

# DAIRY MANAGEMENT COLUMN

**George F.W. Haenlein**  
 Extension Dairy Specialist  
 University of Delaware

## OH, THAT MEXICAN INAPPETENCE!

This year's national Dairy month is over, and I have just returned from another foreign-assistance assignment abroad. There are so many dairy topics I could tackle, but it is so hot right now that all I can think about is how to shut off this heat or, at least, diminish its effect. People can head for air-conditioned places, but what about dairy animals — our cows, goats, and sheep? What can they do to beat this heat? And they still must give milk two or three times a day without changing the level of output.

In a few places in Saudi Arabia, where money is no object, some Holstein herds actually enjoy air conditioning. And in Florida, because of some excellent development work by Experiment Station engineers, cows in many commercial herds are cooled by full showers a couple of times each hour.

I am not the only one thinking about the heat and its effects. Just look how many magazine and journal articles cover hot weather, heat stress and what to do about it. At the risk of taking "coals to New Castle" or "owls to Athens," I will add a few ideas of my own, which include reviews of new research.

The long ears of tropical Brahma or Zebu cattle and of Nubian dairy goats function successfully as radiators in hot weather, en-

abling those animals to get some relief from the heat. Northern climate cows, such as Holsteins, Guernseys and Ayrshires (and Swiss dairy goats), have short, erect ears, so they suffer because they have no such cooling mechanism.

A little-known fact, however, is that the horns of dairy goats are highly vascularized — that is, full of blood vessels. Horns serve as a cooling mechanism for Swiss goats, thus reducing the temperature of the brain by 2 degrees below the average body temperature. This is significant, because the control center for eating or not eating is in the brain. The primary consequence of hot weather is a reduction in feed intake, yet a common U.S. dairy management practice is to dehorn calves and goat kids, thus depriving these animals of that potential cooling mechanism.

When it comes to hot summer days, dairy farmers worry that their dairy animals lie around in the shade and do not eat. As a result, milk yield drops as much as 35 percent per day, total lactation decreases, and ovulation or estrus halts. Holsteins, Guernseys, Ayrshires and Swiss goats suffer when temperatures go above 80 degrees Fahrenheit. Jerseys, Brown Swiss and Nubian goats have a slightly higher tolerance level. What can dairy farmers do?

Recent research in Missouri (*Journal of Dairy Science* 80 (1997) 1206-1206) examined the benefit of adding niacin at 12, 24 or 36 gram/day/cow on heat stress.

This B vitamin dilates blood vessels, thereby aiding in the skin peripheral cooling of cows on hot days. They found that cows' skin was cooler and their milk production slightly higher, but the most important problem, feed intake, was not improved.

Other new research in Arizona (*Journal of Dairy Science* 80 (1997) 1172-1178) included periodic water showers and air fans for cows in addition to feeding extra (3 percent) supplementary fat per diet dry matter. The idea is to reduce heat generation from eating a normal feed ration by increasing its nutrient density with fat, thus providing more energy with less volume of feed. Results showed how difficult it is to help heat-stressed cows by way of feeding — they just do not want to eat as much as usual. The cows know instinctively that eating makes them more hot.

Cows suffer from what I like to call "Mexican Inappetence" syndrome. It sounds better than just saying "reduced voluntary feed intake" or "heat-stress-induced lower feed consumption." All it means is that dairy animals have no appetite for anything. And just as our cold winter storms come across Canada on the "Canadian Clipper," the hot winds originate in the Gulf of Mexico — therefore, "Mexican Inappetence."

Research in Arizona showed that while the manipulation of the ration in the right direction, physiologically, did not help hot cows sufficiently, but a milk production increase of more than 5

pounds/day/cow and increased feed intake was achieved with periodic showers and air fans. To be of any value, shower cooling must take place where cows spend most of their time: 1) where they eat silage or a total mixed ration (TMR), and 2) in the holding pen. As cows wait to be milked, they crowd together and get overheated. We have done both at the University of Delaware dairy barn with good success.

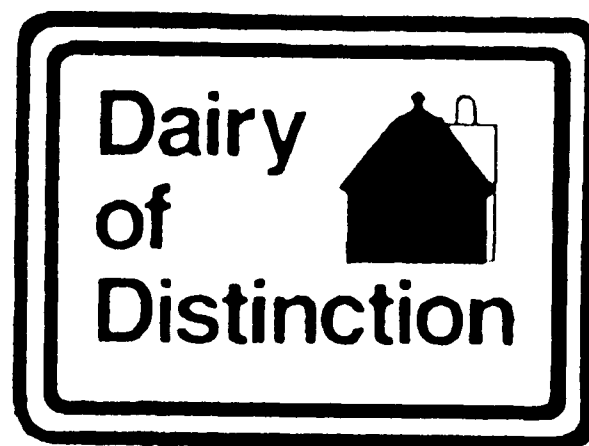
Other good advice comes from the Georgia and Kansas Experiment Stations on how to overcome that inappetence of dairy animals when the hot air from the Gulf of Mexico stagnates here:

- Don't walk cows long distances.
- Provide clean, cool water, even out in the pasture!
- Reduce roughage to 40 percent of total ration dry matter.
- Increase energy and protein density of the ration.
- Adding 1 pound fat can reduce

the grain ration by 2.25 pounds.

- Keep ration fat contents as high as 6.0 percent.
- Make ration protein levels about 20 percent.
- Keep potassium ration contents between 1.3-1.5 percent.
- Limit grazing to early morning and evening.
- Shower and fan cows — regularly and frequently — where they congregate as soon as the temperature reaches 80 degrees F.
- Feed TMR several times per day for better freshness.
- Moisture TMR to 45-50 percent water contents for improved intake.
- Clean feed bunks daily and remove leftovers.
- Use rumen buffers to control acidosis.

If you follow these tips for taking the heat off your milking animals, they will lose that inappetence, and you will reap the financial benefits.



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