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Feeding Cows in Cold Weather

As the weather so often is in Kansas, we've been on a rollercoaster of temperatures as winter officially begins. There was no doubt that cold weather was here this past weekend when single digits registered on the thermometer. In the past I've written about lower critical temperature (LCT) for livestock and the factors affecting this value. Today let's load up on feeding cows in the cold.

While it is tempting to meet the energy needs of cattle during cold stress by adding more feed, it's important not to make drastic changes to daily rations. Providing consistent, high-energy feed during extended cold spells is the best approach. Take a week or two prior to and through extreme cold to feed more of the same ration or supplement with higher-quality hay, grains like corn, or energy-rich feeds like distillers grains. Good quality forage/hay can also help, as the fermentation in the rumen adds internal heat to the animal.

When feeding lower quality hay, dormant range grazing or corn stalk grazing, additional feed will be needed. One option is to feed a higher quality hay source with higher total digestible nutrients (TDN), if available. Free choice high quality hay, containing 58 to 60% TDN, is adequate to temperatures of 34°F below the LCT of the cow (-15°F for cows in good condition with dry hair or 19°F with wet hair). If cows are grazing cornstalks or winter range, then supplementation with a high energy feed may be desirable. Often good quality alfalfa hay can fit the bill as a quality supplementary feed. While corn can be used to provide more energy, it comes with risk. Feeding more than 2 to 3 pounds per head can decrease forage digestion, especially if the forage is lower in protein. Feeding corn with some alfalfa on low protein forages can mitigate this issue. Other supplementation options include grains and by-products.

When corn supplementation is considered, 3 pounds of corn (82% TDN) provides 2.5 pounds of TDN, which can offset energy requirements for a moderate body condition score (BCS) 5 cow down to 5°F with a dry coat or 38°F with a wet coat. Distillers grains are another excellent choice due to the fact they are high in energy and protein. Another benefit of distillers grains is the reduction of the forage substitution effect. When compared to corn, the decision to feed distillers grains depends more on the cost than digestive restrictions.

When wind chill temperatures are extremely cold or the cow has a wet hair coat, there is a substantial increase in the demand for supplementation to meet energy requirements. For instance, if the wind chill was -10°F and the cows had a wet hair coat, then 8.9 pounds of dry distillers would be needed to account for the increased energy requirement. However, feeding these levels can be impractical. A better approach would be to provide a smaller amount of supplemental feed and to continue to feed extra after the weather has moderated to allow cows to regain condition lost.

It is also important to remember that lactating cows have a much greater energy requirement than pregnant cows. When this factor is added in combination with cold stress, BCS can rapidly decrease. For lactating cows, the energy demand is even greater, and cold stress can have a more immediate impact on their body condition. Ensuring that these cows have adequate nutrition before they start losing condition is key to preventing further problems, particularly during the harshest months of winter.

The University of Nebraska has an excellent publication addressing the comparison of beef cattle supplementation for winter weather. Check out NebGuide G2268 ["Supplementation Needs for Gestating and Lactating Beef Cows and Comparing the Prices of Supplement Sources"](#)