

**2004 Arkansas**



***Wheat  
Research  
Verification  
Program***

**UofA**

**UNIVERSITY OF ARKANSAS  
DIVISION OF AGRICULTURE**

**Cooperative Extension Service**

**U. S. Department of Agriculture  
and County Governments Cooperating**

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## 2003-2004 Wheat Research Verification Program

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## Abstract

The 2003-2004 Wheat Research Verification Program (WRVP) was implemented by the University of Arkansas Cooperative Extension Service on 11 producer fields located in Arkansas, Clay, Crawford, Cross, Greene, Lawrence, Logan, Mississippi, Monroe, Woodruff, and Yell Counties. Frequent rains throughout October delayed planting in the northeast part of the state. 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, grain sorghum, soybean, rice, and summer fallow. Seeding dates ranged from October 2 through November 1, with seeding rates varying from 90 to 180 lbs/ac. Eight fields were drill seeded and three were broadcast seeded. Cooperators in Clay and Woodruff 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 seven fields. Leaf rust appeared early in Monroe County and eventually had to be treated with Propimax. Propimax was also used in Logan County to control powdery mildew, a disease that rarely reaches treatment levels in Arkansas. Damp weather and a sensitive variety led to the rapid development of the disease. Insects were also not a factor throughout the season; however, many fields showed symptoms of barley yellow dwarf virus (BYDV), which is vectored by aphids. Most fields in Arkansas exhibited symptoms of this disease despite no obvious buildup of aphids in the fall or spring. Harvest dates ranged from June 3 through June 27. Average yield for the WRVP was 62.2 bu/ac, compared to a state average yield of 52 bu/ac on 620,000 harvested acres. As with much of the state, test weight was lower than previous years with an average of 57.0 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. Where possible, the actual price the cooperator received for the wheat crop was used to calculate an estimate of total income as a result of seed yield. If a price was not provided, a fixed price of \$3.44/bu was used. 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. Seven of the 11 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 an 18-year period, the WRVP has averaged 12.9 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.

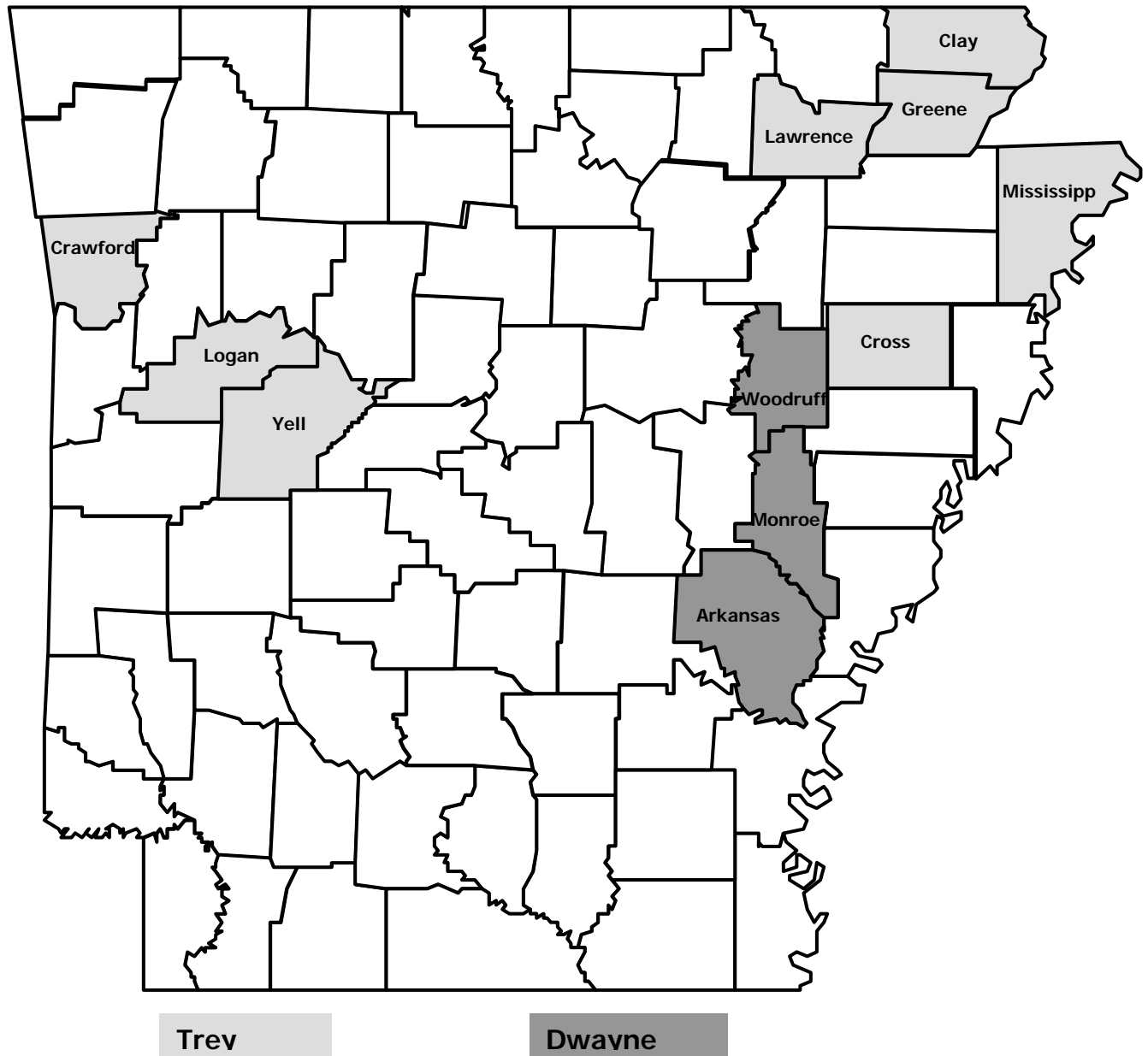
The WRVP program is designed as on-farm demonstrations of all the research-based recommendations required to grow wheat profitably in Arkansas. The WRVP program is part of the University of Arkansas Extension Service's goal of helping wheat producers make economically, agronomically, and environmentally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

## 2003-2004 Wheat Research Verification Program Fields

Eleven farms enrolled a field in the Wheat Research Verification Program in the fall of 2003. The fields were located on commercial wheat farms and ranged in size from 30 to 60 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 the 2003-2004 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 2003. 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. 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 2003-2004 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 43.8 acres ranging from 30 to 60 acres.

Table 1. Variety, Field Size, and Preplant Fertilizer, WRVP Fields 2003-04

County	Variety	Field Size (Acres)	Preplant Fertilizer <sup>1</sup> (lbs/ac)
<b>Arkansas</b>	Delta King 9216	38	18-78-78
Clay	NK Coker 9663	60	30-60-80
<b>Crawford</b>	Delta King 9410	40	23-58-0
<b>Cross</b>	Progeny 166	50	46-78-78
Greene	NK Coker 9152	50	19-58-117, 1.5 tons lime
Lawrence	<b>Croplan 554W</b>	30	27-69-0
Mississippi	Progeny 156	42	<b>44-60-0-24</b>
Logan	Delta King 7777	40	27-69-0
Monroe	Delta King 9216	60	40-36-118
Woodruff	Pioneer 26R24	34	43-55-42
Yell	Sabbe	38	30-0-30

<sup>1</sup>Nitrogen – 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. The *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 2003, reflecting the specific needs of different soil types, geographic regions, and the overall management strategy employed by the cooperators. Three varieties, NK Coker 9152, Progeny 156, and Progeny 166, were planted in the WRVP for the first time.

