

CORN & GRAIN SORGHUM RESEARCH VERIFICATION PROGRAM, 2008

Conducted by:

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County Agent	Cooperators	County	Crop
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Mr. Tommy Thompson	Mr. Randy Pettingill	Conway	Corn
Mr. Rick Wimberley	Mr. Melvin Taylor	Cross	Corn
Mr. Nathan Reinhart	Mr. Steve Wyatt	Independence	Corn
Mr. Herb Ginn	Mr. Hunter Burris	Lawrence	Corn
Mr. Herb Ginn	Mr. JD Beary	Lawrence	Grain Sorghum
Mr. Mark Brawner	Mr. Terry Swiney	Lee	Corn
Mrs. Susan Scott	Mr. Brad Whitehead	Lonoke	Corn
Mr. Van Dawson	Mr. Bo Mason	Monroe	Corn
Mr. Rick Thompson	Mr. David Gairhan	Poinsett	Corn
Mr. Tony Richards	Mr. Kevin Harvey	Prairie	Corn
Mr. Tony Richards	Mr. Jason Holloway	Prairie	Grain Sorghum
Mr. Allan Beuerman	Mr. Dudley Webb	Pulaski	Corn

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Special acknowledgment to the members of the Arkansas Corn and Grain Sorghum Promotion Board:

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INTRODUCTION

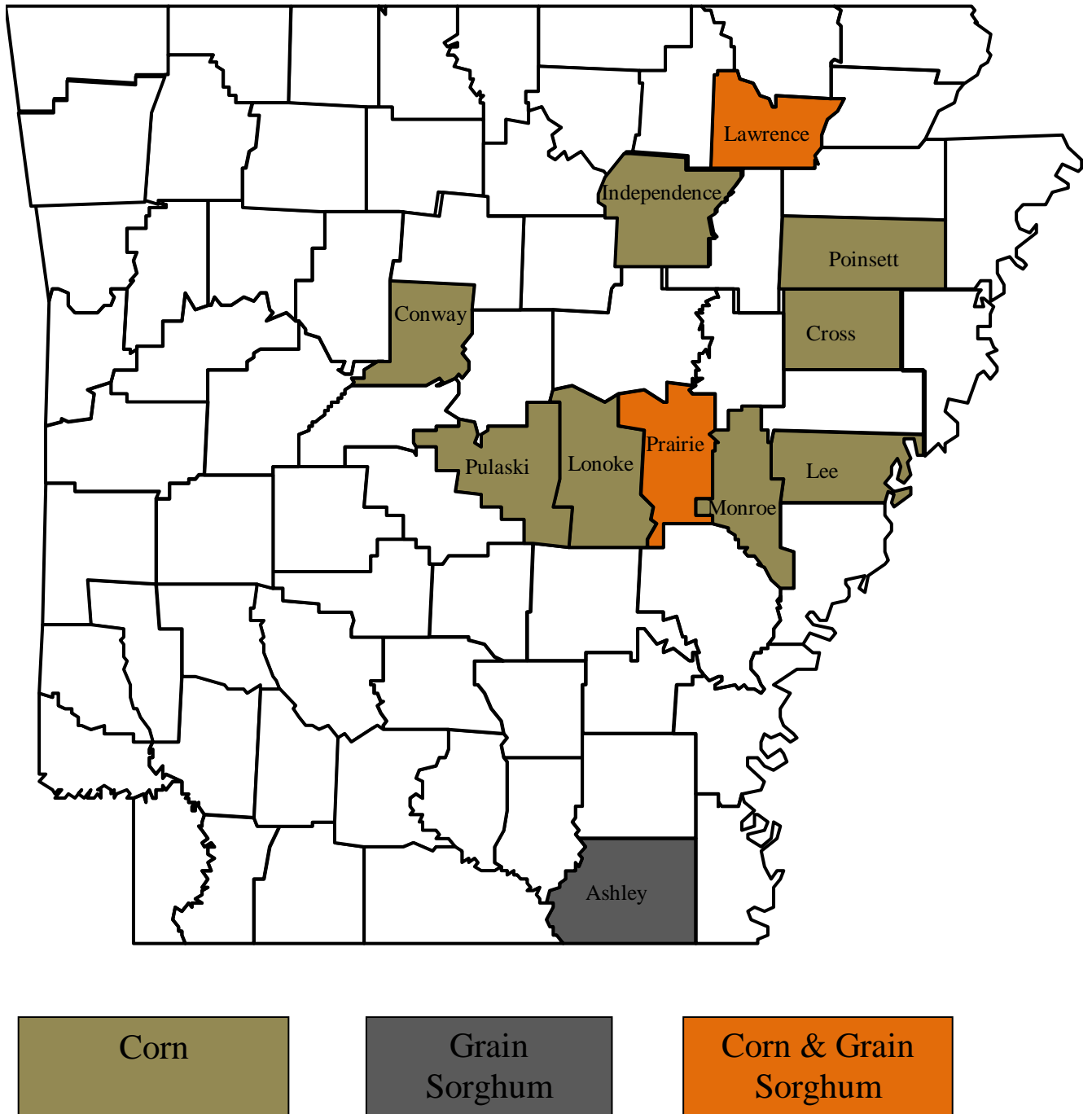
The 2008 growing season was the ninth year for the Corn and Grain Sorghum Research Verification Program (CGSRVP). The CGSRVP is an interdisciplinary effort between growers, county Extension agents, Extension specialists, and researchers. The CGSRVP is an on-farm demonstration of all the research-based recommendations required to grow corn and grain sorghum profitably in Arkansas. The specific objectives of the program are:

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

Each CGSRVP field and cooperator was 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. Thirteen growers were enrolled in the CGSRVP in the spring of 2008, ten corn and three grain sorghum fields. The fields were located on commercial farms ranging in size from 32 to 133 acres for corn fields, and 31 to 36 for grain sorghum fields. The average field size was 54 and 34 acres for the corn and grain sorghum fields, respectively.

The 2008 CGSRVP corn fields were conducted in Conway, Cross, Independence, Lawrence, Lee, Lonoke, Monroe, Poinsett, Prairie and Pulaski counties; and three grain sorghum fields in Ashley, Lawrence and Prairie Counties. Seven different corn hybrids (Belle 1646RY, DeKalb DKC 64-78, Mycogen 2T783, Pioneer 31G71, Pioneer 33M57, Terral TV26BR41 and Stine 9806VT3) and two grain sorghum varieties (FFR 322 and Pioneer 84G62) were planted. Management decisions were based on field history, soil test results, hybrids, and data collected from each individual field during the growing season.

Figure 1. Location of 2008 Corn and Grain Sorghum Research Verification Fields



ECONOMIC ANALYSIS

This section provides information on the development of estimated production costs for the 2008 CGSRVP. Records of field operations on each field provided the basis for estimating these costs. The field records were compiled by the CGSRVP coordinator, county Extension agents, and cooperators in the 2008 CGSRVP.

Using CGSRVP production data from the 13 fields (10 corn and 3 grain sorghum), operating costs, and net returns above total specified costs assuming a 25 percent (25%) land rent were estimated for each field. Break-even prices needed to cover total specified costs are also presented.

Direct Expenses

Direct expenses 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 were used in this analysis. The prices used for these inputs were largely provided by the producer cooperators. When necessary, input prices were utilized from the "2008 Corn and Grain Sorghum Cost of Production Estimates" published by the Cooperative Extension Service.

Fuel and repair costs for machinery were calculated using a budget generator based on parameters and standards published in the American Society of Agricultural Engineers 1993 Handbook. Therefore, the producers' actual machinery costs will vary from the machinery cost estimates that are presented in this report. However, the producers' actual field operations were used as a basis for calculations and his equipment size and type were matched as closely as possible to the existing data set used in the annual set of state crop budgets.

Direct expenses, shown in Table 3, for the CGSRVP corn fields ranged from \$421.03 per acre for Conway County to \$705.17 per acre for Prairie County and averaged \$526.38 per acre. The grain sorghum fields ranged from \$235.59 per acre for Lawrence County (non-irrigated) to \$356.54 per acre for Ashley County (irrigated) and averaged \$318.48 per acre. Corn direct expenses per bushel ranged from \$1.80 in Conway County to \$3.42 in Prairie County and averaged \$2.60 per bushel. Grain Sorghum direct expenses averaged \$3.77 per bushel. Due primarily to price increases in fertilizer and fuel, 2008 direct expenses were on average 46% higher for corn and 53% higher for grain sorghum than in 2007. Corn fertilizer expense increased approximately 50% in 2008, while fuel expense nearly doubled, increasing 94% over 2007. Seed and herbicide expense increased as well in 2008.

