KANSAS FARM MANAGEMENT & MARKETING HANDBOOK

KSU Farm Management Guide MF-969

Flood-Irrigated Ridge-Till Corn Cost-Return Budget

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Producing flood-irrigated corn under a ridge till cropping system has several advantages over conventional tillage. Profit potential is increased through the lowering of per-acre variable costs. Fewer tillage operations before planting reduce labor, fuel, and machinery repair expenses. Herbicide expense also is reduced as most chemicals are band-applied rather than broadcast. After several years, weed pressure is often decreased, resulting in lower chemical application rates and usage. Another potential saving is the possibility of applying less irrigation water, reducing pumping costs and irrigation equipment repairs.

Ridge-till requires a different level of management than conventional tillage. Residue management and distribution are major concerns during the first watering with furrow irrigation. Water flow through the field can be a problem and could require increased labor during the initial watering period. It is also crucial that the ridges are not disturbed by implement tires. This may require adjustments in machinery tire size and spacing so that travel is confined to the area within the furrows. Some benefits of ridge till (reduced weed pressure, improved yields) are only seen after several years of continuous ridge-till. It is important that producers commit to ridge-till for a minimum of three years to assess its effect fully.

Making the switch from conventional to ridge-till will require an added machinery investment. The amount of extra investment will vary depending on whether old machinery is modified or new machinery is purchased. With time, less machinery investment is required under ridge-till.

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

Item	Yield Level (bu) 160	190	220	
Water, 260 TDH	20	22	24	$2.16/inch
Fertilizer:				
N (Anhy.)	180	180	210	$0.17/lb
N (Dry)	10	10	10	$0.30/lb
P	45	45	45	$0.28/lb
K	0	0	0	$0.13/lb
Lime	0	0	0	$0.005/lb
Seed, (seeds/acre)	28,000	32,000	36,000	
Seed price, $/lb	$1.05	$1.05	$1.05	
Labor hours	2.85	2.85	2.85	
Labor price/hour				$9.00
Land value/acre				$650
Land interest rate				6.00%
Land real estate tax rate				0.50%
Machinery investment				$208
Machinery life				10 yrs
Salvage value				35.00%
Interest rate on machinery				10.00%
Well, pump and gearhead value				$228
Well, pump and gearhead life				15 yrs
Power unit and meter value				$39
Power unit and meter life				7 yrs
Irrigation system value				$33
Irrigation system life				10 yrs
Insurance rate on machinery				0.25%
Interest on variable costs				10.00%

COST-RETURN PROJECTION — FLOOD-IRRIGATED RIDGE-TILL CORN

	Yield Level (bu)			Your
	160	190	220	Farm
VARIABLE COSTS PER ACRE:[1]				
1. Labor	$ 25.65	$ 25.65	$ 25.65	
2. Seed	29.40	33.60	37.80	
3. Herbicide	33.12	33.12	33.12	
4 Insecticide	41.57	41.57	41.57	
5. Fertilizer and Lime	46.20	46.20	51.30	
6. Fuel and Oil — Crop	6.32	6.32	6.32	
7. Fuel and Oil — Pumping[2]	43.20	47.52	51.84	
8. Machinery and Equipment Repairs	22.60	22.60	22.60	
9. Irrigation Repairs and Maintenance	4.00	4.40	4.80	
10. Crop Insurance	6.27	6.75	6.98	
11. Drying	16.00	19.00	22.00	
12. Custom Hire[3]				
13. Crop Consulting	6.50	6.50	6.50	
14. Miscellaneous	7.00	7.00	7.00	
15. Interest on ½ Variable Costs	14.39	15.01	15.87	
A. TOTAL VARIABLE COSTS	$ 302.22	$ 315.24	$ 333.36	
FIXED COSTS PER ACRE:[1]				
16. Real Estate Taxes (including well)	4.39	4.39	4.39	
17. Interest on Land and Well[4]	52.68	52.68	52.68	
18. Rent for Rented Land[5]				
19. Depreciation on Crop Machinery	13.52	13.52	13.52	
20. Interest on Crop Machinery[6]	14.04	14.04	14.04	
21. Depreciation on Irrigation Equipment and Well	24.07	24.07	24.07	
22. Interest on Irrigation Equipment[6]	3.60	3.60	3.60	
23. Insurance on Machinery and Equipment	0.70	0.70	0.70	
B. TOTAL FIXED COSTS	$ 113.00	$ 113.00	$ 113.00	
C. TOTAL COSTS (A + B)	$ 415.22	$ 428.24	$ 446.36	
D. YIELD PER ACRE	160	190	220	
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]	$ 554.76	$ 656.16	$ 757.56	
H. RETURNS OVER VARIABLE COSTS (G-A)	$ 252.54	$ 340.92	$ 424.20	
I. RETURNS OVER TOTAL COSTS (G-C)	$ 139.54	$ 227.92	$ 311.20	
J. VARIABLE COSTS PER BUSHEL (A ÷ D)	$ 1.89	$ 1.66	$ 1.52	
K. FIXED COSTS PER BUSHEL (B ÷ D)	$ 0.71	$ 0.59	$ 0.51	
L. TOTAL COSTS PER BUSHEL (C ÷ D)	$ 2.60	$ 2.25	$ 2.03	
M. ASSET TURNOVER (G ÷ INVESTMENT)[8]	47.91%	56.66%	65.42%	
N. NET RETURN ON INVESTMENT [(I+15+17+20+22) ÷ INVESTMENT][8]	19.36%	27.05%	34.32%	

[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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COOPERATIVE EXTENSION SERVICE, MANHATTAN, KANSAS

MF-969 Revised — October 1996

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File Code: Farm Management 3-1

10-96—1.5M