

2002- 2003 Arkansas



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Cooperative Extension Service

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and County Governments Cooperating**

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2002-2003 Wheat Research Verification Program

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Abstract

The 2002-2003 Wheat Research Verification Program (WRVP) was implemented by the University of Arkansas Cooperative Extension Service on 12 producer fields located in Arkansas, Clay (2), Jefferson, Johnson, Lawrence (2), Lee, Lincoln, Logan, Monroe, and Yell Counties. Frequent rains throughout October and early November delayed planting in many areas across the state. Because of this, fields in Monroe and Lincoln Counties were selected from established fields that met the criteria for the WRVP. Cooperators from the counties above selected 10 varieties from a short list provided by the agent and research verification coordinator. These varieties were selected based upon performance and characteristics determined by the University of Arkansas variety tests. Soil types ranged from silt loam to silty clay, with previous crops of corn, soybean, rice, and summer fallow. Seeding dates ranged from October 7 through November 14, with seeding rates varying from 115 to 180 lbs/ac. Nine fields were drill seeded and two were broadcast seeded. Cooperators in Clay and Jefferson Counties utilized a bedding system to provide multiple drain furrows. Ryegrass, wild garlic, and other winter weeds were common and required the use of herbicide on eight fields. Stripe rust and other diseases remained low throughout the season and because of intensive scouting, no fields were treated with a fungicide. Insects were also not a factor throughout the season. Severe glyphosate drift caused a significant reduction in yield of the Lee County field; therefore, it was not included in the harvest data averages. Harvest dates ranged from June 4 through June 26. Average yield for the WRVP was 63.7 bu/ac, compared to a state average yield of 50 bu/ac on 570,000 harvested acres. As with much of the state, test weight was lower than previous years with an average of 56.2 lb/bu. Improved variety selection, good surface drainage, timely fertilization, and effective pest management practices have been frequently mentioned by producers and county agents as factors which make WRVP fields more profitable and/or produce higher yields. Economic analysis was conducted using a budget generator to estimate specific costs of production for each field. A fixed price of \$3.16/bu was used to calculate total income as a result of seed yield. This price was the state average wheat price for June delivery based upon June prices at elevators throughout eastern Arkansas and the Arkansas River Valley. Ten of the 12 WRVP fields resulted in a positive net return. Fertilizer remains the greatest input cost associated with wheat production in Arkansas. The Wheat Research Verification Program continues to demonstrate that Extension's research-based recommendations can produce profitable, high yielding wheat across a wide range of conditions and soil types. Over a 17-year period, the WRVP has averaged 13.1 bu/ac greater than the state average yield. The program is funded by the wheat checkoff dollars and administered through the Arkansas Wheat Promotion Board.

Introduction

The Wheat Research Verification Program (WRVP) represents an interdisciplinary effort of farmers, county Extension agents, Extension specialists, and researchers committed to improving the profitability of wheat production in Arkansas. The WRVP program began in 1986 under the direction of the University of Arkansas Cooperative Extension Service. The Arkansas Wheat Promotion Board has allocated the funding necessary for the WRVP program each year since its inception.

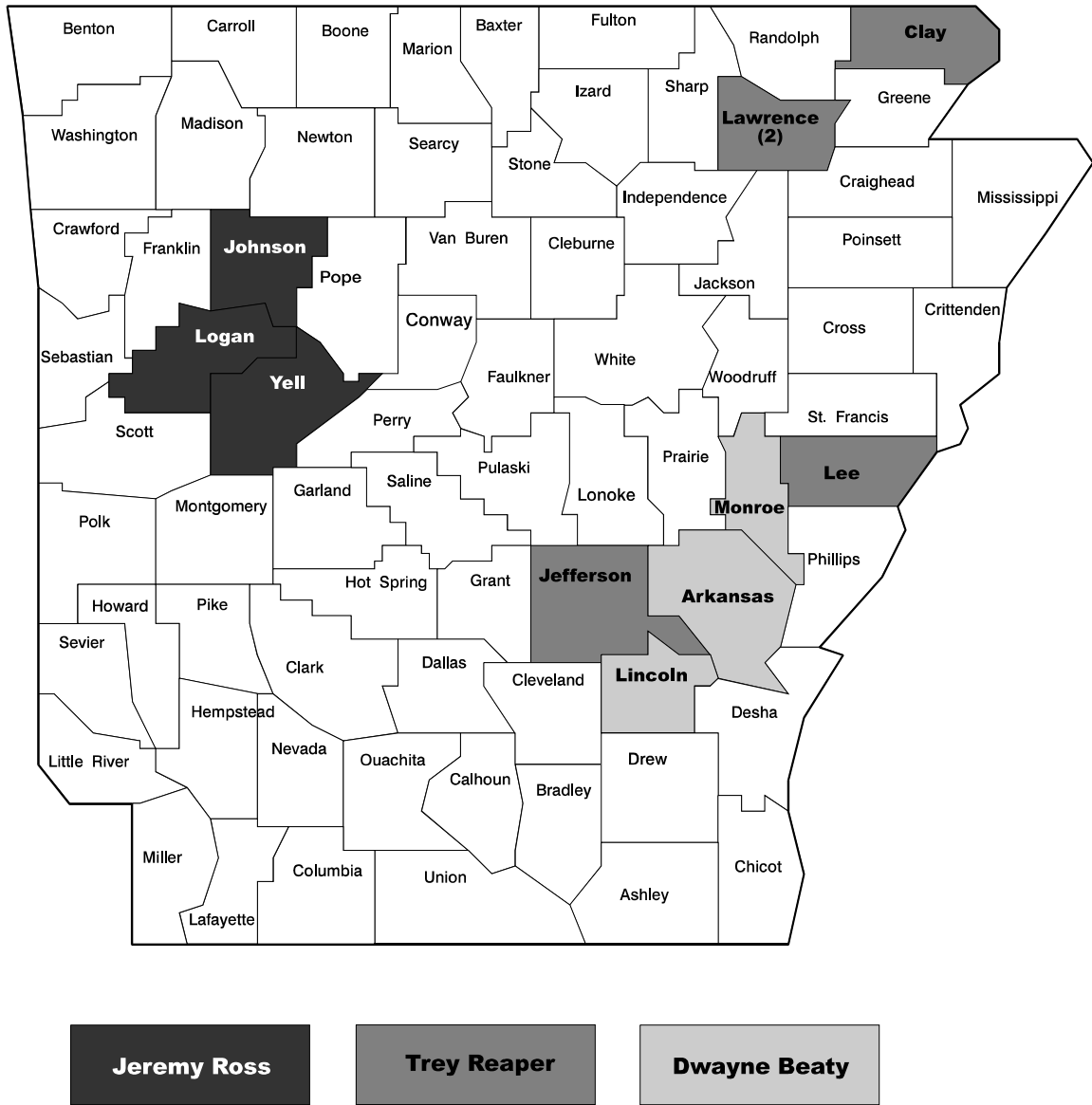
The WRVP program is designed as on-farm demonstrations of all the research-based recommendations required to grow wheat profitably in Arkansas. The WRVP program is part of the University of Arkansas Extension Service's goal of helping wheat producers make economically, agronomically, and environmentally sound decisions on their farms. The specific objectives of the program are:

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

2002-2003 Wheat Research Verification Program Fields

Ten farms enrolled a field in the Wheat Research Verification Program in the fall of 2002. The fields were located on commercial wheat farms and ranged in size from 15 to 140 acres. The locations of the WRVP fields are shown in Figure 1, designated according to the WRVP coordinator responsible for each field.

Figure 1. Location of 2002-03 WRVP Fields



The program is conducted for two consecutive years with each grower/cooperator. When an interested cooperator was identified, the cooperator, county agent, and specialist selected a field to enroll in the program in the fall of 2002. Prospective fields are required to meet the following criteria specified by the WRVP advisory committee:

1. Field size of at least 15 acres.
2. A yield potential equal to or greater than the county average.
3. A soil pH above 5.6.
4. A previous crop of corn, sorghum (without atrazine), soybeans, summer fallow, rice, or pasture.
5. The potential for good surface drainage.

A representative soil sample of the field was analyzed and the field was inspected by the coordinator and county agent. When the soil test results were obtained, the county agent, cooperator, and coordinator met to discuss recommended practices for seedbed preparation, wheat variety selection, and fertilization. All management decisions were made based on current Extension recommendations.

For situations where there were no specific recommendations included in the field plan, a member of the Wheat Verification Committee was consulted. As often as practical, members of the committee were consulted and updated on the condition of the fields. Once seedbed preparation began, the day-to-day management decisions were made by the county agent and coordinator with assistance from appropriate specialists and researchers as conditions warranted. Data were collected on stand counts, growth stage, tillering, heads per square foot, diseases, weeds, and insects during the course of the growing season.

Grain yields and test weights were determined by elevator weigh tickets on all WRVP fields except Johnson County. Where demonstrations were conducted within a field or problem areas within a field were identified during the season, weigh wagons were used to determine yields. Occasionally, a WRVP is located in an odd-shaped field where acreage is difficult to measure. Thus, estimating field-wide yields using a weigh wagon is more accurate than using weigh tickets. To estimate the field-wide yields in a WRVP, a random strip in the field was harvested with the farmer's combine and the grain was augered into the weigh wagon. The weight of the grain was recorded. The strip was measured for length and width and the yield was then calculated on a per acre basis. The entire procedure was repeated at least four times and an average yield was recorded. Test weight was determined from a composite sample from the four strips.

