Heat Abatement is Important on Dairies

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Dairy cows will first start to experience heat stress (breathing heavily, panting, etc.) when the temperature-humidity index exceeds 68. Cows are much less heat tolerant than humans. Heat abatement, (the reduction or lessening of heat stress) is extremely important to any dairy business, because heat stress decreases cow comfort and health, and most importantly decreases reproductive performance and milk production. Some research indicates that the detrimental effects of heat stress on reproduction may start at a temperature-humidity index of 55 to 60.

Some key points farmers should consider regarding heat abatement include:

- **Fans:** Are fans installed and maintained properly for maximum air movement and when temperatures are at or above 72° F?

  A temperature-humidity index of 68 is equivalent to a temperature of 72° F with 45% relative humidity. Fan cooling systems should run continuously once the temperature-humidity index exceeds 68, covering areas especially at the feed bunk, holding areas, and resting areas. You should have enough fans to guarantee that there are no "dead areas" or places in the barn where air is not continuously flowing. A general rule of thumb is to space box-type fans no more than 10 times the diameter of the blades at a 20-degree angle downward towards the bottom of the next fan. (Ex: blade diameter of 3 inches, fans no more than 30 inches apart). Fans spaced more than 10 times their diameter lose effective velocity and, as a result, all cows will not be adequately cooled. Fan blades and housings should be cleaned at least yearly for improved performance.

- **Use sprinklers:** Do you use a sprinkler system for your herd at the feed bunk and the holding pen?

  Low-pressure sprinklers that wet the cows' hair coat should be in areas like the holding pen and feed bunk where the floor can become wet without consequence. Sprinklers should be turned on for 1 to 3 minutes every 10 to 15 minutes to coat the cow's hair and skin. Fans run continuously to allow for evaporation of the water.

- **Barn Ventilation:** Does my housing facility provide adequate natural ventilation and contain properly designed ridge openings or caps in the roof?

  Ridge openings and open sidewalls allow for air removal from the barn. A ridge opening should be 3 inches wide for every 10 feet of building width. Ridge caps are generally not recommended but if used should be of a height equal to 0.75 times the ridge opening. Overshot roofs should allow 3 inches for every 10 feet of building width. These roofs are less desirable because they assume that air always blows in the same direction. In addition, the roof slope should be 4/12, 4 inches of rise for every 12 inches of run. New facilities should be oriented with the long axis of the barn placed east-west to minimize sun exposure inside the building during the summer months.

- **Rations and Water:** Do I need to make ration and water modifications?

  Cows under heat stress will eat less often and consume less dry matter. To get cows to eat more, you should feed during cooler parts of the day, like morning and evening. Mix feed

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twice daily to prevent or minimize heating of the feed. During heat stress, water intake increases tremendously. Make sure that your watering containers provide enough water for your herd and are cleaned daily. Watering containers should be placed throughout the barn so all cows can reach them.

In summary, we realize that the dairy business is one that requires a lot of attention to detail. Putting effort into minimizing heat stress will lead to improved herd health and increased milk production. To get the pay off, you must follow these key principles and put them into practice on your farm!