

Jersey Dairy Enterprise Annual Cow Budget



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Background and Assumptions

This budget represents the costs and returns associated with a 120-cow dairy operation. The 365-day milk average is 16,000 pounds. The herd is milked twice 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 \$2,014 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, DHI Jersey summary data, data generated from this base information, or all three.

Dairy Overview

Herd Information

The herd consists of 120 cows with approximately 84 percent in milk (100 milking and 20 dry). The herd replacement rate is 33 percent annually (culling plus 3 percent herd mortality) with ready-to-calve springers as replacements (\$1,150 per head). The herd consists of 31 percent first lactation cows, 23 percent second lactation cows, and 46 percent third and greater lactation cows. The last calving interval is 12.5 months.

Cow Labor

	Daily labor (hr/herd)		Annual labor (hr/cow)		
	Hired	Owner	Hired	Owner	Total
Milking	3.5	3.5	10.7	10.7	21.4
Feeding	0	3.0	0	9.1	9.1
Facility mgmt.	2.5	0	7.6	0	7.6
Herd mgmt.	0	2.0	.0	6.1	6.1
Manure mgmt.	4	0	1.2	0	1.2
Total	6.4	8.5	19.5	25.9	45.4

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 each day managing the herd. Manure removal is required 12 times each year and requires 12.4 hours per removal.

Feeds

The ration consists of alfalfa hay, corn silage, a commercially prepared (14 percent protein) and purchased dry mixture, whole cottonseed, and beet pulp. The 14 percent 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 cost.

Rations are based on the following averages:

	Average days in milk	Average number of cows	Average lb/ milk/cow
Pen 1	80	50	60
Pen 2	240	50	44
Pen 3	dry cows	20	

Cow Rations

Feed	Cost (\$/100 lb)	Quantity (lb/day as-fed)		
		Pen 1	Pen 2	Pen 3
Alfalfa hay	\$ 4.75	16	16	5
Corn silage	1.25	6	18	30
16% mix-in barn	6.92	16	11	0
Whole cottonseed	8.85	6	4	0
Beet pulp	5.95	6	5	0
Oat hay	3.55	0	0	7
Mineral	21.00	0.3	0.2	1
Cost per head per pen		\$2.89	\$2.39	\$1.07

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

Dairy Enterprise Annual Cow Budget
15,900 Pound Milk Average Jersey Herd

1. Gross Receipts	Unit	Price or Cost/unit	Number of Units/Cow	Value/Cost 100 lbs Milk	Value or Cost/Cow	Your Value
Milk	Cwt.	14.75	159.200	14.75	\$2,348.20	_____
Bull Calves	Head	39.00	.567	.14	22.10	_____
Heifer Calves	Head	130.00	.567	.46	73.67	_____
Cull Cows	Head	430.00	.308	.83	132.58	_____
Manure Credit	Head	25.46	1.00	<u>.16</u>	<u>25.46</u>	_____
Total Receipts				\$16.34	\$2,602.01	_____
2. Operating Costs						
Feeds:						
Roughages	Cwt.	4.44	72.00	2.01	\$ 319.53	_____
Concentrates	Cwt.	7.45	74.64	3.49	556.09	_____
Hired Labor	Hr.	10.00	19.49	1.22	194.90	_____
Herd Health:						
Breeding	Head	26.00	1.00	.16	26.00	_____
Veterinary	Head	23.45	1.00	.15	23.45	_____
Drugs	Head	23.45	1.00	.15	23.45	_____
Marketing	Head	70.85	1.00	.44	70.85	_____
Supplies, etc.:						
Barn supplies	Head	28.50	1.00	.18	28.50	_____
Utilities	Head	47.50	1.00	.30	47.50	_____
Records	Head	20.00	1.00	.13	20.00	_____
Bedding	Head	30.71	1.00	.19	30.71	_____
Other supplies	Head	120.00	1.00	.75	120.00	_____
Repairs - All	Head	86.53	1.00	.54	86.53	_____
Professional Service	Head	10.00	1.00	.06	10.00	_____
Fuel	Head	39.04	1.00	.25	39.04	_____
Replacement Cost	Head	1150.00	0.33	2.38	379.50	_____
Interest on Cattle	Dol.	0.068	790.00	.33	53.33	_____
Interest on Operating Capital*	Dol.	0.063	1,525.70	<u>.05</u>	<u>7.95</u>	_____
Total Operating Cost				\$12.80	\$2,037.31	_____
3. Income Above Operating Costs					\$564.70	_____
4. Ownership Costs						
Interest on Average Investment	Dol.	0.068	2,014.00	.85	\$135.92	_____
Depreciation on All	Head	194.45	1.00	1.22	194.45	_____
Insurance	Head	10.41	1.00	<u>.07</u>	<u>10.41</u>	_____
Total Ownership Cost				\$2.14	\$340.78	_____
5. Total Cost				\$14.94	\$2,378.09	_____
6. Returns to Operator Labor, Mgmt and Risk					\$223.92	_____
Breakeven prices						
If 159 cwt. of milk is produced:						
			To cover operating inputs	\$11.21		
			To cover all costs except risk and management	\$13.34		

* 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	36.8	875.00	5.50
Hired Labor	8.2	195.00	1.22
Herd Health	3.1	73.00	0.46
Marketing	3.0	71.00	0.45
Supplies	10.4	247.00	1.55
Replacements	16.0	380.00	2.38
Interest	2.6	61.00	0.38
Others	<u>5.7</u>	<u>135.00</u>	<u>0.85</u>
Total Operating Cost	85.7%	\$2037.00	\$12.80
2. Ownership Costs			
	14.3%	\$341.00	\$2.14
3. Total Operating and Ownership Cost			
		\$2,378.00	\$14.94
4. Enterprise Summary of Returns			
Returns Over Feed Cost (milk sales only)		\$1,473.00	\$9.25
Returns to Operator Labor, Mgmt and Risk		\$224.00	\$1.41
Rate of Return to \$2,804 Average Capital Investment Per Cow (cows, bldgs., equip., land)		1.33%	1.33%
5. Enterprise Liquidity			
Returns Above Cash Expense for Family Living, Income Tax, Social Security, Debt (P&I) Capital Replacement and Expansion		\$616.00	\$3.87

Sensitivity Analysis

Annual returns per cow when the price of milk varies from
\$13.75 to \$15.75

	Milk Price Per Cwt.				
	\$13.75	\$14.25	\$14.75	\$15.25	\$15.75
Returns over operating cost	\$406	\$485	\$565	\$644	\$724
Returns to operator labor, mgmt and risk	\$65	\$144	\$224	\$304	\$383
Return over feed cost	\$1,567	\$1,647	\$1,726	\$1,806	\$1,886

Feed cost per 100 lb. of milk when the price of roughage varies from \$69 to \$109
and the price of concentrate varies from \$109 to \$189

		Roughage Price Per Ton				
		\$69	\$79	\$89	\$99	\$109
Concentrate Price/Ton	\$109	4.12	4.35	4.57	4.80	5.03
	\$119	4.36	4.58	4.81	5.03	5.26
	\$129	4.59	4.82	5.04	5.27	5.50
	\$139	4.82	5.05	5.28	5.50	5.73
	\$149	5.06	5.29	5.51	5.74	5.97
	\$159	5.29	5.52	5.75	5.97	6.20
	\$169	5.53	5.76	5.98	6.21	6.43
	\$179	5.76	5.99	6.22	6.44	6.67
	\$189	6.00	6.22	6.45	6.68	6.90

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