



Keeping the Pilot Light Lit in Your Cows

By John McGregor, MFGA Extension Support

Typically we wait until it starts to get cold to talk about cold weather stress and supplementing energy to cows. But 2021 hasn't been a typical year.

Last year, forage supplies were tight but the mild winter and early spring of 2020-21 saw most operations stretch limited feed supplies through this period and come out at the end with some inventory. At present the winter and spring for the 2021-22 season is unknown but having a plan to deal with the unexpected may make life easier for your herd.

We know that cows require more energy in winter to stay warm and maintain their core body temperature during prolonged periods of cold. That energy is especially important for spring-calving herds with cows well into their third trimester and calving in late January/early February. The nutrient requirements of the cow steadily increase through the third trimester with cold stress further increasing the energy requirements.

Although most cattle can withstand one or two days of cold weather fairly well, longer durations below that lower critical temperature (-17C) should raise concerns. A rule of thumb is to increase total digestible nutrients (TDN) 1 pound for every 3 degrees drop below -17 C. Another version is to increase TDN 10 percent for every 10 degree drop below the lower critical temperature, which in some cases with a dry winter coat may be as high as -15C for gestating beef cows adapted to winter conditions, but typically ranges from -15C to -20C depending on hair condition. Although temperature, wind chill and humidity all play a role in adding to cold stress, probably the biggest factor is whether the animal's coats are wet or dry. A wet coat loses its insulating properties and its ability to trap air, so cattle lose their body heat faster and are less able to keep warm.

Increasing Energy

When a cow's diet consists mainly of straw, stover or poor quality forages that don't meet the minimum crude protein requirements, additional protein is fed to provide both increased forage intake and utilization.

While cattle will require additional energy in their diets during cold weather, it does not necessarily mean they need more protein or minerals. Cold stress only increases energy requirements, not protein requirements.

When we have cold weather, offering more of a protein supplement does provide some additional energy but it's likely you may be over-feeding protein which may not be the most cost effective way to add energy to the diet.

The exception - cows in their third trimester or starting to calve, both protein and energy requirements increase.

Table 2. Nutritional requirements of the breeding herd¹

Class	Total Digestible Nutrients%	Crude Protein%	Calcium%	Phosphorus%
Mid Gestation	50-53	7	0.20	0.20
Late Gestation	58	9	0.28	0.23
Lactating	60-65	11-12	0.30	0.26
Replacement Heifers	60-65	8-10	0.30	0.22

Other thoughts:

Wind can be a big factor when it comes to cold stress and it factors into the lower critical temperature. Providing any protection from the wind such as portable windbreaks, bush, etc. can help keep cattle warm. The caveat here is that you need to be aware of how much time cattle are feeding as cattle tend not to go out to feed but tend to congregate in areas where they are protected.

Feed testing is very important as most operations have a variety of forages with varying nutrient quality. Balancing resources to meet increasing requirements (table above) and using some of the forages to meet cold weather demands may make economical sense if you know what you have on hand. When cold weather sets in, using higher quality forage or a small amount of grain really depends on what you have and what make the most economic sense for your operation.

Feed wastage needs to be considered especially if you are short of feed. Putting out adequate feed only to have it become bedding or next year's organic matter in a pasture needs to be accounted for and adjusted so that cows consume enough to meet their needs. When supplies are tight or expensive it may be necessary to rethink how you feed your herd so that wastage is minimized.

Manitoba winters are generally cold. The question is just how cold and for how long. Having a plan to deal with a worst case scenario could make life easier for your cattle and you.

Additional resources:

<https://www.gov.mb.ca/agriculture/livestock/production/beef/feeding-cattle-during-manitoba-winters.html>

<https://extension.missouri.edu/publications/g4570>