



Grain, Grass & Growth



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WINTERING THE BEEF COW

The winter feeding period is the most costly component in maintaining a cow/calf enterprise in western Canada. The cost comes not only from the feed, but the system of getting that feed to the cows as well as provisions for water and shelter. Many operations have moved to various methods of extending the grazing season and by doing so have been able to reduce some of the costs connected to winter feeding. 20 years ago it was very common to have cows confined to a small feeding area beside an old slab fence from December through March. Now the cows are out on the fields during much of the winter, eating swaths or bale grazing with portable shelters for wind breaks. Selecting the best site for this scenario can be easy for some operations, but there are several factors that should be considered so the best 'system' is in place. This system needs to be sustainable from economic and environmental perspectives while meeting the management goals of the ranch. It will look different for each cow/calf operation.



A 'Wintering Site Assessment Tool' (WSAT) has been developed to assist producers in addressing various issues related to winter feeding and selecting the best wintering sites to achieve their ranch goals. WSAT focuses on five components: physical site characteristics, feeding strategies, bedding and shelter, water as well as post-wintering site management. The tool identifies concerns related to water and nutrient build-up within each of the five focus areas and provides management tips to reduce the environmental concerns. It is meant for use in development of a long term management strategy, as current problems can have far reaching implications.

The WSAT helps sort through various site considerations and red flags specific characteristics which may make a particular site not suitable for winter feeding. It identifies areas which may require some alteration in management practice to reduce the environmental impact and improve the long term potential of use as a site for winter feeding. Sections in the tool help cattlemen anticipate what will happen during spring run-off or other weather events. Suggestions are provided for management changes that will mitigate the concerns. The tool also recognizes that there is interaction between the five primary components of wintering sites.



The tool is not intended to be an environmental score card, but rather an aid in selecting appropriate sites for an effective winter feeding systems. Although the issue of nutrient accumulation from manure and feed wastage can be a huge concern, there are certainly benefits if these nutrients are used wisely for future crops or grazing. In areas with typically low levels of soil nitrogen, there is huge potential to improve future crop production utilizing a winter feeding system which cuts costs while distributing nutrients right from the source (i.e. the cow and feed wastage).

Watch for distribution of the Wintering Site Assessment Tool publication early in the new year.

The CARA Staff and Directors wish everyone a Merry Christmas and a safe and happy holiday season!



COLD WEATHER ADJUSTMENTS FOR COWS

Frequently Asked Questions Courtesy of Alberta Agriculture and Rural Development

Proper feeding during cold weather is an important management consideration on the prairies. Severe weather during the winter months can make previously "balanced rations" unsuitable for the nutritional needs of the cattle which can lead to weight loss and reduced performance. Animals exposed to cold weather require more energy to maintain rate of gain, body condition, and to maintain body temperatures.

During cold weather does the breed of the animal have any effect on energy requirements?

The breed of animal, back fat thickness and the stage of production have a huge influence on the energy requirements of an animal, during cold weather. Dairy breeds are thinner skinned than European breeds. Herefords have a thicker hide than the European breeds. Thicker skinned animals have more insulation, reducing the amount of additional energy that the animal requires.

How does body condition affect energy requirements during colder temperatures?

Thin cows require more energy for maintenance than fat cows. The more subcutaneous fat a cow has, the greater the ability to withstand colder temperatures. Cows that lose weight prior to calving can end up with weaker calves and poorer rebreeding rates.

How does the cold weather affect a lactating cow's energy requirements?

During lactation, cows require 40 to 60% more energy compared to the gestation period. If lactation occurs during cold weather, the cow's ability to maintain condition and continue to provide milk will be seriously compromised if energy levels are not sufficient in the ration. A general 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).

How much grain can be fed during cold weather to meet the cow's additional energy requirements?

Barley contains 1.5 Mcals DE per pound, so adding 3 to 4 lbs of barley to the cow's ration during cold stress would meet the additional needs. Cows that are not on a grain ration prior to the cold weather may experience rumen upset if more than 4 lbs of grain is introduced into the diet at one time.

How does dry matter intake change during cold weather?

