



The Blade

Creating an Awareness of Forages

*Monthly
Newsletter
of the
Grey Wooded
Forage Association*



OCTOBER 2017



Weevil Release

Message from the Chair

Amy Leitch



Now that we are entering fall with all its beauty and imminent change, we are all feeling a little rushed. I hope with this short message I bring a moment of slowness to you all. A meeting I recently was at had a take home message that I think of daily.

“DO the Ordinary Spectacular.”

I will leave that for you readers to mull around. As Producers we are all trying to do just that, I think.

Have You Mastered it? That is a good Question.

Obviously, some items on the Farm have.

Why did the Scarecrow win the Noble Prize?

Because he was out standing in his field!

Olds, October 24, 2017

Tools to build your cow herd

This workshop will discuss how genetic and genomic tools can help identify superior animals to develop a productive and profitable cow herd. With weather related challenges in recent years there is a huge variability in feed supply and quality; speakers will discuss potential health and nutrition related problems producers may face this winter and how to minimize difficulties during calving and breeding seasons. A local veterinarian will speak on local health issues and concerns.

Agenda	Speakers
9:00 a.m. Registration	
9:30 a.m. Welcome / Introduction	Local Forage Association
9:45 a.m. “My Herd and Me” Genetic tools for the commercial herd	John Crowley or Susan Markus or John Basarab
10:45 a.m. Break	
11:00 a.m. DSM - Vitamin requirements for cattle	Brian Campbell or Mark Engstrom
Noon Lunch	
1:15 p.m. Current feed issues in Alberta and upcoming challenges	Barry Yaremko
2:15 p.m. Break	
3:15 p.m. Proper nutrition increases animal performance and reproductive efficiency	Barry Yaremko
3:50 p.m. Local issues and concerns	Local Veterinarian

Registration

Pre-registration is required; includes lunch, and nutrition breaks

Registration Fee: \$30 per person

Registration deadline: 7 days prior to event and no refund after deadline

For more information Contact: Andrea Hanson at 403 948-1528 or 310- FARM (3276)

Date	Location	Register
October 23, 2017	Lethbridge College	310- FARM (3276)
October 24, 2017	Olds College	310- FARM (3276)

The Blade is a monthly publication produced by The Grey Wooded Forage Association

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GWFA Mission Statement

To promote environmentally and economically sustainable forage and agricultural practices.

GWFA Vision Statement

The community is engaged in regenerative agricultural production methods.

The Grey Wooded Forage Association is a member of ARECA



This publication is made possible in part with funding from:



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Production Along James River
Colin Newsham

Tackling Transparency and How it Builds Trust

Ginette Boucher

Public Trust Summit 2017

The Canadian Centre for Food Integrity

Tackling Transparency and How It Builds Trust

I attended the Public Trust Summit in mid September with the hopes of gaining some insight on transparency, make some connections with industry and learn. Transparency has been in the fore front of the mind of each consumer for some time and it is not going away.

The top two levels of concerns are rising cost of food and keeping food affordable.

What is transparency?

The Canadian Centre for Food Integrity defines it transparency as: "providing the type and amount of information, using language and terms that are easily understood, that helps you make informed decisions."

Seven Elements of Trust-Building Transparency:

Motivation: Act in a manner that is ethical and consistent with stakeholder interests.

The company does not intentionally mislead people. When making decisions, the company takes public interest into consideration rather than only considering profit.

Disclosure: Share all information publicly, both positive and negative

The company is forthcoming with information that might be damaging to the company, but important to me, and makes it easy to find the information.

Stakeholder Participation: Engage those interested in your activities or impact.

The company explains how it makes decisions, and asks the opinions of people like me before making decisions. The company offers an easy way for me to provide input on decisions that affect people like me.

Relevance: Share information stakeholders deem relevant.

The company demonstrates it understands what information is relevant to people like me. The company involves people like me to help identify the information I need.

Clarity: Share information that is easily understood and easily obtained.

Credibility: Share positive and negative information that supports informed stakeholder decision making and have a history of operating with integrity.

Accuracy: Share information that is truthful, objective, reliable and complete

The company provides accurate information that is reliable, complete and does not leave relevant information out.

Sustainability is a journey

Transparency is no longer an option if we want to earn trust

Here's a few quotes I took out of this conference:

"Transparency may be *rationaly* defined as truthful infor-

mation, but perhaps more importantly, it translates to an *emotional* feeling of confidence."

"The food transparency movement is growing and is driving a healthy dialogue between consumers, business and government."

"The food industry, is in the midst of a revolutionary change and the growing call for transparency has become unmistakable."

"In a world where nothing can be hidden, we better have nothing to hide."

Additional resources:

Agriculture in the Classroom: <http://www.aitc-canada.ca/en/alberta.html>

Agriculture More Than Ever: <https://www.agriculturemorethanever.ca/>

Farm & Food Care: <https://www.farmfoodcare.org/>
The Canadian Centre for FOOD INTEGRITY, www.foodintegrity.ca

World Wildlife Fund: www.worldwildlife.org

AgSafe Alberta: www.agsafeab.ca

Crop Life Canada: <http://croplife.ca/>

Other resources:

@sandibrock

@lesleyraekelly

#myfoodchoice

It's all about telling our story, what we do and how we do it....