Fixed or Ownership Costs

Fixed expenses represent the cost of owning farm equipment. These costs can vary greatly from one farm to another depending on the farm's size, management, and annual use of machinery. The fixed expenses presented in Table 3 include depreciation and interest. These costs are based on estimated initial cost and expected useful life of machinery similar to that used by the producer. Ownership costs were allocated on a per-acre basis using estimated performance rates and hours of annual use. Calculations were made by using a budget generator based on parameters and standards published in the American Society of Agricultural Engineers 1993 Handbook.

Economic costs may differ from short-run tax based cash accounting figures for a particular year. The economic approach spreads these costs over the entire useful life of the machinery. In the long-run, the farm business must cover these costs to remain viable.

Fixed costs ranged from \$44.53 to \$97.55 per acre for the corn fields and \$24.29 to \$49.18 per acre for the grain sorghum fields, with an average of \$54.42 and \$40.28 per acre for corn and grain sorghum, respectively.

Using custom operators rather than owning equipment replaces fixed expenses with direct expenses (custom work). Cooperators with high fixed expenses but low custom work expenses typically use high-clearance sprayers for chemical applications and spreaders (buggies) for fertilizer applications instead of hiring aerial or ground custom applicators.

Total Costs (Direct and Fixed Costs)

Since fixed or ownership costs can be substituted for direct cost and vice-versa, total specified expense is calculated to give the true picture of expenses. Total direct and fixed costs presented in Table 3 are the summation of direct expenses and fixed or ownership costs. Not included in these costs are charges for land, risk, overhead, and management. The overhead and management costs would be better addressed at the whole-farm level and are not included in this analysis. Total direct costs plus ownership costs ranged from \$513.07 to \$766.85 per acre for corn and \$259.88 to \$405.72 per acre for grain sorghum, with an average of \$580.80 and \$358.76 per acre for the corn and grain sorghum fields, respectively.

Break-even prices needed to cover total direct costs plus fixed costs ranged from \$2.22 to \$3.72 per bushel for corn and \$3.64 to \$4.67 per bushel for grain sorghum, with an average of \$2.87 and \$4.23 per bushel for the corn and grain sorghum fields, respectively.

Land Costs

Land costs incurred by producers participating in the CGSRVP would likely vary from land ownership, cash rent, or some form of crop share arrangement. Therefore, a comparison of these divergent cost structures would contribute little to this analysis. For this reason, a 25 percent (25%) crop share rental arrangement, with no cost sharing was assumed to provide a consistent standard for comparison (Table 3). This is not meant to imply that this arrangement is normal or that it should be used in place of existing arrangements. It is simply a constant measure to be used across all CGSRVP fields. There are many other tenancy arrangements that are in use.

Table 3 presents the cost of production per bushel after 25 percent (25%) of the yield is given to the landlord. For corn, these break-even prices ranged from \$2.95 per bushel in Conway County to \$4.96 per bushel in Prairie County. For grain sorghum, break-even prices including rent ranged from \$4.86 per bushel in Prairie County to \$6.22 per bushel in Lawrence County.

Net Returns Per Acre

Table 3 presents estimated returns per acre above "Total Costs" plus a 25 percent (25%) crop share rent assuming a corn price of \$5.01 per bushel and a grain sorghum price of \$4.32 per bushel. The corn and grain sorghum producer price used in this analysis is the September 2008 monthly average price offered by various Arkansas delivery terminals. This information was obtained from the USDA Agricultural Marketing Service (AMS). Net returns above "Total Costs and Land Rent" ranged from \$8.47 to \$360.83 per-acre for corn and (\$43.88) to (\$108.64) per acre for grain sorghum. Additional costs related to risk, overhead, and management have not been included. These costs must be accounted for in any further interpretation of this data.

Estimated Direct Costs

Tables 4 and 5 lists estimated direct costs per acre by field for corn and grain sorghum production. The largest specified operating cost for the corn and grain sorghum fields was the fertilization cost, averaging \$209.20 and \$177.30 per acre for the corn and grain sorghum fields, respectively. Seed, fertilizer, and diesel cost account for approximately 71% of input costs for corn and 72% for grain sorghum in the 2008 CGSRVP.

CORN FIELD REVIEWS

Conway County

The Conway County corn research verification field was located in the southeast part of the county just southeast of Morrilton. The producer for the field was Mr. Randy Pettingill and the county agent was Mr. Tommy Thompson. The field was 32 acres and the previous crop was soybeans. The soil type was a combination of Gallion silt loam and Roxana silt loam with some Yorktown silty clay. The field was ripped in the fall. A preplant fertilizer of 111-0-60-24 was applied on April 14 and cultivated in. The field was planted on April 15 with Terral TV 26BR41 at 31,500 seeds per acre with a 30 inch row spacing. The field was planted flat since it was pivot irrigated. The final plant stand was 30,400 plants per acre. On May 13, an application of 1 quart of Atrazine plus 1 quart of Glyphosate was applied followed by 300 pounds of Urea (138 units) on the same day. Another application of 1 quart of Atrazine plus 1 quart of Glyphosate was applied on May 25. The pivot was started on June 8, and the field was irrigated 8 times. A pre-tassel application of Urea was recommended on June 12. During this time, the wind had blown at a very high rate for two weeks. In the River Valley, only one pilot is available, and he got behind during this windy time. He put this field on the books but did not get to it in time, so the pre tassel application was not applied. Total fertilizer for this field was 249-0-60-24. The field was harvested on September 17 and yielded 234.04 bushels per acre adjusted to 15.5% moisture.

Cross County

The Cross County corn research verification field was located in the central part of the county just northwest of Wynne. The producer for the field was Mr. Melvin Taylor and the county agent was Mr. Rick Wimberley. The field was 79 acres and the previous crop was soybeans. The soil type was a combination of Crowley and Calloway silt loam. On April 14 the field was cultivated and floated. The preplant fertilizer was a combination of dry fertilizer and liquid fertilizer. The dry fertilizer consisted of 175 pounds of Urea (80 units) and 50 lbs of potassium (0-0-60). The dry fertilizer was applied on April 15, and then the field was cultivated on April 16 and then bedded. The bedder/roller applied 6 gallons of 3-18-18 into the bed. The field was then planted with Pioneer 31G71 at a rate of 32,000 seeds per acre with a 30 inch row spacing and 6 gallons of 10-34-0 was applied with the planter. The total preplant fertilizer was 88-37-43. A stand count was taken after the field emerged and a final plant stand of 28,150 plants per acre was determined. Looking at the field, there was a problem noticed on certain rows throughout the field. It was later determined that some of the starter fertilizer from the planter got too close to the seed causing some skippy emergence on certain rows. On May 19 the producer applied 2 quarts of Atrazine plus 1 quart of Glyphosate. The producer applied 30 gallons of 32% UAN (105 units) on May 20. Furrow irrigation was started on June 3 and the field was irrigated 9 times. A pre-tassel application of 100 pounds per acre of Urea (46 units) was applied on June 17. Total fertilizer for this field was 239-37-43. A storm came through the field later in the year and very strong winds lodged some of the field on the southeast corner. The field was harvested on September 16 and yielded 170.4 bushels per acre adjusted to 15.5% moisture.

didn't appear to affect harvest. The field was harvested on September 23 and yielded 181.3 bushels per acre adjusted to 15.5% moisture.

Lonoke County

The Lonoke County corn research verification field was located in the southeastern part of the county near Coy. The producer was Mr. Brad Whitehead and the county agent was Ms. Susan Scott. The field was 133 acres and the previous crop was cotton. The soil type was Caspinana and Herbert silt loam. The field was hipped on March 15. The tops were knocked off the beds on March 25 and the field was re-hipped. A burndown application of Glyphosate and Oracle was applied on April 7 by the producer. A preplant fertilizer of 85-0-0-24 was applied on April 14 along with 30 pounds of zinc sulfate for 10 pounds of actual zinc. The field was planted in Stine 9806VT3 at the rate of 34,000 seeds per acre with a 38 inch row spacing. The final plant population was 33,050 plants per acre. Urea at 300 pounds per acre (138 units) was applied on May 12. 2 quarts of Atrazine plus 1 quart of Glyphosate was applied on May 16. Furrow irrigation was started on June 6, and the field was irrigated 6 times. A pre-tassel application of 100 pounds per acre of Urea (46 units) was applied on June 13. Total fertilizer for the field was 269-0-0-24-10. The field was harvested on September 1 and yielded 227.0 bushels per acre adjusted to 15.5% moisture.

