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Input Costs Trends for Arkansas Field Crops, 2007-2013

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Archie Flanders
Department of Agricultural Economics and Agribusiness
Northeast Research and Extension Center
University of Arkansas
Keiser, AR

For questions and comments related to this report contact 870-526-2199 ext. 108 or aflanders@uaex.edu.



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Input Costs Trends for Arkansas Field Crops, 2007-2013

Increasing input prices during 2007-2013 have challenged farm profitability even during a period of favorable commodity prices. Relative prices among inputs are determinants of potential profitability for field crop production. Price increases for inputs with extensive application levels in a specified crop will decrease profits more for that crop than for crops with less extensive application levels. Input costs per unit of crop output is a useful measure for gauging profitability potential in relation to expected commodity prices for crops marketed. This report presents estimates of costs per acre for typical Arkansas methods of crop production, as well as trends in input prices for field crops.

Input Costs for 2013 Field Crop Production

Input prices applied to field rates of usage determine production costs. Crop enterprise budgets developed by the University of Arkansas include estimated costs per acre for field crops (University of Arkansas 2012). Budget costs represent the most generalized production practices for three irrigation scenarios: 1) surface, 2) center pivot, and 3) non-irrigated. For this report, aggregated 2012 production functions are developed for field crops as weighted averages of crop enterprise budgets. Weighted average crop enterprise budgets are presented in Table 1. Input price changes since December 2012 are applied so that costs are representative of the spring 2013 planting period (USDA-NASS 2013a). Irrigation energy costs are weighted by irrigation type, as well as diesel or electric power source (USDA-NASS 2010; USDA-NASS 2009). Rice weights are percentages of seed type planted based on information from Extension specialists. Appendixes 1 through Appendix 6 are weighted budgets for each field crop during 2007-2013.

Value of cottonseed sold as a by-product is assumed greater than post-harvest costs. Thus, post-harvest costs are excluded from operating costs for cotton. Rice has the greatest operating costs of \$656.95/acre. With post-harvest costs excluded for cotton, corn has the second greatest operating costs of \$553.45. Wheat has the lowest operating costs of \$276.25/acre.

Fixed costs are greatest for cotton with \$133.84/acre and lowest for wheat with \$42.58/acre. Adding fixed costs and operating costs leads to rice having the greatest total costs of production of \$755.10/acre. Costs in Table 1 include levee construction for rice, but do not include any other activities related to land forming. Cotton total production costs are \$15.27 greater than total costs for corn. Among the four major crops planted in the spring season, soybeans have the lowest total costs of production at \$361.22/acre. Land costs are not included in Table 1.

Operating costs in Table 1 consists of production inputs, repairs and other fees, and post-harvest expenses. Table 2 summarizes total costs with the three categories for operating costs. Production inputs include seeds, fertilizers, chemicals, custom applications, diesel fuel, electricity, supplies, surveying levees, and labor. Rice has the greatest costs of production inputs with \$529.11/acre. Production inputs are lowest for wheat with \$241.98/acre.

Expected yields for 2013 are calculated as averages of Arkansas yields for 2007-2012 (USDA-NASS 2013b). Dividing total costs by expected yields estimates total costs per yield unit in

Table 2. For example, corn prices received above \$4.20/bu. represent revenue greater than total production costs, excluding land costs.

Table 1. Weighted Average Crop Enterprise Budgets, per Acre, Arkansas Field Crops, 2013

Expense	Cotton	Corn	Soybean	Rice	Sorghum	Wheat
Seed, Includes All Fees	106.26	117.69	72.00	96.88	19.13	34.00
Nitrogen	58.61	126.82	0.00	85.03	61.49	70.76
Phosphate (P2O5)	18.50	35.35	23.57	25.60	38.40	12.80
Potash (K2O)	27.74	35.69	26.52	28.80	43.20	19.20
Other Nutrients	7.77	25.58	0.00	8.07	0.00	3.36
Herbicide	72.92	17.69	41.47	65.53	28.19	27.35
Insecticide	23.84	0.00	5.79	5.04	3.85	0.00
Other Chemicals	23.46	0.00	14.82	17.39	0.00	16.94
Custom Chemical & Fertilizer Applications	0.00	6.51	14.00	43.93	10.01	28.00
Diesel Fuel, Pre-Post Harvest	21.51	14.99	14.23	16.88	14.02	11.26
Repairs and Maintenance, Pre-Post Harvest	15.08	8.77	9.40	7.97	8.47	6.20
Diesel Fuel, Harvest	19.21	9.83	6.15	16.36	9.97	11.23
Repairs and Maintenance, Harvest	17.77	10.22	5.37	15.05	8.65	9.69
Irrigation Energy Cost	43.42	53.83	35.92	101.13	19.20	0.00
Irrigation System Repairs & Maintenance	4.23	4.67	2.98	5.69	1.73	0.00
Supplies (ex. polypipe, levee gates, other)	1.68	2.10	1.88	0.60	1.05	0.00
Other Inputs, Survey Levees	0.00	0.00	0.00	5.50	0.00	0.00
Labor, Field Activities	19.08	9.79	8.37	12.38	8.65	7.08
Scouting/Consultant Fee	9.00	0.00	0.00	0.00	0.00	0.00
Boll Weevil Eradication Fee	14.00	0.00	0.00	0.00	0.00	0.00
Interest, Annual Rate for 6 Months	11.03	10.50	6.18	12.21	6.04	5.64
Cotton: Hauling, Ginning; Grain: Drying	89.58	28.69	0.00	52.45	0.00	0.00
Cotton: Warehousing; Other: Hauling	20.90	33.22	8.36	32.97	17.60	12.17
Promotions, Boards, Classing	9.85	1.51	0.38	1.50	0.80	0.55
Operating Costs¹	515.11	553.45	297.39	656.95	300.45	276.25
Pre-Harvest and Harvest Machinery	86.03	41.80	36.53	55.86	38.85	34.06
Irrigation Equipment	26.31	27.99	18.17	28.32	10.88	0.00
Miscellaneous Overhead ²	21.51	10.45	9.13	13.97	9.71	8.52
Fixed Costs	133.84	80.23	63.83	98.15	59.45	42.58
Total Costs³	648.96	633.68	361.22	755.10	359.90	318.82

