



Forage and Livestock eNews

Updates and information from across the industry

October 18, 2016 - Vol 8, Issue 10

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Greetings!

It's a busy time around the province as forage and livestock producers try to get fall work wrapped up while dealing with some challenging weather conditions!

The October Forage and Livestock eNews includes articles on fall grazing, storing hay, diseases to be aware of in feed



sources and more to help you prepare for winter. If you're thinking about hay prices this year, watch the SFC website for the fall 2016 Forage Market Report, coming out soon. To view past Forage Market Reports, [click here](#).

Please feel free to forward the eNews on to others you think may be interested in forage and

livestock industry updates -signing up is as easy as clicking the 'Join Our Mailing List!' on the left.

We always appreciate your feedback, event listings or article suggestions.

Your *Forage and Livestock eNews*
Editor,
Laura Hoimyr

"Rest and recovery". Two words that were echoed many times throughout the Tenth International Rangeland Congress held in Saskatoon from July 16-22. The aim of this conference was to promote the exchange of information on all aspects of rangeland.

"If you can't measure it, you can't manage it". This concept was also promoted by a number of rangeland specialists from around the world who shared their ideas about tools for assessing grazing management techniques.

The Grazing Response Index (GRI), developed by Dr. Roy Roath and his team from Colorado State University, brings the above two concepts together in a simple and effective manner that producers can use on-farm to better understand how their forages respond to their grazing techniques. In Saskatchewan, approximately 30% of all land used for agriculture is rangeland and pastureland grazed by livestock (Manitoba Environment - Rangelands and Pasturelands: Theme Document 2013).

The GRI is intended to be used on an annual basis to help evaluate the effects of the current years' grazing on the forage plants and to help plan management strategies for the following year. The GRI involves three factors: grazing frequency, grazing intensity and opportunity for plant recovery.

Frequency is the number of times that plants are defoliated by cattle during a grazing period (the time when cattle are in one field or paddock). Plants that are defoliated three or more times within this period respond negatively. Research shows that native plants take approximately seven to ten days after each defoliation to grow tall enough to be grazed again.

Intensity is a measure of how much leaf material has been removed during the grazing period. The more leaf area remaining after grazing, the more photosynthetic capacity there is to replenish carbohydrates and recharge root systems (prerequisites for new leaf growth). It is scored immediately after the cattle exit the field or paddock, and described using three levels of defoliation - light, moderate and heavy.

Opportunity is how much time plants have for growth prior to grazing, or for regrowth after grazing. This allows plants to meet their nutrient and growth requirements during the growing season and allows them to adjust to the impacts of relatively high grazing intensity or frequency. The opportunity for plants to grow or regrow is dependent on soil moisture, fertility, air temperature and leaf area.

The overall GRI rating for an individual pasture is determined by adding the index values for frequency (-1 to +1), intensity (-1 to +1) and opportunity (-2 to +2). It estimates expected response of the plants to the current grazing management. A positive overall value indicates the management is beneficial to plant health, structure and vigour. A negative value indicates that plant health will be harmed if current management techniques are continued over the long term. A zero rating is neutral.

For example (see photo), Long Season Ranch has a single, very large field of native rangeland that was continuously grazed. Frequency was scored as (-1) because plants were exposed to grazing all season long. Intensity was scored as moderate (0), partially due to the large field size. No rest and recovery time were allowed, so this system was scored as (-2) for opportunity. Therefore, the overall GRI score was $(-1) + (0) + (-2) = (-3)$. If the ranch continues this style of grazing over the long term, forage production will decrease resulting in a decline in the number of cattle that it can sustain.



What if this same field was divided into smaller pastures as part of a rotational grazing system? With shorter grazing periods, the number of times a plant could be grazed could be reduced, and with most of the season being ungrazed, opportunity for rest and recovery would be increased. As in the example of the Circle Ranch field (see photo), the overall GRI score could be increased to (+2) (frequency (0), intensity (+1) and opportunity (+1)). With this positive rating, this pasture would be expected to have improved in the current year.

By reviewing the overall GRI for each pasture, producers can adjust grazing management techniques to

maintain or achieve positive scores over their entire grazing system. In combination with other grazing management tools, GRI can be used to improve long-term forage and livestock productivity, and ultimately the health of rangelands and pastures. However, this index is not intended as a substitute for assessing rangeland health, which requires periodic observations of indicators such as plant community structure, plant species and soil exposure.