Monroe County

The Monroe County corn research verification field was located in the northern part of the county, just north of Brinkley. The producer was Mr. Bo Mason and the county agent was Mr. Van Dawson. The field was 44 acres and the previous crop was soybeans. The soil type was Grenada silt loam. The field was disked on March 24, cultivated and then floated. A preplant fertilize of 85-46-90-24 was applied April 20, then the field was bedded and then planted in Pioneer 33M57 at a rate of 34,000 seeds per acre with a 30 inch row spacing. On May 21, 2 quarts of Atrazine plus 1 quart of Glyphosate was applied. Urea was applied at 275 pounds per acre (127 units) on May 25. Furrow irrigation was started on June 5. The field was irrigated 7 times. On June 12, a pre tassel application of 100 pounds per acre of Urea (46 units) was applied on half the field followed by irrigation on that side of the field. The other half of the field was fertilized on June 21, followed by an irrigation on that side of the field. Total fertilize for this field was 258-46-90-24. Due to the high winds, part of the field lodged (estimated field wide lodging of 15%). The field was harvested on September 22 and yielded 207.18 bushels per acre adjusted to 15.5% moisture.

Poinsett County

The Poinsett County corn research verification field was located in the eastern part of the county, just west of Trumann. The producer was Mr. David Gairhan and the county agent was Mr. Rick Thompson. The field was 40 acres and the previous crop was soybeans. The soil type was Dundee silt loam and Sharkey clay. The field was disked once on April 25. A preplant fertilize of 72-60-90-24 was applied on May 1 along with 30 pounds of zinc sulfate for 10 pounds of actual zinc. The field was bedded and planted on May 1 with Pioneer 33M57 at the rate of 35,000 seed per acre with a 38 inch twin row. On May 21 the producer applied 1.5 quarts of Atrazine plus 1 quart of Glyphosate. The field was fertilized on June 4 with 240 pounds of Urea per acre (110 units) and irrigation was started on the same day. The field was furrow irrigated 11 times. Many fields got timely rains, but this field missed those rains. A pre tassel application of 100 pounds per acre of Urea (46 units) was applied on June 23. Total fertilizer for this field was 228-60-90-24-10. The field was harvested on September 25 and yielded 208.9 bushels per acre adjusted to 15.5% moisture.

Prairie County

The Prairie County corn research verification field was planted in the northern part of the county just west of Des Arc. The producer was Mr. Kevin Harvey and the county agent was Mr. Tony Richards. The field was 34 acres and the previous crop was soybeans. The soil type was Calloway and Loring silt loam. The field was burned down with Gramaxone on March 22. The field was then disked and cultivated. A preplant fertilizer of 85-69-90 was applied along with 30 pounds of zinc sulfate for 10 pounds of actual zinc on March 25. The field was bedded, and then planted in DeKalb DKC 67-23 at a rate of 34,000 seeds per acre. After the field was planted, it received a 3 inch rain. The field did not come up, and birds devastated the rest of the seed in the ground. It was decided to replant after only minimal seed emerged. The field was cultivated and rebedded on April 16. The field was replanted in DeKalb DKC 64-78 at the rate of 35,500 seeds per acre with a 30 inch twin row. The final plant stand was 35,600 plants per acre, due to some of the first planted seed emerged. On May 5, 1 quart of Atrazine plus 1 quart of Glyphosate was applied. 280 pounds per acre of Urea (129 units) was applied on May 13. After the field reached 12 inches tall, morningglories emerged, so the field was sprayed with 3 ounces of Callisto and 1 quart of Glyphosate. Irrigation was started on May 31. The field was furrow irrigated and was irrigated 10 times. A pre-tassel application of 100 pounds of Urea per acre (46 units) was applied on June 13. The total fertilizer for the field was 260-69-90-0-10. The field was harvested on September 10 and yielded 205.3 bushels per acre adjusted to 15.5% moisture.

Pulaski County

The Pulaski County corn research verification field was located the southeast part of the county at Bredlow Corner. The producer was Mr. Dudley Webb and the county agent was Mr. Allan Beuerman. The field was 36 acres and followed soybeans. The soil type was Rilla silt loam and Perry clay. Chicken litter was applied at the rate of 2 tons per acre on April 1. The 2 tons of chicken litter had a phosphorous and potassium level equal to a 39-80-98. Urea was applied at 185 pounds per acre (85 units) to increase nitrogen level to preplant nitrogen recommendations. The total preplant fertilizer was 85-80-98. The field was ripped and then bedded. The field was planted on April 17 in Belle 1646RY at a rate of 32,000 seeds per acre with a 38 inch row spacing. The final plant population was 30,400 plants per acre. 2 quarts of Atrazine plus 1 quart of Glyphosate was applied on April 30. On May 25, 300 pounds of Urea was applied per acre (138 units) to the field. 1 quart of Glyphosate per acre was applied on May 25 for some grass that was coming up in the field. The pre tassel application of 100 pounds per acre of Urea (46 units) was applied on June 17. The total fertilizer for this field was 269-80-98. The producer had a problem with his power unit and missed the first irrigation, but did receive a rain that helped. The first furrow irrigation was applied on June 18 and the field was irrigated 6 times. The field developed anthracnose later in the year that lead to some lodging in the field (estimated at 15%), but was not perceived to bad enough to cause significant harvest problems. The field was harvested on September 25 and yielded 198.0 bushels per acre adjusted to 15.5% moisture.

GRAIN SORGHUM FIELD REVIEWS

Ashley County

The Ashley County grain sorghum research verification field was located in the central part of the county near Mist. The producer for this field was Mr. Shan Streeter and the county agents were Gus Wilson and Kevin Norton. The field was 36 acres and the previous crop was soybeans. The soil type was Calhoun and Calloway silt loam. The field was disked twice in March. A preplant fertilize of 52-46-120 was applied on April 12 and a conditioner was pulled over the field. The field was bedded then planted on April 21 in Pioneer 84G62 at a rate of 8.7 pounds per acre with a 22 inch row spacing. The final plant stand was 105,000 plants per acre. Charger Basic was applied at 1.5 pints to the acre right after planting for grass control. Yellow nutsedge was a problem in this field and after consulting with the weed specialist, it was decided to apply Permit with Atrazine. Prior to applying the Permit+Atrazine, a hail storm battered the grain sorghum, causing significant leaf damage. The plants were shredded and in bad shape for 10 days. The plants finally started growing again, and the herbicide application was held off because of the weakened state of the plants. On May 27, the field had finally recovered enough to apply 1.2 quarts of Atrazine plus 1 oz of Permit. 200 pounds of Urea per acre (92 units) was applied on May 29 and the field was starting to look good. The total fertilizer for this field was 144-46-120. The first furrow irrigation was applied on June 19, and the field received 4 irrigations total. After the field headed, corn earworms hit the heads hard and had to be sprayed with 1.82 ounces of Karate on August 1. As the field was getting close to harvest, hurricanes Gustav and Ike hit the field dropping up to 10 inches of rain on the field. The seed started to sprout and it was estimated that 5 bushels per acre was on the ground when it was harvested. The field was harvested on September 12 and yielded 91.7 bushels per acre adjusted to 14% moisture.

Lawrence County

The Lawrence County grain sorghum research verification field was located in the north part of the county just north of Walnut Ridge. The producer for this field was Mr. J.D. Beary and the county agent was Mr. Herb Ginn. The field was 31 acres and the previous crop was soybeans. The soil type was Bosket fine sandy loam. This was the only non irrigated field in the program. The field was disked twice on April 16 and 300 pounds of 10-0-40 was applied preplant. On April 23 the field was cultipacked then planted in FFR 322 at a rate of 6.5 pounds per acre with a 30 inch row spacing. The seed was treated with Latitude insecticide for insect control. The final plant stand was 62,700 plants per acre. 1 pint of Parrallel was applied right after planting for grass control. The field had a rough start. As the plants grew the wind blew hard in this area, which caused the soil to blast the plants. An area protected by trees on the north side of the field was protected from the wind and was bigger and further along than the rest of the field all year long. On May 26, 175 pounds of Urea per acre (80 units) was applied to the field. Since the field was non irrigated, the producer was going to put Agrotain on the Urea to prevent nitrogen loss, but a rain was on the way and Agrotain was not used. The field received a tenth of an inch of rain which appeared to lead to considerable nitrogen loss. On May 31, 1.2 quarts of Atrazine plus oil was applied to the field. In June the field started showing nitrogen deficiency symptoms. On June 27, 100 pounds of Urea per acre (46 units) was applied on the field, and was rained in. The grain sorghum responded well to the late nitrogen. Total fertilizer for this field was 156-0-120. As the field approached harvest, charcoal rot started showing up and by the time the producer could harvest much of the field was lodged. The field was harvested on August 30 and yielded 55.7 bushels per acre adjusted to 14% moisture.