¹Value of cottonseed sold deducted from cotton post-harvest expenses.

²Estimated as 25% of pre-harvest and harvest machinery.

³Does not include land cost.

Table 2. Summary of Weighted Average Crop Enterprise Budgets, per Acre, 2013

Expense Category	Cotton	Corn	Soybean	Rice	Sorghum	Wheat
Production Inputs	444.00	455.87	264.71	529.11	257.16	241.98
Repairs & Other Fees	71.12	34.16	23.93	40.92	24.89	21.53
Post-Harvest Expenses ¹	0.00	63.42	8.74	86.91	18.40	12.73
Total Operating Expenses	515.11	553.45	297.39	656.95	300.45	276.25
Fixed Costs	133.84	80.23	63.83	98.15	59.45	42.58
Total Costs²	648.96	633.68	361.22	755.10	359.90	318.82
Unit Cost ³	0.65	4.20	9.51	5.04	4.50	5.80

¹Value of cottonseed sold deducted from cotton post-harvest expenses.

²Does not include land cost.

³Total costs per lb. for cotton, all other are total cost per bu.

Production inputs are presented by input type in Table 3. Seed is the greatest cost for soybeans, and seed cost for soybean production is \$72.00/acre which is 27% of production inputs. Fertilizers are the greatest production input costs for corn, rice, grain sorghum, and wheat. Fertilizers are 49% of production inputs for corn and 56% of production inputs for grain sorghum. The percentage of production inputs represented by chemicals is greatest for cotton with 27% of production inputs. Diesel and electricity are greatest for rice due to energy requirements for irrigation. The capital intensive nature of crop production is indicated by the relatively low labor cost for all crops in Table 3.

Table 3. Production Input Costs Details, Percent of Total Production Inputs, per Acre, 2013

Input	Cotton	Corn	Soybean	Rice	Sorghum	Wheat
Seed	106.26	117.69	72.00	96.88	19.13	34.00
Percent	24	26	27	18	7	14
Fertilizers	112.62	223.44	50.08	147.50	143.09	106.12
Percent	25	49	19	28	56	44
Chemicals	120.21	17.69	62.08	87.96	32.04	44.29
Percent	27	4	23	17	12	18
Diesel & Electricity	84.15	78.66	56.30	134.37	43.19	22.49
Percent	19	17	21	25	17	9
Labor, Field Activities	19.08	9.79	8.37	12.38	8.65	7.08
Percent	4	2	3	2	3	3
Other	1.68	8.61	15.88	50.03	11.07	28.00
Percent	<1	2	6	9	4	12
Total Production Inputs¹	444.00	455.87	264.71	529.11	257.16	241.98
Percent¹	100	100	100	100	100	100

¹Totals may not sum due to rounding.

Trends in Prices for Primary Production Inputs

Prices for the primary production inputs in Table 3 have increasing trends during 2007-2013 (USDA-NASS 2013a). Price increases for nitrogen, potash and phosphate, as well as diesel follow similar trends in Figure 1. Fertilizers have their highest prices in 2008 before moderating. In 2013, nitrogen prices are 151% of the 2007 level, while potash and phosphate prices are 189% of the 2007 level. Diesel prices in 2012 were at the highest level since 2007 before declining slightly in 2013. Chemical prices in Figure 2 for insecticides, fungicides, and other chemicals have steadily trended upward. Fungicides and other chemical prices in 2013 are 142% of the 2007 level. Insecticide prices in 2013 are 124% of the 2007 level and herbicide prices are 116% of the 2007 level. Seed prices have increased for all crops in Figure 3. Corn seed prices have the greatest increase and are 204% of 2007 prices. Rice seed prices are 200% of the 2007 level, and seed prices for cotton planting are 180% of 2007 prices.

