

Fescue - Clover Hay Planning Budget

Using this planning budget, farmers growing hay can estimate their costs and returns for 2024. Table 1 presents estimates for established tall fescue and clover hay production in Missouri. Assumptions were based on price forecasts as of October 2023. Detailed prices and practices are summarized in Tables 2 and 3. The production practices used to develop these cost estimates are common on Missouri farms. Use the “Your estimate” column to plan your operation’s costs and returns for 2024.

Table 1. Missouri hay planning budget for 2024.

	Dollars per acre ¹	Your estimate
Income		
Hay	300.00	
Grazing	18.00	
Other income	0.00	
Total income	318.00	
Operating costs		
Seed	0.00	
Fertilizer and soil amendments	102.87	
Crop protection chemicals	0.00	
Crop supplies, storage, and marketing	15.00	
Custom hire and rental	31.63	
Machinery fuel	5.93	
Machinery repairs and maintenance	18.06	
Operator and hired labor	14.24	
Operating interest	8.45	
Total operating costs	196.17	
Ownership costs		
Farm business overhead	21.66	
Machinery ownership	21.37	
Real estate charge	39.04	
Total ownership costs	82.07	
Total costs	278.24	
Income over operating costs		
	121.83	
Income over total costs		
	39.76	

¹ Totals may not sum due to rounding.

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Table 2 shows input assumptions for the tall fescue and clover hay budget. Price estimates reflect harvest time prices. Costs or returns from storage or other marketing methods are not included. No income from government programs are added. Farm business overhead includes liability insurance, utilities, accounting, etc. Real estate charge is an estimated rental rate for above average land.

Table 2. Input assumptions used in hay planning budget for 2024.

Selected input quantities	Per acre	Selected input prices	Dollars per unit
Hay yield, tons, 10% moisture	3	Hay price, per ton	100.00
Pasture yield, animal unit month	1	Pasture price, per animal unit month	18.00
Nitrogen rate, pounds N	60	Nitrogen, per pound N	0.60
Phosphorus rate, pounds P ₂ O ₅	46	Phosphorus, per pound P ₂ O ₅	0.62
Potassium rate, pounds K ₂ O	60	Potassium, per pound K ₂ O	0.41
Lime rate, tons	0.50	Lime, per ton	27.50
Sum of allocated labor, hours	0.82	Labor, per hour	17.31
Operating interest, %	9	Farm diesel, per gallon	4.00

Table 3 details the field activities for this budget and their machinery costs. Machinery costs were estimated using typical life (years), use (hours) and performance (fuel and labor) factors for each power unit and implement used.

Table 3. Machinery assumptions used in hay planning budget for 2024, on a per acre basis.

Machine activity (including custom fieldwork)	Labor (hours)	Fuel (gallons)	Operating costs ¹ (dollars)	Ownership costs ² (dollars)	Total costs (dollars)	Trips across field
Disk mower (9 feet), 105 HP MFWD	0.19	0.90	8.39	6.43	14.83	1
Hay rake (30 feet), 75 HP TWD	0.04	0.16	1.64	1.68	3.32	1
Round baler, net wrap (30 feet); 105 HP MFWD	0.09	0.43	12.54	6.26	18.80	1
Pickup truck			7.00	7.00	14.00	
Dry fertilizer application, custom charge					7.25	1
Move round bales on farm, custom charge					24.38	
Total³	0.32	1.48	29.57	21.37	82.57	4

¹ Machinery operating cost is the sum of fuel, repairs, maintenance, and the value of labor.

² Machinery ownership cost is the sum of machinery overhead and depreciation.

³ Totals may not sum due to rounding.

Abbreviations: TWD = 2-wheel drive tractor; MFWD = mechanical front-wheel drive tractor; HP = horsepower

Farmers can also customize this budget to fit their own operations by using the [Missouri Forage Budget Tool](https://extension.missouri.edu/media/wysiwyg/Extensiondata/Pro/AgBusinessPolicyExtension/Docs/ForageBudgets.xlsx) (<https://extension.missouri.edu/media/wysiwyg/Extensiondata/Pro/AgBusinessPolicyExtension/Docs/ForageBudgets.xlsx>). Download the spreadsheet tool to create an electronic copy of your cost and return estimates for forages in Missouri.