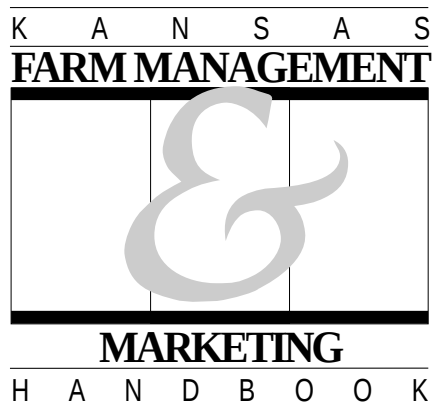




Alfalfa Cost-Return Budget in Central and Eastern Kansas

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Resources and Returns

Labor needed to produce a ton of alfalfa hay ranges from 30 minutes for a fully automated system to 1.6 hours per ton for a conventional baling system. Capital needed for alfalfa production also varies widely depending on the system used. High labor, low investment systems require a tractor, mower, rake, baler, and wagons. High-capital, low-labor systems use a self-propelled swather, tractor, heavy-duty baler, and an automatic bale wagon.

Yield Level

Costs per ton and net returns in crop production are highly dependent on yields. The following estimated budget includes three yield levels. Yield levels vary for a number of reasons including soil type or land quality, weather, input levels, and management. The three yield levels reflect 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, such as fertilizer, repairs, and fuel-oil, are costs that vary with the level of production. Interest was computed on one-half the variable costs.

Fixed costs do not vary with the level of production and are incurred by virtue of owning assets such as land and machinery. If land is cash rented, the cost of the rent per acre should be listed on line 18, and no taxes or interest shown on lines 16 and 17. If land is rented on a cropshare basis, rent is reflected in yield. Interest on machinery was calculated on one-half the average investment [(initial investment + salvage value) ÷ 2].

Profit and Return Factors

Net return on investment is the percentage return on investment. This measure enables comparisons to be made among other enterprises and 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.

Table 1. Factors Used for Cost-Return Budget

Item	Yield Level (ton)			
	2.5	3.5	4.5	
Fertilizer*:				
N (Anhy.)	0	0	0	\$0.17/lb
N (Dry)	0	0	0	\$0.30/lb
P	0	20	40	\$0.28/lb
K	0	20	40	\$0.13/lb
Lime	500	500	500	\$0.005/lb
Seed, lbs**	8	8	8	
Seed price, \$/lb	\$2.85	\$2.85	\$2.85	
Labor hours	5.00	5.40	5.80	
Labor price/hour				\$9.00
Land value/acre*				\$650
Land interest rate				6.00%
Land real estate tax rate				0.50%
Machinery investment**				\$182
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 — CENTRAL AND EASTERN KANSAS

	Yield Level (ton)			Your Farm
	2.5	3.5	4.5	
VARIABLE COSTS PER ACRE: ¹				
1. Labor	\$ 45.00	\$ 48.60	\$ 52.20	
2. Seed	5.70	5.70	5.70	
3. Herbicide			12.15	
4. Insecticide	11.57	11.57	11.57	
5. Fertilizer and Lime	6.80	15.00	23.20	
6. Fuel and Oil	15.65	17.65	19.65	
7.				
8. Machinery and Equipment Repairs	26.65	26.65	26.65	
9.				
10. Crop Insurance				
11. Drying				
12. Custom Hire				
13. Crop Consulting				
14. Miscellaneous	5.25	5.25	5.25	
15. Interest on 1/2 Variable Costs	5.83	6.52	7.82	
A. TOTAL VARIABLE COSTS	\$ 122.45	\$ 136.94	\$ 164.19	
FIXED COSTS PER ACRE: ¹				
16. Real Estate Taxes	3.25	3.25	3.25	
17 Interest on Land ²	39.00	39.00	39.00	
18. Rent for Rented Land				
19. Depreciation on Crop Machinery	14.56	14.56	14.56	
20. Interest on Crop Machinery ³	10.92	10.92	10.92	
21.				
22.				
23. Insurance on Machinery	0.46	0.46	0.46	
B. TOTAL FIXED COSTS	\$ 68.19	\$ 68.19	\$ 68.19	
C. TOTAL COSTS (A + B)	\$ 190.64	\$ 205.13	\$ 232.37	
D. YIELD PER ACRE	2.5	3.5	4.5	
E. PRICE PER TON ⁴	\$ 78.00	\$ 78.00	\$ 78.00	
F. NET GOVERNMENT PAYMENT ⁴	\$ 11.80	\$ 11.80	\$ 11.80	
G. RETURNS PER ACRE [(D × E) + F]	\$ 206.80	\$ 284.80	\$ 362.80	
H. RETURNS OVER VARIABLE COSTS (G-A)	\$ 84.34	\$ 147.85	\$ 198.61	
I. RETURNS OVER TOTAL COSTS (G-C)	\$ 16.16	\$ 79.67	\$ 130.42	
J. VARIABLE COSTS PER TON (A ÷ D)	\$ 48.98	\$ 39.13	\$ 36.49	
K. FIXED COSTS PER TON (B ÷ D)	\$ 27.27	\$ 19.48	\$ 15.15	
L. TOTAL COSTS PER TON (C ÷ D)	\$ 76.25	\$ 58.61	\$ 51.64	
M. ASSET TURNOVER (G ÷ INVESTMENT) ⁵	24.86%	34.23%	43.61%	
N. NET RETURN ON INVESTMENT [(I+15+17+20) ÷ INVESTMENT] ⁵	8.64%	16.36%	22.62%	

¹Totals were derived using information listed in Table 1.²Assumes interest rate shown in Table 1.³Assumes one-half the average investment [(initial investment + salvage value) ÷ 2] at the interest rate shown in Table 1.⁴See 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.⁵Investment equals total value of all fixed assets shown in Table 1.**COOPERATIVE EXTENSION SERVICE, MANHATTAN, KANSAS**

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