



Saskatchewan Hay & Pasture Report

Volume 19, Issue 1

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Note from the Saskatchewan Forage Council

We are happy to bring you the first edition of the 2018 Hay and Pasture Report! This report is presented by the SFC four times annually, during the growing season. We bring you production-related articles and information about forage pricing. To read about current events from the Saskatchewan's Forage industry, you may also [subscribe to our monthly Forage and Livestock eNews](#).

This first edition of the Report has some great info on selecting a forage blend, swathgrazing annuals, and will get you up to date on some research and demonstration projects taking place right here in Saskatchewan.

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. Please visit our website www.saskforage.ca for regular news and information related to the forage industry.

[Visit Our Website](#)

In this Issue:

- [Saskatchewan Agriculture Crop Report](#)
- [Estimating Milk Yield of Dairy Cows Fed Silage-Based TMR Diets](#)
- [Putting science into grass management](#)
- [Advantages of Flail Tine Conditioning](#)
- [Cutting Stage for Swathgrazing Annuals](#)
- [What is the best forage blend for my operation?](#)
- [SFC's upcoming ADOPT projects](#)
- [Saskatchewan Hay Market Report](#)
- [USDA Market News Service Hay Report](#)
- [Saskatchewan Forage Council Sponsors](#)

Saskatchewan Agriculture Crop Report

For the period ending April 30, 2018



A cool and late spring has delayed field work across the province. However, seeding has just nicely started in the southern areas. Most other areas have some field activity with harrowing, pre seeding herbicide and fertilizer applications.

Field conditions vary greatly across the province. The southern regions are dry and the northern and eastern regions are dealing with higher field moisture conditions. Topsoil moisture on crop land is rated as six per cent surplus, 64 per cent adequate, 20 per cent short and 10 per cent very short. Topsoil moisture on hay and pasture is rated as three per cent surplus, 63 per cent adequate, 28 per cent short and six per cent very short. High winds are drying up the soil quickly. The soils are slow to warm up and there is still snow and ice in some sloughs and ditches in the north.

Due to a low yielding hay crop in 2017, an extended cold winter, and a slow start up to spring, many livestock producers are feeding alternative feed sources and feed grains, while they wait for the pastures to green up.

Spring runoff in the south was below normal in many areas, leaving some livestock producers looking at how to sustain water supplies throughout the upcoming grazing season.

[Read the full report here](#)

Forages for Milk and Meat Research Series:

Method of Comparison for Estimating Milk Yield of Dairy Cows Fed Silage-Based TMR Diets

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

Background

Graduate students and researchers (Basim Refat, PhD student, Jayakrishnan Nair, PhD student, Natalie Preston MSc student, David Christensen, John McKinnon, Aaron Beattie, Tim McAllister, Wenzhu Yang, Peiqiang Yu) at the University of Saskatchewan and Agricultural and Agri-Food Canada are carrying out an in-depth large forage research program for dairy (Basim Refat), beef (Jayakrishnan Nair) and sheep (Natalie Preston).

Forage Research Objective

The objective of this study by Basim Refat et al. was to compare the previous and updated Cornell Net Carbohydrate and Protein System nutrition methods for estimating production performance/milk yield of dairy cows fed Saskatchewan-grown silage based TMR diets.

Materials and Methods

The diets used for evaluating the two models contained 49% barley-based concentrate, 10% alfalfa hay and 41% silage. The four whole-plant silages that were grown in Saskatchewan were: Corn silage (7213R), Cowboy barley silage, Copeland barley silage, and Xena barley silage.

Forage Research Results, Conclusions and Implications

The results (Tables 1 and 2) showed that the previous CNCPS model overestimated digestible cell wall fraction and cow milk yield, in particular in corn silage-based diet.

On the other hand, the updated model predicted the milk yield more accurately. The differences between the actual milk and the predicted milk yield from the updated CNCPS model were very similar for all diets (Tables 1 and 2).

The study indicates that the newly updated model can be used as a promising tool for estimating lactation performance more precisely.

