

2006 Arkansas



UofA UNIVERSITY OF ARKANSAS
DIVISION OF AGRICULTURE
Cooperative Extension Service

U.S. Department of Agriculture and County Governments Cooperating

The Wheat Research Verification Program is funded by Arkansas wheat producers through checkoff monies administered by the Arkansas Wheat Promotion Board.

Table of Contents

	Page
Authors and Acknowledgments.....	2
Abstract.....	3
Introduction.....	4
WRVP Methodology.....	5
Results and Discussion.....	7
Table 1. Variety, Field Size, and Preplant Fertilizer, WRVP Fields, 2006.....	7
Table 2. General Soils Information, WRVP Fields, 2006.....	8
Table 3. Fall 2005 Soil Test Results.....	9
Table 4. Previous Crop and Preplant Tillage Operations for WRVP Fields, 2006.....	9
Table 5. Variety, Seeding Date, Rate, and Method, WRVP Fields, Fall, 2005.....	10
Table 6. Spring Nitrogen, WRVP Fields, 2006.....	11
Table 7. Weed, Disease, and Insect Summary, WRVP Fields, 2006.....	12
Table 8. Harvest Date, Grain Yield, Test Weight for WRVP Fields and Pounds of Nitrogen per Bushel,2006.....	13
Economic Analysis.....	14
Table 9. Economic Summary of WRVP Fields, 2006.....	17
Table 10. Various Specified Operating Costs of WRVP Fields, 2006.....	18
Appendix, Economic Analysis By County.....	19

2006 Wheat Research Verification Program

Conducted by:

Mr. Jack 'Trey' Reaper III, WRVP Coordinator
Mr. Matt L. Cordell WRVP Coordinator
Dr. Jason P. Kelley, Extension Agronomist
Dr. Rob Hogan, Extension Economist

<u>County Agents</u>	<u>Cooperators</u>	<u>County</u>
Mr. Van Dawson	Mr. Brooks Davis	Arkansas
Ms. Carly Prislovsky	Mr. Trent and Terry Dabbs	Arkansas
Mr. Gus Wilson	Mr. Jack Shell	Ashley
Mr. John McFarland/ Mr. Jason Osborn	Mr. Fred Bollinger	Crittenden
Mr. Richard Klerk	Mr. Barrett Hunter	Cross
Mr. Wes Kirkpatrick	Mr. Eric Wright	Desha
Mr. Jason Rauls	Mr. Dock Nelson	Drew
Mr. Mark Brawner	Mr. Barkley Threlkeld	Greene
Mr. Randy Chlapecka	Mr. Bubba Sink	Jackson
Mr. Herb Ginn	Mr. Mike Wheelis	Lawrence
Mr. Craig Allen	Mr. Tim Murphy	Poinsett
Mr. Mike Andrews	Mr. David Smith	Randolph

Acknowledgements:

Agricultural Experiment Station, Fayetteville

Dr. Gene Milus, Department of Plant Pathology
Dr. Robert Bacon, Department of Crop, Soil, and Environmental Sciences

Extension Service Specialists

Dr. Rick Cartwright, Extension Plant Pathologist
Mr. Cliff Coker, Extension Plant Pathologist
Dr. Leo Espinoza, Extension Soils Specialist
Dr. Dennis Gardisser, Extension Agricultural Engineer
Dr. Gus Lorenz, Extension Entomologist
Dr. Terry Kirkpatrick, Extension Plant Pathologist
Mr. Phil Tacker, Extension Agricultural Engineer

Special acknowledgement to the members of the Arkansas Wheat Promotion Board:

Mr. Morris Crandall	Mr. Terry Dabbs	Mr. David Jessup
Mr. Cal McCastlain	Mr. Jackie Prince	Mr. Tim Smith
Mr. Blake Swears	Mr. William Turner	Mr. Barry Walls

Abstract

The 2006 Wheat Research Verification Program (WRVP) was implemented by the University of Arkansas Cooperative Extension Service on 12 producer fields located in Arkansas, Ashley, Crittenden, Cross, Desha, Drew, Greene, Jackson, Lawrence, Poinsett, and Randolph Counties. This is an increase from 7 fields in the program in 2005. This increase in WRVP fields is in direct relation to the increased wheat acreage in Arkansas this past year. Cooperators from the counties above selected 9 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 sandy loam to clay, with previous crops of corn, soybean, and rice, as well as one field left fallow prior to wheat planting. Seeding dates ranged from October 4 through November 11, with seeding rates varying from 113 to 165 lbs/ac. Nine fields were drill seeded and three were broadcast seeded. Cooperators in Arkansas, Ashley, Desha, and Randolph Counties utilized a bedded seedbed to provide multiple drain furrows that became critical in periods of heavy precipitation. Eight of the 12 fields in the WRVP were treated with herbicides. Leaf and stripe were a decreased problem with only two fields treated in 2006. Insects were also not a factor throughout the season; however, many fields showed the typical minor symptoms of barley yellow dwarf virus (BYDV), which is vectored by aphids. Some fields experienced wet weather occasionally, but dry weather prevailed for much of the winter and throughout the spring months. This allowed for an earlier than usual harvest in most fields. Harvest dates ranged from May 20 through June 9. Average yield for the WRVP was 73.1 bu/ac, compared to a state average yield of 61 bu/ac on 300,000 harvested acres. Yields ranged from 52.7 bu/ac in Jackson County to 93.7 bu/ac in Greene County. Dry conditions during harvest improved test weight, and the average test weight was 59.6 lb/bu this year. 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. Returns were calculated using the cooperator's sales price or the average June price reported by the Arkansas Market News Service from terminals at Wynne and Dermott. 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 20-year period, the WRVP has averaged 13.3 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.

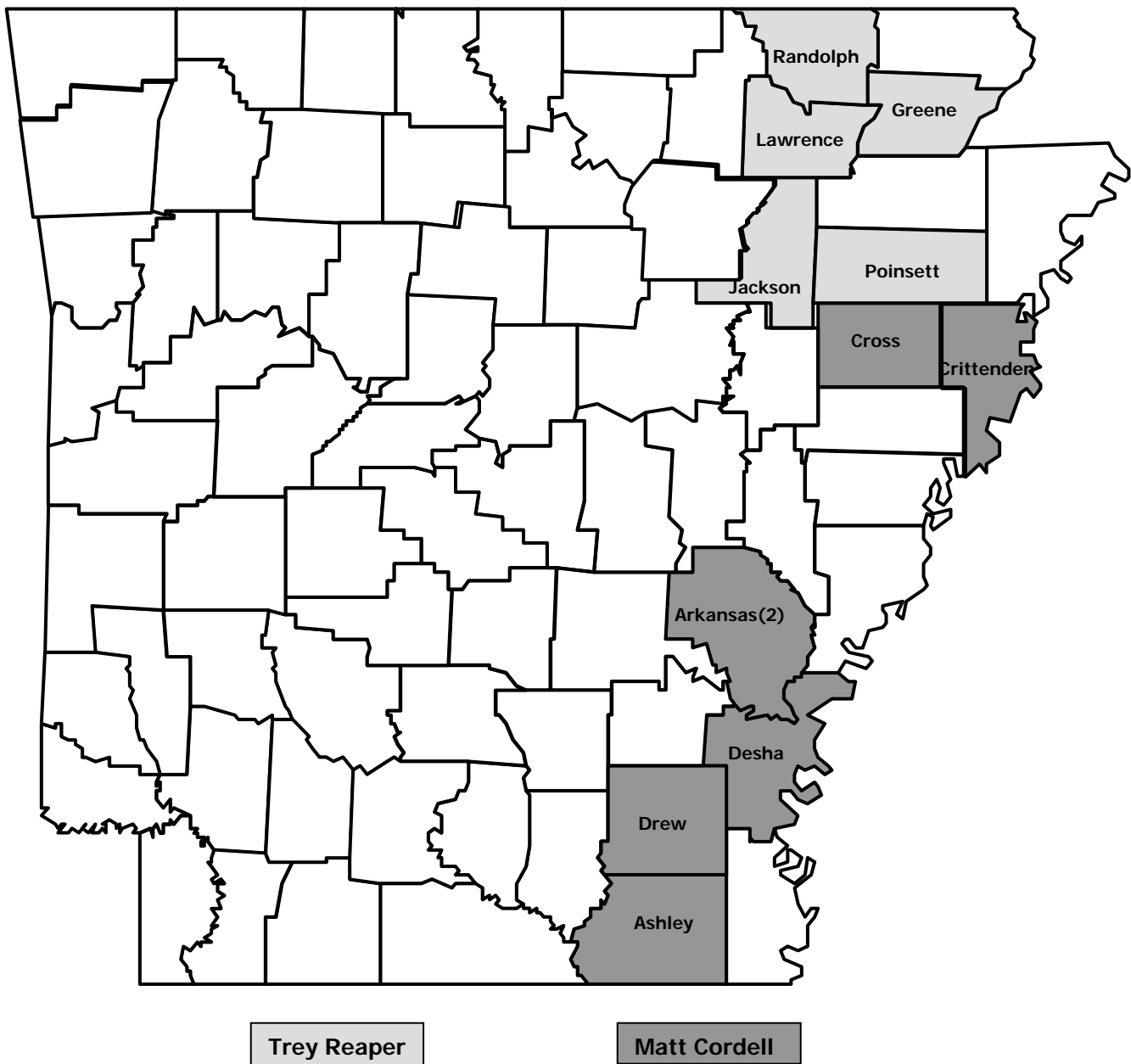
The WRVP program is designed as on-farm demonstrations of all the research-based recommendations required to grow wheat profitably in Arkansas. The WRVP program is part of the University of Arkansas Extension Service's goal of helping wheat producers make economically, agronomically, and environmentally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

2006 Wheat Research Verification Program Fields

Twelve farms enrolled a field in the Wheat Research Verification Program in the fall of 2005. The fields were located on commercial wheat farms and ranged in size from 20 to 130 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 2006 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 2005. 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.