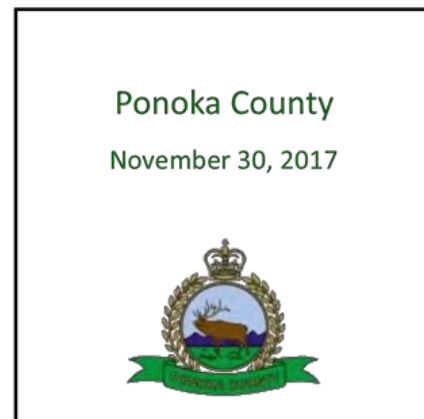
The issue is not what to think, it's how to think

Ginette



Save the Date

Environmental Farm Plan Workshop



Canada Thistle Stem Mining Weevil

Devin Knopp, PAG

As project season has wound down for GWFA, we finally got our long awaited for Canada Thistle Stem Mining Weevils. They came on September 23rd. We developed two different projects around the weevils and had sites ready to go last year, but unfortunately a cold weather snap in Montana prevent the weevils from being harvested. However, this year, they came as planned and we managed to release 14 trays. We'll be releasing a couple more trays hopefully next week.

The two projects we developed are called the Monitoring project and the Establishment project. We developed the two projects to evaluation the weevils differently. The monitoring project is designed to release a single cup or 105 weevils into a set area. We will monitor that site and do thistle stem dissections and plant population counts to see how those 105 weevils have flourished and affected the thistle population over a five-year period. The point is really to see how well they survive and breed, with the benefit of obtaining some thistle control.

The Establishment project is a bit more complex. It is designed to have multiple test or release sites. We are looking for a relatively homogenous area with equal thistle density over a longer stretch of land. Say along a creek bank or wetland area. Here we spaced our sites out as much as we could to prevent the weevils from moving into a neighbouring site. We released three cups of weevils (315 weevils) in the first site, two cups (210 weevils) in the second site, and one cup (105 weevils) in the third location. We also staked out a fourth control site where we didn't release any weevils. The control is meant to monitor the thistle population growth and determine if any weevils have spread out of their release site into the neighbouring thistle patches. The reason for different release numbers, is to see if we can put out a population of weevils that can speed up the control of Canada Thistle, at a reasonable cost, and success rate. We are also looking for information regarding how well they winter, breed, and decrease a population of thistle, with a varying initial adult population. There are a lot of questions we would like to get answered. One of the biggest questions is, how many weevils do I need to release to get control of thistle over X area? We're also hoping we can increase the rate of reproduction to get spread throughout an entire infestation quicker.

The two establishment sites we are running are with Mountain View County. We have four monitoring sites, two with Medicine

River Watershed Society and two with Lacombe County. Each of our partners has shown a great concern over some of the severity in which Canada Thistle has infested areas of interest for them.

They are looking at these projects with great interest in hopefully providing their constituents with another thistle control option.

I've been asked a few times about the effectiveness of these weevils. Some people have read different articles or heard other presentations that state varying degrees of success for thistle control. The way I look at the weevils, they are another tool to put in the tool box. The best example of where I see great success is in environmentally sensitive areas. The banks of rivers, streams, lakes, and wetlands all have buffer zones around them where herbicide applications are prohibited or can only be used at such low amounts that they're about as effective as throwing a bucket of water on a wildfire. A lot of these same areas have banks or other features that prevent equipment, livestock and people from doing mechanical or grazing control. In these situations, releasing this insect to work for you and suppress that population over time to an acceptable level becomes very effective, since before there were very limited or no options.



Unfortunately, we've gotten a few people who are against the release of the Canada Thistle Stem Mining Weevils. They believe that these weevils are the same ones that eat canola pods or their pea plants in the spring. Those are legitimate fears, the Canada Thistle Stem Mining Weevil is being introduced, its not a native

species. These other weevils can be quite destructive to canola fields and pea fields. However, the Canada Thistle Stem Mining Weevils, is a picky weevil and only consumes the tissues of thistle. It requires the thistle to complete its life cycle. Without Canada Thistle, they won't breed and the adult population will die out. The weevils will not interbreed with different species creating a super weevil that will destroy crops. The other weevils in question are the Cabbage Seed Pod Weevil and the Pea Leaf Weevil. They are separate species that require totally different plants to complete their life cycles, and will not interbreed with each other or the Canada Thistle Stem Mining Weevil.

We're very excited about this project, and look forward to seeing how well these weevils over winter. We'll be doing thistle stem dissections late next spring to see if they managed to breed and get an estimate of the total adult population that survived winter. It's a long-term project and we'll be keeping you updated on how it goes through the coming years, with tours, data and pictures. If you have any questions about the weevils please don't hesitate to give us a call or come by one of the sites next year to see how they're doing.





