

# Heat Stress – Thief of Summer Income



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Dairy cattle generally are the most comfortable when the outside temperatures are between 40 and 70°F. As the temperature and humidity rise, milking and dry dairy cows alike are subjected to heat stress. Heat stressed cattle eat less and do not milk or grow as well. All of us have heard stories of milk cows dropping 5 to 10 lbs of milk during the summer heat spells. By altering management practices, the amount of heat stress and its effects on milk production can be reduced. Now is the perfect time to review your management practices and see what changes can help your dairy cows cope better with this summer's heat and humidity.

## **Ways to reduce heat stress for the milking herd:**

1. **Rations should be rebalanced for summertime feeding.** Dry matter intakes decrease with hotter temperatures and humidity. In addition, mineral concentrations of potassium, sodium and magnesium may need to be tweaked for summertime feeding. For example, sweating results in loss of potassium. Thus, the diet should contain greater than 1.5% potassium (DM of the total diet) during the summer. Rations should provide adequate nutrients to support milk production, but, at the same time, contain adequate amounts of effective fiber or chew factor.
2. **Feedbunk management** is most critical during the summer months. First, cows need to be fed earlier in the day so that the heat of digestion does not peak during the hottest part of the day. The heat load from digesting feed peaks 4 hours post feeding. Secondly, feed bunks need to be cleaned out daily to prevent feed from heating up and discouraging intake. Third, feeding cows more times a day helps stimulate feed intake because it helps prevent feed from heating in the feedbunk. Thus, the recommendation that feed be mixed at least twice daily and fed at least twice daily. Additives can be used to extend the bunk life of the TMR or forages by reducing heating.

3. **Fans and sprinklers**, which wet the cows' coat, decrease heat stress on cattle through evaporative cooling. These systems should be used when the temperatures climb above 70-75°F. These systems, placed over the cows at the feedbunk, can help encourage cows to eat more feed. Additional fans placed in the freestall area will encourage cows to lie down and ruminate or rechew their cuds. Sprinklers generally run in a 12-14 minute cycle where they are on for 2 minutes and off for 10-12 minutes; fans should run continuously.
4. **Fans and sprinklers should be located in the holding pen** to cool cows waiting to be milked and upon exit from the parlor.
5. **Water intake** increases as the temperature and humidity outside increases. For example, researchers have shown that water intake increased 29% when the environmental temperature increased from 64°F to 86°F. Routine cleaning of waterers is important to maintain and encourage water intake. Remember that milk is 87% water and that water intake governs feed intake which directly governs milk production.

#### **Ways to reduce heat stress on dry cows and cows just before calving:**

Importance: Heat stress in dry cows has been shown to decrease the quality of colostrum, birth weight of calves, and subsequent milk production and to increase the incidence of retained placentas, displaced abomasums and hoof problems in early lactation. By providing shade over the feeding and resting areas, preventing overcrowding, and running fans and sprinklers, the amount of heat stress can be reduced.

1. **Reducing heat stress in close-up dry cows** is very important and is often times overlooked but will definitely pay financial rewards this next lactation.
2. **Shade** is very important for dry cows to reduce heat stress. Close-up dry cows (cows within 3 weeks of calving) especially need adequate shade. Rotation of shade trees helps decrease the chances of mastitis especially in cows within a couple of weeks of freshening. Cows should not be allowed access to ponds to prevent future mastitis infections.
3. **Water consumption** increases dramatically with increases in temperature and humidity. Without shade, cows will drink 18% more water. Water intake also governs how much feed a dry cow eats. In addition, cows and heifers drink less water when the water's temperature is above 80 °F. Thus, shading waterers or using insulated waterers is important to maintain water intake and thus feed intake.

4. **Shade cloth covering feeding areas**-- Feed troughs located in the sun are not used during the heat of the day and will limit feed intake especially for the close-up dry cow group. You may want to consider using shade cloth over these feedbunks but not allowing an area large enough that cows lie down, creating a pathogen-enhanced environment which leads to an increased incidence of mastitis.
5. If you use **pasture** for your dry cows and heifers, make sure they have adequate pasture for them to eat. Cool season grasses, such as fescue, bluegrass, and orchardgrass, do not grow much in the heat of the summer. When forage availability becomes limiting, hay or other stored forages need to be fed or the cows need to be moved to a pasture crop that is actively growing.
6. **Maintain good body condition.** Do not allow dry cows to lose weight or body condition. Proper amounts of body condition are important for these cows to milk well and rebred quickly after they calve.

Take a few minutes to review your milking herd and dry cow management programs to make sure heat stress does not rob you of potential milk income.