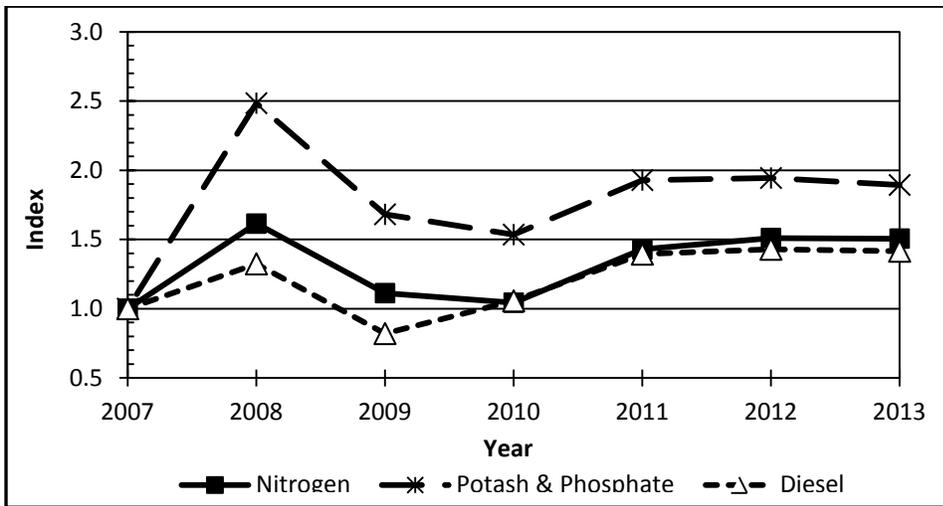


Figure 1. Price Indexes for Major Fertilizers and Diesel, U.S., 2007-2013, 2007=1.0