The preplant fertilizer was applied according to soil test recommendations. Lime was applied in Greene County to increase nutrient availability. The fields in Clay, Lawrence, and Crawford Counties received supplemental fall nitrogen due to a late planting date for their region. 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 silty clay and silt loam soils. The range in soil types reflects the range of soils where wheat could be planted in Arkansas during the fall of 2003.

Good surface drainage is key to profitable wheat production, and each WRVP cooperator was encouraged to provide the best drainage possible. Drainage furrows were constructed at regular intervals to enhance surface drainage in all fields except Crawford County. Weather and soybean harvest prevented the cooperator from establishing drainage furrows; however, average natural surface drainage of the field prevented long, frequent periods of flooding in the field. Fields in Clay and Woodruff 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 2003-04

<b>County</b>	<b>Soil Classification</b>
<b>Arkansas</b>	<b>Stuttgart / Crowley / Grenada silt loam</b>
Clay	Foley silt loam
<b>Crawford</b>	Roellen silty clay loam
<b>Cross</b>	silt loam
Greene	Calloway silt loam
Lawrence	Dundee silt loam
Mississippi	Sharkey silty clay
Logan	Moreland silty clay
Monroe	<b>Grenada / Calhoun / Foley silt loam</b>
Woodruff	Grubbs / Hillemann 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 2003 Soil Test Results, WRVP

<b>County</b>	<b>pH</b>	<b>P</b>	<b>K</b>	<b>Ca</b>	<b>Mg</b>	<b>Na</b>	<b>SO<sub>4</sub>-S</b>	<b>Fe</b>	<b>Mn</b>	<b>Cu</b>	<b>Zn</b>	<b>CEC</b>
<b>Arkansas</b>	6.8	56	141	3745	550	219	89	378	156	2.2	7.4	15
<b>Crawford</b>	6.5	47	410	6480	1287	75	18	257	108	5.8	9.2	25
<b>Cross</b>	7.0	50	211	3057	520	107	24	375	250	2.2	16.9	12
Greene	5.4	62	326	1510	377	33	28	265	415	1.8	4.2	10
Lawrence	6.3	51	221	1551	385	46	20	192	224	1.6	3.3	8
Mississippi	6.3	65	630	7700	1467	68	21	365	73	8.0	15.5	30
Logan	6.0	214	455	2504	472	31	17	211	122	4.1	24.3	12
Monroe	6.9	80	224	3036	588	N/A	39	N/A	N/A	N/A	8.9	8.6
Yell	5.7	104	167	1970	227	34	21	239	121	1.8	6.8	10

Previous crop and tillage operations are listed in Table 4. Two fields were planted following corn and soybean, three following summer fallow, three following rice, and one following grain sorghum. Fields following rice, corn, or grain sorghum generally require more tillage operations due to heavy crop residue. Conventional tillage operations were used for seedbed preparation in most fields with the exception of those in Arkansas and Monroe Counties. These fields were planted using the no-till production system.

**Table 4. Previous Crop and Preplant Tillage Operation for WRVP Fields, 2003-04**

County	Previous Crop	Tillage Operations
<b>Arkansas</b>	<b>Soybean</b>	No-till
Clay	Soybean	Disk, Field Cult., Roller/Bedder
<b>Crawford</b>	Fallow	Disk 2X, Light Disk
<b>Cross</b>	<b>Rice</b>	Disk 4X, Field Cult. 4X, Float
Greene	Fallow	Field Cult., Culti-Mulch
Lawrence	Fallow	Disk, Float 2X, Field Cult.
Mississippi	Grain Sorghum	Disk 3X, Chisel Plow
Logan	Corn	Disk 3X
Monroe	Rice	No-till
Woodruff	Rice	Disk 3X, Roller/Bedder
Yell	Corn	Disk 2X

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. Most fields were planted within the recommended seeding date for their region in 2003. As mentioned previously, fields in Clay, Crawford, and Lawrence Counties were planted in the latter part of these ranges of dates and required supplemental nitrogen fertilizer. Frequent rains prevented planting of the field in St. Francis County; therefore, the second year for that county will be deferred to the 2004-2005 growing season.

**Table 5. Variety, Seeding Date, Rate, Method, WRVP Fields, Fall, 2003.**

County	Variety	Seeding Date	Seeding Rate (lbs/ac)	Seeding Method
<b>Arkansas</b>	Delta King 9216	10/16	120	Drill
Clay	NK Coker 9663	10/29	150	Drill
<b>Crawford</b>	Delta King 9410	10/23	130	Broadcast
<b>Cross</b>	Progeny 166	10/28	180	Broadcast
Greene	NK Coker 9152	10/23	120	Drill
Lawrence	<b>Croplan 554W</b>	11/01	120	Drill
Mississippi	Progeny 156	10/02	90	Drill
Logan	Delta King 7777	10/21	120	Drill

**Table 5 Cont'd.**

<b>County</b>	<b>Variety</b>	<b>Seeding Date</b>	<b>Seeding Rate (lbs/ac)</b>	<b>Seeding Method</b>
Monroe	Delta King 9216	10/09	180	Drill
Woodruff	Pioneer 26R24	10/03	180	Broadcast
Yell	Sabbe	10/15	130	Drill

Seeding rates ranged from 90 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. Eight fields were drill seeded while three fields were broadcast seeded.

Data on spring nitrogen applications are displayed in Table 6 on the next page. Total applied nitrogen ranged from 117.1 lbs/acre on the Cross County field to 138 lbs/acre on the Mississippi County field. The average spring nitrogen rate was 124.9 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 2003-2004 WRVP fields except those located in the Arkansas River Valley (Yell, Crawford, and Logan Counties) received split applications of nitrogen. Three WRVP fields received sulfur with the first spring nitrogen application. The Mississippi 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. Despite adequate soil test sulfur levels, a sulfur deficiency developed in the Yell County field in late March. The field was fertilized with 100 lbs. of ammonium sulfate, causing the deficiency symptoms to disappear within a few days.