Harvest loss was estimated by determining the number of grains per square foot remaining after harvest. Twenty-one grains per square foot is equal to the threshold value of one bushel per acre. The 2002-2003 WRVP fields had low harvest loss estimates.

An economic analysis of each field was conducted by an Extension economist and is included in the appendix of this report. To facilitate comparisons among fields and to allow year-to-year comparisons, average costs of certain operations are computed and used to generate the budgets in this report.

Results and Discussion

The variety, field size and preplant fertilizer for each WRVP field are listed in Table 1. The average field size was 57.3 acres ranging from 15 to 140 acres.

Table 1. Variety, Field Size, and Preplant Fertilizer, WRVP Fields 2002-03

County	Variety	Field Size (Acres)	Preplant Fertilizer ¹ (lbs/ac)
Arkansas	Sabbe	89	0-40-60
Clay	Pioneer 2684 & Pat	76	40-40-80
Jefferson	AgriPro Natchez	115	35-60-60
Johnson	Pat	30	32-23-60
Lawrence 1	Croplan 554W	15	None
Lawrence 2	Terral 8555	15	None
Lee	Delta King 7777 & Dixie 900	45	None
Lincoln	Delta Grow 5300	40	None
Logan	Delta King 7777	35	41-36-0
Monroe	Delta King 9216	140	21-33-106-24
Yell	Sabbe	30	2.2 tons lime/ac

¹Nitrogen – Phosphorus – Potassium – Sulfur.

Coordinators of the Wheat Research Verification Program met with the Extension Wheat Agronomist to develop a short list of varieties suited to each potential verification field's environment. *Wheat Update*, a summary of variety trials conducted by the University of Arkansas Agricultural Experiment Station, was used to obtain yield, physiological, and disease data for certain varieties on a range of soil types. The producer made the final variety selection using those on the list provided by the county agent. The best overall disease resistance and yield history is sought in variety selection. Ten varieties were planted in the WRVP in the fall of 2002, reflecting the specific needs of different soil types, geographic regions, and the overall management strategy employed by the cooperators. Seven varieties-Sabbe, Pat, AgriPro Natchez, Croplan 554W, Delta King 7777, Dixie 900, and Delta King 9216-were planted in the WRVP for the first time. Sabbe and Pat are varieties recently released from the University of Arkansas Division of Agriculture wheat breeding program.

The preplant fertilizer was applied according to soil test recommendations. Lime was applied in Yell County to increase nutrient availability. The fields in Lawrence, Lee, and Lincoln Counties did not require any fall fertilization due to the previous crop. All others received mixed fertilizer. In most cases, it is expedient and practical to apply fertilizer for both wheat and double-cropped soybeans in the fall. Thus, the fertilizer applied may not accurately reflect the needs of the wheat crop alone. This is especially true for the fields where large amounts of potash and phosphorus were applied. Furthermore, the cost of preplant fertilizer was assigned to wheat according to the following schedule: 100% of nitrogen applied and 50% of phosphorus and potash.

Table 2 shows the soil classification for each WRVP field. These fields consisted of clay, silty clay, silt loam and sandy loam soils. The range in soil types reflects the range of soils where wheat could be planted in Arkansas during the fall of 2002.

Good surface drainage is key to profitable wheat production, and each WRVP cooperator was encouraged to provide the best drainage possible. In all WRVP fields drainage furrows were constructed at regular intervals to enhance surface drainage. Fields in Clay and Jefferson Counties were planted on 48" beds, allowing multiple drain furrows across the field with the option to furrow-irrigate double-cropped soybean. Additionally, growers were requested to monitor and maintain drainage from planting through harvest.

Table 2. General Soil Information, WRVP Fields 2002-03

County	Soil Classification
Arkansas	Crowley silt loam
Clay	Foley silt loam
Jefferson	Rilla silt loam
Johnson	Roxanna silt loam
Lawrence 1	Dundee silt loam
Lawrence 2	Dundee silt loam
Lee	Falaya/Loring/Zachary silt loam
Lincoln	Desha silty clay/Rilla silt loam
Logan	Moreland silty clay
Monroe	Jackport/Foley silt loam
Yell	Dardanelle silt loam

The soil analysis results for each field are displayed in Table 3. These data were used to establish fall fertilization recommendations.

Table 3. Fall 2002 Soil Test Results, WRVP

County	pH	P	K	Ca	Mg	Na	SO₄-S	Fe	Mn	Cu	Zn	CEC
Arkansas	7.4	35	135	2730	411	146	25	316	189	2.4	4.4	11
Clay	6.2	74	208	1607	178	66	30	360	242	2.5	6.3	7.6
Jefferson	7.1	66	217	3590	252	44	19	201	57	1.6	1.7	12.5
Johnson	5.7	85	135	1347	346	31	21	234	80	2.0	3.9	8.5
Lawrence 1	5.7	54	197	1083	332	72	21	205	384	1.2	21.6	8
Lawrence 2	5.9	41	149	1307	289	29	18	204	317	1.4	19.2	8
Lee	5.9	94	208	1494	253	35	30	237	252	2.2	27	8.5
Lincoln	6.6	28	300	4864	815	197	40	425	91	1.7	4.0	19
Logan	6.9	86	314	3714	541	26	19	317	127	3.4	9.0	14
Yell	4.9	62	262	2030	389	33	26	282	135	3.0	1.8	14

Previous crop and tillage operations are listed in Table 4. Four fields were planted following corn, three following soybean, three following summer fallow, two

following rice, and one following grain sorghum. Conventional tillage operations were used for seedbed preparation in all fields. Fields following rice, corn, or grain sorghum generally require more tillage operations due to heavy crop residue.

Table 4. Previous Crop and Preplant Tillage Operation for WRVP Fields, 2002-03

County	Previous Crop	Tillage Operations
Arkansas	Soybean	None
Clay	Rice	Disk 2X, Field cultivate, Float
Jefferson	Soybean	Field cultivate 2X
Johnson	Corn	Disk 2X, Field cultivate
Lawrence 1	Fallow	Disk, Float
Lawrence 2	Fallow	Disk, Float
Lee	Fallow	Field cultivate
Lincoln	Rice	None
Logan	Corn	Disk 3X, Chisel plow
Monroe	Rice	Disk 2X
Yell	Soybean	Disk, Field cultivate

The seeding date and rate for each county and variety are given in Table 5. The recommended planting dates for wheat are: North Arkansas - October 1 through October 30, Central Arkansas – October 10 through November 10, South Arkansas – October 15 through November 20. All fields were planted within the recommended seeding date for their region in 2002. Frequent rains prevented planting of the field in St. Francis County; therefore, the second year for that county will be deferred to the 2003-2004 growing season.

Table 5. Variety, Seeding Date, Rate, Method, WRVP Fields, Fall, 2002.

County	Variety	Seeding Date	Seeding Rate (lbs/ac)	Seeding Method
Arkansas	Sabbe	1-Nov	150	Drill
Clay	Pioneer 2684 & Pat	7-Oct	180	Drill
Jefferson	AgriPro Natchez	14-Nov	180	Broadcast
Johnson	Pat	10-Oct	150	Broadcast
Lawrence 1	Croplan 554W	8-Oct	115	Drill
Lawrence 2	Terral 8555	8-Oct	115	Drill
Lee	Delta King 7777 & Dixie 900	1-Nov	150	Drill
Lincoln	Delta Grow 5300	10-Oct	138	Drill
Logan	Delta King 7777	17-Oct	120	Drill
Monroe	Delta King 9216	14-Nov	150	Drill
Yell	Sabbe	24-Oct	150	Drill

Seeding rates ranged from 115 to 180 pounds per acre. The recommended seeding rates vary according to seed size, seedbed conditions, anticipated germination, and seedling survival. Seeding rates are designed to achieve a final stand of 26 plants per square foot. Nine fields were drill seeded while two fields were broadcast seeded.

Data on spring nitrogen applications are displayed in Table 6 on the next page. Total applied nitrogen ranged from 102.5 lbs/acre on the Yell, Johnson, and Logan County fields to 147 lbs/acre on the Arkansas County field. The average spring nitrogen rate was 119.3 lbs/acre.

The first spring nitrogen application is based on soil texture and drainage classification. On clay and poorly drained silt loam soils, 55 pounds of nitrogen per acre is recommended for the first application with the remaining 45 pounds of nitrogen to be applied 3-4 weeks later. On clay soils with a yield potential greater than 55 bu/ac, 75 pounds of nitrogen per acre is recommended at early tillering with the remaining 65 pounds to be applied 3-4 weeks later.

On loamy soils with good drainage, 90-100 pounds of nitrogen per acre is generally recommended for high yields. A single application at mid-tillering stage of wheat development may often satisfy the nitrogen requirements of the crop. However, heavy or frequent spring rainfall causes saturated soils and subsequent loss and/or leaching of nitrates outside the root zone. Thus, split applications of nitrogen are often required to avoid excessive nitrogen losses. In addition, standing water may cause nitrogen losses that can be corrected with supplemental fertilizer of 20-40 pounds of nitrogen per acre, according to Extension recommendations. Frequent rainfall, heavy rainfall, and standing water did occur on WRVP fields in the spring.

All 2001-2002 WRVP fields except those located in the Arkansas River Valley (Yell, Johnson, and Logan Counties) received split applications of nitrogen.

