



# Saskatchewan Hay & Pasture Report

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## Note from the Saskatchewan Forage Council

It's time to 'make hay' in Saskatchewan! Reports from across the province indicate that an average to above average hay crop should be expected in many areas. Areas in the south west and north west received abundant moisture this spring and forage stands show it. Less than average yields may occur in some of the south east and east central portions of SK where excessive moisture caused flood damage to forage stands earlier this spring. Also, some areas in eastern and southern SK have been finding alfalfa weevils and some parts of central SK have been somewhat dry. In this issue of the *Saskatchewan Hay & Pasture Report*, you will find details on regional crop conditions, an annual forage species project, a maturity of greenfeed at cutting project, TESA award winners, dairy forage research, corn grain and wheat DDGs, and pasture assessments. In addition, you will find a summary of forage market information from SK and surrounding jurisdictions.

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). You may also want to visit our website [www.saskforage.ca](http://www.saskforage.ca) for regular news and information related to the forage industry. - *Hay Report Editor, Coy Schellenberg*

## The SFC Celebrates 25 Years of Serving the Forage Industry

The Saskatchewan Forage Council (SFC) recently marked 25 years at their Annual General Meeting and tour held at Saskatoon on June 24, 2013. The SFC was officially formed May 2, 1988 by a visionary group of forage industry stakeholders. The original board of directors included: Robert McGillivray, S.E. Beacom, Les Bohrsen, Rodney Duczec, Don Gayton, Clare Phillips, Ken Stoner, Greg Sommerfeld and Bill Weighill. This group represented people from the forage seed, research, export, processing and livestock sectors - indicating that since its inception in 1988, the SFC has recognized and embraced the diversity of the forage industry.

The *Statement of Purpose and Objectives* submitted along with the articles of incorporation read as follows:

*The SK Forage Council cooperative is committed to the growth and development of all aspects of SK's forage and grassland industry, including production, protection, harvesting, storage, utilization and marketing. This goal will be reached by:*

*Assisting in the promotion and prioritization of research for the forage industry, and encouraging further research when it is needed;*

*Actively assisting in the dissemination of current information on forage production and utilization to members;*

*Promoting the use of forages in cropping systems to prevent and reverse the deterioration of soils and the natural environment;*

*Advising various levels of government on policies related to forage production and marketing.*



*Pasture Tour During 2013 AGM & Tour - Saskatchewan Forage Council*

In speaking with former board member, Greg Sommerfeld, he indicated that the SFC was formed as a means to provide the forage industry with a voice. Smaller fractured groups were working on forage issues, but the formation of a provincial council would be a way to pull them all together. It was also noted that forages were not adequately represented by other crop commodity groups thus there was a gap to be filled. Recognition is something that the forage industry struggles with still in a world of annual crop commodities and livestock groups.

To read the complete article, [click here](#).

## Saskatchewan Agriculture Crop Report

*(for period ending July 8, 2013)*

Warm weather has helped to advance both crop development and haying progress. Saskatchewan livestock producers have 17 per cent of the 2013 hay crop cut and eight per cent baled or put into silage, according to Saskatchewan Agriculture's weekly Crop Report. Ninety per cent of the provincial hay crop is rated as good to excellent in quality.

The majority of fall cereals are in the heading to dough stages of crop development while most spring cereals are in the jointed to heading stages. The majority of pulse crops are in the vegetative to flowering stages and flax crops are mostly in the seedling to flowering crop stages. Most canola and mustard crops are in the rosette to flowering stages of development.

Most parts of the province received large amounts of rain last week which has damaged some crops. Hail, wind and insects such as cabbage seedpod weevil have also caused damage in some areas. There have been reports of disease damage in some areas, specifically cereal leaf diseases and root rot.

Across the province, topsoil moisture on crop land is rated as 20 per cent surplus, 78 per cent adequate and two per cent short. Hay land and pasture topsoil moisture is rated as 12 per cent surplus, 85 per cent adequate and three per cent short.

Livestock water availability is adequate and pasture conditions are rated as 32 per cent excellent, 62 per cent good and six per cent fair.

Farmers are busy haying and controlling pests.

For a breakdown of regional conditions, please visit the Saskatchewan Ministry of Agriculture's [Crop Report online](#).