Unlike many Arkansas wheat fields in 2004, 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, 2003-04**

County	First Spring Application				Second Application			Total lb N/A
	Date	Source <sup>1</sup>	lb/A <sup>2</sup> N	lb/A <sup>3</sup> S	Date	Source	lb/A N	
<b>Arkansas</b>	2/20	<b>Urea</b>	37	0	3/8	Urea	46	
			<b>3rd Application:</b>		3/23	Urea	46	128.8
Clay	1/28	Urea+DAP+ AS	65.5	12	3/12	Urea	55.2	120.7
<b>Crawford</b>	2/26	Urea+AS	120.9	12	N/A			120.9
<b>Cross</b>	2/20	Urea+DAP	59.6	0	3/12	Urea	57.5	117.1
Greene	2/18	Urea	69	0	3/09	Urea	50.6	119.6
Lawrence	2/21	Urea+AS	67	24	3/13	Urea	50.6	117.6
Mississippi	2/20	Urea	73.6	0	3/10	Urea	64.4	138
Logan	2/20	Urea+AS	120.9	0	N/A			120.9
Monroe	2/23	Urea	69	0	3/17	<b>Urea</b>	57.5	126.5
Woodruff	2/19	Urea	55.2	0	3/10	Urea	64.4	119.6
Yell	2/20	Urea+DAP	124	0	3/29	AS	21	145

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

<sup>2</sup>N = nitrogen , <sup>3</sup>S = 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, 2003-04**

County	Initial Stand (#plants/ft <sup>2</sup> )	Tiller Count (#tillers/plant)	Head Count (#heads/ft <sup>2</sup> )
<b>Arkansas</b>	26.0	5.2	60.6
Clay	35.1	3.4	63.4
<b>Crawford</b>	25.8	6.0	65.6
<b>Cross</b>	26.4	5.1	63.1
Greene	28.6	3.7	73.2
Lawrence	39.0	3.5	61.2
Mississippi	24.8	3.8	57.2
Logan	32.7	3.6	68.3
Monroe	37.3	4.1	68.5
Woodruff	30.3	3.5	63.0
Yell	34.2	2.5	65.8
<b>Avg:</b>	<b>30.9</b>	<b>4.0</b>	<b>64.5</b>

The initial stand averaged 30.9 plants/ft<sup>2</sup> across all 2004 WRVP fields. This figure is higher than that observed in 2003 (27.6 plts/ft<sup>2</sup>). 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 2004 averaged 4.0 tillers/plant. Head counts averaged 64.5 heads/ft<sup>2</sup>.

The 2003-2004 WRVP fields were not immune to insects and disease. A summary of pests and chemicals used is displayed in Table 8. Ryegrass was a major issue in Arkansas fields during 2003-2004. Despite this, only two fields in the WRVP were treated. Others had minimal pressure but didn't require treatment. Five fields in the program were treated for winter broadleaf weeds with spring applications. Diseases were more prevalent in the WRVP than in the previous year. Barley yellow dwarf virus (BYDV) was very common across Arkansas. Several WRVP fields showed symptoms of spring and fall infections, especially those planted early for their region. The effect on yield is difficult to measure, however, as some of these fields yielded well. Both stripe and leaf rust were common in the southwestern and southeastern parts of Arkansas with several fields in these areas treated. Because of careful variety selection and intensive scouting, only one WRVP field in Monroe Co. was treated for rust in 2004. Powdery mildew became an issue in Logan Co. after carefully observing the disease over a few weeks. Due to the varietal sensitivity and progression of the disease, the decision was made to treat. Wet weather was also common in most areas during late April through mid-May. Rainfall during the flowering period increases the probability of Fusarium head blight (head scab). Scab was common in a few WRVP fields in 2004, with the severity increasing in those fields planted following corn. Other diseases were present at minimal levels.

**Table 8. Weed, Disease, and Insect Summary - WRVP, 2003-04**

<b>County</b>	<b>Pest Summary and Chemical Application</b>
<b>Arkansas</b>	1.5 pts/ac 2,4-D applied 2/27 for broadleaf weed control
Clay	None, minimal winter weed pressure
<b>Crawford</b>	1.33 pts/ac Hoelon applied in Nov. 2003 for ryegrass control, 2 pts/ac 2,4-D applied March for buttercup, etc.
<b>Cross</b>	None, scattered buttercups present
Greene	None, minimal ryegrass pressure BYDV very noticeable across field; some head scab present
Lawrence	0.5 oz/ac Finesse applied at planting for ryegrass control
Mississippi	2 pts/ac 2,4-D applied in March for winter weed control Suspected wheat stem maggot damage observed 4 weeks prior to harvest. BYDV noticeable across field.
<b>Logan</b>	0.5 oz/ac Harmony Extra applied in March for henbit control; 4 oz/ac Propimax applied in April for powdery mildew; minimal ryegrass pressure; Head scab very noticeable prior to harvest.
Monroe	4 oz/ac Propimax applied in April for leaf rust
Woodruff	3 oz/ac Sencor applied Fall 2003 for broadleaf weed control
Yell	Field border treated with 2,4-D; Head scab and BYDV very noticeable across the field.

The harvest date, grain yield, test weight, and pounds of nitrogen per bushel are shown in Table 9. Despite unfavorable weather in some areas, all WRVP fields were harvested in June. The Crawford County field was the only field that wasn't harvested timely due to wet weather. Although test weight suffered, overall yield was not adversely affected. Yields were also below the state average in Clay, Mississippi, and Woodruff Counties. The later planting date and cut areas in the field are the only explanations for the lower yield in Clay Co. A late-season hailstorm in addition to insect damage hindered yield of the Mississippi Co. field. Woodruff Co. received a large amount of rainfall throughout the growing season. Most areas of Arkansas experienced heavy and frequent rainfall throughout the wheat growing season. Despite this, the 2003-2004 WRVP fields achieved a respectable average yield of 62.2 bu/ac. Although this average was 1.5 bu/ac less than last year's WRVP, it remains higher than the state average yield 52 bu/ac reported by the USDA. Five of the 11 WRVP fields yielded near, at, or above the 70-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 52.5 to 59.0 with an average of 57.0 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 1.63 lbs N/bu to 3.18 lbs N/bu and averaged 2.08 lbs N/bu of wheat.

**Table 9. Harvest Date, Grain Yield, Test Weight for WRVP Fields, 2003- 04**

County	Harvest Date	Test Weight (lb/bu)	Yield (bu/ac @ 13.5%)	Pounds N/bu
<b>Arkansas</b>	6/08	58.0	77.2	1.67
Clay	6/05	58.8	53.5	2.26
<b>Crawford</b>	6/27	52.5	51.5	2.35
<b>Cross</b>	6/03	58.1	68.0	1.72
Greene	6/08	58.0	73.2	1.63
Lawrence	6/14	55.7	62.6	1.88
Mississippi	6/06	57.8	42.7	3.18
Logan	6/10	55.6	69.9	1.73
Monroe	6/04	59.0	73.0	1.73
Woodruff	6/04	57.0	52.0	2.30
Yell	6/03	56.7	60.6	2.39
	<b>Average:</b>	<b>57.0</b>	<b>62.2</b>	<b>2.08</b>
	<b>State Yield Average:</b>		<b>52.0</b>	

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 2004 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 11 fields in 11 counties, operating costs, and net returns above total specified costs assuming a 25 percent land rent were estimated for each field. While some WRVP fields are not in a crop-sharing situation, it is better to assume all fields have crop share costs for comparison. Break-even prices needed to cover total specified costs are also presented. Please keep in mind that overall net returns may not necessarily reflect the actual amount received for the wheat crop, but is an estimate considering all possible expenses related to wheat production.

### **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 2003 Production Costs in Arkansas*.

Specified operating costs for the 11 WRVP fields ranged from \$86.83 per acre to \$143.57 per acre. The average over all fields was \$112.37.

### **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 \$18.28 per acre to \$35.42 per acre with an average of \$23.81 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 \$108.67 per acre to \$178.99 per acre with an average of \$136.19.