Six WRVP fields received sulfur with the first spring nitrogen application. The Monroe County field received sulfur with the mixed fertilizer in the fall (Table 1). Sulfur was applied due to the sandy, low organic matter soil types and the potential of sulfur deficiency from the heavy and frequent winter rains.

Unlike many Arkansas wheat fields in 2003, all WRVP fields received the first application of spring nitrogen timely. Fields that were fertilized on dry soil the last couple of days in January were provided adequate amounts of nutrients that frequent rains would have otherwise prevented. Several fields across the state were fertilized late because of rainfall and/or abandoned due to decreased yield potential.

Table 6. Spring Nitrogen, WRVP Fields, 2002-03

County	First Spring Application				Second Application			Total lb N/A
	Date	Source ¹	lb/A ² N	lb/A ³ S	Date	Source	lb/A N	
Arkansas	1/31	Urea	55	0	3/4	Urea	46	
			3rd Application:		3/24	Urea	46	147
Clay	1/28	Urea + DAP + A.S.	64.5	12	3/7	Urea	56.5	121
Jefferson	1/31	Urea + A.S.	61	12	2/28	Urea	53	114
Johnson	2/16	Urea + A.S.	102.5	12	N/A	None	0	102.5
Lawrence 1	1/29	Urea + DAP	54.6	0	3/10	Urea	55.2	110
Lawrence 2	1/29	Urea + DAP	54.6	0	3/10	Urea	55.2	110
Lee	1/31	A.S. + DAP	19.5	12	3/2	Urea	92	111.5
Lincoln	2/11	Urea + DAP	64	0	3/20	Mixed	100	164
Logan	2/15	Urea + A.S.	102.5	12	N/A	None	0	102.5
Monroe	2/13	Urea	58	0	3/17	Urea	67	125
Yell	2/13	Urea + A.S.	102.5	12	N/A	None	0	102.5

¹Urea (46-0-0), A.S. = Ammonium sulfate (21-0-0-24), DAP = Diammonium phosphate (18-46-0).

²N = nitrogen

³S = sulfur

The stand counts, tiller counts, and head counts for each field are given in Table 7. Each of these data represents the average of 15 randomly selected square foot counts. The initial stand was measured as the number of plants per square foot at Feekes' growth stage 2. The tiller count was measured as total number of culms per plant at Feekes' growth stage 6. The head count was determined by counting the number of heads per square foot at Feekes' growth stage 11.

Table 7. Stand, Tiller, and Head Counts, WRVP Fields, 2002-03

County	Initial Stand (#plts/ft ²)	Tiller Count (#tillers/plant)	Head Count (#heads/ft ²)
Arkansas	35.3	2.1	71
Clay – Pion2684	38.2	3.0	87.8
Clay – Pat	34.1	3.4	71.4
Jefferson	31.3	3.8	112.4
Johnson	45.2	4.5	51.3
Lawrence 1	44.0	2.5	68.0
Lawrence 2	35.6	2.4	60.7
Lee	32.4	2.4	67.4
Lincoln	31.1	3.7	77.3
Logan	33.7	4.9	52.3
Monroe	24.5	3.9	61.5
Yell	40.6	3.5	58.3
Avg:	35.5	3.3	69.9

The initial stand averaged 35.5 plants/ft² across all 2002-03 WRVP fields. This figure is higher than that observed in 2002 (27.6 plts/ft²). Fields planted early in the recommended planting window resulted in higher than normal plant populations due to optimal weather conditions for emergence. Tiller counts observed in spring 2003 averaged 3.3 tillers/plant. Head counts averaged 59.8 heads/ft².

Disease did not severely affect any WRVP fields during the 2002-2003 growing season. Stripe rust was treated on several acres in southwest Arkansas; however, when stripe rust reached the eastern side of the state, most fields had reached 50% heading, the treatment cutoff. Because of intensive scouting, no WRVP fields were treated with a fungicide. Common wheat diseases such as Septoria tritici blotch, barley yellow dwarf, and loose smut were observed in most fields but did not have an economic impact. Other than spring aphids, insects were relatively nonexistent in 2002-2003. True armyworm populations were very low throughout the later stages of reproductive development. As in any other year, weeds were a factor in most fields. Finesse was used for ryegrass suppression in the Lawrence County fields (Table 8). Field 1 had relatively low ryegrass pressure compared to Field 2. Early fall control of ryegrass and winter annuals was excellent in both fields; however, a late flush emerged in Field 2. While yield was probably not affected, it does support data indicating 70% control of ryegrass with Finesse. Fields in Lee, Lincoln, and Logan Counties were treated for ryegrass with Hoelon either by border or blanket applications. Garlic, vetch, and winter junk weeds reached treatment threshold in four fields. The WRVP fields in Jefferson, Monroe, and Johnson Counties experienced low pest levels throughout the growing season; therefore, no treatments were applied.

Table 8. Weed, Disease, and Insect Summary - Wheat Research Verification Program, 2002-03

County	Pest Summary and Chemical Application
Arkansas	Express (0.25 oz/ac)
Clay	Express (0.25 oz/ac)
Jefferson	None
Johnson	None
Lawrence 1	Finesse (0.5 oz/ac)
Lawrence 2	Finesse (0.5 oz/ac)
Lee	Harmony Extra (0.5 oz/ac), Border App.: Hoelon (2.66 pt/ac)
Lincoln	Border Application: Hoelon (1.33 pt/ac)
Logan	Hoelon (1.33 pt/ac)
Monroe	None
Yell	Express (0.25 oz/ac)

The harvest date, grain yield, test weight, and pounds of nitrogen per bushel are shown in Table 9 on page 12. All WRVP fields were harvested in June. The Lee County field was severely affected by glyphosate drift around Feekes' growth stage 8. The yield potential was drastically reduced; therefore, it was not included in the WRVP yield average. Most areas of Arkansas experienced heavy and frequent rainfall throughout the wheat growing season. Despite this, the 2002-2003 WRVP fields achieved a respectable

average yield of 63.8 bu/ac. This was 13.8 bushels greater than the state average yield of 50 bu/ac reported by the USDA. Most WRVP fields yielded in the 60-bushel range.

The WRVP attempts to avoid low test weights by planting varieties with good test weight characteristics and timely harvest. Low test weights were reported across the state as well as for some WRVP fields. WRVP test weights ranged from 53.4 to 61.0 with an average of 56.2 lb/bu.

The pounds of nitrogen per bushel variable is a simple ratio of total applied nitrogen divided by the grain yield. It attempts to measure the efficiency of nitrogen fertilizer applications. The efficiency ranged from 1.6 lbs N/bu to 2.6 lbs N/bu and averaged 1.9 lbs N/bu of wheat.

Table 9. Harvest Date, Grain Yield, Test Weight for WRVP Fields, 2002- 03

County	Harvest Date	Test Weight (lb/bu)	Yield (bu/ac @ 13.5%)	Pounds N/bu
Arkansas	10-Jun	58.0	70.0	2.1
Clay – Pion2684	8-Jun	61.0	71.8	1.7
Clay – Pat	11-Jun	58.5	59.2	2.1
Jefferson	10-Jun & 26-Jun	54.0	57.2	2.0
Johnson	20-Jun	54.8	64.5	1.6
Lawrence 1	22-Jun	54.9	66.1	1.7
Lawrence 2	23-Jun	54.8	55.4	2.0
Lincoln	4-Jun	58.0	63.2	2.6
Logan	15-Jun	53.4	64.5	1.6
Monroe	16-Jun	58.0	68.0	1.8
Yell	10-Jun	55.8	61.8	1.7
Lee ¹	9-Jun	54.0	43.1	2.6
Average:		56.2	63.8	1.9
State Yield Average:			50.0	

¹Yield was significantly affected by glyphosate drift; therefore, it wasn't included in the WRVP yield average.

The Wheat Research Verification Program continues to demonstrate that high yields of wheat can be produced consistently and economically according to the research-based recommendations published by the Cooperative Extension Service.

Economic Analysis

This section provides information on the development of estimated production costs for the 2003 Wheat Research Verification Program. Records of field operations on each field provided the basis for estimating these costs. The field records were compiled by participating county Extension faculty and the coordinators of the Wheat Research Verification Program.

Using WRVP production data from 12 fields in 10 counties, operating costs, and net returns above total specified costs assuming a 25 percent land rent were estimated for each field. Break-even prices needed to cover total specified costs are also presented.

Specified Operating Costs

Specified operating costs listed in Table 10 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 were used in this analysis. However, since prices of inputs may be influenced by quantity discounts, and similar factors that are independent of production management issues being tested by WRVP, constant input prices were used across all fields. This procedure was used so that the objective to verify research recommendations would not be obscured by highly variable input prices.

Machinery fuel and repair costs were calculated using a budget generator based on parameters and standards published in the American Society of Agricultural Engineers 1995 Handbook. Therefore, the producer's actual machinery costs will likely vary somewhat from the machinery cost estimates that are presented in this report. However, the producer's actual field operations were used as a basis for the calculations. Equipment size and type were matched as closely as possible to the existing data set used in the series of Extension Technical Bulletins *Estimating 2002 Production Costs in Arkansas*.

Specified operating costs for the 12 WRVP fields ranged from \$84.65 per acre to \$152.75 per acre. The average over all fields was \$108.51. Although economic data from Lee County is displayed, it is not included in the economic summary averages.

