

rethinking Dairyland

Background for Decisions about Wisconsin's Dairy Industry

No. 3 — September 2002

FACING UP TO THE WESTERN DAIRY BOOM

Stemming a 15-year plunge in cow numbers is the key to defending Wisconsin's share of U.S. milk production

After climbing steadily for 65 years, in the late 1980s Wisconsin milk production stagnated. It peaked in 1988 and since then has remained within a narrow range of 22 to 24 billion pounds.

There's no mystery as to why this happened. It takes cows to make milk, and Wisconsin's dairy herd is shrinking. Between 1985 and 2001, the state's dairy herd decreased 31 percent, from 1.876 million cows to 1.292 million. That averages to a loss of 38,000 cows per year.

Things could have been worse. During the same period, Wisconsin milk production per cow increased exponentially (that is, it has increased at an increasing rate). This partially offset the cow loss; without it, the state's milk production would have dropped rather than leveled. But Wisconsin's milk yield is still nothing to brag about. America's Dairyland ranked 25th in milk production per cow in 2001. Wisconsin's average per-cow production of 17,182 pounds was 1,000 pounds behind the U.S. weighted average. It was also more than 5,000 pounds behind Washington state, the U.S. milk-yield leader, and 3,700 pounds behind California, the state with the greatest overall milk production.

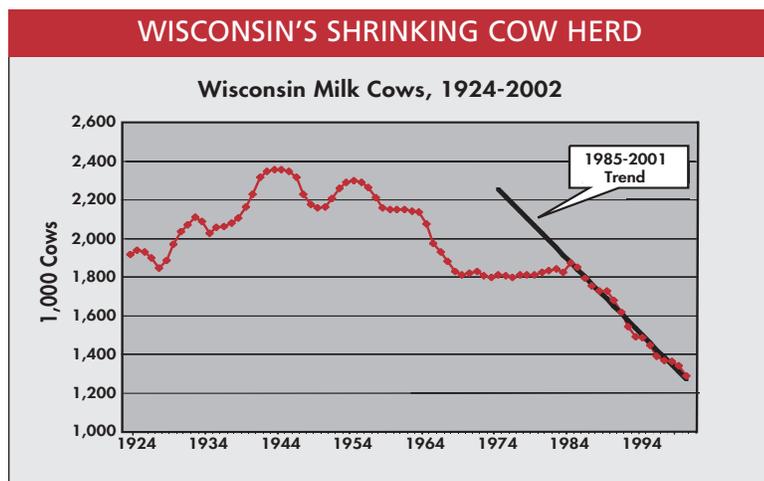
Traditional dairy states have lost ground

The shrinkage of Wisconsin cow numbers mirrors that of other Eastern and Midwestern states, but contrasts with growth in the west. The five states showing the

largest drops in cow numbers between 1985 and 2001 were in the "traditional" lake states dairy region. The nine states showing an increase in cow numbers were all in the west. California gained almost as many cows as Wisconsin lost.

Divergent regional rates of growth in milk production have substantially altered regional shares of total U.S. milk production. In 1985, states west of the Rocky Mountains accounted for 24 percent of the U.S. milk supply. States in the Northeast, Upper Midwest, and Central regions – the traditional U.S. milkshed – accounted for 56 percent.

By 2001, the western regions had increased market share to 40 percent, while the traditional regions had declined to 45 percent. Projecting recent trends in cow numbers and milk per cow suggests that the west could be producing 55 percent



This is part of a series of brief reports on the current state of the Wisconsin dairy industry and factors that will influence its evolution. Expanded versions of these reports, with additional data and graphics, are posted online at <http://www.aae.wisc.edu/www/pub/>

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of U.S. milk in 2015, with the Northeast, Upper Midwest, and Central regions at 35 percent.

Projecting Wisconsin cow number and yield per cow trends to 2015 shows state milk production at about 16 billion pounds, about 8 billion pounds less than 2001. Cutting the annual cow loss in half, to 19,000 cows per year, would still result in 2015 milk production about 1 billion pounds less than 2001. If cow numbers held steady at the 2001 level, milk production in 2015 would be about 5 billion pounds higher than 2001.

Better cows alone won't make up for fewer cows

Yield increases above trend would not materially alter these projections. Reducing the decline in cow numbers is much more important than increasing yield as a means of growing Wisconsin milk production. Stated differently, even the most optimistic gains in milk per cow won't be enough to offset the milk production lost if we keep losing cows at the rate we have been.

These are sobering projections. However, they don't tell us what will happen; only what *could* happen. Recent rates of growth in cow numbers and milk yield in the western U.S. do not appear to be sustainable. And Wisconsin's share of the market could be in for a rebound.

