

Alfalfa Cost-Return Budget in North Central and Northeast Kansas

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Alfalfa is an important crop in north central and northeast Kansas, whether it is used on the farm as a feed ingredient in livestock rations or it is produced and sold for the commercial market. As with many north central and northeast Kansas crops, alfalfa is produced using various cropping systems. This budget is based on annualized costs of an alfalfa stand established and maintained for four years.

Income Per Acre

Crop production costs per unit and net returns are highly dependent on yields. The following estimated budgets include three different yield levels, which are intended to represent expected yields for land of varying quality for a given level of management. Yield levels are based on historical data from Kansas Agricultural Statistics Service and the Northeast Kansas Farm Management Association, adjusting for trends over time. Land values and government payments have been adjusted for alternative yield levels in this budget. In customizing a budget to your farm, attention should be given to using land values representative of your farm's productive capacity as well as government payments specific to your land.

Price per ton is based on an expected statewide market price for alfalfa. Producers should use an expected price

Table 1. Production Inputs — Alfalfa*

Item	Yield Level (ton)			
	3.1	3.6	4.0	
Seed, lbs	3.75	3.75	3.75	\$2.74/lb
Fertilizer:				
N (anhydrous)	0	0	0	\$0.16/lb
N	5	5	5	\$0.23/lb
P	48	54	60	\$0.21/lb
K	0	0	0	\$0.14/lb
Lime	500	500	500	\$0.01/lb
Herbicide				
Pursuit	0.4	0.4	0.4	\$11.14/oz
Select	2.0	2.0	2.0	\$1.49/oz
Insecticide / Fungicide				
Pounce	0.2	0.2	0.2	\$1.09/lb

* Inputs represent annualized amounts over the 4-year stand.

representative of their location. While a futures market does not exist to provide a basis for estimating future alfalfa prices, USDA price reports regularly provide information on Kansas hay markets and can be used to help develop price expectations.

Table 2. Machinery and Land Resources — Alfalfa *

ITEM	Yield Level (ton)			
	3.1	3.6	4.0	
Tillage/Planting/Chemical Applications:				
Chisel	0.25	0.25	0.25	\$9.44/ac
Disk	0	0	0	\$6.47/ac
Field cultivate	0.25	0.25	0.25	\$5.87/ac
Drill	0.25	0.25	0.25	\$7.61/ac
Anhydrous application	0	0	0	\$6.15/ac
Fertilizer application	1	1	1	\$3.61/ac
Herbicide application	0.5	0.5	0.5	\$3.77/ac
Insecticide / fungicide application	1	1	1	\$3.84/ac
Harvest				
Swathing and conditioning	4	4	4	\$8.74/ac
Sideraking	1	1	1	\$2.71/ac
Baling (number of bales/acre)**	4.1	4.8	5.3	\$10.02/bale
Non-machinery labor	0.00	0.00	0.00	\$10.00/hr
Irrigation labor	0.00	0.00	0.00	\$10.00/hr
Land value/acre	\$653	\$816	\$980	6.00%
Interest on capital				8.0%

* Machinery operations represent annualized amounts over the 4-year stand.

Crop insurance was not included as an input expense in this budget because yields reflect an average of all years (good and bad). If crop insurance is included as an input expense, then an expected value for indemnity payments should be included in the returns section.

Costs Per Acre

Production costs at the three yield levels are shown on lines 1 through 13. Kansas Custom Rates for specific field operations are used to represent fuel and labor costs as well as machinery repair, depreciation, and interest expenses.

Table 1 identifies seed, fertilizer, herbicide, and insecticide requirements (rate and cost/unit) for alfalfa. Table 2 outlines the machinery and land resources used for alfalfa, assuming a four-year stand life and four cuttings per year. Establishment costs include seed, some fertilizer, lime, tillage operations, and one herbicide application and occur only in year 1. Additional fertilizer (phosphorus) is applied each year in years 2 through 4. During the four-year life of the stand, one insecticide application is needed on average. Finally, in year 4, a second herbicide application is generally needed.

COST-RETURN PROJECTION — ALFALFA — NORTH CENTRAL AND NORTHEAST KANSAS

	Yield Level (ton)			Your Farm
	3.1	3.6	4.0	
INCOME PER ACRE				
A. Yield per acre	3.1	3.6	4.0	
B. Price per ton	\$ 90.67	\$ 90.67	\$ 90.67	
C. Net government payment	\$ 12.32	\$ 13.40	\$ 14.47	
D. Indemnity payments	\$	\$	\$	
E. Miscellaneous income	\$	\$	\$	
F. Returns/acre ((A × B) + C + D + E)	\$ 293.40	\$ 339.81	\$ 377.15	
COSTS PER ACRE				
1. Seed	\$ 10.28	\$ 10.28	\$ 10.28	
2. Herbicide	6.88	6.88	6.88	
3. Insecticide / Fungicide	0.22	0.22	0.22	
4. Fertilizer and Lime	16.28	17.54	18.65	
5. Crop Consulting				
6. Crop Insurance				
7. Drying				
8. Miscellaneous	7.25	7.25	7.25	
9. Custom Hire / Machinery Expense	94.11	100.83	106.14	
10. Non-machinery Labor				
11. Irrigation				
a. Labor				
b. Fuel and Oil				
c. Repairs and Maintenance				
d. Depreciation on Equipment and Well				
e. Interest on Equipment				
12. Land Charge / Rent	39.15	48.96	58.77	
G. SUB TOTAL	\$ 174.17	\$ 191.96	\$ 208.18	
13. Interest on 1/2 Nonland Costs	5.40	5.72	5.98	
H. TOTAL COSTS	\$ 179.57	\$ 197.68	\$ 214.16	
I. RETURNS OVER COSTS (F - H)	\$ 113.83	\$ 142.13	\$ 162.99	
J. TOTAL COSTS/TON (H ÷ A)	\$ 57.93	\$ 54.91	\$ 53.54	
K. RETURN TO ANNUAL COST (I + 13) ÷ G	68.45%	77.02%	81.16%	

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Kansas State University Agricultural Experiment Station and Cooperative Extension Service

MF-2365

October 2001

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