

CENTRAL NEW YORK DAIRY NEWS



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by Dave Balbian

The Current Strategy: Losing the Least!

With milk prices where they are, essentially everyone selling conventional cow's milk is losing money. It's sad to say it, but the goal in the short term for most producers who are in this business for the long haul is to lose the least amount of money as possible and to be in a position to make money when things finally turn around. We all know why we're in this situation. The big question is, when is it all going to turn around? Dairy economists are predicting some strength in the milk price the second half of the year, although those predictions seem to be break-even at best. 2009 will likely go down on record as the worst year for dairy profits since anyone has been keeping track of it.

Cow Comfort—Heat Stress Relief

Types of Ventilation Systems & Strategies

Tie Stall Barns: **tunnel ventilation** has proven to be a very successful addition to tie stall barns. To be sure the investment is giving you the best payback it must be properly sized in more ways than one. I have seen several systems that were undersized by one or two fans. Inadequate airflow is the result. Most of the investment was made in the system and electricity is being used daily to operate it without the full benefit. Inadequate inlets at the opposite end of the barn is another problem I sometimes see. Formulas are available to calculate inlet size. If it's inadequate, the fans are working hard to pull air in without enough opening to allow for adequate airflow. Please call me if you need help with any of these issues.

Another strategy that can be added to tunnel ventilation systems is the use of a **high pressure water misting system**. This type of system releases a fine mist into the air. As it evaporates, it cools the air, thereby reducing the air temperature in the barn. Care must be taken to fine tune this type of system. The water must all evaporate and the air exchange must be adequate to exhaust the air quickly out of the barn.

Circulating fans and open windows and doors are a lower cost avenue that people have used for years. When we have a breeze outside this system can work well. When we have hot, humid, still air with no breeze, it's much less effective.

The **traditional winter/summer ventilation system** with openings where the ceiling & sidewalls meet can still be effective. These systems typically have a bank of fans in the center of the barn exhausting to either the east or south. A small fan typically runs in the winter with louvers set to draw air from the floor to keep the barn air fresh, but to minimize freezing. In full summer mode a large fan (or more than one large fan) operates at full speed blowing air out of the barn at a high rate. Fresh air is drawn in through the inlets down the outside walls. It mixes with air inside the barn before it is exhausted. This type of system has fallen out of favor on most farms. Many of these systems were not well designed nor adequately sized to perform the way they should have. Again, call for help in evaluating your system if you're having problems.

There are a very small number of tie stall barns that now have insulated **side wall curtains** either as part of new construction, an addition, or a wall repair on an existing barn. This strategy is common on free stall barns, but has gained acceptance with a very small number of tie stall barns. It seems to work well with the exception of the hot humid days with no outside breeze.

Free Stall Barns: Open sidewalls via sidewall curtains or panels that open or are removed are the norm. Open ridges or overshot roofs allow hot moisture laden air to escape and act as a chimney to promote fresh air movement into the barn. New barns often have 14 foot sidewalls now to allow for adequate ventilation in the summer. One of the problems that older barns often have is a short outside wall as high as the stall partitions that block air movement directly to the cow's head when she is laying in the stall. The wall opening often starts from the top of the stall up to the eaves. That short wall needs to be opened up to allow good cow comfort with fresh air. Sometimes extensive work needs to be done to accomplish that because the stalls may be mounted to wooden structures that are a part of the wall itself.

Circulating fans are often added over the feed area and stall beds. The current recommendation is to space fans 10 feet apart for every 1 foot of fan diameter. So, 36" fans would be placed 30 feet apart. Fans need to be mounted high enough to prevent cattle from reaching them and to eliminate damage by cleaning or feeding equipment. Fans need to be tilted so that they are pointing toward the floor directly under the next fan in line. Fans should all be blowing in the same direction and should be following the direction of natural air movement into the barn in the summer. This helps to promote the introduction of fresh air into the barn.

Large ceiling fans that circulate the air over cows do provide some air movement on cows and therefore some heat relief, but they do not tend to move air out of the barn to be replaced by fresh air that is not moisture or bacteria laden.

The next step in providing heat stress relief is the use of **sprinklers**. This addition requires an adequate water supply and a manure handling system that can handle all the extra water. Sprinklers are commonly installed in the alley where cows stand to eat by the feed bunk. Commercially available systems are readily available. Some systems will sprinkle the cows until the skin is wet, the sprinklers then turn off and the fans go on. The evaporative effect caused by the fans cools the cows. When the cows are dry the cycle starts again. Some systems never turn the fans off. That's O.K. The trick is to wet the cows until the skin is wet and then to dry them with air from the fans. Careful calibration is necessary so that cows are not dripping wet with water. When cows are dripping wet, mastitis problems can arise from water dripping off the teat ends. On the other hand, if cows are not soaked to the skin the additional water on their hair can actually act as insulation and add to heat stress.

Tunnel ventilation is also a strategy used in some free stall barns. Lower ceilings and/or baffles to force the air down towards the cows has benefits, as the air wants to travel where there is the least resistance, which is generally above the cows. Sidewalls must be closed and tight, just as in a tunnel ventilated tie stall barn.

High pressure water misting systems can also be utilized in free stall barns with tunnel ventilation. The same guidelines apply here as with a tie stall barn, however in most cases much more capacity is needed.

Cross ventilated free stall barns are a recent design strategy that has caught on in some parts of the U.S. Wide lower profile buildings are used. Exhaust fans are all placed on one side of the barn with side wall opening along the opposite side of the barn.

Grazing herds have often suffered milk production losses during periods of extreme heat stress. The strategy of letting the cows fend for themselves and simply taking what you get (in milk production) is falling out of favor. Cows will gather under any shade available (the lone tree), bunch up, or stand by the barn looking to get back in during these extreme summer conditions. Many producers let the cows graze during the night when it's cooler. Cows are more comfortable and consume more forage from pasture. The barn also gets a chance to cool off during the night. When cows come in for the morning milking the barn is cooler and more comfortable. Some producers keep cows in during the day out of the sun (and feed them inside). Some people will let them out for a short time after morning milking, but bring them back in before the summer sun heats things up too much. Some people adjust their strategy based on the daily conditions and/or the availability of feed in the pasture. Of course, the adequacy of the ventilation system in the barn can play a big role in what works best for any given situation.

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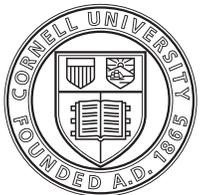
Dave Balbian
(518) 762-3909
drb23@cornell.edu

Field Crop Management

Kevin Ganoe
(315) 866-7920
khg2@cornell.edu

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Cornell University
Cooperative Extension

Dairy and Field Crops Team of
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