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 55.2 acres ranging from 20 to 130 acres.

Table 1. Variety, Field Size, and Preplant Fertilizer, WRVP Fields 2006

County	Variety	Field Size (Acres)	Preplant Fertilizer ¹ (lbs/ac)
Arkansas 1	AgriPro/Coker Beretta	46	0-60-0
Arkansas 2	Delta King 9410	20	27-69-90
Ashley	Hornbeck 3266	125	0-50-60
Crittenden	Delta King 9410	40	None
Cross	AgriPro/Coker Beretta	60	27-69-0
Desha	Terral LA841	30	0-40-80
Drew	Delta King 9410	29	None
Greene	AgriPro/Coker Natchez	35	27-69-0
Jackson	Delta Grow 4500	130	46-46-47 as 1 ton/ac chicken litter
Lawrence	FFR 8302	38	0-78-78
Poinsett	Armor 3330	75	40-100-100
Randolph	Croplan 8302	34	40-80-80

¹Nitrogen – Phosphorus – Potassium.

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. Initially, 15 WRVP fields were planned for the 2006 growing season. Unfortunately, a very dry summer and fall made for less than adequate soil moisture at planting time in much of the state. After a tough summer crop, an increase in prices of nitrogen fertilizer also lessened the interest in planting wheat. For those fields that were planted, 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. Nine varieties were planted in the WRVP in the fall of 2005, reflecting the specific needs of different soil types, geographic regions, and the overall management strategy employed by the cooperators.

Table 2 shows the soil classification for each WRVP field. These fields consisted of clay, sand, 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 2005.

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. Fields in Arkansas, Ashley, Desha, and Randolph were planted on raised 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 2006

County	Soil Classification
Arkansas 1	Stuttgart silt loam, DeWitt silt loam
Arkansas 2	Rilla silt loam
Ashley	Calloway silt loam
Crittenden	Sharkey clay
Cross	Calloway silt loam
Desha	Herbert silt loam, Rilla silt loam
Drew	Perry clay
Greene	Calhoun silt loam
Jackson	Bosket fine sandy loam, Dundee silt loam, and Amagon silt loam
Lawrence	Crowley silt loam
Poinsett	Calloway silt loam
Randolph	Broseley loamy fine sand

The soil analysis results for each field are displayed in Table 3. These data were used to establish fall fertilization recommendations. Fields in Arkansas, Cross, Greene, Jackson, Poinsett, and Randolph Counties received supplemental fall nitrogen due to previous crops of either corn or rice. 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 potassium.

Table 3. Fall 2005 Soil Test Results, WRVP

County	pH	P	K	Ca	Mg	Na	SO ₄ -S	Fe	Mn	Cu	Zn	CEC
Arkansas 1	6.7	50	251	2668	226	62	26	357	117	2.3	5.2	10
Arkansas 2	6.3	78	136	1257	232	79	25	377	87	1.9	3.7	7
Ashley	6.5	29	127	2363	270	73	17	315	118	2.4	4.8	10
Cross	5.7	23	216	2220	366	39	22	239	388	1.4	13.1	12
Desha	6.8	78	145	2029	233	77	23	356	147	1.6	7.6	9
Drew	5.3	15	695	5081	2338	242	32	290	199	2.9	7.3	30
Greene	6.1	62	236	2288	279	28	25	295	351	2	6.5	11
Jackson	5.7	76	189	1314	159	35	18	266	348	1.9	9	8.5
Lawrence	7.5	32	124	3815	711	149	22	249	441	1.8	4.5	15
Poinsett	6.8	30	128	2219	412	68	34	268	258	3.5	21	10
Randolph	6.4	54	103	1552	210	43	18	248	115	1.4	9.5	7

Previous crop and tillage operations are listed in Table 4. Eight fields were planted following soybean, two following corn, one following rice, and one that was fallow the previous growing season. Fields following rice or corn 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 fields in Arkansas, Ashley, and Cross County, which were planted in a no-till system.

Table 4. Previous Crop and Preplant Tillage Operation for WRVP Fields, 2006.

County	Previous Crop	Tillage Operations
Arkansas 1	Fallow	Disk, Field Cultivate (2X), Float
Arkansas 2	Rice	Mow
Ashley	Soybean	None
Crittenenden	Soybean	Field Cultivate
Cross	Soybean	None
Desha	Soybean	Hip
Drew	Soybean	Disk (2X)
Greene	Soybean	Disk, Float, Field Cultivate (2X)
Jackson	Corn	V-Ripped, Disk, Field Cultivate
Lawrence	Soybean	Disk (2X)
Poinsett	Soybean	Disk, Float, Field Cultivate
Randolph	Corn	Disk, Field Cultivate, Bedder/Roller

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 2005.

Table 5. Variety, Seeding Date, Rate, Method, WRVP Fields, Fall, 2005.

County	Variety	Seeding Date	Emerg. Date	Seeding Rate (lbs/ac)	Seeding Method
Arkansas 1	AgriPro/Coker Beretta	12-Oct	22-Oct	120	Broadcast
Arkansas 2	Delta King 9410	21-Oct	31-Oct	165	Drill
Ashley	Hornbeck 3266	10-Oct	15-Oct	120	Drill
Crittenden	Delta King 9410	2-Nov	25-Nov	135	Drill
Cross	AgriPro/Coker Beretta	3-Nov	8-Nov	150	Drill
Desha	Terral LA841	28-Oct	7-Nov	120	Broadcast
Drew	Delta King 9410	18-Oct	9-Nov	120	Drill
Greene	AgriPro/Coker Natchez	11-Nov	25-Nov	120	Drill
Jackson	Delta Grow 4500	4-Oct	20-Oct	113	Drill
Lawrence	FFR 8302	17-Oct	23-Oct	130	Drill
Poinsett	Armor 3330	22-Oct	13-Nov	130	Drill
Randolph	Croplan 8302	13-Oct	22-Oct	150	Broadcast on 40" beds

Seeding rates ranged from 113 to 165 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 three fields were broadcast seeded.

Data on spring nitrogen applications are displayed in Table 6 on the next page. Total applied nitrogen ranged from 112 lbs/acre on the Jackson County field to 133 lbs/acre in Crittenden County. The average spring nitrogen rate was 121.1 lbs/acre.

Spring nitrogen application rates are based on soil texture, yield potential, and previous crop. On clay soils recommended spring nitrogen is 140 lb N/ ac, and 160-170 lb N/ ac when yield potential is greater than 70 bu/ ac.

On loamy soils with good drainage, 110-120 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 not pose as a problem on WRVP fields in the spring. Spring nitrogen was applied in a timely manner in WRVP fields as well as the majority of wheat fields in Arkansas in 2006.

All 2006 WRVP fields received split applications of nitrogen, with Greene County receiving a three-way split application. Nine of the twelve WRVP fields received sulfur with the first spring nitrogen application. Sulfur was applied due to low soil test sulfur levels (Table 3).

Table 6. Spring Nitrogen, WRVP Fields, 2006.

County	First Application		Second Application		Total lb N/A
	Date	Source	Date	Source	
Arkansas 1	28-Feb	100# urea + 50# A.S.	13-Mar	140# urea	121
Arkansas 2	28-Feb	75# urea + 75# A.S.	10-Mar	140# urea	115
Ashley	15-Feb	110# urea + 40# A.S.	15-Mar	125# urea	117
Crittenenden	28-Feb	75# urea + 75# A.S.	13-Mar	180# urea	133
Cross	27-Feb	70-45-45	25-Mar	75# urea + 75# A.S.	121
Desha	28-Feb	100# urea + 50# A.S.	15-Mar	140# urea	121
Drew	28-Feb	100# urea + 130# DAP	16-Mar	130# urea	129
Greene	27-Jan	80# urea	28-Feb 3rd App.: 17-Mar	80# urea + 50# A.S. 3rd App.: 80# urea	121
Jackson	8-Feb	120# urea + 50# A.S.	6-Mar	100# urea	112
Lawrence	9-Feb	127# urea + 50# A.S.	7-Mar	100# urea	115
Poinsett	28-Feb	125# urea + 50# A.S.	31-Mar	125# urea	125
Randolph	9-Feb	135# urea + 50# A.S.	6-Mar	110# urea	123

The 2006 WRVP fields were not immune to weeds and disease. A summary of pests and chemicals used is displayed in Table 7. Ryegrass was not a major problem in 2005. The Jackson County field was the only one treated with Osprey for ryegrass and other winter weeds. The new chemical provided good control of these pests. Cross and Arkansas WRVP fields were treated with Hoelon to control ryegrass around field borders. Others had minimal pressure but didn't require treatment. Six fields in the program were treated for winter broadleaf weeds with spring applications. Unlike the previous year, stripe and leaf rusts were not an issue across the state in 2006. Stripe rust was not present in any WRVP field in 2006. Leaf rust however was observed in several WRVP fields, but in most cases the infection was late in the growing season and did not warrant an application of fungicide. Leaf rust and powdery mildew were a problem earlier in the season in Jackson and Poinsett Counties and Tilt was applied at 4 oz/A. Barley yellow dwarf virus was observed in wheat and oat fields across the state, but the disease was noticed at only minimal or normal levels in most WRVP fields in 2006. Geese damage was minor this year for most WRVP fields; however, above-average damage did occur in Arkansas(2) County. Wheat typically recovers from geese damage, and this field was no exception.