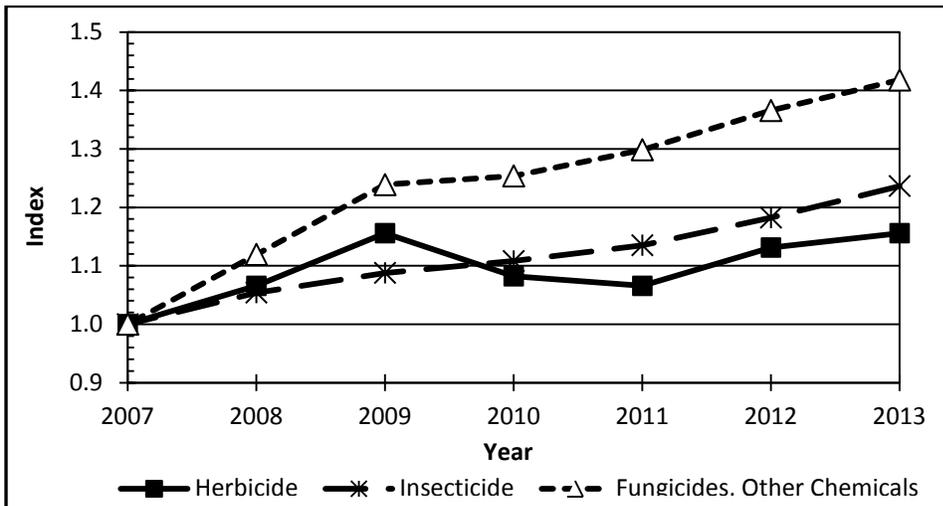


Figure 2. Price Indexes for Agricultural Chemicals, U.S., 2007-2013, 2007=1.0

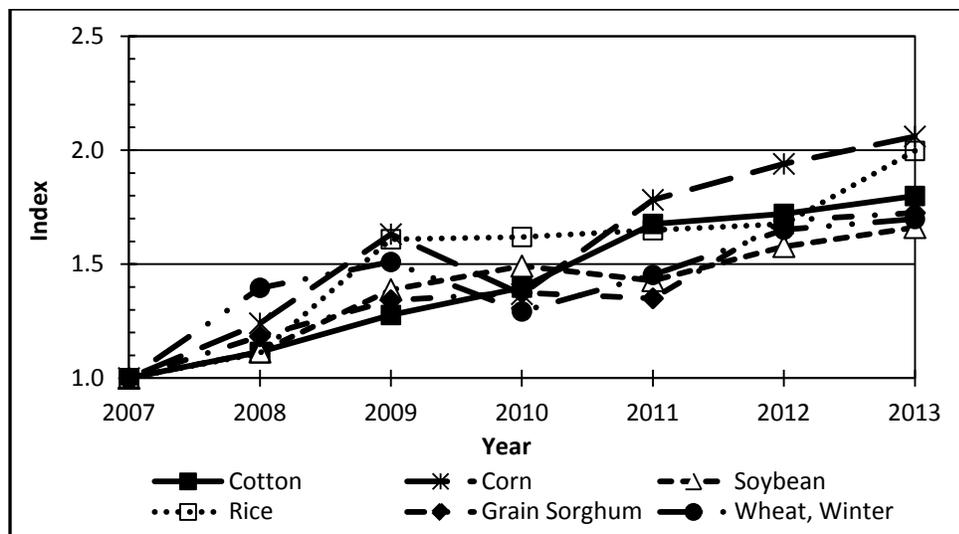


Figure 3. Price Indexes for Seeds, Major U.S. Field Crops, 2007-2013, 2007=1.0

Changes in Costs per Acre due to Increasing Input Prices

Price changes for all input items in crop enterprise budgets are available similarly to prices for primary production inputs presented in Figure 1 through Figure 3. Changes in annual costs per acre can be determined by applying price changes to input components which are 2013 costs in Table 1 based on crop enterprise budget application rates (USDA-NASS 2013a). Figure 4 presents costs per acre indexes during 2007-2013 for production inputs in Table 3. All crops have 2013 production input costs at least 39% greater than 2007 levels. The greatest single year increase in production input costs for all crops occurred in 2008. Production input costs increases in 2013 are changed only slightly from 2012 costs. Soybean production costs in 2013 are 1.5% greater than in 2012, and rice production costs are 2.5% greater than the 2012 level. All other crops have production costs that are unchanged from 2012 or that have decreased by less than 1%. Figure 5 presents costs per acre indexes during 2007-2013 for total costs in Table 2. Total costs for all crops, except for grain sorghum, are greatest in 2013. Grain sorghum total costs per acre are greatest in 2008.