Specified Ownership Costs

Machinery ownership costs represent the capital replacement costs of owning and using equipment and can vary greatly from one farm to another depending on the farm's size, management skills, and annual use. Specified ownership costs presented in Table 10 include depreciation, interest, taxes, and insurance. These costs were based on the initial cost and expected useful life of the machinery and were allocated on a per acre basis using estimated performance rates and hours of annual use.

These are economic costs and may differ from short-run tax based cash accounting figures for a particular year. This 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. Specified ownership costs ranged from \$11.11 per acre to \$29.94 per acre with an average of \$21.93 per acre. The fields with lower ownership costs generally had fewer field operations.

Total Specified Costs

Total specified costs presented in Table 10 are the summation of total specified operating costs and total specified ownership costs. Not included in these costs are charges for land, risk, overhead, and management. The overhead and management costs

would be better addressed in a whole-farm analysis and will not be dealt with in this discussion. Total specified costs ranged from \$101.63 per acre to \$180.42 per acre with an average of \$130.45.

Break-even prices need to cover total specified costs ranged from \$1.49 per bushel to \$2.88 per bushel. Over the 12 fields an average break-even price of \$2.05 per bushel was needed.

Land Costs

Land costs incurred by producers participating in the Wheat Research Verification Program 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 crop share rental arrangement, with no cost sharing was assumed to provide a consistent standard for comparison. 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 WRVP fields.

Net Returns Per Acre

Table 10 also presents estimated returns per acre above Total Specified Costs plus a 25 percent crop share rent. A fixed price of \$3.16/bu was used to calculate total income as a result of seed yield. This price was the state average wheat price for June delivery based upon June prices at elevators throughout eastern Arkansas and the Arkansas River Valley. It is important to note that the income displayed in Table 10 does not represent the actual income received for each field. The fixed price is a way to gauge production and input costs and the potential income for all WRVP fields. All fields generated a positive net return with the exception of the Clay and Lee County fields.. Net returns ranged from (\$30.10) per acre to \$59.53 per acre. The average over all fields was \$20.74 per acre. Costs for risk, overhead, and management have not been included. These costs must be accounted for in any further interpretation of this data.

Various Specified Operating Costs

Table 11 lists various specified operating costs that are required for wheat production. As seen in previous years, the largest specified operating cost in the WRVP was for fertilization with an average cost of \$49.58 per acre. These costs ranged from \$34.85 to \$70.44 and include those associated with fertilizer application. This broad range can be attributed to three production aspects: previous crop, double-cropped production, and single vs. split fertilizer applications. The highest fertilization costs were in Clay and Lincoln Counties. These wheat fields were planted following rice, a rotation that requires high amounts of fall-applied N, P, and K. Fields in Arkansas, Jefferson, and Monroe Counties were more than likely fertilized in the fall with the following soybean crop in mind. The low fertilizer costs in Johnson, Logan, and Yell Counties can be attributed to single spring fertilizer applications with ground-driven equipment. Seed cost ranged from \$19.50 to \$29.58 per acre, averaging \$23.13 per acre over the 12 fields. Preplant tillage was another notable specified operating cost for some fields. It ranged from \$0 to \$19.91 per acre with an average of \$10.91 per acre.

Table 10. Economic Summary of Wheat Research Verification Fields in 2002-2003.

County	Yield¹ (bu/ac)	Total Income² (\$/ac)	Total Specified Operating Costs³ (\$/ac)	Break-even Operating⁴ (\$/bu)	Total Specified Operating and Ownership Costs⁵ (\$/ac)	Break-even Price⁶ (\$/bu)	Break-even Price with Land Costs⁷ (\$/bu)	Returns Above Total Specified Costs⁸ (\$/ac)
Arkansas	70.0	\$221.20	\$108.48	\$1.55	\$125.25	\$1.79	\$2.39	\$40.65
Clay - Pion	71.8	\$226.89	\$152.75	\$2.13	\$180.42	\$2.51	\$3.35	(\$10.25)
Clay - Pat	59.2	\$187.07	\$142.73	\$2.41	\$170.40	\$2.88	\$3.84	(\$30.10)
Jefferson	57.2	\$180.75	\$99.72	\$1.74	\$120.22	\$2.10	\$2.80	\$15.34
Johnson	64.5	\$203.82	\$86.97	\$1.35	\$108.87	\$1.69	\$2.25	\$44.00
Lawrence 1	66.1	\$208.88	\$98.29	\$1.49	\$119.64	\$1.81	\$2.41	\$37.02
Lawrence 2	55.4	\$175.06	\$96.64	\$1.74	\$117.99	\$2.13	\$2.84	\$13.31
Lincoln	63.2	\$199.71	\$126.27	\$2.00	\$145.94	\$2.31	\$3.08	\$3.84
Logan	64.5	\$203.82	\$106.64	\$1.65	\$136.58	\$2.12	\$2.82	\$16.29
Monroe	68.0	\$214.88	\$90.52	\$1.33	\$101.63	\$1.49	\$1.99	\$59.53
Yell	61.8	\$195.29	\$84.65	\$1.37	\$107.96	\$1.75	\$2.33	\$38.51
Lee ⁹	43.1	\$136.20	\$101.00	\$2.34	\$120.72	\$2.80	\$3.73	(\$18.57)
Average:	63.8	\$201.58	\$108.51	\$1.71	\$130.45	\$2.05	\$2.74	\$20.74

¹Yields adjusted to 13.5% moisture.

²Based upon state average wheat price for June delivery, \$3.16/bu.

³Specified out-of-pocket expenses, such as seed, fertilizer, herbicides, irrigation, etc.

⁴Price per bushel required by the farmer to equal total specified operating costs. Does not include land, overhead, risk, and management cost.

⁵Total specified operating costs plus ownership costs which include charges for depreciation and interest on all machinery and irrigation equipment, taxes, and insurance.

⁶Price per bushel required by the farmer to equal total specified operating and ownership costs. Does not include overhead, risk, and management costs.

⁷Break-even price per bushel plus a 25% crop share rent. Does not include overhead, risk, and management costs.

⁸A 25% crop share rent was assumed as a land charge for a renter situation. No cost sharing was assumed.

⁹Yield of the Lee County field was significantly affected by glyphosate drift; therefore, it was excluded from the economic summary averages.

Table 11. Various Specified Operating Costs of the Wheat Verification Fields in 2002-2003.

County	Preplant Tillage		Fertilization Cost with Application (\$/ac)	Seed Cost (\$/ac)	Pest Control		
	No. of Trips	Operating Cost (\$/ac)			Insecticide Cost (\$/ac)	Fungicide Cost (\$/ac)	Herbicide Cost (\$/ac)
Arkansas	0	\$0.00	\$54.20	\$19.50	\$0.00	\$0.00	\$8.18
Clay - Pion	4	\$18.54	\$70.44	\$29.58	\$0.00	\$0.00	\$12.87
Clay - Pat	4	\$18.54	\$70.44	\$22.62	\$0.00	\$0.00	\$12.87
Jefferson	2	\$6.22	\$50.91	\$27.20	\$0.00	\$0.00	\$0.00
Johnson	2	\$10.46	\$42.24	\$19.50	\$0.00	\$0.00	\$0.00
Lawrence 1	2	\$11.80	\$38.57	\$19.55	\$0.00	\$0.00	\$10.56
Lawrence 2	2	\$11.80	\$38.57	\$19.55	\$0.00	\$0.00	\$10.56
Lee	1	\$2.66	\$39.85	\$25.50	\$0.00	\$0.00	\$12.14
Lincoln	1	\$2.90	\$70.00	\$25.50	\$0.00	\$0.00	\$1.38
Logan	4	\$19.91	\$34.85	\$20.40	\$0.00	\$0.00	\$12.89
Monroe	2	\$8.86	\$51.09	\$25.50	\$0.00	\$0.00	\$0.00
Yell	2	\$8.29	\$38.40	\$19.50	\$0.00	\$0.00	\$0.00
Average:	2	\$10.91	\$49.58	\$23.13	\$0.00	\$0.00	\$6.79

Appendix

Economic Analysis By County

Estimated operating expenses and crop input costs

Table 1.A Estimated resource use and costs for field operations, per
 WRVP - 2003, Arkansas County
 Sabbe

OPERATION/ OPERATING INPUT	SIZE/ UNIT	TRACTOR SIZE	PERF RATE	TIMES OVER	MTH	TRACTOR COST		EQUIP COST		ALLOC LABOR		OPERATING INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Cstm ap grd fert dry	acre			1.00	May							1.0000	4.00	4.00	4.00
0-40-60	lbs											100.0000	0.08	8.00	8.00
Grain drill	20'	MFWD 225	0.118	1.00	Nov	2.37	2.50	0.82	1.68	0.283	1.81				9.20
Wheat seed - public	lb											150.0000	0.13	19.50	19.50
Cstm ap grd herbicid	acre			1.00	Jan							1.0000	4.00	4.00	4.00
Express	oz											0.2500	16.75	4.18	4.18
Cstm ap air fert	lb			1.00	Feb							120.0000	0.05	6.00	6.00
Urea 46%	lb											120.0000	0.08	10.20	10.20
Cstm ap air fert	acre			1.00	Mar							1.0000	4.50	4.50	4.50
Urea 46%	lb											100.0000	0.08	8.50	8.50
Cstm ap air fert	acre			1.00	Mar							1.0000	4.50	4.50	4.50
Urea 46%	lb											100.0000	0.08	8.50	8.50
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu			1.00	Jun							70.0000	0.15	10.50	10.50
TOTALS						2.37	2.50	6.11	14.25	0.510	3.26			92.38	120.90
INTEREST ON OPERATING CAPITAL															4.34
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															125.25