Prairie County

The Prairie County grain sorghum research verification field was located in the northern part of the county near Jasmine. The producer for this field was Mr. Jason Holloway and the county agent was Mr. Tony Richards. The field was 35 acres and the previous crop was soybeans. The soil type was Calhoun and Calloway silt loam. The field was cultivated twice in April. A preplant fertilizer of 52-92-96 was applied by the producer on May 5, then bedded and planted. The field was planted in Pioneer 84G62 at a rate of 9 pounds per acre with a 30 inch row spacing. The seed was treated with Cruiser for insects. The final plant stand was 85,200 plants per acre. Dual was applied at 1.5 pints per acre following planting for grass control. The field was scouted for weeds, but weed pressure was light, so it was decided to wait as long as possible to apply Atrazine. During this time the winds started blowing, and the applicators in the area got behind on spraying. By the time they could get to the field, it was already past 12 inches, so it was decided not to spray a herbicide. This worked good since the field never did have any weed pressure all year long. 200 pounds of Urea per acre (92 units) was applied on May 26. Total fertilizer for this field was 144-92-96. Furrow irrigation started on June 17 and the field was irrigated 4 times total. On July 18, 1.6 ounces of Karate was applied for sorghum midge control. The field looked great at this point and appeared to have a 125 bu/a+ yield potential. After the hurricanes blew through the area, the seed in the heads started sprouting and falling off the heads. When the field was harvested there was 10 to 15 bushels per acre of seed laying on the ground. The field was harvested on September 18 and yielded 109.3 bushels per acre adjusted to 14% moisture.

Table 1. County, Hybrid, Field Size, Total Fertilizer and Soil Information CGSRVP Fields 2008.

County	Planting Date	Row Sp. (in)	Hybrid	Field Size (Ac)	Fertilizer N-P-K-S-Zn lbs/acre	Soil Classification
Corn						
Conway	4/15/08	30	Terral TV26BR41	32	249-0-60-24-0	Gallion Silt Loam
Cross	4/16/08	30	Pioneer 31G71	79	239-37-43-0-0	Calloway/Crowley Silt Loam
Independence	5/20/08	30	Mycogen 2T783	57.5	270-115-78-24-0	Jackport Silty Clay Loam
Lawrence	4/17/08	30	Pioneer 33M57	33	257-126-155-0-0	Dundee Silt Loam
Lee	4/28/08	38	Belle 1646RY	48	252-46-60-0-10	Calloway/Grenada Silt Loam
Lonoke	4/14/08	38	Stine 9806VT3	133	269-0-0-24-10	Caspinana/Herbert Silt Loam
Monroe	4/20/08	30	Pioneer 33M57	44	258-46-90-24-0	Grenada Silt Loam
Poinsett	5/1/08	38 twin	Pioneer 33M57	40	228-60-90-24-10	Dundee Silt Loam & Sharkey Clay
Prairie	3/26/08, 4/16/08	30 twin	DeKalb 64-78	34	260-69-90-0-10	Calloway/Loring Silt Loam
Pulaski	4/17/08	38	Belle 1646RY	36	269-80-98-0-0	Rilla Silt Loam & Perry Clay
Grain Sorghum						
Ashley (Irrigated)	4/26/08	22	Pioneer 84G62	36	144-46-120-0-0	Calhoun/Calloway Silt Loam
Prairie (Irrigated)	5/5/08	30	Pioneer 84G62	35	144-92-96-0-0	Calhoun/Calloway Silt Loam
Lawrence (Non-Irr.)	4/23/08	30	FFR 322	31	156-0-120-0-0	Bosket Fine Sandy Loam

Table 2. Pesticide Usage, Irrigation, Previous Crop and Yield, CGSRVP 2008.

County	Herbicide, Insecticide & Fungicide	Irrigation	Irrigation Type	Previous Crop	Yield (bu/a)
Corn					
Conway	1 qt Atrazine + 1 qt Glyphosate – May 13 & 25	7 times	Pivot	Soybeans	234.0
Cross	2 qt Atrazine + 1 qt Glyphosate – May 19	9 times	Furrow	Soybeans	170.4
Independence	2 qt Atrazine + 1 qt Glyphosate – June 1 1 qt Glyphosate – June 15, 14 oz Quilt – July 29	4 times	Flood	Soybeans	202.1
Lawrence	1 qt Atrazine + 22 oz Roundup – May 9	7 times	Furrow	Soybeans	215.4
Lee	1 qt Atrazine + 1 qt Glyphosate – May 21 & 31	8 times	Furrow	Soybeans	181.3
Lonoke	1.75 qt Atrazine + 1 qt Glyphosate – May 16	6 times	Furrow	Cotton	227.0
Monroe	1 qt Atrazine + 1 qt Glyphosate – May 21	7 times	Furrow	Soybeans	207.2
Poinsett	1.5 qt Atrazine + 1 qt Glyphosate – May 21	11 times	Furrow	Soybeans	208.9
Prairie	1 qt Atrazine + 1 qt Glyphosate – May 5 3 oz Callisto + 1 qt Glyphosate – May 30	10 times	Furrow	Soybeans	206.3
Pulaski	2 qt Atrazine + 1 qt Glyphosate – April 30 1 qt Glyphosate – May 25	6 times	Furrow	Soybeans	198.0
Average Yield					205.1
Grain Sorghum					
Ashley (Irrigated)	1.5 pt Charger Basic at Planting, 1.2 qt Atrazine + 1 oz Permit – May 27 1.8 oz Karate - Aug 1	4 times	Furrow	Soybeans	91.79
Prairie (Irrigated)	1.5 pt Dual at Planting, 1.6 oz Karate – July 18	4 times	Furrow	Soybeans	109.3
Average Yield (Irr)					100.5
Lawrence (Non-Irr.)	1 pt Parallel at Planting, 1.2 qt Atrazine – May 31	0 times	None	Soybeans	55.7

Table 3. Selected Economic Information for the 2008 CGSRVP.

County	Total Direct Expenses¹ (\$/A)	Break-even Price With Direct Costs² (\$/Bu)	Total Fixed Costs³ (\$/A)	Total Direct and Fixed Costs⁴ (\$/A)	Break-even Price With Total Costs⁵ (\$/Bu)	Break-even Price With Land Rent Costs⁶ (\$/Bu)	Returns Above Total Costs and Land Rent Costs⁷ (\$/A)
Corn							
Conway	\$421.03	\$1.80	\$ 97.55	\$ 518.58	\$2.22	\$2.95	\$360.83
Cross	\$510.03	\$2.99	\$ 61.57	\$ 571.60	\$3.36	\$4.47	\$68.57
Independence	\$588.64	\$2.91	\$ 54.92	\$ 643.56	\$3.18	\$4.25	\$115.68
Lawrence	\$563.72	\$2.62	\$ 48.77	\$ 612.49	\$2.84	\$3.79	\$196.99
Lee	\$555.82	\$3.07	\$ 45.67	\$ 601.49	\$3.32	\$4.42	\$79.56
Lonoke	\$465.95	\$2.05	\$ 47.12	\$ 513.07	\$2.26	\$3.01	\$341.39
Monroe	\$564.24	\$2.72	\$ 56.09	\$ 620.33	\$2.99	\$3.99	\$158.15
Poinsett	\$507.78	\$2.43	\$ 44.53	\$ 552.31	\$2.64	\$3.53	\$232.56
Prairie	\$705.17	\$3.42	\$ 61.68	\$ 766.85	\$3.72	\$4.96	\$8.47
Pulaski	\$511.83	\$2.58	\$ 45.44	\$ 557.27	\$2.81	\$3.75	\$186.87
Average	\$526.38	\$2.60	\$ 54.42	\$ 580.80	\$2.87	\$3.82	\$191.27
Grain Sorghum							
Ashley (Irrigated)	\$ 356.54	\$3.89	\$ 49.18	\$ 405.72	\$4.42	\$5.90	-\$108.64
Lawrence (Non-Irrig.)	\$ 235.59	\$4.23	\$ 24.29	\$ 259.88	\$4.67	\$6.22	-\$79.44
Prairie (Irrigated)	\$ 352.75	\$3.23	\$ 45.29	\$ 398.04	\$3.64	\$4.86	-\$43.88
Average	\$ 318.48	\$3.77	\$ 40.28	\$ 358.76	\$4.23	\$5.64	-\$77.55

¹ Direct out-of-pocket, operating expenses, such as seed, fertilizer, irrigation, etc.

