



Sub-Irrigated Alfalfa Cost-Return Budget in Western Kansas

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The planting flexibility available under the 1996 Federal Agricultural Improvement and Reform Act has allowed increasing numbers of Kansas producers to consider alfalfa as a cash crop. Alfalfa can be a profitable crop enterprise in many lowland, subirrigated areas of Western Kansas. Markets for alfalfa hay are firmly established in Western Kansas where sizable cattle feeding and expanding dairy operations provide a ready demand. Alfalfa hay and pellets produced in the region are routinely shipped to other areas. Sizable price premiums are typically received for premium or dairy quality as opposed to average quality alfalfa hay. Perhaps in alfalfa as in no other Western Kansas crop enterprise, the timely and effective management of harvesting, handling, storage, and marketing operations is rewarded with higher hay quality and selling prices.

Expected Yields

Crop production costs per unit and net returns in sub-irrigated alfalfa production are highly dependent on yields. The following estimated budget includes three different sub-irrigated alfalfa yield levels, which are intended to represent expected yields for land of varying quality for a given level of management. Alternative expected yields can help producers compare the profitability of crop enterprises on farmland tracts with varying yield potentials. Land values and government payments have been adjusted for alternative yield levels in this budget. In customizing this budget to your farm, attention should be given to using land values representative of your farm's productive capacity.

Variable and Fixed Costs, Return Factors

Variable costs such as fertilizer, repairs, and fuel-oil may vary with the level of production. The cost columns show the

interest on the variable costs (Lines 1 through 15) for one-half year. Fixed costs do not vary with level of production and are incurred by virtue of owning assets such as land and machinery. Projections of net percentage return on investment permit comparisons to be made among alternative enterprises or other investments.

Table 1. Factors Used for Cost-Return Budget

Item	Yield Level (ton)			
	3.3	3.7	4.1	
Fertilizer:*				
N (Anhy.)	0	0	0	\$0.15/lb
N (Dry)	0	0	0	\$0.24/lb
P	54	60	68	\$0.18/lb
K	0	0	0	\$0.14/lb
Lime	0	0	0	\$0.01/lb
Seed, lbs.**	15.0	15.0	15.0	
Seed price, \$/lb.	\$2.81	\$2.81	\$2.81	
Labor hours	2.67	2.80	2.93	
Labor price/hour				\$10.80
Land value/acre	\$398	\$498	\$598	
Land interest rate				6.00%
Land real estate tax rate				0.50%
Machinery investment				\$191
Machinery life				10 yrs
Salvage value				35%
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 — SUB-IRRIGATED ALFALFA — WESTERN KANSAS

	Yield Level (ton)			Your Farm
	3.3	3.7	4.1	
VARIABLE COSTS PER ACRE:¹				
1. Labor	\$ 28.88	\$ 30.24	\$ 31.60	
2. Seed	10.54	10.54	10.54	
3. Herbicide	4.48	4.48	4.48	
4. Insecticide	12.57	12.57	12.57	
5. Fertilizer and Lime	12.72	13.80	15.24	
6. Fuel and Oil	14.37	15.04	15.72	
7.				
8. Machinery and Equipment Repairs	29.54	30.93	32.32	
9.				
10. Crop Insurance				
11. Drying				
12. Custom Hire				
13. Crop Consulting				
14. Miscellaneous	5.00	5.00	5.00	
15. Interest on 1/2 Variable Costs	5.90	6.13	6.37	
A. TOTAL VARIABLE COSTS	\$ 124.00	\$ 128.73	\$ 133.85	
FIXED COSTS PER ACRE:¹				
16. Real Estate Taxes	1.99	2.49	2.99	
17. Interest on Land ²	23.88	29.88	35.88	
18. Rent for Rented Land				
19. Depreciation on Crop Machinery	12.42	12.42	12.42	
20. Interest on Crop Machinery ³	12.89	12.89	12.89	
21.				
22.				
23. Insurance on Machinery	0.48	0.48	0.48	
B. TOTAL FIXED COSTS	\$ 51.66	\$ 58.16	\$ 64.66	
C. TOTAL COSTS (A + B)	\$ 175.65	\$ 186.89	\$ 198.50	
D. YIELD PER ACRE	3.3	3.7	4.1	
E. PRICE PER TON⁴	\$ 70.00	\$ 70.00	\$ 70.00	
F. NET GOVERNMENT PAYMENT⁴	\$ 8.67	\$ 9.42	\$ 10.17	
G. INDEMNITY PAYMENTS	\$	\$	\$	
H. MISCELLANEOUS INCOME	\$	\$	\$	
I. RETURNS PER ACRE [(D × E) + F + G + H]	\$ 239.67	\$ 268.42	\$ 297.17	
J. RETURNS OVER VARIABLE COSTS (I – A)	\$ 115.67	\$ 139.69	\$ 163.32	
K. RETURNS OVER TOTAL COSTS (I – C)	\$ 64.02	\$ 81.53	\$ 98.67	
L. VARIABLE COSTS PER TON (A ÷ D)	\$ 37.58	\$ 34.79	\$ 32.65	
M. TOTAL COSTS PER TON (C ÷ D)	\$ 53.23	\$ 50.51	\$ 48.42	
N. NET RETURN ON INVESTMENT				
[(K+15+17+20) ÷ INVESTMENT] ⁵	18.11%	18.93%	19.49%	

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.

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Kansas State University Agricultural Experiment Station and Cooperative Extension Service

MF-2367

October 2000

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File code: Farm Management 3-1