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KANSAS FARM MANAGEMENT & MARKETING HANDBOOK

KSU Farm Management Guide MF-1000

Center-Pivot-Irrigated Short-Season Corn Cost-Return Budget

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Irrigated short season corn (or early-corn early) has gained acceptance in Kansas as an alternate crop to full season corn or grain sorghum. Reasons for planting short season corn vary among producers. Some factors include: profitability, cash-flow, marketing, crop rotation, insect problems, water availability, and labor.

Producers should compare the cash-flow requirements and profitability of short season corn with alternate crops. Though early-corn early may be more profitable than other crops, a crop that has lower input costs might be a better choice if the required cash or operating credit is not available. Another factor to consider is marketing. Due to the earlier harvest, taking advantage of old-crop prices may be possible.

Short season corn allows producers to rotate to wheat without leaving the land idle for a year. Rotational benefits affect weed and insect control, therefore improving profitability. Several insect problems can potentially be avoided with short season corn. Because of the earlier maturity, avoiding treating for European corn borers and spider mites may be possible. New bio type and pesticide-resistant greenbugs identified pose problems for grain sorghum production that do not affect corn. While eliminating insecticide costs may be possible, the cost of one treatment is included in the budget.

The chief factor dictating crop choice is water availability. Short season corn requires less water than full season corn, making it an attractive alternative for producers with low well capacities. Another important factor is labor. Because short season corn is harvested earlier than full season corn or grain sorghum, fall labor requirements can be reduced.

Yield Goals

Cost per bushel and net returns in crop production are highly dependent on yields. The following estimated budget includes three different yield levels. Yield goals vary for a number of reasons such as soil type or land quality, historical weather patterns, input levels, and management. Budgeting for alternative yield goals can help producers compare the profitability of crop enterprises on farmland tracts with varying yield potentials. Multi-peril crop insurance expenses are included in western Kansas crop budgets as a cost of managing crop production risk in an area prone to great yield variability. Land values are not adjusted for alternative yield goals in this budget. In customizing this budget to fit your farm, attention should be given to using land values representative of your farm's productive capacity.

Table 1. Factors Used for Cost-Return Budget

	Yield Level (bu)			
Item	**120**	**160**	**200**	
Water, 325 TDH	14 in	17 in	20 in	$2.71/inch
Fertilizer:				
N (Anhy.)	140	140	190	$0.17/lb
N (Dry)	10	10	10	$0.30/lb
P	40	40	40	$0.28/lb
K	0	0	0	$0.13/lb
Lime	0	0	0	$0.005/lb
Seed,				
(seeds/acre)	36,000	36,000	36,000	
Seed price, $/lb	$1.05	$1.05	$1.05	
Labor hours	2.15	2.15	2.15	
Labor price/hour				$9.00
Land value/acre				$575
Land interest rate				6.00%
Land real estate tax rate				0.50%
Machinery investment				$236
Machinery life				10 yrs
Salvage value				35.00%
Interest rate on machinery				10.00%
Well, pump and gearhead value				$290
Well, pump and gearhead life				15 yrs
Power unit and meter value				$50
Power unit and meter life				7 yrs
Irrigation system value				$385
Irrigation system life				10 yrs
Insurance rate on machinery				0.25%
Interest on variable costs				10.00%

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COST-RETURN PROJECTION — CENTER-PIVOT-IRRIGATED SHORT SEASON CORN

	Yield Level (bu) 120	160	200	Your Farm
VARIABLE COSTS PER ACRE:[1]				
1. Labor	$ 19.35	$ 19.35	$ 19.35	
2. Seed	37.80	37.80	37.80	
3. Herbicide	33.12	33.12	33.12	
4 Insecticide	12.02	12.02	12.02	
5. Fertilizer and Lime	38.00	38.00	46.50	
6. Fuel and Oil — Crop	10.00	10.00	10.00	
7. Fuel and Oil — Pumping[2]	37.94	46.07	54.20	
8. Machinery and Equipment Repairs	22.60	22.60	22.60	
9. Irrigation Repairs and Maintenance	4.20	5.10	6.00	
10. Crop Insurance	5.90	6.00	6.29	
11. Drying	12.00	16.00	20.00	
12. Custom Hire[3]				
13. Crop Consulting	6.50	6.50	6.50	
14. Miscellaneous	6.00	6.00	6.00	
15. Interest on ½ Variable Costs	12.27	12.93	14.02	
A. TOTAL VARIABLE COSTS	$ 257.70	$ 271.49	$ 294.40	
FIXED COSTS PER ACRE:[1]				
16. Real Estate Taxes (including well)	4.33	4.33	4.33	
17. Interest on Land and Well[4]	51.90	51.90	51.90	
18. Rent for Rented Land[5]				
19. Depreciation on Crop Machinery	15.34	15.34	15.34	
20. Interest on Crop Machinery[6]	15.93	15.93	15.93	
21. Depreciation on Irrigation Equipment and Well	64.98	64.98	64.98	
22. Interest on Irrigation Equipment[6]	21.75	21.75	21.75	
23. Insurance on Machinery and Equipment	1.68	1.68	1.68	
B. TOTAL FIXED COSTS	$ 175.90	$ 175.90	$ 175.90	
C. TOTAL COSTS (A + B)	$ 433.60	$ 447.39	$ 470.30	
D. YIELD PER ACRE	120	160	200	
E. PRICE PER BUSHEL[7]	$ 3.38	$ 3.38	$ 3.38	
F. NET GOVERNMENT PAYMENT[7]	$ 13.96	$ 13.96	$ 13.96	
G. RETURNS PER ACRE [(D × E) + F]	$ 419.56	$ 554.76	$ 689.96	
H. RETURNS OVER VARIABLE COSTS (G-A)	$ 161.86	$ 283.27	$ 395.56	
I. RETURNS OVER TOTAL COSTS (G-C)	$ –14.04	$ 107.37	$ 219.66	
J. VARIABLE COSTS PER BUSHEL (A ÷ D)	$ 2.15	$ 1.70	$ 1.47	
K. FIXED COSTS PER BUSHEL (B ÷ D)	$ 1.47	$ 1.10	$ 0.88	
L. TOTAL COSTS PER BUSHEL (C ÷ D)	$ 3.61	$ 2.80	$ 2.35	
M. ASSET TURNOVER (G ÷ INVESTMENT)[8]	27.32%	36.12%	44.92%	
N. NET RETURN ON INVESTMENT [(I+15+17+20+22) ÷ INVESTMENT][8]	5.72%	13.66%	21.05%	

[1] *Totals were derived using information listed in Table 1.*
[2] *See MF-836,* "Irrigation Capital Requirements and Energy Costs."
[3] *If using custom hire, adjust lines 6, 8, 19, and 20.*
[4] *Assumes interest rate shown in Table 1.*
[5] *If cash rented, insert zero in lines 16 and 17.*
[6] *Assumes one-half the average investment [(initial investment + salvage value) ÷ 2] at the interest rate shown in Table 1.*
[7] *See MF-1013 "Prices for Crop and Livestock Cost-Return Budgets" and MF-2236 "Government Program Payments for Crop Cost Return Budgets" for additional information on crop prices and program payments.*
[8] *Investment equals total value of all fixed assets shown in Table 1.*

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