² Price per bushel required by the farmer to equal total direct costs. Does not include land, overhead, risk, and management costs.

³ Total fixed or ownership costs which include charges for depreciation and opportunity cost of capital.

⁴ Total direct operating costs plus fixed costs which include charges for depreciation and interest on all machinery and irrigation equipment.

⁵ Price per bushel required by the farmer to equal total direct operating and fixed costs. Does not include land, overhead, risk, and management costs.

⁶ Break-even price per bushel plus a 25 percent crop share rent. Does not include overhead, risk, and management costs.

⁷ A 25 percent crop share rent was assumed as a land charge for a renter situation. No cost sharing was assumed.

Table 4. Estimated Costs per Acre for Corn Fields (all irrigated), CGSRVP 2008

	Conway	Cross	Independence	Lawrence	Lee	Lonoke	Monroe	Poinsett	Prairie	Pulaski	weighted
Acres	32	79	57.5	33	48	133	44	40	34	36	average
Direct Exp.	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)
Drying	\$44.47	\$32.37	\$38.39	\$40.93	\$34.44	\$43.21	\$39.55	\$39.69	\$39.20	\$37.63	\$ 39.06
Fertilizer	\$134.00	\$195.65	\$295.00	\$245.47	\$232.00	\$158.00	\$250.25	\$174.40	\$279.85	\$215.95	\$ 209.20
Fungicides	\$0.00	\$0.00	\$9.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$ 0.98
Herbicides	\$23.00	\$25.24	\$21.00	\$16.58	\$29.52	\$26.80	\$13.50	\$9.82	\$48.11	\$21.40	\$ 23.97
Irrigation Supplies	\$0.00	\$10.30	\$0.00	\$10.30	\$10.30	\$10.30	\$10.30	\$10.30	\$10.30	\$10.30	\$ 8.58
Crop Seed	\$74.81	\$76.00	\$77.90	\$87.40	\$78.38	\$80.75	\$80.75	\$83.13	\$101.83	\$76.00	\$ 80.78
Custom Hire	\$35.11	\$32.31	\$45.81	\$50.81	\$53.94	\$53.11	\$52.73	\$47.33	\$66.05	\$56.21	\$ 48.69
Operator Labor	\$6.88	\$6.97	\$5.91	\$4.42	\$3.91	\$3.31	\$4.97	\$2.55	\$6.65	\$3.24	\$ 4.75
Irrigation Labor	\$0.56	\$4.96	\$1.20	\$4.34	\$4.96	\$3.72	\$4.34	\$6.82	\$6.20	\$3.72	\$ 4.03
Hand Labor	\$1.97	\$1.56	\$1.33	\$0.89	\$0.81	\$0.51	\$0.51	\$0.46	\$1.54	\$0.75	\$ 0.97
Diesel Fuel ¹	\$72.89	\$100.99	\$68.60	\$80.79	\$87.09	\$68.60	\$85.04	\$113.50	\$115.98	\$67.90	\$ 83.68
Repairs & Maint.	\$19.63	\$14.19	\$12.87	\$10.64	\$10.13	\$9.26	\$11.82	\$11.92	\$14.62	\$9.26	\$ 11.90
Interest on Op. Cap.	\$7.71	\$9.49	\$11.53	\$11.15	\$10.34	\$8.38	\$10.48	\$7.86	\$14.84	\$9.47	\$ 9.80
Total Direct Expenses											\$ 526.38

¹Price of diesel was assumed to be \$3.10 per gallon.

²Weighted average calculations based on 536.5 total acres.

Table 5. Estimated Costs per Acre for Grain Sorghum Fields, CGSRVP 2008

	Ashley	Lawrence*	Prairie	weighted avg.
Acres	36	31	35	
Direct Exp.	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)
Custom Work	\$38.00	\$14.16	\$48.20	\$34.25
Fertilizer	\$177.24	\$167.60	\$185.95	\$177.30
Herbicides	\$35.31	\$11.47	\$19.16	\$22.52
Insecticides	\$5.13		\$4.51	\$3.36
Irrigation Supplies	\$10.30		\$10.30	\$7.17
Crop Seed	\$12.18	\$9.10	\$12.60	\$11.39
Operator Labor	\$4.97	\$5.06	\$3.58	\$4.52
Irrigation Labor	\$2.48		\$2.48	\$1.73
Hand Labor	\$1.11	\$1.45	\$0.77	\$1.10
Diesel Fuel ¹	\$53.95	\$15.41	\$51.65	\$41.45
Repairs & Maint.	\$8.74	\$6.36	\$7.19	\$7.48
Interest on Op. Cap.	\$7.13	\$4.98	\$6.36	\$6.21
Total Direct Expenses				\$318.48

¹Price of diesel was assumed to be \$3.10 per gallon.

²Weighted average calculations based on 102 total acres.

Appendix A

Corn: Economic Analysis by County

Estimated operating expenses and crop input costs

Table 1. Estimated costs per acre
 Corn, TV26BR41, Center Pivot Irrigated, Silt Loam
 Conway Co., University of Arkansas, 2008.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
GIN/DRY					
Dry Corn	bu	0.19	234.0400	44.47	_____
FERTILIZERS					
Amm Sulfate (21% N)	lb	0.23	100.0000	23.00	_____
Potash (0-0-60)	lb	0.26	100.0000	26.00	_____
Urea - (46% N)	lb	0.17	500.0000	85.00	_____
HERBICIDES					
Roundup Orig MAX	qt	7.50	2.0000	15.00	_____
Atrazine 4L	qt	4.00	2.0000	8.00	_____
CROP SEED					
Corn Seed Bt/RR	thous	2.37	31.5000	74.81	_____
CUSTOM HIRE					
Cstm Haul Corn	bu	0.15	234.0400	35.11	_____
OPERATOR LABOR					
Tractors	hour	9.45	0.6008	5.67	_____
Harvesters	hour	9.45	0.1277	1.21	_____
IRRIGATION LABOR					
Center pivot Irr.	hour	8.19	0.0649	0.56	_____
HAND LABOR					
Implements	hour	8.19	0.2411	1.97	_____
DIESEL FUEL					
Tractors	gal	3.10	5.9336	18.40	_____
Harvesters	gal	3.10	1.5772	4.89	_____
Center pivot Irr.	gal	3.10	16.0000	49.60	_____
REPAIR & MAINTENANCE					
Implements	acre	4.20	1.0000	4.20	_____
Tractors	acre	2.04	1.0000	2.04	_____
Harvesters	acre	2.19	1.0000	2.19	_____
Center pivot Irr.	ac-in	1.39	8.0000	11.20	_____
INTEREST ON OP. CAP.	acre	7.71	1.0000	7.71	_____

TOTAL DIRECT EXPENSES				421.03	_____
FIXED EXPENSES					
Implements	acre	10.34	1.0000	10.34	_____
Tractors	acre	14.37	1.0000	14.37	_____
Harvesters	acre	9.71	1.0000	9.71	_____
Center pivot Irr.	each	8206.70	0.0076	63.13	_____