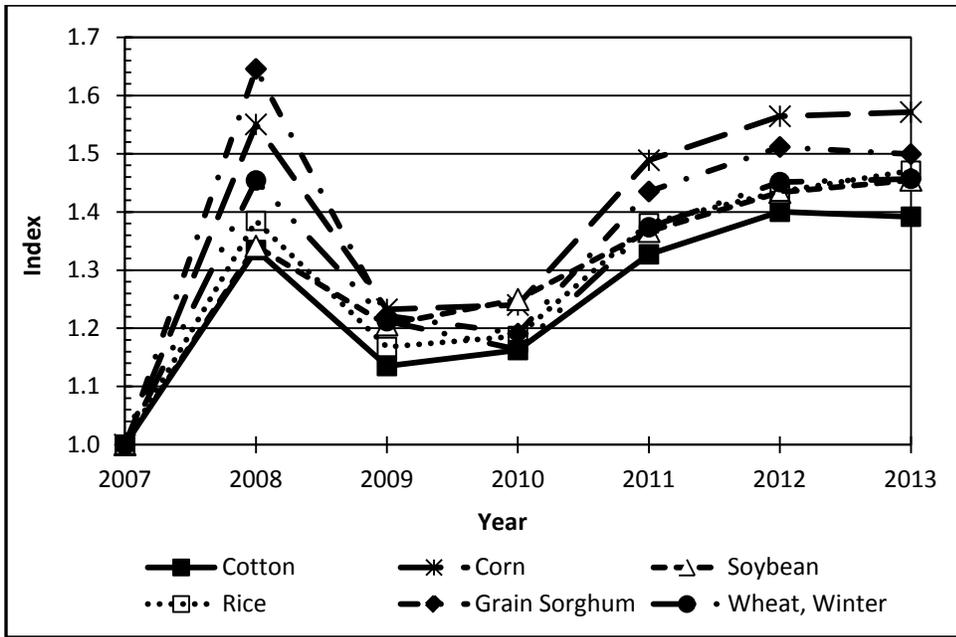


Figure 4. Indexes for Production Inputs, Costs per Acre, 2007-2013, 2007=1.0

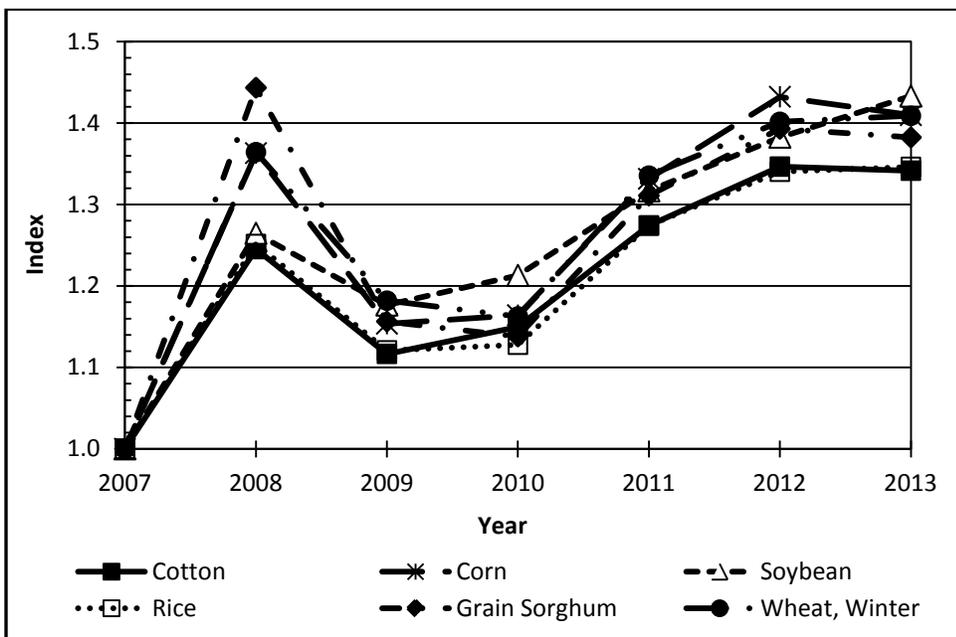


Figure 5. Indexes for Total Inputs, Costs per Acre, 2007-2013, 2007=1.0

Summary

Increasing input prices during 2007-2013 have challenged farm profitability even during a period of favorable commodity prices. Weighted average crop enterprise budgets with 2013 costs are developed for field crops produced in Arkansas. Rice has the greatest operating costs of \$656.95/acre, and wheat has the lowest operating costs of \$276.25/acre. Fixed costs are greatest for cotton with \$133.84/acre and lowest for wheat with \$42.58/acre. Adding fixed costs and operating costs leads to rice having the greatest total costs of production of \$755.10/acre. Production inputs include seeds, fertilizers, chemicals, custom applications, diesel fuel, electricity, supplies, surveying levees, and labor. Rice has the greatest costs of production inputs with \$529.11/acre. Production inputs are lowest for wheat with \$241.98/acre. Seed cost for corn production is \$117.69/acre which is 26% of production inputs. Soybeans have seed cost of \$72.00/acre, or 27% of production inputs. Fertilizers are the greatest production input costs for corn, rice, grain sorghum, and wheat. Fertilizers are 49% of production inputs for corn and 56% of production inputs for grain sorghum. The percentage of production inputs for chemicals is greatest for cotton with 27% of production inputs. Diesel and electricity are greatest for rice due to energy requirements for irrigation. The capital intensive nature of crop production is indicated by the relatively low labor cost for all crops.

References

- USDA-National Agricultural Statistics Service (NASS). 2013a. *Agricultural Prices*, USDA-NASS, Washington, DC. Available online at <http://www.nass.usda.gov/>
- USDA-National Agricultural Statistics Service (NASS). 2009. *2007 Census of Agriculture Report*, USDA-NASS, Washington, DC. Available online at <http://www.nass.usda.gov/>
- USDA-National Agricultural Statistics Service (NASS). 2010. *2008 Farm and Ranch Irrigation Survey*, USDA-NASS, Washington, DC. Available online at <http://www.nass.usda.gov/>
- USDA-National Agricultural Statistics Service (NASS). 2013b. *U.S. & All States Data-Crops*, USDA-NASS, Washington, DC. Available online at <http://www.nass.usda.gov/>
- University of Arkansas. 2012. "2013 Crop Enterprise Budgets," AG-1283, Division of Agriculture, Cooperative Extension Service, Little Rock, AR, December 2012.

Appendices

Appendix 1. Weighted Average Crop Enterprise Budgets, per Acre, Arkansas Cotton, 2007 - 2013

Expense	2013	2012	2011	2010	2009	2008	2007
Seed, Includes All Fees	106.26	108.41	100.94	93.17	87.57	75.49	71.89
Nitrogen	58.61	58.78	55.58	40.59	43.28	62.82	38.91
Phosphate (P2O5)	18.50	18.99	18.84	14.99	16.42	24.27	9.77
Potash (K2O)	27.74	28.48	28.26	22.49	24.64	36.40	14.65
Other Nutrients	7.77	7.94	7.82	6.01	6.55	9.34	5.15
Herbicide	72.92	71.37	67.23	68.26	72.92	67.23	63.09
Insecticide	23.84	22.80	21.88	21.36	20.97	20.32	19.28
Other Chemicals	23.46	22.59	21.48	20.74	20.49	18.52	16.54
Custom Chemical & Fertilizer Applications	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diesel Fuel, Pre-Post Harvest	21.51	21.73	21.19	16.06	12.47	20.12	15.20
Repairs and Maintenance, Pre-Post Harvest	15.08	15.08	14.56	14.04	13.78	13.52	13.35
Diesel Fuel, Harvest	19.21	21.38	17.71	15.48	12.42	31.93	15.81
Repairs and Maintenance, Harvest	17.77	19.34	16.02	17.99	14.34	17.73	18.88
Irrigation Energy Cost	43.42	43.85	42.77	32.40	25.17	40.61	30.67
Irrigation System Repairs & Maintenance	4.23	4.23	4.08	3.94	3.87	3.79	3.74
Supplies (ex. polypipe, levee gates, other)	1.68	1.67	1.63	1.56	1.54	1.50	1.41
Other Inputs, Survey Levees	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Labor, Field Activities	19.08	18.70	18.05	17.76	17.67	17.20	16.64
Scouting/Consultant Fee	9.00	9.00	9.00	9.00	9.00	9.00	9.00
Boll Weevil Eradication Fee	14.00	14.00	14.00	14.00	14.00	14.00	14.00
Interest, Annual Rate for 6 Months	11.03	11.76	10.68	8.87	9.67	11.84	8.22
Cotton: Hauling, Ginning; Grain: Drying	89.58	97.47	83.61	94.05	73.62	91.08	96.39
Cotton: Warehousing; Other: Hauling	20.90	22.74	19.51	21.95	17.18	21.25	22.49
Promotions, Boards, Classing	9.85	10.72	9.20	10.35	8.10	10.02	10.60
Operating Costs¹	515.11	520.10	491.72	438.72	426.76	495.63	386.19
Pre-Harvest and Harvest Machinery	86.03	84.39	80.12	75.52	72.90	68.63	62.72
Irrigation Equipment	26.31	25.80	24.50	23.09	22.29	20.98	19.18
Miscellaneous Overhead ²	21.51	21.10	20.03	18.88	18.22	17.16	15.68
Fixed Costs	133.84	131.29	124.65	117.50	113.41	106.77	97.57
Total Costs³	648.96	651.39	616.37	556.22	540.17	602.39	483.76

¹Value of cottonseed sold deducted from cotton post-harvest expenses.

