



Grey Wooded Forage Association

"Creating an Awareness of Forages"

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Annual Report 2015 | 2016

A Year of Recovery

Highlights in this Report:

- Manager's & Chairman's report - Pages 2-3
- Board of Directors & Staff - Page 5
- New capital assets - Page 6
- ALUS Program Highlights - Page 8
- Soil Health Highlights - Pages 13-15
- Extended Grazing Workshop & Tour - Pages 16-17
- GWFA & ARECA Advocacy - Page 18
- ABFGC update - Page 19
- Projects: Healthy Alfalfa and 3D Fencing - Pages 22-23
- Innovative Swath Grazing - Pages 23-26
- Environmental Viability of Increased Field Use - Page 27
- Events - Pages 9, 10, 12, 13

Mission Statement

To promote environmentally and economically sustainable forage and agricultural practices.

Vision Statement

The community is engaged in regenerative agricultural production methods.



Manager's Notes

By Ginette Boucher

A YEAR OF RECOVERY 2015/16

GWFA was faced with many challenges in 2015/2016. With the staff changeover prior to the new fiscal year, new management, and staff illness late in the year we found ourselves re-evaluating our program and services and needing to reach out to our members for direction. Because we have strong roots and long time members this enabled us to tap into these resources and take a firm stand.



Finances were also a big concern with the uncertainty in the new Provincial & Federal government. I spent some time doing some advocacy and going out to meet most of the MLA'S in the counties we serve; with the goal in mind of creating awareness and educate the decision makers, this became obviously a very important task. After numerous meetings, we found that most MLA's were not familiar with our organization or ARECA and after much discussion they saw the value we brought to agriculture and what our program can do for producers in Alberta.

The strong management skills and the environmental background I brought to the association enabled us to reduce costs, tightened up the budget and expenses and become more effective with limited funds. I also bring to the association strong sales, marketing skills and was able to rebuild & develop the much needed partnerships within our county partners to grow our revenue and enabled us to have a strong financial year end with a good foundation to build on. We have added the EFP (Environmental Farm Plan), to our program and are currently taking some training when possible.

We will continue to collaborate with our county partners and plan to secure many more corporate sponsors to build some financial security in our organization through sound financial planning and sponsor development. We are working towards a six-month cushion for some financial stability

should some funding not arrive in time it will not impact our program. Those of you with expertise in the area of fund raising, financial planning and sponsor development are welcome to assist us on our ongoing mission of financial stability.

With the mild winter and the lack of snow we are now faced with drought situations in much of the province; a sound drought management plan would be wise to implement for the coming season and for the future. By delaying putting your cows out to pasture and reducing your stocking rates, and time management in each paddock will give plants an opportunity to grow. Taking less in the spring will give you more grass in the fall.

In regards to Albert's ongoing health there has been no improvement. I contact Albert by text a couple time per month to get an update. The last update was on May 9th and Albert said that he was on full time oxygen, and he was going to see the lung specialist on the May 10th. We will keep you posted on the progress as we hear about it. Let's continue to pray for Albert and his family.

Alberta Agriculture and Forestry have come out with some enhanced funding dollars which we have received in the amount of \$50,000.00 per fiscal year for the next two years. These dollars are meant to assist with manpower and extension delivery. Due to the severity of Albert's condition and not knowing whether or not he will be returning to work or when, we've hired another full time staff. A few weeks ago we interviewed several candidates for the environmental and communications position. Devin Knopp of Leslieville had been employed with Leduc County in an ag foremen position and had recently resigned his position to return to the farm in Leslieville to work with his father Gerald a long time GWFA member and Board member. After our series of questions, we found Devin to be the ideal candidate for the position. We would like to welcome Devin to GWFA and look forward to have him working with us.

Our year's events, activities, highlights and collaborations will follow in this report. It has been a challenging year, "A Year Of Recovery". With the sound foundation that has been build in the last year, and our better financial position we look forward to growing and developing our association to assist all producers, communities and families in central Alberta working in agriculture production. The key to success is communication, we need to hear from

you as often as possible as without you we have no association. This association was founded by producers for producers, let's get back to our roots.

We would like to extend a thank you to Alberta Agriculture and Forestry to funding our program.

Best Regards, Ginette

Message from the Chair

By Ken Ziegler

2015/16 The Year for Regrouping.



One of the greatest tactics any organization can do is to stop from time to time and regroup. We do this organizationally, as a family or even as individuals. A common clue that we're regrouping is when we ask ourselves the question, "Ok, what's going on around here?" and then establish a new direction or way of doing things to accommodate the answer.

Although the Board of the GWFA as spent many meetings over the years listening to the membership and building Vision Statements, Mission Statements and Goals, 2015/16 will go into the history books as the year of turning. One of the turning points was to change some of the staff away from administration towards networking. Ginette is a powerhouse when it comes to networking with individuals, members and other organizations. We're in a very strong position today relationally with organizations that we previously knew existed but didn't work together very much. Because of this positioning, we've given and received more than before.

Unfortunately some of our regrouping isn't finished yet as we've temporarily lost the experience and abilities of Albert early this year. Albert has been struggling with health issues for some time and finally this January, he chose to make a short term lifestyle change that would be more conducive to long term healing. We're not sure what Albert's future will be as a staff member but certainly wish him a sustainable recovery.

The regrouping of 2016 has also allowed us to hire a new staff member. Under the direction of our manager Ginette Boucher, we've hired Devin Knopp. Devin was raised in the Leslieville area and has a strong handle of the agricultural practices and challenges of central Alberta. As a P.Ag. Devin will be valuable asset to GWFA. As a board, we're excited that Devin can join us and look forward to many good days to come.

The regrouping is ongoing. With the fantastic leadership of Deb Skeels on the Projects Committee and Ted Chastko on the Publicity Committee, we've come up with several good projects and events. Coupled with Ginette's ability to network, we look forwards to a strong 2016/17.

And now a direct call to you as members. Please connect with us often and regularly. As a Board, our intent is to serve you and to do that well. Help us do our job well by contacting us with your insights, questions and issues. Also feel free to connect with each other regularly as well. One of the jobs in the near future is to develop our Facebook page and build twitter so those of you with "phones that are smart" can use that tool to communicate. For others, remember that our phone number is still a good way to stay connected.

Thanks for this past year. 2015/16 has been a year of good change. We continue to regroup ourselves as we endeavor to make GWFA a "centre of choice" for your forage information needs.

Ken

Thank you to our corporate sponsors who support our organization and all of its activities throughout the year!



Thank you to our Annual General Meeting Sponsors!



Next
to New

Thank you to the counties who support and collaborate with us!



Red Deer County



Grey Wooded Forage Association 2015-2016 Board of Directors & Staff

Chair:	Ken Ziegler	Rocky Mountain House	403-845-8204
Vice Chair:	Vance Graham	Rocky Mountain House	403-845-6249
Treasurer:	Herman Wyering	Ponoka	403-783-2681
ARECA Rep:	Herman Wyering	Ponoka	403-783-2681
Secretary:	Brendon Anderson	Rimbey	403-843-3314

Directors:

Chris Sande	Rocky Mountain House	403-729-3896
Deb Skeels	Rocky Mountain House	403-845-2515
Theodore Chastko	Lacombe	780-232-2096
Cyril Newsham	Bearberry	403-638-2718
Andrew Ritson-Bennett	Innisfail	403-350-9299

Manager:	Ginette Boucher	GWFA Office	403-844-2645
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Forage & Grazing Specialist:	Albert Kuipers	GWFA Office:	403-844-2645
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From left back row : Andrew Ritson-Bennett, Cy Newsham, Herman Wyering, Chris Sande, Brendon Anderson.
 From left front row : Vance Graham, Deb Skeels, Ken Ziegler.
 Below: Ginette Boucher, Albert Kuipers, Heather Lyon.



