



Vet Call

► by **Bob Larson**, professor of production medicine, Kansas State University

Cold weather concerns

Cold winter weather and the potential for cold stress in cattle requires that producers in many parts of the country prepare for the husbandry challenges that the winter months bring. Adult cattle with a dry winter hair coat, adequate body condition, and abundant feed can withstand most winter situations. But, by planning for winter weather, ranchers can avoid being caught off-guard by extreme events and can manage the typical loss of body condition that occurs when cattle have to utilize body fat as an energy source to keep warm.

Situational stress

Situations that are more likely to cause cold stress are: cattle with thin fat cover and short hair coats (due to movement from a warmer environment to a colder environment; or extremely cold temperatures early in the fall/winter season), high wind speed, or wet hides. Wet or mud-caked hair loses its ability to insulate the animal. A wet winter hair coat only provides as much protection from the cold as a typical summer hair coat. Cold wind draws heat away from an animal more quickly than still air at the same temperature. If cold wind is combined with a wet hair coat, the effects are even more profound.

Providing adequate forage is important for maintaining body heat during cold weather because cattle generate a great deal of heat by the fermentation of forages in the rumen. Cattle appear to be able to sense when a storm is hours away and will increase their feed intake. But because adequate water intake is important, if water sources are frozen or unavailable due to winter weather, feed intake will drop rather than increase as needed to maintain body heat.

Cold weather brings a special concern with bulls because of the potential to have frostbite damage to the scrotum and testicles. It is very important that bulls have protection from the wind and adequate bedding if they are housed on concrete or dirt.

Cold calves

Cold temperatures have the greatest potential to cause serious problems in young calves, particularly calves in the first day of life. Because calves are born wet, they lose body heat very rapidly, and if they are not able to become dry, they can quickly become severely cold stressed. Contact with snow or wet ground will increase the amount of time that a calf stays wet and in danger.

Calves are born with a body temperature of about 100° F. When exposed to a cold environment, calves are able to produce heat in two ways, shivering and the heat production of brown fat (fat that surrounds the kidneys of a newborn). They can conserve heat by reducing blood flow to the body surface and extremities (feet, ears, etc.).

In early stages of cold exposure, calves will shiver vigorously and have a fast heart rate and breathing rate. If that does not keep its body temperature up, the calf's body sends less blood to extremities in an effort to minimize heat loss. When this occurs, nostrils and feet will feel cold.

Severe cold stress occurs when the body temperature drops below 94° F. At this temperature, the brain and other organs are affected, and the calf becomes depressed, unable to rise and can become unconscious.

Calves suffering from cold stress must be warmed so the body temperature can rise above 100° F. If body temperature has not dropped too far, putting the calf in the cab of a pickup out of the wind and moisture and with the heater blowing will warm the calf. In more severe cases, calves can be placed in warm water, specially designed warming boxes, or near a heating source such as an electric blanket, heat lamp or hot water bottles. To avoid skin burns, the heat source should not exceed 108° F. In addition to an external heat source, cold-stressed calves should be fed warm colostrum, milk or electrolyte fluid with an energy source using an esophageal feeder.

During periods of cold or wet weather, newborn calves (less than 1 to 2 days of age) should be checked every few hours with a thermometer and any calf with a below-normal temperature, even if it appears OK, should be warmed. Prevention of cold stress involves management to ensure that calves can be born in a short period of time and

both the calf and dam can stand shortly after calving so that they can bond and the calf can begin suckling.

Anything that prolongs calving or reduces the chance that a calf will suckle soon after birth should be addressed by management changes. Calving difficulties are minimized by proper heifer development, proper bull selection for calving ease or birth weight, and proper nutrition so that heifers and cows calve in a body condition score of 5 to 6 on a 9-point scale. Cows with large teats or that are not attentive mothers should be culled.

Planning ahead

Use of pasture as the primary forage source during calving encourages cow dispersal and minimizes development of muddy areas. If the herd forage plan includes feeding hay, consider feeding hay in early to mid-gestation and saving stockpiled pasture for the calving season. If supplemental hay and grain are fed during calving, these should be provided at locations that are separate and distant from water sources and windbreaks.

I discourage the use of bale rings in calving and nursery pastures and suggest that if using large round bales, they be unrolled and the feeding area changed with each feeding. Unrolled bales will have greater hay waste, but reduced chance for mud caused by concentrating the herd into small feeding areas. Unrolled hay also provides bedding for newborn calves so that they are not in direct contact with the ground.

Planning ahead and considering newborn comfort and protection when making heifer development, bull selection, nutrition, and pasture management decisions can greatly reduce the risk of cold-stressed calves if they are born during winter storms. Protecting the cow herd (and bulls) from winter wind and providing bedding if on concrete or mud/dirt will minimize the effects of severe weather. And, making sure that cows will have adequate access to forage, even with snow cover, completes a strategy to be prepared for the upcoming winter weather.

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