

EBB-D1-02

Holstein Dairy Enterprise Annual Cow Budget

- Small-sized Idaho herd · 21,000 pounds milk per cow
- Open lots w/o housing · Barn fed concentrates

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Background and Assumptions

This budget represents the average costs and returns per cow associated with a 210-cow dairy herd. The rolling 365-day 3.5 fat-corrected milk for the year is 21,000 pounds. The herd is milked twice daily in a double 6 herringbone parlor. Cows are grouped in three production strings, barn fed 10 pounds of concentrate, and top dressed the balance outside.

No outside housing is provided for the milking cows. Loose housing is provided for dry cows. All pens have lock-type stanchions for herd management. The owner contributes to the daily labor requirement. The \$1,167 per cow facility investment is based on the best estimate of current cost and the average value of each component over its useful life. Operating input costs are based on actual herd survey data, from base information, or both.

Dairy Overview

Herd Information

The herd consists of 210 cows total with 85 percent of cows in milk (180 milking + 30 dry). The herd replacement rate is 33 percent annually (cull loss and mortality) with ready-to-calve springers used as replacements (\$1,315 per head). The herd has a 3 percent mortality rate on mature cows and an average 13-month calving interval.

Cow Labor

	Daily labor (hr/herd)		Annual labor (hr/cow)		
	Hired	Owner	Hired	Owner	Total
Milking	13.5	.0	23.5	.0	23.5
Feeding	3.0	3.0	5.2	5.2	10.4
Facility mgmt.	2.0	.0	3.5	.0	3.5
Herd mgmt.	.0	4.0	.0	7.0	7.0
Manure mgmt.	.0	.0	.0	.0	.0
Total	18.5	7.0	32.2	12.2	44.4

Labor

All milking labor is hired (13.5 hours/day includes all cleanup). Feeding labor is split between the owner and hired labor (3 hours/day each). Facility management labor is hired (2 hours/day). Herd management labor is provided totally by the herd owner (4 hours/day). Manure is managed in open lots and removed twice a year by a custom operator. Feed lanes are scraped three times a week.

Feeds

The ration consists of alfalfa hay and corn silage and a commercially prepared (16 percent protein) and purchased dairy mixture. Twelve pounds of this mix is fed in the barn to all cows. The balance for each group is top dressed on the silage feeding. Alfalfa hay is fed long. A feed company representative balances the rations to meet the requirements of each group of cows at no cost.

Rations are based on the following averages:

	Average days in milk	Average lb/cow/day
Pen 1	56	88
Pen 2	167	59
Pen 3	279	48
Pen 4	dry cows	

Cow Rations

Feed	Cost (\$/100 lb)	Quantity (lb/day as-fed)			
		Pen 1	Pen 2	Pen 3	Pen 4
Alfalfa hay	\$4.75	16	16	16	6
Corn silage	1.25	25	37	42	30
16% mix in-barn	6.91	5.91	12	12	0
Mix outside	5.75	23	11	4	0
Mineral	21.00	.2	.2	.2	.2
Oat hay	3.55	0	0	0	12
Cost per head per pen		\$3.17	\$2.59	\$2.35	\$1.13

Feeds are converted to a 90 percent dry matter basis and grouped into roughage and concentrate equivalents. Annual cow requirements for roughage and concentrate equivalents are reported in the feed section of the enterprise budget.