Grey Wooded Forage Association Publication

The Blade

This monthly publication is an important vehicle for regularly getting event announcements and information to the members. The Blade is currently 16 pages and we continuously search for content of quality and value for our readers. We are constantly looking for articles to improve our publication. If you should have some thoughts for content, please be sure to share it with us.

The Grey Wooded Forage Association publishes The Blade monthly and distributes five hundred copies digitally, and prints to distribute by mail and other methods over 200 publications. Our Board also distributes copies; we also provide publications to our sponsors, and bring several to our many events to create awareness of our association and develop new members.

One of our goals is to grow our digital distribution into the thousands and reach beyond our borders. We have been working at developing The Blade into a publication that is of high enough value that people want to be GWFA members just to get it.

The Blade is available on our website: www.greywoodedforageassociation.com

New Printer

Our new printer was purchased with our capital expenditure dollars. We offer printing services for GWFA Members & ARECA Member Associations. We have printed 4H sale catalogs for Sundre-Bergen. GWFA would like to invite organizations, communities and others to use our low-cost printing service to assist us with revenue in delivering our program.

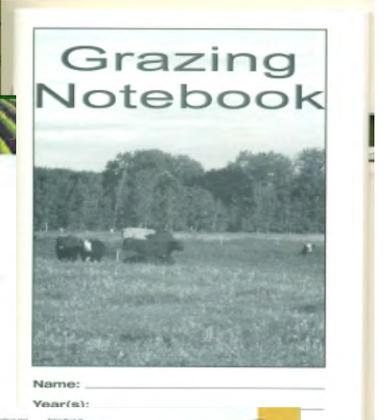
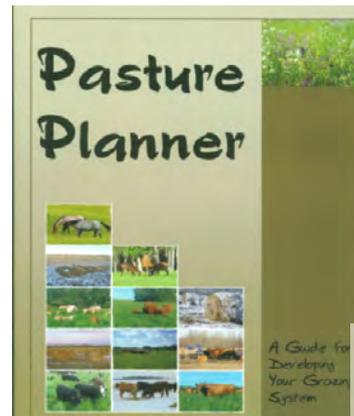
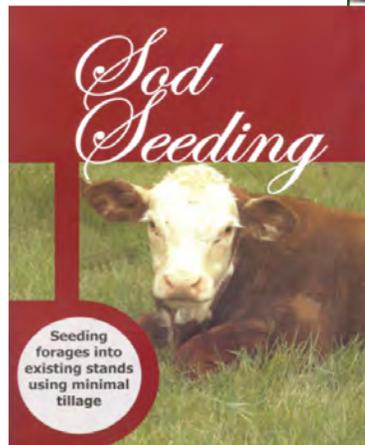
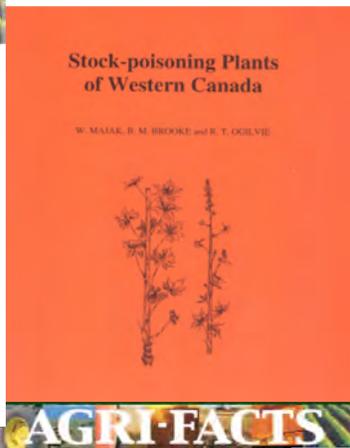
New Sea-Can

Our new sea-can was also purchased with our capital expenditure dollars.



Publications Available to Members

The publications shown on this page are available and we often bring an assortment when we go to events and tradeshow.



Feel free to contact us at any time for any of the above publications. We are often out of office at events, meetings, or are just out doing errands; therefore if you plan to drop in it is good to call ahead to be sure there is someone in the office to greet you (403-844-2645). Ginette can also be contacted at any time by text at 403-507-5478.

Grey Wooded Forage Association Events in Partnership with Industry, Organizations or Government.

Paying Farmers & Ranchers for Ecosystem Services in Red Deer County: 2015 ALUS Program Highlights

By Ken Lewis, Red Deer County ALUS Program Coordinator

2015 was a year of tremendous growth for our Alternative Land Use Services (ALUS) Program. Twenty-six farmers and ranchers enrolled a total of 920 acres of their land into the ALUS Program. With support from the ALUS Program, those folks adopted different “environmentally beneficial agriculture management practice” (also known as “BMPs”), such as providing livestock water away from water bodies, installing riparian area management fencing, and creating larger buffer zones between wetlands and annual crops.



2) GWFA staff have been Technical Advisors to our ALUS “Partnership Advisory Committee” which provides overall guidance, oversight, and decision-making to our ALUS Program.

This past winter, we’ve also been working with GWFA to develop our “Grazing to Increase Ecosystem Services” or “Grazing for ALUS” program (we’re still working on the name). We are planning workshops and a field days, where producers can come learn how to graze their land so that they can grow more grass/more livestock AND grow more ecosystem services...and get paid for both.

What’s unique to ALUS, is that these 26 producers are also getting paid, up to \$40 per acre per year, for the increased ecosystem services that they are now producing on their land as a result of their BMP adoption.

The Grey Wooded Forage Association has been supporting our ALUS Program in two ways:

1) GWFA staff have been working with some of our ALUS producers to help them plan their grazing management to increase ecosystem services.



2016 is shaping up to be even more exciting, as our ALUS Program continues to grow and we work with our farmers and ranchers to make the provision of ecosystem services a measurable and marketable revenue stream for agriculture.

I welcome any and all inquiries about the ALUS Program. Please contact me anytime at 403-342-8653 or klewis@rdcounty.ca, or check out www.alus.ca on the web.

Battle River Launch

The Battle River Watershed Alliance has been thrilled to partner with the GWFA over the past year. In April 2015, the BRWA launched the Ponoka Riparian Restoration Program. GWFA attended the program launch event and provided an electric fencing demonstration.



The goal of the program is to work with local landowners and residents and provide financial support for projects that help to improve the health of the Battle River and its tributary streams. The program has enabled the BRWA to connect with a number of landowners and work with them to



implement on-the-ground actions such as the installation of off-site watering systems and riparian fencing. Several riparian health assessments have also been conducted, which help to increase our understanding of the health of the Battle River. The BRWA and GWFA will continue to

partner on this program and other initiatives into the future. This event was a great way to launch the Battle River Watershed Alliance's Ponoka Riparian Restoration Program, drawing about 40 people from the Town of Ponoka, Ponoka County, and beyond.

The goal of the Ponoka Riparian Restoration Program is to work with local landowners and residents and provide financial support for projects that help to improve the health of the Battle River and its

tributary streams.

Informative presentations were given by Cows and Fish, Grey Wooded Forage Association, Ponoka County, Sundog Solar and Frostfree Nosepumps. Valuable information was provided on riparian areas, riparian health assessments, and various



techniques for off-stream livestock watering and riparian fencing solutions.

The event also provided an opportunity for the Battle River Watershed Alliance to connect with local residents and producers who were interested in taking concrete actions on their land to support the health of the Battle River.

A number of projects were completed in 2015, including 7 riparian health assessments and the installation of riparian fencing and off-stream livestock watering systems. More projects are lined up for 2016, and funding is available to support additional riparian health assessments and landowner projects.



The County of Wetaskiwin Update



The Sustainable Agriculture (SA) Program promotes the awareness and adoption of beneficial management practices as they pertain to water, soil and energy management. It is delivered to both County of Wetaskiwin and Leduc County residents through

a partnership agreement which is entering its 15th year.

However, neither county had a forage association connected with it until 2015! It is great to have the services of the Grey Wooded Forage Association (County of Wetaskiwin) and West Central Forage Association (Leduc County) extended to our residents!

Hosting workshops is one SA program activity. An example was the "Grazing for Dollars" workshop, a collaboration between the SA program and GWFA at Buck Lake on November 19, 2015. Close to 30 people were in attendance, and many filled out the evaluation forms. Feedback was positive, and highlighted specific interest in more topics related to grazing management. Our residents have expressed a need for more information which GWFA can help meet!

