

2010 Idaho Livestock Costs and Returns Estimate



EBB-D3-10

Jersey Dairy Enterprise Budget

120-cow dairy 16,940 lb milk per cow

Free stall housing Total mixed rations

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Background and Assumptions

Economic costs are used in the University of Idaho costs and returns estimates. All resources are valued based on market price or opportunity cost. This budget represents the average costs and returns per cow associated with a 120-cow dairy herd. The rolling 365-day 3.5% fat-corrected milk for the year is 16,940 lb per cow. The herd is milked two times daily in a double 4 herringbone parlor with automatic detachers. Lactating cows are grouped in two production strings, barn fed concentrates, and top-dressed commodity feeds outside. All pens have lock-type stanchions for herd management.

Free stall housing is provided for the two lactating groups with loose housing provided for the dry cows. The \$6,273 per cow facility investment is based on the best estimate of current cost and average value of each component over its useful life. Operating input costs are based on survey data, DHIA Jersey summary data, data generated from this base information, or all three.

Dairy Overview

Herd Information

The herd consists of 120 cows total with approximately 84% of cows in milk (100 milking + 20 dry). The herd replacement rate is 30% annually (cull loss and mortality) with ready-to-calve heifers used as replacement (\$1,225 per head). The herd consists of 31% first lactation cows, 23% second lactation cows, and 46% third and greater lactation cows. The calving interval is 12.5 months.

Daily (hr/herd) and Annual (hr/cow) Labor Requirements

	Daily labor (hr/herd)		Annual labor (hr/cow)		
	Hired	Owner	Hired	Owner	Total
Milking	3.5	3.5	10.6	10.6	21.2
Feeding	0.0	3.0	0.0	9.1	9.1
Facility mgmt.	2.5	0.0	7.6	0.0	7.6
Herd mgmt.	0.0	2.0	0.0	6.1	6.1
Manure mgmt.	0.4	0.0	1.2	0.0	1.2
Total	6.4	8.5	19.4	25.8	45.2

Labor

Labor requirements are divided between hired and owner labor. Milking labor is split between the owner and hired labor (7 hours total, 3.5 hours each shift). All the feeding labor (3 hours) is provided by the owner. Facility management labor of 2.5 hours is hired. The owner spends 2 hours per day managing the herd. Manure removal is required 12 times each year, requiring 12.4 hours per removal.

Feeds

The ration consists of alfalfa hay, corn silage, a commercial 14% protein dairy mixture, whole cottonseed, and beet pulp. The 14% dairy mixture is fed in the barn to all cows. Beet pulp and whole cottonseed are added to the silage of the high-producing group of cows. Alfalfa hay is fed long. A feed company representative balances the rations to meet the requirements of each group of cows at no extra cost. Rations are based on the following averages:

Daily Feed Ration Quantities (lb/cow) and Cost by Pen (\$/day)

Price (\$/cwt)	Cow Ration Quantity (lb/day as fed)						Cost by pen
	Alfalfa hay	Corn silage	Barn grain	Beet pulp	Cotton- seed meal	Feeder hay	
	\$7.65	\$1.75	\$8.65	\$6.50	\$13.00	\$5.75	
Pen 1	16	6	16	6	6	0	\$3.88
Pen 2	15	18	11	5	4	0	\$3.26
Pen 3	5	30	0	0	0	7	\$1.31

