - 22 for each production system in the program. These operation costs include preplant tillage, fertilization, weed control, and irrigation for each irrigated field. Where appropriate, the number of trips or applications is listed and costs are assigned on a per-acre basis. **The costs per acre are developed using a budget generator and do not necessarily reflect the exact costs incurred by the cooperator.**

Additionally, Table 23 lists the average of each production system and the special case category across the SRVP from 1983 – 2005. Table 24 compares the state average yield for irrigated and non-irrigated soybeans to the SRVP yield from 1983 – 2005 and includes the season average price used in estimating net returns for each year.

In the Appendix, a complete breakdown of agronomic and economic data for each field is given. Field notes include preplant tillage, planting date, seeding rate, soil analysis, plant population, weed densities, pesticides, physiological data, weather data, and harvest data. Economic data depicts the costs associated with each field. Irrigation charts for each irrigated field are included with individual field reports. Selected fields also a chart displaying the daily maximum and minimum temperature during reproductive growth, which is an indication of heat stress the plants endured during critical periods.

Educational Aspects of 2005 Soybean Research Verification Program Fields

The SRVP is designed to educate cooperating farmers, neighbors, and soybean producers across the county and state. The total SRVP educational effort attempts to heighten awareness, learning, involvement, and implementation of soybean technology by the entire community of soybean producers.

The SRVP coordinators, county Extension agents, and various Extension specialists used a variety of educational tools and methods to multiply the effectiveness of the SRVP field in each county. Signs identifying fields were placed in highly visible locations indicating the county, cooperating farmer and indicating funding by the soybean promotion board. Interest in learning more about the production practices carried out in the SRVP fields was generated by seeing the signs and weekly visits by the coordinator and county agent. Discussion of verification fields and production practices ensued with the cooperator being asked questions about the program from his/her neighbors.

This year's SRVP field tour was on July 26 and integrated with the similar programs in rice, corn/grain sorghum, and cotton. The tour was a good opportunity for an overview of the research verification program of these crops. The SRVP field featured during the tour was on the Herrick Norcross farm south of Tyronza in East Poinsett County. Approximately 15 producers, industry representatives, and Extension personnel attended the tour.

Results from the 1983 – 2005 SRVP have been shared with farmers during county and regional soybean meetings during the winter of 2005. Extension specialists used different aspects of the SRVP to educate farmers on recommendations. The SRVP data is used to reinforce recommendations developed by Extension specialists of several disciplines that work with soybeans.

Summary and Conclusions

The 2005 overall state average yield for soybeans in Arkansas was 34 bu/A. In the 2005 **irrigated** portion of the SRVP five early season, six full season, and two double-cropped fields produced average grain yields of 53.8, 48.8, and 40.3 bu/A, respectively, with an irrigated average of 49.9 bu/A. The **non-irrigated** portion of the SRVP, consisting of four early season and one full season field resulted in average grain yields of 32.7 and 21.8 bu/A, respectively, with a non-irrigated average yield of 30.5 bu/A. The overall average of all SRVP fields was 44.5 bu/A. By following Extension recommendations for soybean production, an increase of approximately 10.5 bu/A higher than the state average was obtained in 2005.

The long term data (1983 – 2005) generated by the Arkansas SRVP suggests differences in yield and net return associated with different soybean production systems (Table 23). The Early Season Irrigated system leads the program in net returns at \$49.54 per acre; however, only 20 fields have represented this system over the life of the program. Up until this year, the Full Season Irrigated system, which includes 204 fields, has had the highest return.

Table 1. Agronomic Summary of the Early Season Irrigated Fields in the 2005 Soybean Research Verification Program.

County	Variety	Soil Texture	Row Width (in)	Type of Irrigation	Acreage	Yield (bu/ac)
Crittenden	Pioneer 94B73 RR	Mhoon/Commerce silt loam	7.5"	Center Pivot	52.5	64.4
Cross	Asgrow 4401 RR	Henry/Lexington/Grenada silt loam	15"	Flood	48.0	37.3
Independence	Garst 4612 RR	Egam silt loam	15"	Border	60.0	61.5
Jefferson	DPL 5414 RR DG33B52	Perry clay	30"	Furrow	37.4	48.5
Poinsett	Asgrow 4902 RR	Sharkey silty clay	19"	Border	65.0	57.2

Table 2. Economic Summary of the Early Season Irrigated Fields in the 2005 Soybean Research Verification Program.

COUNTY	Yield¹ (Bu/A)	Total Specified Operating Costs² (\$/A)	Break-even Operating³ (\$/Bu)	Total Specified Operating and Ownership Costs⁴ (\$/A)	Break-even Price⁵ (\$/Bu)	Break-even Price With Land Costs⁶ (\$/Bu)	Returns Above Total Specified Costs⁷ (\$/A)
Crittenden	64.4	\$114.89	\$1.78	\$195.82	\$3.04	\$3.80	\$172.55
Cross	37.3	\$141.24	\$3.79	\$196.57	\$5.27	\$6.59	\$16.79
Independence	61.5	\$133.54	\$2.17	\$187.23	\$3.04	\$3.81	\$164.55
Jefferson	48.5	\$141.55	\$2.92	\$181.49	\$3.74	\$4.68	\$95.93
Poinsett	57.2	\$131.54	\$2.30	\$180.83	\$3.16	\$3.95	\$146.35
AVERAGE	53.78	\$132.55	\$2.59	\$188.39	\$3.65	\$4.56	\$119.23

¹Yields adjusted to 13 percent moisture.

²Specified out-of-pocket expenses such as seed, fertilizer, herbicides, irrigation, etc.

³Price per bushel required by the farmer to equal total specified operation costs. Does not include land, overhead, risk, and management cost.

⁴Total specified operating costs plus ownership costs which include charges for depreciation and interest on all machinery and irrigation equipment, taxes, and insurance.

⁵Price per bushel required by the farmer to equal total specified operation and ownership costs. Does not include land, overhead, risk, and management cost.

⁶Break-even price per bushel plus a 20 percent crop share rent. Does not include, overhead, risk, and management costs.

⁷A 20 percent crop share rent was assumed as a land charge for a renter situation. No cost sharing was assumed.

\$5.72/Bu is an approximation for the August 1 - December 31, 2005 commodity loan rate used in the above calculations.

Table 3. Yearly Averages (1992-2005) of the Early Season Irrigated Soybean Research Verification Program.

Year	Number of Fields	Average Field Size (Acres)	Yield (Bu/A)	Total Specified Operating Costs (\$/A)	Break-even Operating (\$/Bu)	Total Specified Operating and Ownership Costs (\$/A)	Break-even Price (\$/Bu)	Break-even Price With Land Costs (\$/Bu)	Returns Above Total Specified Costs (\$/A)
1992	1	35	63	\$140.52	\$2.23	\$186.40	\$2.96	\$3.94	\$78.20
1994	1	34	42.4	\$156.94	\$3.70	\$201.51	\$4.75	\$6.34	(\$18.66)
1998	2	39	44.1	\$161.13	\$3.64	\$206.71	\$4.69	\$6.26	(\$18.18)
1999	1	56.8	55.3	\$162.09	\$2.93	\$206.79	\$3.74	\$4.99	\$17.18
2000	1	104.5	38	\$159.97	\$4.21	\$201.52	\$5.30	\$7.07	(\$47.62)
2001	2	25.9	53.9	\$146.95	\$2.73	\$186.88	\$3.47	\$4.62	\$31.42
2002	2	47	57.6	\$116.94	\$2.06	\$161.74	\$2.84	\$3.79	\$78.12
2003	5	41.9	48.4	\$123.72	\$3.02	\$147.62	\$3.62	\$4.82	\$42.54
2005	5	52.6	53.78	\$132.55	\$2.59	\$188.39	\$3.65	\$4.56	\$119.23
Weighted Average									
20 Fields		46.3	50.4	\$138.28	\$2.89	\$180.94	\$3.76	\$4.93	\$49.56

*Break-even price with land cost for 2005 assumed an 80/20 crop share rent. Previous years assumed a 75/25 agreement.