Representatives from GWFA and WCFA were also present at the SA Program "Winter Feeding Strategies" workshop held at the Glen Park Hall in Leduc County.

It gave our producers a chance to put some faces to names from the forage associations, and in the case of one lucky producer, win a year's paper subscription to The Blade!

The SA program and County of Wetaskiwin look forward to future partnership opportunities with GWFA in 2016 and beyond.

Thank You
to ALL who participated
in our **Grazing for Dollars Workshop!**
on November 19, 2015
at the Buck Lake Community Centre

Thank you to our speakers, organizers, sponsors & supporters!

Sundog Solar
www.sundogsolarwind.com

MARTIN DEERLINE
50 YEARS

BONAVISTA
ENERGY CORPORATION

Alberta Agriculture and Forestry

AOF
Agriculture Opportunity Fund

ARECA

Brought to you by GWFA and the County of Wetaskiwin

Grey Wooded Forage Association
www.greywoodedforageassociation.com

County of Wetaskiwin
www.county.wetaskiwin.ab.ca

ARECA Report

By Janette McDonald, Executive Director

ARECA is the provincial arm of GWFA. The Board of ARECA is made up of representatives from our 9 member organizations, one of them being GWFA. ARECA's goal is to help GWFA serve farmers and ranchers. Your rep is Herman Wyering. For 2015-16, Herman has also provided strong leadership as Treasurer of the ARECA Board.



Some highlights in 2015:

ARECA worked with our team (9 associations) to deliver a Soil Health Initiative with the Alberta Crop Industry Development Fund. This initiative enabled our members to deliver over 20 meetings and programs across Alberta. It also funded www.albertasoilhealth.ca. On this site we added short articles about soil quality and soil health in Alberta. We also interviewed 13 producers across Alberta and created Producer Highlights. GWFA featured Doug and Deb Skeels of Rocky Mountain House.

ARECA enabled the delivery of successful Regional Variety Trials across Alberta. Together, we tested 78 new cereal varieties and 76 new pulse varieties.

ARECA enabled the delivery of the Provincial Pest Monitoring program funded and operated Alberta Agriculture and Forestry. Together, ARECA associations monitored 9 insect pests.

ARECA delivers the provincial Environmental Farm Plan.

ARECA started a Connections newsletter, designed to "connect" our 9 member organizations. Each month, we develop a highlight sheet of one association and distribute to each Board member of each association. Connections featured GWFA in January.

ARECA team hosted the Western Canada Soil Health Conference

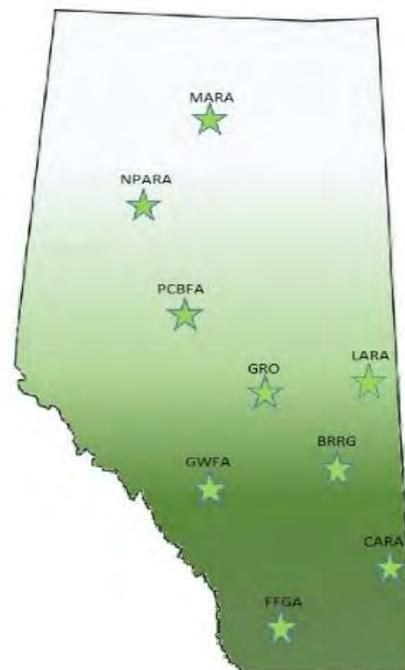


in Edmonton. This was attended by 425 people and was sold out! Soil health has become a hot topic across North America. GWFA, through ARECA, is delivering information to farmers in the field.

ARECA enabled the inaugural Verticillium Wilt Survey, funded and operated by the Canadian Food Inspection Agency, in co-operation with the canola industry. GWFA collected 8 samples. Together, ARECA associations surveyed 83 fields.

The ARECA Board developed a new process that aims to differentiate provincial programs from local programs. Our goal is to develop over-arching programs that fit for all or most of our 9 member associations; while supporting the independent, local programs of each individual association. So far, the process is working well and will be reviewed in 2016.

Late in 2015, ARECA decided it was timely to renew their Environment Team.



"Planned Grazing Management" Workshop & Webinar

Organic Alberta and Grey Wooded Forage Association partnered together to host a successful workshop (that combined webinar and producer panel) on Planned Grazing Management. The workshop was hosted in Lacombe on October 27th, 2015.

Jim Gerrish, of American Grazing Lands Services joined by webinar to present on "Management-intensive Grazing: What is it & What can it do for you?"

The link to view the recording was shared with all participants, and was available on both partner websites. Here is the link: <https://youtu.be/2f4tE45Duw0>



Following the webinar Grant Lastiwka and Ken Ziegler played a valuable role facilitating a debrief session that tapped into the vast knowledge in the room.

After lunch, three local ranchers were invited to speak on their own grazing practices. The producer panel featured members from both organizations: Brian Luce, Steve Kenyon and Blake Hall.

Results from the day:

- 12 participants joined the webinar from distance - 2 from SK and the rest were from Alberta, including Hanna, Raymore, Calgary, Coronation, Camrose, and Edmonton
- 36 people, including staff and board members, attended the workshop
- Call of the Land Interview with Caitlynn Reesor and Agri-news article

- Widespread promotions through both members' newsletters, website and network
- In-kind support from Alberta Agriculture (Livestock Staff, room rental, webinar technology and support)

- By working together, we were able to reach a larger audience

- As a result of such a positive experience, Grey Wooded and Organic Alberta will partner again in June 2016 to host Stockmanship School with Richard and Tina Williams.

Planned Grazing Management
 WORKSHOP & WEBINAR
 Oct. 27

Featuring **JIM GERRISH**
 American Land Services
 (joining online)

PRODUCER PANEL
 Brian Luce, Lucends Ranch
 Steve Kenyon, Greener Pastures Ranching
 Blake Hall, Prairie Gold Meats

Workshop made possible by:
 Grey Wooded Forage Association, organic ALBERTA, TRU-TEST GROUP, Sunco Solar

Event Details
LACOMBE, AB
LOCATION
 Field Crop Development Centre
 5030 - 50th Street

10:00 AM to 2:00 PM
 9:30 am Coffee & Registration

\$20 INCLUDES LUNCH
 To register contact:
 Ginette, GWFA, 403-844-2645
 Melissa, Organic Alberta, 587-521-2400

Can't make it in person but still want to view webinar?
 Contact the organizers to access link.

Soil Health Highlights



Discover the Soil Below Your Feet! & Graze for Clean Water Part 2!

Field Day
September 23, 2015




Thank you to all who made this event a huge success!

MATEJKA
FARMS Ponoka, AB
Mark & Kathy Matejka

Ponoka County Agricultural Services
 Alberta Crop Industry development Fund Ltd.
 Agricultural Research & Extension Council of Alberta
 Rob Dunn, P.Ag. Cropping System Specialist, FarmWise Inc.
 Alberta Agriculture and Forestry
 Ponoka Fertilizer Ltd.
 CBO Earth Works
 West Country RV Rentals
 Sundog Solar & Agricultural Supplies
 Blue Rock Animal Nutrition Ltd.
 Hannas Seeds












Thank you to all who attended!



Soil Health Producer Highlights Series

My Farm, My Soil, My Story

Doug and Deb Skeels- Rocky Mountain House, AB



What does "Soil Health" mean to you & why is it important?

If the soil is not healthy we don't produce much grass. Quality grass translates into pounds of beef. Land is expensive here. We need to grow as much grass as we can on a small land base.

What management practices have you used to improve soil health on your operation?

We started with rotational grazing quite a few years ago. We noticed a considerable improvement in grass production, so we continued with it.

We have also tried swath grazing for several years. We tried different crops with different times of grazing. We have used oats, barley, triticale and mixtures with peas for the swath grazing over the years. Triticale far out produced the other crops each year. We have issues with wildlife fouling and trampling the swathes. We still think it is highly beneficial for the land and an economical way of feeding cattle.