²Estimated as 25% of pre-harvest and harvest machinery.

³Does not include land cost.

Appendix 2. Weighted Average Crop Enterprise Budgets, per Acre, Arkansas Corn, 2007 - 2013

Expense	2013	2012	2011	2010	2009	2008	2007
Seed, Includes All Fees	117.69	110.67	102.82	101.99	97.04	75.98	63.59
Nitrogen	126.82	127.18	120.26	87.83	93.66	135.93	84.18
Phosphate (P2O5)	35.35	36.30	36.01	28.66	31.39	46.38	18.67
Potash (K2O)	35.69	36.64	36.35	28.93	31.69	46.82	18.84
Other Nutrients	25.58	26.13	25.74	19.78	21.58	30.76	16.95
Herbicide	17.69	17.32	16.31	16.56	17.69	16.31	15.31
Insecticide	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Chemicals	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom Chemical & Fertilizer Applications	6.51	6.51	6.14	6.01	6.01	5.97	5.18
Diesel Fuel, Pre-Post Harvest	14.99	15.14	14.77	11.19	8.69	14.02	10.59
Repairs and Maintenance, Pre-Post Harvest	8.77	8.77	8.47	8.17	8.01	7.86	7.76
Diesel Fuel, Harvest	9.83	11.85	9.13	7.49	7.58	16.49	8.42
Repairs and Maintenance, Harvest	10.22	12.05	9.28	9.79	9.83	10.29	11.29
Irrigation Energy Cost	53.83	54.37	53.03	40.17	31.20	50.35	38.03
Irrigation System Repairs & Maintenance	4.67	4.67	4.51	4.35	4.27	4.19	4.13
Supplies (ex. polypipe, levee gates, other)	2.10	2.09	2.04	1.95	1.92	1.87	1.76
Other Inputs, Survey Levees	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Labor, Field Activities	9.79	9.59	9.26	9.11	9.06	8.82	8.53
Scouting/Consultant Fee	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boll Weevil Eradication Fee	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest, Annual Rate for 6 Months	10.50	11.09	10.08	7.88	8.80	11.55	6.81
Cotton: Hauling, Ginning; Grain: Drying	28.69	33.82	26.98	28.50	28.12	29.45	32.11
Cotton: Warehousing; Other: Hauling	33.22	39.16	31.24	33.00	32.56	34.10	37.18
Promotions, Boards, Classing	1.51	1.78	1.42	1.50	1.48	1.55	1.69
Operating Costs	553.45	565.12	523.83	452.86	450.59	548.72	391.03
Pre-Harvest and Harvest Machinery	41.80	41.00	38.92	36.69	35.42	33.34	30.47
Irrigation Equipment	27.99	27.45	26.07	24.57	23.71	22.33	20.40
Miscellaneous Overhead ¹	10.45	10.25	9.73	9.17	8.85	8.34	7.62
Fixed Costs	80.23	78.70	74.72	70.43	67.98	64.00	58.49
Total Costs²	633.68	643.82	598.55	523.30	518.58	612.72	449.52

¹Estimated as 25% of pre-harvest and harvest machinery.

²Does not include land cost.

Appendix 3. Weighted Average Crop Enterprise Budgets, per Acre, Arkansas Soybean, 2007 - 2013

Expense	2013	2012	2011	2010	2009	2008	2007
Seed, Includes All Fees	72.00	68.10	62.13	65.18	60.43	48.73	44.71
Nitrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphate (P2O5)	23.57	24.20	24.01	19.11	20.93	30.92	12.44
Potash (K2O)	26.52	27.22	27.01	21.50	23.55	34.79	14.00
Other Nutrients	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Herbicide	41.47	40.59	38.24	38.82	41.47	38.24	35.88
Insecticide	5.79	5.54	5.31	5.19	5.09	4.93	4.68
Other Chemicals	14.82	14.27	13.57	13.10	12.95	11.70	10.45
Custom Chemical & Fertilizer Applications	14.00	14.00	13.20	12.93	12.93	12.84	11.15
Diesel Fuel, Pre-Post Harvest	14.23	14.38	14.02	10.62	8.25	13.31	10.06
Repairs and Maintenance, Pre-Post Harvest	9.40	9.40	9.08	8.75	8.59	8.43	8.32
Diesel Fuel, Harvest	6.15	6.21	6.05	4.59	3.56	5.75	4.34
Repairs and Maintenance, Harvest	5.37	5.37	5.19	5.00	4.91	4.82	4.75
Irrigation Energy Cost	35.92	36.28	35.38	26.81	20.82	33.60	25.38
Irrigation System Repairs & Maintenance	2.98	2.98	2.87	2.77	2.72	2.67	2.63
Supplies (ex. polypipe, levee gates, other)	1.88	1.87	1.83	1.75	1.72	1.68	1.58
Other Inputs, Survey Levees	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Labor, Field Activities	8.37	8.20	7.91	7.79	7.75	7.54	7.29
Scouting/Consultant Fee	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boll Weevil Eradication Fee	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest, Annual Rate for 6 Months	6.18	6.36	6.27	5.75	5.92	6.44	6.22
Cotton: Hauling, Ginning; Grain: Drying	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cotton: Warehousing; Other: Hauling	8.36	9.46	8.47	7.70	8.25	8.36	7.92
Promotions, Boards, Classing	0.38	0.43	0.39	0.35	0.38	0.38	0.36
Operating Costs	297.39	294.85	280.93	257.70	250.21	275.13	212.18
Pre-Harvest and Harvest Machinery	36.53	35.83	34.02	32.07	30.95	29.14	26.63
Irrigation Equipment	18.17	17.82	16.92	15.95	15.40	14.49	13.25
Miscellaneous Overhead ¹	9.13	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Costs	63.83	53.65	50.94	48.02	46.35	43.63	39.88
Total Costs²	361.22	348.50	331.87	305.72	296.56	318.76	252.05