Break-even prices need to cover total specified costs ranged from \$1.74 per bushel to \$3.12 per bushel. Over the 11 fields an average break-even price of \$2.25 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. Unless the cooperator provided a price for which the wheat crop was received, a fixed price of \$3.44/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 fields in Crawford, Cross, Mississippi, and Woodruff Counties. Net returns ranged from (\$23.07) per acre to \$64.61 per acre. The average over all fields was \$24.26 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 \$53.98 per acre. These costs ranged from \$41.57 to \$81.68 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 Greene and Cross Counties. Lime was applied to the Greene Co. field, increasing the overall fertilization costs. Cross County was planted following rice, as were the fields in Monroe and Woodruff Counties. Wheat following rice requires high amounts of fall-applied N, P, and K. Fields in Arkansas, Clay, and Yell Counties were more than likely fertilized in the fall with the following soybean crop in mind. Seed cost ranged from \$7.68 to \$30.60 per acre, averaging \$20.26 per acre over the 11 fields. Preplant tillage was another notable specified operating cost for some fields. It ranged from \$0 to \$42.79 per acre with an average of \$14.04 per acre.

**Table 10. Economic Summary of Wheat Research Verification Fields in 2003-2004.**

County	Yield <sup>1</sup> (bu/ac)	Total Income <sup>2</sup> (\$/ac)	Total Specified Operating Costs <sup>3</sup> (\$/ac)	Break-even Operating <sup>4</sup> (\$/bu)	Total Specified Operating and Ownership Costs <sup>5</sup> (\$/ac)	Break-even Price <sup>6</sup> (\$/bu)	Break-even Price with Land Costs <sup>7</sup> (\$/bu)	Returns Above Total Specified Costs <sup>8</sup> (\$/ac)
Arkansas	77.0	\$264.88	\$115.77	\$1.50	\$134.05	\$1.74	\$2.32	\$64.61
Clay	53.5	\$203.30	\$94.52	\$1.77	\$116.32	\$2.17	\$2.90	\$36.16
Crawford	51.5	\$162.23	\$106.58	\$2.07	\$131.96	\$2.56	\$3.42	(\$10.29)
Cross	68.0	\$233.92	\$143.57	\$2.11	\$178.99	\$2.63	\$3.51	(\$3.55)
Greene	73.2	\$251.81	\$128.79	\$1.76	\$147.56	\$2.02	\$2.69	\$41.30
Lawrence	62.6	\$203.45	\$117.86	\$1.88	\$142.56	\$2.28	\$3.04	\$10.03
Logan	69.9	\$240.46	\$114.46	\$1.64	\$141.09	\$2.02	\$2.69	\$39.25
Mississippi	42.7	\$146.89	\$106.49	\$2.49	\$133.24	\$3.12	\$4.16	(\$23.07)
Monroe	73.0	\$251.12	\$109.14	\$1.50	\$127.42	\$1.75	\$2.33	\$60.92
Woodruff	52.0	\$178.88	\$112.11	\$2.16	\$136.22	\$2.62	\$3.49	(\$2.06)
Yell	60.6	\$216.34	\$86.83	\$1.43	\$108.67	\$1.79	\$2.39	\$53.59
<b>Average:</b>	<b>62.2</b>	<b>\$213.93</b>	<b>\$112.37</b>	<b>\$1.85</b>	<b>\$136.19</b>	<b>\$2.25</b>	<b>\$2.99</b>	<b>\$24.26</b>

<sup>1</sup>Yields adjusted to 13.5% moisture.

<sup>2</sup>Based upon state average wheat price for June delivery, \$3.44/bu. {Except (Clay - \$3.80), (Crawford - \$3.15), (Lawrence - \$3.25), & (Yell - \$3.57) as reported by cooperator}

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

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

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

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

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

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

**Table 11. Various Specified Operating Costs of the Wheat Verification Fields in 2003-2004.**

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	\$62.95	\$20.40	\$0.00	\$0.00	\$6.61
Clay	3	\$11.00	\$58.34	\$7.68	\$0.00	\$0.00	\$0.00
Crawford	2	\$9.66	\$41.57	\$22.10	\$0.00	\$0.00	\$20.81
Cross	9	\$42.79	\$62.32	\$30.60	\$0.00	\$0.00	\$0.00
Greene	1	\$3.08	\$81.68	\$20.40	\$0.00	\$0.00	\$0.00
Lawrence	4	\$19.67	\$53.30	\$20.40	\$0.00	\$0.00	\$10.56
Logan	3	\$14.43	\$44.30	\$20.40	\$0.00	\$14.14	\$6.93
Mississippi	2	\$16.20	\$52.85	\$15.30	\$0.00	\$0.00	\$6.61
Monroe	0	\$0.00	\$46.33	\$23.40	\$0.00	\$14.14	\$0.00
Woodruff	3	\$14.68	\$50.04	\$30.60	\$0.00	\$0.00	\$4.62
Yell	2	\$8.93	\$49.02	\$11.70	\$0.00	\$0.00	\$0.66
<b>Average:</b>	<b>3</b>	<b>\$14.04</b>	<b>\$53.98</b>	<b>\$20.26</b>	<b>\$0.00</b>	<b>\$2.57</b>	<b>\$5.16</b>

## **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 - 2004 Arkansas County

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'	MFWD 225	0.052	1.00	Oct	1.04	1.10	0.22	0.40	0.067	0.43				3.21
DAP 18-46-0	lb											100.0000	0.09	9.50	9.50
Phosphate 0-46-0	lb											70.0000	0.10	7.00	7.00
0-0-60	lb											65.0000	0.07	4.94	4.94
Grain drill	20'	MFWD 225	0.118	1.00	Oct	2.37	2.50	0.82	1.68	0.283	1.81				9.20
Wheat seed - private	lb											120.0000	0.17	20.40	20.40
Cstm ap air fert	acre			1.00	Feb							1.0000	4.50	4.50	4.50
Urea 46%	lb											80.0000	0.08	6.80	6.80
Cstm ap air herbicid	acre			1.00	Feb							1.0000	4.50	4.50	4.50
2,4-D Amine	pint											1.5000	1.41	2.11	2.11
Cstm ap air fert	lb			1.00	Mar							100.0000	0.05	5.00	5.00
Urea 46%	lb											100.0000	0.08	8.50	8.50
Cstm ap air fert	lb			1.00	Mar							100.0000	0.05	5.00	5.00
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											77.0000	0.15	11.55	11.55
TOTALS						3.41	3.61	6.34	14.66	0.578	3.70			98.30	130.04
INTEREST ON OPERATING CAPITAL															4.01
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															134.05

Table 1.F Estimated costs per  
WRVP - 2004 Arkansas County

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					
Cstm ap air fert	acre	4.50	1.0000	4.50	_____
Cstm ap air herbicid	acre	4.50	1.0000	4.50	_____
Cstm ap air fert	lb	0.05	200.0000	10.00	_____
Custom haul	bu	0.15	77.0000	11.55	_____
FERTILIZER & LIME					
DAP 18-46-0	lb	0.09	100.0000	9.50	_____
Phosphate 0-46-0	lb	0.10	70.0000	7.00	_____
0-0-60	lb	0.07	65.0000	4.94	_____
Urea 46%	lb	0.08	280.0000	23.80	_____
HERBICIDES					
2,4-D Amine	pint	1.41	1.5000	2.11	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1638	1.04	_____
Tractors	hour	6.40	0.1870	1.19	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	2.1654	1.84	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		1.04	1.0000	1.04	_____
Tractors		1.57	1.0000	1.57	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		4.01	1.0000	4.01	_____
TOTAL DIRECT EXPENSES				115.77	_____
FIXED EXPENSES					
Implements		2.09	1.0000	2.09	_____
Tractors		3.61	1.0000	3.61	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				18.27	_____
TOTAL SPECIFIED EXPENSES				134.05	_____



