

## A hypothetical California dairy under the proposed "milk tax"

**The first 50¢ assessment probably won't cut California output. The second assessment probably will**

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**R**ecent changes in national dairy price support policies, designed to eliminate the milk surplus, may force dairy farmers to reevaluate their present operating plans. To aid in this effort, we have made a computer simulation of a representative dairy in the San Joaquin Valley, California. Although the model is not patterned after one particular dairy, we have tried to portray accurately the economic circumstances faced by most dairy farmers.

### The dairy farm

The hypothetical dairy farm has 460 cows, of which 400 are milking and are divided into four 100-cow strings. A milk blend price of \$12.76 per hundred-weight (cwt) has been used as representative for a South San Joaquin Valley dairy.

Table 1 shows how the milking strings perform in terms of production, feed cost, and income above feed cost. The feeding program was developed using Bath's computerized maximum-income-above-feed-cost routine (Donald L. Bath and Loren F. Bennet, 1980, "Development of a dairy feeding model for maximizing income above feed cost with access by remote computer terminals," *Journal of Dairy Sciences* 63:1379-89). These rations are composed of

rolled corn (\$136 per ton), corn silage (\$26 per ton), alfalfa hay (\$100 per ton), beet pulp (\$123 per ton), cotton seed meal (\$200 per ton), and whole cotton seed (\$186 per ton). The prices used were those prevailing in the late summer of 1982.

In the dairy, as it is presently operating with 460 cows, monthly milk production of 5,430 cwt brings in total milk sales of \$69,287 (table 2). Hauling and deductions average 39 cents per cwt. Feed costs are derived from table 1. Other variable costs, at \$26.31 per cow, include utilities, fuel, repairs, maintenance, breeding, Dairy Herd Improvement testing, and herd replacement. Fixed overhead (\$15,433 per month) includes rent, loan payments, all labor, and permits. The resulting cash flow of \$8,253 per month includes depreciation, a return to owner equity, and payment of income taxes.

All cost figures except feed have been taken from the July *South Valley Feed-back Information*, as calculated by the California Bureau of Milk Stabilization. To reflect the cash flow of the dairy more accurately, we have reduced the Bureau's herd replacement cost by 20 percent and interest expense by 40 percent. Such changes are necessary, because the Bureau makes all calculations

on an opportunity cost basis. A 20 percent reduction in herd replacement more accurately reflects the cost of owner-raised animals. The interest reduction of 40 percent reflects the financing costs of a dairy with 40 percent owner equity.

### Four operating plans

Dairy farmers have to maintain their cash flow. Because each dairy is different in the amount of milk it can ship, we have simulated four basic operating plans:

- (1) Present situation, with 460 cows.
- (2) Feed less per cow. This is one way to stay below a creamery-imposed 10 percent milk shipment limit. Over the past year or two, many California dairy-men have faced such restrictions.
- (3) Cull 56 cows out of the herd. This is a second way to stay below a creamery-imposed 10 percent milk shipment cutback.
- (4) Add 39 lactating heifers to the herd. This operating plan is open only to dairy farmers whose creamery will take more milk. The assumption is made that 40 springing heifers are purchased, but that one dies before freshening. This plan produces 10 percent more milk.

As shown in table 2, expansion provides the highest cash flow, at \$9,084

**TABLE 1. Daily cow performance in present situation, 460 cows, rolling herd average of 16,500 pounds**

Item	High string	Medium string	Heifer string	Low string	Dry cows
String size	100	100	100	100	60
Lb. milk/cow/day	66.00	44.00	46.00	25.00	0.00
Blend price/cwt	\$12.76	\$12.76	\$12.76	\$12.76	n.a.
Sales/cow/day	\$8.42	\$5.61	\$5.87	\$3.19	\$0.00
Feed cost/cow/day	\$2.90	\$2.41	\$2.58	\$1.85	\$1.20
Income above feed cost/cow/day	\$5.52	\$3.20	\$3.29	\$1.34	-\$1.20