A few years ago Ag Canada wanted to do a trial on bale grazing. We volunteered our farm. In the 4 years this study has been conducted, we noticed a substantial increase in grass production in the bale grazed areas. Those areas remained green and productive much later in the fall than the other pasture. It also works well for time management and no equipment usage during the winter to feed the cows. Bales are all set out in the grazing area one day in the fall. Feeding the cattle simply requires moving a temporary electric fence of 1/16-inch aircraft cable.

What changes have you seen?

More grass, more forage species, better color

to the grass, and the quality lasts later into the fall. Manure disappears quickly. This year there was a drought in our area. That's something we have not seen for several years, being so close to the mountains. The thatch from the bale grazing conserved what little water there was. You could see a noticeable difference in the same field where the bale grazing was done and not done.

What are the biggest challenges for soil health in your area?

There is generally low soil fertility in the grey wooded soil in our area. It seems to require importation of nutrients by some means. The soil type and depth is highly variable even in a small area. Everyone's soil is different and you need to figure out what best works for your soil type and conditions.

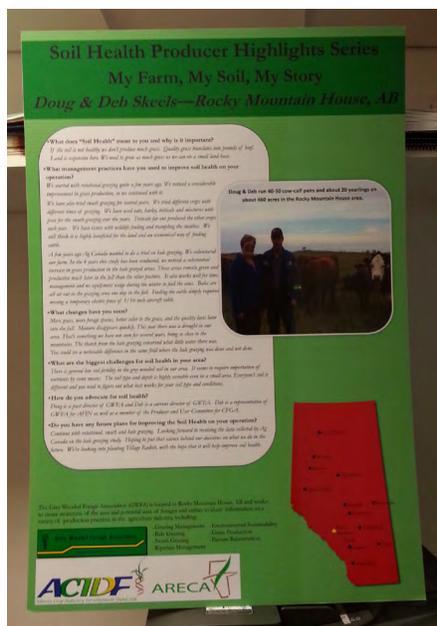
How do you advocate for soil health?

Doug is a past director of GWFA and Deb is a current director of GWFA. Deb is a representative of GWFA for AFIN as well as a member of the Producer and User Committee for CFGA.

Do you have any future plans for improving the Soil Health on your operation?

Continue with rotational, swath and bale grazing. Looking forward to receiving the data collected by Ag Canada on the bale grazing study. Hoping to put that Science behind our decisions on what we do in the future. We're looking into planting Tillage Radish with the hope

that it will help improve soil health.



Soil Health Throughout the Province



When the United Nations proclaimed 2015 the International Year of Soils ARECA jumped at the opportunity to highlight soil in Alberta. ARECA hosted 3 provincial Soil Health Tours this summer as part of the Alberta Soil Health Initiative to share our excitement about soil!

Join us to Celebrate & Learn About Soil Health at the Western Canada Conference on Soil Health Dec 8-10, 2015!



**Peter
Donovan**
6 Events
118 Participants

**Christine
Jones**
5 Events
218 Participants



Soil Pits
9 Events
293 Participants



SOIL is Bigger than Oil

Soil Health Applied Research Alliance
ACIDF

An article in August, Alberta Beef Magazine



Extended Grazing Workshop & Tour

The Extended Grazing Workshop in Lacombe was an excellent opportunity for producers and industry leaders to explore the benefits and challenges of various extended grazing practices as well as areas that need further research and discussion.

The first day of this two day conference involved tours of different winter grazing systems, starting with corn grazing at Murray Abel's farm. Corn grazing works well on his farm as it remains profitable while meeting the nutritional requirements of his cattle during the winter. Some benefits of corn include superior standability even in heavy snow and high levels of biomass produced, but cattle must be moved often to reduce waste and acidosis from preferential grazing of cobs only.



Demonstrations of 3-D fencing and winter watering systems were also included in this tour as additional tools that producers can utilize. Bale grazing at the Skeel's farm near Rocky Mountain House was next, a system that has been used by these producers for the last few years as it reduces labor and machinery inputs that requires minimal management. This farm's grazing system is part of an Ag Canada research project that looks at environmental impacts and nutrient distribution as a result of bale grazing. Other highlights from this stop include solar panel water drinkers produced by Sundog Solar and Grey Wooded Forage winter-hardy alfalfa trials.



We got to see another example of a Sundog Solar

watering system at the Ziola farm, the first of the afternoon tours, which also included some new innovations in extended grazing practices. The family uses a Brassica crop in a mixture with oats for swath grazing their cattle over winter, which retains moisture and its green color, with excellent palatability. In addition to this new swath grazing system, stockpiled forages are used, consisting of various mixtures of cicer milkvetch, alfalfa, sainfoin and other grasses.



The final tour of the day was to the Lacombe Research Center to see the Ag Canada swath grazing projects conducted by Dr. Vern Baron. Several crop varieties of barley, triticale and corn are studied at both high and low fertility levels, with stocking density determined based on yield and expected number of grazing days. This research is being conducted to determine the cultivars that are best suited to swath grazing using cattle at different stages of maturity, assessing their performance and condition throughout the winter.

Day Two of the Extended Grazing Workshop

was split up into short sessions covering a range of topics from some of the top experts in the industry from across Western Canada. Starting the morning off, Dr. Greg Penner from the University of Saskatchewan taught us about balancing the diet of gestating cows during the winter season. During the beginning of the extended grazing season, from about October to December, nutritional requirements of cattle calving in April are fairly low, while forage quality is fairly high. Over the winter season quality and yield decrease, making it a challenge to meet the higher energy and protein requirements of cows in



their third trimester near the end of the extended grazing season.



Adding an economic perspective to the winter feeding equation, Kathy Larson from the Western Beef Development Center discussed how winter feeding and bedding can make up 50% or more of a producer's costs. Therefore a producer often focuses on how to reduce winter feeding costs, and extending the grazing season is a viable way to manage those costs as many studies have found that most forms of winter grazing are cheaper than traditional drylot systems.



Advocating for the environmental benefits of extended grazing, particularly bale grazing and bale processing, Dr. Jeff Schoenau from the University of Saskatchewan brought his knowledge of soil science to the discussion. In terms

of soil health, in-field feeding has by far the greatest impacts as importing nutrients in the form of both residual feed and manure produced by wintering cattle adds the greatest amounts of nitrogen and phosphorus to the field. Even spread of forages and rotating fields from year to year allow the benefits to be spread more evenly over a greater amount of land. While there are many advantages of bale grazing and processing, Dr. Don Flaten warned of some of the potential drawbacks from these type of grazing systems. The University of Manitoba professor has studied the effects increased levels of nitrogen, and particularly phosphorus from bale grazing have on the quality of nearby water bodies. In order to mitigate these risks, farmers can employ Beneficial Management Practices (BMPs) that include placement of feeding sites to reduce the amount of run-off, rotating feeding sites and even using retention/collection areas.



The final two talks of the day were presented by local experts from the Lacombe Research Center who are involved in some of the most innovative research on

forage production and swath grazing systems. Dr. Pat Juskiw discussed her work in breeding cereal crops such as barley and triticale with regards to forage use. Some of the difficulties with breeding varieties for forage use include how to quantify forage quality for selection and improvement, as well as the challenges of having different requirements of forage crops at different times of the year and stages of animal growth. These factors in combination with the limited resources and funding dedicated to forage research and breeding programs means that producers have fewer cultivars to choose from when it comes to extended grazing.



However, some of these challenges can be overcome with agronomics and different management techniques, as Dr. Vern Baron's research has examined. Some of the management tools producers can include in their own systems are the use of more than one type of crop and grazing system, different harvest timing or planting date, and manipulation of the tradeoff between yield and quality based on the specific goals of the producer. To facilitate further dialogue, Dr. Hushton Block, Linda Hunt and Trevor Wallace summarized the day's proceedings and gathered and answered questions from the audience. Participant engagement and discussion, as well as the high quality of the speakers and the information they relayed all contributed to an exceptional conference that could lead to further discussion and opportunities to be examined regarding the future of forage production in Western Canada.