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FOR MORE INFO AND TO REGISTER VISIT OUR
WEBSITE: www.absoilgrazing.com

Contact Alberta EFP

For more information, go to www.AlbertaEFP.com or send an email to inquiries@AlbertaEFP.com

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A Potential New Feed Ingredient: BioChar

Barry Yaremico, Lee Eddy

September 27, 2017

Improving production efficiencies in the cow herd can improve the bottom line. Adjusting management strategies to reduce the number of open cows or improving calf growth rates are two production parameters that contribute to the economic success of an operation.

Pressures from the political arena, media (including social media) and different organizations are pointing the finger at cattle production as a "major" contributor of greenhouse gasses to the environment.

To address the production efficiency and environmental concerns, there is a research project starting in April 2018 at Agriculture and Agri-Food Canada Research Station in Lethbridge. We will evaluate Activated BioChar a "new" feed ingredient that has shown good results in other parts of the world to reduce greenhouse gas production and improving feed efficiency / growth rate in back-grounding calves and finishing animals.

Agencies involved in this project are Agriculture and Agri-food Canada, Alberta Agriculture and Forestry. Cool Planet California, Blue Rock Animal Nutrition and the universities of Alberta, Lethbridge and Manitoba.

Two hundred head of 500 pound calves will be put onto one of four treatment groups. The barley grain, barley silage diet without BioChar as the control, and three different levels of BioChar to determine if there is a dose response or to find an optimum dose to improve feed efficiency, average daily gain and reduce methane emissions. BioChar is a granular powder that can be mixed into the silage as part of a TMR or into a grain mix.

The theory behind BioChar is that when activated, it has very large surface area of 400 square meters plus per gram. In the rumen the microbes that capture methane live in the surface film. When the surface area is increased, it results in an increase in the number of microbes that capture methane. As a result, we should reduce the amount of methane released and hence more energy retained by the animal. The retained energy should result in an increase of average daily gain and an increase of feed efficiency.

Some of the other objectives of the research is to evaluate the impact of BioChar on volatilization of nitrogen fractions from manure in the feedlot pens. This would reduce GHG emissions.



There are also reports that manure containing BioChar improves water infiltration into soil by changing soil structure when the manure is worked into the soil. There are claims that soil fertility is improved because nitrogen retention is improved. A three year trial evaluating yield and quality of annual and perennial crops structure is planned to evaluate the effect of BioChar on soil and crop productivity.

This feedlot trial is the first experiment. If results are promising, drylot feeding trials for mature cows is the next step. 80% of the methane produced in the annual life cycle of a beef animal is produced by the cow. The final experiment would be to evaluate methane emissions on pasture when BioChar is fed to cows over the summer.

BioChar is currently registered as a coloring agent for feed products under the Canadian Feed Act. In order to have the registration changed, there must be results from three experiments showing an improvement when BioChar is used as an ingredient in a ration.



GENOMIC APPLICATIONS IN THE COMMERCIAL BEEF SECTOR

Dr. John Basarab

Beef Scientist, Alberta Agriculture and Forestry

The emergence of genomic tools for the commercial herd.

Dr. Troy Drake, DVM

Owner, Herdtrax

The role of the veterinarian in the delivery of genomic tools and the importance of data management.

Michelle Miller

CEO, Delta Genomics

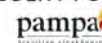
The linking of logistics... pasture to lab (and back again).

Producer, TBD

Producer Perspective

The view from the ranch: beef genomics in practice.

DINNER AND STUDENT POSTER SESSION AT



For the full 2-day program:
www.livestockgentec.com





University of
Lethbridge

News Release

University of Lethbridge-led study looks to reduce methane gas emissions in cattle

Tuesday, July 11, 2017

Seeking to mitigate the greenhouse gas contributions of the region's agricultural sector, a University of Lethbridge-led study has been granted \$1.1 million by the federal government's Agricultural Greenhouse Gases Program.

"Canadian farmers are great stewards of the land and the environment. These new investments are part of the government's commitment to addressing climate change and ensuring our farmers are world leaders in the use and development of clean and sustainable technology and processes," says Lawrence MacAulay, Minister of Agriculture and Agri-Food.

Dr. Erasmus Okine, University of Lethbridge vice-president (Research), is principal investigator on the study, which will investigate whether the use of biochar in beef cattle diets reduces the amount of methane they produce.

Because a single cow can produce 200 to 500 litres of methane a day, the cattle industry is estimated to be responsible for about 38 per cent of agricultural greenhouse gases. Cattle release methane and carbon dioxide by silently belching about once a minute. If they don't release the gas, they begin to bloat, a serious condition that can lead to death in a short time. Okine and his fellow researchers want to find a way to reduce the amount of methane produced while still maintaining a productive herd.

The project, one of 20 across Canada to receive funding through the Agricultural Greenhouse Gases Program, is called Assessment of the Potential of Biochar Added to Beef Cattle Diets to Reduce Greenhouse Gas Emissions in Agriculture.

"Reducing the amount of greenhouse gases produced by the cattle sector is important both environmentally, economically and helps build public trust," says Okine. "Producers want to operate in a sustainable fashion and our study results will help them do that."