Table 1. Differences between the previous and updated Cornell Net Carbohydrate and Protein Systems in predicting the potential milk yield

	Diets				P- value Contrasts CS-TMR vs. BS-TMR	
	Corn silage-based TMR	Barley silage-based (BS) TMR				
	CS-TMR1	Cowboy BS-TMR	Copeland BS-TMR	Xena BS-TMR		
Predicted Milk yield, kg/d						
Milk yield (ADL input) ¹	47.4	38.8	36.1	39.3	-	
Milk yield (iNDF288 input) ¹	39.8	36.7	37.3	36.7	0.02	
Milk yield (iNDF288 input) ²	41.3	35.4	37.3	36.8	0.01	

1 Predicted milk yield based on allowable metabolizable energy. 2 Predicted milk yield based on allowable metabolizable protein.

Table 2. Accuracy of the Previous and the updated Cornell Net Carbohydrate and Protein System in prediction milk yield

Items	Diets			
	Corn silage-based TMR (CS)	Cowboy BS-TMR	Copeland BS-TMR	Xena BS-TMR
Milk yield (Actual) ¹	40.0 ± 1.71	35.25 ± 1.71	35.94 ± 1.71	34.78 ± 1.71
ΔMilk yield (ADL input) ²	+7.4	+3.55	+0.16	+4.52
ΔMilk yield (iNDF288hr input) ³	0.21	-1.45	-1.31	-1.92

1 Milk yield obtained from actual dairy trail using the same diet that used for predicting the milk yield by CNCPS models. 2 Difference between the predicted milk yield (Cornell Net Carbohydrate and Protein System with ADL input) and the actual milk yield. 3 Difference between the predicted milk yield (Cornell Net Carbohydrate and Protein System with iNDF288hr input) and the actual milk yield.

Acknowledgement:

This study has been funded by Saskatchewan Agricultural Development Fund, the Ministry of Agriculture Strategic Research Chair Program, the Western Grain Research Foundation, the Natural Sciences and Engineering Research Council of Canada (NSERC, Canada's federal funding agency for university-based research) and Saskatchewan Forage Network.

[Top of page](#)

Putting science into grass management

The Grazing Response Index scores foliage removal, grazing period and recovery time.

By: Ray Ford, Canadian Cattlemen, April 9, 2018

This article originally appeared in the 2018 Forage & Grassland Guide.

When it came out of Colorado in the 1990s, the Grazing Response Index (GRI) was strictly at home on the range. Now Ducks Unlimited Canada's Jodie Horvath says that, with a few tweaks, the grass management tool can help graziers on Western Canada's tame pastures, too.

"When you're a farmer, a lot of things feel out of your control, especially with the weather," says Horvath, a DUC conservation programs specialist and Saskatchewan grain and cattle producer. The GRI "helps you realize there are things you can control, including the number of animals you put out, where they go, and how long they're out there - so you do have some decision-making available to you."

With the backing of the Saskatchewan Forage Council and Agriculture and Agri-Food Canada, Horvath tested the index during three years of grazing at DUC's Touchwood Hills Conservation Ranch north of Fort Qu'Appelle. "There aren't a lot of ways to measure and grade how we're doing on our tame pastures," she says. "I thought the GRI would be something really practical that we could implement

easily on a farm for the average producer."

Putting grass first

The GRI focuses on three aspects of grazing and pasture growth: grazing intensity - the amount of leaf area that is bitten off by grazing animals; the frequency - how often leaves are bitten off as the plants try to regrow; and the plant's opportunity to regrow - the rest and recovery pastures get after grazing. GRI grades "how the grazing pattern in a particular year affects the health of the plant," says Mae Elsinger, Brandon-based range management biologist with Agriculture and Agri-Food Canada. "It's about damage to the plant, recovery from damage, and the overall health by the end of the year."

