



Agriculture & Agri-Food Canada/Alberta  
Agriculture, Food & Rural Development

Western Forage/Beef Group

# Can We Graze Cows for More than 300 Days a Year?

Duane McCartney, Forage/Beef Systems

Grazing is still the cheapest method of raising beef cows.

Over the years the Western Forage/Beef Group has been involved with considerable research in developing systems that would extend the grazing season.

Research at the Melfort Research Farm Pathlow Pasture research site, on Gray Wooded soils in Saskatchewan showed that we could commence grazing about two weeks earlier in the spring by fertilizing the pastures with 80 lbs of N , 40 lbs of P<sub>2</sub>O<sub>5</sub> and 10 lbs of S.

Through rotational grazing, we were able to extend the grazing on these pastures for another two weeks in the fall. In years of drought we were able to rotationally graze those fertilized fields twice, while we could only graze the non-fertilized paddocks once during the season.

In addition, we were able to get extra grazing early in the spring and later in the fall from paddocks seeded to crested wheatgrass compared to the original old pasture stand. These grazing management strategies



provided good grazing from early May to late October.

Through the use of intercropping a fall cereal with oat or barley silage crop, the fall regrowth of the fall cereal or Italian rye grass was available for grazing late into the fall and early winter. Cows grazing this regrowth were able to significantly increase their body condition prior to winter.

Swath grazing of oats or barley can then be used to pasture the cows from mid-November to early spring depending upon their calving season. Research at the Lacombe Research Centre has shown that swath grazing can reduce the traditional winter feeding and yardage costs by up to 50% with cows coming through the winter in the same body condition as those wintered on stored feed.

We didn't see any major differences between swath grazing oat or barley but we did see a big advantage in providing bedding. Cows lying on swaths wasted about 20% more swath materials than those provided with limited bedding.

Plot research at Lacombe showed that there was potential for wintering cows on meadow brome and alfalfa regrowth. This

## In This Issue

<i>Can We Graze Cows for More than 300 Days a Year? .....</i>	<b>1</b>
<i>Coming Events .....</i>	<b>2</b>
<i>WFBG Accomplishments .....</i>	<b>2</b>
<i>Corn and How to Use It .....</i>	<b>3</b>
<i>What's New on Foragebeef.ca? ..</i>	<b>4</b>
<i>Wastage from Feeding on the Ground .....</i>	<b>5</b>
<i>WFBG Members and Advisory Committee .....</i>	<b>6</b>

past winter a new research trial was established to evaluate cows grazing this type of perennial pasture. The meadow brome alfalfa pastures were cut for hay in mid-July and the regrowth was then available for grazing during November, December and January. The regrowth was left standing for grazing through the snow.

Winter kill was a major question and it was felt that trampling and smothering problems could occur if the perennial crop was swathed. By leaving the stockpiled forage standing, we also eliminated the swathing cost.

The cows were strip grazed using an electric fence. The fence was moved every two to three days depending on snow conditions. It was very interesting to watch how the cows would graze a new area and move the snow out of the way with their muzzles. The forage was still green and the nutritional quality met the cow's requirements.

The weather last winter was the worst in recent years. We had an average January temperature of -13 °C with 5.9 mm of freezing rain and another 20 cm of snow. All the cows performed very well under these conditions. In fact they wintered in the same body condition as cows on oat swaths or fed a straw silage ration in the wintering facility. Cows appeared to be content during the winter grazing period.

The cows on the meadow brome pasture would graze the standing alfalfa stems first, (there were some alfalfa leaves remaining on the stems) followed by grazing the meadow brome grass. The grass was flat to the ground. The cows would break through the snow and graze the meadow brome completely down to the ground.

When the freezing rain came in January followed by new snow, the cows had to graze through a 2" layer of ice. In over 10 years of swath grazing research, this was the first time that we have experienced an ice layer this thick. The cows would trample the area breaking up the ice layers and eventually graze the exposed grass.

As the snow and ice conditions continued the cows would leave areas that were too difficult to break through. This resulted in considerable wastage when we assessed the fields in the spring. There also was considerable wastage in the oat swath grazed fields due to the winter snow and ice conditions. In previous years, some of this material was later grazed when the cows and calves returned to the fields in late April early May. Additional grain was fed to the nursing cows while grazing swaths.

We intentionally did not regraze the perennial fields in the early spring after calving as we were concerned about grazing the new growth too early in the spring before the new plants had reached the three leaf stage.

