

GROWING BEEF



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Wintertime feeding for reducing cattle stress

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It's too early to tell what the 2008-09 Iowa winter will be like, but we likely will have a few extreme cold snaps. Preparing the cow herd for these can have an impact on the success of the 2009 calving season as well as breeding cows for the 2010 calf crop.

Factors that create stress and increase the energy requirements during the winter months are cold, wind, precipitation and mud.

Cows with a dry winter hair coat have a lower critical temperature of about 32°F¹. Below this the cow's energy needs increase. A general rule of thumb is that for every one degree (F) the temperature drops below 32°F, increase the ration energy by 1%. This is based on the effective ambient temperature or wind chill index, so providing wind breaks is important to reducing winter cold stress.

A mature 1350 lb. dry British bred type cow, requires 14.5 megacalories of NEm and about 3.1 lb CP at 32°F. This requirement is met by approximately 31 lb. of first cutting grass hay. At 12°F an additional three pounds of hay is needed to meet her energy requirements. In both cases the protein requirements are exceeded.

If cattle have wet hair coats, the lower critical temperature is increased. The energy requirements of wet cattle generally

increase by two percent for every degree below 59°F. Mud is another major consideration in cold stress. It is estimated that mud can increase the maintenance requirement from 7-30%. The simple practice of providing bedding helps to reduce the stress from precipitation and mud.

One tool to manage cold snaps is to

calving time to prevent calving problems and ensure the best results for conception and pregnancy the following summer. Thin cows have a higher risk of calving problems, weak calves and poor colostrum quality. Missouri research shows that only 66% of cows with a body condition score (BCS) of three to four at calving are cycling 90 days after calving, while 92% of cows

Cold Stress Tips



1. Provide plenty of fresh water - snow and ice don't count
2. Provide for animal comfort with wind breaks and bedding
3. Meet their increased energy requirements
4. Separate cow herd based on feed requirements, mature cows separate from young, old or thin cows.

increase access to forage. Heat generated during the digestive process (fermentation in the rumen) helps maintain core body temperatures. Cattle will also eat more when it is cold, so increase feeding rate above maintenance - three to four pounds more hay or two to three pounds more grain. Remember that cows will handle one or two days of very cold weather fairly well, but sustained periods probably warrant a ration modification.

Cows should be monitored throughout the winter feeding period to ensure adequate nutrition. The goal should be a body condition score of five or six at

with a BCS of five to six are cycling within 90 days². Body condition during the winter is not only a challenge with Iowa winters, but it is also very expensive. Increase body condition on thin cows in the fall before winter weather hits.

Additionally, requirements for vitamins and minerals must not be neglected. Free choice salt and mineral should be provided at all times. Water also needs to be monitored to ensure adequate water intake, since water intake drives feed intake.

¹KSU Extension bulletin C-735

² Whittier and Stevens, 1993. Missouri Cooperative Extension Service G2230

IOWA STATE UNIVERSITY
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Helping you become your best.

Improving cattle comfort in wintertime

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Managing stress in the winter time can pay dividends with improved performance in the feedlot. Cattle respond to cold stress by expending more calories to maintain body temperature. There are several ways that cattle battle combat cold temperatures.

One method is through internal and external insulation. External insulation is effected by hide thickness (breed and genetics) and hair coat. The temperature at which cattle begin to use additional energy to maintain body temperature is called the lower critical temperature.

Although cattle with a heavy winter coat have a lower critical temperature that is significantly less, when they have a summer hair coat or the hair coat is wet, the lower critical temperature is just over 50 degrees. For each degree of cold stress below this temperature their energy needs are increased a little less than 1%.

The effective temperature for cold stress is also impacted by the wind speed in addition to the temperature. Other factors that affect the lower critical temperature are the cattle's age and body condition (internal insulation) and the heat generated

by the ration fed. So how do you use this knowledge to improve cattle comfort?

Provide wind protection

Reducing the effects of wind on the animal reduces that effective temperature. This might be a windbreak fence, shelterbelt, or a shelter. If providing a windbreak, try to keep it 80% solid and 20% open. This is more effective in reducing the wind speed behind the break.

Offer appropriate shelter

If you are providing shelter, give the animals enough space (>20 square feet per head) and make sure that the building is well ventilated. Poor ventilation increases stress on the respiratory system and traps moisture in the building. That moisture accelerates heat losses.

Provide bedding

Cattle can lose heat when lying down by direct conduction. In conditions where moisture may build up in the areas where cattle bed down, bedding can provide a layer of insulation between the animal and the ground.

Remove snow

By being proactive in snow removal in



Cattle need appropriate shelter during wintertime, in a building that is well ventilated, like the one shown.

the feedlot you can reduce the potential for muddy conditions when temperatures thaw. Mud may be more stressful than cold in Iowa feedlots because it reduces the insulation value of the hair coat and requires more energy for the animal to travel from feed to water to resting areas.

Cattle have the ability to thrive in cold weather. However, to live up to those abilities requires protection from the wind which can cut through their natural insulation. Protection from excessive moisture can help maintain this insulation as well. Bedding, along with proper animal density and ventilation in shelters are management tools that can help.

Getting
to know
an IBC
beef
specialist



Joe Sellers

Iowa counties served: Lucas, Wayne, Marion, Jasper, Polk, Warren, Dallas, Madison, Clarke, Decatur, Ringgold, and Union.

What do you enjoy most about working with producers in your area?

Producers are trying new things to become more efficient - from better genetics and new AI technology, to better grazing management, to feeding co-products in beef diets, to building hoop buildings for feeding cattle. It is an exciting and

challenging time.

What advice can you offer to producers for handling the winter months with their operation?

Try to plan for ration adjustments required in poor weather. This winter is starting out rough with snow and cold conditions - that requires higher energy feeds for beef cows compared to normal weather. Our BRANDS ration programs handles those adjustments very well.