



# Saskatchewan Hay & Pasture Report

Volume 18, Issue 2

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## Note from the Saskatchewan Forage Council

We're happy to bring you the June edition of the 2017 Hay and Pasture Report! Have you heard about the SFC's Pasture Tour coming up in August? This year's event will be held in the Foam Lake area and tour highlights include: impact of intensive grazing, solar watering systems, annual crops winter grazing, diverse cover crops and more. Register early as bus seating is limited! Learn more about the tour [here](#). To find out about other upcoming forage and livestock events, visit the SFC website and select the [Events](#) tab.

As always, we welcome your feedback and encourage anyone interested in being placed on our email distribution list to contact the SFC at [office@saskforage.ca](mailto:office@saskforage.ca). Please visit our website [www.saskforage.ca](http://www.saskforage.ca) for regular news and information related to the forage industry.

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## Saskatchewan Agriculture Crop Report

For the period ending June 19, 2017



With the recent rainfall across the province in the past week, crop development has improved. The warm and wet weather was welcomed in areas that were experiencing moisture stress.

Most of the province received rain in the past week, ranging from trace amounts to 112 mm, with a provincial average of 26 mm. Across the province, cropland topsoil moisture is rated as 10 per cent surplus, 68 per cent adequate and 18 per cent short and four per cent very short. Hay land

and pasture topsoil moisture is rated as eight per cent surplus, 60 per cent adequate, 24 per cent short and eight per cent very short.

Topsoil moisture is lowest in the area south of Assiniboia (Crop District 3ASW), where 90 per cent of the cropland, hay land and pasture are short to very short of moisture, followed by the area around Shaunavon (crop districts 3BS and 4A), where 60 per cent of cropland and 84 and 80 per cent of hay land and pasture, respectively, are short to very short of moisture. The wettest crop districts are in the northwest (crop districts 9AE and 9B), where 45 and 46 per cent, respectively, of cropland and 40 and 35 per cent, respectively, of hay land and pasture have surplus topsoil moisture.

Producers are busy controlling weeds when they can and preparing for haying. Cattle have been moved to pasture.

SaskPower has received 156 reports this year of farm equipment coming in contact with power lines, with 22 incidents being reported so far in June. SaskPower urges anyone who has come in contact with electricity to seek medical attention immediately, even if there are no signs of injury.

[Read the full report here.](#)

## Western Beef Development Centre has a busy growing season ahead

**By: Tara Mulhern Davidson**

When it comes to forage and beef research at the Western Beef Development Centre (WBDC), grass literally grows under their feet...but it is usually measured, weighed, and analysed in several capacities. WBDC, a division of the Prairie Agricultural Machinery Institute, located near Lanigan, SK, has dozens of projects on the go at any given time, often partnering with other organizations to efficiently share resources, knowledge and experience, as well as increase study sites.

### *Grazing Sainfoin and Cicer Milkvetch*

WBDC is currently working with PhD student Breeanna Kelln on a non-bloat legume project. With research locations at both Lanigan and Lethbridge, the sites are located on older existing stands of alfalfa/meadow brome that were sod-seeded in 2015 with two varieties of sainfoin (Nova and AC Mountainview) as well as cicer milkvetch.



*Cicer milkvetch is a bloat-safe legume that WBDC has included in different research projects (Photo credit: Tara Mulhern Davidson)*

"Establishing a non-bloat legume into an existing pasture can be a challenge," said Dr. Bart Lardner, senior research scientist with WBDC, who added that localized, dry conditions early on in the project proved tricky. The pasture treatments persevered, however, and in 2016, grasser cattle grazed both the cicer and sainfoin pastures. Measurements were taken to assess cattle performance, particularly average daily gain (ADG), and factors such as beef production per hectare were also quantified. Plant yields and forage quality was also measured, as was the botanical composition of the study areas, to determine whether new legume populations are increasing or decreasing.

In 2017, the study will be in its second year, and there will be a focus on the rumen dynamics of animals grazing the treatments at Lanigan and Lethbridge. Cannulated cows will be used to measure changes in rumen pH, volatile fatty acids, rumen ammonia, and possibly measure methane emissions. Data will be collected for one more year in 2018.

### *Developing Grazing Mixes to beat "Summer Slump"*

Lardner has been paying attention to what producers are challenged with in their grazing systems and is currently in the midst of a three year study looking at different forage grazing mixes to address what he terms "summer slump."

