



# Saskatchewan Hay & Pasture Report

Volume 18, Issue 4

October 3, 2017

## Note from the Saskatchewan Forage Council

Welcome to the fourth and final edition of the Hay & Pasture Report for the 2017 year! It's been a challenging forage production season for many in Saskatchewan, but we continue to look for ways to improve forage production, land management and to support those in this important industry.

If you haven't yet had the chance to hear Gabe Brown speak, I encourage you to attend the Canadian Bison Association's Annual Convention, which will be held in Regina this November. Gabe is a rancher who has made soil health and regenerative management the focus of his operation in North Dakota. He will inspire you to be open to new ways of thinking and to take action on that project you've been putting off. The [SFC's events page](#) has more information about the conference or you can view the agenda [here](#).

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.

Visit Our Website

---

## In this Issue:

[Saskatchewan Agriculture Crop Report](#)

[Polycultures](#)

[Effect of winter grazing system on beef cow performance and system costs](#)

[Plowprint Report](#)

[Saskatchewan Advisory Council on Forage Crops](#)

[Another look at the costs and benefits of swath grazing](#)

[Saskatchewan Hay Market Report](#)

[USDA Market News Service Hay Report](#)

[Saskatchewan Forage Council Sponsors](#)

---

## Saskatchewan Agriculture Crop Report

For the period ending September 25, 2017



Wet and cool weather delayed harvest for most producers this past week, according to Saskatchewan Agriculture's weekly Crop Report. Seventy-eight per cent of the crop is now in the bin, slightly up from 75 per cent last week. Harvest progress remains ahead of the five-year

(2012-2016) average of 74 per cent for this time of year. Fifteen per cent of the crop is swathed or ready to straight-cut. Many producers expect to be back in the field when warmer weather returns and crops can dry sufficiently.

Topsoil moisture conditions continue to improve with the recent rainfall, although the subsoil will need significant new moisture to replenish what has been lost to the hot and dry weather. Across the province, topsoil moisture on cropland is rated as 29 per cent adequate, 36 per cent short and 35 per cent very short. Hay land and pasture topsoil moisture is rated as 22 per cent adequate, 34 per cent short and 44 per cent very short.

The majority of crop damage this past week was due to wildlife, strong winds, frost and lack of moisture. Pastures and hay land have suffered greatly from the lack of moisture and will need significant rainfall.

Producers are busy combining, completing fall field work, moving cattle and hauling bales.

[Read the full report here](#)

## **Polycultures**

**By: M.P. Schellenberg, PAg CPRM PhD & J.D. Bainard, PhD**

The forage production utilizing multiple annual species (polycultures) continues to gain interest among producers. The field tours I participated in this summer were all well attended. As a relatively new option in Saskatchewan, there seems to be more questions than answers. This is in part due to relatively little research ongoing in the prairies on this system. I use the term system deliberately as I see this as a component of cropping rotation.

As a component of a cropping system, the polyculture is meant to provide a number of services that may be more important than actual production. We have found at Swift Current that crop mixtures did decrease weed densities as the number of species and functional groups increase, and insect pests were less likely to find their preferred forage throughout the grazing season. In our study, we targeted annual forage species already grown in the semiarid southwest from four functional groups: cool season grasses (barley, oats, triticale), warm season grasses (corn, sorghum, German millet), legumes (forage pea, field pea, hairy vetch) and tap root crops (purple top turnip, kale, forage radish).

The environmental services were harder to identify. In our Swift Current project we did identify an increase in soil organic matter by comparing % water stable aggregates values from the start of project and after three years of the same cropping treatment on the same piece of land. The only statistically significant increases occurred in the plots that had mixtures, as well as the barley monoculture. Repeated seeding of the same crop mixture reflects our research design but is not the recommended way to utilize polycultures, even in more humid regions where polycultures have gained broader use. If plantings are to be on the same piece of land year after year the better option would be a perennial mixture. No detectable change was found for soil nutrients but three years is a very short time to note any changes. The rate of change for % water stable aggregates and soil nutrients was likely impacted by the removal of all plant material (green feed) to a height of 5 cm (2 inches) from the soil surface. This would have resulted in exportation of carbon and nutrients that would otherwise have contributed to increased nutrient cycling.