Table 4. Agronomic Summary of the Full Season Irrigated Fields in the 2005 Soybean Research Verification Program.

County	Variety	Soil Texture	Row Width (in)	Type of Irrigation	Acreage	Yield (bu/ac)
Arkansas	Ozark	Stuttgart/Dewitt silt loam	30"	Furrow	60.0	68.7
Craighead	Morsoy RT5553 RR	Amagon/Dubbs silt loam	15"	Flood	52.0	45.8
Greene	Asgrow 5301 RR	Falaya silt loam	30"	Furrow	80.0	56.7
Mississippi	Progeny 4860 RR	Sharkey silty clay	15"	Center Pivot	34.7	47.3
Prairie	Armor 47G7 RR	Crowley/Stuttgart silt loam	30"	Furrow	110.4	48.9
St. Francis	Armor 47G7 RR	Calloway/Henry silt loam	7.5"	Furrow	45.0	45.3

Table 5. Economic Summary of the Full Season Irrigated Fields in the 2005 Soybean Research Verification Program.

COUNTY	Yield¹ (Bu/A)	Total Specified Operating Costs² (\$/A)	Break-even Operating³ (\$/Bu)	Total Specified Operating and Ownership Costs⁴ (\$/A)	Break-even Price⁵ (\$/Bu)	Break-even Price With Land Costs⁶ (\$/Bu)	Returns Above Total Specified Costs⁷ (\$/A)
Arkansas	68.7	\$186.31	\$2.71	\$231.50	\$3.37	\$4.21	\$161.46
Craighead	45.8	\$107.53	\$2.35	\$149.34	\$3.26	\$4.08	\$112.64
Greene	56.7	\$210.94	\$3.72	\$270.40	\$4.77	\$5.96	\$53.92
Mississippi	47.3	\$121.21	\$2.56	\$203.95	\$4.31	\$5.39	\$66.61
Prairie	48.9	\$175.11	\$3.58	\$228.56	\$4.67	\$5.84	\$51.15
St. Francis	45.3	\$140.33	\$3.10	\$184.74	\$4.08	\$5.10	\$74.38
AVERAGE	52.1	\$156.91	\$3.00	\$211.42	\$4.08	\$5.10	\$86.69

¹Yields adjusted to 13 percent moisture.

²Specified out-of-pocket expenses such as seed, fertilizer, herbicides, irrigation, etc.

³Price per bushel required by the farmer to equal total specified operation costs. Does not include land, overhead, risk, and management cost.

⁴Total specified operating costs plus ownership costs which include charges for depreciation and interest on all machinery and irrigation equipment, taxes, and insurance.

⁵Price per bushel required by the farmer to equal total specified operation and ownership costs. Does not include land, overhead, risk, and management cost.

⁶Break-even price per bushel plus a 20 percent crop share rent. Does not include, overhead, risk, and management costs.

⁷A 20 percent crop share rent was assumed as a land charge for a renter situation. No cost sharing was assumed.

\$5.72/Bu is an approximation for the August 1 - December 31, 2005 commodity loan rate used in the above calculations.

Table 6. Yearly Averages (1983-2005) of the Full Season Irrigated Soybean Research Verification Program.

Year	Number of Fields	Average Field Size (Acres)	Yield (Bu/A)	Total Specified Operating Costs (\$/A)	Break-even Operating (\$/Bu)	Total Specified Operating and Ownership Costs (\$/A)	Break-even Price (\$/Bu)	Break-even Price With Land Costs (\$/Bu)	Returns Above Total Specified Costs (\$/A)
1983	4	31.5	53.5	\$118.79	\$2.25	\$208.57	\$3.94	\$5.26	\$122.62
1984	9	34.2	42.9	\$120.97	\$2.91	\$201.78	\$4.48	\$6.45	(\$9.82)
1985	14	42	44.5	\$109.68	\$2.50	\$203.04	\$4.63	\$6.18	(\$29.45)
1986	8	47.4	42	\$91.16	\$2.22	\$158.52	\$3.91	\$5.21	(\$2.03)
1987	12	48.9	44	\$105.18	\$2.50	\$180.41	\$4.27	\$5.69	\$14.95
1988	11	43.8	41.1	\$103.98	\$2.54	\$169.17	\$4.15	\$5.53	\$63.76
1989	4	38	38.6	\$106.45	\$2.95	\$176.84	\$4.94	\$6.58	(\$6.72)
1990	8	64.9	48	\$114.78	\$2.41	\$183.18	\$3.85	\$5.13	\$29.46
1991	4	50	50.8	\$115.38	\$2.27	\$174.55	\$3.45	\$4.60	\$43.13
1992	10	55.7	50.9	\$110.18	\$2.22	\$166.44	\$3.35	\$4.47	\$47.30
1993	9	73.4	48.9	\$106.37	\$2.24	\$155.44	\$3.27	\$4.36	\$95.73
1994	8	47.4	51.5	\$97.75	\$1.92	\$138.26	\$2.73	\$3.64	\$83.95
1995	12	62.4	49.2	\$121.28	\$2.53	\$169.39	\$3.54	\$4.72	\$75.71
1996	8	68.1	51.5	\$131.27	\$2.63	\$187.06	\$3.73	\$4.97	\$86.92
1997	9	50.2	48.7	\$142.71	\$2.98	\$196.17	\$4.11	\$5.48	\$55.97
1998	12	40.9	50.7	\$156.48	\$3.31	\$208.02	\$4.40	\$5.86	\$8.65
1999	9	38.4	61.8	\$136.40	\$2.22	\$193.22	\$3.15	\$4.20	\$56.89
2000	7	50.4	53.2	\$156.43	\$2.94	\$202.01	\$3.79	\$5.06	\$13.33
2001	8	85.3	50.2	\$125.42	\$2.60	\$175.31	\$3.58	\$4.77	\$28.05
2002	11	54	52.1	\$135.94	\$2.65	\$181.87	\$3.55	\$4.74	\$35.27
2003	10	43	53.2	\$117.20	\$2.27	\$160.06	\$3.11	\$4.15	\$134.47
2004	11	56.5	52.4	\$129.04	\$2.49	\$179.21	\$3.47	\$4.63	\$26.81
2005	6	63.7	52.1	\$156.91	\$3.00	\$211.42	\$4.08	\$5.10	\$86.69
Weighted Average 204 Fields		51.9	49.3	\$122.23	\$2.54	\$180.13	\$3.73	\$4.98	\$44.14

*Break-even price with land cost for 2005 assumed an 80/20 crop share rent. Previous years assumed a 75/25 agreement.

Table 7. Agronomic Summary of the Double-Cropped Irrigated Fields in the 2005 Soybean Research Verification Program.

County	Variety	Soil Texture	Row Width (in)	Type of Irrigation	Acreage	Yield (bu/ac)
Desha	Progeny 5250 RR DPL 5634 RR	Herbert-Rilla silt loam	7.5" on 38" beds	Furrow	30.7	40.2
Drew	Asgrow 5501 RR	Grenada silt loam	30"	Furrow	20.0	27.0

Table 8. Economic Summary of the Doublecrop Irrigated Fields in the 2005 Soybean Research Verification Program.