At present, the GRI is primarily developed for native grasslands, but is being tested on tame pastures in central Saskatchewan. While the overall GRI principles remain similar for tame pastures, tame forages are expected to tolerate shorter regrowth periods and higher grazing intensities compared to native forages. For more information, please contact Lynne at 204-723-0602, or lynnepinder@gmail.com. A GRI factsheet and worksheet are available at <http://publications.gc.ca>.

References:

Grazing Response Index: A simple and effective assessment of grazing management. Agriculture and Agri-Food Canada. Electronic version available at: <http://publications.gc.ca>

Manitoba Envirothon - Rangelands and Pasturelands: Theme Document 2013. Lindsey Andronak, Barbara Fuller, Mae Elsinger.

Lynne Pinder is the Extension Coordinator for the Building Long-term Capacity for Resilient Cow-calf Production Systems Project, which is funded through the Beef Cattle Research Council with financial contribution from the Manitoba Beef Producers.

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Be Aware of Diseases Affecting Feed Source Quality and Safety

Whether you are growing cereals or forages as feed sources for livestock, you're likely aware of concerns over fusarium head blight, mycotoxins and ergot. These diseases tend to be more prevalent on wetter years and can affect the quality of cereals as well as some grasses. The Saskatchewan Ministry of Agriculture has information to assist you in identifying these diseases and determining if feeds are safe for livestock. Excerpts and links are found below.

Fusarium Head Blight and Mycotoxins

Fusarium Head Blight occurs mainly in wheat, but also affects barley, rye, oats and some grasses. The disease overwinters in the soil on crop residue and root crowns. It can also survive on the grain. It infects crops from flowering through to the soft dough stage. The most damaging level of infection occurs during the flowering stage.

On the livestock side, the concern is not necessarily about Fusarium; the issue is with the mycotoxins that *F. graminearum* may produce. This particular species produces a number of mycotoxins, including zearalenones and trichothecenes. Trichothecenes are comprised of several metabolites, including deoxynivalenol (DON or vomitoxin), diacetoxyscirpenol (DAS), T2 toxin and HT2 toxin. By far, DON is the toxin most commonly produced. In fact, the industry uses DON as a marker. It is an indicator that other toxins may be present.

DON is a relatively mild toxin. Animals consuming feed containing high levels of DON may have a reduced immune response. Feed refusal is common. Swine are the most sensitive of the various species of livestock. Beef cattle can tolerate much higher levels of DON. DON is found in the infected grain and chaff covering that grain. Little, if any, is found in the straw and leaves of the plant.

Agriculture and AgriFood Canada has regulatory guidelines for maximum tolerated levels of DON in livestock diets. Rations for beef cattle and poultry may contain up to 5 parts per million (ppm) DON or 5,000 parts per billion (ppb). Diets for swine, young calves and lactating dairy animals may contain up to 1 ppm or 1,000 ppb DON. Although values are not listed for horses, it is advisable to keep total dietary intake of DON at 1 ppm.

If Fusarium-contaminated grain is going to be fed to livestock, it is advisable to have it tested at a feed testing laboratory for the presence of mycotoxins. A number of labs, elevators, terminals

and pelleted feed companies are using ELISA (enzyme-linked immunosorbent assays) tests to measure DON levels in suspect grain samples. This technology is relatively inexpensive, quick and accurate. It does not detect the presence of other mycotoxins when using the test strip for DON. For example, HT2 can be present at high levels in infected grain with no DON in the sample.

To read the full factsheet, [click here](#).

Ergot of Cereals and Grasses

Ergot is a plant disease caused by the fungus *Claviceps purpurea*, which infects the developing grains of cereals and grasses. Ergot symptoms become evident during kernel formation, when ergot bodies are formed in place of kernels.

The ergot bodies, which are also called sclerotia, are formed from a hard mass of fungal mycelium, and are the over-wintering structures in the disease cycle. The ergot bodies have a hard protective rind on the outside, which is black to dark purple in colour, and a white to grey coloured interior. They are often elongated and protrude from the glumes of maturing heads, and may be up to 10 times larger than the seed it has replaced.

