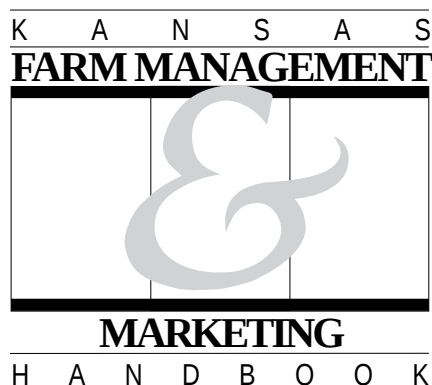




# Soybean Production in Northeast Kansas

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## Cost-Return Projections

Crop budgets are based on average costs of production for different areas of the state. Production costs for individual farms will vary considerably due to the amounts of fertilizer and chemicals applied, type and amount of farm machinery owned, and land costs.

## Yield Level

Costs per bushel and net returns in crop production are highly dependent on yields. The following estimated budgets include three yield levels. Some of the reasons yield levels vary are soil type/land quality, weather, input levels, and management. The three yield levels included in the estimated budgets reflect yield variability due to input level, management, etc. as opposed to land quality (land values are held constant). Budgeting at multiple yield levels can help producers examine the financial risk of a crop enterprise that is directly related to production risk.

## Variable and Fixed Costs

Table 1 shows some of the assumptions used to develop this budget. Note the lime amount assumes that 1 ton of ECC is applied every 5 years. See MF-942, *Cost-Return Budgets — Dryland Crops* for herbicide, insecticide, and seed usage.

Variable costs are costs that vary with level of production such as fertilizer, repairs, and fuel and oil. Fixed costs are costs that do not vary with the level of production, and are incurred by virtue of owning assets such as land and machinery.

Machinery investment was estimated for an average size farm to meet tillage, planting, and harvest requirements in a timely manner. Salvage value of machinery was assumed to be 35 percent of the initial investment. Interest on machinery was calculated on one-half the average investment [(initial investment + salvage value)/2]. Land costs

are based on owned land. If land is cash rented, the rent per acre should be listed on Line 17 and no taxes or interest should be shown on Lines 15 and 16.

## Profit and Return Factors

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

Table1. Factors Used for Cost-Return Budget

| Item                        | Yield Level (bu) |        |        |           |
|-----------------------------|------------------|--------|--------|-----------|
|                             | 25               | 35     | 45     |           |
| Fertilizer:                 |                  |        |        |           |
| N. (Anhy.)                  | 0                | 0      | 0      | \$0.19/lb |
| N. (Dry)                    | 0                | 0      | 0      | \$0.29/lb |
| P.                          | 30               | 30     | 30     | \$0.27/lb |
| K.                          | 30               | 30     | 30     | \$0.13/lb |
| Lime                        | 400              | 400    | 400    | \$0.01/lb |
| Seed, lbs                   | 40               | 40     | 40     |           |
| Seed price, \$/lb           | \$0.25           | \$0.30 | \$0.31 |           |
| Labor Hours                 | 2.05             | 2.05   | 2.05   |           |
| Labor Price/Hour            |                  |        |        | \$9.00    |
| Land Value/Acre             |                  |        |        | \$720.00  |
| Land Interest Rate          |                  |        |        | 6%        |
| Machinery Investment        |                  |        |        | \$264.00  |
| Machinery Life              |                  |        |        | 10 yrs    |
| Salvage value               |                  |        |        | 35%       |
| Interest Rate on Machinery  |                  |        |        | 10%       |
| Insurance Rate on Machinery |                  |        |        | 0.25%     |
| Interest on Variable Costs  |                  |        |        | 10%       |

