KANSAS FARM MANAGEMENT & MARKETING HANDBOOK

KSU Farm Management Guide MF-2146

Fescue Hay Cost-Return Budget in Central and Eastern Kansas

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Resources

Typically fescue hay is cut with a tractor and mower, raked with a side delivery rake, baled with a large round baler, and moved to storage with a tractor and bale fork. Other equipment may include a swather and a trailer for hauling large bales. Labor per acre and per ton vary with size of equipment and distance to storage.

Yield Level

Cost per ton and net returns in crop production are highly dependent on yields. The following estimated budget includes three different yield levels. The three yield levels are intended to represent expected yields of varying land quality for a given level of management. Land values and various inputs vary as yield levels vary.

Variable and Fixed Costs

Table 1 show some of the assumptions used to develop this budget. See MF-942, *Cost-Return Budgets—Nonirrigated Crops*, for herbicide and insecticide usage.

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

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.

In this projection, the cost of machinery and equipment is allocated to hay production in accordance with the hours the machine was used for this enterprise. Estimated equipment investment, based on 200 acres, for hay production is shown at right, above. Interest on machinery was calculated on one-half the average investment [(initial investment + salvage value) ÷ 2].

Equipment	Investment	% Used for Hay Production
Tractor (85 H.P.)	$40,000	25
Tractor (65 H.P.)	25,000	35
Mower (9 ft.)	4,500	100
Rake (9 ft.)	3,500	100
Bale Fork	1,000	100
Baler	10,500	100

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.

Table 1. Factors Used for Cost-Return Budget

	Yield Level (ton)			
Item	**1.0**	**2.3**	**2.8**	
Fertilizer*:				
N (Anhy.)	0	0	0	$0.15/lb
N (Dry)	0	80	100	$0.23/lb
P	0	30	30	$0.27/lb
K	0	10	10	$0.14/lb
Lime	0	0	0	$0.0045/lb
Seed, lbs**	18	18	18	
Seed price, $/lb	$0.75	$0.75	$0.75	
Labor hours	1.25	1.40	1.70	
Labor price/hour				$10.80
Land value/acre	$450	$500	$525	
Land interest rate				6.00%
Land real estate tax rate				0.50%
Machinery investment				$222
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 60 pounds nitrogen, 40 pounds phosphate, 60 pounds potash and 3 tons of lime applied at seeding time prorated over 10 years*
***Prorated over 10 years*

COST-RETURN PROJECTION — FESCUE HAY —CENTRAL AND EASTERN

	Yield Level (ton)			Your
	1.0	2.3	2.8	Farm
VARIABLE COSTS PER ACRE:[1]				
1. Labor	$ 13.50	$ 15.12	$ 18.36	
2. Seed	1.35	1.35	1.35	
3. Herbicide				
4. Insecticide				
5. Fertilizer and Lime	6.00	33.90	38.50	
6. Fuel and Oil	3.60	7.00	8.80	
7.				
8. Machinery and Equipment Repairs	8.00	12.00	14.00	
9.				
10. Crop Insurance				
11. Drying				
12. Custom Hire				
13. Crop Consulting				
14. Miscellaneous	7.50	7.50	7.50	
15. Interest on 1/2 Variable Costs	2.00	3.84	4.43	
A. TOTAL VARIABLE COSTS	$ 41.95	$ 80.71	$ 92.94	
FIXED COSTS PER ACRE:[1]				
16. Real Estate Taxes	2.25	2.50	2.63	
17 Interest on Land[2]	27.00	29.98	31.50	
18. Rent for Rented Land				
19. Depreciation on Crop Machinery	17.76	17.76	17.76	
20. Interest on Crop Machinery[3]	13.32	13.32	13.32	
21.				
22.				
23. Insurance on Machinery	0.56	0.56	0.56	
B. TOTAL FIXED COSTS	$ 60.89	$ 64.11	$ 65.76	
C. TOTAL COSTS (A + B)	$ 102.83	$ 144.82	$ 158.70	
D. YIELD PER ACRE	1.0	2.3	2.8	
E. PRICE PER TON[4]	$ 73.00	$ 73.00	$ 73.00	
F. NET GOVERNMENT PAYMENT[4]				
G. INDEMNITY PAYMENTS	$	$	$	
H. MISCELLANEOUS INCOME	$	$	$	
I. RETURNS PER ACRE [(D × E) + F + G + H]	$ 73.00	$ 167.90	$ 204.40	
J. RETURNS OVER VARIABLE COSTS (I – A)	$ 31.05	$ 87.19	$ 111.46	
K. RETURNS OVER TOTAL COSTS (I – C)	$ –29.83	$ 23.08	$ 45.70	
L. VARIABLE COSTS PER TON (A ÷ D)	$ 41.95	$ 35.09	$ 33.19	
M. TOTAL COSTS PER TON (C ÷ D)	$ 102.83	$ 62.97	$ 56.68	
N. NET RETURN ON INVESTMENT [(K+15+17+20) ÷ INVESTMENT][5]	1.86%	9.73%	12.71%	

[1]*Totals were derived using information listed in Table 1.* [2]*Assumes interest rate shown in Table 1.* [3]*Assumes one-half the average investment [(initial investment + salvage value) ÷ 2] at the interest rate shown in Table 1.* [4]*See 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.* [5]*Investment equals total value of all fixed assets shown in Table 1.*

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