Table 7. Weed, Disease, and Insect Summary - WRVP, 2006

County	Pest Summary and Chemical Application
Arkansas 1	2 pts/ac Hoelon (border) for ryegrass
Arkansas 2	1.5 pts/ac 2,4-D for cutleaf evening primrose
Ashley	None
Crittentenden	1.5 pts/ac 2,4-D + 0.5 oz/ac Harmony Ex. for wild garlic and misc. broadleaf weeds
Cross	2 pts/ac Hoelon (border) for ryegrass
Desha	None
Drew	None
Greene	1.5 pts/ac 2,4-D for buttercups
Jackson	4.75 oz/ac Osprey (border) for ryegrass 0.5 oz/ac Harmony Extra for winter broadleaf weeds 4 oz/ac Tilt for leaf rust & powdery mildew
Lawrence	None
Poinsett	0.5 oz/ac Harmony Ex. (border) for winter broadleaf weeds 4 oz/ac Tilt for leaf rust & powdery mildew
Randolph	0.33 oz/ac Express for vetch

The harvest date, grain yield, test weight, and pounds of nitrogen per bushel are shown in Table 8. A hot, dry spring allowed for a timely harvest of all WRVP fields. Conditions were dry for most of the growing season, and this led to a record yielding wheat crop in Arkansas. 2006 WRVP fields achieved a respectable average yield of

73.1 bu/ac. This average was 2.6 bu/ac more than last year's WRVP, and remains higher than the predicted state average yield 61 bu/ac reported by the USDA. The Arkansas(1) and Greene Co. fields exceeded our yield expectations and averaged over 90 bu/ac each. Only the Jackson and Randolph Co. fields yielded below the predicted state average yield. The poor yield of these fields could be from several factors including freeze damage, effects of Barley Yellow Dwarf Virus, and possibly negative effects from lack of rainfall.

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 57.0 to 61.8 with an average of 59.6 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 1.29 lbs N/bu to 2.13 lbs N/bu and averaged 1.7 lb N/bu of wheat.

Table 8. Harvest Date, Grain Yield, Test Weight for WRVP Fields, 2006

County	Harvest Date	Test Weight (lb/bu)	Yield (bu/ac @ 13.5%)	Pounds N/bu
Arkansas 1	27-May	61.8	90.2	1.34
Arkansas 2	8-Jun	59.8	65.9	1.75
Ashley	20-May	60.2	85.0	1.38
Crittenenden	9-Jun		62.5	2.13
Cross	6-Jun	57.0	70.6	1.71
Desha	24-May	59.0	75.5	1.60
Drew	8-Jun	58.2	64.6	2.00
Greene	6-Jun	60.4	93.7	1.29
Jackson	4-Jun	57.9	52.7	2.13
Lawrence	8-Jun	60.4	75.4	1.53
Poinsett	9-Jun	59.4	80.7	1.55
Randolph	7-Jun	61.0	60.4	2.04
WRVP Average:				73.1
Predicted State Yield Average:				61.0

ECONOMIC ANALYSIS: 2006 WRVP

This section provides information on the development of estimated production costs for the 2006 Wheat Research Verification Program. Records of field operations on each field provided the basis for estimating these costs (see Appendix). The field records were compiled by participating county Extension faculty and the coordinators of the Wheat Research Verification Program. Presented in this analysis are specified operating and ownership costs for each trial. Not included are overhead labor costs, other overhead costs, insurance costs, and opportunity costs for management and unpaid family labor. Assuming a 25% share rent for each field incorporates land costs.

Direct Expenses

Direct expenses are those expenditures that would generally require annual cash outlays and would be included on an annual operating loan application. Actual quantities of all operating inputs as reported by the cooperators were used in this analysis. The prices used for these inputs were, for the most part, the same as those reported in the "2006 Cost of Production Estimates" published by the Cooperative Extension Service. If an input were used that did not have a published price, a price quote for that input was obtained from a supply dealer.

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

Direct expenses for the twelve WRVP fields range from \$106.49 per acre for Drew County to \$152.65 per acre for Greene County and averaged \$133.45 per acre. Direct expenses per bushel ranged from \$1.50 in Ashley County to \$2.44 in Jackson County and averaged \$1.90 per bushel.

Fixed Expenses

The fixed expenses category in Table 9 represents the cost of owning and using farm equipment. These costs can vary greatly from one farm to another depending on the farm's size, management skills, and annual use. The fixed expenses presented in Table 9 include depreciation and interest. These costs are based on estimated initial cost and expected useful life of machinery similar to that used by the producer. Ownership costs were allocated on a per acre basis using estimated performance rates and hours of annual use. Calculations were made by using a budget generator based

on parameters and standards published in the American Society of Agricultural Engineers 1993 Handbook.

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

Fixed expenses for the twelve fields ranged from \$15.85 per acre for Desha County to \$25.77 per acre for Greene County and averaged \$20.62 per acre. High fixed expenses can be the result of numerous trips across the field.

Using custom operators rather than owning equipment replaces fixed expenses with direct expenses (custom work). Cooperators with high fixed expenses but low custom work expenses probably used high-clearance sprayers for insecticide, herbicide, and/or fungicide treatments instead of using custom aerial application.

Total Specified Expenses

Since fixed costs can be substituted for direct cost and vice-versa, total specified expense is calculated to give the true picture of expenses. Not included in the ***total specified expenses*** in Table 9 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 expenses per acre for the twelve fields ranged from \$127.24 for Drew County to \$178.42 for Greene County and averaged \$154.07. Total specified expenses per bushel ranged from \$1.73 in Ashley County to \$2.87 in Jackson County and averaged \$2.20 for the twelve fields.

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 (25%) crop share rental arrangement with no cost sharing was assumed. 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 consistent measure to be used across all trials. There are many other tenancy arrangements that are in use.

Table 9 presents the cost of production per bushel after 25 percent of the yield is given to the landlord. These break-even prices ranged from \$2.30 per bushel in Ashley County to \$3.83 per bushel in Jackson County. The average cost of production for the twelve fields was \$2.93 per bushel.

Returns per Acre

Break-even prices, such as those displayed in Table 9, are very useful information, especially for making marketing decisions. However, having the lowest break-even price does not guarantee the highest returns. The total yield available for sale still plays a key role in determining returns per acre. Per acre returns for each of the twelve fields are presented in Table 10. Government payments and other sources of farm income, which contribute to overall farm income, have been ignored in this table. The wheat price used in Table 10 is either the cooperator's sales price or the average June price reported by the Arkansas Market News Service from terminals at Wynne and Dermott.

The most profitable field, Poinsett County had net returns of \$91.20 per acre. The least profitable field was Jackson County losing \$12.62 per acre. The objective in any one year is to receive sufficient sales to at least cover direct expenses and rent. This allows the business to repay operating debts and farm again next year. Across several years, per acre returns over total expenses and rent in Table 10 need to be positive for the farm business to remain solvent.

The general trend in Table 10 shows that the higher yielding fields resulted in higher net returns. Arkansas, Ashley, Greene, and Poinsett Counties were the higher yielding counties and had higher net returns. Jackson County had the least yield and suffered the most negative net return.

Table 9. Estimated costs per acre and breakeven prices: 2006 Wheat Research Verification Program.

	Arkansas 1	Arkansas 2	Ashley	Crittenden	Cross	Desha	Drew	Greene	Jackson	Lawrence	Poinsett	Randolph	W. Average	Total Acres
Acres	46	23	120.1	40	53.6	30	24	31	130	38	75	34		644.7
Direct Exp.	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	
Custom Work	36.20	27.02	26.50	32.38	21.95	25.83	21.94	37.25	20.66	26.35	29.10	22.67	26.43	
Fertilizer ¹	54.17	68.74	60.25	57.47	67.87	63.33	49.81	58.57	57.27	54.53	63.99	61.37	59.81	
Herbicides	8.76	3.15	3.58	9.51	3.35			3.93			0.64	1.84	2.63	
Fungicide									10.23		10.23			
Crop Seed	19.20	26.40	19.20	21.60	24.00	24.00	14.40	23.87	18.08	21.12	20.80	24.00	20.60	
Operator Labor	3.19	2.43	2.10	1.96	1.79	2.14	3.04	3.81	3.12	2.66	3.14	3.69	2.72	
Hand Labor		2.18	1.20	0.51	0.96	0.51	0.77	0.51	0.85	0.64	0.51	1.73	0.85	
Diesel Fuel ²	11.46	6.47	6.59	6.38	5.32	6.26	7.75	12.39	9.55	6.76	10.32	9.56	8.32	
Repairs & Maint.	4.77	5.52	4.91	4.07	4.52	3.68	5.34	5.67	5.35	4.81	5.15	5.97	5.00	
Interest on Op. Cap.	4.17	3.65	3.52	4.64	3.60	3.61	3.44	6.65	3.50	3.39	4.03	3.48	3.84	
Total Direct Exp. ³	141.92	145.56	127.85	138.52	133.36	129.36	106.49	152.65	128.61	120.26	147.91	134.31	133.45	
Total Fixed Exp. ⁴	22.81	18.64	18.78	17.72	16.52	15.85	20.75	25.77	22.74	18.50	22.96	23.89	20.62	
Total Specified Exp. ⁵	164.73	164.20	146.63	156.24	149.88	145.21	127.24	178.42	151.35	138.76	170.87	158.20	154.07	
Per Acre Yield ⁶	90.2	65.9	85.0	62.5	70.6	75.5	64.6	93.7	52.7	75.4	80.7	60.4	72.4	
Breakeven Price Over:														
Direct Expenses ⁷	\$1.57	\$2.21	\$1.50	\$2.22	\$1.89	\$1.71	\$1.65	\$1.63	\$2.44	\$1.59	\$1.83	\$2.22	\$1.90	
Total Expenses ⁸	\$1.83	\$2.49	\$1.73	\$2.50	\$2.12	\$1.92	\$1.97	\$1.90	\$2.87	\$1.84	\$2.12	\$2.62	\$2.20	
Total Expenses and Rent ⁹	\$2.44	\$3.32	\$2.30	\$3.33	\$2.83	\$2.56	\$2.63	\$2.54	\$3.83	\$2.45	\$2.82	\$3.49	\$2.93	

¹Only one half of all P & K is charged to wheat crop. The other half is charged to soybeans.

