



By Dr. Bart Lardner (PhD), professor, College of Agriculture and Bioresources, and Ministry of Agriculture Strategic Research Program Chair in Cow-Calf and Forage Systems

Recent rains in some parts of Saskatchewan are a welcome blessing for both grain and livestock producers with the moisture stimulating crop and pasture growth. Cattle producers should be aware, however, that pastures that have been subjected to the type of dry conditions that we have experienced over past years will not return to normal productivity within the next two to three months irrespective of the amount of moisture we receive.

Awareness of pasture and cattle management can help speed up this recovery process. If possible, note the previous time and use of grazed areas. During drought, plants are more tolerant of grazing later in the season, therefore stock pastures light versus moderate. Plants are more water stressed therefore turnout later.

Low soil moisture is a major problem and limits plant growth and forage yields. There is limited fibrous root growth in grasses; thus, an inability to reach moisture. Over time, species growing in the pasture shift to weedy, shallow rooted and less productive types. This drought impact has a greater effect on coarse soils.

Cattle can experience reduced gains but increased energy use in search of sufficient forage. Producers will note poor body condition by fall, more open cows and conception rates affected along with lower calf gains.

Pasture strategies include:

- Manage for litter. It has the capacity to absorb any rain or moisture a pasture will receive. During drought, grazing can have a negative effect on forage growth; if spring growth started, early grazing will further stress plant; reduce energy reserves.
- Reduce stocking levels to balance livestock needs with available forage. Allow light use of the forage by cattle, which will conserve the plants level of vigour and litter. Rest or defer grazing in fields heavily grazed last season.
- Graze first the fields deferred last year. Carryover is critical. Use livestock to graze poor hay and annual crops.
- Graze crested wheatgrass (a drought tolerant species) litter until mid-summer.
- Maximize safe use of spring tame pastures and use of stubble fields after harvest; contract with neighbours for available chaff. A fertility program in wet years is paying off dividends now!

Management strategies for cattle grazing drought-stressed pastures include managing grazing pressure on pastures, creep feeding calves, early weaning programs and selective culling.

Managing grazing pressure is in effect adopting the principles of a rotational grazing program. The idea is to confine cattle to a small part of the total pasture area to allow additional time for the rest of the pasture to grow. This can be accomplished using electric fencing or by movement of water source and salt licks and minerals to that area of the pasture less frequented by the cattle. If possible, care should be taken not to overgraze any one area of the pasture. Animals should be rotated once grazing conditions no longer meet the animal's needs.

Creep feeding provides additional feed for the calves, taking pressure off the cows to supply milk to the calves. This practice can reduce the weight loss on the cow, leaving her as much as 50 lbs. heavier in the fall when grazed under poor pasture conditions. Creep feeding can be accomplished by providing a supplementary energy and protein source to the calves in an area where mature animals can't access. Creep rations should contain 70 to 74 per cent TDN and 13 to 16 per cent crude protein (dry matter basis). Good quality whole oats are readily consumed by calves and are considered nutritionally adequate. Most sources of commercial grain screening pellets can also be used as a creep feed as well as other cereal grain and protein supplements. There are also numerous commercial creep feeds on the market. The creep feed can be fed in feed bunks, troughs or self-feeders that have been modified to allow calf entry but deny access to the cows. An opening 16 to 18 inches wide and 3 to 3.5 feet high will accomplish this. Expected consumption will vary with size of calf, pasture conditions and milk production in the cows.

Early weaning is an important management tool not only to help alleviate grazing pressure but also to allow cows to develop deposit body fat or condition prior to winter and to allow them to be in proper condition for calving and subsequent rebreeding. In times of pasture shortage, early weaning and feeding the calves directly is cheaper than feeding the cows to maintain milk production. Cows nursing calves on poor pastures will lose body condition. Thins cows going into the winter are expensive to feed and are ideal candidates for calving and rebreeding problems if they remain in poor condition. Calves can be weaned as young as 100 days providing they are given access to a feed that meets their needs. Providing a creep ration to early-weaned calves is an idea method to meet the nutritional needs of these calves for growth. Talk to your livestock agrolgist or feed company about early weaning feeding programs.

If you are still uncertain that these steps will help stretch your summer grazing program, you have to consider an intensive culling program. Culling now rather than later will save grass and

allow pastures to recover and retains the option of feeding the cull cows in dry lot for sale or return to pasture when conditions substantially improve.

Alternative feeds can be a good option to supplement or replace conventional hay-based feeding programs. However, when choosing alternative feed supplies it is critical take into consideration all limitations and factors related to its use such as: cost/benefits relative to other energy and protein sources, availability, nutritive value, their ability to substitute functionally forage, presence of other substances, health problems, etc.