Table1: Jersey Dairy Enterprise Annual Cow Budget

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	Weight Each	Unit	Total Number of Head or Units	Price or Cost/Unit	Total Value	Value or Cost/Head	Your Value
1. Gross Receipts							
Milk	169.40	cwt	120	14.50	294,756.00	2456.30	_____
Bull Calves	0.57	head	120	35.00	2394.00	19.95	_____
Heifer Calves	0.57	head	120	135.00	9234.00	76.95	_____
Cull cows	0.37	head	120	397.00	17,626.80	146.89	_____
Manure Credit	1.00	head	120	25.46	3055.20	25.46	_____
Total Receipts					\$327,066.00	\$2725.55	_____
2. Operating Costs							
Alfalfa hay		cwt	2376.00	7.65	18,176.40	151.47	_____
Corn silage		cwt	2592.00	1.75	4536.00	37.80	_____
Barn grain		cwt	1944.00	8.65	16,815.60	140.13	_____
Beet pulp		cwt	792.00	6.50	5148.00	42.90	_____
Cottonseed meal		cwt	720.00	13.00	9360.00	78.00	_____
Feeder hay		cwt	201.60	5.75	1159.20	9.66	_____
Marketing		head	120.00	151.76	18,211.20	151.76	_____
Barn Supplies		head	120.00	40.00	4800.00	40.00	_____
Utilities		head	120.00	136.00	16,320.00	136.00	_____
Records		head	120.00	20.00	2400.00	20.00	_____
Bedding		head	120.00	71.73	8607.60	71.73	_____
Professional service		head	120.00	10.47	1256.40	10.47	_____
Replacement heifers		head	40.00	1225.00	48,995.10	408.29	_____
Interest on operating capital		head	120.00	14.62	1754.40	14.62	_____
Custom hire		head	120.00	27.50	3300.00	27.50	_____
Veterinary Medicine	\$		10,440.00	1.00	10,440.00	87.00	_____
Machinery (fuel, lubrication, repair)	\$		2632.73	1.00	2632.73	21.94	_____
Vehicles (fuel, repair)	\$		3791.25	1.00	3791.25	31.59	_____
Equipment (repair)	\$		4310.43	1.00	4310.43	35.92	_____
Housing and Improvements (repair)	\$		5788.36	1.00	5788.36	48.24	_____
Hired Labor		hour	2328.00	9.26	21,557.28	179.64	_____
Owner Labor		hour	3096.00	10.95	33,901.20	282.51	_____
Interest on Operating Capital	\$		0.00	0.07	0.00	0.00	_____
Total Operating Costs					\$243,261.15	\$2027.18	_____
3. Income Above Operating Costs					\$83,804.85	\$698.37	_____
4. Ownership Costs							
Capital Recovery:							
Purchased Livestock	\$		0.00	1.00	0.00	0.00	_____
Housing and Improvements	\$		32,161.45	1.00	32,161.45	268.01	_____
Machinery	\$		2517.57	1.00	2517.57	20.98	_____
Equipment	\$		13,537.39	1.00	13,537.39	112.81	_____
Vehicles	\$		2829.98	1.00	2829.98	23.58	_____
Interest on Retained Livestock	\$		84,000.00	0.06	5040.00	42.00	_____
Taxes and Insurance	\$		1880.65	1.00	1880.65	15.67	_____
Overhead	\$		5913.00	1.00	5913.00	49.27	_____
Total Ownership Costs					\$63,880.03	\$532.33	_____
5. Total Costs					\$307,141.18	\$2559.51	_____
6. Returns to Risk and Management					\$19,924.82	\$166.04	_____

Table 4: Investment Summary.

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	Purchase Price	Salvage/Cull Value	Livestock Share	Useful Life	Annual Taxes and Insurance	Annual Capital Recovery ¹
Buildings, Improvements and Equipment						
Land for dairy	\$50,000.00	\$50,000.00	80	100	\$240.00	\$2400.00
D-4 herringbone	\$54,194.00	\$5419.00	100	20	\$178.84	\$4577.57
Dry cow shed	\$18,065.00	\$1806.50	100	15	\$59.61	\$1782.41
Maternity pens	\$12,043.00	\$1204.30	100	15	\$39.74	\$1188.24
Free stall/pens	\$136,500.00	\$13,650.00	100	15	\$450.45	\$13,467.98
Waste lagoon	\$18,065.00	\$0.00	80	15	\$43.36	\$1488.02
Feed bunk combo	\$30,108.00	\$3010.80	100	15	\$99.36	\$2970.65
Silo	\$22,882.00	\$2288.20	55	20	\$41.53	\$1063.01
Hay storage	\$36,129.00	\$3612.90	65	20	\$77.50	\$1983.59
Commodity shed	\$12,043.00	\$0.00	100	15	\$36.13	\$1239.98
Parlor equipment	\$18,065.00	\$3600.00	100	10	\$65.00	\$2181.33
Milking equipment	\$18,065.00	\$3600.00	100	10	\$65.00	\$2181.33
Grain system	\$12,043.00	\$2100.00	100	8	\$42.43	\$1811.07
Feed wagon	\$20,000.00	\$4000.00	70	10	\$50.40	\$1689.72
Stock trailer	\$10,000.00	\$2000.00	95	10	\$34.20	\$1146.60
Manure wagon	\$10,000.00	\$2000.00	75	10	\$27.00	\$905.21
Bulk tank	\$24,086.00	\$4200.00	100	8	\$84.86	\$3622.13
Total	\$502,288.00				\$1635.39	\$45,698.83
Purchased Livestock						
Total	\$0.00					\$0.00
Retained Livestock						
Cows	\$120,000.00	\$48,000.00	100			\$5040.00 ²
Total	\$120,000.00					\$5040.00²
Machinery and Vehicles						
Tractor - 50hp	\$29,941.00	\$5988.00	50	13	\$53.89	\$1568.75
Tractor - 75hp	\$50,626.00	\$10,125.00	25	25	\$45.56	\$948.82
Farm pickup	\$18,000.00	\$3600.00	90	6	\$145.80	\$2829.98
Total	\$98,567.00				\$245.26	\$5347.55

¹ Annual capital recovery is the method of calculating depreciation and interest recommended by the National Task Force on Commodity Costs and Returns Measurement Methods.

² Interest on average investment.

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