Written by: Katie Wyering

For some agronomic info on corn grazing, visit our website, under the events tab, events proceedings:

www.greywoodedforageassociation.com



GWFA & ARECA Doing Advocacy

Top left picture, Barb Miller, Red Deer south constituency, meeting with Ginette and Brendon Anderson, Secretary of our Board.

Bottom left, Mr. Jason Nixon MLA Rimbey-Rocky Mountain House- Sundre, meeting with Cy Newsham Board member and Ginette.

Top right photo, Mr. Bruce Hinkley, MLA for Wetaskiwin-Camrose. Bruce attended our Soil Pit event on September 23rd, and share a message in the evening about the plans for the NDP government.

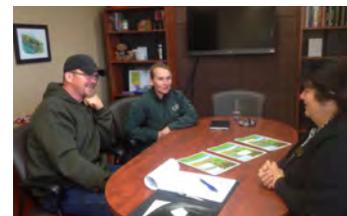
Bottom right Mrs. Kim Schreiner, MLA Red Deer North constituency office and Ginette & Brendon Anderson.

MLA for Lacombe-Ponoka Mr. Ronald Orr; met with GWFA Treasurer Herman Wyring and Ginette (no picture).

MLA Ron MacIntyre of the Sylvan Lake-Innisfail constituency office met with Kristen Ritson-Bennett of Blue Rock Animal Nutrition and Ginette (No picture).

We found the majority of the MLA's were extremely receptive to our message, that of the importance agriculture is in our province and what we bring to producers as an association. We also informed them

of our ARECA association in Leduc representing most of the forage & research associations throughout the province. We were encouraged to continue to apply for all the funding available through the government programs, keep up the good work and keep them informed of what we are doing through our email distribution system. Also each MLA would talk with Oneil Carlier Minister of Agriculture and Forestry and inform him of our meetings and recommend the importance of our program.



ARECA Meets with the Minister - September 2015

We had an excellent meeting with the new Minister of Agriculture and Forestry (AF), Oneil Carlier. Chair Ian Murray (FFGA) and two ARECA Board members, Herman Wyring (GWFA) and Tom McMillan (GRO) and Janette McDonald (ARECA ED) attended.

Our primary goal was to talk about how we can enhance our partnership with AF. We talked about our nine member associations and the work we have done on Soil Health in 2015. We showed the Minister the long list of events planned and hosted by our associations this summer; on topics from pasture management, to stockmanship to crop field days, to soil health.



We talked about the province's carbon strategy and how our members can be a part of designing successful policy on maintaining and rewarding carbon sequestration in perennial pastures and grasslands.

We highlighted our delivery of the Alberta Environmental Farm Plan (AEFP). ARECA has delivered the EFP since 2013 and we talked with Carlier and AF Environmental Stewardship staff about our plans to strengthen the program in the future. We talked about the Agricultural Opportunities Fund (AOF) and its fundamental importance to the operation of our organizations. We were very clear that without maintenance of the AOF funding, delivery of good applied research and extension through ARAs and Forage Associations would be impossible.

Alberta Beef Forage Grazing Centre Update

The Alberta Beef, Forage and Grazing Centre is a tripartite agreement between Alberta Beef Producers (ABP), Agriculture and Agri-Food Canada (AAFC), and Alberta Agriculture and Forestry (AF). It has the mission of developing and transferring knowledge, innovative processes and tools to improve the forage/beef industry.

The Centre has six strategic goals:

- Reduce winter feeding costs by 50%
- Reduce the environmental footprint of the cowherd by 15%
- Improve cow efficiency by 15%
- Reduce backgrounding costs by 50%
- Improve late summer/fall pasture productivity by 30%
- Build and maintain research and extension capacity

The Centre utilizes existing AAFC and AF facilities and staff, with a small cash infusion from ABP to assist with core funding and extension initiatives. It is governed by a Management Committee with two representatives from each signatory group. Early in the Centre's development, the Management Committee appointed a Research and Extension Advisory Committee to oversee the day-to-day operations of the Centre. There are representatives from the Management Committee (Holly Mayer, AAFC; Wes Johnson, AF), AAFC (Vern Baron, Darren Brujhell), AF (John Basarab, Susan Markus), the Agricultural Research and Extension Council of Alberta (ARECA; Dianne Westerlund), and ABP (Karin Schmid). It is the job of this group to essentially move the Centre from an idea to reality.

The Centre's structure also includes an Industry Advisory Board (which includes representation from ABP, the Alberta Forage Industry Network, ARECA, and other cow/calf, backgrounder or feedlot producers), and research and extension working groups (i.e. people actually doing the projects that contribute to the Centre's strategic goals).

The Research and Extension Advisory committee has been quite busy over the past few months, developing terms of reference for the Centre, completing an initial project scan of activities contributing to the strategic goals, developing an extension plan, and beginning to populate the Industry Advisory Board. Upcoming activities include the development of a communications plan that will assist in engaging with those groups outside Lacombe, connection with and involvement of the research and extension working groups, and the initiation of some extension and communication activities that are identified as priorities in those respective plans (including branding of the Centre).

We plan to host a kick-off meeting of the Center that will involve the Management Committee, the Research and Extension Advisory Committee, the Industry Advisory Committee and the research and extension working groups in the fall of this year.

This is an ambitious, long-term initiative, with a large number of potential stakeholders. Although many of the Centre's activities are currently centered around the Lacombe Research Station, it is recognized that there are other organizations performing activities that contribute to the Centre's strategic goals that need to be engaged and active in utilizing the Centre as a way to foster coordination, collaboration, and enhance extension activities relating to forage and beef production, and whose participation is important to the Centre's success. That is where groups like ARECA, the applied research organizations (such as the Grey Wooded Forage Association), and others can play a key role, and we look forward to working with all interested parties as the Centre develops and evolves.

Alberta  Agriculture and Forestry



Managing Nutrients in Extensive Cattle Wintering Sites



Project #: 2011C

Cooperator: Doug & Deb Skeels

By: Agriculture and Agri-food Canada

Extension Partner: Grey Wooded Forage Association

GWFA Funding: ARD/AOF Environmental Funding



Early in 2011 we were approached by Dennis Lastuka from Ag Canada to see if we had a suitable site and an interested cooperator for a nutrient intensity and distribution study in bale grazing situation. GWFA Director Doug Skeels was quick to volunteer as he was planning to try bale anyway.



Some high tech moisture and temperature sensors were buried at various depths at specific distances from the centre of the two test bale's locations. A set of sensors were also set up just outside of the bale grazed area.

These sensors were then connected to special transponders that were buried in 5 gallon buckets as well. Apparently, these transponders can hold up to seven years of temperature and moisture data, which can be readily downloaded onto laptop computers. Many soil samples were taken at the beginning of the project and each year following.



Bales are set at 40 foot centres and a different area of the pasture is used each year. Doug and Gerald Skeels (Doug's Dad) manage the bale grazing each winter. They've been quite impressed with the ease of bale grazing as compared to the



conventional feeding system they normally used.

Data is collected from the transponders in each year.



Many more soil samples are taken in strategic distances from the bale centres. Forage samples are also taken each year to see the correlation between high soil nutrient

content and high quality forage.

At intervals during each summer, forage yield is mapped using "Green Seeker" technology. The "Green Seeker" unit

mounts on the front of a quad which is driven back and forth over the pasture till the whole thing was recorded.