Returning to the idea that polycultures are a component of a cropping rotation, polycultures provide an opportunity to be utilized as a forage source as a planned forage or as emergency feed (as needed by some in drought years) as well as a cover crop (or green manure) to prevent erosion, build healthy soil, and aid in weed control. Polycultures are also a way to re-introduce livestock to a landscape where nutrient depletion may have occurred thus returning nutrients through defecation and tillage from hoof action.

So what species does one use for polycultures? There are an almost unlimited number of species from various functional types being marketed. Many of these have not been fully tested for effect or adaptation. At Swift Current we attempted to address the number of species and functional groups. The project indicated that for the 12 species we selected, 8 to 9 species appeared to produce most of the results (in part due to sorghum and kale not really establishing). Producers interested in adopting polycultures as part of their cropping system should carefully consider what crops are adapted for their region and what the end goal of their polyculture is. This information should direct species selection and implementation of the mixture.

[Top of page](#)

# Effect of winter grazing system on beef cow performance and system costs

By: Divya Jose MSc, Dr. Daalkhaijav Damiran, Dr. Gregory Penner, Dr John McKinnon, Kathy Larson MSc, and Dr. Bart Lardner

Western Beef Development Centre Fact Sheet #2017.01

## Introduction

Winter feeding costs alone account for more than two-thirds of the total annual feeding and management expenses in beef cow-calf production in western Canada (Larson, 2013; Damiran et al., 2016). The increased costs associated with traditional drylot pen feeding in winter have subsequently resulted in the evaluation of alternative extensive grazing systems (McCartney et al., 2004) that may reduce feed costs. Apart from better economic returns, extensive grazing strategies also tend to reduce fuel, equipment and labour costs associated with harvesting and hauling feed, as well as manure removal from pens (Kelln et al., 2011; Damiran et al., 2016). Moreover, beef cows grazed on extensive grazing systems were reported to have similar or improved cow performance without negative effects on reproductive performance compared to cows fed barley hay bales in drylot pens (Kelln et al., 2011). Cool season annual forages such as barley are well suited to Western

Canadian growing conditions and provide acceptable forage yield and quality for winter grazing (McCartney et al., 2004; Kelln et al., 2011). Recently, with the introduction of low heat unit corn varieties suited to western Canadian weather, there is an increased interest in the use of warm season annuals in extensive grazing systems (Lardner et al., 2017). However, there are concerns among beef producers with regard to the sorting of energy rich plant parts (Launchbaugh and Dougherty, 2007), forage utilization (DeVries et al., 2014), and weather adaptation (SMA, 2010) of grazing cows in extensive winter management systems. The objectives of this 3-year study was to compare three wintering systems: (i) whole plant, low heat unit hybrid standing corn grazing, (ii) whole plant swathed barley grazing, and (iii) drylot pen feeding barley greenfeed hay during winter on forage characteristics, cow performance, subsequent calf performance, and system costs.

## Study Site and Crop Management

The 3 year study was conducted at the Western Beef Development Centre's (WBDC) Termuende Research Ranch located east of Lanigan, Saskatchewan. The soil at the site is classified as Chernozemic Black Oxbow soil. In spring each year (late May to early June), a 15 acre field was seeded to corn (cv. DKC 26-25) at the rate of 30,000 seeds/acre and 120 lb/acre of nitrogen (46-0-0) fertilizer was applied by harrowing pre-seeding. Also, in spring each year (early to mid-June), a 15 acre field was seeded to barley (cv. AC Ranger; 2 bu/acre) along with 50 lb/acre of N fertilizer (as 46-0-0). Weed control in the corn crop was managed with pre- and post-seeding applications of 1 L/acre of Roundup each year. The barley crop received an application (0.5 L/acre) tank mix of Refine/Perimeter/Axial BIA each year (late-June to early-July). Whole plant barley was swathed in late August at the soft dough stage, while whole plant corn continued to grow until the first killing frost in September. The barley greenfeed for feeding in drylot pens was grown in an adjacent field with similar agronomics to the barley in the swath grazing. The barley crop was cut with a haybine, allowed to cure in the swath and then baled into large round hay bales (~1500 lb) which were transported to the yard site and fed in drylot pens.