Table 1.F Estimated costs per
 WRVP - 2003, Arkansas County
 Sabbe

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - public	lb	0.13	150.0000	19.50	_____
CUSTOM WORK					
Cstm ap grd fert dry	acre	4.00	1.0000	4.00	_____
Cstm ap grd herbicid	acre	4.00	1.0000	4.00	_____
Cstm ap air fert	lb	0.05	120.0000	6.00	_____
Cstm ap air fert	acre	4.50	2.0000	9.00	_____
Custom haul	bu	0.15	70.0000	10.50	_____
FERTILIZER & LIME					
0-40-60	lbs	0.08	100.0000	8.00	_____
Urea 46%	lb	0.08	320.0000	27.20	_____
HERBICIDES					
Express	oz	16.75	0.2500	4.18	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1534	0.98	_____
Tractors	hour	6.40	0.1298	0.83	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	1.5030	1.27	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		0.82	1.0000	0.82	_____
Tractors		1.09	1.0000	1.09	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		4.34	1.0000	4.34	_____
TOTAL DIRECT EXPENSES				108.48	_____
FIXED EXPENSES					
Implements		1.68	1.0000	1.68	_____
Tractors		2.50	1.0000	2.50	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				16.76	_____
TOTAL SPECIFIED EXPENSES				125.25	_____

Table 2.A Estimated resource use and costs for field operations, per
 WRVP - 2003, Clay County
 Pioneer 2684

OPERATION/ OPERATING INPUT	SIZE/ UNIT	TRACTOR SIZE	PERF RATE	TIMES OVER	MTH	TRACTOR COST		EQUIP COST		ALLOC LABOR		OPERATING INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----						-----dollars-----			
Disk, light cut	32'	4WD 300	0.067	1.00	Sep	1.55	1.34	0.43	1.00	0.087	0.55				4.89
Disk, light cut	32'	4WD 300	0.067	1.00	Oct	1.55	1.34	0.43	1.00	0.087	0.55				4.89
Field cultivator	31.5'	MFWD 225	0.044	1.00	Oct	0.88	0.93	0.22	0.47	0.057	0.36				2.88
Land float	18'x 55'	MFWD 225	0.110	1.00	Oct	2.21	2.33	0.08	0.33	0.143	0.91				5.88
Cstm ap grd fert dry acre				1.00	Oct							1.0000	4.00	4.00	4.00
13.3-20-26.7	lbs.											300.0000	0.09	28.80	28.80
Grain drill	36'	MFWD 225	0.065	1.00	Oct	1.30	1.38	0.87	1.79	0.156	0.99				6.35
Wheat seed - private lb												174.0000	0.17	29.58	29.58
Bed conditioner	26.67'	MFWD 225	0.052	1.00	Oct	1.04	1.10	0.18	0.39	0.067	0.43				3.16
Ditcher, rear mount	3'	2WD 130	1.618	0.04	Oct	0.74	0.76	0.51	0.87	0.084	0.53				3.44
Cstm ap grd fert dry acre				1.00	Jan							1.0000	4.00	4.00	4.00
DAP 18-46-0	lb											66.6000	0.09	6.32	6.32
Ammon Sulfate 21.2%	lb											66.6000	0.08	5.46	5.46
Urea 46%	lb											66.6000	0.08	5.66	5.66
Cstm ap air fert	lb			1.00	Mar							120.0000	0.05	6.00	6.00
Urea 46%	lb											120.0000	0.08	10.20	10.20
Cstm ap air herbicid acre				1.00	Mar							1.0000	4.50	4.50	4.50
Express	oz											0.5000	16.75	8.37	8.37
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu			1.00	Jun							78.1000	0.15	11.71	11.71
TOTALS						9.30	9.21	8.04	18.45	0.909	5.82			124.61	175.46
INTEREST ON OPERATING CAPITAL															4.96
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															180.42

Table 2.F Estimated costs per
 WRVP - 2003, Clay County
 Pioneer 2684

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - private	lb	0.17	174.0000	29.58	_____
CUSTOM WORK					
Cstm ap grd fert dry	acre	4.00	2.0000	8.00	_____
Cstm ap air fert	lb	0.05	120.0000	6.00	_____
Cstm ap air herbicid	acre	4.50	1.0000	4.50	_____
Custom haul	bu	0.15	78.1000	11.71	_____
FERTILIZER & LIME					
13.3-20-26.7	lbs.	0.09	300.0000	28.80	_____
DAP 18-46-0	lb	0.09	66.6000	6.32	_____
Ammon Sulfate 21.2%	lb	0.08	66.6000	5.46	_____
Urea 46%	lb	0.08	186.6000	15.86	_____
HERBICIDES					
Express	oz	16.75	0.5000	8.37	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1654	1.05	_____
Tractors	hour	6.40	0.5166	3.30	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	6.2041	5.27	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		2.75	1.0000	2.75	_____
Tractors		4.02	1.0000	4.02	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		4.96	1.0000	4.96	_____

TOTAL DIRECT EXPENSES				152.75	_____
FIXED EXPENSES					
Implements		5.88	1.0000	5.88	_____
Tractors		9.21	1.0000	9.21	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____

TOTAL FIXED EXPENSES				27.67	_____

TOTAL SPECIFIED EXPENSES				180.42	_____

Table 3.A Estimated resource use and costs for field operations, per
 WRVP - 2003, Clay County
 Pat

OPERATION/ OPERATING INPUT	SIZE/ UNIT	TRACTOR SIZE	PERF RATE	TIMES OVER	MTH	TRACTOR COST		EQUIP COST		ALLOC LABOR		OPERATING INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----						-----dollars-----			
Disk, light cut	32'	4WD 300	0.067	1.00	Sep	1.55	1.34	0.43	1.00	0.087	0.55				4.89
Disk, light cut	32'	4WD 300	0.067	1.00	Oct	1.55	1.34	0.43	1.00	0.087	0.55				4.89
Field cultivator	31.5'	MFWD 225	0.044	1.00	Oct	0.88	0.93	0.22	0.47	0.057	0.36				2.88
Land float	18'x 55'	MFWD 225	0.110	1.00	Oct	2.21	2.33	0.08	0.33	0.143	0.91				5.88
Cstm ap grd fert dry acre				1.00	Oct							1.0000	4.00	4.00	4.00
13.3-20-26.7	lbs.											300.0000	0.09	28.80	28.80
Grain drill	36'	MFWD 225	0.065	1.00	Oct	1.30	1.38	0.87	1.79	0.156	0.99				6.35
Wheat seed - public	lb											174.0000	0.13	22.62	22.62
Bed conditioner	26.67'	MFWD 225	0.052	1.00	Oct	1.04	1.10	0.18	0.39	0.067	0.43				3.16
Ditcher, rear mount	3'	2WD 130	1.618	0.04	Oct	0.74	0.76	0.51	0.87	0.084	0.53				3.44
Cstm ap grd fert dry acre				1.00	Jan							1.0000	4.00	4.00	4.00
DAP 18-46-0	lb											66.6000	0.09	6.32	6.32
Ammon Sulfate 21.2%	lb											66.6000	0.08	5.46	5.46
Urea 46%	lb											66.6000	0.08	5.66	5.66
Cstm ap air fert	lb			1.00	Mar							120.0000	0.05	6.00	6.00
Urea 46%	lb											120.0000	0.08	10.20	10.20
Cstm ap air herbicid	acre			1.00	Mar							1.0000	4.50	4.50	4.50
Express	oz											0.5000	16.75	8.37	8.37
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu			1.00	Jun							59.2000	0.15	8.88	8.88
TOTALS						9.30	9.21	8.04	18.45	0.909	5.82			114.82	165.66
INTEREST ON OPERATING CAPITAL															4.74
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															170.40

Table 3.F Estimated costs per
 WRVP - 2003, Clay County
 Pat

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - public	lb	0.13	174.0000	22.62	_____
CUSTOM WORK					
Cstm ap grd fert dry	acre	4.00	2.0000	8.00	_____
Cstm ap air fert	lb	0.05	120.0000	6.00	_____
Cstm ap air herbicid	acre	4.50	1.0000	4.50	_____
Custom haul	bu	0.15	59.2000	8.88	_____
FERTILIZER & LIME					
13.3-20-26.7	lbs.	0.09	300.0000	28.80	_____
DAP 18-46-0	lb	0.09	66.6000	6.32	_____
Ammon Sulfate 21.2%	lb	0.08	66.6000	5.46	_____
Urea 46%	lb	0.08	186.6000	15.86	_____
HERBICIDES					
Express	oz	16.75	0.5000	8.37	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1654	1.05	_____
Tractors	hour	6.40	0.5166	3.30	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	6.2041	5.27	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		2.75	1.0000	2.75	_____
Tractors		4.02	1.0000	4.02	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		4.74	1.0000	4.74	_____

TOTAL DIRECT EXPENSES				142.73	_____
FIXED EXPENSES					
Implements		5.88	1.0000	5.88	_____
Tractors		9.21	1.0000	9.21	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____

TOTAL FIXED EXPENSES				27.67	_____

TOTAL SPECIFIED EXPENSES				170.40	_____

Table 4.A Estimated resource use and costs for field operations, per
 WRVP - 2003 Jefferson County
 AgriPro Natchez