²Price of diesel was taken to be \$2.20 per gallon.

³Specified out-of-pocket expenses, such as seed, fertilizer, herbicides, interest on all machinery and irrigation equipment, etc.

⁴Total ownership costs which include charges for depreciation, taxes, and insurance.

⁵Total specified operating costs plus ownership costs.

⁶Yields adjusted to 13.5%.

⁷Price per bushel required by the farmer to equal total specified operating costs. Does not include land, overhead, risk, and management cost.

⁸Price per bushel required by the farmer to equal total specified operating and ownership costs. Does not include land, risk, and management costs.

Table 10. Estimated returns per acre: 2006 Wheat Research Verification Program

	Arkansas 1	Arkansas 2	Ashley	Crittenden	Cross	Desha	Drew	Greene	Jackson	Lawrence	Poinsett	Randolph
Acres	46	23	120.1	40	53.6	30	24	31	130	38	75	34
Per Acre Yield ¹	90.2	65.9	85.0	62.5	70.6	75.5	64.6	93.7	52.7	75.4	80.7	60.4
Sales Price ²	\$3.38	\$3.88	\$3.45	\$3.60	\$3.38	\$3.70	\$3.38	\$3.96	\$3.51	\$3.38	\$4.33	\$3.38
Sales	\$304.61	\$255.69	\$293.25	\$225.00	\$238.63	\$279.35	\$218.16	\$371.05	\$184.98	\$254.85	\$349.43	\$204.15
Total Direct Exp. ³	\$141.92	\$145.56	\$127.85	\$138.52	\$133.36	\$129.36	\$106.49	\$152.65	\$128.61	\$120.26	\$147.91	\$134.31
Returns over Dir. Exp.	\$162.69	\$110.13	\$165.40	\$86.48	\$105.27	\$149.99	\$111.67	\$218.40	\$56.37	\$134.59	\$201.52	\$69.84
Total Specified Exp. ⁴	\$164.73	\$164.20	\$146.63	\$156.24	\$149.88	\$145.21	\$127.24	\$178.42	\$151.35	\$138.76	\$170.87	\$158.20
Returns over Total Exp.	\$139.88	\$91.49	\$146.62	\$68.76	\$88.75	\$134.14	\$90.92	\$192.63	\$33.63	\$116.09	\$178.56	\$45.95
Rent (25% share) ⁵	\$76.15	\$63.92	\$73.31	\$56.25	\$59.66	\$69.84	\$54.54	\$92.76	\$46.24	\$63.71	\$87.36	\$51.04
Returns over Total Exp. and Rent	\$63.73	\$27.57	\$73.31	\$12.51	\$29.09	\$64.30	\$36.38	\$99.87	-\$12.62	\$52.38	\$91.20	-\$5.09

¹Yields adjusted to 13.5%.

²Sales Price is the greater of average Arkansas market price July through June and CCC Loan Price.

³Specified out-of-pocket expenses, such as seed, fertilizer, herbicides, interest on all machinery and irrigation equipment, etc.

⁴Total specified operating costs plus ownership costs which include charges for depreciation, taxes, and insurance.

⁵A 25% crop share rent was assumed as a land charge for a renter situation. No cost sharing was assumed.

Appendix

Economic Analysis by County

Estimated operating expenses and crop input costs

Table 1.A Estimated resource use and costs for field operations, per acre
 Lawrence County
 University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Disk Harrow	24'	MFWD 150	0.081	2.00	Oct	3.26	3.46	1.18	3.00	0.16	1.33				12.23
0-26-26	lb			0.25	Oct							77.5000	0.11	8.53	8.53
Cstm Ap Grd Fert	acre											0.2500	4.75	1.19	1.19
Planting				1.00	Oct										
Grain Drill	24'	MFWD 150	0.078			1.56	1.66	0.82	1.90	0.15	1.28				7.22
Wheat Seed Private	lb											132.0000	0.16	21.12	21.12
Urea, Solid (46% N)	lb			1.00	Feb							127.0000	0.17	22.38	22.38
Amm Sulfate (21% N)	lb											50.0000	0.12	6.00	6.00
Cstm Ap Air Fert	lb											177.0000	0.05	8.85	8.85
Urea, Solid (46% N)	lb			1.00	Mar							100.0000	0.17	17.62	17.62
Cstm Ap Air Fert	lb											100.0000	0.05	5.00	5.00
Harvest				1.00	Jun										
Header Wheat/Sorghum	30'	Rigid275hp	0.085			4.31	7.69	0.44	0.79	0.08	0.69				13.92
Cstm Haul Wheat	bu											75.4000	0.15	11.31	11.31
TOTALS						9.13	12.81	2.44	5.69	0.40	3.30			102.00	135.37
INTEREST ON OPERATING CAPITAL															3.39
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															138.76

Table 1.F Estimated costs per acre
 Lawrence County
 University of Arkansas

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS					
0-26-26	lb	0.11	77.5000	8.53	_____
Urea, Solid (46% N)	lb	0.17	227.0000	40.00	_____
Amm Sulfate (21% N)	lb	0.12	50.0000	6.00	_____
CROP SEED					
Wheat Seed Private	lb	0.16	132.0000	21.12	_____
CUSTOM HIRE					
Cstm Ap Grd Fert	acre	4.75	0.2500	1.19	_____
Cstm Ap Air Fert	lb	0.05	277.0000	13.85	_____
Cstm Haul Wheat	bu	0.15	75.4000	11.31	_____
OPERATOR LABOR					
Tractors	hour	8.12	0.2422	1.97	_____
Harvesters	hour	8.12	0.0851	0.69	_____
HAND LABOR					
Implements	hour	8.12	0.0785	0.64	_____
DIESEL FUEL					
Tractors	gal	2.20	1.8705	4.11	_____
Harvesters	gal	2.20	1.2047	2.65	_____
REPAIR & MAINTENANCE					
Implements	acre	2.44	1.0000	2.44	_____
Tractors	acre	0.71	1.0000	0.71	_____
Harvesters	acre	1.66	1.0000	1.66	_____
INTEREST ON OP. CAP.	acre	3.39	1.0000	3.39	_____

TOTAL DIRECT EXPENSES				120.26	_____
FIXED EXPENSES					
Implements	acre	5.69	1.0000	5.69	_____
Tractors	acre	5.12	1.0000	5.12	_____
Harvesters	acre	7.69	1.0000	7.69	_____

TOTAL FIXED EXPENSES				18.50	_____

TOTAL SPECIFIED EXPENSES				138.76	_____

Table 2.A Estimated resource use and costs for field operations, per acre
 Greene County
 , University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Disk Harrow	32'	MFWD 225	0.061	1.00	Oct	1.81	1.89	0.54	1.37	0.06	0.50				6.11
Land Plane	50'x16'	MFWD 225	0.121	1.00	Oct	3.59	3.73	0.16	0.50	0.12	0.99				8.97
0-33-16	lb			0.25	Oct							45.0000	0.15	6.75	6.75
Cstm Ap Grd Fert	acre											0.2500	4.75	1.19	1.19
Field Cultivate	24'	MFWD 225	0.062	1.00	Oct	1.85	1.91	0.28	1.42	0.06	0.51				5.97
Cultipacker	20'	MFWD 225	0.074	1.00	Nov	2.21	2.30	0.19	0.32	0.07	0.61				5.63
Grain Drill	30'	MFWD 225	0.062	1.00	Nov	1.86	1.93	0.82	1.92	0.12	1.02				7.55
Wheat Seed Private	lb											120.0000	0.16	19.20	19.20
Fungicide Seed Trt	lbseed											120.0000	0.03	4.67	4.67
Urea, Solid (46% N)	lb			1.00	Jan							100.0000	0.17	17.62	17.62
Cstm Ap Air Fert	lb											100.0000	0.05	5.00	5.00
Amm Sulfate (21% N)	lb			1.00	Feb							50.0000	0.12	6.00	6.00
Urea, Solid (46% N)	lb											80.0000	0.17	14.10	14.10
Cstm Ap Air Fert	lb											130.0000	0.05	6.50	6.50
Barrage (2, 4-D)	oz			1.00	Mar							12.0000	0.29	3.48	3.48
Surfactant (80-20)	pt											0.3875	1.15	0.45	0.45
Cstm Ap Air Herb	acre											1.0000	5.50	5.50	5.50
Urea, Solid (46% N)	lb			1.00	Mar							80.0000	0.17	14.10	14.10
Cstm Ap Air Fert	acre											1.0000	5.00	5.00	5.00
Harvest				1.00	Jun										
Header Wheat/Sorghum	30'	Rigid275hp	0.085			4.31	7.69	0.44	0.79	0.08	0.69				13.92
Cstm Haul Wheat	bu											93.7000	0.15	14.06	14.06
TOTALS						15.63	19.45	2.43	6.32	0.53	4.32			123.62	171.77
INTEREST ON OPERATING CAPITAL															6.65
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															178.42