COUNTY	Yield ¹ (Bu/A)	Total Specified Operating Costs ² (\$/A)	Break-even Operating ³ (\$/Bu)	Total Specified Operating and Ownership Costs ⁴ (\$/A)	Break-even Price ⁵ (\$/Bu)	Break-even Price With Land Costs ⁶ (\$/Bu)	Returns Above Total Specified Costs ⁷ (\$/A)
Desha	40.2	\$135.17	\$3.36	\$178.15	\$4.43	\$5.54	\$51.79
Drew	27	\$133.78	\$4.95	\$174.71	\$6.47	\$8.09	(\$20.27)
AVERAGE	33.6	\$134.48	\$4.16	\$176.43	\$5.45	\$6.81	\$15.76

¹Yields adjusted to 13 percent moisture.

²Specified out-of-pocket expenses such as seed, fertilizer, herbicides, irrigation, etc.

³Price per bushel required by the farmer to equal total specified operation costs. Does not include land, overhead, risk, and management cost.

⁴Total specified operating costs plus ownership costs which include charges for depreciation and interest on all machinery and irrigation equipment, taxes, and insurance.

⁵Price per bushel required by the farmer to equal total specified operation and ownership costs. Does not include land, overhead, risk, and management cost.

⁶Break-even price per bushel plus a 20 percent crop share rent. Does not include, overhead, risk, and management costs.

⁷A 20 percent crop share rent was assumed as a land charge for a renter situation. No cost sharing was assumed.

\$5.72/Bu is an approximation for the August 1 - December 31, 2005 commodity loan rate used in the above calculations.

Table 9. Yearly Averages of the 1984-2005 of the Doublecrop Irrigated Soybean Research Verification Program.

Year	Number of Fields	Average Field Size (Acres)	Yield (Bu/A)	Total Specified Operating Costs (\$/A)	Break-even Operating (\$/Bu)	Total Specified Operating and Ownership Costs (\$/A)	Break-even Price (\$/Bu)	Break-even Price With Land Costs (\$/Bu)	Returns Above Total Specified Costs (\$/A)
1984	1	70	50	\$98.46	\$1.97	\$162.92	\$3.26	\$4.34	\$60.58
1985	3	83.3	40.4	\$93.45	\$2.42	\$194.49	\$4.97	\$6.63	(\$37.36)
1986	2	45	31	\$68.87	\$2.26	\$109.92	\$3.66	\$4.88	\$5.80
1987	3	25.8	39.5	\$110.38	\$2.79	\$189.60	\$4.79	\$6.38	(\$14.07)
1988	4	45.1	42.8	\$104.65	\$2.44	\$171.73	\$4.00	\$5.34	\$70.35
1989	2	68.9	49.9	\$90.49	\$1.82	\$153.69	\$3.09	\$4.12	\$66.37
1990	3	50.7	51.9	\$90.21	\$1.73	\$150.54	\$2.89	\$3.86	\$79.65
1991	2	44.2	46	\$120.91	\$2.62	\$182.82	\$3.97	\$5.29	\$14.18
1992	6	47.8	46	\$103.54	\$2.30	\$155.22	\$3.45	\$4.60	\$37.77
1993	7	67	40.5	\$113.35	\$3.05	\$159.03	\$4.26	\$5.69	\$48.97
1994	5	54.4	42.1	\$114.01	\$2.79	\$151.94	\$3.72	\$4.97	\$28.84
1995	5	55.2	43.3	\$113.77	\$2.65	\$164.34	\$3.82	\$5.09	\$51.19
1996	6	43.7	43	\$110.50	\$2.66	\$156.99	\$3.79	\$5.05	\$71.99
1997	3	83.3	48.2	\$130.11	\$2.72	\$178.37	\$3.71	\$4.95	\$71.24
1998	5	48	45.7	\$122.92	\$2.71	\$158.84	\$3.52	\$4.69	\$36.44
1999	4	58.5	47.9	\$132.86	\$2.82	\$194.26	\$4.15	\$5.54	(\$0.37)
2000	7	52.1	42.2	\$121.28	\$2.94	\$175.18	\$4.27	\$5.69	(\$4.38)
2001	6	46.5	42.7	\$98.06	\$2.35	\$138.62	\$3.32	\$4.43	\$34.11
2002	2	65	50	\$122.55	\$2.47	\$187.95	\$3.80	\$5.06	\$20.26
2003	4	67.6	51.8	\$110.62	\$2.18	\$149.07	\$2.93	\$3.91	\$137.99
2004	2	55.1	33.6	\$126.51	\$3.83	\$165.16	\$4.99	\$6.65	(\$33.23)
2005	2	25	33.6	\$134.48	\$4.16	\$176.43	\$5.45	\$6.81	\$15.76
Weighted Average									
84 Fields		54.1	41.9	\$111.49	\$2.73	\$164.14	\$4.01	\$5.35	\$36.94

*Break-even price with land cost for 2005 assumed an 80/20 crop share rent. Previous years assumed a 75/25 agreement.

Table 10. Agronomic Summary of the Early Season Non-Irrigated Fields in the 2005 Soybean Research Verification Program.

County	Variety	Soil Texture	Row Width (in)	Acreage	Yield (bu/ac)
Crawford	Pioneer 94B13 RR	Roxana silt loam	12"	25.3	45.1
Little River 1	Armor 44R5 RR		7.5"	52.0	26.6
Little River 2	Ozark		7.5"	52.0	23.2
Yell	Armor 44R5 RR	Guthrie-Barling silt loam	32"	37.0	35.8

Table 11. Economic Summary of the Early Season Non-Irrigated Fields in the 2005 Soybean Research Verification Program.

COUNTY	Yield ¹ (Bu/A)	Total Specified Operating Costs ² (\$/A)	Break-even Operating ³ (\$/Bu)	Total Specified Operating and Ownership Costs ⁴ (\$/A)	Break-even Price ⁵ (\$/Bu)	Break-even Price With Land Costs ⁶ (\$/Bu)	Returns Above Total Specified Costs ⁷ (\$/A)
Crawford	45.1	\$75.22	\$1.67	\$107.29	\$2.38	\$2.97	\$150.29
Little River 1	26.6	\$67.77	\$2.55	\$92.26	\$3.47	\$4.34	\$59.89
Little River 2	22.4	\$59.60	\$2.66	\$88.78	\$3.96	\$4.95	\$39.35
Yell	35.8	\$93.45	\$2.61	\$124.39	\$3.47	\$4.34	\$80.39
AVERAGE	32.475	\$74.01	\$2.37	\$103.18	\$3.32	\$4.15	\$82.48

¹Yields adjusted to 13 percent moisture.

²Specified out-of-pocket expenses such as seed, fertilizer, herbicides, irrigation, etc.

³Price per bushel required by the farmer to equal total specified operation costs. Does not include land, overhead, risk, and management cost.

⁴Total specified operating costs plus ownership costs which include charges for depreciation and interest on all machinery and irrigation equipment, taxes, and insurance.

⁵Price per bushel required by the farmer to equal total specified operation and ownership costs. Does not include land, overhead, risk, and management cost.

⁶Break-even price per bushel plus a 20 percent crop share rent. Does not include, overhead, risk, and management costs.

⁷A 20 percent crop share rent was assumed as a land charge for a renter situation. No cost sharing was assumed.