"We know that each year when August and September comes around, both yield and forage quality in pastures tends to go into a slump," Lardner explained. "We are looking for mixtures that can best fill that void," he added, saying that they will be looking at different binary mixtures on two different sites at Lanigan and with Dr Alan Iwaasa in Swift Current to find combinations that work. Samuel Peprah is the MSc student working on the project. One species combination that they are looking at includes AC Yellowhead, a new variety of alfalfa used in combination with Russian wildrye and AC Success, a hybrid brome variety. The second mix includes AC Mountainview sainfoin, used in conjunction with Russian wildrye and hybrid brome.

The study will address grazing animal performance, forage yield and quality over a three year time frame. The study also lends itself nicely to evaluating the economics of grazing these treatments at two different sites.

#### *Cover Crops*

Cover crops for use as forages have recently received a lot of attention. "Cover crop mixes are on a lot of people's radar and we are interested in addressing some of the claims and some of the soil health benefits that have been reported," said Lardner. In 2017, WBDC will participate in a new cover crop study along with MSc graduate student, Jacqueline Toews, partners at the University of Saskatchewan, the Saskatchewan Ministry of Agriculture, and Agriculture and Agri-Food Canada. The research will again feature sites at both Lanigan and Swift Current, SK, and look at some long-term soil health numbers among other factors.



*Sainfoin is a legume species that has received attention for its bloat-free characteristics (Photo credit: Tara Mulhern Davidson)*

With dozens of different cover crop species available, the study will look at different mixtures, including Brassica species such as turnip and radish, a variety of annual C3 and C4 grass species, legume species, and more. "We look forward to looking at some of the research that's taken place south of the border and comparing it to what we find from a Saskatchewan perspective," said Lardner.

These three projects are just a small sample of the forage and grazing research that WBDC is currently involved in. For more information on completed and ongoing projects, useful fact sheets, and upcoming events, visit their website at [www.wbdc.sk.ca](http://www.wbdc.sk.ca).

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## **Evaluation of corn grazing varieties to extend grazing season and reduce winter feed costs in western Canada**

**Summary of Agriculture Development Fund (ADF) Research Report, prepared by the Western Beef Development Centre**

Three experiments were conducted over 3 yr to determine whole plant corn and whole plant barley biomass and quality at 4 different locations, and the effects of grazing either whole plant corn or swathed whole plant barley in extensive winter grazing systems compared to round bale barley hay fed drylot, while managing either pregnant beef cows or backgrounded calves.

The effect of winter grazing system on beef calf backgrounding and beef cow performance, cow reproductive efficiency, rumen fermentation characteristics, estimated dry matter intake and system costs were evaluated. Dry pregnant cows stratified by BW (658 kg) were randomly allocated to 1 of 3 replicated (n = 2) grazing systems which were (i) grazing standing whole plant corn ( SC ) (TDN = 67.1%; CP = 9.6%) in field paddocks; (ii) grazing swathed whole plant barley (SB ) (TDN = 60.6%; CP = 10.9%) in field paddocks; or (iii) drylot pen feeding round bale barley hay ( BH ) (TDN = 60.7%; CP = 11.6%). Fall weaned beef calves were stratified by BW (256 kg) and randomly allocated to 1 of 3 replicated (n=2) backgrounding systems which were (i) grazing standing whole plant corn ( COR ) (TDN = 65%; CP = 8.7%) in field paddocks; (ii) grazing

swathed whole plant barley (BAR ) (TDN = 61%; CP = 11.2%) in field paddocks; or (iii) drylot pen feeding barley hay ( CON ) (TDN = 57%; CP = 10.9%). Over 3 yr, corn biomass from small plots, ranged from 9.0 to 13.2 tonne per hectare [3.8 to 5.6 ton/ac] DM across sites and varieties, while forage barley biomass averaged 7.5 tonne per hectare (3.4 ton/ac) DM across sites. Nutritive value of forages indicated on average barley CP was higher than corn (11 vs 8%) however, corn energy content depending location was either higher or similar to forage barley energy level (69 vs 67%, respectively).

