



Beef Tech-Line



May 2010

Heat Stress in Beef Cattle

By: Simone Holt, Ph.D.

Heat Stress in Cattle – Be Prepared.

Summer heat waves can cause considerable economic loss to cattle operations through reduced performance and, in severe cases, death of animals. All too often we react a little too late to heat stress situations. In most instances, once physical signs appear (excessive panting, restlessness etc.) it is already too late to prevent performance losses.

Which animals are most at risk?

Unexpected heat waves can occur throughout the summer. The impact on cattle operations is dependent of many factors, including duration – how many consecutive days of hot weather we receive.

Cattle can easily handle one day of high temperatures coupled with high humidity. However, several days of hot conditions become problematic, as cattle do not have opportunity for recovery. The heat load placed on the animal becomes additive over several days and most cattle deaths related to heat stress occur on day 3 or 4 of the heat stress event.

Cattle in confinement (feedlots) are generally at greater risk for heat stress than cattle on pasture. Pasture cattle have access to increased airflow; possibly more shade and are not subject to radiant heat from concrete and dark pen surfaces.

Heavier cattle (> 1000lb) close to market weight are considered more susceptible to heat stress than lighter cattle. Attention should also be given to receiving cattle that may already be in a stressed state due to shipping and receiving processes.

Dark hided (Black and Red) cattle are generally more susceptible to heat stress than light hided. It is best to remember that under heat wave conditions all cattle are susceptible to heat stress regardless of hide color.

Cattle that have had previous health challenges are more susceptible to high temperatures. These are generally cattle that have previously been treated for respiratory disease, and may have residual lung damage.

What are the heat stress signs?

Signs of heat stress include bunching, panting (open-mouth with tongue out – severe heat stress), restlessness, congregation around water sources, lack of coordination and trembling.

If you see any of these signs, assume cattle are under some degree of heat stress. Every possible step should be taken to avoid additional stress on the animal.

(continued on next page)



Preventative Measures – What can I do?

Alter feeding program – Research would suggest that by altering feeding time to the afternoon or evening can help to alleviate heat stress. Heat is generated in the animal by the process of consuming and fermenting feed. Adjusting the time of feeding to late afternoon or evening will mean that additional heat generated from feed will occur in the cooler hours of the day.

Multiple feeding can also be beneficial during hot weather. Offering 20 to 40% of total feed delivery in the morning, and the remainder (60 to 80%) in the evening will help to alleviate heat stress.

High moisture feeds can deteriorate rapidly during hot conditions. Multiple feedings may also assist in keeping feed fresh.

Offer shade – If at all possible move cattle to pens or areas that contain shade. Crowding animals into a small shaded area or building will only create additional heat stress for the animals, so it is important to ensure the shaded areas allow for 20 sq ft./animal.

Unshaded pens with a south or west slope offer more sun exposure, so are significantly worse for cattle than unshaded pens with a east or southeast slope.

Provide extra water sources – At 90°F, water consumption may be almost twice that at 70°F and 50% greater than at 80°F. Keep good quality fresh water available at all times.

If water space is limited, temporary water sources, in the form of tubs, tanks or portable troughs should be placed in pens to allow water access for all animals. In some cases, during hot weather, cattle deaths occur due to inability to access water.

Water application (either to the animal or pen surface) can help alleviate heat stress, even short periods of watering/sprinkling will be beneficial.

When using sprinkling systems designed to wet cattle, droplet size is important. Misting water onto cattle may only add to the heat stress by adding humidity (moisture is trapped in the hair coat). Sprinklers that provide large droplets are best to wet through the hair coat to the skin.

Watering or wetting the ground surface is also a good option, particularly if cattle are not accustomed to sprinklers. Cattle are able to find a cool spot to rest and stand which offers significant relief.

Remember, if cattle are not accustomed to sprinklers and fire hoses you should limit their use to the cooler hours of the morning or evening. Any additional stress that causes animals to take flight will increase the body temperature and subsequent heat stress of the animal.

Avoid moving or working cattle – Body temperature of cattle exposed to high daytime temperatures will peak in the early evening, declining in the night to reach a low point in hours close to sunrise, and then slowly builds throughout the day.

It is best to avoid working or moving cattle at all during periods of hot weather. However, if unavoidable it is better to work cattle early in the morning rather than during the day or early evening.

Transportation should also be avoided during hot conditions. If transportation can't be delayed, do it during the cooler late evening or early morning hours to avoid additional stress. Transportation of cattle during hot weather is thought to be a major contributor to dark cutters.

Hubbard Feeds Inc.
PO Box 8500
Mankato, MN 56002-8500
1-800-869-7219
www.hubbardfeeds.com

