

# Dairy (Confinement) Planning Budget

This budget presents information useful to dairy farmers. Table 1 presents estimates for the 2021 year on a 150-cow confinement 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 confinement dairies in Missouri. Farmers are encouraged to customize this budget to fit their operation.

**Table 1. Missouri dairy (confinement) planning budget for 2021.**

	20,000 pounds milk sold		24,000 pounds milk sold		Your estimate
	Dollars per cow <sup>1</sup>	Dollars per cwt <sup>1</sup>	Dollars per cow <sup>1</sup>	Dollars per cwt <sup>1</sup>	
<b>Income</b>					
Milk sales	3,599.96	18.00	4,319.93	18.00	
Quality premium	50.00	0.25	60.00	0.25	
Bull and surplus heifer sales	59.83	0.30	59.83	0.25	
Cull cow sales	234.90	1.17	234.90	0.98	
<b>Total income</b>	<b>3,944.68</b>	<b>19.72</b>	<b>4,674.66</b>	<b>19.48</b>	
<b>Operating costs</b>					
Feed	2,040.06	10.20	2,260.58	9.42	
Labor	517.24	2.59	517.24	2.16	
Veterinary, drugs and supplies	114.00	0.57	115.00	0.48	
Utilities and water	60.00	0.30	75.00	0.31	
Fuel, oil and vehicle	65.00	0.33	65.00	0.27	
Milk hauling and promotion	200.00	1.00	240.00	1.00	
Building and equipment repair	225.58	1.13	225.58	0.94	
Breeding/genetic charges	54.00	0.27	54.00	0.23	
Professional fees (legal, accounting, etc.)	12.00	0.06	11.00	0.05	
Miscellaneous and insurance	28.40	0.14	34.08	0.14	
Operating interest	70.12	0.35	75.54	0.31	
<b>Total operating costs</b>	<b>3,386.40</b>	<b>16.93</b>	<b>3,673.02</b>	<b>15.30</b>	
<b>Ownership costs</b>					
Depreciation on buildings and equipment	395.68	1.98	395.68	1.65	
Interest on land, buildings and equipment	160.74	0.80	160.74	0.67	
Interest on breeding stock	56.25	0.28	56.25	0.23	
Insurance/tax on capital items	115.60	0.58	115.60	0.48	
<b>Total ownership costs</b>	<b>728.27</b>	<b>3.64</b>	<b>728.27</b>	<b>3.03</b>	
<b>Total costs</b>	<b>4,114.67</b>	<b>20.57</b>	<b>4,401.28</b>	<b>18.34</b>	
<b>Income over operating costs</b>	<b>558.29</b>	<b>2.79</b>	<b>1,001.64</b>	<b>4.17</b>	
<b>Income over total costs</b>	<b>-169.98</b>	<b>-0.85</b>	<b>273.37</b>	<b>1.14</b>	

<sup>1</sup> 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 2021.**

Selected input quantities	Quantity	Selected input prices	Dollars per unit
Cull cow sale weight, pounds	1,450	Cull cow sale price, per hundredweight	60
Labor, cows per worker	70	Annual labor salary and benefits, per worker	42,000
Calf crop, percent	95	Bull calf sale price, per head	100
Heifer replacement, percent	33	Surplus heifer calf sale price, per head	85
Operating interest, percent	4.5	Milk price, per hundredweight	18

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

Feed description	Cost per unit	20,000 pounds milk sold		24,000 pounds milk sold	
		Pounds	Dollars <sup>2</sup>	Pounds	Dollars <sup>2</sup>
Corn silage, per ton	45.00	12,223	275.03	13,357	300.54
Alfalfa baleage, per ton	100.00	3,741	187.05	5,296	264.79
Corn, ground, per bushel	3.75	3,470	232.37	3,658	244.92
Alfalfa hay, per ton	200.00	1,708	170.78	1,934	193.41
Whole cotton seed, per ton	240.00	1,675	201.04	1,897	227.67
Soybean hulls, per ton	150.00	1,125	84.35	752	56.39
Soybean meal, per ton	350.00	1,095	191.59	1,354	237.03
Distillers grain, dry, per ton	190.00	1,005	95.49	949	90.12
Grass hay, per ton	80.00	914	36.54	914	36.54
Minerals/vitamins, per ton	1,100.00	577	317.38	656	360.72
Total lactating and dry cow feed cost			1,791.62		2012.13
Replacement heifer feed and forage cost <sup>1</sup>			248.44		248.44
<b>Total feed cost per cow</b>			<b>2,040.06</b>		<b>2,260.58</b>

<sup>1</sup> Total replacement heifer (0 to 24 months) feed cost is \$752.85 and was adjusted to a 33% heifer replacement rate.

<sup>2</sup> Totals may not sum due to rounding.

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

Description	Quantity	Dollars per unit	Total dollars	Dollars per cow <sup>2</sup>
Land, acres	4	3,500	14,000	93
Milking parlor, stalls	12	30,000	360,000	2,387
Breeding herd, cows	150	1,250	188,500	1,250
Free stall barn, stalls	130	2,750	357,500	2,371
Land improvements			5,000	33
Feed storage			56,826	377
Manure storage system			97,500	647
Equipment			81,100	538
<b>Total<sup>1</sup></b>			<b>1,160,426</b>	<b>7,695</b>

<sup>1</sup> Totals may not sum due to rounding.

<sup>2</sup> 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.



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