In the extensive cow grazing study, dry matter intake of cows grazing whole plant corn was lower (P=0.01) compared to cows grazing whole plant swathed barley or barley hay fed in drylot pens. Cow BW change, BCS, average daily gain, rib and rump fat changes were not different (P>0.05) between cows in either winter grazing system. Calf birth date, calf birth BW, calving span and calving interval did not differ (P>0.05) between cows managed in field paddocks grazing whole plant corn or swathed barley compared to cows in drylot pens consuming round bale barley hay. Daily variation in ruminal pH parameters was observed (P<0.05) in cannulated heifers consuming whole plant corn or swathed whole plant barley in the field grazing systems. Cows managed in the field grazing systems (SC, SB) had lower system costs, 26 and 37% , respectively compared to the drylot barley hay (BH) system. Calf ADG during backgrounding was similar (P>0.05) between COR, BAR and CON systems. There were no differences (P > 0.05) in feedlot performance parameters, except calves feedlot finished on corn grain diet yielded more (P=0.04) Canada Prime grade carcasses than calves finished on barley grain diet. The extensive backgrounded calves had costs that were 33% and 29% lower for standing corn and swath-grazed barley, respectively compared to drylot backgrounding system. Averaged over 3 yr, the cost of gain for corn grazing calves was 50% less compared to drylot bunk fed calves. In summary, adoption of extensive winter grazing systems such as grazing whole plant standing corn or swathed whole plant barley can reduce labour and production costs during winter months, compared to feeding barley hay bales in drylot pens.

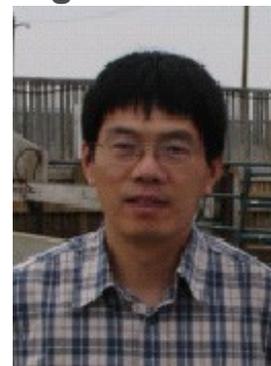
[Read the full report \(pdf\)](#)

[View the summary online here.](#)

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## **Nutrient Disappearance for Cowboy (High NDFD Barley Silage), Copeland (Intermediate NDFD Barley Silage) and Xena (Low NDFD Barley Silage) and Corn Silage (P7213RCS) Grown in Saskatchewan**

**By: Dr. Peiqiang Yu**  
**Professor and Ministry of Agriculture Strategic Feed Research Chair**  
**Department of Animal and Poultry Science**  
**University of Saskatchewan**



**Dr. Peiqiang Yu**

U of S researchers are carrying out barley and corn silage research projects which have been funded by ADF, WGRF, NSERC and SNK and managed by Ministry of Agriculture Strategic Feed Research Chair.

### *Research Objectives*

The objective of this study was to evaluate nutrient disappearance for Cowboy (High NDFD barley silage =HNDFD), Copeland (Intermediate NDFD barley silage= INDFD), Xena (Low NDFD barley silage= LNDFD) barley silage and corn silage P7213R.

### *Research Results*

The following Table show nutrient disappearance for Cowboy (High NDFD barley silage = HNDFD), Copeland (Intermediate NDFD barley silage= INDFD), Xena (Low NDFD barley silage= LNDFD) barley silage and corn silage P7213R (CS).

The key results showed that:

- \* HNDFD had a higher NDFD compared to LNDFD (51 vs. 45% DM).
- \* However, the DM digestibility of HNDFD was not significantly different compared to LNDFD
- \* This might be attributed to the presence of lower content of starch and a higher proportion of NDF compared to LNDFD
- \* Furthermore, HNDFD exhibited a lower starch digestibility compared to INDFD and LNDFD
- \* In this study, CS had a significantly higher DM digestibility when compared with barley silage varieties (69.1 vs. 64.8%).
- \* The greater digestibility of CS is attributed to the existence of a significant portion of digestible nutrients, higher NFC and lower content of NDF compared to the barley silages.
- \* In the present study, CS showed a lower NDF disappearance than all barley silages varieties (41.5 vs. 48.1).

**Table 1. Nutrient disappearance for Cowboy (High, HNDFD), Copeland (Intermediate, INDFD), Xena (Low, LNDFD) barley silage and corn silage P7213R (CS).**

Items	Silages				
	Corn variety	Barley variety			
7213R	Cowboy (HNDFD)	Copeland (INDFD)	Xena (LNDFD)		
Nutrient disappearance of silage, %					
Disappearance of dry matter	69.1		64.6	65.6	64.2
Disappearance of organic matter	69.7		65.5	66.4	65.1
Disappearance of neutral detergent fiber	41.5		51.2	48.4	45.0
Disappearance of acid detergent fiber	37.4		46.7	43.8	37.6
Disappearance of hemicellulose	48.7		59.5	56.9	56.7
Disappearance of crude protein	80.0		77.1	80.7	78.4
Disappearance of starch	98.8		95.4	98.3	98.7

Note: HNDFD = CDC Cowboy high NDFD barley silage; INDFD = CDC Copeland intermediate NDFD barley silage; LNDFD = Xena low NDFD barley silage.