The researchers will be testing the effects of biochar, a charcoal-rich product that results from pyrolysis of biomass, which can include wood, manure, leaves and organic waste as starter material. Pyrolysis is burning a substance in the absence of oxygen and, in this study, the researchers will use biochar created from wood products.

In the lab, biochar has been shown to create favourable conditions for the growth of bacteria that aid in digestion. The research study will examine whether small amounts of biochar added to cattle feed improves the efficiency of digestion and thereby reduces the amount of methane produced.

"What we are trying to do is a proof of concept in terms of adding biochar to the feed and to see whether there are benefits on the larger scale to the cattle we are testing," says Okine.

The first step of the study is to analyze the content of six biochar products to determine the best product to use in the study. Once a biochar product has been chosen, the study will move to Agriculture and Agri-Food Canada's Lethbridge Research and Development Centre where the biochar will be added to cattle feed, first on individual animals in chambers and then in a feedlot setting. Researchers will calculate the methane produced, measure the average daily gain, monitor the health of the cows, analyze the manure and test its effect on soils. In the feedlot setting, methane levels will be measured using sensitive instruments placed upwind and downwind of the feedlot. The difference in methane levels from the two readings gives an indication of the amount of methane produced by the cattle.

"This research project shows the role the U of L can play in helping mitigate the negative aspects of methane emission by livestock, make livestock production environmentally and economically sustainable, and provide social acceptance due to the impact we have on the reduction of methane and greenhouse gas," says Okine.

Partners in the study include Agriculture and Agri-Food Canada, the universities of Manitoba and Alberta, Alberta Agriculture and Forestry, and two industry partners—Cool Planet and Blue Rock Animal Nutrition.

To view online: <http://www.uleth.ca/unews/article/university-led-study-looks-reduce-methane-gas-emissions-cattle>

Contact:

Trevor Kenney, News & Information Manager

403-329-2710

403-360-7639 (cell)

trevor.kenney@uleth.ca

Environmental Farm Plan Free Online Workshop

Register by Oct 27, 2017 to reserve your spot

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Space is Limited

To register contact

Kim Barkwell:

780-387-6182

GWFA: 403-844-2645

<https://county-of-wetaskiwin-efp.eventbrite.ca>

November 2, 2017

Registration
Begins at 9:30

10:00-3:00

**County of
Wetaskiwin
Office**

243019A—Hwy 13



Nov. 14, 2017

Registration Begins
at 9:30

10:00-3:00

**Mountain View
County Office**



Environmental Farm Plan Free Online Workshop

Register by November 10, 2017 to Reserve Your Spot

Coffee & Lunch Provided

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Space is Limited

Register by Nov. 10

<https://environmentalfarmplanworkshop.eventbrite.ca>

For Information Contact:

Daniela 403-335-3311 Ext. 204

dlemus@mvcounty.com



Grazing Stubble Fields This Fall: It Can Be Done!

Barry Yaremicio Beef/Forage Specialist, AB Info Center, Stettler

C/o Karin Lindquist Forage-Beef Specialist, Ag-Infor Center, Stettler



Turning cows out onto stubble fields is a good way to utilize forage resources. They will pick and choose what they eat from the straw, chaff, weed seeds in the stubble, slough hay from the low areas and mature hay growing along the fences and headlands. Quality of what they eat can be variable depending on the type of crop grown, fertility program and stage of maturity when the crop was cut or harvested. The combine setting – the amount of light grain and weed seeds thrown out onto the ground will impact what the cows eat as well.

Straw, chaff, and over mature grass hays typically have low amounts of protein, energy, calcium and magnesium. These feeds are also high in Neutral Detergent Fibre (which can reduce total feed intake) and relatively high in phosphorus. Grains and weed seeds are also high in phosphorus and have higher energy and protein content than the grasses, straw and chaff.

Cow calf pairs that are turned into stubble fields have different mineral supplementation requirements compared to when they were on a mixed alfalfa – grass pasture. The lack of calcium and magnesium in the straw and forages can cause two problems: 1) a diet that is low in calcium and higher in phosphorus can reduce phosphorus absorption. Phosphorus is the driver of all metabolic functions. When phosphorus is not absorbed, feed intake is reduced which in turn reduces milk production and weight gain on the calves. Cows can also start to lose weight. If the imbalance continues, it can impair reproductive performance – with cows taking longer to cycle and conceive a calf next year. 2) a calcium / magnesium deficiency can cause cows to go down and it generally requires a veterinarian to treat animals in this situation.

A mineral supplementation program should contain additional calcium and magnesium. When it comes to calcium, in many cases; a 2:1 mineral does not provide enough calcium to remedy the situation. A feedlot mineral with a 3:1 or 4:1 calcium to phosphorus ratio is preferred. If a 1:1 or 2:1 mineral is left over from the summer, mix 1 bag of limestone (38% calcium) with 1 bag of mineral and 1 bag of fortified trace mineral salt (with selenium). This mixture (roughly 165 pounds) should be consumed by 100 cow calf pairs in 5 to 6 days. If consumption is too low, add dried molasses to improve consumption. Add 8 to 10 pounds of dried molasses to the entire mix and adjust to get the proper intake.