Plants are like solar power systems, she adds - the more leaf area bitten off, the less solar energy the plant captures. When growing leaves are repeatedly chomped, stressed plants are forced to draw stored energy from their roots, like an underpowered solar system draining its storage batteries. As the grass weakens, it's shaded out by less palatable or weedy species. The result is a less productive pasture.

Horvath's major challenge was adapting a system designed for native range grasses into one that works for cool-season domesticated species. When the GRI was brought into Canada, researchers at British Columbia's Thompson Rivers University tested the approach on common range grasses, including bluebunch wheatgrass, rough fescue, and pinegrass to ensure what works in Colorado is applicable north of the 49th parallel.

Elsinger says the same detailed lab work hasn't been done on tame species, including the alfalfa, meadow and smooth bromes featured in Horvath's test pastures. But she adds experienced managers know tame pastures behave differently from native range.

"Tame forages have evolved under a totally different system," Elsinger says. While Prairie grasses were occasionally trampled, grazed, or burned - sometimes severely - they probably had extended rest periods. Tame species developed in Europe and Asia under thousands of years of regular and repeated grazing, so "these grasses have just adapted to higher-intensity grazing than native grasses."

[**Read the full article here.**](#)

[**Learn more about the SFC ADOPT project Use of the Grazing Response Index \(GRI\) on Saskatchewan Pastures to Facilitate Forage Management Decisions on the SFC website under completed projects.**](#)

[Top of page](#)



Grazing cages are an excellent visual aid when determining percentage of forage removed during grazing.

Image credit: Jodie Horvath, DUC

Advantages of Flail Tine Conditioning

Many grass-hay producers choose flail tine conditioning for fast drying. Other operations that harvest legume crops as high-moisture and haylage also choose flail tine systems. Grasses are difficult to condition with rolls because it is almost impossible to achieve a small enough roll clearance to crush the fine stems and leaves of most grasses.

The flail tine design delivers more effective conditioning of difficult-to-crimp grass crops by stripping wax from the plant's cuticle layer. It also works well in high-moisture and silage applications.

For fast drying for grass hay, choose New Holland LeaningEdge™ flail tine conditioning. For lighter conditioning of delicate crops, raise the hood away from the flail tines. For maximum conditioning, lower the hood to increase the crop friction. An optional textured

hood liner provides more aggressive conditioning of difficult crops. The semi-swinging tine design ensures that crop is released at the ideal moment for uniform fast-drying swaths.

To learn more about New Holland's disc mower-conditioner offering, visit www.NewHolland.com



Cutting Stage for Swathgrazing Annuals

Western Beef Development Centre video

In this research video, Dr. Bart Lardner, his student, Courtney O'Keefe, and Kathy Larson discuss 2-year results from a study conducted at the Termuende Research Ranch. Current industry recommendations for cutting stage are based on the best stage for making silage. This project looked at refining the recommendations for the optimum cutting stage when annual forage is being preserved instead as swathgrazed annuals.

Watch the video on the WBDC YouTube Channel at <https://www.youtube.com/watch?v=U4a-YxrFcE>

What is the best forage blend for my operation?

By: Terry Kowalchuk, Provincial Specialist Forage Crops, Saskatchewan Ministry of Agriculture

Seeding diverse mixtures of forages is generally beneficial compared to monocultures. Diverse mixes of grasses and legumes use resources more efficiently than monocultures and increase pasture resilience by enabling the stand to adapt to a broader range of climatic conditions. In addition, species richness tends to increase forage production and quality because diverse mixtures are less prone to invasive plant species and less susceptible to insect and disease attacks. Diverse stands are less prone to soil erosion. They also help reduce greenhouse gas emissions from livestock and generally sequester more carbon in soils than single-species stands. Mixed forage stands also help suppress weeds.

Over the past several decades, recommendations about the number of species to include in mixtures has varied. In the '50s and '60s, quite complex mixtures were recommended, but it was found that only a few species survived, so the trend from the '70s through to about 2010 was towards simple mixtures. More recently, many of the commercial seed guides are trending back towards more complex mixtures, some of which can be quite expensive.

