



**M**innesota dairy cows may not be ready to run the Boston Marathon, but they do have a little extra zip in their step these days. Their feet and legs are healthier because University of Minnesota research on cow comfort is encouraging farmers to make substantial changes in dairy cow housing. As a result, comfortable cows are giving more milk—a boon to local producers and part of the reason for increased confidence in the farmers' ability to compete nationally. The number of dairy cows in Minnesota is on the rise, fueling cautious optimism that the heart of the industry remains here in the Midwest, not headed for western states.

# Got more milk?

## Cow comfort boosts yield

**University of Minnesota research reveals how changes in dairy cow housing can help increase profits**



Minnesota is regaining its competitive stride in the dairy business due to production systems that keep cows comfortable and encourage their natural productivity. Finding answers to the cow comfort puzzle keeps Extension animal scientist Marcia Endres busy. For many scientists, a “laboratory” is a 20-foot bench filled with test tubes, beakers and analytical equipment. But Endres’ laboratory includes real-life farms—big sheds filled with muttering and mooing dairy cows.

It was four years ago when Endres, a nutritionist by trade, noticed that cow comfort dominated the hallway talk at dairy meetings. “Everyone was talking and had an opinion, but nobody had any data,” Endres said. “We needed to get the numbers.”

Those conversations convinced her to redirect her studies and ultimately led Endres and her Extension Dairy Team colleagues to local farms, where they got up close and personal with 5,600 bovines. The Dairy Team scored the cows’ physical condition, analyzed their gait, studied their living quarters and combined these observations with a database of cow performance information. The scientific data brought to light

Pat Lunemann, president of the Minnesota Milk Producers Association, works with Extension animal scientist Marcia Endres to determine the best housing system for his herd.



Lunemann and Extension educator Jim Salfer take a close look at milk production data from Lunemann's Twin Eagle Dairy in Clarissa.

the importance of a resilient and comfortable surface for cows to lie on, the design of dairy facilities and cow management.

Prestigious scientific journals have published Endres' findings. National dairy experts are directing their clients to Minnesota for cow-comfort answers. But the best measure of the Dairy Team's success is that Minnesota dairy farmers are using the research results. "We are seeing much better designed dairy facilities now because of this research," said Jim Salfer, a St. Cloud-based Extension educator. "Producers are also more aware of cow comfort and are asking more questions about the best ways to care for their cows."

The Extension Dairy Team's "Better living through research" philosophy continues. One project now under way looks at alternatives for cow bedding. Using traditional sources like straw or sawdust, which are potential sources of biofuels, increase cost and limit availability. The team also recently received funding from the Rapid Agricultural Response Fund to compare the health, productivity and comfort of cows housed in three different types of barns.

The team will gather data from buildings housing cows throughout the state, and the results will help drive the choices Minnesota dairy producers make when modernizing their buildings. Making the right choice will have a big impact. As Salfer puts it, "Minnesota needs the dairy industry and the dairy industry needs major investment in new structures. The goal of our research is to help farmers make profitable decisions, and when people make money they stay in business."



Partially composted sawdust bedding aids cow comfort.

## Concrete changes

### The jackhammer approach to applying research results

Pat Lunemann doesn't need to read regression equations. He sees the statistical validation for University of Minnesota cow comfort research every time he looks at his bulk milk-storage tank.

The Clarissa dairy producer was motivated by the research that shows herds with more comfortable cows produce 10 percent more milk. "This research was a real eye-opener. I knew my cows weren't as comfortable as they could be, but this research project provided data to show how my cows compared to others with better systems," Lunemann said.

As a result, Lunemann can talk proficiently about the pluses and minuses of different jackhammer systems for removing concrete from dairy barns. He gained that knowledge by removing concrete from the long rows of platforms where his cows spend most of their time resting between milking. He also got rid of the cow mattresses that covered the platforms in the barn. Now the cows at his family's Twin Eagle Dairy are resting easy on a dirt floor covered with recycled bedding and sawdust. Lunemann was anticipating more productive cows from his bed redo. The bonus? The new free-stall arrangement takes fewer dollars to maintain.

Lunemann believes in the benefits of on-farm Extension research projects. "Most people pay more attention to research conducted in a situation similar to their own. Farmers are the same and want to make sure it will work at their place before making big changes." Those changes based on research can help Minnesota dairy cows compete in what is increasingly a global milk market.

For more information on cow comfort, nutrition and milk marketing, visit <http://www.extension.umn.edu/Dairy>