TOTAL FIXED EXPENSES				97.55	_____

TOTAL SPECIFIED EXPENSES				518.58	_____

Table 2. Estimated costs per acre
 Corn, Pioneer 31G71, Furrow Irrigated, Silt Loam
 Cross Co., University of Arkansas, 2008.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
GIN/DRY					
Dry Corn	bu	0.19	170.3700	32.37	_____
FERTILIZERS					
Urea, Solid (46% N)	lb	0.23	275.0000	63.25	_____
Potash (0-0-60)	lb	0.26	50.0000	13.00	_____
3-18-18	gal	4.60	6.0000	27.60	_____
10-34-0	gal	4.60	6.0000	27.60	_____
Liquid Nitrogen 32%	gal	2.14	30.0000	64.20	_____
HERBICIDES					
Roundup Orig MAX	qt	8.00	1.0000	8.00	_____
Atrazine 4L	qt	8.62	2.0000	17.24	_____
IRRIGATION SUPPLIES					
IrrPipe+lay+pickup	acre	10.30	1.0000	10.30	_____
CROP SEED					
Corn Seed Bt/RR	thous	2.37	32.0000	76.00	_____
CUSTOM HIRE					
Cstm Ap Air Fert	acre	6.75	1.0000	6.75	_____
Cstm Haul Corn	bu	0.15	170.3700	25.56	_____
OPERATOR LABOR					
Tractors	hour	9.45	0.5922	5.59	_____
Harvesters	hour	9.45	0.1277	1.21	_____
Self-Propelled	hour	9.45	0.0176	0.17	_____
IRRIGATION LABOR					
Furrow Irr.	hour	8.19	0.6034	4.96	_____
HAND LABOR					
Implements	hour	8.19	0.1835	1.49	_____
Self-Propelled	hour	8.19	0.0088	0.07	_____
DIESEL FUEL					
Tractors	gal	3.10	6.8198	21.14	_____
Harvesters	gal	3.10	1.5772	4.89	_____
Self-Propelled	gal	3.10	0.1815	0.56	_____
Furrow Irr.	gal	3.10	24.0001	74.40	_____
REPAIR & MAINTENANCE					
Implements	acre	5.37	1.0000	5.37	_____
Tractors	acre	2.26	1.0000	2.26	_____
Harvesters	acre	2.19	1.0000	2.19	_____
Self-Propelled	acre	0.13	1.0000	0.13	_____
Furrow Irr.	ac-in	0.17	24.0000	4.24	_____
INTEREST ON OP. CAP.	acre	9.49	1.0000	9.49	_____
TOTAL DIRECT EXPENSES				510.03	_____
FIXED EXPENSES					
Implements	acre	11.70	1.0000	11.70	_____
Tractors	acre	16.10	1.0000	16.10	_____
Harvesters	acre	9.71	1.0000	9.71	_____
Self-Propelled	acre	0.97	1.0000	0.97	_____
Furrow Irr.	each	2770.44	0.0083	23.09	_____
TOTAL FIXED EXPENSES				61.57	_____
TOTAL SPECIFIED EXPENSES				571.60	_____

Table 2.B Estimated resource use and costs for field operations, per acre

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST			
						DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST				
Corn, Pioneer 31671, Furrow Irrigated, Silt Loam Cross Co., University of Arkansas, 2008.																
										dollars		dollars				
Field Cultivate	24'	4WD 300	0.062	1.00	Apr	3.28	2.12	0.28	1.34	0.06	0.59					
Land Float	18'x50'	MFWD 225	0.071	2.00	Apr	5.71	4.08	0.24	0.72	0.14	1.35					
Spin Spreader	5 ton	2WD 170	0.042	1.00	Apr	1.26	0.86	0.26	0.59	0.08	0.74					
	lb											175.0000	0.23	40.25	40.25	
Urea, Solid (46% N)	lb											50.0000	0.26	13.00	13.00	
Flash Cut	24'	4WD 300	0.062	1.00	Apr	3.28	2.12	0.28	1.34	0.06	0.59					
Bedder/Roller-Fold.	30' (12r30)	MFWD 225	0.062	1.00	Apr	2.49	1.78	0.36	1.09	0.06	0.59					
Fert Appl (Liquid)	12R-30	MFWD 225	0.078	1.00	Apr	3.13	2.24	0.80	1.03	0.11	1.06					
	gal											6.0000	4.60	27.60	27.60	
Blatt 18 Folding	12R-30	2WD 170	0.062	1.00	Apr	1.89	1.29	1.10	2.42	0.12	1.10					
	thous											32.0000	2.37	76.00	76.00	
Corn Seed Bt/RR	gal											6.0000	4.60	27.60	27.60	
Spayed (600-750Gal)	60'		0.017	1.00	May	0.69	0.97			0.02	0.24					
	qt											1.0000	8.00	8.00	8.00	
Roundup Orig MAX	qt											2.0000	8.62	17.24	17.24	
Arz Appl (Liquid)	12R-30	2WD 170	0.078	1.00	May	2.36	1.61	0.80	1.03	0.11	1.06					
	gal											30.0000	2.14	64.20	64.20	
Liquid Nlay open	acre			1.00	Jun							1.0000	10.30	10.30	10.30	
Cstm Ap Air Fert	acre			1.00	Jun							1.0000	6.75	6.75	6.75	
	lb											100.0000	0.23	23.00	23.00	
Urea Solid (46% N)				1.00	Sep											
Header - Corn	8R-30	240hp	0.127			7.08	9.71	1.25	2.14	0.12	1.21					
	bu											170.3700	0.15	25.56	25.56	
Cstm Haul Corn	bu											170.3700	0.19	32.37	32.37	
Buy Corn	each			1.00	Jun							0.0083		0.0083	0.0083	
	ac-in			1.00	Jun			9.83		0.07	0.62	3.0000		3.0000	3.0000	
Application 1	ac-in			1.00	Jun			9.83		0.07	0.62	3.0000		3.0000	3.0000	
Application 2	ac-in			1.00	Jun			9.83		0.07	0.62	3.0000		3.0000	3.0000	
Application 3	ac-in			1.00	Jun			9.83		0.07	0.62	3.0000		3.0000	3.0000	
Application 4	ac-in			1.00	Jun			9.83		0.07	0.62	3.0000		3.0000	3.0000	
Application 5	ac-in			1.00	Jul			9.83		0.07	0.62	3.0000		3.0000	3.0000	
Application 6	ac-in			1.00	Jul			9.83		0.07	0.62	3.0000		3.0000	3.0000	
Application 7	ac-in			1.00	Aug			9.83		0.07	0.62	3.0000		3.0000	3.0000	
Application 8	ac-in			1.00	Aug			9.83		0.07	0.62	3.0000		3.0000	3.0000	
TOTALS						31.17	26.78	84.01	34.79	1.53	13.49			301.457	562.11	562.11
INTEREST ON OPERATING CAPITAL														10.45	10.45	10.45
UNALLOCATED LABOR														10.45	10.45	10.45
TOTAL SPECIFIED COST														10.45	10.45	10.45

9.49
570060

Table 3 Estimated costs per acre
 Corn, MY2T783, Flood Irrigated, Silty Clay Loam
 Independence Co., University of Arkansas, 2008.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
GIN/DRY					
Dry Corn	bu	0.19	202.0600	38.39	_____
FERTILIZERS					
Amm Sulfate (21% N)	lb	0.20	100.0000	20.00	_____
Urea - Appl. 1	lb	0.25	40.0000	10.00	_____
DAP 18-46-0	lb	0.50	250.0000	125.00	_____
Potash (0-0-60)	lb	0.24	130.0000	31.20	_____
Liquid Nitrogen 32%	gal	1.77	40.0000	70.80	_____
Urea - Appl. 2	lb	0.38	100.0000	38.00	_____
FUNGICIDES					
Quilt	oz	0.65	14.0000	9.10	_____
HERBICIDES					
Roundup Orig MAX	qt	7.50	2.0000	15.00	_____
Atrazine 4L	qt	3.00	2.0000	6.00	_____
CROP SEED					
Corn Seed Bt/RR	thous	2.37	32.8000	77.90	_____
CUSTOM HIRE					
Survey Levees-CnSbGs	acre	3.00	1.0000	3.00	_____
Cstm Ap Air Fert	acre	6.25	1.0000	6.25	_____
Cstm Ap Air Fung	acre	6.25	1.0000	6.25	_____
Cstm Haul Corn	bu	0.15	202.0600	30.31	_____
OPERATOR LABOR					
Tractors	hour	9.45	0.4585	4.34	_____
Harvesters	hour	9.45	0.1277	1.21	_____
Self-Propelled	hour	9.45	0.0386	0.36	_____
IRRIGATION LABOR					
Flood Irr. - Crn-Sor	hour	8.19	0.1448	1.20	_____
HAND LABOR					
Implements	hour	8.19	0.1433	1.17	_____
Self-Propelled	hour	8.19	0.0193	0.16	_____
DIESEL FUEL					
Tractors	gal	3.10	4.0803	12.65	_____
Harvesters	gal	3.10	1.5772	4.89	_____
Self-Propelled	gal	3.10	0.4752	1.46	_____
Flood Irr. - Crn-Sor	gal	3.10	16.0000	49.60	_____
REPAIR & MAINTENANCE					
Implements	acre	4.04	1.0000	4.04	_____
Tractors	acre	1.47	1.0000	1.47	_____
Harvesters	acre	2.19	1.0000	2.19	_____
Self-Propelled	acre	0.37	1.0000	0.37	_____
Flood Irr. - Crn-Sor	ac-in	0.30	16.0000	4.80	_____
INTEREST ON OP. CAP.	acre	11.53	1.0000	11.53	_____
TOTAL DIRECT EXPENSES				588.64	_____
FIXED EXPENSES					
Implements	acre	9.18	1.0000	9.18	_____
Tractors	acre	10.19	1.0000	10.19	_____
Harvesters	acre	9.71	1.0000	9.71	_____
Self-Propelled	acre	2.75	1.0000	2.75	_____
Flood Irr. - Crn-Sor	each	2770.44	0.0083	23.09	_____
TOTAL FIXED EXPENSES				54.92	_____
TOTAL SPECIFIED EXPENSES				643.56	_____