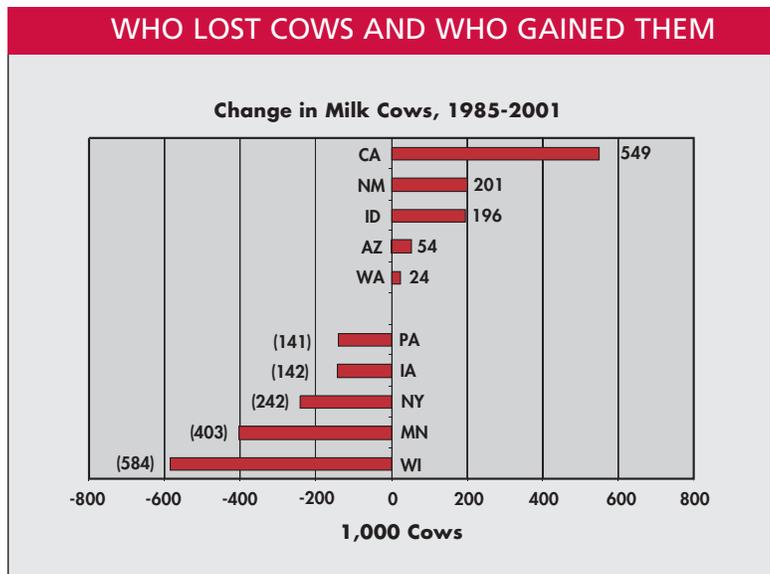
Western dairy growth will likely ease up

Several factors spurred the expansion of Western dairying. Strong population growth created robust demand for fluid milk and manufactured dairy products. A favorable climate encouraged large-scale drylot dairying with related economies to scale.

The State of California encouraged dairy growth. The state encouraged dairy plant investment with milk pricing regulations that guaranteed dairy product manufacturers a dependable and profitable return on investment. County governments offered incentives for farms and plants to invest. Tax laws related to capital gains also spurred dairy expansion in California.

Urban encroachment allowed southern California dairies to sell their land to real estate developers at very high prices and reinvest the proceeds in even larger dairies in the Central Valley of California and in other western states.

From the mid-1970's to the mid-1980's, the U.S. dairy price support program elevated milk prices and reduced risk, prompting new investment in California dairying. Between 1965 and 1975, California gained 17,000 dairy cows. During the next 10 years it gained 200,000. Dairy growth in Idaho and New Mexico started a bit later than in California. In fact,



a number of California operations moved or expanded to these states because land was less expensive and suited to growing quality forages.

Western milk production will keep growing, but probably not as fast as in recent years. The growth factors noted above aren't likely to change much in the years ahead, and state and local governments will continue to support dairying. But other factors will come into play:

- **Average price is falling.** Prices paid to farmers in the west — especially Idaho and New Mexico — have fallen because a smaller share of western milk is being used for fluid use, the highest valued use, while more is going into manufactured dairy products. California's milk pricing system keeps manufacturing class prices low to encourage investment in dairy plants.

- **Competition for forage.** The growth of western dairying has spurred competition for land to grow forage, which has increased the cost of alfalfa.

- **Water is a scarce resource.** As urban areas and western dairying both expand, there will be more competition between municipalities and agricultural irrigation water districts. As population grows, the availability of irrigation water will decrease and its cost will increase.

- **Environmental scrutiny.** Although environmental restrictions are likely to be fairly uniform across regions, larger dairies are more visible and more heavily targeted, and therefore may be more likely to be constrained by environmental rules.

- **Yield growth will taper.** Western milk yields will grow at a slower pace. There are biological limitations to how much milk a cow can produce. It is harder to go up from 25,000 pounds per cow than from 18,000 pounds. There are no new major technological breakthroughs with the impact of rBST on the horizon.

A Wisconsin turnaround is very possible

Some of the factors that could limit dairy growth in the West might favor growth in Wisconsin.

■ **Higher fluid sales.** A larger share of Wisconsin’s milk is being sold for higher valued fluid purposes than in the past. There’s really no change in how the milk is being used (the lion’s share still goes to make cheese). But changes in provisions in the milk pricing system allow more Wisconsin milk to receive the benefit of higher Class I prices.

■ **Ample land and water.** Wisconsin is capable of producing high-quality forages without irrigation. With fewer dairy cows and slower population growth, the state doesn’t face the same competition for land that is being experienced in the west. While urban encroachment is an issue in a few parts of the state, there’s plenty of room for growth in predominantly rural areas.

