



# Saskatchewan Hay & Pasture Report

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## Note from the Saskatchewan Forage Council

It's hard to believe it's already time for the third edition of the 2017 Hay and Pasture Report! This month we are sharing stories and articles on a variety of subjects including a project on the Grazing Response Index (GRI), the importance of pollinators, livestock nutrition and more!

The SFC AGM & Diverse Cover Crop Field Day is coming up! This day focuses on integrating diverse cover crops with livestock and topics include research on diverse cover crops, winter feeding options and cow nutrition, tour of diverse cover crop site and more. The day ends with the SFC AGM at 4pm. Learn more by viewing the [poster](#). Call the Agriculture Knowledge Centre at 1.866.457.2377 for more info or to register.

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 July 31, 2017



Harvest is underway for some producers in the south, according to Saskatchewan Agriculture's weekly Crop Report. Less than one per cent of the provincial crop has been combined, while slightly more than one per cent is ready to straight-cut. Forty-seven per cent of the fall rye, six per cent of the winter wheat, two per cent of the lentils and one per cent of the

field peas are now in the bin. Many pulse crops in southern and central areas are being desiccated. Reported yields so far range from average to well below average, depending on field and moisture conditions.

Most of the province received little to no rain this past week, although the Glaslyn area reported 38 mm over the weekend. Many areas remain very dry and will need significant rain to fill crops and replenish topsoil moisture. For some producers in the south, crops are rapidly drying down and any rainfall now will come too late to be of benefit.

Topsoil moisture conditions have worsened with the lack of rain and high temperatures. Across the province, topsoil moisture on cropland is rated as one per cent surplus, 29 per cent adequate, 41 per cent short and 29 per cent very short. Hay land and pasture topsoil moisture is rated as one per cent surplus, 23 per cent adequate, 40 per cent short and 36 per cent very short. In most of the south along the U.S. and Alberta borders, 100 per cent of cropland, hay land and pasture is short to very short topsoil moisture.

Crops are ripening quickly in many areas and most range from poor to good condition. Crop damage this week is mainly attributed to hot temperatures, hail, localized flooding, strong winds and lack of rain. There are many reports of insects such as aphids, diamondback moths and grasshoppers. Haying is wrapping up for many livestock producers and yields remain significantly lower than normal. Pasture conditions are currently rated as one per cent excellent, 18 per cent good, 32 per cent fair, 31 per cent poor and 18 per cent very poor.

Producers are getting ready for harvest, scouting for pests and finishing haying operations.

[Read the full report here.](#)

## **You want pollinators to make their home on your range**

**By: Jill Burkhardt, published in Alberta Farmer Express June 27, 2017**

*There are scores of native pollinators in Alberta - and the more you have on your rangeland, the better.*

There is a buzz on range- and pasture lands. And we really need to pay attention to native pollinators and the benefits that they provide, says a rangeland ecologist.

"Pollinators are critical to rangelands themselves, and the plants that are there," said Cameron Carlyle, an assistant professor at the University of Alberta, who is not only studying the benefits pollinators provide, but tracking how well they are doing.

The range of pollinator species is diverse but they roughly fall into two groups, he said.

"Bumblebees, are the large fuzzy bees that we commonly think of when we think of bees. Solitary bees tend to be smaller and take many forms. Bees aren't the only pollinators - moths, butterflies and flies are other insect pollinators - but generally most pollination done by insects in our grasslands is done by bees."

Pollinators have "co-evolved" with native plant species, said Cary Hamel, conservation science manager of the Nature Conservancy of Canada's Manitoba region.

"These ecosystems have been evolving for thousands of years," he said.

Most ranchers think of rangelands in terms of their ability to produce grass for their cattle, but it goes beyond that. Healthy and productive rangelands have a diverse array of species, including native forbs (such as buffalo bean or pea vine) or introduced ones (such as clover or alfalfa).

"The productivity of that grass could be partially dependent upon forb (flowering plant) species that are present," said Carlyle. "Anything that is flowering is going to be dependent upon pollination and a lot of that is dependent upon insect pollinators."

So if pollinators disappear out of the rangeland ecosystem, then some plants, such as nitrogen-fixing legumes, will, too.

"If we start to lose (legumes) then we would see declines in productivity," said Carlyle. "Not to mention the loss in diversity in forage types on the landscape."