¹Estimated as 25% of pre-harvest and harvest machinery.

²Does not include land cost.

Appendix 4. Weighted Average Crop Enterprise Budgets, per Acre, Arkansas Rice, 2007 - 2013

Expense	2013	2012	2011	2010	2009	2008	2007
Seed, Includes All Fees	96.88	81.30	80.01	78.56	78.08	53.82	48.52
Nitrogen	85.03	85.28	80.64	58.89	62.80	91.14	56.44
Phosphate (P2O5)	25.60	26.28	26.08	20.75	22.73	33.59	13.52
Potash (K2O)	28.80	29.57	29.34	23.35	25.57	37.79	15.21
Other Nutrients	8.07	8.24	8.12	6.24	6.80	9.70	5.34
Herbicide	65.53	64.14	60.42	61.35	65.53	60.42	56.70
Insecticide	5.04	4.82	4.63	4.52	4.43	4.30	4.08
Other Chemicals	17.39	16.75	15.92	15.38	15.19	13.73	12.26
Custom Chemical & Fertilizer Applications	43.93	43.93	41.41	40.57	40.57	40.29	34.97
Diesel Fuel, Pre-Post Harvest	16.88	17.05	16.63	12.60	9.79	15.79	11.93
Repairs and Maintenance, Pre-Post Harvest	7.97	7.97	7.70	7.42	7.28	7.15	7.06
Diesel Fuel, Harvest	16.36	18.53	16.22	12.06	12.97	26.40	13.42
Repairs and Maintenance, Harvest	15.05	16.67	14.59	13.95	14.90	14.58	15.93
Irrigation Energy Cost	101.13	102.13	99.62	75.47	58.61	94.59	71.44
Irrigation System Repairs & Maintenance	5.69	5.69	5.50	5.30	5.20	5.10	5.04
Supplies (ex. polypipe, levee gates, other)	0.60	0.60	0.58	0.56	0.55	0.54	0.50
Other Inputs, Survey Levees	5.50	5.47	5.34	5.10	5.04	4.91	4.61
Labor, Field Activities	12.38	12.13	11.71	11.52	11.46	11.16	10.79
Scouting/Consultant Fee	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boll Weevil Eradication Fee	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest, Annual Rate for 6 Months	12.21	12.64	11.64	9.36	10.37	12.85	8.43
Cotton: Hauling, Ginning; Grain: Drying	52.45	58.10	52.66	50.40	52.89	51.80	56.23
Cotton: Warehousing; Other: Hauling	32.97	36.52	33.10	31.68	33.24	32.56	35.35
Promotions, Boards, Classing	1.50	1.66	1.50	1.44	1.51	1.48	1.61
Operating Costs	656.95	655.47	623.33	546.46	545.54	623.67	489.38
Pre-Harvest and Harvest Machinery	55.86	54.80	52.03	49.04	47.34	44.56	40.73
Irrigation Equipment	28.32	27.78	26.37	24.86	24.00	22.59	20.65
Miscellaneous Overhead ¹	13.97	13.70	13.01	12.26	11.83	11.14	10.18
Fixed Costs	98.15	96.28	91.41	86.16	83.17	78.30	71.55
Total Costs²	755.10	751.74	714.74	632.62	628.71	701.97	560.93

¹Estimated as 25% of pre-harvest and harvest machinery.

²Does not include land cost.

