

# Grain Sorghum Cost-Return Budget in Southeast Kansas



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## Kansas State University Agricultural Experiment Station and Cooperative Extension Service

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Grain sorghum acreage in southeast Kansas has decreased in recent years due, in large part, to the fact that many acres previously devoted to grain sorghum have been diverted to corn. Despite the popularity of corn, grain sorghum is historically a much more consistent crop, more suited for the southeast Kansas climate in which summers can be hot and dry. The advantages of grain sorghum over corn go on to include lower production costs. Grain sorghum can be planted from late April to mid-June. However, producers planting grain sorghum early may see plants experiencing stress and suffering from stalk rot. When conditions are dry, early-planted grain sorghum on upland soils can experience considerable lodging. The following budget outlines the expected costs and returns for grain sorghum in southeast Kansas.

### Income per Acre

Crop production costs per unit are highly dependent on yields. The following estimated budget includes three different yield levels which are intended to represent expected yields for land of varying quality for a given level of management. Alternative expected yields could help producers compare the profitability of crop enterprises on farmland tracts with varying yield potentials. Land values and government payments have been adjusted for alternative yield levels in this budget. In customizing this budget to your farm, attention should be given to using land values representative of your farm's production capacity.

**Table 1. Production Inputs — Grain Sorghum**

Item	Yield Level (bu)			
	70	85	110	
Seed, lbs*	4.5	4.5	4.5	\$3.43/lb
Fertilizer:				
N (anhydrous)	70	85	110	\$0.44/lb
N	0	0	0	\$0.68/lb
P	35	35	35	\$0.80/lb
K	40	40	40	\$0.55/lb
Lime	333	333	333	\$0.01/lb
Herbicide				
Bicep II Magnum	2.0	2.0	2.0	\$10.55/qt
Buctril + Atrazine	2.0	2.0	2.0	\$6.85/pt
Insecticide / Fungicide				
Warrior	2.5	2.5	2.5	\$1.94/oz

\* *Concep/Gaucha treated*

Price per bushel represents an expected harvest price in Emporia, Kan. Producers in other regions of southeast Kansas should account for local basis (cash price – futures price) when making their own price forecasts.

Crop insurance was not included as an input expense in this budget because yields reflect an average of all years (good and bad). If crop insurance is included as an input

**Table 2. Machinery and Land Resources — Grain Sorghum**

Item	Yield Level (bu)			Custom Rate
	70	85	110	
Tillage/Planting/Chemical Applications:				
Chisel	0	0	0	\$11.56/a
Disk	1	1	1	\$9.89/a
Field cultivate	1	1	1	\$9.49/a
Plant	1	1	1	\$13.81/a
Anhydrous application	1	1	1	\$10.89/a
Fertilizer application	1	1	1	\$5.36/a
Herbicide application	2	2	2	\$5.47/a
Insecticide / fungicide application	1	1	1	\$5.54/a
Harvest				
Base charge	1	1	1	\$21.58/a
Extra charge for yields exceeding	36	36	36	\$0.204/bu
Hauling	70	85	110	\$0.190/bu
Non-machinery labor	0.94	0.99	1.07	\$13.00/hr
Land charge/rent	\$60.80	\$76.00	\$91.20	
Interest on capital				6.5%

expense, then an expected value for indemnity payments should be included in the returns section. Historically, MPCCI indemnity payments have exceeded premiums due to government subsidies.

### Costs per Acre

Production costs at the three production levels are shown on lines 1 through 13. Kansas Custom Rates for specific field

operations are used to represent fuel and labor costs as well as machinery repair, depreciation, and interest expenses in these budgets. Table 1 identifies the typical seed, fertilizer, herbicide, and insecticide requirements (rate and cost/unit) for conventional till grain sorghum. Each tillage, planting, and harvest operation is identified. Table 2 outlines the machinery and land resources used for conventional till grain sorghum. Each tillage, planting, and harvest operation is identified.

## COST-RETURN PROJECTION — GRAIN SORGHUM — SOUTHEAST KANSAS

	Yield Level (bu)			Your Farm
	70	85	110	
<b>INCOME PER ACRE</b>				
A. Yield per acre .....	70	85	110	_____
B. Price per bushel .....	\$ 5.19	\$ 5.19	\$ 5.19	_____
C. Net government payment .....	\$ 10.48	\$ 11.39	\$ 12.30	_____
D. Indemnity payments .....	\$ _____	\$ _____	\$ _____	_____
E. Miscellaneous income.....	\$ _____	\$ _____	\$ _____	_____
F. Returns/acre ((A × B) + C + D + E) .....	\$ 373.78	\$ 452.54	\$ 583.20	_____
<b>COSTS PER ACRE</b>				
1. Seed .....	\$ 15.44	\$ 15.44	\$ 15.44	_____
2. Herbicide .....	34.80	34.80	34.80	_____
3. Insecticide / Fungicide .....	4.85	4.85	4.85	_____
4. Fertilizer and Lime .....	84.13	90.73	101.73	_____
5. Crop Consulting .....	_____	_____	_____	_____
6. Crop Insurance .....	_____	_____	_____	_____
7. Drying .....	_____	_____	_____	_____
8. Miscellaneous.....	7.00	7.00	7.00	_____
9. Custom Hire / Machinery Expense.....	107.74	113.65	123.50	_____
10. Non-machinery Labor .....	12.17	12.84	13.96	_____
11. Irrigation .....	_____	_____	_____	_____
a. Labor .....	_____	_____	_____	_____
b. Fuel and Oil.....	_____	_____	_____	_____
c. Repairs and Maintenance .....	_____	_____	_____	_____
d. Depreciation on Equipment and Well.....	_____	_____	_____	_____
e. Interest on Equipment.....	_____	_____	_____	_____
12. Land Charge / Rent.....	60.80	76.00	91.20	_____
G.SUB TOTAL .....	\$ 326.93	\$ 355.30	\$ 392.47	_____
13. Interest on ½ Nonland Costs .....	8.65	9.08	9.79	_____
H. TOTAL COSTS .....	\$ 335.57	\$ 364.38	\$ 402.26	_____
I. RETURNS OVER COSTS (F - H) .....	\$ 38.20	\$ 88.16	\$ 180.94	_____
J. TOTAL COSTS/BUSHEL (H ÷ A) .....	\$ 4.79	\$ 4.29	\$ 3.66	_____
K. RETURN TO ANNUAL COST (I + 13) ÷ G .....	14.33%	27.37%	48.60%	_____

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### Kansas State University Agricultural Experiment Station and Cooperative Extension Service

MF-995

December 2011

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