

# Grain Sorghum Cost-Return Budget in Southeast Kansas



**K-STATE**  
Research and Extension

Department of Agricultural Economics — [www.agmanager.info](http://www.agmanager.info)

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

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The information in this projected budget reflects expected income and costs based on typical production practices in the region. These values should be used as a guide, but individuals are encouraged to use their own values reflecting their specific land productive capabilities and farming system when looking at the potential costs and returns for their operations.

### Income Per Acre

Crop production costs per unit and net returns are highly dependent on yields. The following estimated budgets include three different yield levels, which are intended to represent expected yields for land of varying quality for a given level of management. Yield levels are based on historical data from the Kansas Farm Management Association in the region, adjusting for trends over time. Cash rent for land has been adjusted for alternative yield levels in this budget and planting intensity (i.e., either fallow or double cropping). In customizing a budget for your farm, attention should be given to using land values (i.e., rents) that are representative of your farm's productive capacity, planting intensity, and local farmland market conditions.

Output price represents an expected harvest price in the region. Typically, a reasonable price forecast for most crops is to use the futures market adjusted by the historical basis for a particular location, where basis equals cash price minus futures price. Silage prices are based on corresponding crop

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

Item	Yield Level (bu/a)			
	70	80	90	
Seed, 1,000 seeds/a*	40	50	60	\$0.27/1,000
Fertilizer:				
N-anhydrous	69	79	89	\$0.71/lb
N	0	0	0	\$0.56/lb
P	27	31	35	\$0.68/lb
K	19	22	24	\$0.40/lb
Lime	333	333	333	\$0.015/lb
Herbicide				
Preemergence	1	1	1	\$33.77/a
Postemergence	1	1	1	\$12.71/a

\* *Concept/Gaucho treated (15,000 seeds/lb)*

prices. See MF1013 for more detailed information on price forecasts.

Because the yields used in the budgets reflect average expected yields, there is no crop insurance indemnity payment included in income. Crop insurance premiums will vary tremendously based on many factors (proven yield, coverage level, type of insurance policy). Crop insurance premiums included as costs reflect an expected net premium paid on average given the expected revenue.

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

Item	Yield Level (bu/a)			Custom Rate
	70	80	90	
Tillage/Planting/Chemical Applications:				
Chisel	0	0	0	\$15.91/a
Disk	1	1	1	\$13.33/a
Field cultivate	1	1	1	\$12.28/a
Plant	1	1	1	\$16.61/a
Anhydrous application	1	1	1	\$13.79/a
Fertilizer application	1	1	1	\$6.42/a
Herbicide application	2	2	2	\$6.62/a
Insecticide/fungicide application	0	0	0	\$6.76/a
Harvest				
Base charge	1	1	1	\$29.99/a
Extra charge for yields exceeding	48	48	48	\$0.24/bu
Hauling	70	80	90	\$0.21/bu
Non-machinery labor	0.50	0.50	0.50	\$15.00/hr
Land charge/rent	\$24.00	\$32.00	\$40.00	
Interest on capital				6.5%

## Costs Per Acre

Production costs at the three yield levels are shown on lines 1 through 13. Projected Kansas custom rates for specific field operations are used to represent fuel and labor costs as well as machinery repair, depreciation, and inter-

est expenses. Table 1 identifies seed, fertilizer, herbicide, and insecticide/fungicide costs. Fertilizer rates are based on removal with adjustments for local conditions. Table 2 outlines the machinery operations assumed, non-machinery labor, and land cash rent.

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

	Yield Level (bu/a)			Your Farm
	70	80	90	
<b>INCOME PER ACRE</b>				
A. Yield per acre.....	70	80	90	
B. Price per bushel .....	\$ 4.07	\$ 4.07	\$ 4.07	
C. Net government payment .....	\$	\$	\$	
D. Indemnity payments .....	\$	\$	\$	
E. Miscellaneous income.....	\$	\$	\$	
F. Returns/acre ((A × B) + C + D + E).....	\$ 284.90	\$ 325.60	\$ 366.30	
<b>COSTS PER ACRE</b>				
1. Seed .....	\$ 10.80	\$ 13.50	\$ 16.20	
2. Herbicide .....	46.48	46.48	46.48	
3. Insecticide / Fungicide.....				
4. Fertilizer and Lime .....	79.95	90.97	101.59	
5. Crop Consulting.....				
6. Crop Insurance* .....	6.39	7.74	9.09	
7. Drying .....				
8. Miscellaneous.....	7.00	7.00	7.00	
9. Custom Hire / Machinery Expense.....	125.64	130.14	134.64	
10. Non-machinery Labor .....	7.50	7.50	7.50	
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.....	24.00	32.00	40.00	
G. SUB TOTAL .....	\$ 307.75	\$ 335.33	\$ 362.50	
13. Interest on ½ Nonland Costs .....	9.22	9.86	10.48	
H. TOTAL COSTS.....	\$ 316.98	\$ 345.18	\$ 372.98	
I. RETURNS OVER COSTS (F - H) .....	\$ -32.08	\$ -19.58	\$ -6.68	
J. TOTAL COSTS/BUSHEL (H ÷ A) .....	\$ 4.53	\$ 4.31	\$ 4.14	
K. RETURN TO ANNUAL COST (I + 13) ÷ G .....	-7.43%	-2.90%	1.05%	

\* Reflects expected net premium paid.

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