In Alberta, we don't know if native pollinators are on the decline. But Carlyle said other research indicates bumblebee numbers are falling. The exact cause isn't known but there are indications that their ranges are shifting and that a changing climate is a factor.

"Climate change is likely going to impact these native bees," said Carlyle. "They are getting 'squished' as the climate changes because southern areas will become too warm for them but their populations can't move north fast enough."

### **Helping them out**

So what can grazers do to sustain a diverse and abundant pollinator community?

Keeping your range in good health tops the list.

"Our research has found a fairly strong positive relationship between range health and bee diversity and bee abundance," Carlyle said. "In general, a lack of invasive species, a diversity of plants, and the maintenance of structure is more conducive to a healthy pollinator community," added Hamel. "If you have land with flowers or flowering plants, that's a great start. Continue to maintain those habitats."

Diversity is also a good thing as shrubs and forest, grassland, and wetlands provide a variety of habitat for different pollinators. However, in the Aspen Parkland zone, keeping open meadows and prairie areas intact and free from shrub and tree encroachment benefits pollinators.

Having different types of grasses also helps.

"Bunchgrasses can be really important in terms of where they nest," said Hamel, noting butterflies complete their life cycle on the rangeland and the caterpillars will use grass as a source of food.

"Many native species are tied to native grasses."

Having nearby tame pastures can also be a plus as they provide an additional food source for pollinators, which can travel several hundred metres or even, for some species, a few kilometres.

Read the full article [here](#).

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## **Grazing Response Index and Saskatchewan Pastures**

**By: Laura Hoimyr, Saskatchewan Forage Council communications**

Many factors influence the quality and yield of a pasture. It can be difficult to evaluate how well a pasture is being managed and to determine what the best course of action is to improve the health of our forages and soils. The Saskatchewan Forage Council and partners recently completed and ADOPT project titled "Use of the Grazing Response Index (GRI) on Saskatchewan Pastures to Facilitate Forage Management Decisions". The GRI process was originally developed for use on native rangeland. This demonstration evaluated the possibilities and the challenges of applying the principles of GRI to tame pastures in Saskatchewan.

### **Location and pasture composition**

The demonstration took place on three separate pasture sites located on the Ducks Unlimited (DU) Touchwood Hills Conservation Ranch near Lestock. Pastures were meadow brome/alfalfa, smooth brome/alfalfa or a more complex blend with alfalfa and sainfoin along with mixed grasses. The GRI method was applied over a three year period to these three pastures, under different stocking rates and grazing models.

### **Three factors**

The Grazing Response Index applies three important factors influencing plant growth that can be affected through grazing management: grazing intensity, grazing frequency and opportunity for regrowth. One component of this project included evaluating how these factors would need to be scored differently when the GRI method was applied to tame pastures are compared to rangeland. Some changes to the scoring have been made to better suit the different plant response and growth rates of tame forages. This was a demonstration project only and further study of the application of

this method to tame forages would be of great value. The SFC encourages producers and researchers to apply the draft tame forage GRI method we have posted on our website at: [http://www.saskforage.ca/images/pdfs/Projects/GRI\\_worksheet\\_tame.pdf](http://www.saskforage.ca/images/pdfs/Projects/GRI_worksheet_tame.pdf) and to provide feedback to improve the assessment method.

### Adaptation of the scoring method

*Grazing intensity* measured at the end of the grazing period and is described using three levels of defoliation: light, moderate and heavy. Grazing exclusion cages were used to provide a visual reference for amount of forage removed in this demonstration. When measuring intensity of utilization of tame forages, the percentage of leaf area allowed to be removed while maintaining a positive score was adjusted upward as compared to native forages.

*Grazing frequency* provides a score for the number of times any one plant is defoliated during a grazing season. Depending on growing conditions and the rest and recovery provided, it may not be detrimental to tame forages to be grazed three or more times per growing season. For this reason, the GRI frequency index for tame forages was adapted to measure only the longest grazing period used during the current growing season. If a tame paddock was grazed twice in a growing season, with adequate rest in between, this paddock would only receive a negative score if any one plant in the paddock could have regrown and been bitten again within any one of the grazing periods.



A grazing exclusion cage gives a good visual reference for the amount of forage removed after a graze period.

