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FARM MANAGEMENT
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H A N D B O O K

KSU Farm Management Guide MF-2150

Dryland No-Till Corn in Western Kansas (W-C-F Rotation)

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No-Till Farming

Moisture conservation is the primary goal of reduced tillage programs. When herbicides are used in place of conventional tillage practices, weeds which deplete soil moisture are eliminated. Crop residue remains standing which reduces moisture evaporation from the soil surface and increases moisture captured from snowfall. Additional benefits of no-till farming over conventional tillage include increased erosion control, energy conservation, and reduced labor requirements. There is much research which appears to confirm many of those claimed benefits of no-till. Crop residue requirements for conservation compliance are met more easily under no-till practices.

Effects of No-till on Variable and Fixed Costs

Since weed control is achieved by herbicide use in no-till systems rather than with tillage, there is a shift among variable costs detailed in the following estimated crop budget. Herbicide costs increase markedly from a conventional tillage system, but fuel expense, labor, and equipment repairs decrease. The move from conventional tillage to no-till will reduce machinery investment due to the diminished need for tillage equipment.

Yield Level

Cost per bushel and net returns in crop production are highly dependent on yields. The following estimated budget includes three different yield levels. Yield levels vary for a number of reasons such as soil type/land quality, input levels, and management. Budgeting at multiple yield levels can help producers examine the financial risk of a crop enterprise that is directly related to production risk as well as to compare the profitability of crop enterprises on farmland tracts with varying yield potentials.

Profit and Return Factors

Net return on investment is the percentage return on land and equipment investment. This measure enables comparisons to be made between enterprises as well as other investment alternatives. Asset turnover is the percentage of investment recovered by total returns. Inverting this measure allows the comparison of different enterprises on the basis of capital required to generate a dollar of gross income.

Table 1. Factors Used for Cost-Return Budget

	Yield Level (bu)			
Item	**65**	**75**	**85**	
Fertilizer:				
N (Anhy.)	50	50	70	$0.19/lb
N (Dry)	0	0	0	$0.29/lb
P	20	20	20	$0.27/lb
K	0	0	0	$0.13/lb
Seed (seeds/a)	18,000	18,000	20,000	
Seed Price, $/1000	$0.90	$0.90	$0.90	
Labor Hours	1.00	1.00	1.00	
Labor Price/Hour				$9.00
Land Value/Acre*				$490.00
Land Interest Rate				6.00%
Machinery Investment**				$188.00
Machinery Life				10.00 yrs
Salvage Value				35.00%
Interest Rate on Machinery				10.00%
Insurance Rate on Machinery				0.25%
Interest on Variable Costs				10.00%

*All land costs were computed, and then multiplied by a factor of 1.5 to account for fallow land. (two crops every 3 years)
**Investment required per crop and fallow acres.

COST-RETURN PROJECTION—DRYLAND NO-TILL CORN—WESTERN KANSAS

	Yield Level (bu) 65	75	85	Your Farm
VARIABLE COSTS PER ACRE:				
1. Labor (1 hr × $9.00/hr)	$9.00	$9.00	$9.00	
2. Seed	16.20	16.20	18.00	
3. Herbicide and Insecticide	28.22	28.22	28.22	
4. Fertilizer and Lime	14.90	14.90	18.70	
5. Fuel and Oil	6.10	6.10	6.10	
6.				
7. Machinery & Equipment Repairs	14.40	14.40	14.40	
8.				
9. Crop Insurance	8.50	8.50	8.50	
10. Drying @ $0.10/bu	6.50	7.50	8.50	
11. Custom Hire				
12. Crop Consulting				
13. Miscellaneous	5.00	5.00	5.00	
14. Interest on 1/2 Variable Costs @ 10%	5.44	5.49	5.82	
A. TOTAL VARIABLE COSTS	$114.26	$115.31	$122.24	
FIXED COSTS PER ACRE:				
15. Real Estate Taxes @ 0.5%	$3.68	$3.68	$3.68	
16. Interest on Land ($490/A × 6%)[1]	44.10	44.10	44.10	
17. Rent for Rented Land				
18. Depreciation on Crop Machinery	12.22	12.22	12.22	
19. Interest on Crop Machinery[2] @ 10%	12.69	12.69	12.69	
20.				
21.				
22. Insurance on Machinery	0.47	0.47	0.47	
B. TOTAL FIXED COSTS	$73.16	$73.16	$73.16	
C. TOTAL COSTS (A + B)	$187.42	$188.47	$195.40	
D. YIELD PER ACRE	65	75	85	
E. PRICE PER BUSHEL	$2.50	$2.50	$2.50	
F. NET GOVERNMENT PAYMENT[3]	$16.58	$19.13	$21.68	
G. RETURNS PER ACRE ((D × E) + F)	$179.08	$206.63	$234.18	
H. RETURNS OVER VARIABLE COSTS (G-A)	$64.82	$91.32	$111.94	
I. RETURNS OVER TOTAL COSTS (G-C)	$-8.34	$18.16	$38.78	
J. VARIABLE COSTS PER BUSHEL (A ÷ D)	$1.76	$1.54	$1.44	
K. FIXED COSTS PER BUSHEL (B ÷ D)	$1.13	$0.98	$0.86	
L. TOTAL COSTS PER BUSHEL (C ÷ D)	$2.88	$2.51	$2.30	
M. ASSET TURNOVER (G ÷ INVESTMENT)[4]	19.40%	22.39%	25.37%	
N. NET RETURN ON INVESTMENT ((I+14+16+19) ÷ INVESTMENT)[4]	5.84%	8.72%	10.99%	

[1]*Assumes interest rate shown in Table 1.*
[2]*Assumes one-half the (original cost plus salvage value) at the interest rate shown in Table 1.*
[3]*Net government payment equals yield per acre (D) times expected deficiency payment minus prorated cost of set-aside acres. Based on 15% flex acres and 5% ARP. The price used was a five-year average price. The twelve month national average price for the crop year. The 1995 farm program may have major changes.*
[4]*Investment equals total value of all fixed assets shown in Table 1.*

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