Cold weather increases dry matter intake by up to 30% whereas snow can decrease dry matter intake by about 15%. If the animal remains dry and a snow layer gathers on the hair coat it can add insulation value. Cold alone can increase the need for a change to the ration, however, since wet or mudded hair coats reduce the insulation value, this additional stress can cause dry matter intake to decrease. An increased wind speed reduces the hair coat insulation and increases maintenance requirements when the animal is cold stressed.

How can you provide additional energy to a ration?

Supplement cattle with high-energy feeds, like grain. 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. Feeding additional straw or low quality forage will not meet the higher energy requirements of the animal. Straw contains 50% of the energy compared to barley on a pound per pound basis. Impaction can occur if animals consume large amounts of low protein straw or roughage during cold periods.

What are some management strategies that can be used to combat cold weather?

- The effects of cold stress increase when wind speed increases and hair coat insulation value is reduced when wet or muddy. Simple windbreaks, shelters, brush or bedding can help cows cope with the extreme temperatures. Be careful not to force cattle into barns or enclosures during storms as the chance of disease and getting wet (i.e. condensation dripping off of rafters or the roof) increase the longer they remain in close quarters.
- Consider splitting the herd into management groups. Thin cows could be fed differently than the fat cows making the best use of existing feed inventories. Competition between cows often leads to timid, smaller or younger cattle not receiving their fair share.
- Feed cattle in the late afternoon or early evening. The energy from feed that is available to keep an animal's body warm is known as the heat increment of feeding. Incremental heat production is at its maximum 4 to 6 hours after the feed is consumed. Therefore, feeding late in the afternoon provides higher amounts of heat from fermentation overnight when temperatures are lowest, making the most efficient use of your feed supplies and meeting the cattle's energy requirements.

GROWING FORWARD - OPEN PROGRAMS

Business Opportunity Grant • Energy Efficiency Construction Program • Energy Efficiency Retrofits Program
Traceability - RFID Technology Assistance • Food Safety - OFFS (Delivery Agent) • Leadership Development Grant
Livestock Welfare (Non-Profit Organization) • On-Farm Energy Assessments • Traceability Pilot Project
Traceability Training Program • Water Management Program

SOCIAL MEDIA

The Need for Producers to Get Connected

CARA is now part of the worldwide social networks of Facebook and Twitter and our new website www.chinookappliedresearch.ca is currently under development. We are utilizing these tools to bring current research and agricultural conversations to producers both locally and far afield.

We are in a time where everywhere you look someone has an iPhone, smartphone or iPad. It's very exciting how we can communicate with producers and researchers around the province, country and worldwide with just a tweet or Facebook message. Social networking allows for relationship building between producers and agricultural companies as well as keeps the producers up-to-date with the latest research.

Social media has been used by organizations like PETA to do significant harm to our industry. Many producers and agricultural companies have difficulty dealing with some public perceptions in the media created by these groups. A huge opportunity exists to mediate and start conversations promoting and telling the real story of agriculture through social media. Who better than those involved directly in the industry to take advantage of this connection to the consumer? As stated by Bethany Olson, a scholarship winner from the Excellence in Ag Program: "Consumers want and need to know the truth about how their food is produced and Internet technology is just the tool to help agriculturalists inform consumers. In order to continue utilizing advanced technologies in the field, agriculturalists will first need to harness the power of social media technology."



Are you connecting with social media? Watch our 2013 newsletters for information about workshops on how to get connected with social media. Join with us on Twitter, Facebook and our website blogs – participate in the conversations about agriculture!

<http://www.feedandgrain.com/article/10757909/is-social-media-the-most-important-new-tool-for-agriculture> Dec 6, 2012

Are Nose Pumps an Option for Wintering Cows?

There has been an opinion among many cattlemen that there are really only two energy free winter watering systems for cattle: letting them eat snow or watering directly from a dugout (which isn't truly energy free as it can require considerable 'manpower' energy when it is -30!). This opinion is changing as several 'energy free' systems have been developed and are now in use by local cattlemen. This issue takes a look at frost free nose pumps.

Up until a few years ago, James Mudge, Mudge Farms of Stanmore, was faced with the challenge of meeting the water needs of 700 cows during the winter months with two wells that struggled to maintain an adequate volume. He decided to give nose pumps a try and has been really satisfied with the results.

