



South Dakota
State University
Cooperative
Extension Service

Extension Extra

ExEx 11011
Veterinary
Science

COLLEGE OF AGRICULTURE & BIOLOGICAL SCIENCES / USDA

Handling Heat Stress in Cattle

What to look for

Signs of heat stress include bunching (in the shade if it's available), slobbering, high respiratory rates (panting), open mouth breathing, lack of coordination, and trembling. If you see these signs, assume the cattle have high heat loads, and minimize the stress immediately, but handle the animals gently to avoid increasing their stress even more.

Animals with past health problems may be more affected by heat stress. These animals often will be the first and the most severely affected in the herd. Past bouts of respiratory disease with residual lung damage may make them unable to cope with temperatures that otherwise normal animals can handle.

If an animal's health problems are on-going, administer treatment with extra care. Remember that the animal may be less able to compensate for high temperatures. This may be true even for cattle with otherwise easily treated problems, such as footrot.

Cattle in confinement generally have greater heat loads than cattle on pasture. This presumably is due to more air movement in the pasture, possibly more shade, and less exposure to radiant heat associated with concrete or dark soil.

Heavier cattle (>1000 lb) are generally more susceptible to high heat loads than lighter cattle. Also pay close attention to newly received cattle that may already be stressed due to the shipping and receiving processes.

Dark hided cattle are generally more susceptible to heat stress than light hided cattle. It is best, however, to assume all cattle are susceptible to heat stress regardless of hide color.

What to do

Offer shade. Shade will reduce heat loads in cattle. If cattle can be moved to shaded pens, the severity of the heat stress will be reduced.

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.

Offer water. Water consumption is driven by environmental temperature. 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 in front of the cattle at all times.

If water space is limited, temporary water sources, in the form of tubs or portable troughs, should be provided.

Heat stress in cattle can be lessened by providing water via sprinklers or fire hoses. Even rather short periods of watering can be beneficial in decreasing heat stress in cattle.

Droplet size is extremely important. Misting water onto cattle may only add to the heat stress by adding humidity. Use a sprinkler that produces large droplets.

Watering the ground with hoses and allowing the cattle to stand in the water or on the wetted ground offers significant relief.

Cattle may not be accustomed to sprinklers and fire hoses, which may scare them and provide additional stress. If this is the case, it is best not to use sprinklers or hoses during the hottest part of the day. Restrict their use to the cooler hours of the morning or early evening.

Avoid overworking the cattle. Body temperatures of cattle exposed to high daytime temperatures tends to peak in the early evening, declining in the night to reach a low point in the hours after sunrise, then slowly building throughout the day. Work with cattle in the early morning, and avoid afternoon/evening work when body temperatures are already high.

If possible, under prolonged heat stress conditions, avoid working the cattle at all.

If at all possible, avoid transporting cattle during periods of heat stress. If transportation can't be delayed, do it during the cooler evening or early morning hours to avoid any additional stress. Transportation of cattle during heat stress events is thought to be a contributor to dark cutters.

Other things to keep in mind

In pens of heifers being fed for slaughter, using the feed additive melengestrol acetate (MGA) has been shown to be associated with

less death from heat stress. This is presumably due to the fact that MGA keeps heifers from coming into estrus and therefore limits the activity level of animals in the pen.

High environmental temperature in the days after breeding has been associated with increased early embryonic loss in cattle. Fertilization appears to take place normally, but embryo development is delayed or altered when environmental temperatures are consistently above 90 F.

The effect of high environmental temperature seems to be most pronounced within the first weeks after conception. However, temperature also has effects at late gestation, as cows exposed to consistently high temperatures in the 4 to 8 weeks prior to calving may have lower placental weights and produce calves with lower birthweights.

Temperatures greater than 90 F can also impact the reproductive function of bulls. Even if bulls do not show physical signs of heat stress, semen quality can be compromised. Semen quality tends to decrease 1 to 2 weeks after an acute, severe heat stress and will persist for an additional 4 to 8 weeks. This may be a practical concern if the bull is expected to breed a large number of females (ie as in a synchronized breeding program) in this time frame.

Animals that have been through severe heat stress may be more sensitive later, and may show signs of heat stress at lower temperatures. Be aware that this may happen and treat animals according to the signs they show.