OPERATION/ OPERATING INPUT	SIZE/ UNIT	TRACTOR SIZE	PERF RATE	TIMES OVER	MTH	TRACTOR COST		EQUIP COST		ALLOC LABOR		OPERATING INPUT			TOTAL COST	
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST		
						-----dollars-----				dollars		-----dollars-----				
Field cultivator	29.58'	MFWD 225	0.047	1.00	Oct	0.94	0.99	0.21	0.45	0.061	0.39					3.00
Field cultivator	29.58'	Track225	0.047	1.00	Oct	1.01	1.15	0.21	0.45	0.061	0.39					3.22
Cstm seed grd brdcst acre				1.00	Nov							1.0000	4.50	4.50		4.50
Wheat seed - private lb												160.0000	0.17	27.20		27.20
Cstm ap grd fert dry acre				1.00	Nov							1.0000	4.00	4.00		4.00
DAP 18-46-0 lb												150.0000	0.09	14.25		14.25
Bed conditioner	26.67'	MFWD 225	0.052	1.00	Nov	1.04	1.10	0.18	0.39	0.067	0.43					3.16
Fertilizer spreader	32'	Track225	0.052	1.00	Jan	1.12	1.27	0.22	0.40	0.067	0.43					3.46
21-0-0-24 lbs												50.0000	0.08	4.10		4.10
Urea 46% lb												110.0000	0.08	9.35		9.35
Fertilizer spreader	32'	Track225	0.052	1.00	Feb	1.12	1.27	0.22	0.40	0.067	0.43					3.46
Urea 46% lb												115.0000	0.08	9.77		9.77
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45					19.31
Custom haul	bu			1.00	Jun							56.9000	0.15	8.53		8.53
TOTALS						5.25	5.82	6.36	14.67	0.552	3.53				81.71	117.35
INTEREST ON OPERATING CAPITAL																2.86
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																120.22

Table 4.F Estimated costs per
 WRVP - 2003 Jefferson County
 AgriPro Natchez

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - private	lb	0.17	160.0000	27.20	_____
CUSTOM WORK					
Cstm seed grd brdcst	acre	4.50	1.0000	4.50	_____
Cstm ap grd fert dry	acre	4.00	1.0000	4.00	_____
Custom haul	bu	0.15	56.9000	8.53	_____
FERTILIZER & LIME					
DAP 18-46-0	lb	0.09	150.0000	14.25	_____
21-0-0-24	lbs	0.08	50.0000	4.10	_____
Urea 46%	lb	0.08	225.0000	19.12	_____
OPERATOR LABOR					
Implements	hour	6.40	0.0500	0.32	_____
Tractors	hour	6.40	0.2750	1.76	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	3.1845	2.70	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		1.06	1.0000	1.06	_____
Tractors		2.54	1.0000	2.54	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		2.86	1.0000	2.86	_____
TOTAL DIRECT EXPENSES				99.72	_____
FIXED EXPENSES					
Implements		2.11	1.0000	2.11	_____
Tractors		5.82	1.0000	5.82	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				20.49	_____
TOTAL SPECIFIED EXPENSES				120.22	_____

Table 5.A Estimated resource use and costs for field operations, per
 WRVP -2003, Johnson County
 Pat

OPERATION/ OPERATING INPUT	SIZE/ UNIT	TRACTOR SIZE	PERF RATE	TIMES OVER	MTH	TRACTOR COST		EQUIP COST		ALLOC LABOR		OPERATING INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Fertilizer spreader	32'	2WD 130	0.052	1.00	Oct	0.59	0.61	0.22	0.40	0.067	0.43				2.27
0-0-60	lb											100.0000	0.07	7.60	7.60
DAP 18-46-0	lb											50.0000	0.09	4.75	4.75
Urea 46%	lb											50.0000	0.08	4.25	4.25
Disk, light cut	21.75'	2WD 170	0.099	2.00	Oct	2.91	2.97	0.87	2.04	0.257	1.64				10.46
Fertilizer spreader	32'	2WD 130	0.052	1.00	Oct	0.59	0.61	0.22	0.40	0.067	0.43				2.27
Wheat seed - public	lb											150.0000	0.13	19.50	19.50
Field cultivator	25.5'	MFWD 170	0.054	1.00	Oct	0.79	0.81	0.20	0.43	0.070	0.44				2.69
Fertilizer spreader	32'	2WD 130	0.052	1.00	Feb	0.59	0.61	0.22	0.40	0.067	0.43				2.27
Urea 46%	lb											200.0000	0.08	17.00	17.00
21-0-0-24	lbs											50.0000	0.08	4.10	4.10
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu			1.00	Jun							64.5000	0.15	9.67	9.67
TOTALS						5.49	5.63	7.05	16.26	0.757	4.85			66.87	106.18
INTEREST ON OPERATING CAPITAL															2.69
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															108.87

Table 5.F Estimated costs per
 WRVP -2003, Johnson County
 Pat

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - public	lb	0.13	150.0000	19.50	_____
CUSTOM WORK					
Custom haul	bu	0.15	64.5000	9.67	_____
FERTILIZER & LIME					
0-0-60	lb	0.07	100.0000	7.60	_____
DAP 18-46-0	lb	0.09	50.0000	4.75	_____
Urea 46%	lb	0.08	250.0000	21.25	_____
21-0-0-24	lbs	0.08	50.0000	4.10	_____
OPERATOR LABOR					
Implements	hour	6.40	0.0816	0.52	_____
Tractors	hour	6.40	0.4488	2.87	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	3.5735	3.03	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		1.76	1.0000	1.76	_____
Tractors		2.46	1.0000	2.46	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		2.69	1.0000	2.69	_____
TOTAL DIRECT EXPENSES				86.97	_____
FIXED EXPENSES					
Implements		3.70	1.0000	3.70	_____
Tractors		5.63	1.0000	5.63	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				21.90	_____
TOTAL SPECIFIED EXPENSES				108.87	_____

Table 6.A Estimated resource use and costs for field operations, per
 WRVP - 2003. Lawrence County East
 Croplan 554W

OPERATION/ OPERATING INPUT	SIZE/ UNIT	TRACTOR SIZE	PERF RATE	TIMES OVER	MTH	TRACTOR COST		EQUIP COST		ALLOC LABOR		OPERATING INPUT			TOTAL COST	
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST		
						-----dollars-----				dollars		-----dollars-----				
Disk, medium cut	29.25'	MFWD 225	0.074	1.00	Sep	1.48	1.57	0.45	1.06	0.096	0.61					5.19
Land float	16'x 56'	MFWD190	0.138	1.00	Sep	2.40	2.61	0.09	0.35	0.179	1.14					6.61
Grain drill	36'	MFWD 225	0.065	1.00	Oct	1.30	1.38	0.87	1.79	0.156	0.99					6.35
Wheat seed - private	lb											115.0000	0.17	19.55		19.55
Cstm ap grd herbicid	acre			1.00	Oct							1.0000	4.00	4.00		4.00
Finesse	oz											0.5000	13.12	6.56		6.56
Cstm ap grd fert dry	acre			1.00	Jan							1.0000	4.00	4.00		4.00
DAP 18-46-0	lb											130.0000	0.09	12.35		12.35
Urea 46-0-0	lb											55.0000	0.08	4.67		4.67
Cstm ap air fert	lb			1.00	Mar							130.0000	0.05	6.50		6.50
Urea 46-0-0	lb											130.0000	0.08	11.05		11.05
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45					19.31
Custom haul	bu											65.7000	0.15	9.85		9.85
TOTALS						5.19	5.56	6.71	15.77	0.659	4.21			78.54		116.01
INTEREST ON OPERATING CAPITAL																3.62
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																119.64

Table 6.F Estimated costs per
 WRVP - 2003. Lawrence County East
 Croplan 554W

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - private	lb	0.17	115.0000	19.55	_____
CUSTOM WORK					
Cstm ap grd herbicid	acre	4.00	1.0000	4.00	_____
Cstm ap grd fert dry	acre	4.00	1.0000	4.00	_____
Cstm ap air fert	lb	0.05	130.0000	6.50	_____
Custom haul	bu	0.15	65.7000	9.85	_____
FERTILIZER & LIME					
DAP 18-46-0	lb	0.09	130.0000	12.35	_____
Urea 46-0-0	lb	0.08	185.0000	15.72	_____
HERBICIDES					
Finesse	oz	13.12	0.5000	6.56	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1269	0.81	_____
Tractors	hour	6.40	0.3047	1.95	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	3.2538	2.76	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		1.42	1.0000	1.42	_____
Tractors		2.43	1.0000	2.43	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		3.62	1.0000	3.62	_____
TOTAL DIRECT EXPENSES				98.29	_____
FIXED EXPENSES					
Implements		3.20	1.0000	3.20	_____
Tractors		5.56	1.0000	5.56	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				21.34	_____
TOTAL SPECIFIED EXPENSES				119.64	_____

Table 7.A Estimated resource use and costs for field operations, per
 WRVP - 2003, Lawrence County West
 Terral 8555