## Annual Forage Species ADOPT Project

### *Saskatchewan Forage Council*

The Saskatchewan Forage Council (SFC) and partners have released the final report for a recently completed ADOPT project (Agricultural Demonstration of Practices and Technologies) entitled "*Annual Forage Species Demonstration*".



This project demonstrated annual forage species for fall and winter grazing options at three sites in Saskatchewan. The demonstration included oats, barley, millet, and corn. The oats, barley and millet were swath grazed and the corn was grazed standing. The objective of this project is to help producers determine if annual forages for fall and winter grazing is a viable option for their operation, and which forage species are suitable for conditions in their area.

This demonstration gave producers the opportunity to view both cool season and warm season forage species on five acre plots on operations in Saskatchewan in order to evaluate the applicability of these species for their own operations.

*Left: Millet, Right: Barley - Saskatchewan Forage Council*

Large yield variations in cool season annuals based on seeding dates demonstrated the economic value of planting annual crops within the recommended time frame. Cool

season annuals (oats and barley) had the lowest cost per pound of dry matter only when seeded in early June. When seeded within the recommended time period, oats had the lowest cost per pound of dry matter production of all crops across all sites.

The warm season annuals (corn and millet) were more predictable in terms of yield and produced more forage per dollar spent on average than the cool season annuals. This advantage is largely thought to correlate with seeding dates in this demonstration. Corn produced the highest total dry matter yield at every site, but also had the highest input costs of any crop.

It appears that any of these annual crops could provide a good alternative to purchasing or baling hay to feed in fall and winter. The average prices to produce a pound of dry matter ranged from 1.6 cents (corn) to 2.5 cents (oats) during this project, with the added benefit of extensive grazing systems that return nutrients to the soil. Based on the varied results, producers should carefully consider if the environmental conditions are conducive to appropriate timing for sowing annual crops for grazing.

To read the complete *Project Summary*, [click here](#).

To view the *Annual Forage Species* ADOPT project Final Report, [click here](#).

## Maturity of Greenfeed at Cutting

*C.L. Rosser and G.B. Penner - Animal & Poultry Science, University of Saskatchewan*

A reality of beef cattle production in the Canadian Prairies is that a portion of the forage produced in summer must be conserved for use during winter months. Given that forage production accounts for a significant proportion of the total winter-feeding costs, strategies to improve the return on investment are worthwhile to evaluate. For producers that grow annual forages on their operation, an obvious strategy to improve the return on investment would be to increase the yield of the forage; a goal that may be easier to achieve than you might think.

The Saskatchewan Ministry of Agriculture has published recommended stages of maturity for when to harvest annual cereal grain crops such as barley, millet, oat, and wheat (Saskatchewan Ministry of Agriculture, 2008). The recommended stages are soft dough for barley, early heading for millet, late milk for oat, and early dough for wheat. While these recommendations have served as a good starting point, there are several reasons to question whether these recommendations are the most beneficial when considering dry-preserved forage (i.e. that used for green feed or swath grazing). The first reason to question these recommendations is that the recommended maturity for when to harvest is based on research conducted for silage. It is obvious that the post-harvest storage of silage and green feed are dramatically different. For example, to prepare good-quality silage, forages must be cut with appropriate moisture contents to allow for fermentation and high-density packing. In contrast, cutting forages used for green feed or swath grazing with a high moisture content increases the time required for curing in the field and may increase risk for spoilage. Silage is also chopped and processed to enhance packing and improve digestibility of both the forage and immature cereal grain contained within the whole plant. For dry-preserved forages, there is evidence that in-field maturation of the grain occurs signifying another major difference compared to silage. Additionally, from past research we know that the digestibility of silage increases over time during storage, whereas for swaths preserved out in the field, digestibility decreases over time. The final major point is that the yield of forage increases as plants mature. Thus, harvesting forages too early may inadvertently limit the potential forage yield.



*Small plots of barley, millet, oat, and wheat - Gregory Penner, University of Saskatchewan*

Considering the information presented above, the Saskatchewan Ministry of Agriculture (Agriculture Development Fund) approved a collaborative proposal between the University of Saskatchewan (Department of Animal and Poultry Science and the Department of Crop Science), Agriculture and Agri-Food Canada (Brandon Research Centre), and the Western Beef Development Centre to fund a project to re-evaluate the optimal stage of maturity for dry-preserved forages. For this project, the optimal stage of maturity for harvest was defined to be the stage that maximizes the yield of digestible nutrients.