Table 2.A Estimated resource use and costs for field operations, per  
WRVP - 2004 Clay County

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	32.33'	4WD 300	0.067	1.00	Oct	1.55	1.34	0.45	1.05	0.087	0.55					4.96
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
Cstm ap grd fert dry	acre			1.00	Oct							1.0000	4.00	4.00		4.00
DAP 18-46-0	lb											150.0000	0.09	14.25		14.25
0-0-60	lb											67.0000	0.07	5.09		5.09
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
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 - saved	lb.											96.0000	0.08	7.68		7.68
Cstm ap grd fert dry	acre			1.00	Jan							1.0000	4.00	4.00		4.00
36-9-0-3	lbs											200.0000	0.07	14.80		14.80
Cstm ap air fert	lb			1.00	Mar							120.0000	0.05	6.00		6.00
Urea 46-0-0	lb											120.0000	0.08	10.20		10.20
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45					19.31
Custom haul	bu											53.5000	0.15	8.02		8.02
TOTALS						5.54	5.62	6.97	16.18	0.722	4.62				74.04	112.99
INTEREST ON OPERATING CAPITAL																3.33
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																116.32



Table 2.F Estimated costs per  
WRVP - 2004 Clay County

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat Seed - saved	lb.	0.08	96.0000	7.68	_____
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	_____
Custom haul	bu	0.15	53.5000	8.02	_____
FERTILIZER & LIME					
DAP 18-46-0	lb	0.09	150.0000	14.25	_____
0-0-60	lb	0.07	67.0000	5.09	_____
36-9-0-3	lbs	0.07	200.0000	14.80	_____
Urea 46-0-0	lb	0.08	120.0000	10.20	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1860	1.19	_____
Tractors	hour	6.40	0.3091	1.97	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	3.6290	3.08	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		1.68	1.0000	1.68	_____
Tractors		2.45	1.0000	2.45	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		3.33	1.0000	3.33	_____
TOTAL DIRECT EXPENSES				94.52	_____
FIXED EXPENSES					
Implements		3.61	1.0000	3.61	_____
Tractors		5.62	1.0000	5.62	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				21.80	_____
TOTAL SPECIFIED EXPENSES				116.32	_____

Table 3.A Estimated resource use and costs for field operations, per  
WRVP - 2004 Crawford County

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, medium cut	32.33'	MFWD 225	0.067	1.00	Sep	1.34	1.42	0.45	1.05	0.087	0.55				4.83
Fertilizer spreader	32'	MFWD 150	0.052	1.00	Oct	0.73	0.81	0.22	0.40	0.067	0.43				2.60
DAP 18-46-0	lb											125.0000	0.09	11.87	11.87
Disk, medium cut	32.33'	MFWD 225	0.067	1.00	Oct	1.34	1.42	0.45	1.05	0.087	0.55				4.83
Fertilizer spreader	32'	MFWD 150	0.052	1.00	Oct	0.73	0.81	0.22	0.40	0.067	0.43				2.60
Wheat seed - private	lb											130.0000	0.17	22.10	22.10
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
Cstm ap air herbicid	acre			1.00	Nov							1.0000	4.50	4.50	4.50
Hoelon	pint											1.3300	7.44	9.89	9.89
Fertilizer spreader	32'	MFWD 150	0.052	1.00	Feb	0.73	0.81	0.22	0.40	0.067	0.43				2.60
21-0-0-24	lbs											50.0000	0.08	4.10	4.10
Urea 46%	lb											240.0000	0.08	20.40	20.40
Sprayer, broadcast	26.67'	MFWD 150	0.095	1.00	Mar	1.33	1.48	0.16	0.36	0.152	0.97				4.31
2,4-D Amine	pint											1.5000	1.41	2.11	2.11
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu											51.5000	0.15	7.72	7.72
TOTALS						7.77	8.11	7.47	17.26	0.843	5.39			82.71	128.73
INTEREST ON OPERATING CAPITAL															3.22
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															131.96

Table 3.F Estimated costs per  
WRVP - 2004 Crawford County

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - private	lb	0.17	130.0000	22.10	_____
CUSTOM WORK					
Cstm ap air herbicid	acre	4.50	1.0000	4.50	_____
Custom haul	bu	0.15	51.5000	7.72	_____
FERTILIZER & LIME					
DAP 18-46-0	lb	0.09	125.0000	11.87	_____
21-0-0-24	lbs	0.08	50.0000	4.10	_____
Urea 46%	lb	0.08	240.0000	20.40	_____
HERBICIDES					
Hoelon	pint	7.44	1.3300	9.89	_____
2,4-D Amine	pint	1.41	1.5000	2.11	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1189	0.76	_____
Tractors	hour	6.40	0.4972	3.18	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	4.9763	4.22	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		2.18	1.0000	2.18	_____
Tractors		3.54	1.0000	3.54	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		3.22	1.0000	3.22	_____
TOTAL DIRECT EXPENSES				106.58	_____
FIXED EXPENSES					
Implements		4.69	1.0000	4.69	_____
Tractors		8.11	1.0000	8.11	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				25.37	_____
TOTAL SPECIFIED EXPENSES				131.96	_____

Table 4.A Estimated resource use and costs for field operations, per  
WRVP - 2004 Cross County

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	25'	MFWD 225	0.086	4.00	Oct	6.91	7.31	1.75	4.09	0.447	2.86				22.93
Field cultivator	31.5'	4WD 400	0.044	4.00	Oct	5.31	4.40	0.90	1.90	0.228	1.46				13.98
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
Urea 46-0-0	lb											100.0000	0.08	8.50	8.50
0-30-30	lb											150.0000	0.08	13.35	13.35
Cstm seed grd brdcst acre				1.00	Oct							1.0000	4.50	4.50	4.50
Wheat seed - private	lb											180.0000	0.17	30.60	30.60
Field cultivator	31.5'	Track400	0.044	1.00	Oct	1.47	1.42	0.22	0.47	0.057	0.36				3.96
Ditcher, rear mount	3'	MFWD 225	1.618	0.01	Oct	0.32	0.34	0.12	0.21	0.021	0.13				1.15
Cstm ap air fert	lb			1.00	Feb							110.0000	0.05	5.50	5.50
Urea 46-0-0	lb											110.0000	0.08	9.35	9.35
DAP 18-46-0	lb											50.0000	0.09	4.75	4.75
Cstm ap air fert	lb			1.00	Mar							125.0000	0.05	6.25	6.25
Urea 46-0-0	lb											125.0000	0.08	10.62	10.62
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu											68.0000	0.15	10.20	10.20
TOTALS						16.24	15.82	8.39	19.59	1.124	7.19			107.62	174.87
INTEREST ON OPERATING CAPITAL															4.12
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															178.99

