



UNIVERSITY OF ARKANSAS
DIVISION OF AGRICULTURE
Cooperative Extension Service

Estimating 2009 Costs of Production Grain Sorghum, Center Pivot Irrigated, Loamy Soils

AG-1204-11-08

Brad Watkins, Extension Economist
Jeffrey Hignight, Program Associate

Jason Kelley, Extension Agronomist – Wheat and Feed Grains

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZERS					
45-60-70	acre	159.66	1.0000	159.66	_____
Urea, Solid (46% N)	lb.	0.30	200.0000	60.00	_____
Agrotain	lburea	0.02	200.0000	4.80	_____
HERBICIDES					
Atrazine 4L	pt	1.69	4.0000	6.76	_____
Dual II Magnum	pt	13.15	1.5000	19.73	_____
INSECTICIDES					
Insecticide - Midge	acre	2.97	1.0000	2.97	_____
CROP SEED					
Sorghum Concept Trt	lbseed	2.40	6.5000	15.60	_____
Insecticide Seed Trt	lbseed	0.96	6.5000	6.24	_____
CUSTOM HIRE					
Cstm Ap Grd Fert	acre	6.00	2.0000	12.00	_____
Cstm Ap Grd. Herb	acre	6.00	1.0000	6.00	_____
Cstm Ap Air Insect	acre	7.50	1.0000	7.50	_____
Haul Sorghum	bu	0.22	110.0000	24.20	_____
GIN/DRY					
Sorghum Checkoff	bu	0.01	110.0000	1.10	_____
OPERATOR LABOR					
Tractors	hour	9.92	0.3267	3.25	_____
Harvesters	hour	9.92	0.1021	1.01	_____
IRRIGATION LABOR					
Center pivot Irr.	hour	8.60	0.0487	0.42	_____
HAND LABOR					
Implements	hour	8.60	0.1015	0.87	_____
DIESEL FUEL					
Tractors	gal	2.60	3.3012	8.57	_____
Harvesters	gal	2.60	1.2617	3.28	_____
Center pivot Irr.	gal	2.60	12.0000	31.20	_____
REPAIR & MAINTENANCE					
Implements	acre	3.58	1.0000	3.58	_____
Tractors	acre	1.30	1.0000	1.30	_____
Center pivot Irr.	ac-in	1.49	6.0000	8.96	_____
INTEREST ON OP. CAP.	acre	9.18	1.0000	9.18	_____
TOTAL DIRECT EXPENSES				398.18	_____
FIXED EXPENSES					
Implements	acre	8.73	1.0000	8.73	_____
Tractors	acre	9.55	1.0000	9.55	_____
Center pivot Irr.	each	9060.48	0.0076	69.70	_____
TOTAL FIXED EXPENSES				87.98	_____
TOTAL SPECIFIED EXPENSES				486.16	_____

Visit our web site at: <http://www.uaex.edu>

View or print all of the Arkansas crop budgets at http://www.uaex.edu/depts/ag_economics/crop_budgets.htm

University of Arkansas, United States Department of Agriculture and County Governments Cooperating. The Division of Agriculture offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, age, disability, marital or veteran status, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

Table 2. Estimated resource use and costs for field operations, per acre, Grain Sorghum, Center Pivot Irrigated, Loamy Soils, 2009

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	Nov	2.43	2.35	0.65	1.62	0.07	0.70					7.75
Chisel Plow(Folding)	24'	MFWD 190	0.076	1.00	Nov	2.22	2.07	0.69	1.44	0.07	0.76					7.18
Cstm Ap Grd Fert	acre			1.00	Mar							1.0000	6.00	6.00		6.00
45-60-70	acre											1.0000	159.66	159.66		159.66
Field Cultivate Fld	32'	MFWD 225	0.046	1.00	Mar	1.61	1.56	0.32	1.61	0.04	0.46					5.56
Plant & Pre-Rigid	8R-30	MFWD 170	0.101	1.00	Apr	2.68	2.71	1.23	2.79	0.20	1.88					11.29
Sorghum Concept Trt	lbseed											6.5000	2.40	15.60		15.60
Atrazine 4L	pt											2.0000	1.69	3.38		3.38
Dual II Magnum	pt											1.5000	13.15	19.73		19.73
Insecticide Seed Trt	lbseed											6.5000	0.96	6.24		6.24
Cstm Ap Grd. Herb	acre			1.00	May							1.0000	6.00	6.00		6.00
Atrazine 4L	pt											2.0000	1.69	3.38		3.38
Cstm Ap Grd Fert	acre			1.00	May							1.0000	6.00	6.00		6.00
Urea, Solid (46% N)	lb.											200.0000	0.30	60.00		60.00
Agrotain	lburea											200.0000	0.02	4.80		4.80
Cstm Ap Air Insect	acre			1.00	Jun							1.0000	7.50	7.50		7.50
Insecticide - Midge	acre											1.0000	2.97	2.97		2.97
Header Sorghum	25' Rigid	240hp	0.102	1.00	Sep	3.28		0.54	0.96	0.10	1.01					5.79
Haul Sorghum	bu											110.0000	0.22	24.20		24.20
Sorghum Checkoff	bu											110.0000	0.01	1.10		1.10
Grain Cart	8R30 500 bu	MFWD 190	0.031	1.00	Sep	0.93	0.86	0.15	0.31	0.03	0.32					2.57
Center pivot Irr.	each			1.00	Jun-Aug											69.70
Apply Water	ac-in															40.58
TOTALS						13.15	9.55	43.74	78.43	0.57	5.55				326.56	476.98
INTEREST ON OPERATING CAPITAL																9.18
TOTAL SPECIFIED COST																486.16

