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Does Stockpiled Grazing Kill Alfalfa?

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Since the Western Forage/Beef group began researching stockpiled grazing producers have asked: "What will it do to the alfalfa in my stand?". The answer is: "How you manage pastures and hay stands prior to fall influences alfalfa composition in the stand more than just grazing in September and October." Stockpiled grazing involves saving forage during the summer growth period for use later when pasture growth normally slows, usually in late summer, fall or early winter.

In 1999 we began a grazing study on stands that had been planted in 1997. We continued the study until 2005 (7 years). Our intention was to compare old grass stands with pure alfalfa and alfalfa-meadow bromegrass mixtures for beef production under two systems. We managed stands as either summer rotational pasture or when cut as hay (mid-July) and then grazed (after September 15). The mixed stand was planted as a 1:1 mixture on a seed basis. At the same time we monitored the stand composition and in the alfalfa and grass-alfalfa pastures we found some interesting results.

In the summer grazing system the pure alfalfa was killed after 2 years. Figure 1 shows that the alfalfa in the summer-grazed meadow bromegrass mixture was essentially gone after the two years. Until the trial ended in 2005 the meadow bromegrass completely dominated the summer-grazed mixture. It remained productive by applying fertilizer nitrogen.

However in the hay-graze system the life of the pure alfalfa stand was prolonged until 2004. Figure 1 shows that under hay and then stockpiled grazing, alfalfa actually increased to 70% of the stand dry matter yield by 2001 and then declined to about 40% of the mixture stand by 2005.

From 1999 until 2001 the alfalfa in the mixed stand did not increase in plant number. The long rest period between mid-July and mid-September allowed the alfalfa plants to develop large crowns with many shoots, store adequate carbohydrate to withstand winter temperatures, and ensure vigorous and competitive spring growth. Fall grazing was not a winter-kill factor under the hay-graze system.

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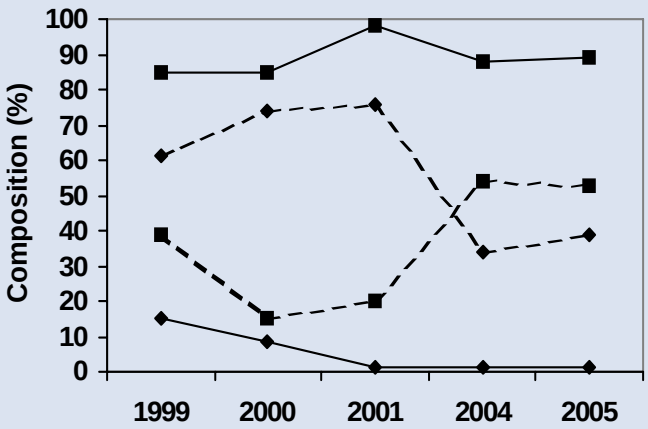

Fig. 1. Meadow bromegrass-alfalfa pasture stand composition, summer pasture meadow bromegrass (–■–), SE = 6.9%, stockpiled pasture meadow bromegrass (- -■- -), SE = 6.9% and summer pasture alfalfa (–◆–), SE = 1.5% and stockpiled pasture alfalfa(- -◆- -), SE = 13.0%.

Summer grazing did not allow alfalfa sufficient rest during the critical period for winter survival.

Research by Len Folkins, at Lacombe, AB during the 1970's, showed that alfalfa stands were sensitive to winter kill when cut in August, but they were most sensitive when cut from the last week in July until the third week in August. Grazing during that time acts in a similar way. Grazing after mid-September in most areas of the prairies should not create a winter kill problem for alfalfa.

However, producers should be aware of the critical period for alfalfa winter kill in home-areas and incorporate the critical period concept into grazing plans if they wish to keep alfalfa in pastures. Also keep in mind that winter hardy alfalfa varieties are often found to be grazing tolerant.

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The summer and stockpiled systems varied greatly in stand composition for meadow bromegrass-alfalfa pastures (Fig. 1). In the summer-grazed system alfalfa was reduced to 15% or less of the stand by 1999 and averaged 6% over the years.

The stockpiled pasture peaked at 76% alfalfa on a dry matter basis in 2001 and was reduced to 39% by 2005.

Meadow bromegrass complemented the alfalfa composition yearly in each system averaging 90% and 36% over years in summer and stockpiled pastures, respectively.

Coming Events

Low Cost Cow/Calf Program - The School for Profitable Beef Cattle Ranching
Nov 29 - Dec 2, 2006
NAIT - Fairview Campus
Fairview, AB
Registration Cost: $602/ person and $490/ additional person (involved in same operation)
Contact: 520-544-0864 for more information
Website: http://lowcostcowcalf.com

Western Canadian Grazing Conference
December 6 - 8, 2006
Mayfield Inn, Edmonton, AB
Contact: Agricultural Research Extension Council of Alberta (ARECA)
at 780-416-6046 for more information

Cattlemen's Corral Crop Visions
January 16 and 17, 2007
Lloydminster Exhibition Grounds
Lloydminster, AB/SK
Contact 306-825-5571 for more information

Things I've Learned About Feeding Straw

Duane McCartney, Forage Beef Systems Western Forage/Beef Group

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In Western Canada cow calf producers have an excellent opportunity to lower their winter feeding costs by using straw in their wintering rations.

Over the years many studies have been done at Agriculture and Agri-Food Canada at Melfort and Swift Current, SK and Lacombe, AB; the University of Saskatchewan; the University of Alberta; and the Saskatchewan Research Council on using cereal crop residues for wintering beef cattle. This research has been recently summarized for the Canadian Journal of Animal Science and Canadian Cattlemen magazine. Here are some of the overall findings.