\$5.72/Bu is an approximation for the August 1 - December 31, 2005 commodity loan rate used in the above calculations.

Table 12. Yearly Averages (1989-2005) of the Early Season Non-Irrigated Soybean Research Verification Program.

Year	Number of Fields	Average Field Size (Acres)	Yield (Bu/A)	Total Specified Operating Costs (\$/A)	Break-even Operating (\$/Bu)	Total Specified Operating and Ownership Costs (\$/A)	Break-even Price (\$/Bu)	Break-even Price With Land Costs (\$/Bu)	Returns Above Total Specified Costs (\$/A)
1989	2	32.5	37.5	\$92.33	\$2.46	\$125.51	\$3.34	\$4.46	\$39.87
1990	2	15.5	23.3	\$84.39	\$3.63	\$116.31	\$4.99	\$6.66	(\$13.03)
1991	2	44	26.9	\$80.18	\$2.98	\$118.10	\$4.39	\$5.86	(\$2.90)
1992	2	72.5	37.1	\$69.92	\$1.88	\$96.13	\$2.58	\$3.45	\$59.48
1993	1	37	19.7	\$88.03	\$4.47	\$104.90	\$5.32	\$7.10	(\$3.69)
1994	1	88	46.3	\$92.18	\$1.99	\$112.92	\$2.44	\$3.25	\$29.60
1997	2	33	38.4	\$90.53	\$2.43	\$123.14	\$3.34	\$4.45	\$75.58
1998	1	19	20	\$103.72	\$5.19	\$138.18	\$6.91	\$9.21	(\$52.68)
1999	1	35	25.5	\$117.67	\$4.61	\$153.95	\$6.04	\$8.05	(\$50.68)
2001	1	62	21	\$87.93	\$4.19	\$103.65	\$4.94	\$6.58	(\$18.60)
2002	5	36.3	36.5	\$95.34	\$2.80	\$108.89	\$3.10	\$4.13	\$43.02
2003	1	11.3	46.8	\$81.92	\$1.75	\$103.15	\$2.20	\$2.94	\$156.03
2004	5	41.9	48.4	\$123.72	\$3.02	\$147.62	\$3.62	\$4.82	\$42.54
2005	4	61.4	32.5	\$74.01	\$2.37	\$103.18	\$3.32	\$4.15	\$82.48
Weighted Average 30 Fields		42.8	35.9	\$91.15	\$2.69	\$116.58	\$3.42	\$4.51	\$41.15

*Break-even price with land cost for 2005 assumed an 80/20 crop share rent. Previous years assumed a 75/25 agreement.

Table 13. Agronomic Summary of the Full Season Non-Irrigated Fields in the 2005 Soybean Research Verification Program.

County	Variety	Soil Texture	Row Width (in)	Acreage	Yield (bu/ac)
Logan	Croplan RC4992 RR	Dardanelle silt loam	19"	70.0	21.8

Table 14. Economic Summary of the Full Season Non-Irrigated Fields in the 2005 Soybean Research Verification Program.

COUNTY	Yield ¹ (Bu/A)	Total Specified Operating Costs ² (\$/A)	Break-even Operating ³ (\$/Bu)	Total Specified Operating and Ownership Costs ⁴ (\$/A)	Break-even Price ⁵ (\$/Bu)	Break-even Price With Land Costs ⁶ (\$/Bu)	Returns Above Total Specified Costs ⁷ (\$/A)
Logan	21.8	\$74.91	\$3.44	\$106.77	\$4.90	\$6.12	\$17.93

¹Yields adjusted to 13 percent moisture.

²Specified out-of-pocket expenses such as seed, fertilizer, herbicides, irrigation, etc.

³Price per bushel required by the farmer to equal total specified operation costs. Does not include land, overhead, risk, and management cost.

⁴Total specified operating costs plus ownership costs which include charges for depreciation and interest on all machinery and irrigation equipment, taxes, and insurance.

⁵Price per bushel required by the farmer to equal total specified operation and ownership costs. Does not include land, overhead, risk, and management cost.

⁶Break-even price per bushel plus a 20 percent crop share rent. Does not include, overhead, risk, and management costs.

⁷A 20 percent crop share rent was assumed as a land charge for a renter situation. No cost sharing was assumed.

\$5.72/Bu is an approximation for the August 1 - December 31, 2005 commodity loan rate used in the above calculations.

Table 15. Yearly Averages (1985-2005) of the Full Season Non-Irrigated Soybean Research Verification Program.

Year	Number of Fields	Average Field Size (Acres)	Yield (Bu/A)	Total Specified Operating Costs (\$/A)	Break-even Operating (\$/Bu)	Total Specified Operating and Ownership Costs (\$/A)	Break-even Price (\$/Bu)	Break-even Price With Land Costs (\$/Bu)	Returns Above Total Specified Costs (\$/A)
1985	1	92	45	\$57.81	\$1.28	\$130.14	\$2.89	\$3.86	\$45.02
1988	2	37	25.6	\$66.14	\$3.04	\$101.77	\$4.65	\$6.21	\$42.91
1989	2	20	29.8	\$64.72	\$2.27	\$99.84	\$3.52	\$4.69	\$31.36
1990	4	18.5	29.1	\$77.90	\$2.95	\$110.41	\$4.22	\$5.62	\$18.35
1991	3	23.3	38	\$68.35	\$1.83	\$98.99	\$2.67	\$3.56	\$63.89
1992	4	40.5	36.8	\$92.73	\$2.68	\$130.57	\$3.79	\$5.06	\$23.88
1993	4	52.8	22.1	\$73.30	\$4.64	\$96.83	\$6.14	\$8.19	\$16.84
1994	4	39.5	35.2	\$70.76	\$2.24	\$92.99	\$2.91	\$3.88	\$58.60
1995	4	31.3	16.1	\$82.84	\$7.31	\$108.59	\$9.42	\$12.56	(\$28.66)
1996	1	40	31.9	\$108.45	\$3.40	\$140.27	\$4.40	\$5.86	\$29.60
1997	4	61	24.1	\$77.47	\$3.54	\$104.99	\$4.80	\$6.40	\$19.86
1998	3	80	18.1	\$96.29	\$5.26	\$121.36	\$6.65	\$8.87	(\$43.98)
2004	2	39.2	50.1	\$99.76	\$1.99	\$128.45	\$2.56	\$3.42	\$68.36
2005	1	70	21.8	\$74.91	\$3.44	\$106.77	\$4.90	\$6.12	\$17.93
Weighted Average for 39 Fields		43.0	28.1	\$80.31	\$3.20	\$111.02	\$4.40	\$5.86	\$17.62

*Break-even price with land cost for 2005 assumed an 80/20 crop share rent. Previous years assumed a 75/25 agreement.

Table 17. Yearly Averages (1988-02) of the Special Case Fields of the Soybean Research Verification Program.