## Grazing Management

Each year 60 dry, pregnant multiparous Black Angus cows stratified by BW (~1500 lb) were randomly allocated to 1 of 3 replicated (n = 2) winter feeding systems: (1) grazing standing whole plant corn (GWPC); (2) grazing swathed whole plant barley (GSB) in field paddocks or (3) feeding barley greenfeed bales in drylot pens (DL). Cows were allocated forage based on forage nutrient density and environmental conditions in accordance with the NRC (2000) beef model for maintenance of body condition. Cows were managed on winter systems for 77 d (9 November 2012 to 25 January 2013) in yr 1, 78 d (24 October 2013 to 9 January 2014) in yr 2, and 45 d (21 October 2014 to 3 December 2015) in yr 3. The cows were allocated 3 to 4 days of standing corn and swathed barley using portable electric fences.

Water was provided in insulated portable troughs to each GWPC and GSB paddock (10 cow/paddock) and two portable wind breaks and bedding straw were provided in each replicate paddock. Cows in the DL system were housed in two adjacent outdoor drylot pens (50 × 120 m) surrounded by wooden slatted fences. Each pen contained an open-faced shed and a heated water bowl. Each pen was also provided with a round bale feeder, which was replenished with a new greenfeed bale every 3 to 4 days. All cows were supplied with free choice loose mineral (Right Now® Bronze, Cargill Nutrition) and a cobalt iodized salt block. Following each trial period, the cows were group fed a range pellet at 4.4 lb/cow/d (13% CP) and barley greenfeed hay to meet nutrient requirements until adequate pasture growth was available in the spring. Cows were managed together on summer pasture and during the breeding season until the following winter period. Cow BW, body condition (BCS), feed intake (DMI) and reproductive performance were monitored

during the study.

### Weather

Temperatures (°C) and monthly precipitation (mm) data were obtained from WBDC's benchmark site meteorological station. Long term (1981-2010) monthly temperature (°C), precipitation and snow (cm) data were obtained from Environment Canada's Climate data for Watrous, Saskatchewan, which is the closest weather station to the research study site ([www.climate.weatheroffice.gc.ca](http://www.climate.weatheroffice.gc.ca)). Figure 1 suggests that the warmest temperatures during the 3-yr study period were observed in the third year.



The grazing periods in yrs 1 and 2 were

colder than the 30 yr average (1981-2010), with yr 2 being the coldest. Environmental factors such as extreme cold conditions, snow depth and wind can have a negative impact on animal productivity in extensive grazing programs (Kelln et al., 2011). Increased snow depth and reduced visibility resulting from heavy snowfall can make it difficult for the cows to find and consume forages buried under the snow (Kelln et al., 2011). The average snow on the ground at the end of the months from November to February were 12, 3, and 3.3 cm in yr 1, yr 2, and yr 3 respectively, which also indicates that cows had the least favorable grazing conditions in yr 1 of the study (Figure 2). The cows managed in the DL system were fed using a bale feeder so there were no access issues.

Read the full fact sheet [here](#).

[Top of page](#)

**There will be a FREE cleanfarms obsolete pesticide and livestock/equine medication collection program from October 23-27 at 20 ag-retail locations in the southern half of the province.**

Farmers and other pesticide users are encouraged to bring in any agricultural or commercial pesticide and/or livestock medication (but NO needles/sharps) into designated ag-retail locations during the collection period where a licenced waste hauler will safely manage the products and send them for environmentally responsible disposal via high temperature incineration.

View the [poster](#) for more information and collection locations.

## Plowprint Report

### World Wildlife Fund

Temperate grassland ecosystems are the least protected biomes on the planet. Worldwide, these important habitats are being lost at an alarming rate due to a number of factors that include the production of food and fuel for a growing human population. Their decline is having a significant impact on species such as grassland birds, and the ecosystem services these grasslands provide-ranging from carbon sequestration to water infiltration-are also being highly affected.

The Plowprint Report, which includes both a general information and technical version, has been developed to broaden public awareness of grasslands loss, and to offer a consistent way for the conservation community to track year-to-year grassland conversion to cropland across the focal regions of the Mississippi River Basin and Great Plains. This is the first edition of the report, which will be released on an annual basis.