Table 3.B Estimated resource use and costs for field operations, per acre

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST		
						DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST			
Corn, MZ1783, Flood Irrigated, Silty Clay Loam Independence Co., University of Arkansas, 2008.															
										dollars		dollars			
Chisel Plow(Folding)	16'	MFWD 190	0.115	1.00	May	3.94	3.10	0.45	0.90	0.11	1.09				
Field Cultivate	32'	MFWD 225	0.046	2.00	May	3.72	2.66	0.62	2.99	0.09	0.88				
Dry Applicator SP		70'300cuft	0.015	1.00	May	0.91	1.37			0.02	0.20				
	lb											100.0000	0.20	20.00	20.00
Amm Sulfate (21% N)	lb											40.0000	0.25	10.00	10.00
Urea - Appl. 1	lb											250.0000	0.50	125.00	125.00
DAP 18-46-0	lb											130.0000	0.24	31.20	31.20
Peash-(Bigid)	8R-30	2WD 150	0.094	1.00	May	2.51	1.68	0.79	1.74	0.18	1.66				
	thous											32.8000	2.37	77.90	77.90
Sprayed(60/25Gal)		90'	0.011	1.00	Jun	0.46	0.69			0.01	0.16				
	qt											1.0000	7.50	7.50	7.50
Roundup Orig MAX	qt											2.0000	3.00	6.00	6.00
Keraz(4L Liquid)	8R-30	2WD 150	0.098	1.00	Jun	2.61	1.75	0.88	1.12	0.14	1.33				
	gal											40.0000	1.77	70.80	70.80
Sprayer(60/25Gal)		90'	0.011	1.00	Jun	0.46	0.69			0.01	0.16				
	qt											1.0000	7.50	7.50	7.50
Roundup Levees MAX	acre			1.00	Jun							1.0000	3.00	3.00	3.00
Build Inside Levees				2.00	Jun									3.00	3.00
	8 blade	2WD 150	0.003			0.19	0.13	0.01	0.04	0.00	0.07			7.69	7.69
Blade Escape(1m/80a)	8'-10'	MFWD 105	0.025	1.00	Jun	0.47	0.34	0.03	0.03	0.02	0.24				
Cstm Ap Air Fert	acre			1.00	Jul							1.0000	6.25	6.25	6.25
	lb											100.0000	0.38	38.00	38.00
Urea Appl. Fert	acre			1.00	Jul							1.0000	6.25	6.25	6.25
	oz											14.0000	0.65	9.10	9.10
Wait Down Levees				1.00	Aug									8.44	8.44
	2 blade	MFWD 150	0.025			0.68	0.53	0.01	0.22	0.02	0.24			1.11	1.11
Header - Corn	bu			1.00	Oct							202.0600	0.15	30.31	30.31
Cstm Haul Corn	bu											202.0600	0.19	38.39	38.39
Byod Inr. - Crn-Sor	each			1.00	Jun				23.09			0.0083			
	ac-in			1.00	Jun			13.60		0.03	0.30	4.0000		1.68	1.68
Application 1	ac-in			1.00	Jun			13.60		0.03	0.30	4.0000			
Application 2	ac-in			1.00	Jul			13.60		0.03	0.30	4.0000		21.39	21.39
Application 3	ac-in			1.00	Jul			13.60		0.03	0.30	4.0000			
Application 4															
TOTALS						23.03	22.65	58.44	32.27	0.93	8.44			437.920	632.03
INTEREST ON OPERATING CAPITAL														13.90	13.90
UNALLOCATED LABOR														13.90	13.90
TOTAL SPECIFIED COST														13.90	13.90

Table 5 Estimated costs per acre
 Corn, Belle 1646RY, Furrow Irrigated, Silt Loam
 Lee Co., University of Arkansas, 2008.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
GIN/DRY					
Dry Corn	bu	0.19	181.2500	34.44	_____
FERTILIZERS					
Urea - (46% N)	lb	0.26	510.0000	132.60	_____
DAP 18-46-0	lb	0.48	100.0000	48.00	_____
Potash (0-0-60)	lb	0.28	100.0000	28.00	_____
Zinc (31%)	lb	0.78	30.0000	23.40	_____
HERBICIDES					
Roundup Orig MAX	qt	11.13	2.0000	22.26	_____
Atrazine 4L	qt	3.63	2.0000	7.26	_____
IRRIGATION SUPPLIES					
IrrPipe+lay+pickup	acre	10.30	1.0000	10.30	_____
CROP SEED					
Corn Seed Bt/RR	thous	2.37	33.0000	78.38	_____
CUSTOM HIRE					
Cstm Ap Grd Fert	acre	4.50	1.0000	4.50	_____
Cstm Ap Grd. Herb	acre	5.25	2.0000	10.50	_____
Cstm Ap Grd Fert 2	acre	5.25	1.0000	5.25	_____
Cstm Ap Air Fert	acre	6.50	1.0000	6.50	_____
Cstm Haul Corn	bu	0.15	181.2500	27.19	_____
OPERATOR LABOR					
Tractors	hour	9.45	0.2797	2.64	_____
Harvesters	hour	9.45	0.1344	1.27	_____
IRRIGATION LABOR					
Furrow Irr.	hour	8.19	0.6034	4.96	_____
HAND LABOR					
Implements	hour	8.19	0.0992	0.81	_____
DIESEL FUEL					
Tractors	gal	3.10	2.4302	7.54	_____
Harvesters	gal	3.10	1.6602	5.15	_____
Furrow Irr.	gal	3.10	24.0001	74.40	_____
REPAIR & MAINTENANCE					
Implements	acre	2.61	1.0000	2.61	_____
Tractors	acre	0.97	1.0000	0.97	_____
Harvesters	acre	2.31	1.0000	2.31	_____
Furrow Irr.	ac-in	0.17	24.0000	4.24	_____
INTEREST ON OP. CAP.	acre	10.34	1.0000	10.34	_____
TOTAL DIRECT EXPENSES				555.82	_____
FIXED EXPENSES					
Implements	acre	5.54	1.0000	5.54	_____
Tractors	acre	6.82	1.0000	6.82	_____
Harvesters	acre	10.22	1.0000	10.22	_____
Furrow Irr.	each	2770.44	0.0083	23.09	_____
TOTAL FIXED EXPENSES				45.67	_____
TOTAL SPECIFIED EXPENSES				601.49	_____