Working with your nutritionist, extension specialists and/or consultants will help you make a better evaluation on the options available and determine how is the best way to incorporate the alternative feed choose on the ration in order to meet the livestock needs.

### ***Alternative forage sources***

Forage substitutes are more difficult to source and usually expensive. The following are some possibilities that can be considered.

#### **Dehydrated alfalfa pellets and cubes**

Alfalfa cubes have coarser material and since cubes retain a longer fibre length and a larger particle size they can be used as the only source of forage for dairy cattle. However, adaptation time is recommended. To minimize problems, it is suggested to also feed the cows with at least five pounds of long hay.

Dehydrated pellets can be used as a protein supplement and it is recommended they be fed with another forage source to maintain required effective fiber in the ration since pelleted forage material is quite fine.

#### **Grain crop hay and silage**

Annual cereal and oilseed crops have been used to replace hay during the periods of drought in Canada over the years. The most commonly grown alternatives are rye, wheat, barley, oats and canola. Usually cut at mid-dough stage good quality cereal hay or silage is relatively similar to good grass or grass/legume hay in energy and protein content.

Other options include triticale (both spring and fall types), sorghum, sudangrass and hybrid sorghum-sudangrass.

Special attention is required to the nitrate and prussic acid levels if you decide to use annuals as an option of feeding under adverse conditions as drought. Depending on the levels found some adjustments on the ration will be required.

### Native grass hay

Native hays vary widely in nutritional value. However, when it is cut at the proper maturity stage, they can be comparable to tame grass hays in protein and energy content. It is also recommended to do a feed test prior to feeding.

## **Grains, Grain Co-Products and Screenings**

### Grains

Grains may also be an alternative, used to replace part of the roughage of the diet. However, in order to avoid reducing feed intake and ruminal acidosis, the levels of forage replacement should be based on digestion characteristics of the grain used.

The most commonly used grains in feed rations are:

- *Barley*: intermediate in energy and protein. Can be used as the only grain in the ration as well as to replace part of the roughage of the diet.
- *Oats*: contains less energy compared to barley and wheat. Oat protein content is comparable with barley grain. Can be a good replacement to roughage.
- *Wheat*: high energy and protein content. Problems with acidosis can occur when it is managed as the only grain at very high levels in the ration.
- *Rye*: similar to wheat in nutritive value. Due the lack of palatability the feed intake can be compromised, thus it is not recommended that cereal represents levels above 40 to 50 per cent of the grain portion of the ration. Rye is also susceptible to ergot infestation which can be avoided if it is cut at the milk and dough stage or before ergots bodies form.

### Grain Co-products

By-products can be a good option to supplement conventional forage based feeding programs during periods of shortage. However, by-products can vary in nutrient and moisture depending on the source of grain and the methods used for ethanol and DDGS production. Testing each load for nutrient content will help producers make properly cost/benefits evaluations and necessary ration adjustments.

- *Dried Distillers Grains with Soluble (DDGS)* – DDGS is a co-product of the dry-mill ethanol industry which can be an excellent source of energy and protein. Although corn is the major grain used in alcohol production, wheat, barley and sorghum may also be used. Depending on the grain base used, DDGS can reach CP levels averaging 27 to 40 per cent with highest averages for wheat and lowest for sorghum bases. The energy values are similar to barley grains what makes this a promising ingredient to replace barley grain at certain levels in the diet.
- *Canola meal*: relatively high in CP (38 to 40 per cent) but moderate in energy contents. Commonly used as a protein supplement. Canola meal can be used as an alternative to soybean meal.
- *Brewers grains*: residue resulting from the brewing process of barley, malt and other cereal with medium to low energy and high protein contents.

### Grain screenings

The screenings consist of small, broken or shrunken kernels of grains and other materials such as weed seeds, chaff, hulls and some dust. Grain screenings can be a good source of both energy and protein. However, there is a considerable variation in its composition and nutrition value depending on the source. Depending on the proportion used in the total diet digestive upsets may occur because the characteristics of some ingredients.

### **Straw**

Good quality straw can be a good source of energy. However, straw is low in protein (only four to five per cent). Straw is useful in maintenance or wintering rations for cows and sheep if properly supplemented with adequate source of energy, protein along with minerals and vitamins. Although all cereal straws can be fed, oat straw is preferable for cow rations due its palatability and highest energy contents followed by barley straw and wheat straw. If hay is not available, straw can be used.

For help with your drought strategy in feeding your cow herd, please contact your local Livestock and Feed Extension Specialist with the Saskatchewan Ministry of Agriculture or the ministry's Agriculture Knowledge Centre at 1-866-457-2377. You can also email Dr. Bart Lardner at [bart.lardner@usask.ca](mailto:bart.lardner@usask.ca).