Larger Herds Mean Lowered Costs of Producing Milk

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"What is the best size of dairy herd for me? What does it cost me to produce 100 pounds of milk? If I increase my herd size what will happen to costs of production?"

Probably every Arizona dairyman has asked himself these questions during the past year. While the answers are still a little uncertain, it should be worthwhile to look over the information in regard to dairy costs available at the University of Arizona.

UA Study Completed

Recently agricultural economists at the University of Arizona made an analysis of Arizona dairy producers to determine the cost of milk production. Size of dairy herd and production per cow, which have important influences on cost of production, were also examined. This work was supported by the Arizona Dairymen's League. Results of this study will be published as a University of Arizona technical bulletin.

This study shows that it costs the average Arizona dairyman $5.83 to produce 100 pounds of milk. This average dairyman milked 97 cows that produced 8,546 pounds of milk each per year. The accompanying table shows a breakdown of this cost of production into six items. Note that feed cost is half of the total expense, while labor and investment were the next most important costs.

Costs Drop For Bigger Herds

Labor, management and investment costs were selected for further study to see if they are different for different sized herds. Results of this analysis are shown. Costs for these three factors drop from over $259 per cow for the smaller herds to about $150 per cow for the large herds.

Labor cost declines as herd size is increased, mainly because of specialization. In larger herds, where more workers are employed, each worker tends to become a specialist. This not only allows each worker to become more proficient at his special task, but much time is saved because he doesn't move from one job to another.

Management and investment expenses decline with expansion in herd size because they do not need to be increased proportionately as more cows are added to the herd. Usually more cows can be added without adding another manager, and often herd size can be increased by making more intensive use of investment items (for example, a milking parlor), rather than by adding another item. Thus, when these cost items are fixed, herd expansion spreads the cost over more cows, lowering the cost per cow. There is, of course, a limit to how far a dairyman can spread these fixed cost items. If it weren't for this limit, there would be no reason why cows couldn't be added indefinitely without expanding investment.

'Capacity' Spells Economy

For example, take the investment in a milking parlor. As more and more cows are milked with the existing parlor, each cow's share of the cost of owning and operating the parlor declines. If herd expansion continues, however, a point is reached where another parlor unit must be built. If only a few cows are added beyond the capacity of the old parlor, the cost per cow will again be very high. Then, as the capacity of the second parlor is approached, the parlor cost per cow will again fall.

The number of cows involved in each of these "expansion steps" depends on the type and size of parlor being used. Ralph Van Sant, University of Arizona Dairy Extension Specialist, and others prominent in Arizona's dairy producing industry believe these steps may involve from 200 to 240 cows.

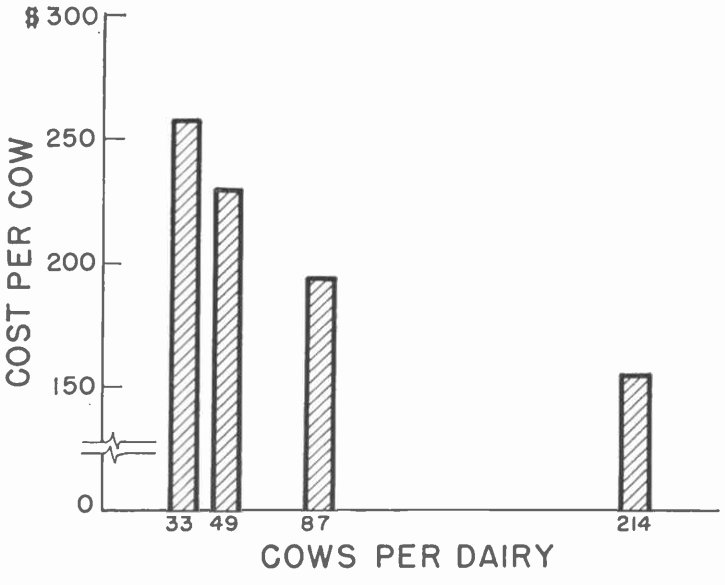
"I think a parlor unit about the size we have at our new University of Arizona Dairy Research Center at Tucson would be about optimum from a cost standpoint," says Mr. Van Sant. "It would take from 200 to 240 cows to fully utilize the parlor unit we have out there."

Other Factors, Too

Any cost advantage held by larger herds is an important consideration when deciding the best size of herd. Cost of production is, however, only one of several important considerations when planning optimum herd size. Other important factors that should be considered include: managerial ability available to manage a larger herd, capital available for financing herd expansion, and the availability of competent labor to handle additional cows.

When all of these questions are answered, a dairyman can make the correct decisions as to what is the best herd size for his situation. And while cost of production is not the only consideration — it is still worth quite a lot of study.

HOW LABOR, MANAGEMENT AND INVESTMENT COST PER COW CHANGE WITH SIZE OF DAIRY HERD.



Average total cost of producing milk in Arizona per dairy,* per cow, and per hundredweight of milk produced

Cost Item	AVERAGE COST		
	Per Dairy*	Per Cow	Per Cwt. of Milk
Feed	$24,182	$249.29	$2.92
Labor	8,528	87.92	1.02
Investment	6,943	71.58	.84
General Production Expense	3,142	32.49	.38
General Marketing Expense	3,107	32.03	.37
Management	2,474	25.50	.30
Total	$48,376	$498.81	$5.83

*Based on an average dairy of 97 milk cows.

Dr. Moran is an Assistant Agricultural Economist.