Our results were quite consistent across crop types such that yield increased dramatically with advancing stages of maturity. For example, the dry matter yield from head elongation to mature increased from 6.9 to 16.3 metric tonne/ha (6,100 to 14,500 lb/acre) for barley, 4.6 to 12.8 t/ha (4,100 to 11,400 lb/acre) for millet, 7.0 to 13.8 t/ha (6,250 to 12,300 lb/acre) for oat, and 5.6 to 14.1 t/ha (5,000 to 12,600 lb/acre) for wheat. The concentration of crude protein decreased as the forage matured with values as low as 8.5% crude protein at the fully mature stage indicating a consequence of leaving the forage to advance in maturity. It should be noted, that even when feeding mature beef cattle, protein supplementation might be required to meet their protein requirements.

Based on the yield and nutrient composition results, it appears that delaying maturity at harvest may be a good strategy for dry-fed forages. However, this data has not provided any information on whether the forage was digestible. Our next step was to evaluate how stage of maturity affected the digestibility of the forage.

To view the original *Extension Article*, [click here](#).

## Grazing Stewards Recognized

*Chad MacPherson – Saskatchewan Stock Growers Association*

Since 1995, the Environmental Stewardship Award (TESA) has been presented annually to innovative cattle producers who realize the value of implementing environmentally and economically sustainable cattle production on their operations. The 2013 TESA sponsored by Ducks Unlimited Canada, MNP and the Saskatchewan Stock Growers Association (SSGA) was presented to Sandy Arrow Ranch of Hanley, SK at the SSGA 100th AGM in Moose Jaw.



2013 TESA Award Presented to Allen and Lillian Patkau (centre). Presented by Chad MacPherson, SSGA General Manager (far right) and Chad Haaland, nominator (far left) - Saskatchewan Stock Growers Association

Sandy Arrow Ranch, located in the sand hills along the South Saskatchewan River, is owned and operated by Allen & Lillian Patkau. The Patkau's operate a 450 cow/calf and 400 yearling operation on 4,200 acres of land.

Over the last thirty years the Sandy Arrow land base has undergone an extensive transformation as they have converted their land from annual cropping to permanent cover. The Patkau's have implemented rotational grazing, exclusion fencing, alternative winter grazing systems and off site watering to improve the productivity and profitability of their ranch.

As a result they have realized:

- Improved soil health
- Improved grass quality and plant diversity
- Reduced equipment & labour costs
- Increased stocking rates and
- Improved herd health

The Patkau's believe in improving the environmental sustainability of the ranch while maintaining the economic viability; with a long term goal of improving productivity and range health of the ranch for future generations.

## New 'Road Map' Focuses on Dairy Forage Research

*Ron Hatfield & Lori Bocher - U.S. Dairy Forage Research Center, USDA*

There are numerous challenges facing modern agriculture. Chief among these is preventing loss of nutrients and nutrient-bearing soil particles due to the sometimes rapid changes in weather events, e.g., heavy snows followed by rapid melting, heavy or continuous rain events, lack of rain coupled with high winds, etc. Forages play a crucial role in helping to diminish the harmful effects of such weather events. Unfortunately, more acres are being taken out of forage production and converted to row crop production due to short-term gains in profitability. As stewards of the land, and considering long-term sustainability goals, targets should be established that approach zero soil loss from our farm lands. Without the soil, we cannot farm. Perennial forages help hold soil in place. So what is the best route forward?

The U.S. Dairy Forage Research Center (USDFRC) in Madison, WI conducts research to help find the best route forward. A major part of its mission is to increase perennial forages on the landscape to insure both economic and environmental sustainability. As the only unit in the USDA Agricultural Research Service with the mission of improving forage use by dairy cattle, the USDFRC strives to be creative in finding ways to leverage research resources, and proactive in communicating the importance of dairy forage research.

As a way to further these goals, the USDFRC recently completed a National Dairy Forage Road Map. This road map documents many of the challenges currently facing the dairy forage industry and describes research approaches to these challenges. As updated research goals are placed on this map, there is a concerted effort to find research partners (universities, other ARS units, industry) who can leverage the work of the USDFRC and help provide the dairy forage industry with additional research outcomes in a timely manner.

