

Dairy (Grazing) Planning Budget

This budget presents information useful to dairy farmers. Table 1 presents estimates for the 2021 year on a 150-cow rotational grazing dairy (replacements raised on farm) in Missouri. Assumptions were based on price forecasts as of October 2020. Detailed inputs, feed requirements and investments are summarized in Tables 2, 3 and 4. The production practices used to develop these cost estimates are common for grazing dairies in Missouri. Farmers are encouraged to customize this budget to fit their operation.

Table 1. Missouri dairy (grazing) planning budget for 2021.

	11,000 pounds milk sold		14,000 pounds milk sold		Your estimate
	Dollars per cow ¹	Dollars per cwt ¹	Dollars per cow ¹	Dollars per cwt ¹	
Income					
Milk sales	1,980.04	18.00	2,520.05	18.00	
Quality premium	27.50	0.25	35.00	0.25	
Bull and surplus heifer sales	69.18	0.63	69.18	0.49	
Cull cow sales	118.80	1.08	118.80	0.85	
Total income	2,195.52	19.96	2,743.03	19.59	
Operating costs					
Feed	921.45	8.38	991.76	7.08	
Labor	350.00	3.18	350.00	2.50	
Veterinary, drugs and supplies	85.00	0.77	95.00	0.68	
Utilities and water	55.00	0.50	55.00	0.39	
Fuel, oil and vehicle	65.00	0.59	65.00	0.46	
Milk hauling and promotion	110.00	1.00	140.00	1.00	
Building and equipment repair	159.42	1.45	159.42	1.14	
Breeding/genetic charges	54.00	0.49	54.00	0.39	
Professional fees (legal, accounting, etc.)	12.00	0.11	12.00	0.09	
Miscellaneous and insurance	15.62	0.14	19.88	0.14	
Operating interest	38.64	0.35	40.55	0.29	
Total operating costs	1,866.13	16.96	1,982.61	14.16	
Ownership costs					
Depreciation on buildings and equipment	106.18	0.97	106.18	0.76	
Interest on land, buildings and equipment	210.27	1.91	210.27	1.50	
Interest on breeding stock	56.25	0.51	56.25	0.40	
Insurance/taxes on capital items	54.30	0.49	54.30	0.39	
Total ownership costs	427.00	3.88	427.00	3.05	
Total costs	2,293.13	20.85	2,409.61	17.21	
Income over operating costs	329.38	2.99	760.42	5.43	
Income over total costs	-97.62	-0.89	333.42	2.38	

¹ Totals may not sum due to rounding.
 Abbreviations: cwt = hundredweight

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Table 2. Input assumptions used in dairy (grazing) planning budget for 2021.

Selected input quantities	Quantity	Selected input prices	Dollars per unit
Cull cow sale weight, pounds	1,100	Cull cow sale price, per hundredweight	60
Labor, cows per worker	100	Annual labor salary and benefits, per worker	42,000
Calf crop, percent	95	Bull calf sale price, per head	100
Heifer replacement, percent	22	Surplus heifer calf sale price, per head	85
Operating interest, percent	4.5	Milk price, per hundredweight	18

Table 3. Feed requirements in dairy (grazing) planning budget for 2021, on a per cow basis.

Feed description	Cost per unit	11,000 pounds milk sold		14,000 pounds milk sold	
		Pounds	Dollars ²	Pounds	Dollars ²
Pasture (intensive dairy), dry matter per ton	80.00	7,335	293.41	7,658	306.31
Alfalfa hay, per ton	200.00	1,289	128.94	1,289	128.94
Corn, cracked, per bushel	3.75	910	60.94	1,384	92.70
Soybean hulls, per ton	150.00	910	68.25	1,068	80.11
Distillers grain, dry, per ton	190.00	791	75.10	949	90.12
Grass hay, per ton	80.00	670	26.80	639	25.58
Minerals/vitamins, per ton	1,100.00	186	102.38	186	102.38
Total lactating and dry cow feed cost			755.82	826.13	
Replacement heifer feed and forage cost ¹			165.63	165.63	
Total feed cost per cow			921.45	991.76	

¹ Total replacement heifer (0 to 24 months) feed cost is \$752.85 and was adjusted to a 22% heifer replacement rate.

² Totals may not sum due to rounding.

Table 4. Investment assumptions in dairy (grazing) planning budget for 2021.

Description	Quantity	Dollars per unit	Total dollars	Dollars per cow ²
Land, acres	200	3,500	700,000	3,889
Milking parlor, stalls	24	7,000	168,000	933
Breeding herd, cows	180	1,250	225,000	1,250
Working facility			14,800	82
Feed storage			11,480	64
Manure storage system			31,250	174
Equipment			31,000	172
Total¹			1,181,530	6,564

¹ Totals may not sum due to rounding.

² Represents total cows in herd.

Farmers can also develop their own custom budget by using the Missouri Dairy Enterprise Tool (<https://extension.missouri.edu/media/wysiwyg/Extensiondata/Pro/AgBusinessPolicyExtension/Docs/MODairyBudget.xlsx>). This spreadsheet tool allows users to develop a custom estimate for their costs and returns for dairy production and heifer raising in Missouri.