If feeding a straight mineral; magnesium content should be in the 3 to 5% range if the recommended intake is between 70 and 100 grams per day. The added magnesium along with the calcium reduces the risk of downer cows. If magnesium is not present in the mineral, it can be purchased as an individual product from some feed stores or feed mills.

Feeds that are over mature or crop aftermath are usually low in protein. A lactating cow requires 11% protein (minimum on a dry basis) to maintain feed intake and milk production. Dry cows can manage on 8% protein. Supplementing protein on pasture is troublesome. Protein tubs or blocks will help solve the problem, but the mineral and vitamin supplementation should still continue as described above. Feeding 3 to 4 pounds of grain every third day along with a protein supplement is another option. Putting weaned cows onto these fields is an option to reduce protein requirements.

If the energy and protein requirements of the cow are not met, the cow will not be producing much milk. This will reduce calf gains. To offset the loss of calf performance, creep feeding the calves with a ration that is between 14 and 16% protein will improve average daily gains. If feeding straight oats, which has 10 to 11% protein on average, the calves will put down fat rather than lean growth and they could possibly not frame out properly resulting in fat dumpy butterballs that will be discounted at auction. A mixture of 1/3 peas and 2/3 oats or barley by weight will provide a creep ration that meets protein and energy requirements. With lower grain prices and high calf prices creep feeding will pay very well in the long run.

An advertisement for the Alberta Environmental Farm Plan (EFP). It features a blue sky background with a red tractor in a green field. The text reads: "Sustainable Sourcing Is Coming Let's Get Ahead Of It". Below this, it says: "Today's market is beginning to insist on sustainably-produced agriculture products. The Alberta Environmental Farm Plan (EFP) is a tool that helps you demonstrate your commitment to environmental stewardship and prepare for the future of sustainable sourcing." The Alberta EFP logo is in the top left corner, and the website "AlbertaEFP.com" is at the bottom left.



GATE TO PLATE

November 21, 2017
Ponoka Legion
10:00-3:30

Speakers:
Dr. Ellen Goddard
Alberta Agriculture
And Forestry
Producer Panel

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Castor canadensis...Can we live with them?

By Ken Lewis, Red Deer County Conservation Coordinator

Castor canadensis, is of course the scientific name for the beaver. Here in Red Deer County, there's rarely a shortage of opinion on the topic of beavers, what they can do, and what should be done about them.

When I talk to farmers and ranchers about beavers, I hear two major concerns: 1) flooding of fields and pastures, and 2) tree removal by beavers.

But, I've also heard farmers and ranchers comment on the benefits that beavers provide to their operation...they mention things like how beavers provide a water source (especially in dry years / dry seasons), improved forage or crop production (especially in dry periods), and improved biodiversity.

Often, "beaver management" means either removal of the beaver dams and lodges, and/or removal of the beavers themselves...by whatever means.

In September, I had the opportunity to participate in a workshop that introduced us to two tools that provide an alternative to removing beavers or their dams and lodges. At a hands on workshop, we learned about "Beaver Exclusion Fences" and "Pond Levellers"...and, even better, we got to learn by doing...we built and installed these beaver management devices.

The Beaver Exclusion Fence is a small fence that is built in such a way that the beaver can't plug a culvert. [insert photo: Beaver Exclusion Fence. Credit must be provided as follows: "Photo courtesy of Cows and Fish"]

The Pond Leveller is a pipe through a beaver dam, that allows you to dictate to the beaver the level of water in the beaver pond, that you (and the beaver) can live with. [insert photo: Pond Leveller. Credit must be provided as follows: "Photo courtesy of Cows and Fish"]

At this workshop, we learned a few other things about beavers that made me go "hmmm..."

Here's a few highlights:

Beavers are very territorial, and keep other beavers away. Beavers are at a place, because it is good habitat for them. If you remove a beaver colony and their dams and lodge, chances are pretty good more beavers will just move in.

When new beavers move in, and need to rebuild new dams and lodges, they will be more likely to target large trees in their construction. Established colonies who have already built their dams and lodges, on the other hand, are more inclined to target younger trees and saplings, since they need mainly food instead of construction materials. Cutting down healthy, growing younger trees and saplings, can often stimulate more tree or shrub growth.

When new beavers move in, they tend to have larger litters of 4 or 5 kits per litter. Established colonies tend towards smaller litters of 1 or 2 kits per litter.

Beavers need a certain level of water, enough for them to access food in the winter under the ice. Their dams often raise the water level above what they need, and

that level can be lowered by people, to reduce the amount of flooded land.

We are looking to work with a few landowners who would like to try these kinds of approaches to beaver management. With our ALUS Program, we can help cover the costs of putting in these beaver management tools, including materials and labour.