### **The Structure & Goals for the Road Map**

The National Dairy Forage Road Map is based on the road map that the nation's dairy and forage producers follow. They plant seeds, grow a crop, and harvest/store the crop for feeding to livestock, for sale to other livestock producers, or for sale as a bioenergy feedstock. The key to making the farm system both economically and environmentally sustainable is to keep nutrients from being lost along the way - to capture more nutrients for growing crops and feeding animals that produce milk and meat. Most of the research at the USDFRC is directly or indirectly aimed at making more efficient use of nutrients.

With a destination of more economically and environmentally sustainable dairy



*Dairy Cow Eating Hay - Dave Christensen, University of Saskatchewan*

forage farm systems, forages and dairy cows are the vehicles. Based on past, current, and future USDFRC research, six main highways have been identified as routes to the final destination:

1. Modify plants to improve nutrient availability.
2. Develop new cropping & pasture systems.
3. Improve harvest & storage systems.
4. Improve nutrient utilization by cows.
5. Reduce nutrient escape to environment.
6. Develop new bioenergy & bioproduct uses.

To view the full report, visit the USDFRC website at:

[www.ars.usda.gov/mwa/madison/dfrc](http://www.ars.usda.gov/mwa/madison/dfrc).

## Replacing Corn Grain with Wheat DDGs

*Dr. Peiqiang Yu - Professor and Saskatchewan Ministry of Agriculture Strategic Feed Research Chair, University of Saskatchewan*

Barley is traditionally the mainstay of the western Canadian feedlot industry, with feedlot rations containing up to 90% barley grain. Corn grain is used by the western Canadian feedlot industry as an alternative feed source when the cost of barley grain is high. Corn contains more starch and is higher in metabolizable energy, but has less protein than barley which must be considered when formulating diets for feedlot cattle. Therefore, corn-based diets fed to finishing cattle in the United States are supplemented to ensure a dietary crude protein content (CP) of 12.5% of DM. Due to expansion of bioethanol production in North America, a large supply of bio-ethanol co-products like wheat DDGS is available in western Canada. These co-products are typically high in CP. We hypothesized that feeding corn in combination with wheat DDGS will improve availability of nutrients to the animal (i.e., metabolizable protein) and synchronizes protein to energy fermentation in the rumen. The objectives of this study were to determine the effects of replacing corn grain with wheat DDGS on nutritive value for ruminants in terms of detailed nutritional profiles, energy values, protein and carbohydrate sub-fractions, in situ rumen degradation kinetics, protein to energy degradation ratios, as well as protein supply to the intestine.

This study revealed that increasing wheat DDGS inclusion level increased most of the nutritional composition linearly, except for starch which linearly decreased. Metabolizable protein supply in the small intestine increased linearly with increasing levels of wheat DDGS. The inclusion of wheat DDGS in corn based diets decreased the energy values of the diet slightly. Optimum ruminal N to energy balance for microbial growth was reached by replacing 25-50% of the corn with wheat DDGS. In summary, this study suggests that corn and wheat DDGS combinations are a viable alternative for replacing feed barley grain in the beef industry in western Canada.

To read the complete *Research Paper*, [click here](#).



*Standing Corn - Leanne Thompson*

## Boots on the Ground

Dave Pratt - *Ranching for Profit Blog*, [blog.ranchmanagement.com](http://blog.ranchmanagement.com)

You can't monitor the health of land from a windshield. You've got to have boots on the ground. Even then, we tend to look across the land rather than into it. Looking across gives a distorted picture of what's really going on. We need to look into the land.



LEFT: Wildlife use but no livestock for 12 years  
RIGHT: Grazed by cattle one week each year  
Dave Pratt, [blog.ranchmanagement.com](http://blog.ranchmanagement.com)

Study the photo on the left. It was taken on a ranch in western Wyoming. The pasture on the left side of the fence hasn't had any livestock grazing in 12 years. The pasture on the right is grazed one week every year.

The ungrazed pasture looks like it has more cover, less bare soil and is generally healthier than the pasture on the right. But let's change our perspective and look down into the pastures rather than across. Study the photo on the right.

Now we see the real story. There is clearly more cover and less bare soil in the paddock with livestock grazing. The soil on the side with no grazing is not only exposed, it has formed a cap. A cap is a crust that

forms when raindrops fall on bare soil. Capping reduces water penetration and increases runoff. There is more litter covering the soil in the pasture on the right and the soil is loose. When it rains, that litter will intercept those drops so they won't hit bare soil. The litter will slow the flow and increase infiltration. That will grow more grass. Growing more grass will increase the volume of roots in the soil. Those roots will increase the organic matter content of the soil, which will further increase infiltration, and it will hold more moisture longer into the dry season. (Organic matter holds 6 times its weight in water!)