The alfalfa stand in the spring showed no visible signs of winterkill damage. The previous fall had been quite cold before the snow fall and the alfalfa plants had ample time to harden off prior to freeze up.

This study will continue this winter and this management system provides yet another option for managing cows and extending the grazing season.

**For more information contact Duane McCartney, Western Forage/Beef Group at 403-782-8104  
Email: mccartneyd@agr.gc.ca**

## Western Forage/Beef Group Accomplishments



**Canadian Society of  
Agronomy Newsletter  
2005 Annual Meeting  
Best Paper Awards**

***Congratulations to Dr. Vern Baron on winning the Most Thought-Provoking category at the 2005 Annual Meeting Best Paper Awards, with his presentation "Influence of forage management and species on soil mineral nitrogen supply rates and seasonal dynamics".***

## Coming Events

**Capturing Feed Grain & Forage Opportunities  
2005 Conference**

**December 6 & 7, 2005**

**Capri Centre, Red Deer, AB**

**Contact: 1-800-387-6030 for more information**

**Manitoba Grazing School**

**Rejuvenating Your Pasture Profitability**

**December 7 & 8, 2005**

**Keystone Centre, Brandon, MB**

**Contact: 204-482-6315**

**Tired of Running in Circles?**

**Plan to attend the Western Canadian Grazing  
Conference**

**December 7 - 9, 2005**

**Saskatoon, SK**

**Contact Saskatchewan Stock Growers Assoc.  
at 306-757-8523 for more information**

# Corn and How to Use it

**Arvid Aasen, Pasture Specialist**  
**Lorne Erickson, Beef Specialist - Forage Systems**  
**Vern Baron, Forage Physiologist**



In the May issue of the Western Forage/Beef Group Newsletter, we discussed corn and the risks of growing it for a winter feedstuff.

In this issue we would like to compare yield differences of corn and cereals grown for silage and/or swath grazing.

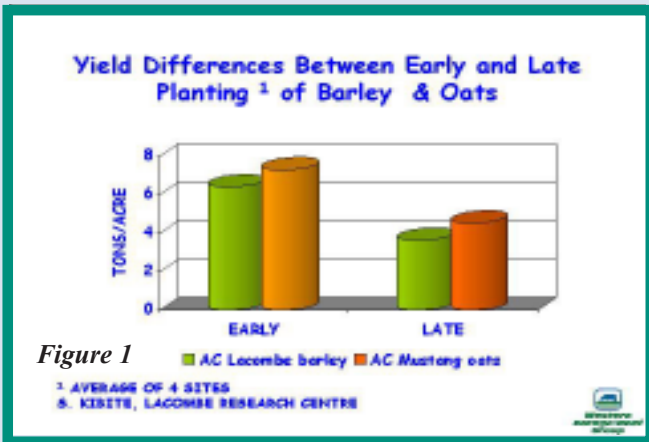
Research at Lacombe (Figure 1) shows that delayed seeding of barley and oats until mid-June reduces yields by about 40% when compared with mid-May seeding. To avoid spoilage of these crops and to enable swath grazing barley or oats in late August or early September, seeding of these crops has

**Table 1 Actual and estimated corn and cereal yields**

Crop	Yield <sup>1</sup>	Yield <sup>2</sup>
	t/acre dry matter	
Corn	3.95	3.95*
Barley	3.48	2.09
Triticale	4.38	2.63
Oat	4.85	2.91

<sup>1</sup> Average over 4 years - Baron, Lacombe Research Centre  
<sup>2</sup> Seeding cereals mid June - estimated yield 60% of mid May yield to adjust for late seeding for swath grazing  
\* Corn utilizes all of the growing season - no adjustment

Table 2 indicates the potential grazing days when utilizing the cereals as swath grazing and when grazing the standing corn. With the reduced yields from the delayed seeding of the cereals we can see that the corn potentially has more grazing days.



traditionally been delayed. This practice reduces potential winter feed supplies.

When we look at cereal and corn herbage yields (Table 1) we see that corn yields similar or less than cereal yields when seeded mid-May and harvested as greenfeed or silage. The higher costs of growing corn do not justify seeding it for silage when the yields are similar to cereal yields.

When we grow corn we are utilizing the whole growing season to produce high quality forage as compared to growing cereals, which may only utilize 12 to 14 weeks of the growing season for similar forage quality.

