



DAIRYINFO

W-S Feed & Supplies, Ltd.
1805 Sawmill Road
Conestogo, ON N0B 1N0
Canada
1.800.265.2203
www.wsfeeds.ca

Taking service to another level!

Reducing Heat Stress in the Holding Pen ~

Modern dairy cows experience heat stress when the THI (temperature humidity index) exceeds 68°F/20°C. This index is based on the relationship of temperature and relative humidity. Many dairies use shade, fans and/or sprinklers to cool cows at the feedbunk and in housing areas. An area [that is] often overlooked is the holding pen, where cows may be standing from 2-6 hours/day, depending on milking parlor performance and group size. Cooling needs to be considered in this area! Research has shown that, without cooling, the body temperature of a cow may increase 3-degrees within 20 minutes after entering the holding pen. When an overhead spray system and fans were installed, the cows' body temperature was lowered by 3.5-degrees during the time the cows were in the holding pen. Cooled cows produced .77 kg *more* milk/day than cows that were not cooled. Another research trial showed an increase in milk production of 2.3 kg/day when cows were cooled five times/day for 30 minutes in a holding pen.

Heat stress not only affects milk production during hot periods but can also affect reproduction and milk production well into the cooler months. Cows give off approximately 4,500 BTUs/hour when temperatures exceed 80°F/26°C. About half of this energy is expelled from their lungs as evaporative moisture or latent heat. The remainder radiates from the hide. This heat production/cow is similar to a 1,500-watt hair dryer blowing continuously at a high speed.

Modern dairies strive to limit the time cows are away from feed and water to no more than 2-3 hours/day. Many small(er) dairies house all lactating cows in a single group. As a result, cows may be away from feed and water from 4-6 hours/day, or 15-25% of the time. Gates, fences or panels are an economical way to subdivide the cow herd into multiple groups during the summer months, as a means of reducing time standing in the holding pen.

Proper group sizing can help reduce heat stress with minimal investment in equipment or facilities. Cows should be grouped together so they are in the holding pen less than one hour/milking when milking two times daily. Herds milking three times each day should remain in the holding pen less than 45 minutes/milking. To estimate group size, multiply the total number of milk stalls by 4.5. Dairies with parlors not used at full capacity (more than 12 hours/day) may be able to alter their milking schedules. The objective is to avoid milking between 1 p.m. and 7 p.m. For example, a dairy milking two times/day may switch from a 5 a.m. and 5 p.m. milking to a 10 a.m. and 10 p.m. milking. A herd being milked three times/day may be switched to a 3 a.m.,

11 a.m. and 7 p.m. schedule, to avoid having cows in the holding pen during the heat of the day.

Dairies may also consider changing the order of the groups of cows being milked. Heifers are better able to tolerate heat than mature cows. High-producing groups should be milked during the cooler periods of the day. Cows should have access to fresh water immediately upon exiting the milk parlor. Providing two feet of trough space per cow per parlor side along return lanes is ideal; however, any trough space that is available on the return trip from the parlor will be helpful. It is important to provide fresh, clean, cool water! Watering troughs must be easy to empty for cleaning and should be cleaned on a systematic basis. A water trough that is warmed by the afternoon sun should be emptied immediately before the afternoon milking and refilled with fresh water. Watering troughs at the exit lanes should be placed in the shade or have some form of shade constructed over them.

Holding pens should have sidewalls open at least 60% in order to enhance natural ventilation. Be careful to ensure that no structural damage is done to the holding pen if the sidewalls are modified. Sidewall curtains or hinged doors can be used to protect the cows during cold weather.

Here are five management steps to minimize heat stress in the holding pen:

- Reduce group size to minimize time in holding pen.
- Alter milking times, if parlor is not used to capacity.
- Open up holding pen sidewalls/ridge to enhance natural ventilation.
- Install fans to mechanically ventilate holding pen on hot, still summer days.
- **Install sprinkler systems to increase the evaporative cooling from the cows.**

Keep your cows cool this summer and appreciate the difference in health, production and profitability.

(Edited from an article by Harner, Smith, Brouk & Murphy – K-State)



Interested in discussing topics in this newsletter, or want to do a better job feeding and managing your cows?

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That's the W-S Feed commitment!

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Spring!

In order to maximize yield, it is important that corn is planted *prior to the end* of the optimum planting time for each climatic zone. The optimum planting period for any area is the range of dates that provides the best combination of moisture, soil and air temperature, along with the quality of seed to be planted and its average days to maturity (RM). The optimum planting range for corn is approximately 2-3 weeks. Planting after this optimum time will usually result in lower yields, with many studies showing a rate of approximately ½% loss in yield potential/day following a delay in planting. The longer you delay planting, the greater the decline in potential yield rates and in the speed of the rate of decline. I will be happy to work with you to determine the optimum planting time(s) for our area – and to help you make the most of this year's crops! Make the most of your planting... for results.

On The Heels of SPRING... is SUMMER!

It isn't too soon to think and plan for summer, along with the heat and humidity it brings! Heat stress can have a lasting impact on your dairy cows, affecting production, health, reproduction, and bottom line profitability. If we recall the hot weather of past summers and the effect it had on livestock, it is important to work proactively to help prevent a similar (or worse) reoccurrence this coming summer. Have you taken time to review your strategies and plans to deal with heat stress? Be sure to take time to review ideas and plans on dealing with these concerns: fans/air exchange and/or sprinkler systems, additional shade areas and waterers, cleaning vents and fans; ration adjustments, and other options. Don't forget about your calves, replacement heifers and dry cows! Heat stress can impact all livestock on your farm. Your goal should be to keep the entire herd as comfortable as possible... knowing that a comfortable cow is usually a good producing cow. Plan ahead and ensure your livestock are going to be cool this summer. We can review your rations and take a look at your entire operation with heat stress in mind, working to avoid common pitfalls and problem areas. You'll be pleased at the results. Check it out... ask me today.



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