Ergot is most prevalent in years when continuous moist conditions prevail during both stages of the disease cycle. First, moisture is needed at the soil surface during spring and early summer to promote germination of ergot bodies. Second, wet, cloudy and cool weather extends the period of flowering and increases the window of infection for spores to enter the florets. These weather conditions may also favour insect populations of aphids, thrips, midge and leaf hoppers, which serve as potential vectors of sticky spores.

Ergotism can still be common in livestock when fed contaminated grain at the farm level. Symptoms may include lameness, loss of body parts from gangrene, abortions in pregnant animals, seizures, and eventually death. Consumption of contaminated feeds with sub-lethal doses may still lead to problems of poor growth and performance, loss of milk production in lactating animals, and animals going "off feed." Animals will recover from these milder symptoms when contaminated feed is removed. Animals differ in their susceptibility to ergot poisoning. Young or pregnant animals are considered highly susceptible. For beef cattle, current recommendations indicate that ergot may be present at levels up to 0.1 per cent (by weight) of their daily dry matter intake.

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

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Forage Seed Grower Information Session and Annual General Meeting

By: Ray McVicar

Saskatchewan Forage Seed Development Commission (SFSDC Executive Director)

Please mark your calendar for the SFSDC Forage Seed Grower Information Session

d sweet clover, sainfoin, cicer milkvetch, slender wheatgrass, hybrid brome grass and timothy. NARF and U of S also tested Plant Growth Regulators (PGRs) on established red, alsike and sweet clovers.

and Annual General Meeting

Thursday December 1, 2016
1:00 PM to 4:30 PM
Nipawin, SK
Nipawin Evergreen Centre
Jackpine Room



Information Session Highlights:

- Forage Seed Research
 - Weed Control
 - Plant Growth
 - Regulators on Clovers
 - Alternate Row Companion Crop Establishment
 - Red Clover Insect Control
 - Herbicides on Established Forages at the University of Saskatchewan
- Insect Pest Review on Forage Seed Crops
- Forage Crop Variety Testing Project
- Forage Seed Market Update

SFSDC Annual General Meeting:

- Forage Seed Industry Issues
- Opportunity for Input into the Commission's Future Plans
- Review of Activities and Financial Reports

Admission is free and refreshments will be available.

For more information visit the SFSDC website at: www.skforageseeddc.com or contact the office at 306-789-1958 or email sfsdc05@gmail.com.

Image: SFSDC AGM December 2, 2015

Image Source: SFSDC

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Fall Grazing Reminders

By: Travis Peardon, Regional Livestock Specialist, Saskatchewan Ministry of Agriculture, Outlook, SK

Grazing as late into the fall as possible is a great way to cut down on winter feed costs for cattle producers. Every day that the grazing season is extended, is one less day of providing feed for your cow herd. Although extending the grazing season is a great way to reduce feed costs it does come with some risks and management challenges.

Bloat is a common concern at this time of year if producers are grazing regrowth on alfalfa fields. After a frost the cell walls in the alfalfa plant rupture and increase the release of soluble protein in the plant increasing the chances of bloat in cattle. If a frost occurs when cattle are grazing alfalfa, cattle should be pulled immediately. Producers need to wait a minimum of seven days or longer after a frost or freeze before putting cattle back on the field. This should allow the plant to start drying down reducing the risk of bloat. Likewise, if it was not a complete killing freeze



and just a light frost, each subsequent frost or freeze needs to be monitored for additional plant damage.

Grazing stubble fields is another way to extend the grazing season. This allows cattle to make use of grass in sloughs, along fence lines and other areas that were not cropped as well as straw and chaff. Caution must be exercised when grazing fields with crop regrowth. Lush regrowth of volunteer cereals pose a risk of nitrates after a frost. Nitrates are a form of nitrogen easily absorbed by the plant from the soil. Once absorbed it is transferred through the stem to the leaves where it is converted into amino acids and proteins. The plant needs these compounds for growth and seed production. When a frost occurs, the leaf tissue is injured and can no longer convert the nitrates to protein. This results in an accumulation of nitrates to levels that are potentially toxic to livestock. A rest period of seven to 14

days is recommended along with forage testing. Potentially hazardous nitrate levels in the plant decrease if there is leaf tissue alive to utilize the nitrates. It is difficult to know for certain when nitrates are no longer a risk to grazing livestock. For this reason it is advisable to test forages that are thought to be a nitrate risk.