**TABLE 2. Monthly cash flow comparison**

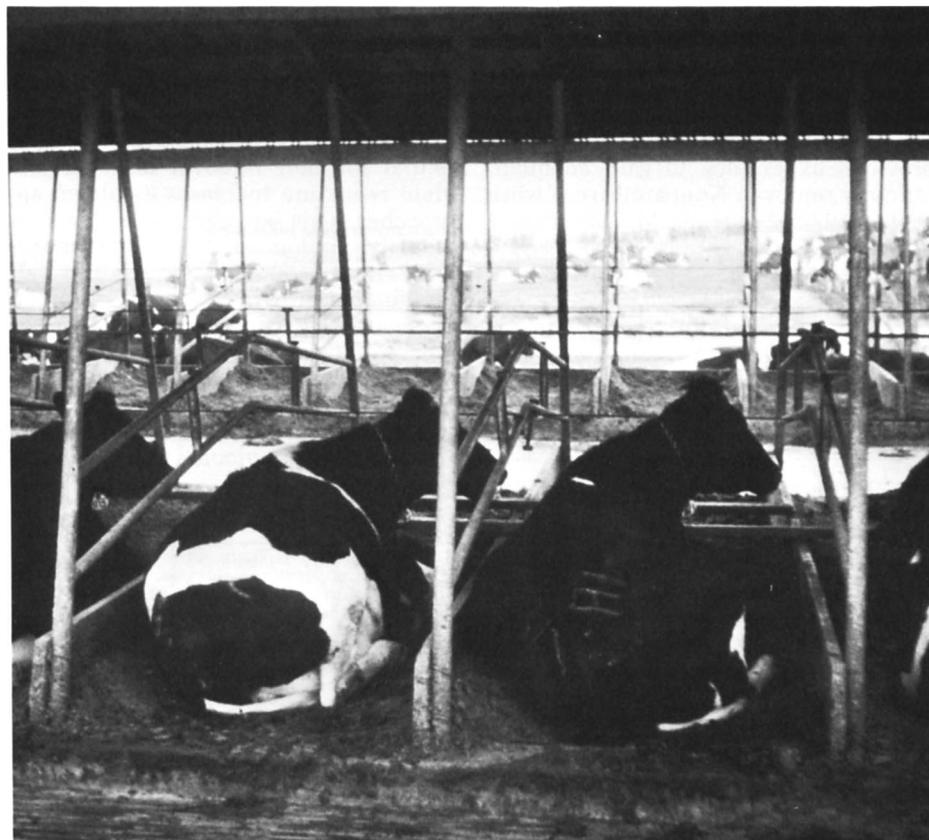
Item	Present situation	Feed less per cow	Cull 56 cows from herd	Add 39 lactating heifers
Herd size	460	460	404	499
Milk production (cwt)	5,430	4,890	4,902	5,957
Gross milk sales	\$69,287	\$62,666	\$62,814	\$75,745
Hauling and deductions (@ 39¢/cwt)	\$2,118	\$1,907	\$1,912	\$2,323
Feed cost	\$31,380	\$30,120	\$27,289	\$34,302
Other variable costs (@ \$26.31/cow)	\$12,103	\$12,103	\$10,629	\$13,128
Fixed overhead	\$15,433	\$15,433	\$15,433	\$15,433
Cow loan or culled cow income*	0	0	+\$257	\$1,475
Cash flow per month†	\$8,253	\$3,103	\$7,808	\$9,084

\* Culled cow sales of \$30,800 are invested at 10 percent interest. Cow loan of \$48,000 at 15 percent interest over 3½ years.  
 † Cash flow is used to pay depreciation, return on equity, and income taxes.

**TABLE 3. Monthly cash flow and first and second 50-cent-per-cwt assessments**

Item	Present situation	Feed less per cow	Cull 56 cows out	Add 39 lactating heifers
	\$ per month			
Initial cash flow (see table 2)	8,253	3,103	7,808	9,084
Cost of first assessment	2,715	2,445	2,451	2,979
Cash flow after first assessment	5,538	658	5,357	6,105
Cost of second assessment	2,715	0*	0*	2,979
Cash flow after second assessment	2,823	658	5,357	3,126

\* Second assessment not levied, because milk production is reduced.



per month. The present situation is second, and culling third. Feeding less finishes a distant fourth and is not recommended.

With such economics, the reason for recent milk production growth becomes clear. Dairymen have invested heavily in cows and facilities. To eliminate the milk surplus, the federal government is now considering a milk tax.

### New milk assessments

The recently passed federal Omnibus Budget Reconciliation Act of 1982 includes provisions for two assessments on milk. The first assessment of 50 cents per cwt will be imposed on all milk. The second 50-cent assessment is a base plan, which will be imposed only on producers who do not cut production down to their assigned base level. Currently the U.S. Department of Agriculture is planning to go ahead with the first and second assessments but several court cases are pending.

After the first 50-cent-per-cwt assessment, expansion is still the most profitable plan, with a cash flow of \$6,105 per month (table 3). Remaining at the present size is second, culling finishes a very close third, and feeding less comes in a distant fourth. This first assessment probably will not reduce California milk production.

The second 50-cent-per-cwt assessment can substantially reduce milk production, because all those who produce above their base level will have to pay the first and second assessments on all their milk. Those who cut back will pay only the first assessment. Culling now emerges as the best strategy, with a cash flow of \$5,357 per month. Expansion is a distant second, the present situation is third, and feeding less still ranks last.

### Conclusion

Given 1982 prices and costs, it has been economically justifiable for dairies to expand. The first 50-cent-per-cwt assessment will not change the economics of expansion, but the additional 50-cent assessment will reduce production, at least in the short run. When a cutback is desired, culling is far more profitable than feeding less per cow.

The long-term feasibility of the base plan (the second assessment) is questionable, however. Producers will seek ways around the milk production restrictions. For example, it is conceivable that a dairy could use its surplus cows to start another dairy, eliminating the second assessment on the original dairy but still allowing expansion.

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