Image Credit: Jodie Horvath, DUC

*Opportunity for regrowth* is critical for all plants, regardless of species. For this reason, half of the score for GRI comes from this factor, and no changes were made when adapting GRI to tame forages. This score may be somewhat subjective and requires knowledge of the growing conditions and management over the season. Grazing managers must spend time in their pastures and assess how well the vegetation recovered and whether the plants were given adequate opportunity to regrow before being grazed again. It is important to note that this is not just a factor of time given to recover, but also of the quality of that time. Temperature, moisture conditions, insect damage, early frost and many other factors could affect the quality of the time given for recovery.

### Final Results

After scoring each of the three factors on each pasture for a given year, the grazing manager now has an overall score to work with and to help make decisions for the upcoming grazing season. It should be noted that GRI is not a long-term management tool, but rather a look at how the plant responded to the current year's management system and what changes could be made to improve future pasture usage. A positive overall value is desirable in terms of plant health and a negative overall value indicates that if the same management practices are continued, there will likely be a decline in plant health over time. A zero rating is neutral.

Examples and results of GRI scores from the demonstration are included in the full report: [http://www.saskforage.ca/images/pdfs/Projects/ADOPT\\_GRI\\_Final\\_Report.pdf](http://www.saskforage.ca/images/pdfs/Projects/ADOPT_GRI_Final_Report.pdf)

**The project was supported by the Agricultural Demonstration of Practices and Technologies (ADOPT) initiative under the Canada-Saskatchewan Growing Forward 2 bi-lateral agreement.**

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## Copper deficiency takes heavy toll

By: Beef Cattle Research Council, posted on May 1, 2017

*Water testing can help prevent a wreck in reproductive performance*

Garret Hill couldn't figure out what was wrong. Cattle had plenty of grass, clean water, a standard mineral mix in front of them, they appeared to be in good condition, yet conception rates among cows and heifers on his family's central Saskatchewan ranch were declining.

This problem came to a head about six years ago. Their area around Duval, about an hour north of Regina, had experienced a succession of particularly wet growing seasons. There was plenty of grass and a relatively deep (150 foot) well on the farm supplied water to the herd as needed during the year.

"We didn't know what was wrong," says Hill, who along with brother Greg and other family members today run about a 1,000 head cow-calf operation. "But at that time we had about one-third of the cow herd open and it seemed to be increasing by about five per cent per year. The problem was getting worse."

It was during preg checking session that the alarm went off. Brother Greg Hill had called local veterinarians Laurie Zemlak and Tanya Marshall from the TM'z Veterinary Clinic at Lumsden to handle the annual preg check at the ranch. During that session Zemlak and Marshall noted a higher than normal percentage of opens. They in turn called in specialists from the University of Saskatchewan, Western College of Veterinary Medicine (WCVM) to investigate. The WCVM researchers had several blood samples from the cowherd analyzed.

"It came down to a copper deficiency," says Hill. "The blood tests showed a serious copper deficiency. They figured it was like a perfect storm. Our well water was high in sulphates, and with wet conditions our grass was high in molybdenum - both high sulphates and molybdenum will tie up copper. And copper is essential to reproductive performance. We were feeding copper in our mineral mix, but it wasn't in the right form."

The combination of high sulphates in the water, as well as high molybdenum levels in forages was a double whammy on copper. The cattle couldn't get enough copper into them to overcome the adverse affect of sulphates and molybdenum. And Hill says with a herd calving in late May and June and later to be bred in August and September, the deficiency was probably peaking just at breeding season.

Working with nutritionist Blake MacMillan from Blair Livestock Nutrition, they got the herd switched to a chelated mineral formulation. That was an important first step in correcting the problem. Chelated minerals are an organic source of minerals and generally are more readily available, more easily absorbed by cattle. They are more expensive than a standard mineral but can be more effective, especially when correcting a deficiency.

"We saw phenomenal results, once we switched minerals," says Hill. "All we use now are the chelated minerals. You think they cost more, but they really don't. If you start having open cows because of a mineral deficiency, that is way more expensive than the minerals. If we hadn't got the help to figure out what was wrong in our herd, I know we would have been out of business."

Read the full article [here](#).