Table 2.F Estimated costs per acre
 Greene County
 , University of Arkansas

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS					
0-33-16	lb	0.15	45.0000	6.75	_____
Urea, Solid (46% N)	lb	0.17	260.0000	45.82	_____
Amm Sulfate (21% N)	lb	0.12	50.0000	6.00	_____
HERBICIDES					
Barrage (2, 4-D)	oz	0.29	12.0000	3.48	_____
CROP SEED					
Wheat Seed Private	lb	0.16	120.0000	19.20	_____
Fungicide Seed Trt	lbseed	0.03	120.0000	4.67	_____
ADJUVANTS					
Surfactant (80-20)	pt	1.15	0.3875	0.45	_____
CUSTOM HIRE					
Cstm Ap Grd Fert	acre	4.75	0.2500	1.19	_____
Cstm Ap Air Fert	lb	0.05	230.0000	11.50	_____
Cstm Ap Air Herb	acre	5.50	1.0000	5.50	_____
Cstm Ap Air Fert	acre	5.00	1.0000	5.00	_____
Cstm Haul Wheat	bu	0.15	93.7000	14.06	_____
OPERATOR LABOR					
Tractors	hour	8.12	0.3824	3.12	_____
Harvesters	hour	8.12	0.0851	0.69	_____
HAND LABOR					
Implements	hour	8.12	0.0628	0.51	_____
DIESEL FUEL					
Tractors	gal	2.20	4.4291	9.74	_____
Harvesters	gal	2.20	1.2047	2.65	_____
REPAIR & MAINTENANCE					
Implements	acre	2.43	1.0000	2.43	_____
Tractors	acre	1.58	1.0000	1.58	_____
Harvesters	acre	1.66	1.0000	1.66	_____
INTEREST ON OP. CAP.	acre	6.65	1.0000	6.65	_____
TOTAL DIRECT EXPENSES				152.65	_____
FIXED EXPENSES					
Implements	acre	6.32	1.0000	6.32	_____
Tractors	acre	11.76	1.0000	11.76	_____
Harvesters	acre	7.69	1.0000	7.69	_____
TOTAL FIXED EXPENSES				25.77	_____
TOTAL SPECIFIED EXPENSES				178.42	_____

Table 3.A Estimated resource use and costs for field operations, per acre
 Randolph County
 , University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Rotary Cutter	12'	MFWD 170	0.098	1.00	Oct	2.21	2.39	0.62	0.52	0.09	0.80				6.54
BURN LABOR	hour			1.00	Oct					0.15	1.22				1.22
Disk Harrow	24'	MFWD 170	0.081	1.00	Oct	1.85	2.00	0.59	1.50	0.08	0.66				6.60
Field Cultivate	32'	MFWD 170	0.046	1.00	Oct	1.05	1.14	0.27	1.38	0.04	0.38				4.22
12-24-24	lb			0.25	Oct							81.2500	0.15	12.19	12.19
Cstm Ap Grd Fert	acre											0.2500	4.75	1.19	1.19
Disk Bed w/roller	12R-30	MFWD 170	0.062	1.00	Oct	1.40	1.52	0.32	1.03	0.06	0.51				4.78
Grain Drill	30'	MFWD 170	0.062	1.00	Oct	1.41	1.53	0.82	1.92	0.12	1.02				6.70
Wheat Seed Private	lb											150.0000	0.16	24.00	24.00
Urea, Solid (46% N)	lb			1.00	Feb							135.0000	0.17	23.79	23.79
Amm Sulfate (21% N)	lb											50.0000	0.12	6.00	6.00
Cstm Ap Air Fert	acre											1.0000	5.00	5.00	5.00
Urea, Solid (46% N)	lb			1.00	Mar							110.0000	0.17	19.39	19.39
Cstm Ap Air Fert	acre											1.0000	5.00	5.00	5.00
Express	oz			0.44	Mar							0.1452	12.69	1.84	1.84
Cstm Ap Air Herb	acre											0.4400	5.50	2.42	2.42
Header Wheat/Sorghum	25' Rigid	240hp	0.102	1.00	Jun	4.53	8.13	0.46	0.83	0.10	0.83				14.78
Cstm Haul Wheat	bu											60.4000	0.15	9.06	9.06
TOTALS						12.45	16.71	3.08	7.18	0.66	5.42			109.88	154.72
INTEREST ON OPERATING CAPITAL															3.48
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															158.20

Table 3.F Estimated costs per acre
 Randolph County
 , University of Arkansas

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS					
12-24-24	lb	0.15	81.2500	12.19	_____
Urea, Solid (46% N)	lb	0.17	245.0000	43.18	_____
Amm Sulfate (21% N)	lb	0.12	50.0000	6.00	_____
HERBICIDES					
Express	oz	12.69	0.1452	1.84	_____
CROP SEED					
Wheat Seed Private	lb	0.16	150.0000	24.00	_____
CUSTOM HIRE					
Cstm Ap Grd Fert	acre	4.75	0.2500	1.19	_____
Cstm Ap Air Fert	acre	5.00	2.0000	10.00	_____
Cstm Ap Air Herb	acre	5.50	0.4400	2.42	_____
Cstm Haul Wheat	bu	0.15	60.4000	9.06	_____
OPERATOR LABOR					
Tractors	hour	8.12	0.3520	2.86	_____
Harvesters	hour	8.12	0.1021	0.83	_____
HAND LABOR					
Implements	hour	8.12	0.0628	0.51	_____
BURN LABOR					
Special Labor	hour	8.12	0.1500	1.22	_____
DIESEL FUEL					
Tractors	gal	2.20	3.0808	6.78	_____
Harvesters	gal	2.20	1.2617	2.78	_____
REPAIR & MAINTENANCE					
Implements	acre	3.08	1.0000	3.08	_____
Tractors	acre	1.14	1.0000	1.14	_____
Harvesters	acre	1.75	1.0000	1.75	_____
INTEREST ON OP. CAP.	acre	3.48	1.0000	3.48	_____
TOTAL DIRECT EXPENSES				134.31	_____
FIXED EXPENSES					
Implements	acre	7.18	1.0000	7.18	_____
Tractors	acre	8.58	1.0000	8.58	_____
Harvesters	acre	8.13	1.0000	8.13	_____
TOTAL FIXED EXPENSES				23.89	_____
TOTAL SPECIFIED EXPENSES				158.20	_____

Table 4.A Estimated resource use and costs for field operations, per acre
Arkansas County 1
, University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Heavy Disk	27'	4WD 500	0.075	1.00	Oct	4.57	3.74	0.67	1.70	0.07	0.61				11.29
Field Cultivate	32'	2WD 190	0.046	1.00	Oct	1.15	1.12	0.27	1.38	0.04	0.38				4.30
Land Plane	50'x16'	2WD 190	0.121	1.00	Oct	3.00	2.91	0.16	0.50	0.12	0.99				7.56
Cstm Ap Grd Seed	acre			1.00	Oct							1.0000	4.75	4.75	4.75
Wheat Seed Private	lb											120.0000	0.16	19.20	19.20
Cstm Ap Grd Fert	acre			0.50	Oct							0.5000	4.75	2.38	2.38
Phoshate (0-46-0)	lb											66.5000	0.14	9.40	9.40
Field Cultivate	32'	2WD 190	0.046	1.00	Oct	1.15	1.12	0.27	1.38	0.04	0.38				4.30
Cstm Ap Grd. Herb	acre			0.43	Dec							0.4300	4.75	2.04	2.04
Hoelon 3EC	pt											1.1438	7.66	8.76	8.76
Cstm Ap Air Fert	lb			1.00	Feb							150.0000	0.05	7.50	7.50
Urea, Solid (46% N)	lb											100.0000	0.17	17.62	17.62
Amm Sulfate (21% N)	lb											50.0000	0.12	6.00	6.00
Cstm Ap Air Fert	lb			1.00	Mar							120.0000	0.05	6.00	6.00
Urea, Solid (46% N)	lb											120.0000	0.17	21.15	21.15
Header Wheat/Sorghum	25' Rigid	240hp	0.102	1.00	May	4.53	8.13	0.46	0.83	0.10	0.83				14.78
Cstm Haul Wheat	bu											90.2000	0.15	13.53	13.53
TOTALS						14.40	17.02	1.83	5.79	0.39	3.19			118.33	160.56
INTEREST ON OPERATING CAPITAL															4.17
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															164.73

Table 4.F Estimated costs per acre
Arkansas County 1
, University of Arkansas

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS					
Phoshate (0-46-0)	lb	0.14	66.5000	9.40	_____
Urea, Solid (46% N)	lb	0.17	220.0000	38.77	_____
Amm Sulfate (21% N)	lb	0.12	50.0000	6.00	_____
HERBICIDES					
Hoelon 3EC	pt	7.66	1.1438	8.76	_____
CROP SEED					
Wheat Seed Private	lb	0.16	120.0000	19.20	_____
CUSTOM HIRE					
Cstm Ap Grd Seed	acre	4.75	1.0000	4.75	_____
Cstm Ap Grd Fert	acre	4.75	0.5000	2.38	_____
Cstm Ap Grd. Herb	acre	4.75	0.4300	2.04	_____
Cstm Ap Air Fert	lb	0.05	270.0000	13.50	_____
Cstm Haul Wheat	bu	0.15	90.2000	13.53	_____
OPERATOR LABOR					
Tractors	hour	8.12	0.2903	2.36	_____
Harvesters	hour	8.12	0.1021	0.83	_____
DIESEL FUEL					
Tractors	gal	2.20	3.9494	8.68	_____
Harvesters	gal	2.20	1.2617	2.78	_____
REPAIR & MAINTENANCE					
Implements	acre	1.83	1.0000	1.83	_____
Tractors	acre	1.19	1.0000	1.19	_____
Harvesters	acre	1.75	1.0000	1.75	_____
INTEREST ON OP. CAP.	acre	4.17	1.0000	4.17	_____

TOTAL DIRECT EXPENSES				141.92	_____
FIXED EXPENSES					
Implements	acre	5.79	1.0000	5.79	_____
Tractors	acre	8.89	1.0000	8.89	_____
Harvesters	acre	8.13	1.0000	8.13	_____