In Table 1 we have estimated the cereals yields if we were to seed it mid-June. Based on Figure 1, these yields are projected to be only 60% of the mid-May seeding. This reduced yield now makes the corn more viable as a forage crop in non-traditional corn growing areas.

**Table 2 Effect of Late Seeding on Grazing Days**

Crop	Tons/ac dry matter		
	Yield	85% consumed	Cows days @ 25 lb DM/day
Corn	3.95	3.4	269
Barley*	2.09	1.8	142
Triticale*	2.63	2.2	179
Oats*	2.91	2.5	198

\*seeding cereals mid-June estimated yield 60% of yield from mid-May seeding

When we look at the quality of the corn for grazing (Figure 2), research at Brooks, AB indicates that in January and February the quality is still quite high at 65% digestibility.

With less cob formation in the Lacombe area, the digestibility may be less, but still sufficient to maintain a cow.

Winter Quality of 5 Corn Varieties at Brooks (2 years)

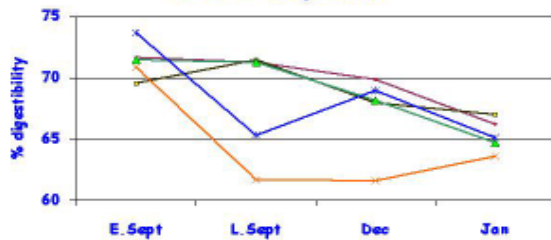


Figure 2.

When we now look at the cost of growing these crops for grazing, we see that the corn is similar in cost to the cereals (Table 3).

Grazing corn was calculated to be 58¢, barley 70¢, oats 51¢ and triticale 56¢/cow/day. This now makes corn more attractive as a winter grazing crop.

Corn may be a high-risk crop when grown for silage in the non-traditional corn growing areas, but it may be an alternative as a winter grazing crop in these areas. The agronomics of growing corn such as variety selection, field selection, fertility and weed control in these areas must be given careful consideration prior to selecting it as a grazing crop.

Table 3

Cost of grazing when late seeding cereals

Feed costs	\$/cow/day	
	swath graze	corn graze
Corn	-	\$0.58
Barley	\$0.70	
Triticale	\$0.56	
Oats	\$0.51	

The Western Forage/Beef Group has initiated a research trial to determine seeding dates of the spring cereals to reduce the loss of production for swath grazing, yet maintain a late harvest date to reduce swath losses which may occur with early cutting. Look for more information on this study in future newsletters.

For more information contact Arvid Aasen, Western Forage/Beef Group at 403-782-8027

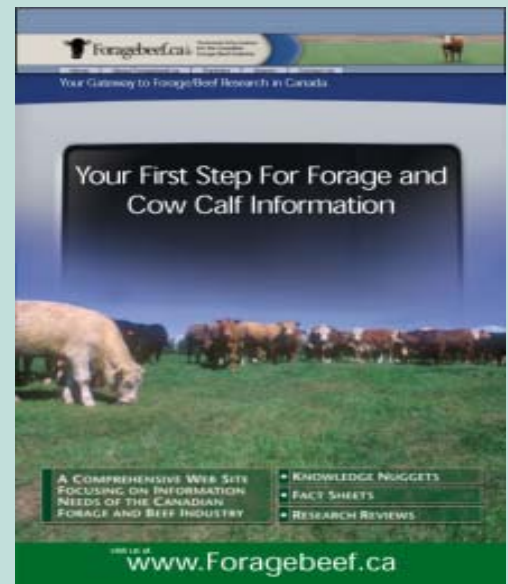
Email: [arvid.aasen@gov.ab.ca](mailto:arvid.aasen@gov.ab.ca)

Articles in this newsletter are written for reprint. Please feel free to reprint with credit given to the Western Forage/Beef Group.

## What's New on Foragebeef.ca?

Look for these Knowledge Nuggets Coming to the Site Soon ....

- Animal Grazing Behaviour
- Wind Shelters
- Breeding Systems and Management
- Bull Fertility
- Bull Management
- Cattle Handling Systems
- Compensatory Gain
- Crossbreeding Programs
- Cull Cows
- Heifer Selection
- Herd Fertility
- Identification Systems
- Macro Mineral Nutrition
- Molds and Mycotoxins
- Pasture Finished Beef
- Pasture-Cropland Rotations



# Wastage from Feeding on the Ground

Ken Ziegler, Production Systems Beef Specialist

Feed is commonly fed on the ground to cattle over winter. How much feed is wasted from cattle mixing the feed into the snow?