Table 4.F Estimated costs per  
WRVP - 2004 Cross County

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - private	lb	0.17	180.0000	30.60	_____
CUSTOM WORK					
Cstm ap grd fert dry	acre	4.00	1.0000	4.00	_____
Cstm seed grd brdcst	acre	4.50	1.0000	4.50	_____
Cstm ap air fert	lb	0.05	235.0000	11.75	_____
Custom haul	bu	0.15	68.0000	10.20	_____
FERTILIZER & LIME					
Urea 46-0-0	lb	0.08	335.0000	28.47	_____
0-30-30	lb	0.08	150.0000	13.35	_____
DAP 18-46-0	lb	0.09	50.0000	4.75	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1380	0.88	_____
Tractors	hour	6.40	0.7591	4.85	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	10.9695	9.32	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		3.09	1.0000	3.09	_____
Tractors		6.91	1.0000	6.91	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		4.12	1.0000	4.12	_____
TOTAL DIRECT EXPENSES				143.57	_____
FIXED EXPENSES					
Implements		7.02	1.0000	7.02	_____
Tractors		15.82	1.0000	15.82	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				35.41	_____
TOTAL SPECIFIED EXPENSES				178.99	_____

Table 5.A Estimated resource use and costs for field operations, per  
WRVP - 2004 Greene County

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'	4WD 300	0.047	1.00	Sep	1.09	0.94	0.21	0.45	0.061	0.39					3.08
Cstm ap grd fert dry acre				1.00	Oct							1.0000	4.00	4.00		4.00
Lime NE 1t/5yr+appl ton												1.5000	5.80	8.70		8.70
Cstm ap grd fert dry acre				1.00	Oct							1.0000	4.00	4.00		4.00
20-20-20 lbs												325.0000	0.08	27.62		27.62
Grain drill	24'	2WD 130	0.098	1.00	Oct	1.12	1.16	0.80	1.66	0.235	1.50					6.26
Wheat seed - private lb												120.0000	0.17	20.40		20.40
Ditcher, rear mount	3'	2WD 130	1.618	0.01	Oct	0.18	0.19	0.12	0.21	0.021	0.13					0.86
Incorprovator	25.5'	MFWD190	0.063	1.00	Oct	1.09	1.19	0.17	0.37	0.081	0.52					3.36
Cstm ap air fert	lb			1.00	Feb							150.0000	0.05	7.50		7.50
Urea 46% lb												150.0000	0.08	12.75		12.75
Cstm ap air fert	lb			1.00	Mar							110.0000	0.05	5.50		5.50
Urea 46% lb												110.0000	0.08	9.35		9.35
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45					19.31
Custom haul bu												73.2000	0.15	10.98		10.98
TOTALS						3.49	3.49	6.62	15.27	0.626	4.01				110.80	143.70
INTEREST ON OPERATING CAPITAL																3.86
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																147.56

Table 5.F Estimated costs per  
WRVP - 2004 Greene County

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					
Cstm ap grd fert dry	acre	4.00	2.0000	8.00	_____
Cstm ap air fert	lb	0.05	260.0000	13.00	_____
Custom haul	bu	0.15	73.2000	10.98	_____
FERTILIZER & LIME					
Lime NE 1t/5yr+appl	ton	5.80	1.5000	8.70	_____
20-20-20	lbs	0.08	325.0000	27.62	_____
Urea 46%	lb	0.08	260.0000	22.10	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1526	0.97	_____
Tractors	hour	6.40	0.2465	1.57	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	2.3156	1.96	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		1.32	1.0000	1.32	_____
Tractors		1.52	1.0000	1.52	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		3.86	1.0000	3.86	_____
TOTAL DIRECT EXPENSES				128.79	_____
FIXED EXPENSES					
Implements		2.70	1.0000	2.70	_____
Tractors		3.49	1.0000	3.49	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				18.76	_____
TOTAL SPECIFIED EXPENSES				147.56	_____

Table 6.A Estimated resource use and costs for field operations, per  
WRVP - 2004 Lawrence County

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, medium cut	29.25'	2WD 190	0.074	1.00	Aug	1.21	1.23	0.45	1.06	0.096	0.61				4.58
Land float	16'x 56'	2WD 190	0.138	2.00	Aug	4.53	4.60	0.18	0.71	0.358	2.29				12.33
Cstm ap grd fert dry acre				1.00	Oct							1.0000	4.00	4.00	4.00
DAP 18-46-0	lb											150.0000	0.09	14.25	14.25
Field cultivator	29.58'	MFWD190	0.047	1.00	Oct	0.81	0.89	0.21	0.45	0.061	0.39				2.76
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											120.0000	0.17	20.40	20.40
Cstm ap grd herbicid acre				1.00	Nov							1.0000	4.00	4.00	4.00
Finesse	oz											0.5000	13.12	6.56	6.56
Cstm ap air fert	acre			1.00	Feb							1.0000	4.50	4.50	4.50
Ammon Sulfate 21.2%	lb											100.0000	0.08	8.20	8.20
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 46-0-0	lb											110.0000	0.08	9.35	9.35
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu											62.6000	0.15	9.39	9.39
TOTALS						7.87	8.10	7.02	16.58	0.899	5.75			93.65	138.99
INTEREST ON OPERATING CAPITAL															3.56
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															142.56



Table 6.F Estimated costs per  
WRVP - 2004 Lawrence County

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					
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	acre	4.50	2.0000	9.00	_____
Custom haul	bu	0.15	62.6000	9.39	_____
FERTILIZER & LIME					
DAP 18-46-0	lb	0.09	150.0000	14.25	_____
Ammon Sulfate 21.2%	lb	0.08	100.0000	8.20	_____
Urea 46%	lb	0.08	100.0000	8.50	_____
Urea 46-0-0	lb	0.08	110.0000	9.35	_____
HERBICIDES					
Finesse	oz	13.12	0.5000	6.56	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1639	1.04	_____
Tractors	hour	6.40	0.5082	3.25	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	5.0945	4.33	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		1.72	1.0000	1.72	_____
Tractors		3.54	1.0000	3.54	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		3.56	1.0000	3.56	_____
				-----	
TOTAL DIRECT EXPENSES				117.86	_____
FIXED EXPENSES					
Implements		4.01	1.0000	4.01	_____
Tractors		8.10	1.0000	8.10	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
				-----	
TOTAL FIXED EXPENSES				24.69	_____
				-----	
TOTAL SPECIFIED EXPENSES				142.56	_____

Table 7.A Estimated resource use and costs for field operations, per  
WRVP - 2004 Logan County

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	32.33'	MFWD 225	0.067	2.00	Sep	2.69	2.84	0.90	2.10	0.174	1.11				9.67
Fertilizer spreader	32'	MFWD 150	0.052	1.00	Oct	0.73	0.81	0.22	0.40	0.067	0.43				2.60
DAP 18-46-0	lb											150.0000	0.09	14.25	14.25
Disk, light cut	32'	MFWD 225	0.067	1.00	Oct	1.34	1.42	0.43	1.00	0.087	0.55				4.76
Grain drill	36'	2WD 190	0.065	1.00	Oct	1.06	1.08	0.87	1.79	0.156	0.99				5.81
Wheat seed - private	lb											120.0000	0.17	20.40	20.40
Ditcher, rear mount	3'	2WD 130	1.618	0.01	Oct	0.18	0.19	0.12	0.21	0.021	0.13				0.86
Fertilizer spreader	32'	MFWD190	0.052	1.00	Feb	0.90	0.98	0.22	0.40	0.067	0.43				2.95
Urea 46%	lb											240.0000	0.08	20.40	20.40
21-0-0-24	lbs											50.0000	0.08	4.10	4.10
Hiclr sprayer, 320gal	60'		0.027	1.00	Mar			0.41	0.78	0.038	0.24				1.44
Harmony Extra	oz											0.5000	11.55	5.77	5.77
Cstm ap air fungicid	acre			1.00	Mar							1.0000	4.50	4.50	4.50
Propimax EC	pt											0.2500	38.56	9.64	9.64
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu											69.9000	0.15	10.48	10.48
TOTALS						6.93	7.34	8.50	19.28	0.840	5.37			89.55	136.99
INTEREST ON OPERATING CAPITAL															4.10
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															141.09

