Corn Cost-Return Budget in Northeast Kansas

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

K-STATE Research and Extension

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While Kansas is an important corn production state, the majority of the state's corn production historically occurred under irrigation. However, in recent years, non-irrigated corn production has grown substantially across the state and in northeast Kansas. As with many northeast Kansas crops, corn is produced using various crop rotation and tillage systems. This budget is based on corn production in rotation using a no-till system.

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 Kansas Agricultural Statistics Service and the Northeast Kansas Farm Management Association, adjusting for trends over time. Based on K-State research findings, this budget assumes a higher yield for corn in rotation than would be expected for continuous corn production. 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 as government payments specific to your land.

Price per bushel represents an expected harvest price in Topeka, Kan., accounting for government marketing loan price support levels. Corn producers in other areas of northeast Kansas should use an expected price that is representative for their location. Typically, a reasonable forecast for price is to use the futures market adjusted by the historical basis for a particular location, where basis equals cash price minus futures price.

Crop insurance was not included as an input expense in this budget because yields reflect an average of all years

Table 1. *Production Inputs — Corn*

	Yield Level (bu/a)			
Item	88	110	133	
Seed, 1,000/a*	27	27	27	$3.51/1,000
Fertilizer:				
N (anhydrous)	63	86	110	$0.47/lb
N	11	14	17	$0.65/lb
P	38	47	57	$0.60/lb
K	0	0	0	$0.51/lb
Lime	500	500	500	$0.01/lb
Herbicide				
Bicep II Magnum + Glyphosate + Ammonium Sulfate	1.0	1.0	1.0	$25.87/a
Glyphosate + Ammonium Sulfate	32.0	32.0	32.0	$0.11/oz
	1.5	1.5	1.5	$0.34/lb
Insecticide / Fungicide				
Headline	0	0	9	$2.63/oz

** Roundup Ready/Bt/Gaucho treated seed*

Table 2. *Machinery and Land Resources — Corn*

	Yield Level (bu/a)			Custom
Item	88	110	133	Rate
Tillage/Planting/Chemical Applications:				
Chisel	0	0	0	$11.54/a
Disk	0	0	0	$9.88/a
Field cultivate	0	0	0	$9.47/a
No-till plant	1	1	1	$15.48/a
Anhydrous application	1	1	1	$10.87/a
Fertilizer application	0	0	0	$5.36/a
Herbicide application	2	2	2	$5.46/a
Insecticide / fungicide application	0	0	0	$5.53/a
Harvest				
Base charge	1	1	1	$26.14/a
Extra charge for yields exceeding	74	74	74	$0.207/bu
Hauling	88	110	133	$0.174/bu
Non-machinery labor	0.71	0.78	0.86	$13.00/hr
Land charge/rent	$92.80	$116.00	$139.20	
Interest on capital				6.5%

(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.

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 corn. Fertilizer requirements are adjusted up for the higher yields expected under rotation, allowing for a 30-pound-per-acre nitrogen credit following soybeans. Herbicide requirements include both pre-crop and in-crop treatments. Insecticide costs are assumed to be limited to seed treatment under a rotation system. Table 2 outlines the machinery and land resources used for corn in a no-till system.

COST-RETURN PROJECTION — CORN — NORTHEAST KANSAS

	Yield Level (bu/a)			Your
	88	**110**	**133**	**Farm**
INCOME PER ACRE				
A. Yield per acre	88	110	133	
B. Price per bushel	$ 6.27	$ 6.27	$ 6.27	
C. Net government payment	$ 12.51	$ 13.60	$ 14.69	
D. Indemnity payments	$	$	$	
E. Miscellaneous income	$	$	$	
F. Returns/acre ((A × B) + C + D + E)	$ 564.27	$ 703.30	$ 848.60	
COSTS PER ACRE				
1. Seed	$ 94.77	$ 94.77	$ 94.77	
2. Herbicide	29.90	29.90	29.90	
3. Insecticide / Fungicide	0.00	0.00	23.67	
4. Fertilizer and Lime	64.37	82.49	101.67	
5. Crop Consulting				
6. Crop Insurance				
7. Drying	11.44	14.30	17.29	
8. Miscellaneous	8.25	8.25	8.25	
9. Custom Hire / Machinery Expense	81.62	90.00	98.77	
10. Non-machinery Labor	9.22	10.17	11.16	
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	92.80	116.00	139.20	
G. SUB TOTAL	$ 392.37	$ 445.88	$ 524.67	
13. Interest on ½ Nonland Costs	9.36	10.26	11.97	
H. TOTAL COSTS	$ 401.74	$ 456.13	$ 536.64	
I. RETURNS OVER COSTS (F - H)	$ 162.53	$ 247.17	$ 311.96	
J. TOTAL COSTS/BUSHEL (H ÷ A)	$ 4.57	$ 4.15	$ 4.03	
K. RETURN TO ANNUAL COST (I + 13) ÷ G	43.81%	57.73%	61.74%	

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