TOTAL FIXED EXPENSES				22.81	_____

TOTAL SPECIFIED EXPENSES				164.73	_____

Table 5.A Estimated resource use and costs for field operations, per acre
Arkansas County 2
, University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Rotary Cutter	15'	MFWD 190	0.078	1.00	Oct	1.97	2.11	0.80	0.68	0.07	0.64				6.20
BURN LABOR	hour			1.00	Oct					0.15	1.22				1.22
NT Grain Drill	20'	MFWD 150	0.117	1.00	Oct	2.34	2.49	1.89	4.40	0.23	1.92				13.04
Wheat Seed Private	lb											165.0000	0.16	26.40	26.40
Cstm Ap Grd Fert	acre			0.50	Oct							0.5000	4.75	2.38	2.38
Potash (0-0-60)	lb											75.0000	0.12	9.38	9.38
DAP 18-46-0	lb											75.0000	0.14	10.71	10.71
Cstm Ap Grd. Herb	acre			1.00	Feb							1.0000	4.75	4.75	4.75
2,4-D Amine	pt											1.5000	2.10	3.15	3.15
Cstm Ap Air Fert	acre			1.00	Feb							1.0000	5.00	5.00	5.00
Amm Sulfate (21% N)	lb											75.0000	0.12	9.00	9.00
Urea, Solid (46% N)	lb											75.0000	0.17	13.22	13.22
Cstm Ap Air Fert	acre			1.00	Mar							1.0000	5.00	5.00	5.00
Urea, Solid (46% N)	lb											150.0000	0.17	26.43	26.43
Header Wheat/Sorghum	25' Rigid	240hp	0.102	1.00	Jun	4.53	8.13	0.46	0.83	0.10	0.83				14.78
Cstm Haul Wheat	bu											65.9000	0.15	9.89	9.89
TOTALS						8.84	12.73	3.15	5.91	0.56	4.61			125.31	160.55
INTEREST ON OPERATING CAPITAL															3.65
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															164.20

Table 5.F Estimated costs per acre
Arkansas County 2
, University of Arkansas

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS					
Potash (0-0-60)	lb	0.12	75.0000	9.38	_____
DAP 18-46-0	lb	0.14	75.0000	10.71	_____
Amm Sulfate (21% N)	lb	0.12	75.0000	9.00	_____
Urea, Solid (46% N)	lb	0.17	225.0000	39.65	_____
HERBICIDES					
2,4-D Amine	pt	2.10	1.5000	3.15	_____
CROP SEED					
Wheat Seed Private	lb	0.16	165.0000	26.40	_____
CUSTOM HIRE					
Cstm Ap Grd Fert	acre	4.75	0.5000	2.38	_____
Cstm Ap Grd. Herb	acre	4.75	1.0000	4.75	_____
Cstm Ap Air Fert	acre	5.00	2.0000	10.00	_____
Cstm Haul Wheat	bu	0.15	65.9000	9.89	_____
OPERATOR LABOR					
Tractors	hour	8.12	0.1964	1.60	_____
Harvesters	hour	8.12	0.1021	0.83	_____
HAND LABOR					
Implements	hour	8.12	0.1178	0.96	_____
BURN LABOR					
Special Labor	hour	8.12	0.1500	1.22	_____
DIESEL FUEL					
Tractors	gal	2.20	1.6783	3.69	_____
Harvesters	gal	2.20	1.2617	2.78	_____
REPAIR & MAINTENANCE					
Implements	acre	3.15	1.0000	3.15	_____
Tractors	acre	0.62	1.0000	0.62	_____
Harvesters	acre	1.75	1.0000	1.75	_____
INTEREST ON OP. CAP.	acre	3.65	1.0000	3.65	_____
TOTAL DIRECT EXPENSES				145.56	_____
FIXED EXPENSES					
Implements	acre	5.91	1.0000	5.91	_____
Tractors	acre	4.60	1.0000	4.60	_____
Harvesters	acre	8.13	1.0000	8.13	_____
TOTAL FIXED EXPENSES				18.64	_____
TOTAL SPECIFIED EXPENSES				164.20	_____

Table 6.A Estimated resource use and costs for field operations, per acre
 Ashley County
 , University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF TIMES			POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
			RATE	OVER	MTH	DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
NT Grain Drill	20'	MFWD 225	0.117	1.00	Oct	3.48	3.63	1.89	4.40	0.23	1.92				15.32
Wheat Seed Private	lb											120.0000	0.16	19.20	19.20
Sprayer(600-750Gal)	60'		0.017	1.00	Oct	0.53	0.98			0.02	0.21				1.72
Glyphosate Plus	pt											2.0000	1.78	3.58	3.58
Spin Spreader	5 ton	MFWD 170	0.042	0.50	Oct	0.48	0.51	0.13	0.30	0.04	0.34				1.76
Phoshate (0-46-0)	lb											55.0000	0.14	7.78	7.78
Potash (0-0-60)	lb											50.0000	0.12	6.25	6.25
Cstm Ap Air Fert	lb			1.00	Feb							150.0000	0.05	7.50	7.50
Amm Sulfate (21% N)	lb											40.0000	0.12	4.80	4.80
Urea, Solid (46% N)	lb											110.0000	0.17	19.39	19.39
Cstm Ap Air Fert	lb			1.00	Mar							125.0000	0.05	6.25	6.25
Urea, Solid (46% N)	lb											125.0000	0.17	22.03	22.03
Header Wheat/Sorghum	25' Rigid	240hp	0.102	1.00	May	4.53	8.13	0.46	0.83	0.10	0.83				14.78
Cstm Haul Wheat	bu											85.0000	0.15	12.75	12.75
TOTALS						9.02	13.25	2.48	5.53	0.40	3.30			109.53	143.11
INTEREST ON OPERATING CAPITAL															3.52
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															146.63

Table 6.F Estimated costs per acre
 Ashley County
 , University of Arkansas

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS					
Phoshate (0-46-0)	lb	0.14	55.0000	7.78	_____
Potash (0-0-60)	lb	0.12	50.0000	6.25	_____
Amm Sulfate (21% N)	lb	0.12	40.0000	4.80	_____
Urea, Solid (46% N)	lb	0.17	235.0000	41.41	_____
HERBICIDES					
Glyphosate Plus	pt	1.78	2.0000	3.58	_____
CROP SEED					
Wheat Seed Private	lb	0.16	120.0000	19.20	_____
CUSTOM HIRE					
Cstm Ap Air Fert	lb	0.05	275.0000	13.75	_____
Cstm Haul Wheat	bu	0.15	85.0000	12.75	_____
OPERATOR LABOR					
Tractors	hour	8.12	0.1389	1.13	_____
Harvesters	hour	8.12	0.1021	0.83	_____
Self-Propelled	hour	8.12	0.0176	0.14	_____
HAND LABOR					
Implements	hour	8.12	0.1389	1.13	_____
Self-Propelled	hour	8.12	0.0088	0.07	_____
DIESEL FUEL					
Tractors	gal	2.20	1.5491	3.41	_____
Harvesters	gal	2.20	1.2617	2.78	_____
Self-Propelled	gal	2.20	0.1815	0.40	_____
REPAIR & MAINTENANCE					
Implements	acre	2.48	1.0000	2.48	_____
Tractors	acre	0.55	1.0000	0.55	_____
Harvesters	acre	1.75	1.0000	1.75	_____
Self-Propelled	acre	0.13	1.0000	0.13	_____
INTEREST ON OP. CAP.	acre	3.52	1.0000	3.52	_____
TOTAL DIRECT EXPENSES				127.85	_____
FIXED EXPENSES					
Implements	acre	5.53	1.0000	5.53	_____
Tractors	acre	4.14	1.0000	4.14	_____
Harvesters	acre	8.13	1.0000	8.13	_____
Self-Propelled	acre	0.98	1.0000	0.98	_____
TOTAL FIXED EXPENSES				18.78	_____
TOTAL SPECIFIED EXPENSES				146.63	_____

Table 7.A Estimated resource use and costs for field operations, per acre
 Crittenden County
 , University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Field Cultivate	32'	MFWD 225	0.046	2.00	Oct	2.76	2.87	0.54	2.76	0.09	0.76				9.69
Grain Drill	30'	MFWD 190	0.062	1.00	Oct	1.58	1.69	0.82	1.92	0.12	1.02				7.03
Wheat Seed Private	lb											135.0000	0.16	21.60	21.60
Cstm Ap Air Fert	lb			1.00	Feb							150.0000	0.05	7.50	7.50
Amm Sulfate (21% N)	lb											75.0000	0.12	9.00	9.00
Urea, Solid (46% N)	lb											75.0000	0.17	13.22	13.22
Cstm Ap Air Fert	lb			1.00	Mar							200.0000	0.05	10.00	10.00
Urea, Solid (46% N)	lb											200.0000	0.17	35.25	35.25
Cstm Ap Air Herb	acre			1.00	Mar							1.0000	5.50	5.50	5.50
2,4-D Amine	pt											1.5000	2.10	3.15	3.15
Harmony Extra	oz											0.5000	12.72	6.36	6.36
Header Wheat/Sorghum	30'	Rigid 275hp	0.085	1.00	Jun	4.31	7.69	0.44	0.79	0.08	0.69				13.92
Cstm Haul Wheat	bu											62.5000	0.15	9.38	9.38
TOTALS						8.65	12.25	1.80	5.47	0.30	2.47			120.96	151.60
INTEREST ON OPERATING CAPITAL															4.64
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															156.24