LEFT: Wildlife use but no livestock for 12 years  
RIGHT: Grazed by cattle one week each year  
Dave Pratt, [blog.ranchmanagement.com](http://blog.ranchmanagement.com)

Fence-line contrasts often look impressive, but they can be misleading. In comparing these photos it would probably have been useful to know that cattle left the pasture with the one-week graze period the day before the pictures were taken! Imagine what the side-by-side comparison looked like a week earlier or what it will look like two weeks after the next rain.

Next time you drive down the road, before you draw too many conclusions about the health and productivity of your pastures, it'd be a good idea to get your boots on the ground to see what's really going on.

To view the original article, [click here](#).



## Saskatchewan Hay Market Report

Saskatchewan Ministry of Agriculture

[www.agriculture.gov.sk.ca/FeedForageListing](http://www.agriculture.gov.sk.ca/FeedForageListing)

There is a limited quantity of reports for forage listings as of July 10, 2013. There are no reports for baled forage. There are only two listings for standing hay (800 acres) with one asking price listed of \$0.015/lb or \$33 per T (metric). There is only one listing for available pasture at a rate of \$100 per head per season with a capacity of 25 animals.

## USDA Market News Service Hay Report

The United States Department of Agriculture (USDA) collects a wide variety of information from hay markets across the country. Presented below is information from those jurisdictions closest to Saskatchewan. For complete USDA hay market listings, please visit the [USDA Market News](http://www.usda.gov/mnreports/) webpage.

### Wyoming, Western Nebraska, and Western South Dakota Weekly Hay Summary (Week ending July 5, 2013)

Dennis Widga, Torrington, WY

[www.ams.usda.gov/mnreports/to\\_gr310.txt](http://www.ams.usda.gov/mnreports/to_gr310.txt)

All classes are trading steady. Trading activity was slow to inactive on light demand.

### Weekly Montana Hay Report (Week ending July 5, 2013)

Justin Lumpkin, Billings, MT

[www.ams.usda.gov/mnreports/bl\\_gr310.txt](http://www.ams.usda.gov/mnreports/bl_gr310.txt)

Few reported sales of new crop hay this week. Hay growers are busy cutting and baling first cut alfalfa. Demand moderate for hay with prices just now starting to reported. Offers are considerable lower than last year, as the drought conditions in most of Montana is greatly improved from a year ago. Hay buyers that don't need to feed hay right now aren't actively making offers as they too are uncertain of what the market will be.

### Prices are for the week ending July 5, 2013

	Eastern Wyoming	Central & Western Wyoming	Western Nebraska & South Dakota	Montana
<b>Alfalfa</b>				
Supreme	\$265	\$240	-	-
Premium	\$230-240 \$283**	\$240	-	-
Good	\$210-230 \$210*	\$180-200	\$180-230 \$150-175*	\$170 \$160*
Fair -Good	\$200-210	-	-	-
<b>Grass</b>	\$300**	\$285**	-	-
<b>Timothy</b>	-	-	-	-

All prices in U.S. dollars per ton FOB stack in large square bales unless otherwise noted.

Most horse hay sold in small squares.

\* large rounds \*\*small squares

***Hay Quality Designations - Physical Descriptions:***

***Supreme:*** Very early maturity, pre bloom, soft fine stemmed, extra leafy - factors indicative of very high nutritive content. Hay is excellent colour and free of damage. Relative Feed Value (RFV): >185

***Premium:*** Early maturity, i.e., pre-bloom in legumes and pre head in grass hays; extra leafy and fine stemmed - factors indicative of a high nutritive content. Hay is green and free of damage. RFV: 170-185

***Good:*** Early to average maturity, i.e., early to mid-bloom in legumes and early head in grass hays; leafy, fine to medium stemmed, free of damage other than slight discoloration. RFV: 150-170

***Fair:*** Late maturity, i.e., mid to late-bloom in legumes and headed in grass hays; moderate or below leaf content, and generally coarse stemmed. Hay may show light damage. RFV: 130-150

***Utility:*** Hay in very late maturity, such as mature seed pods in legumes or mature head in grass hays, coarse stemmed. This category could include hay discounted due to excessive damage and heavy weed content or mould. RFV: <130

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