

Dairy (Confinement) Planning Budget

Using this planning budget, dairy farmers may estimate their costs and returns for 2023. Table 1 presents estimates for a 150-cow confinement dairy (replacements raised on farm) in Missouri. Assumptions were based on price forecasts as of September 2022. 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 Missouri confinement dairies. Use the “Your estimate” column to plan your operation’s costs and returns for 2023.

Table 1. Missouri dairy (confinement) planning budget for 2023.

	20,000 pounds milk sold		24,000 pounds milk sold		Your estimate
	Dollars per cow ¹	Dollars per cwt ¹	Dollars per cow ¹	Dollars per cwt ¹	
Income					
Milk sales	4,399.95	22.00	5,279.92	22.00	
Government payments	150.00	0.75	180.00	0.75	
Bull and surplus heifer sales	58.38	0.29	58.38	0.24	
Cull cow sales	313.20	1.57	313.20	1.31	
Total income	4,921.52	24.61	5,831.49	24.30	
Operating costs					
Feed	3,161.27	15.81	3,453.44	14.39	
Labor	615.76	3.08	615.76	2.57	
Veterinary, drugs and supplies	120.00	0.60	125.00	0.52	
Utilities and water	65.00	0.33	80.00	0.33	
Fuel, oil and vehicle	90.00	0.45	90.00	0.38	
Milk hauling and promotion	230.00	1.15	276.00	1.15	
Building and equipment repair	265.94	1.33	265.94	1.11	
Breeding/genetic charges	57.00	0.29	57.00	0.24	
Professional fees (legal, accounting, etc.)	12.00	0.06	12.00	0.05	
Miscellaneous and DMC premiums	28.40	0.14	34.08	0.14	
Operating interest	143.50	0.72	153.83	0.64	
Total operating costs	4,788.87	23.94	5,163.05	21.51	
Ownership costs					
Depreciation on buildings and equipment	468.72	2.34	468.72	1.95	
Interest on land, buildings and equipment	273.81	1.37	273.81	1.14	
Interest on breeding stock	91.00	0.46	91.00	0.38	
Insurance/tax on capital items	134.12	0.67	134.12	0.56	
Total ownership costs	967.64	4.84	967.64	4.03	
Total costs	5,756.51	28.78	6,130.69	25.54	
Income over operating costs	132.65	0.66	668.44	2.79	
Income over total costs	-834.99	-4.17	-299.20	-1.25	

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

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Table 2. Input assumptions used in dairy (confinement) planning budget for 2023.

Selected input quantities	Quantity	Selected input prices	Dollars per unit
Cull cow sale weight, pounds	1,450	Cull cow sale price, per hundredweight	80
Labor, cows per worker	70	Annual labor salary and benefits, per worker	50,000
Calf crop, percent	95	Bull calf sale price, per head	100
Heifer replacement, percent	33	Surplus heifer calf sale price, per head	75
Operating interest, percent	6.5	Milk price, per hundredweight	22

Table 3. Feed requirements used in dairy (confinement) planning budget for 2023, on a per cow basis.

Feed description	Cost per unit	20,000 pounds milk sold		24,000 pounds milk sold	
		Pounds	Dollars ²	Pounds	Dollars ²
Corn silage, per ton	79.50	12,223	485.88	13,357	530.95
Alfalfa baleage, per ton	109.88	3,741	205.53	5,296	290.95
Corn, ground, per bushel	7.00	3,470	433.76	3,658	457.19
Alfalfa hay, per ton	275.00	1,708	234.83	1,934	265.94
Whole cotton seed, per ton	460.00	1,675	385.32	1,897	436.37
Soybean hulls, per ton	275.00	1,125	154.64	752	103.39
Soybean meal, per ton	515.00	1,095	281.91	1,354	348.77
Distillers grain, dry, per ton	310.00	1,005	155.80	949	147.04
Grass hay, per ton	150.00	914	68.51	914	68.51
Minerals/vitamins, per ton	1,250.00	577	360.66	656	409.91
Total lactating and dry cow feed cost			2,766.85	3,059.02	
Replacement heifer feed and forage cost ¹			394.42	394.42	
Total feed cost per cow			3,161.27	3,453.44	

¹ Total replacement heifer (0 to 24 months) feed cost is \$1,195.21 and was adjusted to a 33% heifer replacement rate.

² Totals may not sum due to rounding.

Table 4. Investment assumptions in dairy (confinement) planning budget for 2023.

Description	Quantity	Dollars per unit	Total dollars	Dollars per cow ²
Land, acres	4	4,320	17,280	115
Milking parlor, stalls	12	35,000	420,000	2,785
Breeding herd, cows	150	1,400	211,120	1,400
Free stall barn, stalls	130	3,000	390,000	2,586
Land improvements			5,000	33
Feed storage			74,548	494
Manure storage system			130,000	862
Equipment			109,000	723
Total¹			1,356,948	8,998

¹ Totals may not sum due to rounding.

² Represents total cows in herd.

Farmers can also customize this budget to fit their own operations by using the [Missouri Dairy Enterprise Tool](https://extension.missouri.edu/media/wysiwyg/Extensiondata/Pro/AgBusinessPolicyExtension/Docs/MODairyBudget.xlsx) (extension.missouri.edu/media/wysiwyg/Extensiondata/Pro/AgBusinessPolicyExtension/Docs/MODairyBudget.xlsx). Download the spreadsheet tool to keep an electronic copy of your cost and return estimates for dairy production and heifer raising in Missouri.



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