Table 7.F Estimated costs per  
WRVP - 2004 Logan County

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					
Cstm ap air fungicid	acre	4.50	1.0000	4.50	_____
Custom haul	bu	0.15	69.9000	10.48	_____
FERTILIZER & LIME					
DAP 18-46-0	lb	0.09	150.0000	14.25	_____
Urea 46%	lb	0.08	240.0000	20.40	_____
21-0-0-24	lbs	0.08	50.0000	4.10	_____
FUNGICIDE & SEED TR.					
Propimax EC	pt	38.56	0.2500	9.64	_____
HERBICIDES					
Harmony Extra	oz	11.55	0.5000	5.77	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1487	0.95	_____
Tractors	hour	6.40	0.4247	2.71	_____
Self-Propelled Eq.	hour	6.40	0.2664	1.70	_____
DIESEL FUEL					
Tractors	gal	0.85	4.3784	3.72	_____
Self-Propelled Eq.	gal	0.85	1.9609	1.66	_____
REPAIR & MAINTENANCE					
Implements		2.79	1.0000	2.79	_____
Tractors		3.21	1.0000	3.21	_____
Self-Propelled Eq.		4.04	1.0000	4.04	_____
INTEREST ON OP. CAP.		4.10	1.0000	4.10	_____
TOTAL DIRECT EXPENSES				114.46	_____
FIXED EXPENSES					
Implements		5.94	1.0000	5.94	_____
Tractors		7.34	1.0000	7.34	_____
Self-Propelled Eq.		13.34	1.0000	13.34	_____
TOTAL FIXED EXPENSES				26.63	_____
TOTAL SPECIFIED EXPENSES				141.09	_____

Table 8.A Estimated resource use and costs for field operations, per  
WRVP - 2004 Mississippi County

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	23.5'	MFWD190	0.091	2.00	Sep	3.17	3.44	0.90	2.10	0.236	1.51				11.13
Chisel plow	21'	MFWD 225	0.092	1.00	Sep	1.85	1.95	0.17	0.33	0.119	0.76				5.07
Cstm ap grd fert dry acre				1.00	Oct							1.0000	4.00	4.00	4.00
DAP 18-46-0	lb											130.0000	0.09	12.35	12.35
Disk, light cut	21.75'	MFWD190	0.099	1.00	Oct	1.72	1.87	0.43	1.02	0.128	0.82				5.88
Grain drill	36'	MFWD190	0.065	1.00	Oct	1.13	1.23	0.87	1.79	0.156	0.99				6.02
Wheat seed - private	lb											90.0000	0.17	15.30	15.30
Ditcher, rear mount	3'	2WD 130	1.618	0.01	Oct	0.18	0.19	0.12	0.21	0.021	0.13				0.86
Cstm ap grd fert dry acre				1.00	Feb							1.0000	4.00	4.00	4.00
Urea 46%	lb											160.0000	0.08	13.60	13.60
Cstm ap air herbicid	acre			1.00	Feb							1.0000	4.50	4.50	4.50
2,4-D Amine	pint											1.5000	1.41	2.11	2.11
Cstm ap air fert	lb			1.00	Mar							140.0000	0.05	7.00	7.00
Urea 46%	lb											140.0000	0.08	11.90	11.90
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu											42.7000	0.15	6.40	6.40
TOTALS						8.06	8.70	7.80	18.04	0.889	5.69			81.17	129.47
INTEREST ON OPERATING CAPITAL															3.76
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															133.24

Table 8.F Estimated costs per  
WRVP - 2004 Mississippi County

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - private	lb	0.17	90.0000	15.30	_____
CUSTOM WORK					
Cstm ap grd fert dry	acre	4.00	2.0000	8.00	_____
Cstm ap air herbicid	acre	4.50	1.0000	4.50	_____
Cstm ap air fert	lb	0.05	140.0000	7.00	_____
Custom haul	bu	0.15	42.7000	6.40	_____
FERTILIZER & LIME					
DAP 18-46-0	lb	0.09	130.0000	12.35	_____
Urea 46%	lb	0.08	300.0000	25.50	_____
HERBICIDES					
2,4-D Amine	pint	1.41	1.5000	2.11	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1623	1.03	_____
Tractors	hour	6.40	0.4995	3.19	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	5.0098	4.25	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		2.51	1.0000	2.51	_____
Tractors		3.80	1.0000	3.80	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		3.76	1.0000	3.76	_____
TOTAL DIRECT EXPENSES				106.49	_____
FIXED EXPENSES					
Implements		5.47	1.0000	5.47	_____
Tractors		8.70	1.0000	8.70	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				26.74	_____
TOTAL SPECIFIED EXPENSES				133.24	_____

Table 9.A Estimated resource use and costs for field operations, per  
WRVP - 2004 Monroe County

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'	MFWD 225	0.052	1.00	Oct	1.04	1.10	0.22	0.40	0.067	0.43				3.21
21-33-106-24	lb											50.0000	0.12	6.00	6.00
Grain drill	20'	MFWD 225	0.118	1.00	Oct	2.37	2.50	0.82	1.68	0.283	1.81				9.20
Wheat seed - public	lb											180.0000	0.13	23.40	23.40
Cstm ap air fert	lb			1.00	Feb							150.0000	0.05	7.50	7.50
Urea 46%	lb											150.0000	0.08	12.75	12.75
Cstm ap air fert	lb			1.00	Mar							125.0000	0.05	6.25	6.25
Urea 46%	lb											125.0000	0.08	10.62	10.62
Cstm ap air fungicid	acre			1.00	Apr							1.0000	4.50	4.50	4.50
Propimax EC	pt											0.2500	38.56	9.64	9.64
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu											73.0000	0.15	10.95	10.95
TOTALS						3.41	3.61	6.34	14.66	0.578	3.70			91.61	123.35
INTEREST ON OPERATING CAPITAL															4.06
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															127.42

Table 9.F Estimated costs per  
WRVP - 2004 Monroe County

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - public	lb	0.13	180.0000	23.40	_____
CUSTOM WORK					
Cstm ap air fert	lb	0.05	275.0000	13.75	_____
Cstm ap air fungicid	acre	4.50	1.0000	4.50	_____
Custom haul	bu	0.15	73.0000	10.95	_____
FERTILIZER & LIME					
21-33-106-24	lb	0.12	50.0000	6.00	_____
Urea 46%	lb	0.08	275.0000	23.37	_____
FUNGICIDE & SEED TR.					
Propimax EC	pt	38.56	0.2500	9.64	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1638	1.04	_____
Tractors	hour	6.40	0.1870	1.19	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	2.1654	1.84	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		1.04	1.0000	1.04	_____
Tractors		1.57	1.0000	1.57	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		4.06	1.0000	4.06	_____
TOTAL DIRECT EXPENSES				109.14	_____
FIXED EXPENSES					
Implements		2.09	1.0000	2.09	_____
Tractors		3.61	1.0000	3.61	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				18.27	_____
TOTAL SPECIFIED EXPENSES				127.42	_____