In 2004, Alberta Agriculture, Food and Rural Development began a project to measure the losses that occur when feeding dry hay, either processed or unrolled, on the ground versus hay processed into portable feed bunks.

The feeding project was done in conjunction with the Western Forage/Beef Group at the Lacombe Research Centre in Lacombe, AB. The experiment was conducted in February 2005.

**A bale processor and a truck-mounted bale unroller placed dry hay onto tarps covered with snow.**

**Meadow brome hay was fed to 55 bred heifers. Feed was supplied at 90% of expected intake to ensure the heifers cleaned up as much as they could.**

**Snow, ice, wasted feed and manure was gathered off of the tarps after the feeding event.**

**The material was dried, manure removed and weighed for total loss.**

**The wasted feed was sieved over a 3/4 inch screen and weighed to determine amount of fine and course material.**

**Nutrient quality was established from coarse and fine material collected at the time of feed delivery.**

**The feeding processes were repeated four times.**

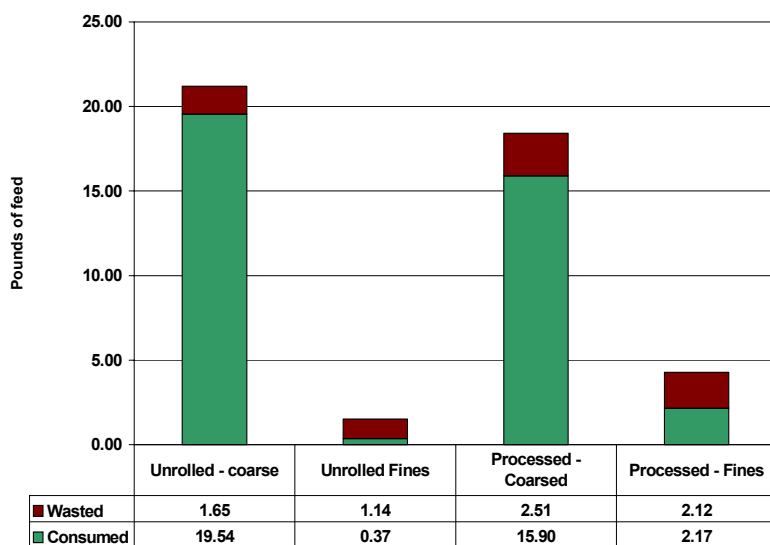


Figure 1. Pounds of feed supplied versus consumed by delivery system

## Total Feed Losses:

Processed onto the snow	19%
Unrolled onto the snow	12%
Processed into the feed bunk	0%

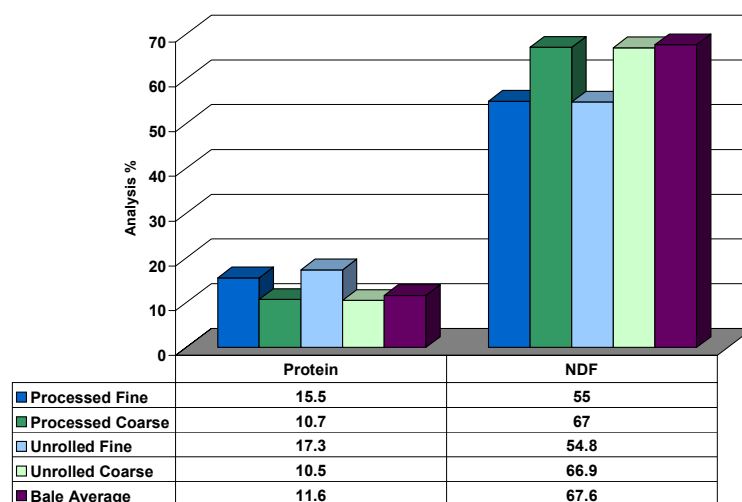


Figure 2. Protein and fiber %

Figure 1 summarizes the pounds of feed provided and amount of feed lost by particle size by delivery system.

All feed was analyzed for nutrient levels according to particle size. Measurements were made for protein, fiber and macro minerals.

## Conclusions:

Both feed quantity and quality are lost when feeding on snow. A loss of fine materials results in cows consuming a lower quality ration than what is reported on feed test results.

Lower forage quality due to fine material loss can reduce animal performance. Rations may need to be adjusted accordingly.

