

VETERINARY CALL

by Bob Larson, Kansas State University

Heat Stress

When temperatures rise cattle can be negatively affected. There are some key management steps producers can take to protect their herds.

Almost every summer, a portion of the United States suffers from a period of extreme heat and humidity that can cause health and production problems for cattle. Cattle are very susceptible to heat stress and can start to show signs of discomfort if the temperature-humidity index reaches 80 or higher.

Factors other than temperature and humidity are also involved with heat stress including high body condition, black hide color, rainfall, lack of wind, lack of night cooling, crowding and consumption of endophyte-infected fescue.

Rain and high humidity reduce the ability of cattle to use evaporation to get rid of body heat. In addition, if winds are calm or cattle congregate behind a windbreak or to fight off biting flies, their ability to be cooled is reduced.

Night temperatures that remain above 70°F increase the danger of heat stress, because needed night-cooling does not occur. Cattle that are not used to hot weather are also at a greater risk if weather changes rapidly or they are shipped from a cool environment to a much hotter one.

Cattle experiencing heat stress will reduce feed intake, increase water consumption, and increase panting or open-mouthed breathing.

Consuming less feed lowers the heat of fermentation in the rumen and the heat generated by digestion and other metabolic activity but results in limiting daily weight gain.

In addition to the potential for poor growth and even death in worst-case scenarios, heat stress can also have negative effects on fertility. Research has indicated heat stress leading up to mating and during the first six weeks of pregnancy can reduce pregnancy rates, and prolonged heat stress in late pregnancy can cause calves to be born early.

Handling the heat

During periods of heat stress, it is important cattle have access to ample water. When temperatures reach 80°F, cattle need two to three gallons (gal.) of water per 100 pounds (lb.) of body weight. If cattle must be handled during hot weather, work them from midnight to 8 a.m. after at least six hours of night cooling.

Providing shade to cattle has been shown to reduce heat stress and to increase feed intake by protecting them from direct sunlight. Man-made shades should have a north-south orientation to allow drying as the shaded area moves throughout the day.

Air movement is important to dissipate heat. In pasture settings, it may be necessary to remove or fence off windbreaks during the summer. For cattle confined in a lot, enhance airflow by providing mounds and move cattle away from windbreaks and wind dead spots.

Sprinklers can be also used to combat heat stress. In geographic areas where humidity is high, fine mists or fog systems are not recommended. Instead, a sprinkling system that produces large water droplets is required to wet the skin. Sprinklers reduce heat stress by increasing evaporative losses and reducing ground temperature, radiant heat gain and dust. Sprinkling should be done only occasionally throughout the day, otherwise high humidity may result and there may be little opportunity for evaporation.

Summer weather forecasts should be monitored, and if heat stress is predicted, you should implement key management steps to protect your herd. **A**

Editor's note: Robert L. Larson is a professor of production medicine and executive director of Veterinary Medicine Continuing Education at Kansas State University in Manhattan, Kan.