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## Barley Variety and Silage Quality

By: Dr. Reynold Bergen, Beef Cattle Research Council, [www.beefresearch.ca](http://www.beefresearch.ca)  
 Reprinted with permission from Canadian Cattlemen, December 2016

Barley Silage is the main roughage fed in Western Canadian feedlots, but few barley breeders try to improve its feed quality. Most breeders focus on improved grain yields, malting characteristics and better disease and lodging resistance, and pay little attention to feed quality traits like protein, starch, or neutral detergent fibre (NDF) content and digestibility (NDFD).

NDF is a measure of "structural carbohydrates", the parts of the plant that hold it up. Cattle digest

NDF slowly, so NDF contributes to gut fill, and can limit feed intake, growth and efficiency. In a Beef Cluster funded study published earlier this year, Dr. John McKinnon and colleagues compared 80 silage samples collected from farms from across Saskatchewan and Alberta, that had been produced from seven different barley varieties (Nair et al., Can.J. Anim. Sci. 96:598-608). In an upcoming paper, they compared three of the two-row barley varieties that had produced silage with similar protein, starch and NDF levels, but different NDFD, and their effects on feedlot performance and carcass traits.

**What they did:** Varieties previously shown to produce silage with high NDFD (CDC Cowboy, a general purpose variety with high forage yield), intermediate NDFD (CDC Copeland, a malting variety), and low NDFD (Xena, a general purpose feed variety) were grown at the University of Saskatchewan, managed the same and silaged without an inoculant at mid-dough. The three silages were fed to 288 steers averaging 705lbs in a small pen feeding trial (12 head per pen). Diets were identical except for the type of silage used. Steers were backgrounded for 68 days. At 850 lbs, the steers stepped up to a finishing diet over 12 days, then finished for 148 days and shipped at 1378lbs. Intakes, gains and conversions were measured throughout the feeding trial, and carcass weights and grades were collected at slaughter.

**What they learned:** Lab analyses indicated that these barleys didn't ensile the same way as previously. This time, CDC Cowboy silage had more NDF and less starch and thus less energy than the CDC Copeland or Xena silages. These differences were also evident in the analysis of backgrounding diets formulated with these silages.

Backgrounding steers fed CDC Cowboy silage grew more slowly, ate less and converted less efficiently than steers fed CDC Copeland or Xena silage. The higher NDF levels in the CDC Cowboy silage likely limited feed intake, dietary energy intake and growth.

Finishing steer performance was unaffected by barley variety, probably because there was so much less silage in the diet.

Over the entire feeding period, the variety of barley used to make the silage had no measurable effects on steer performance. The differences in growth performance seen in the 68 day backgrounding period were diluted by the lack of differences in the longer 148 day finishing period.

Carcass lean yield and quality (marbling) grade were unaffected by the variety of barley used to make the silage, but steers fed CDC Cowboy silage had lighter carcasses (797lbs) than those fed CDC Copeland (817lbs) or Xena silage (811lbs).

**What it means:** The varieties did not reproduce the silage quality observed in the earlier study. Previously, all three varieties had produced silage with similar protein, starch and NDF; the only thing that differed was NDFD. This would have suggested that silage made from CDC Cowboy (most digestible NDF) would produce better animal performance than CDC Copeland (intermediate NDFD) and Xena (lowest NDFD). In this study, silage made from CDC Cowboy actually had higher NDF than the silage made from CDC Copeland and Xena. As a result, steers fed silage made from CDC Cowboy had poorer performance (lower feed intake, energy intake, growth rate and feed efficiency) during the high silage backgrounding period. This is probably a result of "genotype by environment interaction". Different varieties of plants (or animals) perform differently in different growing conditions. Some thrive under optimal conditions and wilt under adverse conditions. Year-to-year variations in rainfall and temperature conditions, and soil type and fertility can influence how different barley varieties grow and mature, and the quality of the silage they produce.

While this study suggests that barley variety alone may not be a great predictor of animal performance, it certainly emphasizes the importance of feed testing. In winter feeding programs, forages with high NDF levels can prevent cows from consuming enough feed to maintain their body condition.

These results don't mean that breeding barley for improved nutritional value is pointless. Remember that these barleys were not actually bred for low NDF or higher NDFD. Most of the feed and forage varieties on the market weren't actually developed to be feed or forage varieties. They were usually intended for the malt or human food market, but didn't make the grade. Alberta Agriculture's Lacombe Field Crop Development Center's barley breeding program is one of the few trying to improve barley forage quality, thanks to beef industry check-off funding. Over time, these efforts may lead to varieties that produce superior feed quality in a variety of growing conditions.

