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Preparing Livestock for Cold Snaps

Not having a white Christmas was disappointing for many people, but my guess is that anyone feeding livestock in winter appreciates not having to deal with extreme cold, snow and/or ice, I know I sure do! The relatively mild fall and winter we have had thus far sounds to be changing as I write this, so it might be a good time to revisit cold weather livestock care. As we prepare ourselves for these weather events, keep in mind what livestock are going through as well.

Livestock tend to lose acclimation to cold weather with an extended period of thermoneutral days. Body condition and their hair coat can play a large part in tolerance to colder conditions. Using a cow example, those in good body condition, with BCS scores of 5 to 6, having good thick winter hair coats have a lower critical temperature around 32° Fahrenheit. Thin cows with thinner hair coat are at more risk with lower critical temperatures of around 40° F, while cows with wet haircoat have lower critical temperature of 59° F. For each degree below the lower critical temperature energy requirements increase by 1%. Wind chills down are forecast to get below 0° F, meaning maintenance energy requirements will increase by up to 30 to 40%.

When animals fall below the lower critical temperature and get into cold stress, the natural response is to increase feed consumption, which increases basal metabolic rate and increase heat of fermentation or digestion. Research indicates cattle consume 105% to 110% of predicted intake when temperatures drop below 22 degrees F and up to 125% of predicted intake when temperatures drop below 5 degrees.

It is important to note that when acute cold stress occurs from a storm front moving in quickly cows can cut intake as much as half or more, due to grazing behavior changes and water intake decreases. Compounding the increase in maintenance energy requirements due to the temperature reductions, these decreased intakes put them in even more of an energy deficiency. For wind chills of minus-20 degrees or lower, feed intake may be reduced because livestock are reluctant to leave sheltered areas.

Here are a few tried and true Research and Extension cold-weather recommendations:

- Make sure ruminants have access to as much hay as they want to eat. Ruminant fermentation helps keep the animals warm.
- If increasing concentrate supplementation rates to help offset energy deficiencies it is best to provide feed concentrate supplements every day.
- Feed livestock beside or in a grove of trees or some other windbreak that is large enough for all the animals gathered. The better the windbreak, the lower the animal's cold stress.
- If there is no natural windbreak available near a water source or feeding area, try placing a line of round bales of straw or low-quality hay where livestock can bed down out of the wind.
- Ensure unrestricted access to unfrozen water. If water intake is limited, feed intake is reduced and ruminal fermentation is affected.
- Feed relatively close to water sources. The farther away the water source, the longer animals will wait to venture out to get a drink.
- Unrolling low-quality hay, straw or crop residues as bedding will provide some relief from the extreme temperatures.

The Kansas Mesonet website is a great resource of weather reporting stations across the state. The Animal Comfort Index gives a look at the current and predicted concerns for livestock comfort - both cold and hot. It can be accessed at: <https://mesonet.k-state.edu/agriculture/animal/forecast/> Stay safe and warm out there!