Table 7.F Estimated costs per acre
 Crittenden County
 , University of Arkansas

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS					
Amm Sulfate (21% N)	lb	0.12	75.0000	9.00	_____
Urea, Solid (46% N)	lb	0.17	275.0000	48.46	_____
HERBICIDES					
2,4-D Amine	pt	2.10	1.5000	3.15	_____
Harmony Extra	oz	12.72	0.5000	6.36	_____
CROP SEED					
Wheat Seed Private	lb	0.16	135.0000	21.60	_____
CUSTOM HIRE					
Cstm Ap Air Fert	lb	0.05	350.0000	17.50	_____
Cstm Ap Air Herb	acre	5.50	1.0000	5.50	_____
Cstm Haul Wheat	bu	0.15	62.5000	9.38	_____
OPERATOR LABOR					
Tractors	hour	8.12	0.1561	1.27	_____
Harvesters	hour	8.12	0.0851	0.69	_____
HAND LABOR					
Implements	hour	8.12	0.0628	0.51	_____
DIESEL FUEL					
Tractors	gal	2.20	1.6955	3.73	_____
Harvesters	gal	2.20	1.2047	2.65	_____
REPAIR & MAINTENANCE					
Implements	acre	1.80	1.0000	1.80	_____
Tractors	acre	0.61	1.0000	0.61	_____
Harvesters	acre	1.66	1.0000	1.66	_____
INTEREST ON OP. CAP.	acre	4.64	1.0000	4.64	_____

TOTAL DIRECT EXPENSES				138.52	_____
FIXED EXPENSES					
Implements	acre	5.47	1.0000	5.47	_____
Tractors	acre	4.56	1.0000	4.56	_____
Harvesters	acre	7.69	1.0000	7.69	_____

TOTAL FIXED EXPENSES				17.72	_____

TOTAL SPECIFIED EXPENSES				156.24	_____

Table 8.A Estimated resource use and costs for field operations, per acre
 Cross County
 , University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Cstm Ap Grd Fert	acre			0.50	Oct							0.5000	4.75	2.38	2.38
DAP 18-46-0	lb											75.0000	0.14	10.71	10.71
NT Grain Drill	20'	MFWD 190	0.117	1.00	Oct	2.96	3.16	1.89	4.40	0.23	1.92				14.33
Wheat Seed Private	lb											150.0000	0.16	24.00	24.00
Cstm Ap Grd. Herb	acre			0.33	Feb							0.3360	4.75	1.60	1.60
Hoelon 3EC	pt											0.4368	7.66	3.35	3.35
Cstm Ap Grd Fert	acre			0.50	Mar							0.5000	4.75	2.38	2.38
Urea, Solid (46% N)	lb											163.0000	0.17	28.73	28.73
Phoshate (0-46-0)	lb											45.5000	0.14	6.43	6.43
Potash (0-0-60)	lb											35.0000	0.12	4.38	4.38
Cstm Ap Air Fert	lb			1.00	Mar							100.0000	0.05	5.00	5.00
Urea, Solid (46% N)	lb											100.0000	0.17	17.62	17.62
Header Wheat/Sorghum	25' Rigid	240hp	0.102	1.00	Jun	4.53	8.13	0.46	0.83	0.10	0.83				14.78
Cstm Haul Wheat	bu											70.6000	0.15	10.59	10.59
TOTALS						7.49	11.29	2.35	5.23	0.33	2.75			117.17	146.28
INTEREST ON OPERATING CAPITAL															3.60
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															149.88

Table 8.F Estimated costs per acre
 Cross County
 , University of Arkansas

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS					
DAP 18-46-0	lb	0.14	75.0000	10.71	_____
Urea, Solid (46% N)	lb	0.17	263.0000	46.35	_____
Phoshate (0-46-0)	lb	0.14	45.5000	6.43	_____
Potash (0-0-60)	lb	0.12	35.0000	4.38	_____
HERBICIDES					
Hoelon 3EC	pt	7.66	0.4368	3.35	_____
CROP SEED					
Wheat Seed Private	lb	0.16	150.0000	24.00	_____
CUSTOM HIRE					
Cstm Ap Grd Fert	acre	4.75	1.0000	4.75	_____
Cstm Ap Grd. Herb	acre	4.75	0.3360	1.60	_____
Cstm Ap Air Fert	lb	0.05	100.0000	5.00	_____
Cstm Haul Wheat	bu	0.15	70.6000	10.59	_____
OPERATOR LABOR					
Tractors	hour	8.12	0.1178	0.96	_____
Harvesters	hour	8.12	0.1021	0.83	_____
HAND LABOR					
Implements	hour	8.12	0.1178	0.96	_____
DIESEL FUEL					
Tractors	gal	2.20	1.1526	2.54	_____
Harvesters	gal	2.20	1.2617	2.78	_____
REPAIR & MAINTENANCE					
Implements	acre	2.35	1.0000	2.35	_____
Tractors	acre	0.42	1.0000	0.42	_____
Harvesters	acre	1.75	1.0000	1.75	_____
INTEREST ON OP. CAP.	acre	3.60	1.0000	3.60	_____

TOTAL DIRECT EXPENSES				133.36	_____
FIXED EXPENSES					
Implements	acre	5.23	1.0000	5.23	_____
Tractors	acre	3.16	1.0000	3.16	_____
Harvesters	acre	8.13	1.0000	8.13	_____

TOTAL FIXED EXPENSES				16.52	_____

TOTAL SPECIFIED EXPENSES				149.88	_____

Table 9.A Estimated resource use and costs for field operations, per acre
 Desha County
 , University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST	
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST		
						-----dollars-----				dollars		-----dollars-----				
Spin Spreader 0-40-80	5 ton acre	MFWD 190	0.042	0.50	Oct	0.53	0.56	0.13	0.30	0.04	0.34				1.86	
Disk Bed (Hipper)	8R-38 2x1	MFWD 190	0.049	2.00	Oct	2.47	2.65	0.51	1.64	0.09	0.80	0.5000	30.07	15.04	15.04	
Spin Spreader	5 ton	MFWD 190	0.042	1.00	Oct	1.06	1.13	0.25	0.61	0.08	0.68				3.73	
Wheat Seed Private	1b											150.0000	0.16	24.00	24.00	
Cstm Ap Air Fert	1b			1.00	Feb							150.0000	0.05	7.50	7.50	
Amm Sulfate (21% N)	1b											50.0000	0.12	6.00	6.00	
Urea, Solid (46% N)	1b											100.0000	0.17	17.62	17.62	
Cstm Ap Air Fert	1b			1.00	Mar							140.0000	0.05	7.00	7.00	
Urea, Solid (46% N)	1b											140.0000	0.17	24.67	24.67	
Header Wheat/Sorghum	25' Rigid	240hp	0.102	1.00	May	4.53	8.13	0.46	0.83	0.10	0.83				14.78	
Cstm Haul Wheat	bu											75.5000	0.15	11.33	11.33	
TOTALS						8.59	12.47	1.35	3.38	0.32	2.65				113.16	141.60
INTEREST ON OPERATING CAPITAL																3.61
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																145.21

Table 9.F Estimated costs per acre
 Desha County
 , University of Arkansas

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS					
0-40-80	acre	30.07	0.5000	15.04	_____
Amm Sulfate (21% N)	lb	0.12	50.0000	6.00	_____
Urea, Solid (46% N)	lb	0.17	240.0000	42.30	_____
CROP SEED					
Wheat Seed Private	lb	0.16	150.0000	24.00	_____
CUSTOM HIRE					
Cstm Ap Air Fert	lb	0.05	290.0000	14.50	_____
Cstm Haul Wheat	bu	0.15	75.5000	11.33	_____
OPERATOR LABOR					
Tractors	hour	8.12	0.1618	1.31	_____
Harvesters	hour	8.12	0.1021	0.83	_____
HAND LABOR					
Implements	hour	8.12	0.0631	0.51	_____
DIESEL FUEL					
Tractors	gal	2.20	1.5825	3.48	_____
Harvesters	gal	2.20	1.2617	2.78	_____
REPAIR & MAINTENANCE					
Implements	acre	1.35	1.0000	1.35	_____
Tractors	acre	0.58	1.0000	0.58	_____
Harvesters	acre	1.75	1.0000	1.75	_____
INTEREST ON OP. CAP.	acre	3.61	1.0000	3.61	_____
TOTAL DIRECT EXPENSES				129.36	_____
FIXED EXPENSES					
Implements	acre	3.38	1.0000	3.38	_____
Tractors	acre	4.34	1.0000	4.34	_____
Harvesters	acre	8.13	1.0000	8.13	_____
TOTAL FIXED EXPENSES				15.85	_____
TOTAL SPECIFIED EXPENSES				145.21	_____

Table 10.A Estimated resource use and costs for field operations, per acre
 Drew County
 , University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Disk Harrow	24'	MFWD 150	0.081	2.00	Oct	3.26	3.46	1.18	3.00	0.16	1.33				12.23
Grain Drill	20'	2WD 170	0.094	1.00	Oct	2.08	1.98	0.94	2.18	0.18	1.54				8.72
Wheat Seed Private	lb											90.0000	0.16	14.40	14.40
Cstm Ap Air Fert	lb			0.50	Feb							115.0000	0.05	5.75	5.75
DAP 18-46-0	lb											65.0000	0.14	9.28	9.28
Urea, Solid (46% N)	lb											100.0000	0.17	17.62	17.62
Cstm Ap Air Fert	lb			1.00	Mar							130.0000	0.05	6.50	6.50
Urea, Solid (46% N)	lb											130.0000	0.17	22.91	22.91
Header Wheat/Sorghum	22' Rigid	240hp	0.116	1.00	Jun	5.14	9.24	0.49	0.89	0.11	0.94				16.70
Cstm Haul Wheat	bu											64.6000	0.15	9.69	9.69
TOTALS						10.48	14.68	2.61	6.07	0.46	3.81			86.15	123.80
INTEREST ON OPERATING CAPITAL															3.44
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															127.24