■ **Closing the yield gap.** Wisconsin will gradually catch up to Western states in milk yield as farmers continue to get higher producing cows into their herds and improve herd feeding and management practices. Dairy Herd Improvement Association records bears this out. The 55 percent of Wisconsin dairy herds in the DHIA testing program — generally the better managed farms — averaged more than 21,000 pounds of milk annually in 2001. This indicates that Wisconsin’s better herds can match or exceed milk yields experienced in the West.

■ **We can adapt and adopt.** While Wisconsin winters preclude full adoption of western-style drylot dairy systems, many cost-saving elements of drylot dairy systems can be adopted in Wisconsin. And many western dairies are moving away from drylot systems toward free-stall housing that is already used extensively in Wisconsin. The state’s moderate climate is generally favorable to dairying. In particular, Wisconsin does not experience California’s yield-reducing high temperatures or periodic heavy rains.

■ **Making milk for less.** There is no obvious reason why Wisconsin dairy farmers can’t get their production costs as low or lower than those of western producers. California Department of Food and Agriculture dairy producer cost surveys for 2001 show statewide average costs ranging from \$12.40 to \$13.25 per hundredweight for the year. This is an easily achievable goal for Wisconsin dairy farmers.

Reasons for cautious optimism

Despite the alarming reduction in Wisconsin dairy, there are signs that Wisconsin dairy farmers are willing to adopt new production strategies to increase their competitiveness.

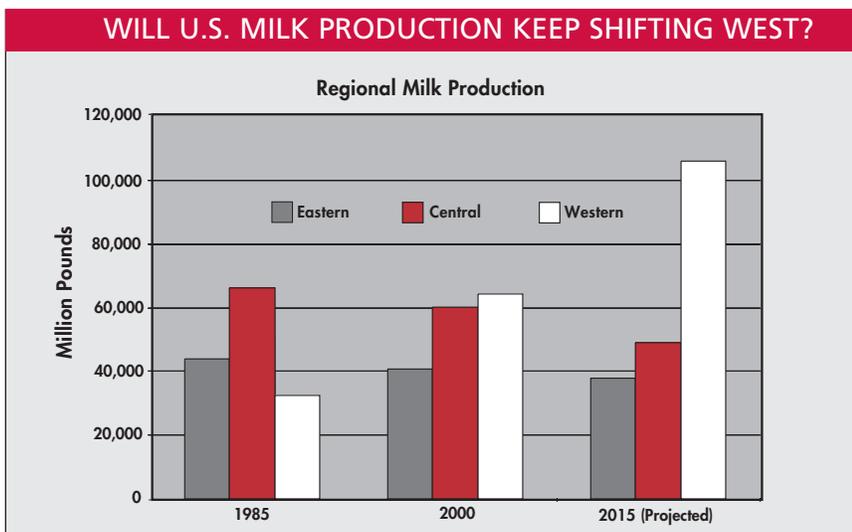
■ **More large herds.** It’s clear that many Wisconsin farmers are adopting larger-scale milking parlor/free stall housing systems typically involving 200 cows or more. In 1993 Wisconsin had 300 such herds which produced about 6 percent of the state’s milk. In 2001, there were 850 such herds producing 29 percent of the state’s milk. About one-fifth of the large herds have more than 500 cows.

The trend to large herds has an impact on the state’s overall milk production, because larger-scale farms have higher milk yields per cow than smaller farms. Average 1997-2001 production for the smallest herd category (1 to 29 cows) was 12,000 pounds per cow. Average yield for 500+ herds was 19,600 pounds per cow. Stated differently, one cow added to the largest herd category offsets a loss of 1.6 cows from herds in the smallest size class.

■ **Mid-sized herds hold steady.** The total number of Wisconsin dairy farms in the 100-199 herd category has held steady over the past five years at nearly 2,000. These farms were responsible for 19 percent of total production in 2001. Thus, while farm numbers and cow numbers have declined substantially in Wisconsin with the exit of farms, this is not the case for herds with over 100 cows.

It’s possible to come up with some very optimistic milk production projections if one focuses on current growth trends in large herds. Since 1993 the number of Wisconsin herds with more than 100 cows has been increased at a rate of about 7.3 percent per year. At this rate of growth, by 2010 Wisconsin would have twice as many such herds, which, if current milk yield trends for this herd size continue, would produce about 23 billion pounds of milk — roughly equivalent to the current production of all Wisconsin farms.