# COST-RETURN PROJECTION—SOYBEANS—NORTHEAST KANSAS

|                                                                                          | Yield Level (bu) |          |          | Your Farm |
|------------------------------------------------------------------------------------------|------------------|----------|----------|-----------|
|                                                                                          | 25               | 35       | 45       |           |
| VARIABLE COSTS PER ACRE:                                                                 |                  |          |          |           |
| 1. Labor (2.05 hrs × \$9.00 per hr) .....                                                | \$18.45          | \$18.45  | \$18.45  |           |
| 2. Seed (40 lbs × \$__ per lb) .....                                                     | 10.00            | 12.00    | 12.50    |           |
| 3. Herbicide (\$26.68) and Insecticide (\$0.00) .....                                    | 26.68            | 26.68    | 26.68    |           |
| 4. Fertilizer (30 lbs P <sub>2</sub> O <sub>5</sub> ; 30 lbs K) and Lime (400 lbs) ..... | 14.00            | 14.00    | 14.00    |           |
| 5. Fuel and Oil .....                                                                    | 6.99             | 6.99     | 6.99     |           |
| 6. ....                                                                                  |                  |          |          |           |
| 7. Machinery & Equipment Repairs.....                                                    | 12.92            | 12.92    | 12.92    |           |
| 8. ....                                                                                  |                  |          |          |           |
| 9. Crop Insurance.....                                                                   | 5.00             | 5.00     | 5.00     |           |
| 10. Drying .....                                                                         |                  |          |          |           |
| 11. Custom Hire .....                                                                    |                  |          |          |           |
| 12. Crop Consulting .....                                                                |                  |          |          |           |
| 13. Miscellaneous .....                                                                  | 5.25             | 5.25     | 5.25     |           |
| 14. Interest on 1/2 Variable Costs @ 10%.....                                            | 4.96             | 5.06     | 5.09     |           |
| A. TOTAL VARIABLE COSTS .....                                                            | \$104.25         | \$106.35 | \$106.88 |           |
| FIXED COSTS PER ACRE:                                                                    |                  |          |          |           |
| 15. Real Estate Taxes @ .5% .....                                                        | 3.60             | 3.60     | 3.60     |           |
| 16. Interest on Land (\$720/A × 6%) <sup>1</sup> .....                                   | 43.20            | 43.20    | 43.20    |           |
| 17. Rent for Rented Land .....                                                           |                  |          |          |           |
| 18. Depreciation on Crop Machinery .....                                                 | 17.16            | 17.16    | 17.16    |           |
| 19. Interest on Crop Machinery <sup>2</sup> @ 10% .....                                  | 17.82            | 17.82    | 17.82    |           |
| 20. ....                                                                                 |                  |          |          |           |
| 21. ....                                                                                 |                  |          |          |           |
| 22. Insurance on Machinery @ .25% .....                                                  | 0.66             | 0.66     | 0.66     |           |
| B. TOTAL FIXED COSTS .....                                                               | \$82.44          | \$82.44  | \$82.44  |           |
| C. TOTAL COSTS (A + B) .....                                                             | \$186.69         | \$188.79 | \$189.32 |           |
| D. YIELD PER ACRE .....                                                                  | 25               | 35       | 45       |           |
| E. PRICE PER BUSHEL .....                                                                | \$5.85           | \$5.85   | \$5.85   |           |
| F. NET GOVERNMENT PAYMENT <sup>3</sup> .....                                             |                  |          |          |           |
| G. RETURNS PER ACRE ((D x E) + F) .....                                                  | \$146.25         | \$204.75 | \$263.25 |           |
| H. RETURNS OVER VARIABLE COSTS (G-A) .....                                               | \$42.00          | \$98.40  | \$156.37 |           |
| I. RETURNS OVER TOTAL COSTS (G-C) .....                                                  | -\$40.44         | \$15.96  | \$73.93  |           |
| J. VARIABLE COSTS PER BUSHEL (A÷D).....                                                  | \$4.17           | \$3.04   | \$2.38   |           |
| K. FIXED COSTS PER BUSHEL (B÷D) .....                                                    | \$3.30           | \$2.36   | \$1.83   |           |
| L. TOTAL COSTS PER BUSHEL (C÷D) .....                                                    | \$7.47           | \$5.39   | \$4.21   |           |
| M. ASSET TURNOVER (G÷INVESTMENT) <sup>4</sup> .....                                      | 14.86%           | 20.81%   | 26.75%   |           |
| N. NET RETURN ON INVESTMENT<br>((1+14+16+19)÷INVESTMENT) <sup>4</sup> .....              | 2.60%            | 8.34%    | 14.23%   |           |

<sup>1</sup>Assumes interest rate shown in Table 1.

<sup>2</sup>Assumes one-half the (original cost plus salvage value) at the interest rate shown in Table 1.

<sup>3</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 twelve month national average price for the crop year. The 1995 farm program may have major changes.

<sup>4</sup>Investment equals total value of all fixed assets shown in Table 1.



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