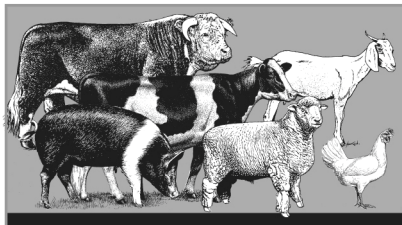

Winter Hazards for Beef Cattle

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It may be hard to think about the upcoming winter during the late summer and fall while the temperature is still in the 90s, but that's the best time to get ready for potential winter hazards. Many of the problems we see with beef cattle health and productivity from winter weather are preventable with some advanced planning.

The lower critical temperature is the environmental temperature at which cattle start burning calories to maintain a normal body temperature. While Louisiana winters are relatively mild, they are usually very wet. It's also not usually cold enough for cattle to develop a really heavy winter coat. For *Bos taurus* breeds in body condition of 5, with a moderate winter coat, the lower critical temperature is 32 degrees in dry weather. This increases to 59 degrees if the coat gets wet. Wind does the same thing, and the two together are really bad. The exact lower critical temperature for *Bos indicus* (Brahman) breeds is hard to find, but we know it is s higher than *Bos taurus* breeds. It will also be different for thin and diseased or parasitized cows.

When the temperature goes below the lower critical temperature, energy requirements skyrocket, and the first response from cattle is to eat more. Intake may increase by 30 percent. Providing additional hay is a good start as a full rumen helps animals stay warm. But lower-quality forages will not be able to keep up with the energy needs, and some supplementation of energy may be needed. Feeding in the afternoon or evening takes advantage of the heat production from digestion when the temperatures are dropping.

Protein Energy Malnutrition

The production losses associated with even small decreases in body condition in the winter are covered in other fact sheets. With more severe restriction of protein and energy, protein energy malnutrition (pregnancy toxemia) can occur. It generally occurs during late gestation in cattle in poor body condition. Heifers are particularly susceptible. Cattle are normal one day and down and unable to rise the next, especially after a cold spell. Once animals go down, treatment is usually unsuccessful. This condition is exacerbated by internal parasites and cold weather, which increase nutritional requirements. Preventing this problem with adequate nutrition is best.

Sudden Death Caused by Hypothermia

The heat tolerance of Brahman cattle makes them ideally suited to Louisiana's hot, humid sub-tropical climate; however, the characteristics of these cattle (a short hair coat and different fat deposition patterns) make them more susceptible to cold stress. Sudden death caused by hypothermia can occur in Zebu-influenced cattle during cold weather, especially if rain and wind are factors. Sudden death has been reported even in Brahman cattle that are

healthy and have adequate body condition if the weather issues are prolonged and without a break. Thin body condition, parasites and other diseases increase the chances of deadly hypothermia. Although the problem is more common in Brahman-influence cattle, all cattle are susceptible. Keeping cattle in good body condition and free of disease and parasites as well as planning for emergency shelter are important in preventing deaths. Shelter in the way of access to a barn or other building with a solid side on the north or simply access to a wooded or hilly area can provide a good windbreak for cattle. Temporary shelter can be provided by assembling a 3- or 4-high stack of round bales across from a perimeter fence to block the cold northern or northwestern wind. Temporary shelter can also be provided by attaching tarps to panels or a constructed frame to block the chilling winds.

Winter Tetany

Poor quality forages alone or in combination with grains can cause mineral imbalances and lead to winter tetany. High levels of potassium (K) and phosphorous (P) when coupled with low levels of magnesium (Mg) and calcium (Ca) can result in a magnesium deficiency. Angus cattle are most susceptible. Brahman cattle are least susceptible. Stress, such as severe weather, hauling or handling, can induce clinical signs. Lactating cattle are more susceptible. "Winter tetany" can cause clinical signs identical to "grass tetany," which is sometimes seen in cattle grazing lush winter annual pastures, especially those that were heavily fertilized. These signs are nervousness, aggressiveness, lack of coordination, muscle tremors or twitching, and finally seizures and death. Winter tetany can also cause clinical signs identical to "milk fever." These are initially a stiff gait that progresses to weakness and loss of ability to rise. To determine the risk of winter tetany, a tetany ratio can be calculated using the percentage of K, Mg and Ca in the diet (tetany ratio = (K/ Mg + Ca)). If this ratio is above 2.2, winter tetany may occur.

Parasitism

Parasites, both external and internal, rob cattle of nutrients. Internal parasites in the gastrointestinal tract can cause loss of body condition, diarrhea, weakness and bottle jaw. Winter is also the most common time to see lice and mite infestations that cause loss of body condition and possibly anemia. Liver flukes can also be a major problem. Control of both internal and external parasites with dewormers and insecticides is critical but needs to be done appropriately with products tested for efficacy on each individual operation. We have reports of cattle that have been dewormed still dying of parasites in the winter because the dewormer used was not effective anymore. Cattle in poor body condition from lack of nutrition have poor immune system function, leaving them more susceptible to parasites. So, proper nutrition will help control parasites as well.

Grain Overload/Digestive Upsets

The anatomy and physiology of the cow's stomach make cattle able to digest and use a wide variety of feedstuffs; however, different diets require different digestive bacteria, and these bacteria take time to change. Sudden feeding of large amounts of starch-based concentrates to cattle on forages can cause grain overload, which, if severe, can cause serious illness, founder and death. Grain overload can also permanently damage the stomach, causing poor growth and performance. If changes in types of forages or concentrate feeds are done too quickly, they can cause indigestion and cause cattle to stop eating. To prevent these problems, make feed changes over a one-to-two-week period. Test hay and plan for supplementation before you need it. In cases of extreme cold, wet weather, feed an extra 0.3 to 0.5 percent by weight per day of a digestible energy source both during and for 3-5 days after an event. If you pay attention to the weather, starting a few days before weather hits is even better.

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