

Alfalfa Establishment Planning Budget

Using this planning budget, farmers establishing alfalfa can estimate their costs and returns for 2024. Table 1 presents estimates for the establishment of Roundup Ready® alfalfa in Missouri. Assumptions were based on price conditions 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. Farmers are encouraged to modify this budget based on their circumstances. Use the “Your estimate” column to plan your operation’s costs and returns for 2024.

Table 1. Missouri alfalfa establishment planning budget for 2024.

	Dollars per acre ¹	Your estimate
Income		
Hay sales (60 pound bales)	594.00	
Other income	0.00	
Total income	594.00	
Operating costs		
Seed	131.25	
Fertilizer and soil amendments	146.40	
Crop protection chemicals	62.49	
Crop supplies, storage, and marketing	10.00	
Custom hire and rental	73.44	
Machinery fuel	26.00	
Machinery repairs and maintenance	24.19	
Operator and hired labor	42.81	
Operating interest	23.25	
Total operating costs	539.83	
Ownership costs		
Farm business overhead	21.66	
Machinery ownership	89.73	
Real estate charge	120.72	
Total ownership costs	232.11	
Total costs	771.93	
Income over operating costs	54.17	
Income over total costs	-177.93	

¹ Totals may not sum due to rounding.

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Table 2 shows input assumptions for alfalfa establishment and small bale production. Price estimates reflect prices out-of-the-field. 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 alfalfa establishment planning budget for 2024.

Selected input quantities	Per acre	Selected input prices	Dollars per unit
Forage yield, 60 pound bales	66	Alfalfa market price, per bale	9.00
Seeding rate, pounds	15	Alfalfa seed, per pound	8.75
Phosphorus rate, pounds P ₂ O ₅	70	Phosphorus, per pound P ₂ O ₅	0.62
Potassium rate, pounds K ₂ O	50	Potassium, per pound K ₂ O	0.41
Lime rate, tons	3	Lime, per ton	27.50
Sum of allocated labor, hours	2.47	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 alfalfa establishment 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
Chisel plow (16 feet), 160 HP MFWD	0.12	0.94	7.50	9.83	17.33	1
Tandem disk (21 feet), 160 HP MFWD	0.08	0.63	6.06	9.63	15.69	1
Cultimulcher (21 feet), 160 HP MFWD	0.08	0.63	5.43	9.51	14.94	1
Presswheel drill (16 feet), 105 HP MFWD	0.16	0.75	7.61	9.02	16.63	1
Boom sprayer - pull-type (90 feet), 160 HP MFWD	0.03	0.17	1.65	5.23	13.75	2
Disk mower/conditioner (12 feet), 105 HP MFWD	0.14	0.67	6.52	10.15	33.33	2
Hay rake (20 feet), 75 HP TWD	0.07	0.23	2.35	1.78	8.26	2
Small square baler, 105 HP MFWD	0.15	0.70	8.37	5.21	27.16	2
Pickup truck			7.00	7.00	14.00	
Dry fertilizer application, custom charge					14.04	2
Accumulate/stack/haul small square bales (mechanical collection), custom charge					59.40	
Total³	1.22	6.50	71.36	89.73	234.53	14

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) (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 alfalfa and other forages in Missouri.