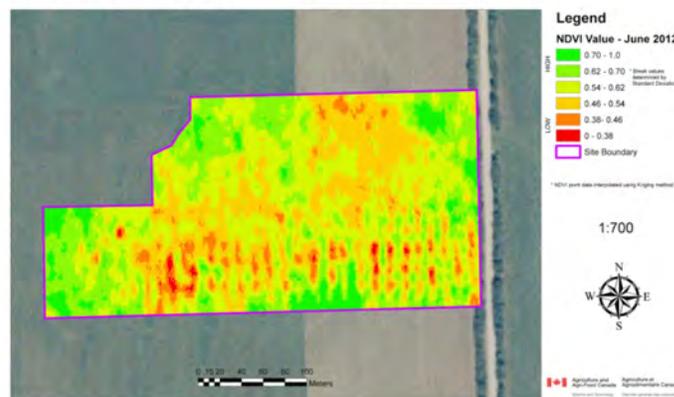


The colourful maps that are produced show where the forage production is the highest, and in so doing, show where the nutrient deposits were the highest.



The plan is to run this project for several years to be able to collect meaningful information over time. This information is intended to help develop bale grazing Best Management Practices (BMPs) for future publication.

Normalized Difference Vegetation Index Map - June 2012



3D Fencing - We Learn As We Go

Three Dimensional (3D) Fencing is a possible way for producers to reduce wildlife damage in their stack yards without the high cost of standard wildlife fencing. Using high voltage electric fencing and using a 3D wire configuration the concept is to use height and depth plus electricity to force deer or elk to turn back from entering a stack yard.

So why would this be an issue of interest to the membership of the Grey Wooded Forage Association (GWFA)? Well certainly to be able to cheapen the costs of building a stack yard fence, but more importantly to learn the animal/fence dynamics of both deer and elk. The stack yard fence serves two purposes: firstly the obvious, to stop animals from entering and damaging stored feed, but secondly, it also serves as an opportunity for us to learn.



Learning the animal/fence dynamic allows us to extrapolate a lower cost stack yard fence to a larger area like a swath grazing field. One of the challenges with swath grazing has been wildlife damage and our inability to keep the animals out of the field. By learning how to fence using lower cost high tensile wire and electricity for a stack yard fence, we should be able use that same understanding as a solution to the ongoing issue of wildlife damage in swathed fields.

In the form of a project, the GWFA made agreements with two hay farmers south of Sundre who had experienced deer and elk damage in their hay bales to partner in building fences around their stack yards. Using trail cameras set up in the fence line, we are able to watch the animals respond to the challenge of crossing the fence.

3D FENCING PROJECT
PROTECTING FEED FROM ELK

PROJECT BY: **COOPERATORS**
Darryl Murphy Renee Poirier

3D FENCING PROJECT
PROTECTING FEED FROM ELK

PROJECT BY: **COOPERATOR - Otto Seidel**

To our amazement, we've realized that where there is a will there is a way but in the end, humans can be smarter. With new understanding, we rebuilt the fences in the fall of 2015 and the landowners are monitoring the success of the fences. Originally the first fence that we had constructed had wire spacing narrower than necessary



but a bit too low. By extending the height of the fence posts, we've been able to raise the height of the fence and add a second top wire offset similar to the wire fencing used for humans. Our thought with that wire is that the animal will see the fence as being wider as well as taller. Any jumping position will be right in line with a lower offset wire stopping the deer or elf from positioning itself for a high jump.

We've also raised the voltage of the electrical system to a minimum of 8000 volts. We have found the higher voltage to be necessary as previously deer would squeeze through the electric fence at voltages that would normally stop a beef cow. We assume that is possible because of their thick winter hair and the lower hoof pressure on the ground. To this point in 2015/16, no deer or elk have breached the fences.



In concert to this monitoring, we intend to coordinate with the local Fish and Wildlife officers in determining stack yard damages in the area as a whole. Obviously with an easy winter like this one, the challenge will be less resulting in this project likely continuing for several winters.

Healthy Alfalfa Varieties

Project #: 2013A

Cooperator: Doug & Deb Skeels

By: Grey Wooded Forage Association

Funding: Agriculture Opportunities Fund (AOF)

Sponsors: Seaborn Seeds, Secan, Glen Lundgard, Allen Batt & Dave Bartlett



currently do a cut in late June or early July, and a graze to 50% of the plots in the fall to represent usual farming practices. We invite you to come down and look at the varieties prior to cutting to visualize this project and the possibilities this brings to producers in the west country. Thank you to Doug & Deb Skeels for collaborating in these projects on their land.

Our Hardy Alfalfa Varieties demo was started in 2013 at Deb & Doug Skeels' pasture quarter, the same quarter where the Agriculture & Agri-Food Canada (AAFC) bale grazing nutrient study is situated.

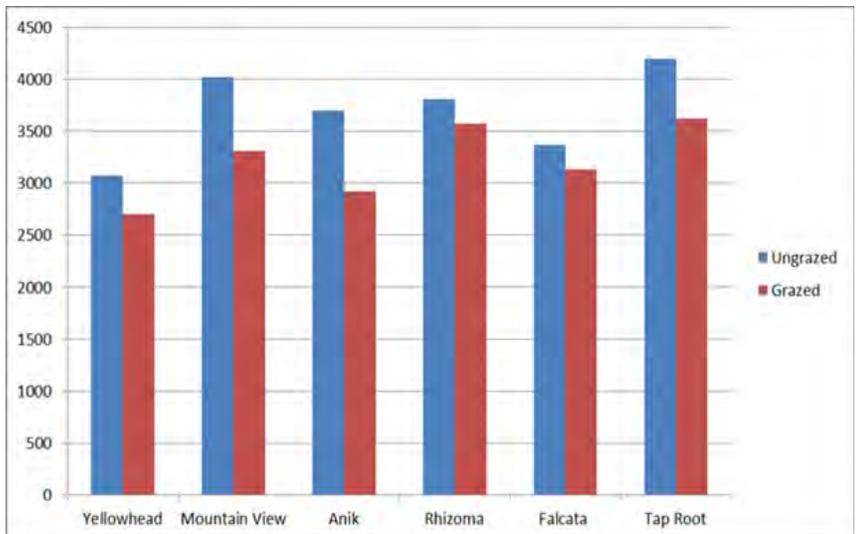
We are currently in the data gathering stages of our alfalfa demonstration plots. We plan to continue this project between 5-10 years to establish longevity and hardiness. With the assistance of our researchers, we will continue to do plant counts and density, and monitor encroaching grasses. We

We would like to extend a big thankyou to Clearwater County Ag Services for putting up our new alfalfa varieties signs at the demonstration site at Doug & Deb Skeels!



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Innovative Swath Grazing

By Dr. Vern Baron, Agriculture and Agri-Food Canada. Lacombe, AB.

This is a project that is funded by Agriculture and Agri-Food Canada (AAFC), Beef Research Council of Canada (BCRC) Alberta Beef producers (ABP) – The Beef Cluster. The project is led by Dr. Vern Baron, AAFC, Lacombe. Other collaborators are Dr. Pat Juskiw, Mazan Aljarrah, Dr. Joseph Nyachiro and Dr. John Basarab, all Alberta Agriculture and Forestry, Lacombe, AB; Dr. Mary Lou Swift, Hi-Pro. Darren Bruhjell and Sharon Reedyk, AAFC, Edmonton also contributed to the project.



The Grey Wooded Forage Association is also a collaborator playing a role in sponsoring and organizing a tour and seminar on extended grazing. This occurred in February 2016. This report will provide a brief overview of some parts of the research and extension.

Experiment 1.

Weathering losses under swath grazing conditions: Compare a range of species for losses in nutritive value in the swath from September to April. (2013-14 to 2015-16)

Weathering losses refer to the loss in forage nutritive value after the forage is swathed or cut. Lacombe Research Centre has looked at loss in nutritive value for perennial grasses and legumes over winter as well several species of cereals and corn. This trial allowed us to investigate losses in several species over the winter when sampled each month from September to April. The treatments were planted in plots large enough to be swathed. Treatments are replicated three times. Well used or older cultivars were chosen from information collected by the Grey Wooded Forage Association surveys: i. e. "What variety do you use on your farm? Some lines (e.g. 94L or Taza) were chosen from the ARRD breeding program on the basis of fiber digestibility, lignin, starch content and agronomic characteristics.



