



Feeding for Cold Weather

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Thus far, most of Manitoba has experienced a relatively mild start to winter. Nonetheless, colder weather is likely to occur before springtime and cattle need some special feeding and management considerations if they are to produce a healthy calf and get re-bred.

The major effect of cold on nutrient requirements of cows is the increased need for energy. To determine the magnitude of the cold, you must first estimate the lower critical temperature (LCT) for beef cow. The LCT refers to the effective temperature. For pregnant cows in good body condition with a dry winter hair coat the LCT is considered to be around -20C at mid-day. Rain, melting snow or wind will significantly increase the coldness of the environment. For example, a -5C temperature with a 40 km/hour wind speed is equivalent to -20C with no wind.

In general, researchers have used the rule of thumb that cows' energy requirements increase by approximately 10% for every 10C drop in effective temperature below the comfort zone. Cows in good condition can increase their consumption of good quality hay by about 30% and this helps to meet part of the increased energy requirement. After this, the energy must be supplied as grain or as better quality forage.

An accepted rule to use is for every 10 degrees the temperature is below -20 C at mid-day beef cows require an additional 4 to 6 Mcals of digestible energy (DE). A 1200 lb cow, consuming an additional 7lbs of good quality forage, may not be able to meet this increased requirement. Cold stress may not be alleviated by simply providing more bulky feed (i.e. hay, silage or greenfeed), without improving the energy density since cold stress reduces the efficiency of digestion. Barley contains 1.5 Mcals DE per pound, so adding 3 to 4 lbs of barley to the cow's ration during cold stress should help meet the additional needs.

Adding a few lbs of barley or providing extra forage may not completely alleviate cold stress in your herd. Having cows in and keeping them in good body condition is probably the most important consideration. Here are a couple of points to consider:

- Cold weather increases the rate of passage of feed, reducing its digestibility, therefore decreasing the energy from a given amount of feed.
- Cows with a lower body score have a LCT closer to -17C
- Animals in good body condition are better able to tolerate extreme cold

- Animals in good body condition with access to shelter or a windbreak are better able to withstand both the acute and prolonged stresses
- It may not be feasible to feed a wet, very cold cow enough to maintain her current body condition, therefore it is a good practice to extend the feeding practice beyond the cold to help regain lost energy.
- Cows that are not on a grain ration prior to the cold weather may experience rumen upset if more than 8 lbs of grain is introduced into the diet at one time.
- Feed cattle late afternoon or early evening. The energy from feed fermentation that is available to keep an animal's body warm is at its maximum 4 to 6 hours after the feed is consumed. Therefore, providing heat overnight when temperatures are lowest is best.

For more information check out these resources:

[Feeding Cattle During Manitoba Winters](#)

[Cold Weather Adjustments for Cows](#)