Table 6 Estimated costs per acre
 Corn, Stine 9803VT3, Furrow Irrigated, Silt Loam
 Lonoke Co., University of Arkansas, 2008.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
GIN/DRY					
Dry Corn	bu	0.19	227.4000	43.21	_____
FERTILIZERS					
Amm Sulfate (21% N)	lb	0.20	100.0000	20.00	_____
Urea - (46% N)	lb	0.20	540.0000	108.00	_____
Zinc (31%)	lb	1.00	30.0000	30.00	_____
HERBICIDES					
Oracle	pt	5.30	1.0000	5.30	_____
Roundup Orig MAX	qt	6.50	2.0000	13.00	_____
Atrazine 4L	qt	4.25	2.0000	8.50	_____
IRRIGATION SUPPLIES					
IrrPipe+lay+pickup	acre	10.30	1.0000	10.30	_____
CROP SEED					
Corn Seed Bt/RR	thous	2.37	34.0000	80.75	_____
CUSTOM HIRE					
Cstm Ap Grd Fert (b)	acre	5.75	2.0000	11.50	_____
Cstm Ap Air Fert	acre	7.50	1.0000	7.50	_____
Cstm Haul Corn	bu	0.15	227.4000	34.11	_____
OPERATOR LABOR					
Tractors	hour	9.45	0.1924	1.82	_____
Harvesters	hour	9.45	0.1344	1.27	_____
Self-Propelled	hour	9.45	0.0235	0.22	_____
IRRIGATION LABOR					
Furrow Irr.	hour	8.19	0.4525	3.72	_____
HAND LABOR					
Implements	hour	8.19	0.0496	0.41	_____
Self-Propelled	hour	8.19	0.0117	0.10	_____
DIESEL FUEL					
Tractors	gal	3.10	2.2293	6.91	_____
Harvesters	gal	3.10	1.6602	5.15	_____
Self-Propelled	gal	3.10	0.2419	0.74	_____
Furrow Irr.	gal	3.10	18.0001	55.80	_____
REPAIR & MAINTENANCE					
Implements	acre	2.81	1.0000	2.81	_____
Tractors	acre	0.78	1.0000	0.78	_____
Harvesters	acre	2.31	1.0000	2.31	_____
Self-Propelled	acre	0.18	1.0000	0.18	_____
Furrow Irr.	ac-in	0.17	18.0000	3.18	_____
INTEREST ON OP. CAP.	acre	8.38	1.0000	8.38	_____
TOTAL DIRECT EXPENSES				465.95	_____
FIXED EXPENSES					
Implements	acre	6.96	1.0000	6.96	_____
Tractors	acre	5.47	1.0000	5.47	_____
Harvesters	acre	10.22	1.0000	10.22	_____
Self-Propelled	acre	1.38	1.0000	1.38	_____
Furrow Irr.	each	2770.44	0.0083	23.09	_____
TOTAL FIXED EXPENSES				47.12	_____
TOTAL SPECIFIED EXPENSES				513.07	_____

Table 7 Estimated costs per acre
 Corn, Pioneer 33M57, Furrow Irrigated, Silt Loam
 Monroe Co., University of Arkansas, 2008.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
GIN/DRY					
Dry Corn	bu	0.19	208.1700	39.55	_____
FERTILIZERS					
Urea - (46% N)	lb	0.22	100.0000	22.00	_____
Amm Sulfate (21% N)	lb	0.21	100.0000	21.00	_____
DAP 18-46-0	lb	0.40	100.0000	40.00	_____
Potash (0-0-60)	lb	0.24	150.0000	36.00	_____
Urea - (46% N) 2	lb	0.35	375.0000	131.25	_____
HERBICIDES					
Roundup Orig MAX	qt	7.50	1.0000	7.50	_____
Atrazine 4L	qt	3.00	2.0000	6.00	_____
IRRIGATION SUPPLIES					
IrrPipe+lay+pickup	acre	10.30	1.0000	10.30	_____
CROP SEED					
Corn Seed Bt/RR	thous	2.37	34.0000	80.75	_____
CUSTOM HIRE					
Cstm Ap Grd Fert	acre	5.50	1.0000	5.50	_____
Cstm Ap Grd. Herb	acre	6.00	1.0000	6.00	_____
Cstm Ap Grd Fert (b)	acre	3.50	1.0000	3.50	_____
Cstm Ap Air Fert	acre	6.50	1.0000	6.50	_____
Cstm Haul Corn	bu	0.15	208.1700	31.23	_____
OPERATOR LABOR					
Tractors	hour	9.45	0.3983	3.76	_____
Harvesters	hour	9.45	0.1277	1.21	_____
IRRIGATION LABOR					
Furrow Irr.	hour	8.19	0.5280	4.34	_____
HAND LABOR					
Implements	hour	8.19	0.0628	0.51	_____
DIESEL FUEL					
Tractors	gal	3.10	4.8523	15.05	_____
Harvesters	gal	3.10	1.5772	4.89	_____
Furrow Irr.	gal	3.10	21.0001	65.10	_____
REPAIR & MAINTENANCE					
Implements	acre	4.31	1.0000	4.31	_____
Tractors	acre	1.61	1.0000	1.61	_____
Harvesters	acre	2.19	1.0000	2.19	_____
Furrow Irr.	ac-in	0.17	21.0000	3.71	_____
INTEREST ON OP. CAP.	acre	10.48	1.0000	10.48	_____
TOTAL DIRECT EXPENSES				564.24	_____
FIXED EXPENSES					
Implements	acre	11.84	1.0000	11.84	_____
Tractors	acre	11.45	1.0000	11.45	_____
Harvesters	acre	9.71	1.0000	9.71	_____
Furrow Irr.	each	2770.44	0.0083	23.09	_____
TOTAL FIXED EXPENSES				56.09	_____
TOTAL SPECIFIED EXPENSES				620.33	_____

Table 7.B Estimated resource use and costs for field operations, per acre

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT		TOTAL COST
						DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	
Corn, Pioneer 33M57, Furrow Irrigated, Silt Loam Monroe Co., University of Arkansas, 2008.												
										dollars	dollars	
Disk Harrow	32'	4WD 300	0.061	1.00	Mar	3.23	2.09	0.55	1.33	0.06	0.58	
Field Cultivate	32'	4WD 300	0.046	1.00	Mar	2.45	1.59	0.31	1.50	0.04	0.44	
Land Float	18'x50'	MFWD 225	0.071	1.00	Mar	2.86	2.04	0.12	0.36	0.07	0.68	
Field Cultivate	32'	MFWD 225	0.046	1.00	Mar	1.87	1.33	0.31	1.50	0.04	0.44	
Cstm Ap Grd Fert	acre			1.00	Apr							1.0000 5.50 5.50
	lb											100.0000 0.22 22.00
Urea - (46% N)	lb											100.0000 0.21 21.00
Amm Sulfate (21% N)	lb											100.0000 0.40 40.00
DAP 18-46-0	lb											150.0000 0.24 36.00
Field Cultivate	32'	MFWD 225	0.046	1.00	Apr	1.87	1.33	0.31	1.50	0.04	0.44	5.45
Bedder/Roller-Fold.	30'(12r30)	MFWD 225	0.062	1.00	Apr	2.49	1.78	0.36	1.09	0.06	0.59	
Plant - Folding	12R-30	2WD 170	0.062	1.00	Apr	1.89	1.29	1.10	2.42	0.12	1.10	
	thous											34.0000 2.37 80.75
Cstm SpGrd/Herb	acre			1.00	May							1.0000 6.00 6.00
	qt											1.0000 7.50 7.50
Roundup Orig MAX	qt											2.0000 3.00 6.00
AstrazApGrd Fert (b)	acre			1.00	May							1.0000 3.50 3.50
	lb											275.0000 0.35 96.25
Urea Pipe+16% N	acre			1.00	Jun							1.0000 10.30 10.30
Cstm Ap Air Fert	acre			0.50	Jun							0.5000 6.50 3.25
	lb											50.0000 0.35 17.50
Cstm Ap(46% N)2	acre			0.50	Jun							0.5000 6.50 3.25
	lb											50.0000 0.35 17.50
Harvest(46% N) 2				1.00	Sep							
Header - Corn	8R-30	240hp	0.127			7.08	9.71	1.25	2.14	0.12	1.21	
	bu											208.1700 0.15 31.23
Corn Haul COST	bu											208.1700 0.19 39.55
Buy Corn	each			1.00	Jun				23.09			0.0083
	ac-in			1.00	Jun			9.83		0.07	0.62	3.0000
Application 1	ac-in			1.00	Jun			9.83		0.07	0.62	3.0000
Application 2	ac-in			1.00	Jun			9.83		0.07	0.62	3.0000
Application 3	ac-in			1.00	Jul			9.83		0.07	0.62	3.0000
Application 4	ac-in			1.00	Jul			9.83		0.07	0.62	3.0000
Application 5	ac-in			1.00	Jul			9.83		0.07	0.62	3.0000
Application 6	ac-in			1.00	Aug			9.83		0.07	0.62	3.0000
Application 7												10.45
TOTALS						23.74	21.16	73.12	34.93	1.11	9.82	407.458
INTEREST ON OPERATING CAPITAL												10.45
UNALLOCATED LABOR												10.45
TOTAL SPECIFIED COST												10.45