Appendix 5. Weighted Average Crop Enterprise Budgets, per Acre, Arkansas Sorghum, 2007 - 2013

Expense	2013	2012	2011	2010	2009	2008	2007
Seed, Includes All Fees	19.13	18.76	14.97	15.24	14.88	13.12	11.09
Nitrogen	61.49	61.66	58.31	42.58	45.41	65.91	40.82
Phosphate (P2O5)	38.40	39.42	39.12	31.13	34.10	50.38	20.28
Potash (K2O)	43.20	44.35	44.01	35.02	38.36	56.68	22.81
Other Nutrients	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Herbicide	28.19	27.59	25.99	26.39	28.19	25.99	24.39
Insecticide	3.85	3.68	3.54	3.45	3.39	3.28	3.11
Other Chemicals	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom Chemical & Fertilizer Applications	10.01	10.01	9.44	9.25	9.25	9.19	7.97
Diesel Fuel, Pre-Post Harvest	14.02	14.16	13.81	10.46	8.13	13.11	9.90
Repairs and Maintenance, Pre-Post Harvest	8.47	8.47	8.18	7.89	7.74	7.59	7.50
Diesel Fuel, Harvest	9.97	10.71	8.86	7.36	7.74	17.92	9.15
Repairs and Maintenance, Harvest	8.65	9.08	7.52	8.03	8.38	9.33	10.25
Irrigation Energy Cost	19.20	19.39	18.91	14.33	11.13	17.96	13.56
Irrigation System Repairs & Maintenance	1.73	1.73	1.67	1.61	1.58	1.55	1.53
Supplies (ex. polypipe, levee gates, other)	1.05	1.05	1.02	0.98	0.97	0.94	0.88
Other Inputs, Survey Levees	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Labor, Field Activities	8.65	8.48	8.18	8.05	8.01	7.80	7.54
Scouting/Consultant Fee	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boll Weevil Eradication Fee	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest, Annual Rate for 6 Months	6.04	6.44	5.85	4.58	5.27	7.36	4.15
Cotton: Hauling, Ginning; Grain: Drying	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cotton: Warehousing; Other: Hauling	17.60	18.48	15.84	16.94	17.38	19.36	21.12
Promotions, Boards, Classing	0.80	0.84	0.72	0.77	0.79	0.88	0.96
Operating Costs	300.45	304.31	285.93	244.06	250.69	328.35	217.01
Pre-Harvest and Harvest Machinery	38.85	38.11	36.18	34.11	32.92	30.99	28.32
Irrigation Equipment	10.88	10.68	10.14	9.55	9.22	8.68	7.93
Miscellaneous Overhead ¹	9.71	9.53	9.05	8.53	8.23	7.75	7.08
Fixed Costs	59.45	58.31	55.36	52.19	50.37	47.42	43.34
Total Costs²	359.90	362.62	341.29	296.25	301.06	375.77	260.35

¹Estimated as 25% of pre-harvest and harvest machinery.

²Does not include land cost.

Appendix 6. Weighted Average Crop Enterprise Budgets, per Acre, Arkansas Wheat, 2007 - 2013

Expense	2013	2012	2011	2010	2009	2008	2007
Seed, Includes All Fees	34.00	33.06	29.09	25.88	30.22	27.96	20.02
Nitrogen	70.76	70.96	67.10	49.00	52.26	75.84	46.97
Phosphate (P2O5)	12.80	13.14	13.04	10.38	11.37	16.79	6.76
Potash (K2O)	19.20	19.71	19.56	15.56	17.05	25.19	10.14
Other Nutrients	3.36	3.43	3.38	2.60	2.83	4.04	2.23
Herbicide	27.35	26.77	25.22	25.61	27.35	25.22	23.67
Insecticide	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Chemicals	16.94	16.32	15.51	14.98	14.80	13.37	11.95
Custom Chemical & Fertilizer Applications	28.00	28.00	26.39	25.86	25.86	25.68	22.29
Diesel Fuel, Pre-Post Harvest	11.26	11.37	11.09	8.40	6.52	10.53	7.95
Repairs and Maintenance, Pre-Post Harvest	6.20	6.20	5.99	5.78	5.67	5.56	5.49
Diesel Fuel, Harvest	11.23	11.35	11.07	8.38	6.51	10.51	7.94
Repairs and Maintenance, Harvest	9.69	9.69	9.35	9.02	8.85	8.68	8.57
Irrigation Energy Cost	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Irrigation System Repairs & Maintenance	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Supplies (ex. polypipe, levee gates, other)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Inputs, Survey Levees	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Labor, Field Activities	7.08	6.94	6.70	6.59	6.56	6.38	6.17
Scouting/Consultant Fee	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boll Weevil Eradication Fee	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest, Annual Rate for 6 Months	5.64	5.80	5.72	5.25	5.41	5.88	5.68
Cotton: Hauling, Ginning; Grain: Drying	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cotton: Warehousing; Other: Hauling	12.17	12.10	12.76	11.88	9.68	12.54	9.02
Promotions, Boards, Classing	0.55	0.55	0.58	0.54	0.44	0.57	0.41
Operating Costs	276.25	275.39	262.55	225.71	231.38	274.75	195.26
Pre-Harvest and Harvest Machinery	34.06	33.41	31.72	29.90	28.86	27.17	24.83
Irrigation Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Miscellaneous Overhead ¹	8.52	8.35	7.93	7.48	7.22	6.79	6.21
Fixed Costs	42.58	41.77	39.65	37.38	36.08	33.97	31.04
Total Costs²	318.82	317.16	302.21	263.08	267.46	308.72	226.30

¹Estimated as 25% of pre-harvest and harvest machinery.

²Does not include land cost.