

Using Water to Help Cows with Heat

by Dan Huyser, ISU Extension & Outreach Ag Engineer, NE Iowa

With the hottest months of summer on the way, it is time to be considering ways to help your herd to cope with the added stress from the heat. Water is one of the most important tools we have to help keep animals cool and comfortable and minimize the “summer slumps” in milk production and reproductive performance.

Plenty of cool, clean water is vital during high heat. Water helps remove heat in several ways. The water a cow drinks will cool her insides as it is ingested. Heat is also removed with the moisture in her breathe, in her urine and feces, and as she sweats. A dairy cow consumes up to 50% of her daily water intake within an hour after milking, so providing fresh, clean water at the parlor exit is an excellent way to encourage water consumption.

Adding a water tank to a pen to allow easier access to water for all cows is another option in free stall barns. Shades over outdoor waterers will help to keep water cool and algae- free for penned stock and dry cows as well as those being pastured.

Evaporating water can provide extra cooling benefits. Sprinkler systems used in conjunction with fairly high velocity air will provide an effective means of heat relief. The idea is to soak the cow to her skin and turn the water off for a long enough period to allow the moving air to “dry” her. While drying, heat is removed from the skin during the evaporation process cooling the cow. When people climb out of a swimming pool and experience a chill until their skin dries, they are experiencing the same process.

There are several things to be considered before turning on the water. First, where are good areas to do this? Holding pens and feeding areas are the most common spots. Parlor return alleys can also be equipped with sprinklers to soak cows going back to areas where spraying water isn't possible, such as tie stall barns and maternity pens, giving them brief relief from the heat.

Second, are water supplies available to be wetting cows? Typically, a system is set up using sprinkler nozzles and piping sized to provide 0.5 gallons/minute of water. The recommended cycle is 2-3 minutes on and 15-20 minutes off to allow drying. This adds up to around 30 gallons per day per nozzle if run 24 hours. Spacing nozzles 10 feet apart in a 100 foot long barn with 2 alleys would require 600 gallons of water in a day.

Third, is there enough storage space in the manure system to handle the extra volume of water? Storage fills up fast with extra water and over flowing pits or lagoons a definite problem. Fourth, is there enough air velocity to cause quick evaporation? If cattle are crowding in stagnant air, adding more water to the environment will only increase the humidity and cause even more stress. Open sided barns may require additional circulation fans on still days to maintain enough air velocity to evaporate water. Barns with tunnel ventilation will generally have enough air velocity.

A fifth area to consider is nozzle placement. Care must be taken to place nozzles so that water isn't getting into feed areas or stall areas. Circulation fans and breezes coming through the sidewalls can necessitate changing the position on water nozzles to direct water away from these areas. And lastly, a producer needs to be aware that added water in the alleys can increase foot health issues as well as increase the potential for mastitis.

While not a substitute for cool weather, making sure cattle have plenty of fresh, clean water to drink and using a water sprinkler system to help cool hot cows can make a difference.