In general, the more variable the climate and soil, the more complex the mix needed. Which plants grow in a given area will depend on the soil conditions and other factors and can change from year to year, favouring some species during wet conditions and others during drier periods. This can be seen by the way that native annuals express themselves differently each year on rangeland, depending on the amount of moisture during the growing season.

The effect of diversity on yield depends mainly on the species mix and how the stand is used. Positive interaction between species is crucial to the success of mixtures and/or blends. For example, research from Manitoba in the mid-'70s showed that mixing slow-maturing grasses like crested wheatgrass or Russian wild ryegrass with fast-maturing species like pubescent wheatgrass or slender wheatgrass was not recommended. Complementary species will help increase yield above that of a monoculture while, if the mixture contains competitive species, the yield will be similar to that of a monoculture as the most productive species dominate over time. Selective grazing can also influence the stand, depending on how the grazing is managed and the relative maturity of the species within the mix.

As the information above shows, choosing the right blend for your operation can be difficult. There is still much to learn about the various interactions between grass and legume species and further research is needed to assess the effectiveness of the various commercially available blends under a broad range of conditions and uses.

The reality is that there is no perfect blend. Here are a few questions to consider to help you choose a mixture for your operation:

1. How is the stand going to be used?
2. How variable is the landscape and the soils into which you are seeding?
3. Are the species in the blend adapted for the intended use and for the particular landscape in which they will be planted?
4. How persistent are the species in the blend when they are planted together (i.e. are they complementary to each other?)
5. What are the factors that reduce the productivity and longevity of the species in the mix?
6. How will the frequency of haying or grazing affect the mix of species over time?
7. Knowing the factors that reduce persistence of species within the mix and given your planned end use and management objectives, is the extra cost of a very diverse mixture warranted?

[Top of page](#)

Saskatchewan Forage Council's upcoming ADOPT Projects

By: Laura Hoimyr

Saskatchewan Forage Council, Communications

The SFC is excited to announce two new ADOPT projects recently approved and slated to begin in 2018: **Delaying the stage of maturity at swathing to increase winter grazing days for swath grazed barley** and **Targeted high stock density grazing demonstration**. Both projects will begin in the spring of 2018, and will be completed in 2019.

Delaying the stage of maturity at swathing to increase winter grazing days for swath grazed barley will demonstrate the alteration of the maturity at harvest for barley used in swath grazing to grazing days without negatively affecting cow performance. Another objective of this demonstration is to help producers learn to identify the differences between the relevant stages of crop maturity.

A field-scale study is currently ongoing at the Western Beef Development Centre regarding delayed maturity of harvest for swath-grazed barley. Data obtained in years 1 and 2 were strongly supportive of altering the stage of maturity at harvest from soft dough to hard dough for barley. [Learn more about this project's two-year results in this article.](#)

The swath grazed barley project will take place at three locations: Swift Current, Clavet (The Livestock and Forage Centre of Excellence) and at a site in the Melfort area. Field day info, final project results and a video link will be available on the SFC website in 2018 and 2019.

The **Targeted high stock density grazing demonstration** will showcase high stock density (~100,000 pounds live animals per acre) grazing as a tool to manage perennial forages for productivity and longevity. This project will take place at two locations in Saskatchewan, with one location already selected and another yet to be determined. Site one will be the Ducks Unlimited Touchwood Hills Conservation Ranch, located near Lestock.

This project will compare pastures managed under rotational grazing, to paddocks managed under much higher stock density on the same ranch. Portable electric fencing will sub-divide paddocks in order to target areas that may benefit from higher stock density such as those with weeds or tree and shrub encroachment. A number of factors will be evaluated after grazing, including percent of forage utilized, weed suppression, litter amount and distribution, bare ground, cost per acre, and yield.

Producers wishing to learn more about this project can plan to attend field days and to watch for photos and videos coming out demonstrating fence construction and cattle movement and behaviour during the grazing season. Watch the [SFC website](#) and [subscribe to our eNews](#) to keep up to date on this project.

