Summer danger

Heat Prostration in Cattle Is Avoidable

by Robert L. Haney
TAES Science Writer

CATTLE in hot weather can be killed or disabled by the heat. Like humans, these animals are subject to heat prostration and heat stroke.

"High humidity plus heat increases the likelihood of heat stroke, because evaporation of water from oral and nasal cavities is reduced as is evaporation of sweat," according to Dr. Murl Bailey with the College of Veterinary Medicine at Texas A&M University.

Crowding, excitement and forced exercise during hot weather produce most of the victims, says Bailey, who studied the problem for the Texas Agricultural Experiment Station.

Lack of needed water, obesity and decreased heat tolerance associated with young or old age are still other factors that increase vulnerability of animals.

Essential Factor

Heat is the essential factor, but lack of oxygen (poor circulation of air), fatigue, and insufficient salt and water intake can also contribute to the condition.

The signs of overheating may develop suddenly, Bailey says, and depend on environmental conditions and health of the cattle.

Some animals show restlessness, excitement, forced movements and spasms of certain muscles. However, other animals may be dull and depressed.

Breathing is rapid and through the open mouth. Protruding tongue may be covered with frothy saliva, and frothy mucus is discharged from the nostrils.

Skin around the eyes is red and congested, and the pupils are dilated at first but later may be constricted. Palpitation of the heart is present, and the pulse may be rapid and weak.

Final Signs

In early stages, the breathing is accelerated but may slow progressively. Death may occur during convulsions, but usually the final signs reflect progressive paralysis of breathing and circulation.

The first sign of dehydration, which commonly occurs in overheating, is a tendency to seek water. At the same time, there is a decrease in urine volume.

Treatment of heat problems in cattle has an initial objective of lowering body temperature, Bailey says. Immediately after or immediately before submersion of an animal in cold water, a veterinarian can give it a shot of dexamethasone to reduce danger of brain damage.

The patient usually benefits if allowed to drink cold water freely and if provided with shade and circulating air.

Fluids

A veterinarian may inject intravenous fluids. Heat exhaustion is due to an excessive loss of sodium (the Na in NaCl, salt). The body reacts by robbing inner cells of potassium to replace the lost sodium in outer body cells. Kidney excretion of sodium ceases, but water excretion continues.

Heat prostration, on the other hand, involves the loss of both sodium and chlorine.

In both cases, treatment requires close watch on the patient and laboratory tests.

Overheating in cattle can be prevented under most management conditions, Bailey says.

Allowing animals free access to water and mineral supplements and restrictions on strenuous handling during the heat of the day can help avoid overheating.