Year	Number of Fields	Average Field Size (Acres)	Yield (Bu/A)	Total Specified Operating Costs (\$/A)	Break-even Operating (\$/Bu)	Total Specified Operating and Ownership Costs (\$/A)	Break-even Price (\$/Bu)	Break-even Price With Land Costs (\$/Bu)	Returns Above Total Specified Costs (\$/A)
1988	1	30.8	27.8	\$92.49	\$3.33	\$153.00	\$5.50	\$7.34	\$4.42
1992	1	52.0	23.6	\$91.20	\$3.86	\$126.88	\$5.38	\$7.17	(\$27.76)
1993	3	54.3	22.2	\$104.98	\$4.99	\$144.00	\$6.78	\$9.04	(\$30.12)
1994	1	30.0	34.4	\$103.95	\$3.02	\$117.63	\$3.42	\$4.56	\$30.72
1995	1	120.0	35.9	\$120.48	\$3.36	\$157.88	\$4.40	\$5.86	\$20.90
1996	1	30.0	17.0	\$73.07	\$4.30	\$110.52	\$6.50	\$8.67	(\$20.00)
1997	2	19.0	56.8	\$135.73	\$2.55	\$186.63	\$3.48	\$4.64	\$107.31
1998	3	42.3	28.9	\$117.62	\$6.12	\$150.61	\$8.05	\$10.73	(\$26.92)
1999	3	50.0	39.2	\$135.45	\$3.73	\$211.43	\$5.69	\$7.59	(\$52.67)
2000	6	61.7	34.5	\$136.16	\$4.33	\$183.75	\$5.90	\$7.86	(\$43.89)
2001	1	18.0	35.0	\$85.52	\$2.44	\$104.62	\$2.99	\$3.99	\$37.13
2002	1	80.0	38.2	\$133.00	\$3.48	\$165.98	\$4.35	\$5.79	(\$6.91)
Weighted Average of 24 Fields:		50.4	33.5	\$119.26	\$4.14	\$163.77	\$5.69	\$7.58	(\$14.14)

Table 18. Various Specified Operating Costs of the Early Season Irrigated Fields in the 2005 SRVP.

COUNTY	Preplant Tillage		Fertilization		Seed Cost (\$/A)	Weed Control			Irrigation	
	No. Trips	Operating Cost ¹ (\$/A)	Fertilizer Applied (Lbs/A)	Cost with Application (\$/A)		No. Cultivation Trips	Operating Cost of Cultivation ¹	Herbicide Cost + App. (\$/A)	No. Apps.	Operating Costs ² (\$/A)
Crittenden	0	\$0.00	0	\$0.00	\$38.74	0	\$0.00	\$23.40	5	\$23.65
Cross	4	\$13.39	200	\$31.46	\$38.10	0	\$0.00	\$8.33	3	\$18.72
Independence	3	\$5.11	100	\$15.71	\$15.88	0	0	\$11.19	3	\$19.92
Jefferson	0	\$0.00	100	\$20.25	\$31.75	0	0	\$37.42	3	\$20.28
Poinsett	3	\$9.25	110	\$18.40	\$32.00	0	0	\$8.50	5	\$22.51
Avg:	2	\$5.55	102	\$17.16	\$31.29	0	\$0.00	\$17.77	3.8	\$21.02

Table 19. Various Specified Operating Costs of Full Season Irrigated Fields in the 2005 SRVP.

COUNTY	Preplant Tillage		Fertilization		Seed Cost (\$/A)	Weed Control			Irrigation	
	No. Trips	Operating Cost ¹ (\$/A)	Fertilizer Applied (Lbs/A)	Cost with Application (\$/A)		No. Cultivation Trips	Operating Cost of Cultivation ¹	Herbicide Cost + App. (\$/A)	No. Apps.	Operating Costs ² (\$/A)
Arkansas	1	\$1.81	300	\$48.88	\$9.20	2	3.64	\$40.90	4	\$27.04
Craighead	0	\$0.00	100	\$19.24	\$41.28	0	0	\$11.71	1	\$6.24
Greene	5	\$20.98	251.5	\$43.66	\$28.80	0	0	\$20.64	5	\$33.80
Mississippi	2	\$6.92	0	\$0.00	\$38.10	0	0	\$4.04	8	\$37.84
Prairie	3	\$16.51	218.29	\$48.72	\$29.85	0	0	\$19.48	4	\$27.04
St. Francis	3	\$5.96	100	\$19.33	\$38.10	0	0	\$19.73	4	\$27.04
Avg:	2.3	\$8.70	161.6	\$29.97	\$30.89	0.3	0.6	\$19.42	4.3	\$26.50

Table 20. Various Specified Operating Costs of the Doublecrop Irrigated Fields in the 2005 SRVP.

COUNTY	Preplant Tillage		Fertilization		Seed Cost (\$/A)	Weed Control			Irrigation	
	No. Trips	Operating Cost ¹ (\$/A)	Fertilizer Applied (Lbs/A)	Cost with Application (\$/A)		No. Cultivation Trips	Operating Cost of Cultivation ¹	Herbicide Cost + App. (\$/A)	No. Apps.	Operating Costs ² (\$/A)
Desha	1	\$2.03	100	\$19.37	\$25.40	0	\$0.00	\$11.97	5	\$33.80
Drew	0	\$0.00	125	\$21.41	\$31.75	0	\$0.00	\$20.28	3	\$20.28
Avg:	0.5	\$1.02	112.5	\$20.39	\$28.58	0.0	\$0.00	\$16.13	4.0	\$27.04

Table 21. Various Specified Operating Costs of Early Season Non-Irrigated Field in the 2005 SRVP.

COUNTY	Preplant Tillage		Fertilization			Weed Control		
	No. Trips	Operating Cost ¹ (\$/A)	Fertilizer Applied (Lbs/A)	Cost with Application (\$/A)	Seed Cost (\$/A)	No. Cultivation Trips	Operating Cost of Cultivation ¹	Herbicide Cost (\$/A)
Crawford	2	8.09	0	\$0.00	\$31.75	0	\$0.00	\$8.82
Little River 1	1	5.21	0	\$0.00	\$28.58	0	\$0.00	\$8.12
Little River 2	2	7.9	0	\$0.00	\$9.00	0	\$0.00	\$23.21
Yell	3	\$6.74	100	\$15.76	\$34.92	0	\$0.00	\$10.54
Avg:	2	\$6.99	25	\$3.94	\$26.06	0	\$0.00	\$12.67

¹Includes tractor and equipment repairs and maintenance, fuel, oil, lubricants, and labor.

Table 22. Various Specified Operating Costs of the Full Season Non-Irrigated Fields in the 2005 SRVP.

COUNTY	Preplant Tillage		Fertilization			Weed Control		
	No. Trips	Operating Cost ¹ (\$/A)	Fertilizer Applied (Lbs/A)	Cost with Application (\$/A)	Seed Cost (\$/A)	No. Cultivation Trips	Operating Cost of Cultivation ¹	Herbicide Cost (\$/A)
Logan	2	\$9.38	0	\$0.00	\$38.10	0	\$0.00	\$6.03

¹Includes tractor and equipment repairs and maintenance, fuel, oil, lubricants, and labor.

Table 23. Production System Weighted Averages (1983-05) of the Soybean Research Verification Program.

Production System	Number of Fields	Average Field Size (Acres)	Yield (Bu/A)	Total Specified Operating Costs (\$/A)	Break-even Operating (\$/Bu)	Total Specified Operating and Ownership Costs (\$/A)	Break-even Price (\$/Bu)	Break-even Price With Land Costs (\$/Bu)	Returns Above Total Specified Costs (\$/A)
Full Season Irrigated	204	51.9	49.3	\$122.23	\$2.54	\$180.13	\$3.73	\$4.98	\$44.14
Doublecrop Irrigated	84	54.1	41.9	\$111.49	\$2.73	\$164.14	\$4.01	\$5.35	\$36.94
Full Season Non-Irr.	39	43.0	28.1	\$80.31	\$3.20	\$111.02	\$4.40	\$5.86	\$17.62
Doublecrop Non-Irr.	17	44.3	22.9	\$69.28	\$3.13	\$89.99	\$4.06	\$5.41	\$17.98
Early Season Non-Irr.	30	42.8	35.9	\$91.15	\$2.69	\$116.58	\$3.42	\$4.51	\$41.15
Early Season Irrigated	20	46.3	50.4	\$138.28	\$2.89	\$180.94	\$3.76	\$4.93	\$49.56
Special Case	24	50.4	33.5	\$119.26	\$4.14	\$163.77	\$5.69	\$7.58	(\$14.14)
Weighted Average 418 Fields		50.2	40.9	\$106.33	\$2.92	\$153.45	\$4.19	\$5.58	\$34.61

Table 24. Avg. Irrigated and Dryland Yield for the State of Arkansas and SRVP, with the Seasonal Average Prices Used in Estimating Net Returns for the SRVP 1983-2005.