Can Wisconsin really add this many large herds that fast? It’s questionable. The increase in larger herd mostly came from the expansion of small and mid-sized operations. But the number of smaller herds has



declined substantially. To continue adding larger herds at current rates, a higher proportion of smaller herds remaining would have to expand.

Low-input alternatives play a role. During the 1990s, a significant proportion of Wisconsin dairy farms, especially in the western and north-central regions of the state, have successfully pursued “low-input” strategies. These operators seek to produce milk at lower cost by reducing the need for both labor and capital.

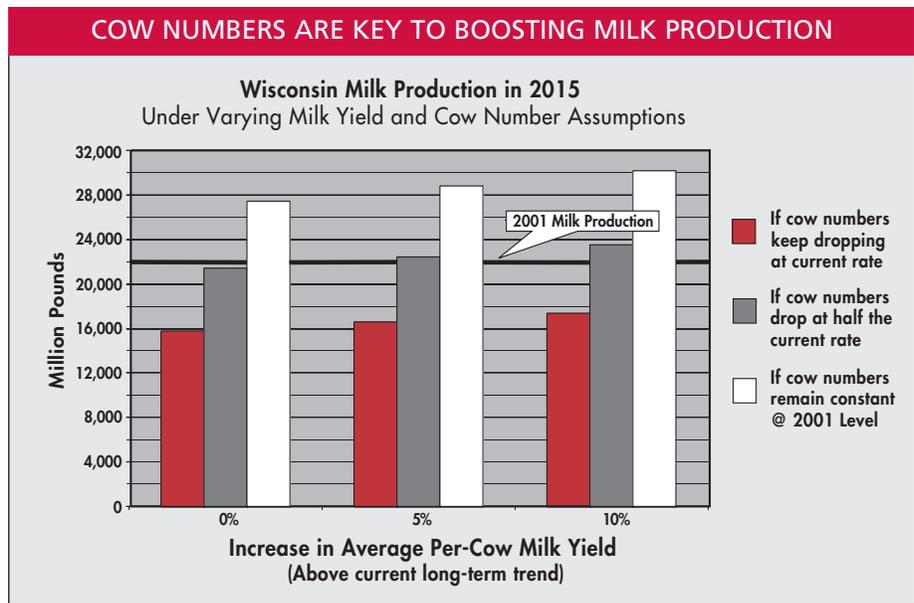
One such approach is management-intensive rotational grazing, where farmers focus on improving pastures to produce high-quality forage and graze cows on a schedule that maximizes the nutrient yield of that forage. By having cows harvest their own food, these operators reduce labor and machinery costs.

Another low-input strategy is to rent a barn, buy feed and forage, and concentrate scarce labor and financial resources on cows, rather than on buying land and raising feed.

Such approaches fit nicely into a household income strategy that mixes dairy farming with other farm enterprises or off-farm jobs. They can also be combined with a low-cost parlor — often located in a remodeled stanchion barn — that allows them to milk more efficiently so that they can expand their herd. Some farmers pursue a “low-input” strategy in order to grow their herd more quickly than they could afford to do using a more conventional system.

The survival rates of these low-input dairy farms is quite impressive. The UW-Madison’s Program on Agricultural Technology Studies found that low-input operations stand just a good a chance of surviving as do larger-scale model freestall models, and a better chance than traditional semi-confinement operations.

Unfortunately, low-input farms won’t have much impact in stemming Wisconsin’s loss of dairy cows or increasing the state’s overall milk production. On average, low-input operations expand much more slowly than do those pursuing a more conventional large-scale model. Low-input dairy farms also tend to have lower milk production averages, especially those that rely on intensive rotational grazing as a primary feed source.



But they do allow a way for significant proportion of moderate-sized operations to stay in business and turn a profit, and therefore can play a vital role in stemming the loss of dairy farms in Wisconsin.

Wisconsin will need more cows to make enough milk

For the Wisconsin dairy industry to thrive, the sharp annual reduction in dairy cows seen since the mid-1980s must be substantially reduced. Milk volume is essential to maintaining the strength of the state’s processing sector. We expect large gains in milk production per cow over the next few years. But even very strong gains in milk can’t prevent further losses in milk production if cow numbers continue to drop at their current clip.

While the key to maintaining vitality in Wisconsin dairy-ing is stopping the free fall in cow numbers, there is no single avenue to achieving that goal. Producers have demonstrated that several dairy system options can increase profitability and encourage growth: Management intensive rotational grazing, incremental modernization/expansion, and large-scale intensive management are all viable options. What is NOT an option is resisting change. Wisconsin dairy farmers must be willing to embrace changes in their operations that allow them to be competitive with dairy farmers in other regions.

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