Brome Hay Cost-Return Budget in Central and Eastern Kansas

Department of Agricultural Economics — www.agmanager.info

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Troy J. Dumler
Agricultural Economist

Douglas Shoup
Crops and Soils, SE

Brome is a cool season grass that is a popular forage in central and eastern Kansas. Because of heavy-texture soils in eastern Kansas that can become waterlogged, grazing can reduce brome stands. For that reason, brome is grown primarily for hay. It responds well to nutrient applications based on soil test recommendations where phosphate and potash are applied in the fall and nitrogen is applied in the winter. The quality of brome will decrease after heading with protein dropping one half of one percent per day until it reaches 6 percent.

Brome is very comparable to fescue, the other cool season grass that is prominent in eastern Kansas. Yields of brome and fescue will be comparable so long as the brome pasture is not subject to grazing. One clear advantage of brome over fescue is that brome is endophyte-free. However, it does not produce as much fall growth that can be stockpiled for winter grazing.

Table 1. *Production Inputs — Brome**

Item	Yield Level (ton) 1.0	2.5	3.5	
Seed, lbs	1	1	1	$1.85/lb
Fertilizer:				
N (anhydrous)	0	0	0	$0.44/lb
N	0	80	120	$0.68/lb
P	0	20	40	$0.80/lb
K	0	20	40	$0.55/lb
Lime	333	333	333	$0.01/lb
Herbicide				
2, 4-D LV Ester	1.0	1.0	1.0	$5.88/qt

** Inputs and number of applications represent annualized amounts over the 20-year stand.*

Income per Acre

Crop production costs per unit are highly dependent on yields. The following estimated budget includes three different 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 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 production capacity.

Table 2. *Machinery and Land Resources — Brome**

Item	Yield Level (ton) 1.0	2.5	3.5	Custom Rate
Tillage/Planting/Chemical Applications:				
Disk	0.05	0.05	0.05	$9.89/a
Harrow	0	0	0	$8.10/a
Field cultivate	0.05	0.05	0.05	$9.49/a
Drill	0.05	0.05	0.05	$16.29/a
Anhydrous application	0	0	0	$10.89/a
Fertilizer application	0.05	1.05	1.05	$5.36/a
Herbicide application	1	1	1	$5.47/a
Insecticide / fungicide application	0	0	0	$5.54/a
Harvest				
Swathing and conditioning	1	1	1	$13.12/a
Sideraking	1	1	1	$4.160/a
Baling (number of 1,500 lb bales/a)	1.33	3.33	4.67	$15.688/bale
Non-machinery labor	0.40	0.72	0.90	$13.00/hr
Land charge/rent	$44.13	$55.16	$66.20	
Interest on capital				6.5%

** Machinery operations represent annualized amounts over the 20-year stand.*

Costs per Acre

Production costs at the three production 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 in these budgets. Table 1 identifies the typical seed, fertilizer, herbicide, and insecticide requirements (rate and cost/unit) for brome hay. Each tillage, planting, and harvest operation is identified. Table 2 outlines the machinery and land resources used for brome hay. Each tillage, planting, and harvest operation is identified.

COST-RETURN PROJECTION — BROME HAY — CENTRAL AND EASTERN KANSAS

	Yield Level (ton)			Your
	1.0	**2.5**	**3.5**	**Farm**
INCOME PER ACRE				
A. Yield per acre	1.0	2.5	3.5	
B. Price per ton	$ 99.89	$ 99.89	$ 99.89	
C. Net government payment	$	$	$	
D. Indemnity payments	$	$	$	
E. Miscellaneous income	$	$	$	
F. Returns/acre ((A × B) + C + D + E)	$ 99.89	$ 249.73	$ 349.62	
COSTS PER ACRE				
1. Seed	$ 1.85	$ 1.85	$ 1.85	
2. Herbicide	5.88	5.88	5.88	
3. Insecticide / Fungicide				
4. Fertilizer and Lime	3.33	84.73	138.93	
5. Crop Consulting				
6. Crop Insurance				
7. Drying				
8. Miscellaneous	6.81	6.81	6.81	
9. Custom Hire / Machinery Expense	45.67	82.40	103.42	
10. Non-machinery Labor	5.16	9.31	11.69	
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	44.13	55.16	66.20	
G.SUB TOTAL	$ 112.83	$ 246.15	$ 334.78	
13. Interest on ½ Nonland Costs	2.23	6.21	8.73	
H. TOTAL COSTS	$ 115.06	$ 252.35	$ 343.51	
I. RETURNS OVER COSTS (F - H)	$ -15.17	$ -2.63	$ 6.11	
J. TOTAL COSTS/TON (H ÷ A)	$ 115.06	$ 100.94	$ 98.14	
K. RETURN TO ANNUAL COST (I + 13) ÷ G	-11.47%	1.45%	4.43%	

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