Year	AVERAGE YIELD (bu/ac)				Seasonal Average Price* ¹ (\$/Bu)
	STATE		SRVP		
	Irrigated*	Dryland*	Irrigated	Dryland	
1983	N/A	N/A	N/A	N/A	7.87
1984	N/A	N/A	43.7	N/A	5.99
1985	32.6	23.9	43.8	45.0	5.19
1986	28.5	19.0	39.8	N/A	4.97
1987	30.4	19.5	43.1	N/A	5.92
1988	33.0	22.9	41.6	27.1	7.55
1989	29.0	20.8	42.4	33.6	5.88
1990	32.0	24.4	49.1	27.1	5.91
1991	34.0	24.6	42.2	33.6	5.71
1992	37.0	31.0	49.9	36.5	5.64
1993	32.0	21.4	45.2	22.2	6.65
1994	38.0	31.0	47.4	34.5	5.69
1995	34.0	19.0	47.5	15.2	6.85
1996	42.0	25.0	45.7	38.3	7.36
1997	36.0	25.0	48.6	27.5	6.88
1998	31.0	18.5	48.7	18.6	5.38
1999	37.0	18.0	57.3	23.6	4.79
2000	34.3	13.7	46.2	6.2	4.90
2001	38.0	23.0	47.0	27.7	4.40
2002	38.0	26.0	53.2	42.3	5.55
2003	42.0	32.0	51.7	46.8	7.38
2004	43.0	34.0	49.5	48.8	5.24
2005			49.9	30.5	5.72

* Arkansas Agricultural Statistics Service

¹ If the season average price was lower than the Arkansas loan rate for soybeans, the loan rate was used in the economic analysis summaries.

2005 SRVP
Crittenden County
 Early Season Irrigated – NoTill

Location: Marion
 Cooperator: Todd Allen
 County Agent: Mike Hamilton
 Coordinator: Trey Reaper

2004 – 63.6 bu/ac
2005 – 64.4 bu/ac
Avg: 64.0 bu/ac

Previous Crop: 2004 Soybean

Field Acreage: 52.5
 Soil Classification:
 Fertilizer Recommendation: None
 Fertilizer Applied: None

Preplant Tillage: None

Nematodes (# / pint of soil): 227 Root-knot
 Planting Date: 5/03
 Variety: Pioneer 94B73 RR

Disease / Nematode Ratings					Herbicide Sensitivity		Chloride Sensitivity			
Root Knot Nematode	Soybean Cyst Nematode			Frog eye Leaf spot	Stem Canker	Sudden Death Syn.	Prop-anil	Sulfentrazone	Chloride Sensitivity 2003	Chloride Sensitivity 2002
	2	5	9							
VS	VS	VS	VS	R	R	MS*	R	T	INC	INC

Row Spacing: 7.5"
 Emergence Date: 5/10
 Plant Population: 111,500 plants/ac

Avg. Number of Weeds/10 Row Feet

5/24: 34.8 broadleaf signalgrass, 0.4 entireleaf morningglory, 0.2 spotted spurge
 6/09: 4.0 entireleaf morningglory, 18 barnyardgrass, 14 broadleaf signalgrass

Herbicide Program

5/11: 20 oz/ac RoundUp UltraMax
 5/25: 20 oz/ac RoundUp UltraMax
 6/10: 20 oz/ac RoundUp UltraMax
 Crittenden County (Early Season Irrigated-No Till)

Seasonal Insect Observations

7/28: 5.0 grasshoppers, 1.0 bean leaf beetles per 75 sweeps
 8/04: 5.0 green cloverworms, 9.0 grasshoppers, 2 bean leaf beetles per 75 sweeps

Cu	6.5	4-30
B	30.1	20-60

Field Notes

- 5/03:** Beans not up but have germinated. Crusting may be a problem since it rained after planting.
- 5/12:** Beans were rotary hoed, but rain this weekend should bring the rest up. If no rain, may want to offset the drill rows and plant an additional 25 lbs/ac more seed to increase population. 30 lbs/ac of seed 2600 seed/lb in size will equal around 2-2.5 seed per foot resulting in an additional 70,000 plts/ac.
- 5/25:** Re-Planted btwn rows on 5/16. Stand still looks thin in places across field but will look better as beans grow. Weed pressure is very low so far. Some pigweed and IVMG and ELMG but all still 2-leaf. May want to spray middle of next week depending on soil moisture and plant growth. Need rain.
- 6/02:** Weed pressure has increased, seems plants are still growing. Not much soil moisture left but if we wait to spray we may have a mess. Larger soybean plts seem to be stressed; many have stacked nodes and axillary trifoliates developing. Will go ahead and spray ASAP.
- 6/14:** Sprayed on 6/4 with 1 qt glyphosate. Field very dry but some beans still small. Will flush across field at end of week to stimulate growth. Weed pressure remains low.
- 7/05:** Field is very wet. Irrigation last week was followed by a couple of showers. It took John 7 days to water the field because it was so dry. Other than a few on the lower end, plants don't appear to be damaged. Weed pressure is very low and beans are close to canopy closure. Do not recommend another herbicide application at this time. Bean leaf beetles are causing noticeable damage but should decrease with wet conditions.
- 7/12:** SDS more noticeable this week. Still good soil moisture. Plant height is variable due to replant. No other disease or insects noticed. Almost all areas have canopied.
- 7/19:** Beans still short but look good. Still a big difference btwn planting dates. R4 vs. R2; different variety was replanted. May be problem at harvest. SDS hasn't gotten any worse. No other diseases are present yet. Other than BLB and some blister beetles, no insects present.
- 8/03:** Still good moisture, can hold off irrigating until Monday. SDS showing up across field. Re-planted variety is at early R5, while other is at mid-R5. Stinkbug and other insect levels are low for now.
- 8/11:** Irrigating now. Very little disease or insects. SDS still present but not any worse.
- 9/01:** Can terminate irrigation. Insects remain low. Field is best looking in this bottom this year.
- 9/15:** Field has turned. Variety that was replanted has not yet reached R7. May be a problem if first planting begins to shatter. Should be ready by end of next week.

Narrative

One goal this year for the Independence Co. field was to plant earlier. We accomplished this; however, only about 60% of the plants emerged. We then recommended that John come back and replant a low seeding rate to increase the overall plant population. Although we increased the number of plants, two different stages of growth were observed for the rest of the season. In the end, this wasn't a factor that affected seed yield or quality. The border irrigation setup went much more smoothly than the flood irrigation last year. Only one application of glyphosate was needed, mainly because of the hot, dry conditions. Foliar diseases were minimal; however, SDS did cause some concern in the early reproductive stages. Luckily it did not get any worse after the initial infection but this variety definitely has high susceptibility. Insects were present throughout the season but at levels well below threshold. John did an excellent job keeping up with the water demand of this crop, as reflected in the final yield. The Independence-Jackson County area was no doubt the driest in Arkansas in 2005. Terrible corn and soybean yields were reported for the area. We commented several times throughout the season that the SRVP field was by far the best looking soybean field in the area.