Saskatchewan Hay Market Report

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

There is very little hay advertised for sale in Saskatchewan currently. Based on an internet search of hay asking prices, listings were discovered for:

Alfalfa-Grass Hay: \$132/metric tonne and \$85/bale average

Alfalfa Hay: two listings, with no price associated

Small Square Bales: \$5-6/bale mixed hay or grass hay

None of the hay listings indicated forage quality or offered feed test results. Almost half of these few listings were for two year old hay. Forage is in short supply in many parts of the province, and appears to be difficult to come by.

There are a number of "hay wanted" ads this month as well. Most requests are for round bales for cattle or horses. Generally these ads specify the area in which the buyer would like to purchase hay, and these requests range from the Saskatoon area, through Regina and to Moose Jaw. There are also a number of requests for hay land to harvest in 2018, and for pasture land to rent.

USDA Market News Service Hay Report May 4, 2018

Wyoming Hay Report

Compared to last week of alfalfa hay sold steady on a light test. Demand was very good from local customers and from out of state buyers. There are a few producers holding some inventory just in case they need to supplement their own cattle herds until grass starts or if the summer is dry. Some areas of the state has received some rain with other areas still needing some moisture. Most of the small grains and sugar beets are planted with producers getting ready to plant corn in the near future. All prices are dollars per ton FOB the field or hay barn unless otherwise noted. Prices are from the most recent reported sales. Read the full report [here](#).

South Dakota Hay Report Compared to last week: All hay and bedding materials continue to sell steady to higher, with limited available supplies. Demand is good to very good, as the cold wet spring has increased the need for bedding materials and delayed pasture turnout. Interest is very good from all areas of the state, with most interest coming from the western half of the state. Hay supplies are scarce as last summers drought conditions, followed by a winter with heavy snowfall for many areas and then a delayed spring has many cattle feeders and ranchers using up their reserve feed stores they had on hand. Spring may have finally arrived, as temperatures are returning to more normal levels and things are starting to dry up a little. Spring field work is starting to happen across the state however there is thought that the frost may not be completely out of the ground yet in the northern tier counties. All hay and straw sold by the ton FOB, unless otherwise noted. Read the full report [here](#).

Weekly Montana Hay Report Compared to last week: Hay prices sold weak to 10.00 lower. Demand for hay continues to lighten as producers take inventory of hay and find a few additional loads available. Demand for hay is light to moderate on very light to light supplies. Limited hay sales were seen this week. Grass is finally filling in across the countryside and producers finally feel confident enough to sell some of their emergency supply. Of note this week, producers are also looking at fields and noticing winter kill in some locations. The central portion of the state took the brunt of it as many ranchers lost significant portions of fields to winter kill. No new sells of straw have been reported. All prices are dollars per ton and FOB unless otherwise noted. Read the full report [here](#).

USDA Hay Prices for May 4, 2018

	Wyoming	Pipestone, MB	South Dakota	Montana
Alfalfa				
Supreme	200 185*	-	-	200-250*
Premium	-	-	-	150-175 150-170* 180**
Good	170 160*	135-155* 135-140**	-	150 150-165*
Fair	-	110-135 115-125*	-	130-135 150*
Utility	-	-	-	115
Grass				
Premium	-	-	135*	-
Good	-	135-150*	110*	145-150*
Fair	-	120 105-130* 115-120**	100*	110
Timothy				
Premium	-	-	-	210-240**
Alfalfa/Grass				
Good	-	-	135*	150-160
Fair	-	115-150*	-	150-160
Wheat Straw	-	-	125-135	-

*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](#).

[Top of page](#)

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JAMES G. (JIM) GETTIS, P.Eng.
President

Tel: 403-288-4642 • Cell: 403-650-7511
Suite 700, 505 3rd Street SW • Calgary, AB • T2P 3E6 • jim.gettis@abbeyr.ca

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Saskatchewan Forage Council | 306.421.8539 | office@saskforage.ca | www.saskforage.ca

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