Figure 1 - (Above)
Oat plot being swathed in Experiment 1 (Weathering Trial)

Figure 2 - (Below)
Triticale swath in Experiment 1 (Weathering Trial)



The weathering trial described above has been grown for three years. Because the most recent sampling occurred in April, 2016, only means over the years are shown and the analyses are preliminary. Yield in September indicates that corn was at the top of the group and winter the winter cereals at the low end. Oat and triticale yielded at similar levels, both higher than barley. Carrying capacities in Table 1 were estimated using the initial yield and forage quality which was the average of all sampling periods (October to April) averaged over three years. The estimates were carried out using a forage evaluation spreadsheet developed in related research. Generally speaking the estimated carrying capacities followed the ranking of yield. Corn and the winter cereals had the highest cost estimates for daily feeding. This is because corn cost the most to grow, while the winter cereals cost the least, but also yielded the least. Corn and the winter cereals had the highest average IVTD and TDN. Triticale, oat and Gadsby barley had relatively low IVTD and TDN percentages. Interestingly AC Ranger barley and Haymaker Oat had the highest IVTD and TDN among the small grain entries.

Forage quality during winter is highly variable, which is why averages over months were used in the estimates shown in Table 1. However trends in over-winter weathering shown in Figure 3 indicate some general differences among species and varieties using TDN as an example. TDN for corn and the winter cereals changed little over winter. By contrast the small-grain entries decreased, with triticale and Gadsby barley decreasing the most and AC Ranger barley and oat decreasing at a slower rate. Weathering trends are also monitored in the other trials in the study.

Table 1. Yield, estimated carrying capacity and daily feed cost based on Sept. yield and forage quality and crude protein (C.P), in vitro true digestibility (IVTD), total digestible nutrients(TDN) and neutral detergent fiber (NDF) October to April during 3 years

		Yield	C. capacity	Cost	C. P.	IVTD	TDN	NDF
		t ha ⁻¹	cow-d ha ⁻¹	\$ cow-d ⁻¹	%			
Barley	AC Ranger	10.3	664	1.11	8.9	60.7	53.6	59.9
Barley	Gadsby	10.8	730	1.08	8.2	58.9	50.0	62.5
S. Triticale	Bunker	11.5	760	1.05	7.8	57.4	51.3	61.7
S. Triticale	Taza	11.3	757	1.05	8.1	56.8	51.0	62.9
Oat	Mustang	11.1	736	1.04	7.3	57.6	52.1	61.5
Oat	Haymaker	12.9	853	0.97	8.5	59.1	53.6	59.3
Corn Stand	P. 3994	15.0	906	1.14	7.6	67.5	63.8	55.8
Corn Swath	P. 3994	15.5	924	1.13	6.8	68.9	65.6	54.0
W. Triticale	Luoma	7.1	454	1.25	12.8	80.1	59.6	54.4
F. Rye	Remington	6.3	405	1.35	13.4	72.4	57.2	55.0

TDN Averaged Over Three years

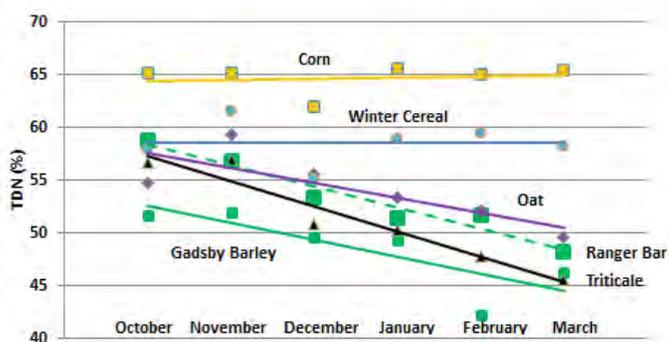


Figure 3 -

Trend for TDN of selected species and varieties as they responded to winter weathering conditions from October until March averaged over three years.

Table 2 indicates the potential for the different species and varieties to be grazed on fall and late winter swaths after different periods of exposure to the winter elements- (September to October or to March). Both corn and the winter cereals were most stable, because their forage quality was generally highest and changed the least. Body condition score (BCS) and cow empty body weight

(EBW) after 100 days of grazing were estimated with the forage evaluation spreadsheet. Estimated EBW either increased or the loss was low and in the case of standing and swathed corn; and for winter triticale the BCS could be rounded to 2.8 or greater. Winter triticale seemed better than fall rye and swathed corn better than standing corn. The small-grains appeared to be similar with regards to this comparison.

Thus, corn appeared to provide some risk mitigation as a choice against severe weathering that might cause excessive weight loss, although it was the most costly. For example, cows beginning at BCS of 2.8, grazing Gadsby barley of March –quality, under warm (2015-16) conditions, after 100 days would have a BCS of 2.73 and an EBW loss of 13 lbs. However cows grazing under colder conditions would have a BCS of 2.45 and EBW loss of 64 lb after 100 days of grazing. This could be a concern. In cold and warm cases when corn swath is grazed with March quality the cows would gain in BCS up to 3.0 and EBW gain of 43 lb.

Observations from grazing trials in 2015-16

Grazing trial 2: (2015-16 to 2017-18). Comparing barley and triticale lines selected for swath grazing compared to popular forage-types.

Introduction:

Producers comment that certain varieties are not consumed by cows when swath grazing. However, it has been difficult to evaluate cereal lines and varieties for potential in swath grazing or for use in other forage end-uses in an objective manner. For example some varieties such as the barley cultivars CDC Cowboy and its’ successor CDC Maverick have been promoted and sold as forage type barley, similarly Murphy oat was promoted as a forage-type based largely on its’ yield attributes. In 2013-14 and 2014-15 savings for swath grazing over the control were \$3,850 and \$6,400, respectively for grazing 100 cows for 100 days. This was due to poor utilization (as low as 30%). Previous research (Baron et al. 2014) from 2008 to 2012 resulted

in savings of \$12 000, \$9300 and \$7400 for triticale, corn and barley, respectively. Utilization in this work varied from 65 to 85%). It appears that reduced utilization per se reduces carrying capacity and therefore increases cost of over-wintering more than loss of quality due to weathering. In some winters it was due to snow conditions (2013-14 and 2014-15), but it could be low forage quality and perhaps preference.

Using a decision-making spreadsheet developed

Table 2. Estimated body condition score (BCS) and empty body weight loss (EBW) using forage quality data from the weathering study for cows beginning grazing at 200 days of pregnancy if the forage quality was at the October or March level (e.g. Fig. 3) and having grazed for 100 days

		BCS			EBW Change	
		Oct.	March	Diff	Oct.	March
Barley	AC Ranger	2.79	2.64	0.15	-3	-30
Barley	Gadsby	2.68	2.60	0.08	-23	-37
S. Triticale	Bunker	2.75	2.61	0.14	-10	-35
S. Triticale	Taza	2.71	2.61	0.10	-17	-36
Oat	Mustang	2.74	2.63	0.11	-11	-32
Oat	Haymaker	2.73	2.65	0.08	-13	-28
Corn Stand	P. 3994	3.15	2.83	0.32	64	4
Corn Swath	P. 3994	3.20	3.17	0.03	74	68
W. Triticale	Luoma	2.79	2.78	0.01	-2	-3
F. Rye	Remington	2.77	2.71	0.06	-5	-18

BCS and EBW are estimated when grazing is initiated for a 1500 lb cow beginning with a BCS of 2.8, at 200 days of pregnancy and after 100 days of grazing and mean temperature at -10 C. Diff is the difference between BCS for cows fed Oct. or March swaths.

by Raquel Doce, Vern Baron and Campbell Dick and input from industry, Dr. Pat Juskiw and Mazan Aljarrah varieties have been chosen for Experiment 3. They are: 1. Bunker triticale, 2. 94L triticale (ARD program), 3. Maverick barley and 4. Canmore barley.

