



# Alfalfa Haylage Production in Central and Eastern Kansas

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## Cost-Return Projection

Haylage is alfalfa that is chopped between 45 and 55 percent moisture and stored in an oxygen-controlled silo.

## Yield Levels

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, weather, input levels, and management. The three yield levels included in this estimated budget reflects yield variability due to input levels and management as opposed to land quality since 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

Variable costs are costs that vary with level of production such as fertilizer, repairs, and fuel-oil. Interest on variable costs is estimated by using one-half of the accumulated variable costs for the year.

Fixed costs do not vary by level of production, and are incurred by virtue of owning assets such as land and machinery. If the land is rented, use line 17 in lieu of lines 15 and 16.

Machinery investment was estimated for an average size farm to meet tillage, planting, and harvest requirements. Interest on machinery is estimated on one-half the value of machinery investment plus salvage value.

## Profit and Return Factors

Net return on investment is the percentage return on investment. This measure enables comparisons to be made between other enterprises as well as other investment alternatives. Asset turnover is the percentage of investment recovered by total returns.

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

| Item                        | Yield Level (ton) |        |        |            |
|-----------------------------|-------------------|--------|--------|------------|
|                             | 4.5               | 6.3    | 8.0    |            |
| Fertilizer:*                |                   |        |        |            |
| N (Anhy.)                   | 0                 | 0      | 0      | \$0.19/lb. |
| N (Dry)                     | 0                 | 0      | 0      | \$0.29/lb. |
| P                           | 0                 | 20     | 40     | \$0.27/lb. |
| K                           | 0                 | 20     | 40     | \$0.13/lb. |
| Lime                        | 500               | 500    | 500    | \$0.01/lb. |
| Seed, lbs**                 | 8                 | 8      | 8      |            |
| Seed price, \$/lb           | \$2.75            | \$2.75 | \$2.75 |            |
| Labor Hours                 | 9.00              | 9.75   | 10.50  |            |
| Labor Price/Hour            |                   |        |        | \$9.00     |
| Land Value/Acre             |                   |        |        | \$610.00   |
| Land Interest Rate          |                   |        |        | 6.00%      |
| Machinery Investment        |                   |        |        | \$221.00   |
| Machinery Life              |                   |        |        | 10 yrs     |
| Salvage value               |                   |        |        | 20.00%     |
| Interest Rate on Machinery  |                   |        |        | 10.00%     |
| Insurance Rate on Machinery |                   |        |        | 0.25%      |
| Interest on Variable Costs  |                   |        |        | 10.00%     |

\*An additional 20 pounds of nitrogen and 40 pounds of phosphate applied at seeding time prorated over 4 years.

\*\*Prorated over 4 years.

## COST-RETURN PROJECTION—ALFALFA HAYLAGE—CENTRAL AND EASTERN KANSAS

|                                                                               | Yield Level (ton) |          |          | Your Farm |
|-------------------------------------------------------------------------------|-------------------|----------|----------|-----------|
|                                                                               | 4.5               | 6.3      | 8.0      |           |
| VARIABLE COSTS PER ACRE:                                                      |                   |          |          |           |
| 1. Labor (____ hrs × \$9.00/hr) .....                                         | \$81.00           | \$87.75  | \$94.50  |           |
| 2. Seed (8 lbs × \$2.75 ÷ 4 yrs) .....                                        | 5.50              | 5.50     | 5.50     |           |
| 3. Herbicide and Insecticide .....                                            | 11.25             | 11.25    | 25.25    |           |
| 4. Fertilizer and Lime .....                                                  | 6.65              | 14.65    | 22.65    |           |
| 5. Fuel and Oil .....                                                         | 18.70             | 20.70    | 22.70    |           |
| 6. ....                                                                       |                   |          |          |           |
| 7. Machinery & Equipment Repairs .....                                        | 29.35             | 29.35    | 29.35    |           |
| 8. ....                                                                       |                   |          |          |           |
| 9. Crop Insurance .....                                                       |                   |          |          |           |
| 10. Drying .....                                                              |                   |          |          |           |
| 11. Custom Hire .....                                                         |                   |          |          |           |
| 12. Crop Consulting .....                                                     |                   |          |          |           |
| 13. Miscellaneous .....                                                       | 6.15              | 6.15     | 6.15     |           |
| 14. Interest on 1/2 Variable Costs @ 10% .....                                | 7.93              | 8.77     | 10.31    |           |
| A. TOTAL VARIABLE COSTS .....                                                 | \$166.53          | \$184.12 | \$216.41 |           |
| FIXED COSTS PER ACRE:                                                         |                   |          |          |           |
| 15. Real Estate Taxes @ .5% .....                                             | 3.05              | 3.05     | 3.05     |           |
| 16. Interest on Land <sup>1</sup> (\$610/a × 6%) .....                        | 36.60             | 36.60    | 36.60    |           |
| 17. Rent for Rented Land .....                                                |                   |          |          |           |
| 18. Depreciation on Crop Machinery .....                                      | 17.68             | 17.68    | 17.68    |           |
| 19. Interest on Crop Machinery <sup>2</sup> @ 10% .....                       | 13.26             | 13.26    | 13.26    |           |
| 20. ....                                                                      |                   |          |          |           |
| 21. ....                                                                      |                   |          |          |           |
| 22. Insurance on Machinery @ .25% .....                                       | 0.55              | 0.55     | 0.55     |           |
| B. TOTAL FIXED COSTS .....                                                    | \$71.14           | \$71.14  | \$71.14  |           |
| C. TOTAL COSTS (A + B) .....                                                  | \$237.67          | \$255.26 | \$287.55 |           |
| D. YIELD PER ACRE .....                                                       | 4.5               | 6.3      | 8.0      |           |
| E. PRICE PER TON .....                                                        | \$42.00           | \$42.00  | \$42.00  |           |
| F. NET GOVERNMENT PAYMENT <sup>3</sup> .....                                  |                   |          |          |           |
| G. RETURNS PER ACRE ((D × E) + F) .....                                       | \$189.00          | \$264.60 | \$336.00 |           |
| H. RETURNS OVER VARIABLE COSTS (G-A) .....                                    | \$22.47           | \$80.48  | \$119.60 |           |
| I. RETURNS OVER TOTAL COSTS (G-C) .....                                       | \$ -48.67         | \$9.34   | \$48.45  |           |
| J. VARIABLE COSTS PER TON (A÷D) .....                                         | \$37.01           | \$29.23  | \$27.05  |           |
| K. FIXED COSTS PER TON (B÷D) .....                                            | \$15.81           | \$11.29  | \$8.89   |           |
| L. TOTAL COSTS PER TON (C÷D) .....                                            | \$52.82           | \$40.52  | \$35.94  |           |
| M. ASSET TURNOVER (G ÷ INVESTMENT) <sup>4</sup> .....                         | 22.74%            | 31.84%   | 40.43%   |           |
| N. NET RETURN ON INVESTMENT<br>((I+14+16+19) ÷ INVESTMENT) <sup>4</sup> ..... | 1.10%             | 8.18%    | 13.07%   |           |

<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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