Dairy Enterprise Annual Cow Budget
21,000 Pound Milk Average Holstein Herd

	Unit	Price or Cost/unit	Number of Units/Cow	Value/Cost 100 lbs Milk	Value or Cost/Cow	Your Value
1. Gross Receipts						
Milk	Cwt.	12.25	210.84	12.25	\$2,582.80	_____
Bull Calves	Head	39.00	0.524	.10	20.43	_____
Heifer Calves	Head	130.00	0.524	.32	68.10	_____
Cull Cows	Head	623.50	0.300	.89	187.05	_____
Manure Credit	Head	35.50	1.00	<u>.17</u>	<u>35.50</u>	_____
Total Receipts				\$13.73	\$2,893.87	_____
2. Operating Costs						
Feeds:						
Roughages	Cwt.	4.25	104.56	2.11	\$444.31	_____
Concentrates	Cwt.	6.48	70.85	2.18	459.38	_____
Hired Labor	Hr.	10.00	33.89	1.61	338.92	_____
Herd Health:						
Breeding	Head	26.00	1.00	.12	26.00	_____
Veterinary	Head	26.51	1.00	.13	26.51	_____
Drugs	Head	26.51	1.00	.13	26.51	_____
Marketing	Head	93.82	1.00	.44	93.82	_____
Supplies, etc.:						
Barn supplies	Head	28.57	1.00	.14	28.57	_____
Other supplies	Head	91.43	1.00	.43	91.43	_____
Utilities	Head	47.14	1.00	.22	47.14	_____
Records	Head	18.00	1.00	.09	18.00	_____
Bedding	Head	30.48	1.00	.14	30.48	_____
Repairs - All	Head	46.78	1.00	.22	46.78	_____
Professional service	Head	9.52	1.00	.05	9.52	_____
Custom Hire	Head	25.00	1.00	.12	25.00	_____
Fuel	Head	20.47	1.00	.10	20.47	_____
Replacement Cost	Head	1315.00	0.33	2.06	433.95	_____
Interest on Cattle	Dol.	0.068	969.20	.31	65.42	_____
Interest Operating Capital*	Dol.	0.063	1,639.00	<u>.04</u>	<u>8.54</u>	_____
Total Operating Cost				\$10.63	\$2240.77	_____
3. Income Above Operating Costs					\$653.10	_____
4. Ownership Costs						
Interest on Avg. Investment	Dol.	0.068	1,167.00	.37	\$78.77	_____
Depreciation on All	Head	112.05	1.00	.53	112.05	_____
Insurance	Head	6.01	1.00	<u>.03</u>	<u>6.01</u>	_____
Total Ownership Cost				\$.93	\$196.83	_____
5. Total Cost				\$11.56	\$2,437.60	_____
6. Returns to Operator Labor, Mgmt and Risk				\$2.16	\$456.27	_____

Breakeven prices
If 211 cwt. of milk is produced:

To cover operating inputs \$9.15
To cover all costs except risk and management \$10.09

* Interest on operating capital is based on 1/12 of total annual capital borrowed (one month).

Enterprise Summary of Costs

	Percent Total Cost (%)	Annual Per Cow (\$)	100 Lbs Milk (\$)
1. Operating Costs			
Feed	37.1	904.00	4.29
Hired Labor	13.9	339.00	1.61
Herd Health	3.2	79.00	0.37
Marketing	3.8	94.00	0.44
Supplies	8.8	215.00	1.02
Replacements	17.8	434.00	2.06
Interest	3.0	74.00	0.35
Others	<u>4.2</u>	<u>102.00</u>	<u>0.48</u>
Total Operating Cost	91.9%	\$2,241.00	\$10.63
2. Ownership Costs			
	8.1%	\$197.00	\$.93
3. Total Operating and Ownership Cost			
		\$2,438.00	\$11.56
4. Enterprise Summary of Returns			
Returns Over Feed Cost (milk sales only)		\$1,679.00	\$7.96
Returns to Operator Labor, Mgmt and Risk		\$456.00	\$2.16
Rate of Return to \$2136 Average Capital Investment Per Cow (cows, bldgs., equip., land)		16.37%	16.37%
5. Enterprise Liquidity			
Returns Above Cash Expense for Family Living, Income Tax, Social Security, Debt (P&I) Capital Replacement and Expansion		\$721.00	\$3.42

Sensitivity Analysis

Annual returns per cow when the price of milk varies from
\$11.25 to \$13.25

	Milk Price Per Cwt.				
	\$11.25	\$11.75	\$12.25	\$12.75	\$13.25
Returns over operating cost	\$442	\$548	\$653	\$759	\$864
Returns to operator labor, mgmt and risk	\$245	\$351	\$456	\$562	\$667
Return over feed cost	\$1,779	\$1,885	\$1,990	\$2,096	\$2,201

Feed cost per 100 lb. of milk when the price of roughage varies from \$65 to \$105
and the price of concentrate varies from \$90 to \$170

	Roughage Price Per Ton					
	\$65	\$75	\$85	\$95	\$105	
Concentrate Price/Ton	\$90	3.12	3.37	3.62	3.86	4.11
	\$100	3.29	3.54	3.78	4.03	4.28
	\$110	3.46	3.71	3.95	4.20	4.45
	\$120	3.63	3.87	4.12	4.37	4.62
	\$130	3.79	4.04	4.29	4.54	4.78
	\$140	3.96	4.21	4.46	4.70	4.95
	\$150	4.13	4.38	4.62	4.87	5.12
	\$160	4.30	4.54	4.79	5.04	5.29
	\$170	4.46	4.71	4.96	5.21	5.46

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