Feed quality is determined by a combination of intake and digestibility. Straw and chaff are lower quality due to lower intake and digestibility, with neither feed being able to meet the nutrient requirements of cattle without supplementation. This does not mean that straw and chaff are of no value!

These materials can represent approximately one-half of the ration fed to wintering beef cows with appropriate supplementation coming from grain or higher quality forages. This represents a substantial economic savings compared to other wintering rations if straw and chaff are available in your area.

Straw quality is determined by the amount of leaves fed to the cow. A cereal plant consists of approximately 40% grain, 17% chaff, 18% leaves, and 25% stems on a dry matter basis. Leaves contain about 5 - 6% crude protein while the stems have about 2.5%. Chaff can have a crude protein content as high as 8%.

Cows can be successfully wintered on chaff piles in a grain field. Salt and mineral will need to be provided.

Cows can be wintered on free choice straw supplemented with some grain, alfalfa hay, or grain silage. In our studies at Melfort, SK and Lacombe, AB an average size cross bred cow will eat about 12 to 15 pounds of straw free choice. We fed them 14 pounds of rolled barley or 14 pounds of alfalfa hay on alternate days. By going to every other day feeding of the grain or hay supplement, we were able to reduce labour costs. Salt and mineral were also provided free choice.

When harvesting straw it is important to bale it as soon as possible after combining. By delaying the baling, the fibre levels in the straw can increase due to weathering resulting in a lower nutritional value than baling behind the combine.

There is still enough residue left in the roots and stubble to prevent soil erosion after chaff and straw have been collected.

Research has shown that 2-row barley straw has a 5 to 10% higher dry matter degradability than six-row barley straw. There is a significant difference in nutritional quality between cereal cultivars. Year to year variation, due to the weather during the growing seasons, also has an effect on nutritional quality. When given a choice, cows prefer the finer stemmed straws such as 2-row barley straw. If this is not available cows can still winter on other types of straw and supplemented with limited amounts of grain, hay or silage.

Desiccant treatment of a cereal crop to speed drying time and control weeds may improve the quality of the straw and chaff by allowing an earlier harvest but leaf loss may be high if harvesting and baling of the straw is delayed.

Cutting the cereal crop with a high stubble height can increase the overall crude protein content and digestibility of the straw as less stems are harvested. However, greater stubble height decreases total straw yield.

Next spring, if you have excess straw and you wish to carry it over until next winter, it is essential that you rearrange your straw piles so that there is an air space around each bale - especially at the butt ends. Studies at Lacombe, AB have shown a 25% spoilage loss from summer rains when the butt ends of the bales touched.

In Western Canada there is a lot of cereal grain production. In these areas, cow calf producers would be economically better off harvesting and feeding high proportions of straw in their wintering cow rations rather than feeding the more expensive hay. These hay lands could be better used for late fall and early winter grazing rather than baling and hauling the hay to the cows.

The current review of straw and chaff used as a cattle feed has identified several issues requiring further research effort including a need for more accurate predictions of energy values and especially voluntary intake. This information will better allow cattle producers to realize all of the value represented by straw and chaff feeds.

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Cattle Reader Technology Enhances Traceability Initiative

On September 18, nearly 60 industry participants, including Agriculture, Food and Rural Development Minister Doug Horner, observed department researchers and industry partners demonstrating the use of a Radio Frequency Identification (RFID) panel reader technology system for cattle at a commercial auction mart in Fort Macleod, AB.

The demonstration showed cattle being identified by a radio frequency ear tag while walking through detection panels with information flowing immediately to a computer. The data was linked to the Canadian Cattle Identification Agency's database, which immediately confirmed birth dates and calculated the maximum days before slaughter to qualify for sale in the Japan and United States markets.

"Identifying and developing traceability technology that meets the demands of the livestock industry, which is cost effective and does not impede commerce, will enhance our industry competitiveness," said Rick Frederickson, Senior Manager, Traceability Initiatives, with Alberta Agriculture, Food & Rural Development. "We're working with industry to develop traceability in all sectors of agriculture to enhance our food safety and information systems."

Currently in Alberta, an estimated 2 million head of cattle are sold and moved from location to location on an annual basis – with many of these transactions recorded by hand. Effective cattle reader technology has the potential to facilitate the rapid transfer of valuable management and production information from the farm to the feedlot, packer, processor and consumer.

The initial phase of the project involved reading electronic tags in cattle moving through simulated auction mart lanes at the Lacombe Research Centre, Lacombe, AB. The current phase of the project has researchers testing RFID technology in select commercial auction marts. Once the project is finalized, a broader project is planned to implement cattle reader systems in participating auction marts throughout the province.

"This type of technology will assist us in our goal to make Alberta a global leader in age verification," said Frederickson. "Age verification will help maintain and improve market access for our beef – and is just one example of how a national traceability system will benefit cattle producers."

To date, more than 2.5 million birth date records of cattle have been submitted to the Canadian Cattle Identification Agency's age verification web site.

For more information about age verification, please visit www.agric.gov.ab.ca or contact the Canadian Cattle Identification Agency at 1-877-909-BEEF (2333) or log on to www.canadaid.com.

Contact: Rick Frederickson, Lead, Age Verification, Alberta Agriculture, Food & Rural Development at (780) 427-4589

Western Forage/Beef Group Mission Statement:
To improve the profitability and sustainability of the forage-based beef industry through development, integration and transfer of knowledge and technology.

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