OPERATION/ OPERATING INPUT	SIZE/ UNIT	TRACTOR SIZE	PERF RATE	TIMES OVER	MTH	TRACTOR COST		EQUIP COST		ALLOC LABOR		OPERATING INPUT			TOTAL COST	
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST		
						-----dollars-----				dollars		-----dollars-----				
Disk, medium cut	29.25'	MFWD 225	0.074	1.00	Sep	1.48	1.57	0.45	1.06	0.096	0.61					5.19
Land float	16'x 56'	MFWD190	0.138	1.00	Sep	2.40	2.61	0.09	0.35	0.179	1.14					6.61
Grain drill	36'	MFWD 225	0.065	1.00	Oct	1.30	1.38	0.87	1.79	0.156	0.99					6.35
Wheat seed - private	lb											115.0000	0.17	19.55		19.55
Cstm ap grd herbicid	acre			1.00	Oct							1.0000	4.00	4.00		4.00
Finesse	oz											0.5000	13.12	6.56		6.56
Cstm ap grd fert dry	acre			1.00	Jan							1.0000	4.00	4.00		4.00
DAP 18-46-0	lb											130.0000	0.09	12.35		12.35
Urea 46-0-0	lb											55.0000	0.08	4.67		4.67
Cstm ap air fert	lb			1.00	Mar							130.0000	0.05	6.50		6.50
Urea 46-0-0	lb											130.0000	0.08	11.05		11.05
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45					19.31
Custom haul	bu											55.1000	0.15	8.26		8.26
TOTALS						5.19	5.56	6.71	15.77	0.659	4.21			76.95		114.42
INTEREST ON OPERATING CAPITAL																3.56
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																117.99

Table 7.F Estimated costs per
 WRVP - 2003, Lawrence County West
 Terral 8555

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - private	lb	0.17	115.0000	19.55	_____
CUSTOM WORK					
Cstm ap grd herbicid	acre	4.00	1.0000	4.00	_____
Cstm ap grd fert dry	acre	4.00	1.0000	4.00	_____
Cstm ap air fert	lb	0.05	130.0000	6.50	_____
Custom haul	bu	0.15	55.1000	8.26	_____
FERTILIZER & LIME					
DAP 18-46-0	lb	0.09	130.0000	12.35	_____
Urea 46-0-0	lb	0.08	185.0000	15.72	_____
HERBICIDES					
Finesse	oz	13.12	0.5000	6.56	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1269	0.81	_____
Tractors	hour	6.40	0.3047	1.95	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	3.2538	2.76	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		1.42	1.0000	1.42	_____
Tractors		2.43	1.0000	2.43	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		3.56	1.0000	3.56	_____
TOTAL DIRECT EXPENSES				96.64	_____
FIXED EXPENSES					
Implements		3.20	1.0000	3.20	_____
Tractors		5.56	1.0000	5.56	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				21.34	_____
TOTAL SPECIFIED EXPENSES				117.99	_____

Table 8.A Estimated resource use and costs for field operations, per
 WRVP - 2003, Lee County
 Dixie 900 & Delta King 7777

OPERATION/ OPERATING INPUT	SIZE/ UNIT	TRACTOR SIZE	PERF RATE	TIMES OVER	MTH	TRACTOR COST		EQUIP COST		ALLOC LABOR		OPERATING INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Field cultivator	31.5'	MFWD190	0.044	1.00	Oct	0.76	0.83	0.22	0.47	0.057	0.36				2.66
Grain drill	36'	MFWD 225	0.065	1.00	Nov	1.30	1.38	0.87	1.79	0.156	0.99				6.35
Wheat seed - private	lb											150.0000	0.17	25.50	25.50
Ditcher, rear mount	3'	MFWD 225	1.618	0.04	Nov	1.30	1.37	0.51	0.87	0.084	0.53				4.61
Hiclr sprayer, 320gal	60'		0.027	0.10	Jan			0.04	0.07	0.003	0.02				0.14
Hoelon	pint											0.2330	7.44	1.73	1.73
Cstm ap grd fert dry	acre			1.00	Jan							1.0000	4.00	4.00	4.00
DAP 18-46-0	lb											50.0000	0.09	4.75	4.75
21-0-0-24	lbs											50.0000	0.08	4.10	4.10
Cstm ap air fert	lb			1.00	Mar							200.0000	0.05	10.00	10.00
Urea 46-0-0	lb											200.0000	0.08	17.00	17.00
Cstm ap air herbicid	acre			1.00	Mar							1.0000	4.50	4.50	4.50
Harmony Extra	oz											0.5000	11.55	5.77	5.77
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu											42.9400	0.15	6.44	6.44
TOTALS						3.37	3.59	6.94	15.79	0.528	3.38			83.79	116.89
INTEREST ON OPERATING CAPITAL															3.82
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															120.72

Table 8.F Estimated costs per
 WRVP - 2003, Lee County
 Dixie 900 & Delta King 7777

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - private	lb	0.17	150.0000	25.50	_____
CUSTOM WORK					
Cstm ap grd fert dry	acre	4.00	1.0000	4.00	_____
Cstm ap air fert	lb	0.05	200.0000	10.00	_____
Cstm ap air herbicid	acre	4.50	1.0000	4.50	_____
Custom haul	bu	0.15	42.9400	6.44	_____
FERTILIZER & LIME					
DAP 18-46-0	lb	0.09	50.0000	4.75	_____
21-0-0-24	lbs	0.08	50.0000	4.10	_____
Urea 46-0-0	lb	0.08	200.0000	17.00	_____
HERBICIDES					
Hoelon	pint	7.44	0.2330	1.73	_____
Harmony Extra	oz	11.55	0.5000	5.77	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1062	0.67	_____
Tractors	hour	6.40	0.1910	1.22	_____
Self-Propelled Eq.	hour	6.40	0.2313	1.48	_____
DIESEL FUEL					
Tractors	gal	0.85	2.1252	1.80	_____
Self-Propelled Eq.	gal	0.85	1.8832	1.60	_____
REPAIR & MAINTENANCE					
Implements		1.61	1.0000	1.61	_____
Tractors		1.56	1.0000	1.56	_____
Self-Propelled Eq.		3.73	1.0000	3.73	_____
INTEREST ON OP. CAP.		3.82	1.0000	3.82	_____

TOTAL DIRECT EXPENSES				101.33	_____
FIXED EXPENSES					
Implements		3.14	1.0000	3.14	_____
Tractors		3.59	1.0000	3.59	_____
Self-Propelled Eq.		12.64	1.0000	12.64	_____

TOTAL FIXED EXPENSES				19.38	_____

TOTAL SPECIFIED EXPENSES				120.72	_____

Table 9.A Estimated resource use and costs for field operations, per
 WRVP - 2003, Lincoln County
 Delta Grow 5300

OPERATION/ OPERATING INPUT	SIZE/ UNIT	TRACTOR SIZE	PERF RATE	TIMES OVER	MTH	TRACTOR COST		EQUIP COST		ALLOC LABOR		OPERATING INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Roller smooth 30"dia	32'	MFWD190	0.054	1.00	Oct	0.94	1.02	0.09	0.40	0.070	0.44				2.90
Grain drill	20'	MFWD190	0.118	1.00	Oct	2.05	2.23	0.82	1.68	0.283	1.81				8.61
Wheat seed - private	lb											150.0000	0.17	25.50	25.50
Ditcher, rear mount	3'	2WD 150	1.618	0.04	Oct	0.84	0.86	0.51	0.87	0.084	0.53				3.64
Cstm ap grd herbicid	acre			0.10	Nov							0.1000	4.00	0.40	0.40
Hoelon	pint											0.1330	7.44	0.98	0.98
Cstm ap grd fert dry	acre			1.00	Feb							1.0000	4.00	4.00	4.00
DAP 18-46-0	lb											100.0000	0.09	9.50	9.50
Urea 46-0-0	lb											100.0000	0.08	8.50	8.50
Cstm ap grd fert dry	acre			1.00	Mar							1.0000	4.00	4.00	4.00
25-12-8-6.75	lb											400.0000	0.11	44.00	44.00
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu											63.2000	0.15	9.48	9.48
TOTALS						3.84	4.12	6.72	15.53	0.665	4.25			106.36	140.85
INTEREST ON OPERATING CAPITAL															5.08
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															145.94

Table 9.F Estimated costs per
 WRVP - 2003, Lincoln County
 Delta Grow 5300

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - private	lb	0.17	150.0000	25.50	_____
CUSTOM WORK					
Cstm ap grd herbicid	acre	4.00	0.1000	0.40	_____
Cstm ap grd fert dry	acre	4.00	2.0000	8.00	_____
Custom haul	bu	0.15	63.2000	9.48	_____
FERTILIZER & LIME					
DAP 18-46-0	lb	0.09	100.0000	9.50	_____
Urea 46-0-0	lb	0.08	100.0000	8.50	_____
25-12-8-6.75	lb	0.11	400.0000	44.00	_____
HERBICIDES					
Hoelon	pint	7.44	0.1330	0.98	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1771	1.13	_____
Tractors	hour	6.40	0.2603	1.66	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	2.3982	2.03	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		1.42	1.0000	1.42	_____
Tractors		1.80	1.0000	1.80	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		5.08	1.0000	5.08	_____
TOTAL DIRECT EXPENSES				126.27	_____
FIXED EXPENSES					
Implements		2.96	1.0000	2.96	_____
Tractors		4.12	1.0000	4.12	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				19.66	_____
TOTAL SPECIFIED EXPENSES				145.94	_____

Table 10.A Estimated resource use and costs for field operations, per
 WRVP - 2003, Logan County
 Delta King 7777

