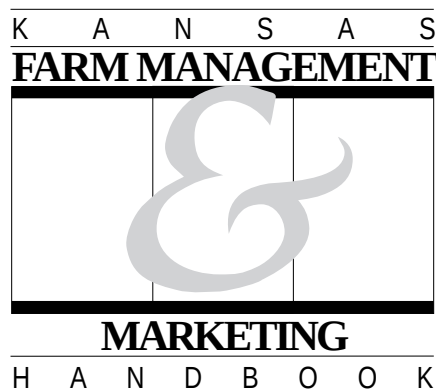




# Ridge Till Flood-Irrigated Corn

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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 is also reduced as most chemicals will use a band application 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 irrigated water, reducing pumping costs and irrigation equipment repairs.

Ridge-till does require 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. Over time, less machinery investment is required under ridge-till.

## Cost-Return Projections

Land preparation costs are included in land value. Other investments are shown in Table 1. Price of the energy source and Total Dynamic Head are the important factors affecting pumping costs. For instance, a \$1 change in natural gas price causes a \$2.97 increase with 100 feet TDH. However, with 500 feet TDH, a \$1 change in gas price causes a \$14.83 change in costs for each acre foot of water pumped.

## 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 many reasons such as soil type/land quality, weather, 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.

**Table 1. Factors Used for Cost-Return Budget**

| Item                            | Yield Level (bu) |        |        |             |
|---------------------------------|------------------|--------|--------|-------------|
|                                 | 160              | 190    | 220    |             |
| Water, 260 TDH<br>(acre inches) | 20               | 22     | 24     | \$1.92/inch |
| Fertilizer:                     |                  |        |        |             |
| N (Anhy.)                       | 170              | 170    | 210    | \$0.19/lb   |
| N (Dry)                         | 20               | 20     | 20     | \$0.29/lb   |
| P                               | 45               | 45     | 45     | \$0.27/lb   |
| K                               | 0                | 0      | 0      | \$0.13/lb   |
| Seed (seeds/Acre)               | 28,000           | 32,000 | 36,000 |             |
| Seed Price, \$/1000             | \$0.90           | \$0.90 | \$0.90 |             |
| Labor Hours                     | 2.85             | 2.85   | 2.85   |             |
| Labor Price/Hour                |                  |        |        | \$9.00      |
| Land Value/Acre                 |                  |        |        | \$605.00    |
| Land Interest Rate              |                  |        |        | 6.00%       |
| Machinery Investment            |                  |        |        | \$208.00    |
| Machinery Life                  |                  |        |        | 10 yrs      |
| Interest Rate on Machinery      |                  |        |        | 10.00%      |
| Well, Pump, and Gearhead Value  |                  |        |        | \$228.00    |
| Well, Pump, and Gearhead Life   |                  |        |        | 15 yrs      |
| Power Unit and Meter Value      |                  |        |        | \$39.00     |
| Power Unit and Meter Life       |                  |        |        | 7 yrs       |
| Irrigation System Value         |                  |        |        | \$33.00     |
| Irrigation System Life          |                  |        |        | 10 yrs      |
| Insurance Rate on Machinery     |                  |        |        | 0.25%       |
| Interest on Variable Costs      |                  |        |        | 10.00%      |