James's system includes 3 separate watering sites, all set over wet wells which draw water from a large dugout. The sites have two and four pump configurations, all set directly over the wet wells. A 24 inch diameter culvert is adequate for the four pump system. The pumps run entirely on cow-power as she pushes the pendulum to draw up the water. A bit of time was spent after the pumps were first installed training the cows to get on to the pumps, and he learned this should be done before freeze-up. Now that the cows are used to watering themselves, the younger cows seem to learn from the older ones. James

has found the maximum capacity per pump is about 100 cows. If watering cows with calves at side, he recommends only 50 pairs per pump. As with any watering system, boss cows will push away more timid cows but over time they get their pecking order figured out and learn when to come for water. The only ice problem he has had is that the pendulum will occasionally freeze up but is easily broke free with a rubber mallet. A bit of ice will occasionally build up around the pumps which he just scrapes away with the front end loader. He has also had to enlarge the dugout which feeds the wet wells as the cows drank it dry last winter. Fortunately he has had run-off and lots of rain to fill the dugout for this winter.



The nose pumps each run about \$1200 and cost of setting up a wet well is between \$5000 and \$5500, which includes the dugout cost, trenching, pipe and culvert. Although it is easier to develop a wet well with a new dugout, it can be done with an existing one.

FALL GRAZING OPTIONS

Annual Crop "Cocktails"

Another option to meet cow nutritional needs?

A number of annual crops are grown for fall grazing. These crops are typically swathed and left in place for the cows to work through once it snows. In an effort to cut costs even more, some fellows have mixed up various types of left over seed, planted it in mid July and left it standing for consumption. The range of annual crops we have available gives a producer the opportunity to select crops which will meet specific grazing needs – i.e. 'annual crop cocktails'. Peas in a mix, for example, can boost the protein content of a graze. Millets are also high in protein and stay green longer than some of the other cereals. A new addition to the mix is tillage radish. Although the radish is also high in protein, it serves another purpose – that of soil modification. When underseeded to cereals, the radish root has been promoted to break down compacted or low grade solonchic soil. The root also leaves a nutritious residue for future crops.



CARA seeded a cocktail mix at Madge Farms, Stanmore July 23 which included proso and German millet, peas, oats and tillage radish alongside an area seeded to straight radish. Feed quality was sampled from both areas will be taken in the spring to monitor soil nutrients.

Don Vincent, who farms south east of Hanna, seeded a mix of triticale, peas, baler oats and radish in late July into an area that was compacted from use as a winter feeding area. In addition to the fall grazing (90 pairs + 25 heifers grazed the 45 acres for over 2 weeks), he hopes the radish will help improve the soil quality.

A Field Day was held November 15 to look at both the Madge and Vincent sites. Don's cows had pretty much cleaned up the available forage and it appeared they may have pulled up and munched on some of the radish as well.



As the year draws to a close, we would like to thank all the individuals, businesses and organizations who have contributed to our program during the past 12 months. There is no doubt that the scope of projects CARA is able to carry out would not happen without our local municipalities behind us. Agricultural Societies, agri-businesses, producer and community groups support our trials, demonstrations and events in various ways. We are able to work with a great group of farmers and ranches in all aspects of the program and are proud to be part of the agricultural industry in our community. To show our gratitude and recognize these partnerships, we will be hosting an Appreciation Banquet on January 8th.



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WATERING COWS WITH SNOW

Frequently Asked Questions Courtesy of Alberta Agriculture and Rural Development

In late fall and early winter, the problem is to provide water to animals that are out on range or swath grazing, is it okay for cows to consume snow as their only water source?

After a short adjustment period cows will consume adequate amounts of snow to meet water requirements. Eating snow is a learned behavior rather than instinct, therefore an adjustment period is needed for the cows to learn how to eat snow. Generally, it takes 3 days for cows to adapt to eating snow.

Can cows get sick from eating snow?

Cows will not get sick from eating snow. Cattle do well when snow is their only water source, as long as there is adequate snow present, and it is not hard or crusted over. It is important to monitor cow and snow condition on a daily or second day basis. A lack of water reduces feed intake, and cows can lose condition fairly rapidly when water is deficient. Studies in Canada have shown some cows have gone 50 to 60 days with snow as the sole water source without any adverse effects.