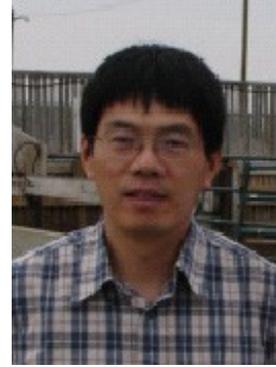
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 Canadian Forage & Grassland Association  
Association canadienne pour les plantes fourragères  
**8th Annual CFGA Conference**  
November 14-16, 2017, Delta Guelph Hotel & Conference Centre, Guelph, ON

Next Generation Forage  
Cropping Systems:  
Profit Above, Wealth Below

**Difference in Silage Carbohydrate Fractions Determined Using Acid Detergent Lignin (ADL) Input and "iNDF at 288 h Incubation" Input**

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



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.

#### *Silage Research Motivation*

**Dr. Peiqiang Yu**

Forage fiber digestibility can directly affect milk production, rumen function, and animal health. Fiber digestibility is often less than 60%, therefore enhancing the digestibility of forages would result in improving animal performance and sustainable of the production system.

#### *Silage Research Objectives*

The objective of this study was to determine the magnitude of difference in silage carbohydrate fractions Determined Using Acid Detergent lignin (ADL) and iNDF at 288 h Incubation in order to assess the accuracy for predicting available ME content and potential milk yield from barley and corn silage-based diets.

#### *Barley and Corn Silages Grown in Saskatchewan*

The silage included: 1. Cowboy (High NDFD barley silage =HNDFD), 2. Copeland (Intermediate NDFD barley silage= INDFD), 3. Xena (Low NDFD barley silage= LNDFD) barley silage and 4. corn silage P7213R (CS).

#### *Research Results*

The following Table show the magnitude difference of carbohydrate nutrient fractions in Corn and barley silages, determined based on acid detergent lignin (ADL) and iNDF at 288 h incubation. The results showed that:

- The "Acid detergent lignin" input based method had overestimated digestible NDF fraction, in particular, for corn silage and corn-silage based diet.
- The "iNDF at 288 h" input based method had more accurate prediction.
- This method could be a promising tool for predicting the lactation performance more precisely, which will be reported later.

Table 1. The magnitude difference of carbohydrate nutrient fractions in Corn and barley silage, determined based on acid detergent lignin (ADL) and iNDF at 288 h incubation

Item	Different Silage <sup>1</sup>			
	Corn silage P7213R	CDC Cowboy high NDFD barley silage (HNDFD)	CDC Copeland intermediate NDFD barley silage (INDFD)	Xena low NDFD barley silage (LINDFD)
Predicted carbohydrate fraction of silage using ADL input				
CC, %DM <sup>1</sup>	5.4	12.72	11.76	10.8
CB3, %DM <sup>2</sup>	34.1	40.0	39.24	37.6
TRDC, %DM <sup>3</sup>	48.0	35.4	34.7	35.0
Predicted carbohydrate fraction of silage using <u>iNDF</u> 288hr input				
<u>Kd</u> , hr <sup>4</sup>	2.79	4.33	3.58	2.61
CC, %DM	15.41	25.42	21.83	16.77
CB3, %DM	29.00	29.60	29.18	31.63
RDCB3, % <sup>5</sup>	41.05	51.97	47.16	39.30
TRDC, %DM	39.39	32.00	34.08	32.76
<u>ttNDFD</u> , % <sup>6</sup>	43.32	53.91	49.25	41.63

<sup>1</sup>CC = unavailable cell walls.

<sup>2</sup>CB3 = available aNDF.

<sup>3</sup>TRDC = total ruminal degradation rate of carbohydrate.

<sup>4</sup>Kd = degradation rate.

<sup>5</sup>RDCB3 = rumen degradable of available aNDF.

<sup>6</sup>ttNDFD = total tract digestibility of available aNDF fraction

For more information please contact:

Peiqiang Yu, Ph.D.

Professor & Ministry of Agriculture Strategic Research Chair

Research Areas: Feed Science, Ruminant Nutrition, Feed Technology & Feed BioTech

Feed Chemistry, Synchrotron Applications, Molecular Nutrition and Feed Molecular Structure

Department of Animal and Poultry Science

College of Agriculture and Bioresources, University of Saskatchewan

6D10 Agriculture Building, 51 Campus Drive

Saskatoon, SK, S7N 5A8, Canada,

Tel: + 1 306 966 4132

Fax: + 1 306 966 4151

E-mail: [peiqliang.yu@usask.ca](mailto:peiqliang.yu@usask.ca)

<http://agbio.usask.ca/find-people/Yu-Peiqliang.php>

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## Apply for Funding to Develop or Protect Your Agricultural Water Supply

Government of Saskatchewan

The Farm and Ranch Water Infrastructure Program (FRWIP) deadline has been extended to September 30, 2017! This is the final year to apply for FRWIP funding to expand irrigated acres, grow the livestock industry, encourage rural economic activity, and mitigate the impact of drought.

