This file is for historical purposes only and may not reflect current practices. For current recommendations, contact K-State Research and Extension.

Grain Sorghum Cost-Return Budget in South Central Kansas

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

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

Troy J. Dumler
Agricultural Economist

Douglas Shoup
Crops and Soils, SE

Kent L. Martin
Crops and Soils, SW

Kansas consistently ranks as the number one grain sorghum producing state in the nation. The largest share of the state's grain sorghum production is in north central Kansas, however, south central Kansas also is a major production region. Grain sorghum is a drought tolerant crop making it well suited to the south central Kansas climate where moisture can be a limiting factor during critical crop growth stages. As with many south central Kansas crops, grain sorghum is produced using various crop rotation and tillage systems. No-till acres in the region are increasing, however, this budget is based on a limited amount of tillage as that currently is the prevalent system.

Income Per Acre

Crop production costs per unit and net returns are highly dependent on yields. The following estimated budget includes three 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 trend-adjusted data from Kansas Agricultural Statistics and the South Central Kansas Farm Management Association. Comparing alternative expected yields can help producers analyze the profitability of crop enterprises on farmland tracts with varying yield potential. Land values and government payments have been adjusted for alternative yield levels in this budget. In customizing a budget to your farm, attention should be given to using land values representative of your farm's productive capacity as well farm-specific government payments.

Table 1. *Production Inputs — Grain Sorghum*

	Yield Level (bu)			
Item	60	80	100	
Seed, lbs*	2.33	3.00	3.67	$3.36/lb
Fertilizer:**				
N (anhydrous)	65	100	130	$0.33/lb
N	0	0	0	$0.50/lb
P	25	30	40	$0.51/lb
K	0	0	0	$0.42/lb
Lime	500	500	500	$0.01/lb
Herbicide				
Bicep II Magnum	1.6	1.6	1.6	$10.92/qt
Atrazine 4L + crop oil	16.0	16.0	16.0	$0.15/oz

** Concep/Gaucho treated*

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

Price per bushel represents an expected harvest price in Hutchinson, Kan., accounting for government marketing loan price support levels. Producers in other areas of south central Kansas should use an expected price representative of their location. Typically, a reasonable price expectation is the futures market adjusted by the historical basis for a particular location, where basis = cash price – futures price.

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

	Yield Level (bu)			Custom
Item	60	80	100	Rate
Tillage/Planting/Chemical Applications:				
Chisel	0	0	0	$11.01/a
Disk	1	1	1	$9.20/a
Field cultivate	1	1	1	$9.15/a
Plant	1	1	1	$13.16/a
Anhydrous application	1	1	1	$10.99/a
Fertilizer application	1	1	1	$4.96/a
Herbicide application	2	2	2	$5.10/a
Insecticide / fungicide application	0	0	0	$5.10/a
Harvest				
Base charge	1	1	1	$23.68/a
Extra charge for yields exceeding	36	36	36	$0.222/bu
Hauling	60	80	100	$0.203/bu
Non-machinery labor	0.86	0.93	1.01	$13.00/hr
Land charge/rent	$33.60	$42.00	$50.40	
Interest on capital				7.0%

This file is for historical purposes only and may not reflect current practices. For current recommendations, contact K-State Research and Extension.

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

Costs Per Acre

Production costs at the three yield 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. Table 1 identifies seed, fertilizer, herbicide, and insecticide requirements (rate and cost/unit) for grain sorghum. Herbicide requirements include both pre-crop and in-crop treatments. Table 2 outlines the machinery and land resources used for grain sorghum in a reduced tillage system.

COST-RETURN PROJECTION — GRAIN SORGHUM — SOUTH CENTRAL KANSAS

	Yield Level (bu)			Your
	60	80	100	Farm
INCOME PER ACRE				
A. Yield per acre	60	80	100	
B. Price per bushel	$ 4.49	$ 4.49	$ 4.49	
C. Net government payment	$ 14.12	$ 15.35	$ 16.58	
D. Indemnity payments	$	$	$	
E. Miscellaneous income	$	$	$	
F. Returns/acre ((A × B) + C + D + E)	$ 283.52	$ 374.55	$ 465.58	
COSTS PER ACRE				
1. Seed	$ 7.84	$ 10.08	$ 12.32	
2. Herbicide	19.87	19.87	19.87	
3. Insecticide / Fungicide				
4. Fertilizer and Lime	39.08	53.15	68.10	
5. Crop Consulting				
6. Crop Insurance				
7. Drying				
8. Miscellaneous	5.75	5.75	5.75	
9. Custom Hire / Machinery Expense	98.85	107.35	115.85	
10. Non-machinery Labor	11.17	12.13	13.09	
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	33.60	42.00	50.40	
G. SUB TOTAL	$ 216.15	$ 250.33	$ 285.38	
13. Interest on ½ Nonland Costs	6.39	7.29	8.22	
H. TOTAL COSTS	$ 222.54	$ 257.62	$ 293.61	
I. RETURNS OVER COSTS (F - H)	$ 60.98	$ 116.93	$ 171.97	
J. TOTAL COSTS/BUSHEL (H ÷ A)	$ 3.71	$ 3.22	$ 2.94	
K. RETURN TO ANNUAL COST (I + 13) ÷ G	31.17%	49.62%	63.14%	

Publications from Kansas State University are available on the World Wide Web at: *www.ksre.ksu.edu*.

Publications are reviewed or revised annually by appropriate faculty to reflect current research and practice. Date shown is that of publication or last revision. Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. In each case, credit Troy J. Dumler, Douglas Shoup, and Kent L. Martin, *Grain Sorghum Cost-Return Budget in South Central Kansas*, Kansas State University, November 2010.

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

MF-575 November 2010

K-State Research and Extension is an equal opportunity provider and employer. Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, as amended. Kansas State University, County Extension Councils, Extension Districts, and United States Department of Agriculture Cooperating, Gary Pierzynski, Interim Director.