**Table 6.G Summary of estimated costs per acre
Independence County
Full Season Border Irrigated, University of Arkansas**

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS	acre	15.25	1.0000	15.25	_____
HERBICIDES	acre	10.73	1.0000	10.73	_____
CROP SEED	acre	44.46	1.0000	44.46	_____
SEED TREATMENT	acre	1.87	1.0000	1.87	_____
SELF-HAUL	acre	9.23	1.0000	9.23	_____
HAND LABOR	hour	8.12	0.0350	0.29	_____
IRRIGATION LABOR	hour	8.12	0.2036	1.65	_____
OPERATOR LABOR	hour	8.12	0.8318	6.77	_____
DIESEL FUEL	gal	1.80	15.1946	27.34	_____
REPAIR & MAINTENANCE	acre	10.70	1.0000	10.70	_____
INTEREST ON OP. CAP.	acre	5.25	1.0000	5.25	_____
TOTAL DIRECT EXPENSES				133.54	_____
TOTAL FIXED EXPENSES				53.69	_____
TOTAL SPECIFIED EXPENSES				187.23	=====

Arkansas County (Full Season – Irrigated)

7/20 0.5 pts/ac Blazer plus 1.0 oz/ac 2,4-DB on 12" band

8/04 12 oz/ac Flexstar spot sprayed 15 acres

Seasonal Insect Observations:

7/29: 14 potato leafhoppers per 50 sweeps

8/25: 7 brown stinkbugs, 1 green stinkbug, 31 green cloverworms, 30 bean leaf beetles, and 4 saltmarsh caterpillars per 100 sweeps

9/23: 5 green stinkbugs per 75 sweeps

Rainfall, Irrigation, and Physiological Data

Date	Growth Stage	Height (in.)	Width (in.)	Rainfall (in.)	Irrigation Scheduler Deficit	Furrow Irrig. Date	Deficit at Irrigation
6/10	V4	6	7	1.64	0.70		
6/17	V5	10	11	0.77	0.78		
7/01	V8			1.47	0.00	6/27	1.80
7/06	R2, V11	22	19	0.00	0.73		
7/15	R2, V12	30	22	0.35	2.14	7/17	2.32
7/29	R3, V14	32	Lapped	1.41	0.19	7/26	1.49
8/04	R4, V14	33		0.00	1.56		
8/12	R5, V15	33		0.00	0.69	8/09	2.48
8/25	R5	33		0.26	0.46	8/22	2.73
9/23	R7			1.47		9/05	1.47

Total Rainfall: 7.37"

Total Irrigations: 6

Irrig. Terminated: 9/05

Tissue Analysis for Nutrient Levels in Uppermost Mature Trifoliolate Leaves:

Sample Date: 7/29

Growth Stage: R3

Nutrient **Field Level** AR Reference Levels (R2)

-----%-----		
P	0.38	0.25-0.60
K	1.53	1.50-2.30
Ca	0.98	0.80-1.40
Mg	0.36	0.25-0.70
S	0.23	0.25-0.60
-----ppm-----		
Na	0.008	
Fe	161	25-300
Mn	343	17-200
Zn	45.7	21-80
Cu	8.4	4-30
B	33.8	20-60

**Table 8.F Estimated costs per acre
Mississippi County
Full Season Center Pivot, University of Arkansas**

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
HERBICIDES					
Glyphosate	pt	1.78	2.0000	3.58	_____
INSECTICIDES					
Methyl parathion	pt	4.05	1.0000	4.05	_____
CROP SEED					
Soybean Seed RR	lb	0.63	60.0000	38.10	_____
CUSTOM HIRE					
Cstm Ap Air Insect	acre	5.50	1.0000	5.50	_____
SELF-HAUL					
self-hauling soybean	bu	0.15	47.3000	7.10	_____
OPERATOR LABOR					
Implements	hour	8.12	0.1537	1.24	_____
Tractors	hour	8.12	0.3286	2.67	_____
Self-Propelled	hour	8.12	0.1777	1.45	_____
IRRIGATION LABOR					
Center pivot Irr.	hour	8.12	0.1856	1.52	_____
HAND LABOR					
Self-Propelled	hour	8.12	0.0058	0.05	_____
DIESEL FUEL					
Tractors	gal	1.80	3.2201	5.79	_____
Self-Propelled	gal	1.80	1.8307	3.30	_____
Center pivot Irr.	gal	1.80	16.0000	28.80	_____
REPAIR & MAINTENANCE					
Implements	acre	1.91	1.0000	1.91	_____
Tractors	acre	1.12	1.0000	1.12	_____
Self-Propelled	acre	3.46	1.0000	3.46	_____
Center pivot Irr.	lac-in	0.93	8.0000	7.52	_____
INTEREST ON OP. CAP.	acre	4.05	1.0000	4.05	_____
TOTAL DIRECT EXPENSES				121.21	_____
FIXED EXPENSES					
Implements	acre	4.11	1.0000	4.11	_____
Tractors	acre	8.24	1.0000	8.24	_____
Self-Propelled	acre	13.22	1.0000	13.22	_____
Center pivot Irr.	each	7431.49	0.0076	57.17	_____
TOTAL FIXED EXPENSES				82.74	_____
TOTAL SPECIFIED EXPENSES				203.95	=====

**Table 8.G Summary of estimated costs per acre
Mississippi County
Full Season Center Pivot, University of Arkansas**

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
HERBICIDES	acre	3.58	1.0000	3.58	_____
INSECTICIDES	acre	4.05	1.0000	4.05	_____
CROP SEED	acre	38.10	1.0000	38.10	_____
CUSTOM HIRE	acre	5.50	1.0000	5.50	_____
SELF-HAUL	acre	7.10	1.0000	7.10	_____
HAND LABOR	hour	8.12	0.0058	0.05	_____
IRRIGATION LABOR	hour	8.12	0.1856	1.52	_____
OPERATOR LABOR	hour	8.12	0.6601	5.36	_____
DIESEL FUEL	gal	1.80	21.0509	37.89	_____
REPAIR & MAINTENANCE	acre	14.01	1.0000	14.01	_____
INTEREST ON OP. CAP.	acre	4.05	1.0000	4.05	_____
TOTAL DIRECT EXPENSES				121.21	_____
TOTAL FIXED EXPENSES				82.74	_____
TOTAL SPECIFIED EXPENSES				203.95	=====