Table 10.A Estimated resource use and costs for field operations, per  
WRVP - 2004 Woodruff County

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'	4WD 300	0.067	3.00	Sep	4.66	4.03	1.29	3.02	0.261	1.67				14.68
Fertilizer spreader	32'	2WD 150	0.052	1.00	Oct	0.67	0.69	0.22	0.40	0.067	0.43				2.44
18-18-27	lb											125.0000	0.10	12.50	12.50
Fertilizer spreader	32'	2WD 150	0.052	1.00	Oct	0.67	0.69	0.22	0.40	0.067	0.43				2.44
Wheat seed - private	lb											180.0000	0.17	30.60	30.60
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
Hiclr sprayer, 320gal	60'		0.027	1.00	Oct			0.41	0.78	0.038	0.24				1.44
Sencor (Lexone)	75DF lb											0.1875	17.00	3.18	3.18
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	lb			1.00	Mar							140.0000	0.05	7.00	7.00
Urea 46%	lb											140.0000	0.08	11.90	11.90
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu											52.0000	0.15	7.80	7.80
TOTALS						7.06	6.53	7.64	17.57	0.730	4.67			89.18	132.68
INTEREST ON OPERATING CAPITAL															3.53
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															136.22



Table 10.F Estimated costs per  
WRVP - 2004 Woodruff County

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - private	lb	0.17	180.0000	30.60	_____
CUSTOM WORK					
Cstm ap air fert	lb	0.05	260.0000	13.00	_____
Custom haul	bu	0.15	52.0000	7.80	_____
FERTILIZER & LIME					
18-18-27	lb	0.10	125.0000	12.50	_____
Urea 46%	lb	0.08	260.0000	22.10	_____
HERBICIDES					
Sencor (Lexone) 75DF	lb	17.00	0.1875	3.18	_____
OPERATOR LABOR					
Implements	hour	6.40	0.0714	0.45	_____
Tractors	hour	6.40	0.3927	2.51	_____
Self-Propelled Eq.	hour	6.40	0.2664	1.70	_____
DIESEL FUEL					
Tractors	gal	0.85	4.9593	4.21	_____
Self-Propelled Eq.	gal	0.85	1.9609	1.66	_____
REPAIR & MAINTENANCE					
Implements		1.93	1.0000	1.93	_____
Tractors		2.85	1.0000	2.85	_____
Self-Propelled Eq.		4.04	1.0000	4.04	_____
INTEREST ON OP. CAP.		3.53	1.0000	3.53	_____
TOTAL DIRECT EXPENSES				112.11	_____
FIXED EXPENSES					
Implements		4.22	1.0000	4.22	_____
Tractors		6.53	1.0000	6.53	_____
Self-Propelled Eq.		13.34	1.0000	13.34	_____
TOTAL FIXED EXPENSES				24.10	_____
TOTAL SPECIFIED EXPENSES				136.22	_____

Table 11.A Estimated resource use and costs for field operations, per  
WRVP - 2004 Yell County

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, medium cut	32.33'	MFWD190	0.067	1.00	Sep	1.16	1.26	0.45	1.05	0.087	0.55				4.50
Fertilizer spreader	32'	2WD 75	0.052	1.00	Oct	0.34	0.28	0.22	0.40	0.067	0.43				1.68
Urea 46-0-0	lb											43.0000	0.08	3.65	3.65
Potash 0-0-60	lb											17.0000	0.07	1.29	1.29
Disk, light cut	32'	MFWD190	0.067	1.00	Oct	1.16	1.26	0.43	1.00	0.087	0.55				4.43
Grain drill	36'	MFWD 150	0.065	1.00	Oct	0.91	1.01	0.87	1.79	0.156	0.99				5.58
Wheat seed - public	lb											90.0000	0.13	11.70	11.70
Ditcher, rear mount	3'	2WD 130	1.618	0.01	Oct	0.18	0.19	0.12	0.21	0.021	0.13				0.86
Fertilizer spreader	32'	2WD 75	0.052	1.00	Feb	0.34	0.28	0.22	0.40	0.067	0.43				1.68
Urea 46%	lb											240.0000	0.08	20.40	20.40
DAP 18-46-0	lb											75.0000	0.09	7.12	7.12
Sprayer, broadcast	30'	2WD 75	0.085	0.10	Feb	0.05	0.04	0.01	0.03	0.013	0.08				0.24
2,4-D Amine	pint											0.3000	1.41	0.42	0.42
Cstm ap air fert	lb			1.00	Mar							100.0000	0.05	5.00	5.00
Ammon Sulfate 21.2%	lb											100.0000	0.08	8.20	8.20
Combine Wheat	25'		0.182	1.00	Jun			5.29	12.56	0.227	1.45				19.31
Custom haul	bu											60.6000	0.15	9.09	9.09
TOTALS						4.16	4.35	7.64	17.49	0.727	4.65			66.88	105.20
INTEREST ON OPERATING CAPITAL															3.47
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															108.67

Table 11.F Estimated costs per  
WRVP - 2004 Yell County

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CROP SEED					
Wheat seed - public	lb	0.13	90.0000	11.70	_____
CUSTOM WORK					
Cstm ap air fert	lb	0.05	100.0000	5.00	_____
Custom haul	bu	0.15	60.6000	9.09	_____
FERTILIZER & LIME					
Urea 46-0-0	lb	0.08	43.0000	3.65	_____
Potash 0-0-60	lb	0.07	17.0000	1.29	_____
Urea 46%	lb	0.08	240.0000	20.40	_____
DAP 18-46-0	lb	0.09	75.0000	7.12	_____
Ammon Sulfate 21.2%	lb	0.08	100.0000	8.20	_____
HERBICIDES					
2,4-D Amine	pint	1.41	0.3000	0.42	_____
OPERATOR LABOR					
Implements	hour	6.40	0.1395	0.89	_____
Tractors	hour	6.40	0.3604	2.30	_____
Self-Propelled Eq.	hour	6.40	0.2275	1.45	_____
DIESEL FUEL					
Tractors	gal	0.85	2.5889	2.20	_____
Self-Propelled Eq.	gal	0.85	1.8746	1.59	_____
REPAIR & MAINTENANCE					
Implements		2.35	1.0000	2.35	_____
Tractors		1.96	1.0000	1.96	_____
Self-Propelled Eq.		3.70	1.0000	3.70	_____
INTEREST ON OP. CAP.		3.47	1.0000	3.47	_____
TOTAL DIRECT EXPENSES				86.83	_____
FIXED EXPENSES					
Implements		4.92	1.0000	4.92	_____
Tractors		4.35	1.0000	4.35	_____
Self-Propelled Eq.		12.56	1.0000	12.56	_____
TOTAL FIXED EXPENSES				21.84	_____
TOTAL SPECIFIED EXPENSES				108.67	_____