Table 10.F Estimated costs per acre
 Drew County
 , University of Arkansas

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS					
DAP 18-46-0	lb	0.14	65.0000	9.28	_____
Urea, Solid (46% N)	lb	0.17	230.0000	40.53	_____
CROP SEED					
Wheat Seed Private	lb	0.16	90.0000	14.40	_____
CUSTOM HIRE					
Cstm Ap Air Fert	lb	0.05	245.0000	12.25	_____
Cstm Haul Wheat	bu	0.15	64.6000	9.69	_____
OPERATOR LABOR					
Tractors	hour	8.12	0.2579	2.10	_____
Harvesters	hour	8.12	0.1161	0.94	_____
HAND LABOR					
Implements	hour	8.12	0.0942	0.77	_____
DIESEL FUEL					
Tractors	gal	2.20	2.0889	4.60	_____
Harvesters	gal	2.20	1.4338	3.15	_____
REPAIR & MAINTENANCE					
Implements	acre	2.61	1.0000	2.61	_____
Tractors	acre	0.74	1.0000	0.74	_____
Harvesters	acre	1.99	1.0000	1.99	_____
INTEREST ON OP. CAP.	acre	3.44	1.0000	3.44	_____
TOTAL DIRECT EXPENSES				106.49	_____
FIXED EXPENSES					
Implements	acre	6.07	1.0000	6.07	_____
Tractors	acre	5.44	1.0000	5.44	_____
Harvesters	acre	9.24	1.0000	9.24	_____
TOTAL FIXED EXPENSES				20.75	_____
TOTAL SPECIFIED EXPENSES				127.24	_____

Table 11.A Estimated resource use and costs for field operations, per acre
Poinsett County
, University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Disk Harrow	28'	MFWD 225	0.070	1.00	Oct	2.08	2.16	0.56	1.42	0.07	0.57				6.79
Land Plane	50'x16'	MFWD 225	0.121	1.00	Oct	3.59	3.73	0.16	0.50	0.12	0.99				8.97
Cstm Ap Grd Fert	acre			0.25	Oct							0.2500	4.75	1.19	1.19
40-100-100	lbs											25.0000	0.55	13.93	13.93
Field Cultivate	32'	MFWD 225	0.046	1.00	Oct	1.38	1.44	0.27	1.38	0.04	0.38				4.85
Grain Drill	30'	MFWD 225	0.062	1.00	Oct	1.86	1.93	0.82	1.92	0.12	1.02				7.55
Wheat Seed Private	lb											130.0000	0.16	20.80	20.80
Cstm Ap Grd Fert	acre			1.00	Feb							1.0000	4.75	4.75	4.75
Amm Sulfate (21% N)	lb											50.0000	0.12	6.00	6.00
Urea, Solid (46% N)	lb											125.0000	0.17	22.03	22.03
Urea, Solid (46% N)	lb			1.00	Mar							125.0000	0.17	22.03	22.03
Cstm Ap Air Fert	acre											1.0000	5.00	5.00	5.00
Harmony Extra	oz			0.10	Apr							0.0500	12.72	0.64	0.64
Cstm Ap Air Herb	acre											0.1000	5.50	0.55	0.55
Cstm Ap Air Fung	acre			1.00	Apr							1.0000	5.50	5.50	5.50
Tilt	oz											4.0000	2.55	10.23	10.23
Header Wheat/Sorghum	30' Rigid	275hp	0.085	1.00	Jun	4.31	7.69	0.44	0.79	0.08	0.69				13.92
Cstm Haul Wheat	bu											80.7000	0.15	12.11	12.11
TOTALS						13.22	16.95	2.25	6.01	0.44	3.65			124.76	166.84
INTEREST ON OPERATING CAPITAL															4.03
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															170.87

Table 11.F Estimated costs per acre
Poinsett County
, University of Arkansas

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS					
40-100-100	lbs	0.55	25.0000	13.93	_____
Amm Sulfate (21% N)	lb	0.12	50.0000	6.00	_____
Urea, Solid (46% N)	lb	0.17	250.0000	44.06	_____
FUNGICIDES					
Tilt	oz	2.55	4.0000	10.23	_____
HERBICIDES					
Harmony Extra	oz	12.72	0.0500	0.64	_____
CROP SEED					
Wheat Seed Private	lb	0.16	130.0000	20.80	_____
CUSTOM HIRE					
Cstm Ap Grd Fert	acre	4.75	1.2500	5.94	_____
Cstm Ap Air Fert	acre	5.00	1.0000	5.00	_____
Cstm Ap Air Herb	acre	5.50	0.1000	0.55	_____
Cstm Ap Air Fung	acre	5.50	1.0000	5.50	_____
Cstm Haul Wheat	bu	0.15	80.7000	12.11	_____
OPERATOR LABOR					
Tractors	hour	8.12	0.3009	2.45	_____
Harvesters	hour	8.12	0.0851	0.69	_____
HAND LABOR					
Implements	hour	8.12	0.0628	0.51	_____
DIESEL FUEL					
Tractors	gal	2.20	3.4858	7.67	_____
Harvesters	gal	2.20	1.2047	2.65	_____
REPAIR & MAINTENANCE					
Implements	acre	2.25	1.0000	2.25	_____
Tractors	acre	1.24	1.0000	1.24	_____
Harvesters	acre	1.66	1.0000	1.66	_____
INTEREST ON OP. CAP.	acre	4.03	1.0000	4.03	_____
TOTAL DIRECT EXPENSES				147.91	_____
FIXED EXPENSES					
Implements	acre	6.01	1.0000	6.01	_____
Tractors	acre	9.26	1.0000	9.26	_____
Harvesters	acre	7.69	1.0000	7.69	_____
TOTAL FIXED EXPENSES				22.96	_____
TOTAL SPECIFIED EXPENSES				170.87	_____

Table 12.A Estimated resource use and costs for field operations, per acre
 Jackson County
 , University of Arkansas

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Chisel Plow(Rigid)	24'	MFWD 190	0.077	1.00	Sep	1.94	2.07	0.21	0.44	0.07	0.63				5.29
Disk Harrow	28'	MFWD 225	0.070	1.00	Oct	2.08	2.16	0.56	1.42	0.07	0.57				6.79
Cust App Chicken Lit	acre			0.50	Oct							0.5000	4.50	2.25	2.25
Chicken Litter	ton											0.5000	25.00	12.50	12.50
Field Cultivate	32'	MFWD 225	0.046	1.00	Oct	1.38	1.44	0.27	1.38	0.04	0.38				4.85
Grain Drill	30'	MFWD 190	0.062	1.00	Oct	1.58	1.69	0.82	1.92	0.12	1.02				7.03
Wheat Seed Private	lb											113.0000	0.16	18.08	18.08
Spin Spreader	5 ton	MFWD 190	0.042	1.00	Feb	1.06	1.13	0.25	0.61	0.08	0.68				3.73
Urea, Solid (46% N)	lb											120.0000	0.17	21.15	21.15
Amm Sulfate (21% N)	lb											50.0000	0.12	6.00	6.00
Urea, Solid (46% N)	lb			1.00	Mar							100.0000	0.17	17.62	17.62
Cstm Ap Air Fert	lb											100.0000	0.05	5.00	5.00
Tilt	oz			1.00	Apr							4.0000	2.55	10.23	10.23
Cstm Ap Air Fung	acre											1.0000	5.50	5.50	5.50
Header Wheat/Sorghum	30' Rigid	275hp	0.085	1.00	Jun	4.31	7.69	0.44	0.79	0.08	0.69				13.92
Cstm Haul Wheat	bu											52.7000	0.15	7.91	7.91
TOTALS						12.35	16.18	2.55	6.56	0.48	3.97			106.24	147.85
INTEREST ON OPERATING CAPITAL															3.50
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															151.35

Table 12.F Estimated costs per acre
 Jackson County
 , University of Arkansas

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS					
Chicken Litter	ton	25.00	0.5000	12.50	_____
Urea, Solid (46% N)	lb	0.17	220.0000	38.77	_____
Amm Sulfate (21% N)	lb	0.12	50.0000	6.00	_____
FUNGICIDES					
Tilt	oz	2.55	4.0000	10.23	_____
CROP SEED					
Wheat Seed Private	lb	0.16	113.0000	18.08	_____
CUSTOM HIRE					
Cust App Chicken Lit	acre	4.50	0.5000	2.25	_____
Cstm Ap Air Fert	lb	0.05	100.0000	5.00	_____
Cstm Ap Air Fung	acre	5.50	1.0000	5.50	_____
Cstm Haul Wheat	bu	0.15	52.7000	7.91	_____
OPERATOR LABOR					
Tractors	hour	8.12	0.2987	2.43	_____
Harvesters	hour	8.12	0.0851	0.69	_____
HAND LABOR					
Implements	hour	8.12	0.1049	0.85	_____
DIESEL FUEL					
Tractors	gal	2.20	3.1325	6.90	_____
Harvesters	gal	2.20	1.2047	2.65	_____
REPAIR & MAINTENANCE					
Implements	acre	2.55	1.0000	2.55	_____
Tractors	acre	1.14	1.0000	1.14	_____
Harvesters	acre	1.66	1.0000	1.66	_____
INTEREST ON OP. CAP.	acre	3.50	1.0000	3.50	_____
TOTAL DIRECT EXPENSES				128.61	_____
FIXED EXPENSES					
Implements	acre	6.56	1.0000	6.56	_____
Tractors	acre	8.49	1.0000	8.49	_____
Harvesters	acre	7.69	1.0000	7.69	_____
TOTAL FIXED EXPENSES				22.74	_____
TOTAL SPECIFIED EXPENSES				151.35	_____