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Grain Sorghum Cost-Return Budget in South Central Kansas

Department of Agricultural Economics — *www.agmanager.info*

K-STATE Research and Extension

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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 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 1. *Production Inputs — Grain Sorghum*

	Yield Level (bu/a)			
Item	68	81	94	
Seed, 1,000 seeds/a*	40	50	60	$0.25/1,000
Fertilizer:**				
N (anhydrous)	61	72	84	$0.39/lb
N	0	0	0	$0.55/lb
P	27	32	37	$0.52/lb
K	0	0	0	$0.45/lb
Lime	500	500	500	$0.015/lb
Herbicide				
Preemergence	1	1	1	$33.42/a
Postemergence	1	1	1	$13.07/a

** Concep/Gaucho treated (15,000 seeds/lb)*

*** Reduce N by 30 pounds if following soybeans*

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

	Yield Level (bu/a)			Custom
Item	68	81	94	Rate
Tillage/Planting/Chemical Applications:				
Chisel	0	0	0	$12.88/a
Disk	1	1	1	$11.60/a
Field cultivate	1	1	1	$10.21/a
Plant	1	1	1	$17.04/a
Anhydrous application	1	1	1	$11.04/a
Fertilizer application	1	1	1	$5.57/a
Herbicide application	2	2	2	$5.52/a
Insecticide / fungicide application	0	0	0	$5.58/a
Harvest				
Base charge	1	1	1	$23.33/a
Extra charge for yields exceeding	34	34	34	$0.23/bu
Hauling	68	81	94	$0.21/bu
Non-machinery labor	1.00	1.00	1.00	$15.00/hr
Land charge/rent	$56.00	$75.00	$94.00	
Interest on capital				6.5%

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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 interest 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 — SOUTH CENTRAL KANSAS

	Yield Level (bu/a)			Your
	68	81	94	Farm
INCOME PER ACRE				
A. Yield per acre	68	81	94	
B. Price per bushel	$ 4.67	$ 4.67	$ 4.67	
C. Net government payment	$	$	$	
D. Indemnity payments	$	$	$	
E. Miscellaneous income	$	$	$	
F. Returns/acre ((A × B) + C + D + E)	$ 317.56	$ 378.27	$ 438.98	
COSTS PER ACRE				
1. Seed	$ 10.00	$ 12.50	$ 15.00	
2. Herbicide	46.48	46.48	46.48	
3. Insecticide / Fungicide				
4. Fertilizer and Lime	45.33	52.22	59.50	
5. Crop Consulting				
6. Crop Insurance*	5.29	7.40	9.52	
7. Drying				
8. Miscellaneous	6.00	6.00	6.00	
9. Custom Hire / Machinery Expense	111.93	117.65	123.37	
10. Non-machinery Labor	15.00	15.00	15.00	
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	56.00	75.00	94.00	
G. SUB TOTAL	$ 296.03	$ 332.25	$ 368.87	
13. Interest on ½ Nonland Costs	7.80	8.36	8.93	
H. TOTAL COSTS	$ 303.83	$ 340.61	$ 377.80	
I. RETURNS OVER COSTS (F - H)	$ 13.73	$ 37.66	$ 61.18	
J. TOTAL COSTS/BUSHEL (H ÷ A)	$ 4.47	$ 4.21	$ 4.02	
K. RETURN TO ANNUAL COST (I + 13) ÷ G	7.27%	13.85%	19.01%	

** Reflects expected net premium paid.*

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