**COST-RETURN PROJECTION—RIDGE-TILL FLOOD-IRRIGATED CORN<sup>1</sup>**

|                                                                               | Yield Level (bu) |          |          | Your Farm |
|-------------------------------------------------------------------------------|------------------|----------|----------|-----------|
|                                                                               | 160              | 190      | 220      |           |
| VARIABLE COSTS PER ACRE:                                                      |                  |          |          |           |
| 1. Labor (2.85 hrs. × \$9.00 per hr) .....                                    | \$ 25.65         | \$ 25.65 | \$ 25.65 |           |
| 2. Seed (___ seeds × \$0.90 per 1,000 seeds) .....                            | 25.20            | 28.80    | 32.40    |           |
| 3. Herbicide (\$21.63) and Insecticide (\$53.38) .....                        | 75.01            | 75.01    | 75.01    |           |
| 4. Fertilizer .....                                                           | 50.25            | 50.25    | 57.85    |           |
| 5. Fuel and Oil—Crop .....                                                    | 4.52             | 4.52     | 4.52     |           |
| 6. Fuel and Oil—Pumping <sup>2</sup> .....                                    | 38.40            | 42.24    | 46.08    |           |
| 7. Crop Machinery Repairs .....                                               | 22.60            | 22.60    | 22.60    |           |
| 8. Irrigation Repairs and Maintenance .....                                   | 4.00             | 4.40     | 4.80     |           |
| 9. Crop Insurance .....                                                       | 6.25             | 6.25     | 6.25     |           |
| 10. Drying @ \$0.10/bu. ....                                                  | 16.00            | 19.00    | 22.00    |           |
| 11. Custom Hire (_____ operation) <sup>3</sup> .....                          |                  |          |          |           |
| 12. Crop Consulting .....                                                     | 6.50             | 6.50     | 6.50     |           |
| 13. Miscellaneous .....                                                       | 7.00             | 7.00     | 7.00     |           |
| 14. Interest <sup>1</sup> / <sub>2</sub> Variable Costs @ 10% .....           | 14.07            | 14.61    | 15.53    |           |
| A. TOTAL VARIABLE COSTS .....                                                 | \$295.45         | \$306.83 | \$326.19 |           |
| FIXED COSTS PER ACRE:                                                         |                  |          |          |           |
| 15. Real Estate Taxes (including well) @ 0.5% .....                           | \$ 4.17          | \$ 4.17  | \$ 4.17  |           |
| 16. Interest on Land and Well (\$833/A × 6%) <sup>4</sup> .....               | 49.98            | 49.98    | 49.98    |           |
| 17. Rent for Rented Land <sup>5</sup> .....                                   |                  |          |          |           |
| 18. Depreciation on Crop Machinery .....                                      | 13.52            | 13.52    | 13.52    |           |
| 19. Interest on Crop Machinery @ 10% <sup>6</sup> .....                       | 14.04            | 14.04    | 14.04    |           |
| 20. Depreciation on Irrigation Equipment and Well .....                       | 24.07            | 24.07    | 24.07    |           |
| 21. Interest on Irrigation Equipment @ 10% <sup>6</sup> .....                 | 3.60             | 3.60     | 3.60     |           |
| 22. Insurance on Machinery and Equipment @ .25% .....                         | 0.70             | 0.70     | 0.70     |           |
| B. TOTAL FIXED COSTS .....                                                    | \$110.08         | \$110.08 | \$110.08 |           |
| C. TOTAL COSTS (A + B) .....                                                  | \$405.53         | \$416.91 | \$436.27 |           |
| D. YIELD PER ACRE .....                                                       | 160              | 190      | 220      |           |
| E. PRICE PER BUSHEL .....                                                     | \$ 2.50          | \$ 2.50  | \$ 2.50  |           |
| F. NET GOVERNMENT PAYMENT <sup>7</sup> .....                                  | \$ 40.80         | \$ 48.45 | \$ 56.10 |           |
| G. RETURNS PER ACRE ((D × E) + F) .....                                       | \$440.80         | \$523.45 | \$606.10 |           |
| H. RETURNS OVER VARIABLE COSTS (G – A) .....                                  | \$145.35         | \$216.62 | \$279.91 |           |
| I. RETURNS OVER TOTAL COSTS (G – C) .....                                     | \$ 35.27         | \$106.54 | \$169.83 |           |
| J. VARIABLE COSTS PER BUSHEL (A ÷ D) .....                                    | \$ 1.85          | \$ 1.61  | \$ 1.48  |           |
| K. FIXED COSTS PER BUSHEL (B ÷ D) .....                                       | \$ 0.69          | \$ 0.58  | \$ 0.50  |           |
| L. TOTAL COSTS PER BUSHEL (C ÷ D) .....                                       | \$ 2.53          | \$ 2.19  | \$ 1.98  |           |
| M. ASSET TURNOVER (G ÷ INVESTMENT) <sup>8</sup> .....                         | 39.60%           | 47.03%   | 54.46%   |           |
| N. NET RETURN ON INVESTMENT<br>((I+14+16+19) ÷ INVESTMENT) <sup>8</sup> ..... | 10.19%           | 16.64%   | 22.41%   |           |

<sup>1</sup>See Table 1, page 1, for factors used. <sup>2</sup>See MF-836, "Irrigation Capital Requirements and Energy Costs." If using custom hire, adjust lines 5, 7, 18, and 19. <sup>3</sup>Assumes interest rate shown in Table 1. <sup>4</sup>If cash rented, insert zero in lines 15 and 16. <sup>5</sup>Assumes one-half the (original cost plus salvage value) at the interest rate shown in Table 1. <sup>6</sup>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 1995 farm program may have major changes. <sup>8</sup>Investment equals total value of all fixed assets shown in Table 1.

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