And, since ALUS pays farmers and ranchers for new management that increases ecosystem services like water storage and water filtration (which beavers are great at doing), we can use the ALUS Program to annually pay the landowner using these tools, on the acres involved.

If this is something you'd like to learn more about, please contact me at 403-505-9038 or klewis@rdcounty.ca.

We are not suggesting these tools will work everywhere, but there are likely many places where they could work. So, let's talk!



10 Key Features of a “KISS” Precision Grazing Program

By: GREENEDGE PRECISION FENCE INC © www.greenedges.com

Each precision grazing system will be unique to management inputs, daily heat/solar units, soil and water resources and the history of fencing and grazing on the land.

Set up permanent-type perimeter (electric) fence boundaries for bio-security, water/riparian protection, animal safety and main power supply for the project.

Determine long term goals for grazing capacity flexible to annual and longer term variations in moisture and animal species as well as expected, improved carrying capacity = 2 to 3 X !

Design and establish foundational/seasonal off-stream watering system but with step-wise flexibility to adjust to greater grazing pressure or more seasons as the opportunity arises.

Build an information-rich, ever-learning records system starting before the first grazing pass and continue for the life of the project. Use tools of GIS and graphic records system (calendar notes thru to digital, aerial photos and mapping)

Optimize grazing pressure per cell as season progresses – fewer boundaries needed later in the season. Forage type/ perennial species will tend to self-adjust and flourish if grazing cycle encourages climax species most adapted to the multi-variables under management.

Maximize soil microbial vitality by optimizing solar insolation (absorption) through viable shoot/root balance – ensuring enough energy to support vital root system. Minimize root shock – lack of solar energy, microbes will think ‘the lights are off’ and without energy will hibernate or die-off.

Minimize artificial inputs such as synthetic fertilizers – instead use winter feeding residues, manure and urine to supplement organic nutrient needs. Some soils may benefit from occasional additions of lime, biochar, foliar fertilizer, etc. but system can be self-sustaining.

Set initial cell plan using portable, labor saving but effective electric barriers – keep three partitions at all times – rear guard, active barrier, advance barrier. Younger stock can cross under active barrier to benefit from cleaner grass stand. Ensure good visibility of new fence barriers including mowing the new fence line lightly if necessary before laying out the temporary barrier.

Management decisions should be based on the “KISS” principles:

Kinetics – recognize, manage and capture the energy from solar, hoof action, grazing/cutting/pulling, affecting the energy transfers in the ecology of grass/grazer and soil food web interactions

Interval – Crucial to plan for adequate grazing rest period which determines number of cells/paddocks and the cell rotational rate. Starting at 3 days on : 27 off is ideal.

Seasonality - Extended grazing season, even winter bale feeding can be achieved. Bought winter feed is a good idea when the residual nutrient addition is considered.

Selectivity – Reward non-selective grazers and discourage selective grazer lead animals that prefer one forage stand over another – habitual, picky eaters are no friend of uniform grazing.

“Letting nature do its best will make the whole project fully self-sustaining”

Contact Lloyd at 403-556-0994 or email at greenedges.com@gmail.com
By Lloyd Quantz, Greenedge Precision Fence. Lloyd earned a B.Sc. in Ag. Majoring in Animal Science and M.Sc. in Ag. Economics. His career has spanned the management of organizations and livestock operations in extensive range as well as intensive operations. He has also consulted to corporations and governments on a variety of agricultural and rural related topics including compost technology, biochar, agroforestry, commodity marketing and genetic improvement. He currently focuses on enhancing the proprietary robotic Fencemaker™, developing electric fence improvements, managing projects and crews, consulting and various writing/marketing projects.

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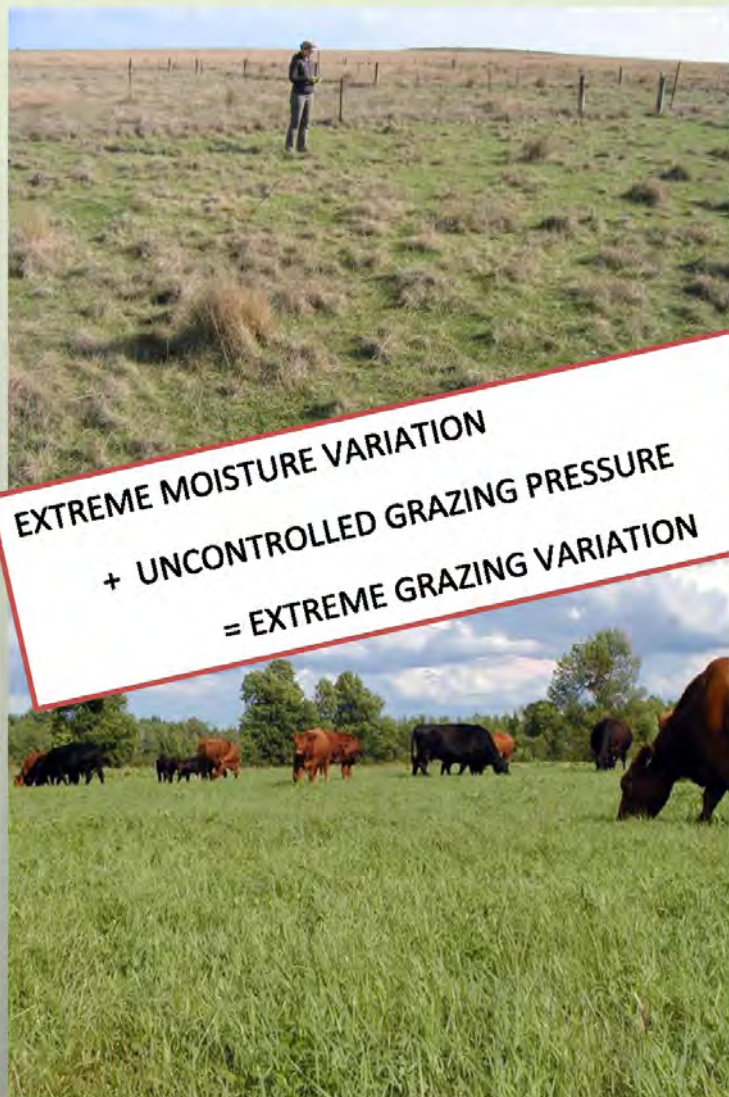
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2017-18 GRAZING CHALLENGES