In addition, the research was conducted on a site know for low productivity and one known for high productivity. This will continue for two more years.

Results

Rainfall from April to July was 63 % of the long term average and April to the end of September 93%. Snowfall during the grazing period from mid-October until the end of March was average. This was in contrast to very high amounts of snow during

the previous two years. Mean temperatures during the winter grazing season were above normal, particularly in February and March. The mean temperatures for each month from October through until March were always less than 10 C.

Forage yield on the two locations differed greatly. The low productivity site averaged 8.5 t ha-1 compared to 13.7 t ha-1 for the high productivity site. The triticale silage used in the control ration yielded 10.9 t ha-1. There was no difference among lines and species for the low productivity site, however Bunker triticale and Canmore barley were greater than 94L triticale. The difference in yield resulted in more grazing days on pasture for the high than low productivity site and consequently a greater carrying capacity (Table 3). Cows began grazing in mid-Oct., two weeks earlier than normal. Carrying capacity averaged 534 cow-d ha-1 on the low productivity site and 935 cow-d ha-1 on the high productivity site. The cows on the high productivity site grazed very close to their calving date. There was little difference in carrying capacity on the low productivity site, but cows grazed longer on Maverick barley and 94L triticale than Canmore barley and Bunker triticale. Cows grazed longer on the high productivity site than in any other year since swath grazing research was initiated at Lacombe.



Figure 4 - Cows grazing on low productivity site in December 2015.

Data shown are preliminary. Preliminary cost analyses show that the average daily cost per cow was \$1.46 per cow day on the low productivity site, \$0.98 per cow on the high productivity site and \$1.72 per cow day for the control. The feed cost per cow day was \$0.73 for low productivity, \$0.33 for high productivity and \$0.66 for the control,

Table 3. Pasture Summary*: Yield, Dates on, Dates off, Grazing or feeding days, and Carrying capacity grazing swathed barley or triticale varieties compared to pen-fed a triticale silage-based ration at Lacombe, AB during the winter of 2015-16

Grazing or Feeding	Yield	Date On	Date Off	Grazing days	Carrying capacity*
System					
	T ha ⁻¹			days	Cow-d ha ⁻¹
-----Low Productivity Site 2015-16-----					
Canmore barley	8.7	19 Oct	19 Jan	92	550
	8.3	19 Oct	18 Jan	91	531
Maverick barley					
94L triticale	8.4	19 Oct	14 Jan	87	508
	8.5	19 Oct	21 Jan	94	548
Bunker triticale					
Conv. Feeding	10.9	2 Nov	27 Jan	86	
-----High Productivity Site 2015-16-----					
Canmore barley	14.8	19 Oct	7 Mar	140	902
	12.8	19 Oct	22 Mar	155	1029
Maverick barley	11.2	19 Oct	22 Mar	155	775
94L triticale	15.9	19 Oct	7 Mar	140	1032
Bunker triticale					
Conv. Feeding	10.9	2 Nov	22 Mar	141	

indicating the importance of yield.

The low productivity location or rep cost more per cow-d the high productivity location and the cost of feed per cow-d cost more for the low productivity location than the control. This is very important as it emphasizes the importance of high yield. The cost of crop production for barley and triticale on low productivity was \$373 and \$385 ha⁻¹, respectively and on high productivity \$308 and \$302 ha⁻¹ respectively. The difference was that the low productivity site required \$149 ha⁻¹ in fertilizer N and P2O5, whereas the high productivity site only required \$72 ha⁻¹. The control required \$515 ha⁻¹. Inputs for high and low productivity barley were \$171 and \$248 ha⁻¹, respectively and triticale \$165 and \$248 ha⁻¹, respectively. However the difference in yields and resultant carrying capacity (Table 4) meant that the cost of feed kg fed was \$0.03, \$0.05 and \$0.04 kg⁻¹ for high and low

productivity and the control, respectively.

All cows gained weight over the 91 days of grazing on the low productivity site (Table 4). Based on measured forage quality in September we estimated that the cows should gain about 23 kg (50 lbs) over 100 day and an EBW loss of 13 kg (28 lb). Thus all should have gained in BCS and back fat. The cows started grazing in October 19 under warm temperature conditions and all met or surpassed the target. Canmore barley exceeded expectations, but had the highest forage quality and was chosen as a promising type. Cows grazing 94L triticale also exceeded expectations, but did not have as high forage quality as Bunker. Thus cows grazing the two new lines on the low productivity site surpassed expectations and their older counterparts. Expected intakes were 11.6 kg cow-d⁻¹ (25.5 lbs) so deviations from this may have been due to utilization effects.

Cows grazing the high productivity site grazed for 148 days on average and up to calving. Under these conditions with the exception of Maverick barley all cows gained weight but all lost some condition and back-fat. Under the high productivity conditions both triticale lines gained more weight than Maverick barley and Canmore was intermediate. Generally Maverick barley had the highest and Bunker triticale the lowest ADF content of lines used in the high productivity location.

Table 4. Cow performance, while grazing swathed barley and spring triticale varieties at Lacombe, AB during the winter of 2015-16.

Grazing or Feeding	Cow weight	Cow Back Fat	Cow Back Fat
System	loss/gain (lbs)	BF on (mm)	BF off (mm)
-----Low Productivity Site-----			
Canmore Barley	108	13	14
Maverick Barley	53	11	13
94L Triticale	144	14	16
Bunker Triticale	65	11	14
Conv. Feeding	154	13	16
-----High Productivity Site-----			
Canmore Barley	20	11	8
Maverick Barley	-57	11	8
94L Triticale	39	12	11
Bunker triticale	43	13	10
Conv. Feeding	182	13	16

Environmental Viability of Increased Field Use Frequency for In-Field Winter Feeding

- First Interim Report

ACIDF



Alberta Crop Industry Development Fund Ltd.

This is an Alberta Crop Industry Development Fund Ltd. (ACIDF) project. In-field winter bale grazing systems that involve importing additional feed to a site can add a significant amount of nutrients to a site through urine, manure and feed residue.

Past research has led to recommendations that to avoid high soil nutrient loading, winter feeding should be restricted to once every five years in an individual pasture and to utilize a bale spacing of 12.5 m (Haak 2014, AARD 2013). However, on-going work suggests that these recommendations may be too low of a rate for some western Canadian soils.

Specifically, early results from AAFC bale grazing studies on Luvisolic, and thin black soils are showing that responses to grazing and nutrient (manure and urine) deposition at the current recommended bale density and pasture rotation are not creating excessive concentrations of N and P in the soil (Cade-Menun 2014, personal communication; Timmerman and Bruhjell 2015, data unpublished).



Nutrient levels immediate to individual bales, where nutrient loading is greatest, were not excessively high in the year immediately following bale grazing, or up to three years later. Equally important, nutrient levels around the peripheral zone were largely unaffected or only slightly affected. The uneven nutrient distribution has resulted in a patchwork pattern of high production (previous bale sites) and low production (spaces between bales) spots where the corresponding forage production levels of the low production spots are 30 to 80 percent lower than where the bales were located.

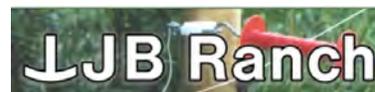
An additional bale grazing treatment would offset the original 12.5 m spacing and provide a more even distribution of nutrients and increased forage production. Our studies suggest that the spaces between the original bale grazing treatments, which are at least 100 m², could easily accommodate an additional individual bale without greatly impacting the nutrient

load at the previous bale site. We predict that a higher return frequency in two central Albertan locations will improve pasture health.

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