

EBB-D2-02

Holstein Dairy Enterprise Annual Cow Budget

- Small-sized Idaho herd · 23,000 pounds milk per cow
- Free stall housing · Total mixed rations

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Background and Assumptions

This budget represents the 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 23,000 pounds. The herd is milked twice daily in a mechanized double 6 herringbone parlor. Cows are grouped in three production strings and fed a total mixed ration.

Free stalls provide housing 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 \$1,903 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, generated from base information, or both.

Dairy Overview

Herd Information

The herd consists of 210 cows with 85 percent of cows in milk (180 milking + 30 dry). The herd replacement rate is 39 percent annually (culling plus mortality) with ready-to-calve springers used as replacements (\$1,315 per head). The herd has a 9 percent mortality rate on mature cows and an average 13-month on calving interval.

Cow Labor

	Daily labor (hr/herd)		Annual labor (hr/cow)		
	Hired	Owner	Hired	Owner	Total
Milking	9.5	.0	16.5	0	16.5
Feeding	2.0	2.0	3.5	3.5	7.0
Facility mgmt.	4.0	.0	7.0	0	7.0
Herd mgmt.	0	4.0	.0	7.0	7.0
Manure	0	0	2.6	0	2.6
Total	15.5	6.0	29.6	10.5	40.1

Labor

All milking labor is hired (9.5 hours per day includes all cleanup). Feeding labor is split between the owner and hired labor (2 hours per day for each). Facility management labor is hired (4 hours per day). Herd management labor is provided totally by the herd owner (4 hours per day).

Feeds

The total ration consists of alfalfa hay and corn silage blended with grain and commodity feeds. A blend of protein feeds provides additional by-pass protein in the rations. A hired nutritionist balances the rations to meet the requirements of each group of cows (\$2,400 annually).

Rations are based on the following averages:

	Average days in milk	Average lb/cow/day
Pen 1	56	99
Pen 2	167	73
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	16	24	34	30
Barley	6.88	10	8	6	0
Corn	6.95	10	8	6	0
Beet pulp	5.95	6	6	6	0
Whole cottonseed	8.85	10	7	5	0
Protein blend	10.00	3	3	3	0
Mineral	21.00	1	1	1	1
Oat hay	3.55	0	0	0	12
Cost per head per pen		\$4.09	\$3.65	\$3.32	\$1.30

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
23,000 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	228.85	12.25	\$2,803.41	_____
Bull Calves	Head	39.00	0.524	.09	20.43	_____
Heifer Calves	Head	130.00	0.524	.30	68.10	_____
Cull Cows	Head	623.50	0.30	.82	187.05	_____
Manure Credit	Head	35.50	1.00	<u>.16</u>	<u>35.50</u>	_____
Total Receipts				\$13.61	\$3,114.49	_____
2. Operating Costs						
Feeds:						
Roughages	Cwt.	4.33	90.27	1.71	\$390.86	_____
Concentrates	Cwt.	8.02	103.66	3.63	831.39	_____
Hired Labor	Hr.	10.00	26.94	1.18	269.40	_____
Herd Health:						
Breeding	Head	26.00	1.00	.11	26.00	_____
Veterinary	Head	26.51	1.00	.12	26.51	_____
Drugs	Head	26.51	1.00	.12	26.51	_____
Marketing	Head	101.84	1.00	.45	101.84	_____
Supplies, etc.:						
Barn supplies	Head	28.57	1.00	.12	28.57	_____
Utilities	Head	107.14	1.00	.47	107.14	_____
Records	Head	18.00	1.00	.08	18.00	_____
Bedding	Head	45.71	1.00	.20	45.71	_____
Repairs - All	Head	83.65	1.00	.37	83.65	_____
Professional Service	Head	9.52	1.00	.04	9.42	_____
Custom Hire	Head	25.00	1.00	.11	25.00	_____
Fuel	Head	43.46	1.00	.19	43.46	_____
Replacement Cost	Head	1315.00	0.39	2.24	512.89	_____
Interest on Cattle	Dol.	0.068	969.20	.29	65.42	_____
Interest Operating Capital*	Dol.	0.063	1931.70	<u>.04</u>	<u>10.06</u>	_____
Total Operating Cost				\$11.46	\$2621.92	_____
3. Income Above Operating Costs				\$2.15	\$492.57	_____
4. Ownership Costs						
Interest on Average Investment	Dol.	0.068	1,903.00	.56	\$128.45	_____
Depreciation on All	Head	186.08	1.00	.81	186.08	_____
Insurance	Head	12.49	1.00	<u>.05</u>	<u>12.49</u>	_____
Total Ownership Cost				\$1.42	\$327.02	_____
5. Total Cost				\$12.89	\$2,948.94	_____
6. Returns to Operator Labor, Mgmt and Risk				\$.72	\$165.55	_____
Breakeven prices						
If 229 cwt. of milk is produced:						
			To cover operating inputs	\$10.10		
			To cover all costs except risk and management	\$11.53		

* 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	41.4	1,222.00	5.34
Hired Labor	9.1	269.00	1.18
Herd Health	2.7	79.00	0.35
Marketing	3.5	102.00	0.45
Supplies	6.8	199.00	0.87
Replacements	17.4	513.00	2.24
Interest	2.6	76.00	0.33
Others	<u>5.5</u>	<u>162.00</u>	<u>0.71</u>
Total Operating Cost	88.9%	\$2,622.00	\$11.46
2. Ownership Costs	11.1%	\$327.00	\$1.43
3. Total Operating and Ownership Cost		\$2,949.00	\$12.89
4. Enterprise Summary of Returns			
Returns Over Feed Cost (milk sales only)		\$1,581.00	\$6.91
Returns to Operator Labor, Mgmt and Risk		\$166.00	\$.72
Rate of Return to \$2,872 Average Capital Investment Per Cow (cows, bldgs., equip., land)		4.00%	4.00%
5. Enterprise Liquidity			
Returns Above Cash Expense for Family Living, Income Tax, Social Security, Debt (P&I) Capital Replacement and Expansion		\$556.00	\$2.43

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	\$264	\$378	\$493	\$607	\$721
Returns to operator labor, mgmt and risk	-\$63	\$51	\$166	\$280	\$394
Return over feed cost	\$1,663	\$1,778	\$1,892	\$2,007	\$2,121

Feed cost per 100 lb. of milk when the price of roughage varies from \$67 to \$107
and the price of concentrate varies from \$120 to \$200

		Roughage Price Per Ton				
		\$67	\$77	\$87	\$97	\$107
Concentrate Price/Ton	\$120	4.04	4.23	4.43	4.63	4.82
	\$130	4.26	4.46	4.66	4.85	5.05
	\$140	4.49	4.69	4.88	5.08	5.28
	\$150	4.72	4.91	5.11	5.31	5.50
	\$160	4.94	5.14	5.34	5.53	5.73
	\$170	5.17	5.37	5.56	5.76	5.96
	\$180	5.39	5.59	5.79	5.99	6.18
	\$190	5.62	5.82	6.02	6.21	6.41
	\$200	5.85	6.04	6.24	6.44	6.64

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