Information presented in this document is prepared solely as a general guide and is not intended to recognize or predict the costs and returns from any one particular farm operation. The mention of any commercial product in this analysis does not imply its endorsement by the University of Arkansas Cooperative Extension Service over other products not named, nor does the omission imply that they are not satisfactory. This budget does not include costs for land, overhead, or management. **AG-1204-11-08**

Table 3. Break-even Yields (BEY) Required to cover Direct Expenses and Net Returns above Direct Expenses at Price/Yield Combinations for Select Land Tenure Arrangements, per acre.

Grain Sorghum, Center Pivot Irrigated, Loamy Soils, 2009

Farm Owner							
BEY (bu/acre)	Crop Price (\$/bu)						
	3.75	3.95	4.15	4.35	4.54	4.74	4.94
	Net Returns above Variable Costs (\$/acre)						
79	-94	-78	-63	-47	-31	-16	0
83	-82	-66	-49	-33	-16	0	16
87	-69	-51	-34	-17	0	17	34
91	-54	-36	-18	0	18	36	54
95	-38	-19	0	19	38	57	75
101	-20	0	20	40	60	79	99
106	0	21	42	63	84	105	126

Farm Owner is assumed to have 100% Equity in Land

Tenant 75-25 Crop-Share							
BEY (bu/acre)	Crop Price (\$/bu)						
	3.75	3.95	4.15	4.35	4.54	4.74	4.94
	Net Returns above Variable Costs (\$/acre)						
108	-96	-80	-64	-48	-32	-16	0
112	-83	-67	-50	-33	-17	0	17
118	-70	-52	-35	-17	0	17	35
123	-55	-37	-18	0	18	37	55
130	-38	-19	0	19	38	58	77
137	-20	0	20	41	61	81	101
145	0	21	43	64	86	107	128

Landowner Receives 25% of the Crop.

Tenant pays 100% of Hauling Crop to Grain Elevator

Tenant 50-50 Cost-Share

BEY (bu/acre)	Crop Price (\$/bu)						
	3.75	3.95	4.15	4.35	4.54	4.74	4.94
	Net Returns above Variable Costs (\$/acre)						
82	-48	-40	-32	-24	-16	-8	0
85	-42	-34	-25	-17	-8	0	8
90	-35	-27	-18	-9	0	9	18
94	-28	-19	-9	0	9	19	28
99	-20	-10	0	10	20	29	39
105	-10	0	10	21	31	41	52
111	0	11	22	33	44	55	66

Landowner Receives 50% of the Crop

Tenant Pays 100% of Hauling Crop to Grain Elevator.

Landowner Pays 100% of Irrigation Expenses (Except Labor).

Landowner Pays 50% of:

Seed, Fertilizer, Herbicides, Fungicides, Insecticides, and Aerial Application Costs.

Tenant 80-20 Crop-Share

BEY (bu/acre)	Crop Price (\$/bu)						
	3.75	3.95	4.15	4.35	4.54	4.74	4.94
	Net Returns above Variable Costs (\$/acre)						
100	-95	-79	-64	-48	-32	-16	0
105	-83	-66	-50	-33	-17	0	17
110	-69	-52	-35	-17	0	17	35
115	-55	-36	-18	0	18	36	55
121	-38	-19	0	19	38	57	76
128	-20	0	20	40	60	81	101
135	0	21	43	64	85	107	128

Landowner Receives 20% of the Crop

Tenant Pays 100% of Hauling Crop to Grain Elevator.