Four funding components are available:

Learn more about the program and how to apply [here](#).

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# Saskatchewan Hay Market Report

As of March 31, 2017 the Saskatchewan Agriculture Forage, Feed and Custom Service Listing site has been discontinued.

A search of hay asking prices in Saskatchewan shows an increase in hay for sale and hay wanted throughout the province, although prices are variable as buyers and sellers wait to see how strong demand is. As more forage trades hands in the coming month, a clearer idea of both supply and demand will likely emerge. Average asking prices discovered in the past week are listed below:

Alfalfa-Grass Hay: \$81.50/metric tonne and \$95/bale  
Alfalfa Hay: \$105/bale (very few adds listed bale weights)  
Greenfeed: \$160/metric tonne (two listings)  
Grass Hay: \$50/metric tonne (one listing)  
Small Square Bales: \$5.85/bale mixed hay and \$7/bale alfalfa

A number of listings with no price associated were found as well as many requests from those wishing to purchase: mixed hay, horse hay, greenfeed, small square bales, hay land to rent, straw and more. Both buyers and sellers had ads looking for opportunities for hay to be put up on shares.

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## USDA Market News Service Hay Report August 3, 2017

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

Compared to last week, prices were mostly steady with demand good to very good in all regions due to drought conditions in Montana and the Dakotas. The NASS Wyoming Crop Progress and Condition report for the week ending July 30, 2017 states that Wyoming experienced warmer than normal temperatures for the week, according to the Mountain Regional Field Office of the National Agricultural Statistics Service, USDA. Twenty-eight of the 34 stations reported above average temperatures for the week with the high temperature of 102 degrees recorded at Torrington and a low of 36 degrees at Lake Yellowstone.

Alfalfa condition rated 51 percent very poor, 33 poor, 10 fair, 6 good, and 0 excellent. Alfalfa second cutting was 50 percent, behind 61 last year and 68 average. Third cutting was 13 percent. Pasture and range condition rated 41 percent very poor, 30 poor, 18 fair, and 11 good. The NASS Nebraska Crop Progress and Condition Report for the week ending July 30, 2017 states that temperatures averaged near normal, according to the USDA's National Agricultural Statistics Service. Significant rainfall of an inch or more was received across most of the State. A few north central counties received as much as four inches of rain. Alfalfa condition rated 5 percent very poor, 15 poor, 32 fair, 40 good, and 8 excellent. Alfalfa third cutting was 48 percent complete, ahead of 38 last year and 35 average. Pasture and range conditions rated 13 percent very poor, 20 poor, 38 fair, 26 good, and 3 excellent. 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. Read the full report [here](#).

**Weekly Montana Hay Report** Compared to two weeks ago: Hay prices sold mostly 10.00-15.00 higher as drought conditions continue to worsen. Demand was good to very good on mostly light to moderate supplies and active market activity. Hot dry weather continues to be seen across much of the state. The Drought Monitor, released on Tuesday, shows over 53% of the state in Moderate to Exceptional drought, with an additional 32% Abnormally dry. The majority of all hay sales continue to move into Eastern Montana. Grass hay sold on good to very good demand on light supplies, market activity was active. 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 August 3-4, 2017

	Eastern Wyoming	Western Nebraska	Western South Dakota	Montana
Alfalfa				
Supreme	-	-	-	200**
Premium	-	-	150	-
Good	125-130	-	-	150-180 150-185*

Fair	115-120 115-120*	-	-	125-150 130-150*
Grass				
Good	-	-	-	140 130-135*
Fair	-	-	-	120-125*
Timothy-Premium	-	-	-	240**
Alfalfa/Grass				
Fair	-	-	-	130-135
Barley Straw	-	-	-	50
Wheat Hay			80	

*\*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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Saskatchewan Forage Council | 306.329.3116 | [office@saskforage.ca](mailto:office@saskforage.ca) | [www.saskforage.ca](http://www.saskforage.ca)

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