[Download the 2016 Plowprint Report here to learn more.](#)

## Saskatchewan Advisory on Forage Crops

The Saskatchewan Advisory Council on Forage Crops (SACFC) is a long standing, voluntary committee made up of representatives from government, industry, producer groups, and researchers. Each year, this group of people come together to share information on forage research projects, current or newly developing forage industry issues and research needs.

This year's SACFC will take place on November 6, 2017 in Saskatoon. Plan to attend! This is your chance to get updates on current forage research and to give input on what your extension needs are.

[View the agenda here.](#) For more information, please contact Sarah Sommerfeld at [sarah.sommerfeld@gov.sk.ca](mailto:sarah.sommerfeld@gov.sk.ca).

To register contact Leanna Rousell at [office@saskforage.ca](mailto:office@saskforage.ca) by November 2.

[Top of page](#)

### Another look at the costs and benefits of swath grazing

By: Reynold Bergen

Canadian Cattlemen magazine, September 7, 2017

Well-managed swath grazing has well-known economic benefits for producers. But research results from a study funded by the Beef Science Cluster showed that it can have environmental benefits as well. Dr. Vern Baron and coworkers at Agriculture and Agri-Food Canada's Lacombe Research Station recently published Swath grazing triticale and corn compared to barley and a traditional winter feeding method in central Alberta (Canadian Journal of Plant Science 94:1125-1137) and Effect of winter feeding systems on farm greenhouse gas emissions (Agricultural Systems 148:28-37).

**What they did:** A five-year winter feeding study was conducted in central Alberta (2008-09 through 2012-13). Angus x Hereford and Red Angus x Chardais cows were fed barley silage, barley grain, barley straw and hay in confinement, or swath grazed on triticale or corn for 120 days. Confined cows were fed once daily and had a heated waterbowl. Swath-grazed cows were restricted to three or four days of feed at a time using electric fences; they also had an all-season waterer, bedding pack and windbreak. Forage quality was monitored weekly (confined feeding) or monthly (swath grazing); protein levels were adequate for all diets, and fibre levels and digestibility were similar. All production costs were calculated and cow weight, body condition score and ultrasound back-fat depth were monitored for all five years. Emissions of three greenhouse gases (carbon dioxide from crop production and yardage, methane from rumen digestion and manure, and nitrous oxide from soil and manure) were calculated for the first three years.

**What they learned:** Feed production: Growing feed for the confinement-fed control cows was always costlier than raising triticale for swath grazing. Corn was more expensive to grow than triticale, and at least as costly as the feed used in the confined treatment in three out of five years. But because yardage costs were lower for swath grazing than for confined feeding, average total feed costs for triticale (\$0.78/cow/day) and corn grazing (\$1.05/cow/day) were much lower than for confined feeding (\$1.98/cow/day).

*Greenhouse gas emissions* were 11 per cent lower for the triticale swath grazing and 24 per cent lower for the corn swath grazing compared to the confined feeding treatment. Nitrous oxide emissions from manure were slightly higher for swath grazing than confined feeding. But confined feeding had slightly higher carbon dioxide emissions (from burning diesel to haul feed, process feed, feed cows, and haul manure) and much higher manure methane emissions than the swath-grazed treatments. In fact, methane emissions accounted for nearly a quarter of total emissions in

the confined treatment, but less than two per cent in the swath-grazing treatments.

*Body weight and condition scores:* Over the 120-day winter feeding period, confined cows maintained their body condition and backfat and gained weight. Swath-grazed cows lost weight and a small amount of body condition and backfat. At the end of the 120-day winter feeding period, cows fed in confinement weighed at least 100 lbs. more than either group of swath-grazed cows.

Read the full article [here](#).

[Top of page](#)

## 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 indicate that there is hay available for sale in some areas, but asking prices appear to be rising as demand grows. Mixed grass/legume hay continues to be the most-advertised item, as well as small square bales. Prices per metric tonne are often skewed, as there are few ads that list bale weights. Average asking prices discovered in the past week are listed below:

Alfalfa-Grass Hay: \$121/metric tonne and \$70/bale

Alfalfa Hay: \$154/metric tonne (first and second cut combined due to low number of ads)

Greenfeed: \$58/bale (mainly oats)

Grass Hay: \$90/metric tonne (two listings)

Small Square Bales: \$6.62/bale mixed hay, \$6.50/bale grass hay and \$7/bale alfalfa

A number of listings with no price associated were found including both first and second cut alfalfa, green feed, mixed hay and timothy. Only a small percentage of listings indicated that feed test information is available upon request, or listed percentage crude protein.

