

Per Cow, Jersey Costs Lower, Returns Greater—Again

For a fourth consecutive year, an analysis of production costs in California Jersey and Holstein dairies and estimated milk revenues based on Federal Order minimum prices shows that per cow, Jersey dairies have lower cost of production and higher net returns per cow compared to Holstein operations.

From 2001 to 2004, when milk prices reached both historic lows and highs while production costs inched upwards, Jerseys were consistently the most profitable breed. Across the four-year period, the cost of production was \$314 (12%) less for Jerseys compared to Holsteins, with Jerseys' advantage in net returns per cow averaging \$139, or 44% greater.

How The Study Was Done

This is the third analysis by National All-Jersey Inc. (NAJ) utilizing extensive data published annually by the California Department of Food and Agriculture (CDFA). Statistics reported in this article were developed by segregating monthly and annual cost of production estimates for Holstein and Jersey herds in the *California Cost of Production Annual Summary* for the years 2001 through 2004, then converting them for comparison on a per cow basis.

The 2004 summary included 196 herds, 22 of which were identified as "Jersey, mixed and other breeds." For the purpose of doing between-breed comparisons, all 22 herds were considered to be Jersey herds. The milk component levels of that group, along with the relatively small number of non-Jersey and non-Holstein herds in California, leads to the conclusion that this group of herds is primarily, if not exclusively, Jersey.

NAJ's previous analyses have calculated milk revenues based on California overbase pricing and the major cheese yield/protein pricing programs used in the state. In order to better estimate

revenue per cow in all regions of the United States, NAJ staff utilized Federal Order minimum prices for milkfat, true protein, and nonfat solids, plus typical over-order premiums for protein, to estimate the average revenue per cow for each year in the study. Costs and returns from milk sales were compared. The results are summarized in Table 1 (*opposite page*).

Production Costs

CDFA breaks out the main categories of cost as (1) feed, (2) labor, (3) operating, (4) herd replacements, and (5) marketing costs (*see Table 1*). In addition, CDFA also considers the cost of management and a reasonable return on investment. These two imputed costs are included as allowances in the cost index.

Production costs increased during 2004, after having been at relatively stable levels for 2002 and 2003. On a per cow basis, production costs for Jersey herds averaged \$2,408 versus \$2,716 for Holsteins, a difference of \$308.

This is consistent with previous years, when Jersey per-cow annualized costs were lower by \$274 (2003), \$334 (2002), and \$341 (2001).

Over the four-year study period, the

and relative savings by expense category.

Lower feed costs account for 52.9% of the Jersey advantage (\$166 of the per cow difference of \$314). Other operating costs account for 18.8% of Jersey savings, while net herd replacements were 16.9% lower. Looking more closely at herd replacement costs, key factors giving Jersey an advantage are higher fertility and lower culling rates, lower heifer raising costs and earlier age at first calving. These advantages are more than enough to offset Jersey's disadvantage in lower salvage value of cull cows and bull calves.

Labor costs differed by just \$8 on average, or 2.5% of total production costs. On the other hand, it cost \$27, or 27.6% more to market a Holstein cow's milk. The added expense is due to the fact that more hundredweights are sold. The average cost to market Holstein milk in California during 2004 was 47 cents per cwt., compared to 46 cents per cwt. for Jersey.

Yield per Cow by Breed

Differences in production between the breeds in the CDFA survey are summarized in Table 1. These are as expected: higher volume yield for Holstein cows, but greater component levels for Jerseys resulting in less difference for milkfat and protein yield.

Among California Jersey herds in the survey, production per cow dropped by 384 lbs. compared to 2003, to an average of 16,000 lbs. milk per cow in 2004. Holstein production increased by 310 lbs. per cow to an average of 21,600 lbs.

Jersey component levels averaged 4.48% fat, 3.60% protein, and 9.15% nonfat solids (SNF) in 2004. Cheese yield per hundredweight for 2004 was 11.71 lbs. per cwt.

Holstein component levels have been largely unchanged since 2001, averaging 3.63% milkfat, 3.22% protein and 8.77% SNF in 2004. Cheese yield per cwt. was 9.98 lbs.

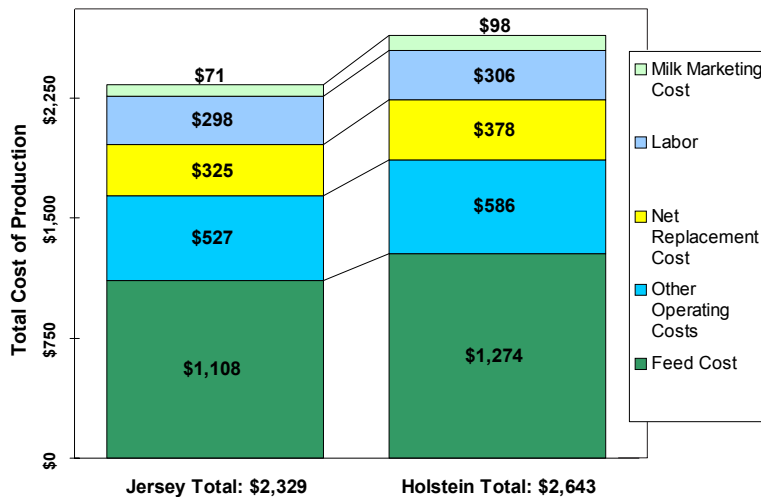


Fig. 1. Average annual production costs per cow for 2001, 2002, 2003 and 2004, based on *California Cost of Production Annual Summary* data.

average cost of production was \$314 lower per cow for Jerseys compared to Holsteins. Figure 1 (*above*) illustrates the distribution

Table 1. Average annual cost of production, milk value and net returns on per cow basis, 2001 through 2004.

Breed	2001			2002			2003			2004		
	Jersey	Holstein	Diff.	Jersey	Holstein	Diff.	Jersey	Holstein	Diff.	Jersey	Holstein	Diff.
Number of Herds (1)	25	213		25	214		23	181		22	174	
Average Herd Size	794	831		848	867		877	883		882	912	
Average Yield per Cow (1)												
Pounds Milk	15,900	21,278	(5,378)	16,260	21,408	(5,148)	16,884	21,290	(4,406)	16,500	21,600	(5,100)
Pounds Fat	731	744	(42)	738	779	(41)	758	769	(10)	739	784	(44)
Pounds Protein	580	677	(97)	585	682	(97)	606	675	(69)	594	695	(101)
Production Costs per Cow (1)												
Total Feed Cost	\$1,053	\$1,227	\$(174)	\$1,077	\$1,263	\$(186)	\$1,115	\$1,263	\$(148)	\$1,186	\$1,346	\$(159)
Total Labor	277	287	(10)	288	300	(12)	308	314	(6)	317	323	(5)
Net Herd Replacement Cost	293	357	(64)	371	429	(58)	330	371	(41)	306	355	(49)
Other Operating Costs	540	603	(63)	528	578	(50)	516	571	(55)	523	594	(72)
Total Milk Marketing Costs	68	98	(30)	68	97	(29)	74	98	(24)	75	101	(26)
Total Production Cost (\$ / cow / year)	\$2,231	\$2,572	\$(341)	\$2,333	\$2,667	\$(334)	\$2,343	\$2,617	\$(274)	\$2,408	\$2,716	\$(308)
Milk Value per Cow (2)	\$2,689	\$2,883	\$(194)	\$2,187	\$2,342	\$(155)	\$2,469	\$2,541	\$(72)	\$3,230	\$3,512	\$(282)
Net Returns per Cow	\$ 458	\$ 310	\$ 148	\$(146)	\$(325)	\$ 179	\$126	\$(76)	\$202	\$ 822	\$ 796	\$26

Source: (1) Cost of Production Summaries, 2001 through 2004, California Department of Food and Agriculture; (2) Calculations by National All-Jersey Inc., using average Federal Order minimum component values with over-order premiums.

While Holsteins out-yielded Jerseys by an average of 5,008 lbs. milk across the four-year period, the average difference between Holsteins and Jerseys was just 34 lbs. fat and 91 lbs. protein per cow.

Milk Value per Cow

NAJ staff estimated the value of milk production using average Federal Order minimum component values (see Table 2). A protein premium of \$0.015 for each 0.01% over 3.1% was added to approximate over-order premiums generally available from cheese manufacturing plants.

Using this method, Jersey milk produced by the California herds in the study was valued at \$19.73 per cwt. in 2004, compared to \$16.26 for Holstein milk, a 21.3% advantage for Jerseys.

Although Jersey milk was significantly higher in value per hundredweight, the total annual value of milk produced by Jersey cows was less compared to Holstein cows. Total Jersey milk value in 2004 was \$3,230, versus \$3,512 per cow for Holsteins, a difference in gross income of -\$282 (-8.7%).

Net Returns

However, when net returns are evaluated (Table 1), lower Jersey production costs outweighed the higher value of milk

receipts from Holsteins, giving Jerseys the advantage in net returns. This was true not only for 2004, but also in each of the preceding years analyzed.

Estimated net returns per cow in 2004 were \$822 for Jerseys, and \$796 for Holsteins, a difference of \$26 per cow favoring Jerseys.

In 2003, net returns were calculated as

Table 2. Average Federal Minimum producer component prices for component pricing orders, 2001–2004.

Class	2001	2002	2003	2004
Butterfat price	\$1.8116	\$1.1928	\$1.2099	\$2.0507
Protein price	1.9611	1.9735	2.3770	2.6035
Nonfat solids price	0.1343	0.0593	0.0129	0.0751

Source: Annual Summary of Federal Milk Market Order Statistics, AMS-USDA

\$126 per Jersey cow, versus a loss of \$76 per Holstein cow, a difference of \$202 per cow. Despite losses for both breeds in 2002, Jersey herds lost \$179 less per cow than Holstein herds. Net losses for 2002 were estimated at \$146 per Jersey cow, compared to \$325 for Holsteins.

During the strong price year of 2001, Jersey herds showed a \$148 advantage in net returns per cow (\$458 per cow for Jersey, versus \$310 per Holstein cow).

Summing the results from 2001 to 2004, a period representing both the extreme highs and lows in U.S. producer milk prices, estimated net returns per Jersey cow averaged \$315, compared to \$176 for

Holsteins, a difference of \$139 (44.1%) in favor of Jerseys.

About the California Study

The California Department of Food and Agriculture has collected data about how much it costs dairy business owners in that state to produce milk since 1955. According to CDFA, "California is the only state in the U.S. that has an impartial government agency reporting comprehensive milk production cost information." While by law CDFA must consider production costs when setting minimum class prices, such information is essential in the end-product pricing formulas that are used to establish milk prices.

A six-person Cost of Production Unit collected and summarized data from 196 operations that cooperated voluntarily during 2004. These farms, with an average herd size of 946 cows, represent 9.9% of the state's 2,107 dairies, with just over 1.74 million total cows (825 per farm). Information on expenditures was collected on-site bimonthly, from unaudited accrual basis financial statements.

Copies of the 2004 Annual Summary may be requested from the Dairy Marketing Branch of the California Department of Food and Agriculture by calling 916/341-5988, or emailing dairy@cdfa.ca.gov.