Losses of magnesium and calcium in the fine material create the potential for winter tetany to occur.

Field observations supported findings from Study 1, showing fines at the bottom of the windrow.

To minimize loss of feed and feed quality, use a portable feed bunk or other method to prevent feed trampling.

For more information contact Ken Ziegler, Western Forage/Beef Group at 403-845-8204; email: ken.ziegler@gov.ab.ca

**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.

**Western Forage/Beef Group  
Member/Producer  
Advisory Committee**

- Larry Greer (Chair), Box 323  
High Prairie, AB T0G 1E0 Ph: 780-523-4237
- Cliff Drever, R R 1  
Camrose, AB T4V 2M9 Ph: 780-672-8147
- Case Korver, R R 3  
Rocky Mountain House, AB T4T 2A2  
Ph: 403-729-2185
- Ron Hamilton, Box 55  
Armena, AB T0B 0G0 Ph: 780-672-9799
- Derrick Reed, Box 156  
Porcupine Plain, SK S0E 1H0 Ph: 306-278-2568
- Ian Watt, Box 88  
Cremona, AB T0M 0R0 Ph: 403-637-2116
- Harvey Yoder, Box 2229  
Lac La Biche, AB T0A 2C0 Ph: 780-623-7069
- Brenda Schoepp, Box 2003  
Rimbey, AB T0C 2J0 Ph: 403-843-3966
- Jess Hudson, R R 1  
Bashaw, AB T0B 0H0 Ph: 780-372-2190
- David Kerr, Box 27  
Lashburn, SK S0M 1H0 Ph: 306-285-3609
- Arron Best, 7000 - 113 Street  
Edmonton, AB T6H 5T6 Ph: 780-422-2043
- Sarah Davies, Box 2229  
Chetwynd, BC V0C 1J0 Ph: 250-788-1970

Editors: Cathy Bryant, Grant Lastiwka and Ann de St. Remy

Design and Layout: Cathy Bryant

**Western Forage/Beef Group  
Members**

- Arvid Aasen, Pasture/Agronomy Specialist  
Phone: 403-782-8027/1-800-340-9178  
email: arvid.aasen@gov.ab.ca
- Vern Baron, Forage Physiologist  
Phone: 403-782-8109 email: baronv@agr.gc.ca
- John Basarab, Research Scientist  
Phone: 403-782-8032/1-800-340-9178  
email: john.basarab@gov.ab.ca
- Cathy Bryant, Office Administrator  
Phone: 403-782-8030/1-800-340-9178  
email: cathy.bryant@gov.ab.ca
- Lorne Erickson, Beef/Forage Specialist  
Phone: 403-782-8026/1-800-340-9178  
email: lorne.erickson@gov.ab.ca
- Rick Frederickson, Head, Beef, Forage & Horse Branch  
Phone: 780-427-4589  
email: rick.frederickson@gov.ab.ca
- Grant Lastiwka, Pasture/Extension Specialist  
Phone: 403-782-8028/1-800-340-9178  
email: grant.lastiwka@gov.ab.ca
- Duane McCartney, Forage/Beef Systems  
Phone: 403-782-8104  
email: mccartneyd@agr.gc.ca
- Adele Ohama, Technologist  
Phone: 403-782-8863 email: ohamaa@agr.gc.ca
- Erasmus Okine, Animal Nutritionist  
Phone: 780-492-7666  
email: erasmus.okine@ualberta.ca
- Ken Grimson, Farm/Animal Manager  
Phone: 403-782-8139 email: grimsonk@agr.gc.ca
- Dave Young, Technologist  
Phone: 403-782-8893 email: youngdg@agr.gc.ca
- Ken Ziegler, Production Systems Beef Specialist  
Phone: 403-845-8204  
email: ken.ziegler@gov.ab.ca

Western Forage/Beef Group  
**A Forage/Beef Agreement between Agriculture & Agri-Food  
Canada and Alberta Agriculture, Food & Rural Development  
amalgamating a multi-disciplinary core of scientists, extension  
specialists, with a producer advisory committee, at the Lacombe  
Research Centre, 6000 C & E Trail, Lacombe, AB T4L 1W1**  
Phone: 403-782-8030 or 1-800-340-9178 (within Alberta only)  
Fax: 403-782-6120

We're on the Web!  
[www.agric.gov.ab.ca](http://www.agric.gov.ab.ca)  
Go to "Quick Links"  
(located in Right Corner)  
"News and Newsletters"