Prussic acid is another grazing concern after a frost, though it affects fewer plant varieties than nitrate toxicity. Prussic acid is also known as hydrogen cyanide and is reported to be potentially lethal at levels greater than 500 parts per million (ppm). Prussic acid is formed within a damaged plant when certain naturally occurring plant compounds are degraded. Prussic acid toxicity occurs most commonly in sorghum and related plant varieties, white clover, vetches, as well as in brassica plant species (i.e. mustard and canola). Prussic acid toxicity is worse with younger plants. Animals should be taken out of potentially harmful pastures after a frost for a period ranging between three to 10 days depending on the plant type, maturity and severity of the frost.

Cattle grazing canola regrowth may be ingesting large amounts of sulphur which can cause issues. Excess sulphur will have negative effects on herd performance including sulphur toxicity and polioencephalomalacia (PEM) or polio. PEM can cause cattle to experience blindness, lethargy, seizures and possibly death. Last year cases of polio were reported from cattle grazing canola regrowth.

It is also important to remember that cattle grazing stubble fields may require additional feed supplementation. Once cattle have consumed grass from sloughs and waste areas the nutritional value of the straw and chaff being consumed will not be enough to meet the daily feed requirements. Additional protein and energy will need to be supplemented.

Minerals and vitamins must not be overlooked during the fall grazing period. This is a good time to make sure calves have good mineral status which will help them stay healthy during weaning. Monitoring your herd closely during this time will ensure that you avoid any problems.

For more information, contact your local Ministry of Agriculture Regional Services Office or the Agriculture Knowledge Center at 1-866-457-2377.

To read this and other related articles on the Saskatchewan Agriculture website, [click here](#).

Image: Alfalfa plant with frost

Image Credit: Laura Hoimyr

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Getting ready for winter involves moving and storing hay for many livestock producers around the province. Barry Yaremcio, beef and forage specialist with Alberta Agriculture and Forestry discussed the pros and cons of different hay storage methods in the August 8, 2016 issue of Agri-News:

When it comes to stacking bales in the field, there are a number of different methods for stacking.

One method is the pyramid style, with three bales on the bottom, two in the middle and one on the top. "That's actually the poorest way to do it," says Yaremcio. "If it rains after the stacks are made, or if snow melts during the winter, all that moisture will work its way through the stack from the top down, and cause spoilage wherever the bales contact each other."

He says the mushroom stack, with bottom bale flat and the second one on top, is better than the pyramid but still will end up with a lot of damage. "The best method, however, if you have the space, is to put single bales in rows with the individual bales in the rows separated by about six inches so they don't touch."

If bales are weathered over winter, they can potentially lose from 100-200 lbs. due to deterioration, protein content may drop 1-2 per cent, and digestibility, if used in the second year, can be down 10-15 per cent.

"For outside storage, hard-core bales are better than soft bales, and the tighter you can get them the better, and net wrap is preferable to twine."

To read the full article on the Alberta Agriculture website, [click here](#).

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Pay Close Attention to Field Traffic

New Holland Agriculture

It's important to get bales off the field as quickly as possible after baling and to pay close attention to limit the amount of traffic over the field. When wheel traffic damages alfalfa plants, they have to begin growing again from the tip of the shoots at the ground. Therefore, minimizing stubble damage is one of the keys to overall productivity.

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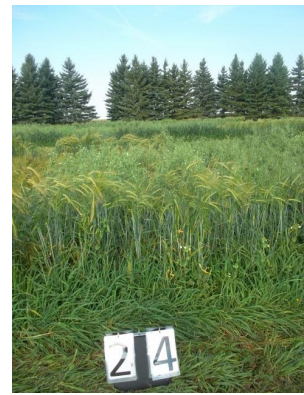
Saskatchewan Forage Council Featured Project...

[Demonstration of Forage Peas in Mixture with Cereals for Greenfeed Production](#)

Completed: January 31, 2016

"Another way to evaluate the treatments is shown in Table 6 looking at total pounds of protein produced per acre, and this is where the full benefit of the pea/cereal mixtures can be shown. The highest protein yield was harvested from the plots containing the pea/cereal mixtures. In particular, the two highest protein yielding treatments were the Haymaker (30) and Horizon pea (100), and Maverick barley (30) and Horizon pea (100) mixtures."