**Read the article here:** <http://www.beefresearch.ca/blog/barley-variety-and-silage-quality/>

## Saskatchewan Hay/Grazing Tender Program

### Ducks Unlimited Canada

Sound management of pastureland keeps forage stands healthy and vigorous. It also helps with weed control, while at the same time, maintains productive waterfowl habitat.

As a unique opportunity for local producers, DUC makes land available for haying and/or grazing with annual tenders.

If you are interested in submitting an application for tender, please contact the DUC office below identified on the listing, call 1-866-252-3825 or email [du\\_regina@ducks.ca](mailto:du_regina@ducks.ca).

Tenders close at 1:00 pm (CST) on July 12th, 2017 and are on a per parcel basis.

Hay can be cut after July 15, 2017.

Read more and view list of tenders at <http://www.ducks.ca/resources/landowners/hay-tender-saskatchewan/>



## Saskatchewan Hay Market Report

As of March 31, 2017 the Saskatchewan Agriculture Forage, Feed and Custom Service Listing site has been discontinued. Dry conditions in some parts of the province and very wet conditions in other areas have led to concerns about possible feed shortages, however more information about the current harvest season will be required before a clear picture of supply, demand and pricing will emerge.

A search of hay asking prices in Saskatchewan resulted in very few listing of hay for sale in the province. There were no listings for buyers wishing to purchase hay. Asking prices were for 2016 and limited 2017 hay crops. Prices varied based on quality, old- or new-crop hay and class or type of hay. Average asking prices discovered were:

Alfalfa-Grass Hay: \$84.50/metric tonne  
Alfalfa Hay: \$130/metric tonne (only one listing)  
Standing Hay: \$66/tonne (only one listing)  
Small Square Bales: \$5.75/bale

A number of listings with no price associated were found, and included organic hay, alfalfa-grass hay, standing hay and wild hay.

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## USDA Market News Service Hay Report June 22, 2017

### Wyoming, Western Nebraska, and Western South Dakota Hay Report

Compared to last week, Eastern Wyoming Prices were mostly steady with no test to compare the other reported regions. Trade activity slow as 1st cutting alfalfa is getting put up. Demand Good to Very Good in all regions due to drought conditions in Montana and the Dakotas. Cattleman in

drought affected regions of South Dakota are considering a possible reduction to their herd size to avoid purchasing supplemental hay. The NASS Wyoming Crop Progress and Condition report for the week ending June 18, 2017 states that Wyoming experienced cooler than normal temperatures for the week, according to the Mountain Regional Field Office of the National Agricultural Statistics Service, USDA. Twenty-five of the 34 stations reported below average temperatures for the week with the high temperature of 91 degrees recorded at Old Fort Laramie and Torrington and a low of 30 degrees at Rawlins. Three stations reported no precipitation and Jackson Hole had the most precipitation with 1.59 inches. Sixteen of the 34 stations received above normal precipitation. Stock water supplies across Wyoming were rated 7 percent very short, 5 percent short, 84 percent adequate, and 4 percent surplus. All prices dollars per ton FOB stack in large square bales and rounds, unless otherwise noted. Most horse hay sold in small squares. Prices are from the most recent reported sales.

**Weekly Montana Hay Report** Compared to two weeks ago: Hay prices sold mostly sharply higher, with most sales 10.00-15.00 higher. Sales are all new crop hay unless otherwise noted. Demand for all hay is good to very good on light supplies. Drought conditions have worsened in much of the Eastern portions of the state. The Drought Monitor is released every Tuesday and gives drought conditions for the US. This week's report shows significant drought expansion as over 27% of the state has entered Moderate to Extreme drought status while 16.5% of the state is abnormally dry. Producers continue to look for feed supplement as grass conditions have deteriorated. While price spreads for hay are wide, delivered hay prices remain fairly tight as the majority of the hay sold is being sold into eastern Montana. All prices are dollars per ton and FOB unless otherwise noted.

#### USDA Hay Price for June 22-23, 2017

	Eastern Wyoming	Western Nebraska	Western South Dakota	Montana
Alfalfa				
Supreme	140	-	155	200**
Premium	125	-	-	-
Good	-	-	-	130-150 130-150*
Fair	110 100*	-	-	115-140 120-130*
Utility	-	115	-	95-110 old crop
Grass	-	-	-	
Good	-	-	-	110-125*
Fair	-	-	-	100-125*
Timothy-Premium	-	-	-	240**
Alfalfa/Grass	-	-	-	
Premium	-	-	155	-
Wheat Hay	-	-	80-100*	-

*\*large round, \*\*small square*

*Prices are US dollars per ton, FOB stack unless otherwise noted*

To read the full reports and to view the hay quality designations - physical descriptions [click here](#).

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