Table 12.A Estimated resource use and costs for field operations, per acre
 Desha County
 Double Crop Furrow Irrigated, University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF TIMES		MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST	
			RATE	OVER		DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST		
						-----dollars-----				dollars		-----dollars-----				
Cstm Ap Grd Fert	acre			1.00	Jun								1.0000	4.75	4.75	4.75
0-30-40	lbs												100.0000	0.14	14.62	14.62
Triple K	26.57'	MFWD 190	0.052	1.00	Jun	1.22	1.54	0.27	0.63	0.06	0.54					4.20
Planter 8r@30''	30'	MFWD 225	0.115	1.00	Jun	3.16	3.89	0.81	1.47	0.27	2.24					11.57
Soybean Seed RR	lb											40.0000	0.63	25.40		25.40
Sprayer(600-750Gal)	60'		0.017	1.00	Jun	0.46	0.98			0.02	0.21					1.65
Glyphosate	pt											2.0000	1.78	3.58		3.58
Sprayer(600-750Gal)	60'		0.017	1.00	Jul	0.46	0.98			0.02	0.21					1.65
Glyphosate	pt											1.5000	1.78	2.68		2.68
Flexstar	pt											0.3750	11.66	4.37		4.37
Poly-Pipe	acre			1.00	Jul							1.0000	5.75	5.75		5.75
Cstm Ap Air Insect	acre			1.00	Sep							1.0000	5.50	5.50		5.50
Karate Z	oz											1.9000	3.29	6.26		6.26
Combine 4WD	22"		0.190	1.00	Oct	7.33	14.14			0.19	1.54					23.01
self-hauling soybean bu												40.2000	0.15	6.03		6.03
Furrow Irr.	each			1.00	Jul						19.35				0.0083	19.35
Application 1	lac-in			1.00	Jul			6.09		0.08	0.67			3.0000		6.76
Application 2	lac-in			1.00	Aug			6.09		0.08	0.67			3.0000		6.76
Application 3	lac-in			1.00	Aug			6.09		0.08	0.67			3.0000		6.76
Application 4	lac-in			1.00	Aug			6.09		0.08	0.67			3.0000		6.76
Application 5	lac-in			1.00	Aug			6.09		0.08	0.67			3.0000		6.76
TOTALS						12.63	21.53	31.53	21.45	1.00	8.09				78.94	174.17
INTEREST ON OPERATING CAPITAL																3.98
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																178.15

Table 12.F Estimated costs per acre
 Desha County
 Double Crop Furrow Irrigated, University of Arkansas

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS					
0-30-40	lbs	0.14	100.0000	14.62	_____
HERBICIDES					
Glyphosate	pt	1.78	3.5000	6.26	_____
Flexstar	pt	11.66	0.3750	4.37	_____
INSECTICIDES					
Karate Z	oz	3.29	1.9000	6.26	_____
IRRIGATION SUPPLIES					
Poly-Pipe	acre	5.75	1.0000	5.75	_____
CROP SEED					
Soybean Seed RR	lb	0.63	40.0000	25.40	_____
CUSTOM HIRE					
Cstm Ap Grd Fert	acre	4.75	1.0000	4.75	_____
Cstm Ap Air Insect	acre	5.50	1.0000	5.50	_____
SELF-HAUL					
self-hauling soybean	bu	0.15	40.2000	6.03	_____
OPERATOR LABOR					
Implements	hour	8.12	0.1599	1.29	_____
Tractors	hour	8.12	0.1837	1.49	_____
Self-Propelled	hour	8.12	0.2252	1.82	_____
IRRIGATION LABOR					
Furrow Irr.	hour	8.12	0.4148	3.35	_____
HAND LABOR					
Self-Propelled	hour	8.12	0.0176	0.14	_____
DIESEL FUEL					
Tractors	gal	1.80	2.0244	3.65	_____
Self-Propelled	gal	1.80	2.3200	4.18	_____
Furrow Irr.	gal	1.80	15.0000	27.00	_____
REPAIR & MAINTENANCE					
Implements	acre	1.08	1.0000	1.08	_____
Tractors	acre	0.73	1.0000	0.73	_____
Self-Propelled	acre	4.07	1.0000	4.07	_____
Furrow Irr.	lac-in	0.23	15.0000	3.45	_____
INTEREST ON OP. CAP.	acre	3.98	1.0000	3.98	_____

TOTAL DIRECT EXPENSES				135.17	_____
FIXED EXPENSES					
Implements	acre	2.10	1.0000	2.10	_____
Tractors	acre	5.43	1.0000	5.43	_____
Self-Propelled	acre	16.10	1.0000	16.10	_____
Furrow Irr.	each	2322.34	0.0083	19.35	_____

TOTAL FIXED EXPENSES				42.98	_____

TOTAL SPECIFIED EXPENSES				178.15	=====

Table 13.A Estimated resource use and costs for field operations, per acre
 Drew County
 Double Crop Irrigated, University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF TIMES			POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST	
			RATE	OVER	MTH	DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST		
						-----dollars-----				dollars		-----dollars-----				
Cstm Ap Grd Fert	acre			1.00	Jun								1.0000	4.75	4.75	4.75
0-18-36	lb												125.0000	0.13	16.66	16.66
Planter 8r@30''	30'	MFWD 225	0.115	1.00	Jun	3.16	3.89	0.81	1.47	0.27	2.24					11.57
Soybean Seed RR	lb												50.0000	0.63	31.75	31.75
Spray (Direct/Layby)	16R-20	MFWD 170	0.063	1.00	Jun	1.21	1.54	0.21	0.31	0.09	0.77					4.04
Glyphosate	pt												2.0000	1.78	3.58	3.58
Flexstar	pt												0.3750	11.66	4.37	4.37
Spray (Direct/Layby)	16R-20	MFWD 170	0.063	1.00	Jul	1.21	1.54	0.21	0.31	0.09	0.77					4.04
Glyphosate	pt												2.0000	1.78	3.58	3.58
Flexstar	pt												0.3750	11.66	4.37	4.37
Poly-Pipe	acre			1.00	Jul								1.0000	5.75	5.75	5.75
Cstm Ap Air Insect	acre			1.00	Sep								1.0000	5.50	5.50	5.50
Karate Z	oz												2.0000	3.29	6.59	6.59
Combine 4WD	25'		0.166	1.00	Oct	6.45	12.52			0.16	1.35					20.32
self-hauling soybean bu													27.0000	0.15	4.05	4.05
Furrow Irr.	each			1.00	Jul						19.35		0.0083			19.35
Application 1	1ac-in			1.00	Jul			6.09		0.08	0.67		3.0000			6.76
Application 2	1ac-in			1.00	Aug			6.09		0.08	0.67		3.0000			6.76
Application 3	1ac-in			1.00	Aug			6.09		0.08	0.67		3.0000			6.76
TOTALS						12.03	19.49	19.50	21.44	0.88	7.14				90.95	170.55
INTEREST ON OPERATING CAPITAL																4.16
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																174.71

Table 16.A Estimated resource use and costs for field operations, per acre
 Little River 2 County
 Early Season Non -Irrigated, University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF TIMES			POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
			RATE	OVER	MTH	DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Disk Harrow	24'	MFWD 150	0.081	2.00	Apr	2.76	3.46	1.18	3.00	0.16	1.33				11.73
Sprayer(600-825Gal)	90'		0.011	1.00	Apr	0.31	0.70			0.01	0.15				1.16
Prowl 3.3 EC	pt											1.5000	2.77	4.17	4.17
Septor	oz											1.4000	2.53	3.54	3.54
Disk Harrow	24'	MFWD 150	0.081	1.00	Apr	1.38	1.73	0.59	1.50	0.08	0.66				5.86
Planter nar 13r@19"	23.75	MFWD 225	0.097	1.00	Apr	2.66	3.28	1.26	2.29	0.23	1.89				11.38
Soybean Seed Public	lb											45.0000	0.20	9.00	9.00
Sprayer(600-825Gal)	90'		0.011	1.00	Jun	0.31	0.70			0.01	0.15				1.16
Flexstar	pt											1.2500	11.66	14.58	14.58
Combine 4WD	25'		0.166	1.00	Sep	6.45	12.52			0.16	1.35				20.32
self-hauling soybean bu												23.2000	0.15	3.48	3.48
TOTALS						13.87	22.39	3.03	6.79	0.67	5.53			34.77	86.38
INTEREST ON OPERATING CAPITAL															2.40
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															88.78