Will the intake of snow affect the birth weights of calves?

Snow intake during pregnancy will not have any noticeable effect on birth weight of calves. Proper nutrition, protein and energy levels, are important factors in affecting the birth weights of calves.



Can cows in early lactation obtain adequate amounts of water from consuming snow?

No. Cows in early lactation require a water source. Animals will not be able to consume adequate amounts of feed. Body condition will be reduced and milk production impaired.

Will feed intake increase for cattle consuming snow?

Feed intake and weight gain do not change significantly when snow is the water source. Heat created during the digestion process is enough to melt the snow and warm it to body temperature. Normal feeding programs will keep the cow in good condition.

What are the advantages of cattle using snow instead of water?

Using snow as a water source can lengthen the grazing season on stockpiled pasture or swath grazing. Lower production costs (no water bowls, water lines, or power needed to heat water or pump water). Manure produced when animals are out on pasture or swath grazing is deposited in the field, and does not need to be hauled in the spring. Tractor and equipment costs are lower because the animals move to the feed rather than moving feed to the animals.

What are some disadvantages of cattle using snow instead of water?

If a sudden change in weather hardens or puts a crust on the snow, there may be little time to provide an alternate source of water. Animals must be brought off the grazing area if water or snow is not available in adequate quantities.

How much snow does a cow consume?

At temperatures between -17 and +10 degrees C, a 1200 pound cow would typically drink about 8.4 gallons (38 litres) of water per day. It takes nearly 14 cubic feet of snow to equate this amount of water (1 cubic foot of snow equals approximately 2.8 litres of water). A cow in the last 4 months of pregnancy needs 1.5 times this amount. This is a key illustration of the importance of an ample supply of good quality snow when cows do not have access to water.

WINTERING COWS & BULLS

Taken from Alberta Agriculture and Rural Development

Points to Remember

- Both critical and non-critical feed periods must be considered when planning the winter feeding program.
- The non-critical feed period for the cow is the second trimester of pregnancy. The least damage to the cow and fetus will be incurred by reducing feed supplies or feeding lower quality feeds in this period. Severe feed restriction can, however, lead to a weakened fetus and lower calf survival.
- Bulls should be sorted three ways before winter. The largest group should be the mature bulls in good condition and do not require special care. The second group is bulls which are still growing and need higher quality feed. This group includes yearling bulls which were used in the breeding pastures. The last group is the older, crippled bulls that have completed their productive life and are to be marketed.
- The normal herd health program should include both bulls and cows. Bulls are more vulnerable to lice than cows and should be treated for both warbles and lice in the fall as well as being protected from the biting flies and mosquitoes in the summer. If a fecal examination shows internal parasites, a systemic endectocide should be used.
- Salt and mineral supplements should be available at all times. They should be carefully designed to give proper supplementation of the nutrients needed according to the winter diets being fed. A hay based diet will require a different mineral balance in the supplement than will a cereal silage, green feed or straw based diet.
- A routine feed analysis of the feed supply for the winter should be taken early to ensure that all the necessary energy, proteins, minerals and vitamins will be supplied to the herd.

Good Management Practices

- Thin cows and replacement heifers should receive extra feed and higher quality feeds in the third trimester of pregnancy.
- Heifers which have just weaned their first calf may also need extra feed if they have lost condition over summer.
- Condition scoring of all females will allow for more precise planning of the amount and quality of feeds that will be needed during the winter feeding period.
- Bulls should also be included in the planning for health and parasite control programs as well as for the winter feed requirements.

Plan Ahead

- Plan for third trimester feeding. Remember that the best quality feed should be saved for the third trimester (last ninety days) of pregnancy and the period from calving until there is good new grass for grazing.
- Seeking new management ideas and long-term planning are activities for the mid-winter period.
- Analyze production records from the past year, compare with previous year's records and assess progress and needs.
- Plan breeding programs and plan the purchase of new bulls.

WANT TO BE A CARA MEMBER? HAS YOUR CURRENT MEMBERSHIP EXPIRED?

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