A TOUGH YEAR FOR MANY

The extreme cycle from very wet in the spring to very dry later in the season challenged all land owners and pasture managers to adjust. Some did it more successfully by having adaptive grazing controls. But most had to contend with an ugly patchwork of over-grazed stunted areas mixed with dry, dormant and weedy pastures.

WHAT TO DO?

Tip: Without getting into intensive equipment for mowing or harrowing, using a tire - float to break up the manure and scatter some of the dormant seed may be useful. -- Don't spread weed seeds.

1. Some winter controlled re-grazing may work if the dormant grasses have any nutrient value – doubtful!
2. Use bale grazing –static or unrolled - strategically where more ground cover is needed to protect new growth next spring.

CONTACT GREENEDGE PRECISION GRAZING AND SEE THE BENEFITS OF PRECISION GRAZING TOOLS INCLUDING ARIAL SPECTRAL PHOTOGRAPHY AND ON-SITE REVIEW OF PASTURES.

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Forage and perennial crops key to maintaining soil health

Mustafa Eric, AFSC Communications Coordinator

Whether it is due to climate change or cyclical patterns, weather phenomena have been increasingly unpredictable and disastrous when they hit. Even if one leaves hurricanes Harvey, Irma and Maria, which have hit the Caribbean and southern states of the U.S in August and September out of the discussion as extreme events, the moisture levels in Southern Alberta give a clear picture.

Last year, the moisture situation report of August 3 on the Agriculture and Forestry Alberta website read as follows:

"Between Calgary and Medicine Hat, over the past 30 days, many areas are estimated to be this wet on average less than once in 50-years, with several weather stations reporting upwards of 180 mm of rain since the start of July."

The same moisture situation report for August 16, 2017 painted a starkly different picture:

"Dry conditions continue across much of the south-half of the province, with a few areas receiving a brief reprieve as hit and miss rain showers moved through towards the end of July and early parts of August. Across the south, total accumulations ranged from near 30 mm to less than 5 mm."

A recent study suggests, however, that with the right agricultural practices, soil can be the most useful resource for farmers in their struggle to keep droughts and floods from ruining their crops.

"When soil is healthy, it can soak up water like a sponge, preventing runoff into nearby communities while also holding onto it for plants to use later when there is less rain. When soil isn't healthy, it acts more like concrete," says Andrea Basche, a U.S. agronomist who authored the study, which can be found at www.ucsus.org.

The study concludes that the key to empower the soil to act like a sponge is to keep it covered year round, with cover crops, perennials, managed grazing, no-fallow- no-till farming practices, among others.

Where does Alberta stand with regard to measuring and assessing soil health, and accordingly, looking into developing policy options?

Prof. Edward Bork of University of Alberta says the concept of soil health is fairly new "although the constituent pieces of information (i.e. soil metrics) that contribute to it may not be".

Assistant Professor Guillermo Hernandez Ramirez at the same university says there is more work to be done.

"There is a clear need to quantify and document soil health, because this information is necessary for sustainability, land stewardship and environmental footprint," he wrote in an email interview. "Alberta Agriculture and Forestry and Agriculture and Agri-Food Canada have had research programs to monitor and map soil health. However, there is much more that is still pending; for example, we have information regarding in which direction soil health changes, but we don't have yet a good notion of the magni-

tude to the change, the spatial variability and how fast these changes happen.

"Under some circumstances, soil aggregation is insightful; however, in other cases, soil microbial properties are more effective in revealing patterns and differential responses."

Frank Larney, one of the lead researchers on soil conservation at AAFC's research centre in Lethbridge, says Alberta is doing pretty good as far as healthy soil practices are concerned.

