

Center-Pivot-Irrigated Cotton

Cost-Return Budget in Southwest Kansas



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While Kansas has not historically been known for its cotton production, the acres planted to cotton in the state have increased sharply in the last several years. Irrigated cotton requires less water compared to high-input crops such as corn, soybeans, and alfalfa, making it an option for producers with low well capacities. The limiting factor for cotton becoming a major crop in Kansas is the number of growing degree units. Cotton requires approximately 1,900 heat units to produce a successful crop. Many areas of Kansas do not regularly receive enough heat units to produce cotton.

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. Producers can compare the profitability of crop enterprises on farmland tracts with varying yield potential by considering alternative expected yield scenarios. Land values and government payments have been adjusted for alternative yield levels in this budget.

Price per pound of lint represents an expected harvest price in southwest Kansas, accounting for government marketing

Table 1. Production Inputs — Cotton

Item	Yield Level (Lint lbs)			
	700	900	1,100	
Seed, 1,000/a*	52	61	70	\$1.13/1,000
Fertilizer:				
N (anhydrous)	75	100	125	\$0.44/lb
N	0	0	0	\$0.68/lb
P	20	30	40	\$0.80/lb
K	0	0	0	\$0.55/lb
Lime	0	0	0	\$0.01/lb
Herbicide				
Dual II	1.0	1.0	1.0	\$13.65/a
Glyphosate + Ammonium Sulfate	2.0	2.0	2.0	\$6.78/a
Harvest Aids**	1.0	1.0	1.0	\$29.18/a
Insecticide / Fungicide				
Orthene	0.18	0.18	0.18	\$17.20/lb
Irrigation water, in	7	7	7	\$3.00/in

* Cruiser treated

** Includes 2 applications.

Table 2. Machinery and Land Resources — Cotton

Item	Yield Level (lint lbs)			Custom Rate
	700	900	1,100	
Tillage/Planting/Chemical Applications:				
Disk	1	1	1	\$9.89/a
Harrow	0	0	0	\$8.10/a
Field cultivate	1	1	1	\$9.49/a
Plant	1	1	1	\$12.36/a
Anhydrous application	1	1	1	\$10.89/a
Fertilizer application	0	0	0	\$5.36/a
Herbicide application	2	2	2	\$5.47/a
Insecticide / fungicide application	1	1	1	\$5.54/a
Harvest				
Charge for stripping and module building	700	900	1100	\$0.10/lb
Extra charge for yields exceeding	0	0	0	\$0.00/lb
Hauling to gin and ginning	700	900	1100	\$0.030/lb
Non-machinery labor	1.30	1.53	1.76	\$13.00/hr
Irrigation labor	0.50	0.50	0.50	\$13.00/hr
Land charge/rent	\$121.60	\$152.00	\$182.40	
Interest on capital				6.5%
Irrigation Equipment				
Well, pump and gearhead value	Investment, \$/a		Years	Salvage value
Power unit and meter	\$476.00		25	0%
Irrigation system	\$131.00		7	0%
	\$575.00		25	25%

loan price support levels. The addition of a cotton gin in western Kansas will offer producers a local market for their cotton. Producers in other regions of Kansas should use an expected price that is representative for their location.

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 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, insecticide, and irrigation water requirements (rate and cost/unit) for center-pivot-irrigated cotton. Herbicide requirements include both pre-crop and in-crop treatments. Table 2 outlines the machinery, irrigation equipment, and land resources used for center-pivot-irrigated cotton. Each tillage, planting, and harvest operation is identified.

COST-RETURN PROJECTION — COTTON — SOUTHWEST KANSAS

	Yield Level (lint, lbs)			Your Farm
	700	900	1,100	
INCOME PER ACRE				
A. Yield per acre: Lint cotton.....	700	900	1,100	
B. Price per pound: Lint cotton.....	\$ 0.80	\$ 0.80	\$ 0.80	
C. Net government payment.....	\$ 29.92	\$ 32.53	\$ 35.13	
D. Indemnity payments.....	\$	\$	\$	
E. Miscellaneous income.....	\$	\$	\$	
F. Returns/acre ((A × B) + C + D + E).....	\$ 589.92	\$ 752.53	\$ 915.13	
COSTS PER ACRE				
1. Seed.....	\$ 58.76	\$ 68.93	\$ 79.10	
2. Herbicide.....	56.39	56.39	56.39	
3. Insecticide / Fungicide.....	3.10	3.10	3.10	
4. Fertilizer and Lime.....	49.00	68.00	87.00	
5. Crop Consulting.....	6.00	6.00	6.00	
6. Crop Insurance.....				
7. Drying.....				
8. Miscellaneous.....	10.00	10.00	10.00	
9. Custom Hire / Machinery Expense.....	150.11	176.11	202.11	
10. Non-machinery Labor.....	16.96	19.90	22.84	
11. Irrigation				
a. Labor.....	6.50	6.50	6.50	
b. Fuel and Oil.....	21.00	21.00	21.00	
c. Repairs and Maintenance.....	2.31	2.31	2.31	
d. Depreciation on Equipment and Well.....	55.00	55.00	55.00	
e. Interest on Equipment and Well.....	43.09	43.09	43.09	
12. Land Charge / Rent.....	121.60	152.00	182.40	
G. SUB TOTAL.....	\$ 599.82	\$ 688.33	\$ 776.84	
13. Interest on ½ Nonland Costs.....	12.35	14.24	16.13	
H. TOTAL COSTS.....	\$ 612.17	\$ 702.57	\$ 792.97	
I. RETURNS OVER COSTS (F - H).....	\$ -22.25	\$ 49.95	\$ 122.16	
J. TOTAL COSTS/POUND (H ÷ A).....	\$ 0.87	\$ 0.78	\$ 0.72	
K. RETURN TO ANNUAL COST (I + 13) ÷ G.....	-1.65%	9.33%	17.80%	

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