OPERATION/ OPERATING INPUT	SIZE/ UNIT	TRACTOR SIZE	PERF RATE	TIMES OVER	MTH	TRACTOR COST		EQUIP COST		ALLOC LABOR		OPERATING INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----						-----dollars-----			
Disk, light cut	32'	MFWD 225	0.067	1.00	Aug	1.34	1.42	0.43	1.00	0.087	0.55				4.76
Chisel plow	17'	MFWD190	0.114	1.00	Aug	1.98	2.16	0.17	0.35	0.148	0.94				5.62
Fertilizer spreader	32'	2WD 130	0.052	1.00	Oct	0.59	0.61	0.22	0.40	0.067	0.43				2.27
DAP 18-46-0	lb											100.0000	0.09	9.50	9.50
Urea 46-0-0	lb											50.0000	0.08	4.25	4.25
Disk, light cut	32'	MFWD 225	0.067	2.00	Oct	2.69	2.84	0.86	2.01	0.174	1.11				9.53
Grain drill	20'	2WD 130	0.118	1.00	Oct	1.35	1.40	0.82	1.68	0.283	1.81				7.07
Wheat seed - private	lb											120.0000	0.17	20.40	20.40
Ditcher, rear mount	3'	2WD 130	1.618	0.04	Oct	0.74	0.76	0.51	0.87	0.084	0.53				3.44
Hiclr sprayer, 320gal	60'		0.027	1.00	Nov			0.41	0.78	0.038	0.24				1.44
Hoelon	pint											1.3300	7.44	9.89	9.89
Peak	oz											0.2500	12.00	3.00	3.00
Fertilizer spreader	32'	2WD 130	0.052	1.00	Feb	0.59	0.61	0.22	0.40	0.067	0.43				2.27
Urea 46-0-0	lb											200.0000	0.08	17.00	17.00
21-0-0-24	lbs											50.0000	0.08	4.10	4.10
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu											64.5000	0.15	9.67	9.67
TOTALS						9.31	9.83	8.97	20.10	1.178	7.54			77.82	133.58
INTEREST ON OPERATING CAPITAL															2.99
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															136.58

Table 10.F Estimated costs per
 WRVP - 2003, Logan County
 Delta King 7777

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - private	lb	0.17	120.0000	20.40	_____
CUSTOM WORK					
Custom haul	bu	0.15	64.5000	9.67	_____
FERTILIZER & LIME					
DAP 18-46-0	lb	0.09	100.0000	9.50	_____
Urea 46-0-0	lb	0.08	250.0000	21.25	_____
21-0-0-24	lbs	0.08	50.0000	4.10	_____
HERBICIDES					
Hoelon	pint	7.44	1.3300	9.89	_____
Peak	oz	12.00	0.2500	3.00	_____
OPERATOR LABOR					
Implements	hour	6.40	0.2501	1.60	_____
Tractors	hour	6.40	0.6618	4.23	_____
Self-Propelled Eq.	hour	6.40	0.2664	1.70	_____
DIESEL FUEL					
Tractors	gal	0.85	5.8955	5.01	_____
Self-Propelled Eq.	gal	0.85	1.9609	1.66	_____
REPAIR & MAINTENANCE					
Implements		3.26	1.0000	3.26	_____
Tractors		4.29	1.0000	4.29	_____
Self-Propelled Eq.		4.04	1.0000	4.04	_____
INTEREST ON OP. CAP.		2.99	1.0000	2.99	_____
TOTAL DIRECT EXPENSES				106.64	_____
FIXED EXPENSES					
Implements		6.75	1.0000	6.75	_____
Tractors		9.83	1.0000	9.83	_____
Self-Propelled Eq.		13.34	1.0000	13.34	_____
TOTAL FIXED EXPENSES				29.93	_____
TOTAL SPECIFIED EXPENSES				136.58	_____

Table 11.A Estimated resource use and costs for field operations, per
 WRVP - 2003, Monroe County
 Delta King 9216

OPERATION/ OPERATING INPUT	SIZE/ UNIT	TRACTOR SIZE	PERF RATE	TIMES OVER	MTH	TRACTOR COST		EQUIP COST		ALLOC LABOR		OPERATING INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Disk, light cut	32'	MFWD190	0.067	2.00	Nov	2.33	2.53	0.86	2.01	0.174	1.11				8.86
Cstm ap grd fert dry	acre			1.00	Nov							1.0000	4.00	4.00	4.00
21-33-106-24	lb											100.0000	0.12	12.00	12.00
Grain drill	36'	MFWD190	0.065	1.00	Nov	1.13	1.23	0.87	1.79	0.156	0.99				6.02
Wheat seed - private	lb											150.0000	0.17	25.50	25.50
Roller (wheels)	20'	MFWD190	0.081	1.00	Nov	1.41	1.53	0.05	0.24	0.105	0.67				3.92
Ditcher, rear mount	3'	2WD 150	1.618	0.04	Nov	0.84	0.86	0.51	0.87	0.084	0.53				3.64
Cstm ap air fert	lb			1.00	Feb							125.0000	0.05	6.25	6.25
Urea 46-0-0	lb											125.0000	0.08	10.62	10.62
Cstm ap air fert	lb			1.00	Mar							135.0000	0.05	6.75	6.75
Urea 46-0-0	lb											135.0000	0.08	11.47	11.47
Combine Wheat	25'		0.182	0.00	Jun										
Custom haul	bu												0.15		
TOTALS						5.72	6.17	2.30	4.93	0.519	3.32			76.60	99.06
INTEREST ON OPERATING CAPITAL															2.56
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															101.63

Table 11.F Estimated costs per
 WRVP - 2003, Monroe County
 Delta King 9216

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - private	lb	0.17	150.0000	25.50	_____
CUSTOM WORK					
Cstm ap grd fert dry	acre	4.00	1.0000	4.00	_____
Cstm ap air fert	lb	0.05	260.0000	13.00	_____
FERTILIZER & LIME					
21-33-106-24	lb	0.12	100.0000	12.00	_____
Urea 46-0-0	lb	0.08	260.0000	22.10	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1404	0.89	_____
Tractors	hour	6.40	0.3791	2.42	_____
DIESEL FUEL					
Tractors	gal	0.85	3.5590	3.02	_____
REPAIR & MAINTENANCE					
Implements		2.30	1.0000	2.30	_____
Tractors		2.69	1.0000	2.69	_____
INTEREST ON OP. CAP.		2.56	1.0000	2.56	_____

TOTAL DIRECT EXPENSES				90.52	_____
FIXED EXPENSES					
Implements		4.93	1.0000	4.93	_____
Tractors		6.17	1.0000	6.17	_____

TOTAL FIXED EXPENSES				11.10	_____

TOTAL SPECIFIED EXPENSES				101.63	_____

Table 12.A Estimated resource use and costs for field operations, per
 WRVP - 2003, Yell County
 Sabbe

OPERATION/ OPERATING INPUT	SIZE/ UNIT	TRACTOR SIZE	PERF RATE	TIMES OVER	MTH	TRACTOR COST		EQUIP COST		ALLOC LABOR		OPERATING INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Fertilizer spreader	32'	2WD 130	0.052	1.00	Oct	0.59	0.61	0.22	0.40	0.067	0.43				2.27
Lime SE 1t/5yr+appl	ton											2.2000	5.80	12.76	12.76
Disk, light cut	25'	MFWD 170	0.086	1.00	Oct	1.26	1.29	0.43	1.02	0.111	0.71				4.73
Field cultivator	20.5'	MFWD190	0.068	1.00	Oct	1.18	1.28	0.16	0.35	0.088	0.56				3.56
Grain drill	20'	2WD 130	0.118	1.00	Oct	1.35	1.40	0.82	1.68	0.283	1.81				7.07
Wheat seed - public	lb											150.0000	0.13	19.50	19.50
Ditcher, rear mount	3'	2WD 130	1.618	0.04	Oct	0.74	0.76	0.51	0.87	0.084	0.53				3.44
Fertilizer spreader	32'	2WD 130	0.052	1.00	Feb	0.59	0.61	0.22	0.40	0.067	0.43				2.27
Urea 46-0-0	lb											200.0000	0.08	17.00	17.00
21-0-0-24	lbs											50.0000	0.08	4.10	4.10
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu											61.8000	0.15	9.27	9.27
TOTALS						5.73	5.98	7.69	17.32	0.930	5.95			62.63	105.31
INTEREST ON OPERATING CAPITAL															2.64
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															107.96

Table 12.F Estimated costs per
 WRVP - 2003, Yell County
 Sabbe

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - public	lb	0.13	150.0000	19.50	_____
CUSTOM WORK					
Custom haul	bu	0.15	61.8000	9.27	_____
FERTILIZER & LIME					
Lime SE 1t/5yr+appl	ton	5.80	2.2000	12.76	_____
Urea 46-0-0	lb	0.08	200.0000	17.00	_____
21-0-0-24	lbs	0.08	50.0000	4.10	_____
OPERATOR LABOR					
Implements	hour	6.40	0.2179	1.39	_____
Tractors	hour	6.40	0.4847	3.10	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	3.6685	3.11	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		2.39	1.0000	2.39	_____
Tractors		2.61	1.0000	2.61	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		2.64	1.0000	2.64	_____
TOTAL DIRECT EXPENSES				84.65	_____
FIXED EXPENSES					
Implements		4.75	1.0000	4.75	_____
Tractors		5.98	1.0000	5.98	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				23.31	_____
TOTAL SPECIFIED EXPENSES				107.96	_____