"No-till is now used on more than 80 per cent of cropland, and summer fallow has virtually disappeared. Also, pasture is used in rotation to provide surface cover. All of this should help mitigate drought effects and runoff from flooding."

Hernandez, however, thinks a bit differently.

"Currently, cropping systems dominate the landscape in central and southern AB," he wrote. "However, in the cases of annual crops, the recurrent agricultural practices and typical bare fields from the fall to spring periods (with no active vegetation and low biomass input into the soil) can likely lead to chronic soil degradation."

"My understanding of crop rotation research suggests that more complex rotations, particularly those that include pulses, and also cover crops (i.e. intermittent perennial forage) are more likely to maintain soil fertility and health, although I am not aware of much data evaluating this directly," said Prof. Bork.

Hernandez agreed. "In addition to what Ed (Prof. Bork) mentioned (legumes, forage), perennial cereal crops can emerge as key components of longer, complex rotations that can foster soil health."

As more research brings additional information on how to improve soil health and allow farmers to use the water retention capacity of their land, prospects for more stable yield and quality in dryland crops could become much stronger within a foreseeable future.



Is your annual compensation review coming this year?

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I can help. Give me a call.



The battle to stop invasive mussels from invading the west

Janine Higgins, Community Engagement Lead, Alberta Environment and Parks



Healthy waterbodies are essential to a future where all Albertans can enjoy the great outdoors and create memories as they live, work and play in our watersheds. The introduction of invasive species threatens our natural environment and could drastically change how we interact with the water we cherish so much. We all have a responsibility to take precautions to care for these spaces and follow important regulations.

Zebra and quagga mussels are native to Russia and the Ukraine, but have been wreaking havoc in North America since 1989 when they were carried over on cargo ships and introduced into eastern Canada. After the discovery of invasive mussels in Manitoba in 2014, and in Montana in 2016, the mussel-free western provinces of Alberta and British Columbia are facing a serious risk that is ever increasing in proximity. As a result of these risks the Aquatic Invasive Species (AIS) Programs are growing and western provinces are working closely together to optimize efficacy and enhance collaboration.

The cost of an infestation isn't just in dollars...

The cost of infestation in Alberta could run as high as \$75 million annually. This would include costs to things like water systems and power and irrigation infrastructure as pipes and pumps become clogged with the mussels that attach to any hard surface. Mussels are filter feeders, removing the bottom level of the food chain resulting in reduced biodiversity as the native plants and animals environments change, and can even increase the frequency of blue green algae. The cost also includes the revenue loss from recreational activities that would be significantly reduced, which is ironic since mussels are mostly spread through recreational watercraft.

The Alberta Aquatic Invasive Species Program

In 2017, the Alberta Aquatic Invasive Species Program bolstered its resources to prepare for the anticipation of the busiest season yet. Alberta has the most extensive watercraft inspections program in Canada with the longest season, most stations and extended hours of operation. The season has been successful, with 14 watercrafts identified with zebra or quagga mussels so far this year, and emphasises the importance of this work.

Alberta doubled the amount of inspectors working on the front lines this year from 30 to more than 60. Responsible for 11 boat inspection stations along the eastern, southern and western borders of the province, two of which are 24 hour stations, as well as

two roving units, these inspectors are busy all through the summer months and well into the extended season.

New this year, Alberta is piloting the use of 24/7 night stations at key high traffic locations to reduce the number of watercraft coming into the province without inspection. Since 2015, boat inspectors have inspected over 65,000 boats entering the province and have found 43 boats to date carrying mussels with most of the culprits traveling from Eastern Canada.

To assist with the growing number of detections, Alberta has also employed three 'Conservation Canines,' dogs that are specially trained to sniff out hard-to-see mussels on watercraft. These three canine inspectors have been an integral part of our team since 2015.

Efforts in 2016 have carried through this year, moving from 70 waterbodies being monitored for the presence of invasive mussels last year to nearly 100 in 2017; all results have come back negative to date. New provincial regulations were also introduced to make it illegal to transport a boat with the drain plug in, as too many boats are coming into the stations with standing water that should have been drained and could be harbouring all kinds of nasty invasive species and aquatic diseases.

A new feature in 2017 is the watercraft inspection passport. This is a system for boaters that most often boat in Alberta and British Columbia, and frequently stop at inspection stations in both provinces. Carrying a recently stamped passport helps expedite visits to the mandatory watercraft inspection stations.

How can you help?

The most important action that people can take while enjoying time out of the lakes, rivers or streams of Canada is to Clean + Drain + Dry all equipment that comes in contact with the water. Together we can be vigilant and protect our lakes, reservoirs and rivers from harmful aquatic invaders and diseases. To report invasive species or for more information, call 1-855-336-BOAT(2628). More information on AIS in Alberta can be found online by searching "Aquatic Invasive Species Alberta".



Grey Wooded Forage Association

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Memberships are \$20.00 and run from April 1, 2017 to March 31, 2018.

Memberships are open to anyone interested in forage production, grazing management and environmental sustainability.

For information call 403-844-2645

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How many head of livestock are you managing?

Beef Cows/Heifers: _____
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