This project was supported by the Agricultural Demonstration of Practices and Technologies (ADOPT) initiative under the Canada-Saskatchewan Growing Forward bi-lateral agreement. Saskatchewan Ministry of Agriculture Forage Specialists partnered on this project to oversee the demonstration sites. The SFC would like to thank Denis Lueke of One Oak Farms (Humboldt, SK) and Scott and Shawn Fraser (Pambrun, SK) for donating seed for the project. Thank you to the research farms for their excellent work at the demonstration sites: Wheatland Conservation Area (Swift Current, Northeast Agriculture Research Foundation (Melfort, SK), East Central Research Foundation (Yorkton, SK), and Western Applied Research Corporation (Scott, SK).



To view the Saskatchewan Forage Council's ongoing and completed projects, [click here](#).

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Upcoming Events

Saskatchewan Trade and Export Partnership

October 18 & 19, 2016

Regina, SK

This year marks the 20th anniversary of operations for the Saskatchewan Trade and Export Partnership (STEP) as an export and market development organization. The 20th anniversary year will culminate in the AGM and Trade Conference October 18th and 19th in Regina, which will include an opening reception highlighting efforts of current and former staff, Board of Directors, and the founding members of STEP.

Visit the [STEP website](#) to learn more.

Getting Started in Sheep "The Basics Workshop"

Nov 4 & 5, 2016

Saskatoon, SK

This two-day course covers the basics in the sheep industry. It is designed for those looking to get into sheep and those who are already in the business at a beginner level. Cost is \$150 plus GST per person or \$225 plus GST for a couple.

To view the course outline, [click here](#).

Canadian Forage & Grassland Association Conference

Nov 15-17, 2016

Winnipeg, MN

Register now for the 7th Annual CFGA Conference hosted by the Manitoba Forage and Grassland Association at the Fairmont Hotel in Winnipeg. The theme of this year's conference is Grass and Green in 2016 to recognize the important role of Canadian forage and grassland managers in providing significant environmental and economic benefits to Canadians from coast to coast.

To register or to learn more, visit the CFGA [website](#).

Canadian Western Agribition

Nov 21-26, 2016

Regina, SK

Canadian Western Agribition, located in Regina, Saskatchewan, Canada, is the best beef show on the continent and the largest livestock show in Canada. The show is anchored by beef cattle and features horses, bison, sheep, goats, and an extensive agribusiness trade show. Canadian Western Agribition is a blend of agriculture, First Nations, and festive entertainment, featuring live music, shopping, and food.

For more information, visit the [Agribition website](#).

2016 Saskatchewan Dairy Conference

Nov 29-30, 2016

Saskatoon, SK

The Saskatchewan Dairy Conference will be held at the Saskatoon Inn on November 29-30, 2016. To register, visit the SaskMilk website, [activities and events page](#).

Foraging into the Future IX

December 7 & 8, 2016

Swift Current, SK

The theme for Foraging into the Future IX is Building Blocks of Success. Topics will include: What is Soil Health, Cocktail Cover Crops, Water Development Projects, Forage Rejuvenation and much more. This event will take place at the Credit Union Iplex in Swift Current.

For more information, contact the Saskatchewan Ministry of Agriculture at 306.778.8285 or email susan.gering@gov.sk.ca

To view the poster and agenda, [click here](#).

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Saskatchewan Forage Council Membership

Be Sure Your Voice in the Forage Industry Counts!

- Incorporated under *The Co-operatives Act*, a membership fee for the SFC is a one-time cost of \$25.00;
- The SFC has worked in the province on behalf of **ALL** forage industry stakeholders (and that's a very extensive and diverse group) for more than 20 years;
- If you are involved with production, management, protection, harvesting, storage, utilization or marketing of forage products, the SFC wants your involvement and input;
- The SFC is committed to placing a focus and awareness on the importance of forages in our province.

The SFC at a glance...

With a mandate to enhance the province's forage and grassland industry, the Saskatchewan Forage Council (SFC) strives to partner with all sectors of the industry - producers, industry organizations and companies, government and university.

Formed in 1988, our objectives are focused on the development and dissemination of information related to the production and utilization of all forage resources, prioritization of forage research and collaboration with governments to develop and implement effective policies and programs as they relate to forage production and marketing.



To learn more about becoming a member [Click Here](#).

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We welcome questions about article submission or to find out more about sponsorship, please contact the Saskatchewan Forage Council at:

Email: office@saskforage.ca

Phone: 306.329.3116

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



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