Requests from those wishing to purchase hay rarely have a price associated. This month's "hay wanted" ads included mixed hay, horse hay (6 buyers), greenfeed, small square bales, round bales standing hay, and straw.

---

## USDA Market News Service Hay Report September 28, 2017

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

Compared to last week, prices were mostly steady with demand good in all regions. The NASS Wyoming Crop Progress and Condition report for the week ending September 24, 2017 indicated that cattle are being moved off summer pastures, and the hay supply looks adequate but fall pastures could be short and lead to early feeding. Pasture and range condition rated 9 percent very poor, 21 percent poor, 31 percent fair, 38 percent good, and 1 percent excellent. Alfalfa third cutting is 64 percent complete. The NASS Nebraska Crop Progress and Condition Report for the week ending September 24, 2017 states that alfalfa condition rated 2 percent very poor, 8 percent poor, 27 percent fair, 47 percent good, and 16 percent excellent. Alfalfa fourth cutting was 83 percent complete. Pasture and range condition rated 4 percent very poor, 20 percent poor, 44 percent fair, 27 percent good, and 5 percent excellent. The NASS South Dakota Crop Progress and Condition Report for the week ending September 24, 2017 states that alfalfa condition rated 33 percent very poor, 31 percent poor, 19 percent fair, 16 percent good, and 1 percent excellent. Alfalfa second cutting was 95 percent complete, third cutting was 66 percent complete. Pasture and range condition rated 32 percent very poor, 25 percent poor, 26 percent fair, and 17 percent good. 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 last week: Hay prices sold steady to weak. Hay market activity this week was moderate to active, with many buyers and sellers moving hay. Hay in the eastern portion of the state has weakened some as buyers shop around to find lower prices. Some ranchers are purchasing hay from states farther east in an attempt to find hay that cost less on a delivered price. Hay prices in the western portion of the state are steady. Ranchers are beginning to step into the market and

buy hay for winter as fall deliveries get underway. A good portion of the hay moved this week was 3rd cutting. Grass hay sold steady this week on mostly good demand and light supplies. All prices are dollars per ton and FOB unless otherwise noted. Read the full report [here](#).

**USDA Hay Price for August 28-29, 2017**

	Eastern Wyoming	Western Nebraska	Western South Dakota	Montana
<b>Alfalfa</b>				
Supreme	150	-	-	150-155 200-250**
Premium	150	-	165-175	140-155 150*
Good	130	-	-	140-155 140-155* 150**
Fair	120-125	-	-	120-155 125-155*
Utility	-			100
<b>Grass</b>				
Good	-	-	-	140 130-135*
Fair	-	-	-	115*
Timothy-Premium	-	-	-	210-240**
<b>Alfalfa/Grass</b>				
Fair	-	-	-	130-140 125*
Utility				90*
<b>Barley Straw</b>	-	-	-	50

*\*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](#)

**The Saskatchewan Forage Council Gratefully Acknowledges funding for our 'Facilitating Forage Initiatives in Saskatchewan' project through the Saskatchewan Cattlemen's Association Industry Development Fund:**



**Saskatchewan Forage Council Sponsors**

**Gold**



Silver



Bronze





SASKATCHEWAN CROP  
INSURANCE CORPORATION

**Financial Support for the Saskatchewan Hay & Pasture Report Has Been  
Provided by Saskatchewan Crop Insurance Corporation**



SASKATCHEWAN CROP  
INSURANCE CORPORATION

The Saskatchewan Hay & Pasture Report is published by the Saskatchewan Forage Council and is available online at [www.saskforage.ca](http://www.saskforage.ca). If you are interested in re-printing content, please contact our office prior to use. Opinions and information are provided by the authors and publication does not imply endorsement by the SFC.

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

STAY CONNECTED:

