SPRING 2019 ISSUE 02 PEACECOUNTRYBEEF.CA

FROM THE ROOTS UP

Your Peace Ag Connection

PUBLISHED BY THE PEACE COUNTRY BEEF & FORAGE ASSOCIATION

Peace Country Beef & Forage Association

"STRENGTHENING AGRICULTURE, ONE FARM AT A TIME"

2019 Board of Directors
Jordan Barnfield
Preston Basnett
John Prinse
Thomas Claydon
Faron Steffen
Robbie Hale
Kelvin Krahn
Allan McLachlan
Michael Gross
Clay Armstrong

Staff
Liisa Jeffrey, Manager
Akim Omokanye, Research Coordinator
Katie McLachlan, Environmental & Communications Coordinator
Monika Benoit, Extension Coordinator
Marianne Krahn, Admin Assistant

Locations:
GPRC Fairview Campus
780-835-6799

High Prairie Provincial Building
780-523-4033

info@pcbfa.ca

Having worked in the Peace Country since 1982, we have established ourselves as an innovative association, working with local businesses, educational facilities, other research groups and always with the producers from across the Peace Region.

Our programs vary from environmental concerns to finding the newest technology and helping producers implement it on their operations.

Our board is made up of producers from across the Peace Region, who actively voice questions, ideas and concerns to address the needs of farmers and ranchers of the Peace.

Mission

The Peace Country Beef & Forage Association is a producer group with the goal to be a hub of innovative, relevant and local beef, forage, soil health and crop information for Peace Country Producers.

Vision

A Peace Country producer's first stop for optimizing beef, forage, soil health and crop production to maximize profitability with innovative and credible information.

Our services include:

- Applied Research
- Extension publications & events
- Feed testing & analysis
- Soil testing & analysis
- Production decision making, technical assistance & problem solving
- Information research & referrals

Follow Us

@peacecountrybeef

@pcbfa

@peacecountrybeef

Search Us & Subscribe!

peacecountrybeef.ca

Become a Member Today!

peacecountrybeef.ca/membership
One Year, Three Year, Five Year & Corporate Memberships are available

2018 PCBFA Board of Directors l-r: Preston Basnett, Robbie Hale, John Prinse, Thomas Claydon, Allan McLachlan, Faron Steffen, Kirk Cowell, Nancy Van Herk, Jordan Barnfield & Kelvin Krahn

CONTENTS

HIGH LEGUME GRAZING 101

By: Kelly Sidoryk, HMI Canada

It is common knowledge that incorporating legumes into grazing programs can significantly increase production. BUT anyone who has gone through a bloat wreck knows that the risks can be high.

According to Alberta Agriculture, the economics "On average legume/ grass stands do better than straight grass giving a better yield and cost per unit of output."

Alberta Agriculture's AgriProfits cost and return profiles indicate for the top third of producers the return to equity was $46.66 per acre for the dry land legume/grass pasture in the Peace Country and $14.19 for the straight dry land tame grass pasture in the same region. The return to equity is calculated by determining the gross return minus the total production costs. They point out that there is a significant range in return when looking at all the producers not just the top third. In the case of the legume/grass mix for the total group the return to equity was $22.822 again comparing to the previously mentioned top third producers of $46.66 per acre.

Using profit to invest in the grazing/soil resources the returns will have a multiplier effect.

One legume that is garnering more attention lately is sainfoin. It is more durable in grazing systems and produces comparable yields to alfalfa/grass mixtures, and it lowers bloat risk. The tannins in the sainfoin are natural bloat preventers and also create bypass protein which is short on lush, vegetative, rapidly growing forage stands.

Above: Sainfoin in pasture

Newer sainfoin varieties, ACC Mountainview, are more hardy and faster growing than the older ones. Sainfoin grows early in the season, but is slower to regrow than alfalfa according to an article on foragebeef.ca. The winter hardy strains give hay and pasture yields within 80 – 90 percent of those of alfalfa except when it is very dry.

A 2013 study led by Alan Iwaasa at the Semiarid Prairie Research Center at Swift Current, Saskatchewan found that sainfoin performs better under a rotational grazing system than continuous grazing. The sainfoin was grown in a mix with grass and alfalfa and in some cases maintained over 20% (amount

required for bloat prevention) but not all. This study was conducted at Swift Current and Lethbridge, Alberta and is ongoing.

There are a number of projects ongoing to determine if sainfoin does have the potential that is suggested. As well the new variety, Mountainview is outperforming some of the earlier ones.

Overall good grazing management is required to minimize bloat potential on legumes. The main key is to prevent animals from eating too much of a highly digestible legume too quickly. As well as giving the rumen microorganisms time to adapt, says S. Ray Smith of the University of Manitoba, in a Preventing Bloat on Pasture article.

The strategies outlined in the article are:

1. Do not turn hungry animals on fresh legume pasture.
2. Maintain at least 50% grass.
3. Do not start grazing when the pastures are wet from dew or rain.
4. Gradually introduce cattle to legume containing pastures.
5. Pre-fill with coarse hay before turning onto pasture.
6. Provide coarse hay at all times when cattle move onto a new pasture.
7. Delay grazing alfalfa until the bloom stage.
8. Cull frequent bloaters from your herd.
9. Feed the bloat preventative poloxalene mixed with the mineral or grain supplement.
10. Check animals frequently for bloat when beginning grazing.

When grazing yearlings, culling frequent bloaters is not as simple an option as with

a cow herd. It also appears that some cattle are more susceptible to bloat. Perhaps due in part to an innate ability to limit themselves or mix non-bloating forages. This is simply an anecdotal observation and not backed up by scientific study. It is the ones you don't see bloating that die quickly.

This is only one small aspect of a good grazing strategy. 2/3 of a beef cow cost is feed and the grazing days are one half of that. Every day spent grazing can add $1 to cow profit.

When economic times are good, using profit to reinvest in the grazing/soil resources returns will have a multiplier effect. Consider which of your pastures can be more productive and profitable. Cost effective tools are grazing planning, rest, water, fences and legumes – maybe fertilizer and herbicides.

Kelly ranches with her family near the border city of Lloydminster, Alberta/Saskatchewan. Her experiences in the ag community have led to a career running their own livestock operation as well as working with families, organizations and individuals to help enhance their situations. Visit kellysidoryk.com

RIPARIAN AREAS: WHAT THEY ARE & THEIR IMPORTANCE IN THE PEACE

Katie McLachlan & Buthaina Al-Maqtari, PCBFA

Here in the Peace Country, we are a part of one of the largest watersheds in Alberta, the Mighty Peace Watershed. Much of the runoff and surface water that runs in the area will eventually meet the Peace River. The Peace River and its tributaries supply drinking water for about 70% of the population of the Peace Country. Therefore, as land managers in the Peace Country, it is important that we work together to do our part to help protect the water quality of the Peace.

According to the MPWA's State of the Watershed, some of the major influencers on surface water quality in our watershed include: use of synthetic fertilizers and chemicals running off the land, land clearing, and general land disturbance in the watershed. When we clear land, we are removing a diverse population of vegetation that would normally act to slow the flow of water through it. When these bushes and buffers are removed, there is nothing left to slow the flow of water, allowing it to move faster over the landscape, causing erosion and higher flow in streams and creeks. When erosion increases, we see higher levels of nutrients, sediment, and chemicals from agricultural production in the Peace River and surrounding water bodies.

Above: The Peace River near Dunvegan

A very extensive part of our watershed includes riparian areas. According to the Mighty Peace Watershed Alliance, nearly 30% of our watershed, or 52,898 square kilometers, is covered by wetlands (MPWA State of the Watershed, 2015). This number only includes wetlands, and not the entirety of riparian area in our watershed. Riparian areas are the lush, vegetative strips that border rivers, streams, lakes, and wetlands.

Thinking about the landscape here in the Peace, A LOT of ground can be considered a riparian area! Riparian areas serve as natural buffers between aquatic areas and dry land. Healthy riparian areas trap and store sediment, maintain banks and shorelines, store water, recharge aquifers, filter and buffer water, and maintain biodiversity.

In basic terms, we can think of riparian areas as nature's Brita filter. When healthy and well maintained, these vegetative areas slow down the flow of water through them. When water flow slows, it has a chance to deposit sediments and pollutants that it has swept up in it's travels. Soils in riparian areas are generally high in organic matter and have an almost sponge-like texture. This 'sponge effect' absorbs water during wet periods, and releases water during drier periods, allowing streams to flow longer into the summer and maintain levels of natural water bodies. These highly organic soils are also home to a thriving microbial community who can work to break down many different types of chemical and synthetic pollutants before they reach water bodies.

The unique characteristics of riparian areas support an abundance of nutrious forage that stays green longer into the summer than the surrounding upland vegetation. They also tend to hold water longer into the summer months. This makes riparian areas a great source of grazing for livestock!

These well vegetated shores provide a source of shade for livestock and help in cooling water in hot temperatures. The sensitive yet very attractive areas to livestock can be exposed to intensive grazing, leading to a

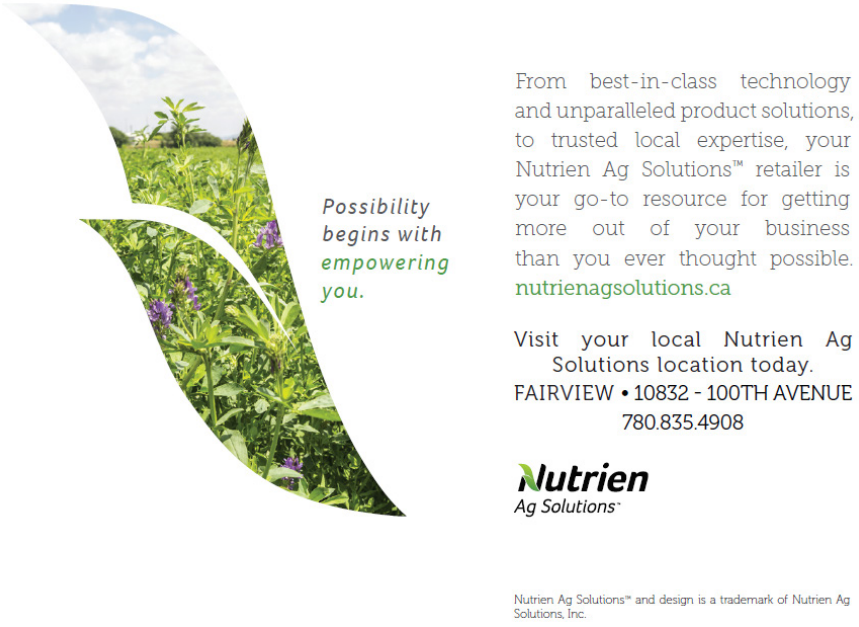
Below: Example of a healthy riparian area. Credit: Cows & Fish

high level of disturbance, which causes erosion and contamination to water bodies. Trampling of livestock beside the shore causes soil compaction, stream bank erosion and loss of vegetation cover. Manure buildup in watercourse by lingering livestock in riparian areas is a source of bacteria and other microorganisms that cause serious water quality issues and directly affects livestock performance and behaviour

So how can we promote a healthy riparian area? Below are some management considerations to look into this spring when you take to the land.

- Promote Healthy Vegetation in Riparian Areas: Diverse herbaceous and woody plants of various sizes and ages will create the structure needed to trap sediment and contaminants as well as uptake some nutrients.
- Increase the Width of Buffers: Maintain a well-vegetated buffer area alongside riparian areas. Buffers minimize impacts from cultivated fields, wintering sites or other intensively used areas. The wider the buffer outside of the riparian area, the more effective it is at improving water quality.
- Encourage the Principles of Range and Pasture Management: Provide effective rest to maintain plant vigor. Aim for evenly distributed livestock use, avoid vulnerable periods (wet soils and periods when shrubs can be overused), and balance forage supply with livestock needs.
- Try a Variety of Management Techniques: Consider alternative water sources for livestock. Place supplemental feed and mineral supplement away from riparian areas, control timing of use, and reduce manure build up in riparian areas. Provide alternative means of shade, shelter and grooming devices.

The Canadian Agricultural Partnership (CAP) currently has some funding available for ensuring riparian area health. Through the Environmental Stewardship & Climate Change Program, producers can qualify for up to $100,000 in projects that help in beneficial riparian management. The program is currently paying up to 70% of riparian area fencing, off-site watering systems, watercourse crossings, and riparian area assessments. In order to take advantage of this program, you must have valid farm status and have completed an Environmental Farm Plan within the last 10 years. If you would like assistance applying for a CAP grant, please feel free to contact PCBFA and we would be more than happy to help you!



UPCOMING PEACE COUNTRY BEEF & FORAGE ASSOCIATION EVENTS

Event	Date	Location
Peace Forage Bus Tour	June 20th	Beaverlodge Bussing available from Manning and Fairview Areas
Grazing School with Dr. Allen Williams	July 22 & 23rd	Grimshaw
5th Annual Field Day at the Research Farm	August 1st	Fairview
Wheatstalk	August 8th	Teepee Creek
For More Information or to Register for any of these great events, please contact us at: peacecountrybeef.ca/upcoming-events | Email info@pcbfa.ca | Call 780-835-6799 ext. 3		

ONE TIME FENCING LTD.
Dave & Kim Kuntz
780-494-2700

RANGE WARD

VISION CREDIT UNION

YIELD AND AGRONOMIC PERFORMANCE OF HARD RED SPRING WHEAT CULTIVARS COMMONLY GROWN IN THE PEACE COUNTRY

Dr. Akim Omokanye, PCBFA

Above: PCBFA Seeding Spring 2018

Collaborator/Funder: Alberta Wheat Commission

Background

Variety selection plays an important role in wheat yield potential. Regardless of whether a producer intends to seed one cultivar or several on the farm, it is important to start out with a list of several good candidates. The final product of interest is grain yield and therefore, it is crucial to select cultivars that have shown consistent performance in the region. Wheat cultivars differ in their straw strength. No-till producers in the Peace might be looking for tall varieties with good straw production potential to help improve water retention in the soil, so this could also play a role in selecting a cultivar.

In the Peace region, droughts are a recurring feature of the climate and can be expected in any part of the region. While very severe and prolonged droughts are rare, they do occur. Therefore, testing and selecting cultivars with high water use efficiency is essential to helping producers obtain better economic returns. Furthermore, producers need accurate, regional, and current variety information to stay competitive. This project was used as an effective tool for testing some of the common spring hard red wheat cultivars in the Peace Country growing environment.

Objectives

To assess the grain yield and grain quality of some hard red spring wheat varieties commonly grown in Fairview and surrounding areas.

Project Design

Project site: The field demonstration was carried out at the Fairview Research Farm on RR#35, MD of Fairview. The site was under alfalfa hay for >10 years before being sprayed out and plowed in the fall of 2017. It was disced and harrowed in 2018 before seeding. The site was a uniform and well-drained field, with no low areas, and no known infestation of quack grass, Canada thistle or herbicide tolerant weeds. The surface soil characteristics

Continued on Page 10

from 0-6" depth and rainfall information for Fairview are provided in Table 1.

Table 1. Soil characteristics at the site before seeding

Soil quality	
pH	6.2 (Neutral)
Organic matter	7.6 (Normal)
EC (dS/m)	0.2 (Good)
Nutrient analysis (ppm)	
Nitrate-N	7 (Deficient)
P	8 (Deficient)
K	115 (Marginal)
Sulphate-S	3 (Marginal)
Ca	1720 (Excess)
Mg	260 (Optimum)
Spring soil moisture at seeding (%)	12.7
Spring soil temperature at seeding (°C)	16.2
2018 rainfall, mm (April-Aug)	227
Long-term annual rainfall average, mm (April-Aug)	254

Experimental design: Randomized complete block design with four replications.

Treatments: 16 of the common hard red spring wheat cultivars grown in Fairview and area were tested (see Table 2 bottom of Page 11). Stettler was used as control.

Seeding rate and seeding date: 350 plants/m2 (32.4 plants/ft2) was used as seeding rate and seeding was done on May 25.

Seeding method: 6-row Fabro plot drill with 9" row spacing. Plot size was 1.15 m x 8 m. Fertility (actual lbs/acre): 147 N + 43 P + 46 K + 16 S was applied at seeding. Spraying: Pre-emergent was with glyphosate and in-crop spraying was done once with Curtail M (800 ml/acre) + Fluroxyoyr (170ml/acre).

Data collection: Combine harvesting was done on October 4 with a Wintersteiger plot combine harvester. Grain yield was adjusted to 12% moisture content. Lodging score was taken on plant lodging just before grain harvest. Grain samples for protein content determination were shipped to A&L Laboratory (Ontario).

Data analysis: Field data were subjected to analysis of variance (ANOVA) using R statistical software. When ANOVA indicated significant treatment effects, the means were separated by the least significant difference (LSD) at the 0.05 probability level.

Results

Grain yield, test weight (bushel weight) and grain protein content were all statistically different (Table 2).

AAC Brandon had the highest grain yield with about 134 bushels/acre, followed by AAC Crossfield with about 132 bushels/acre and then AAC Tisdale with about 127 bushels/acre. AAC Connery had the least grain yield with 83 bushels/acre. The grain yield advantage from cultivars tested over control (Stettler) was up to 11% (AAC Brandon). AAC Connery, Thorsby, AC Splendor and CDC Bradwell did not result in any grain yield advantage over control.

The bushel test weight was significantly higher for AAC Redwater than all other cultivars (except Shaw VB). Similarly, AAC Redwater had significantly higher grain protein content than other cultivars (except Stettler and AAC Tisdale).

No lodging was recorded for any of the cultivars tested. Stettler, Thorsby and AAC Redwater seemed to be taller than other varieties.

It is important to note that other factors, such as resistance to different diseases, may vary with the cultivars. The degree of resistance to diseases and full grading was not done in this study and those may play a role in varietal selection as well.

Above: Wheat Plots at PCBFA's Teepee Creek Plot Site

Above: PCBFA Small Plots at the Fairview Research Farm

Conclusion

Grain yield and grain protein content are some of the objectives in wheat breeding programs, as these traits are important determinants of the economic value of the harvested product. In this study, AAC Brandon, with the highest grain yield, seemed to have lower protein than some cultivars tested. Overall, in terms of grain yield and to a large extent grain protein content, Stettler, AAC Redwater, AAC Tisdale and AAC Brandon seemed to have performed better than other cultivars. Two (AAC Redwater and AAC Brandon) of the top 4 cultivars also showed greater test weight than most cultivars.

Acknowledgments

This study was funded by the Alberta Wheat Commission. Fertilizer was donated by Nutrien Ag Solutions (formerly known as CPS) in Fairview. Wheat varieties used were sourced from Canterra seeds, FP genetics, Fairview Co-op Seed Cleaning Plants, and from the following producers: Murray Lewis (Cleardale), Ron Heck (Fairview) and Nick Sekulic (Prestville Farms Ltd., Rycroft). The technical help by PCBFA staff and summer students, Thomas Claydon (PCBFA director), Allan McLachlan (PCBFA director), and GPRC farm (Fairview campus) is greatly appreciated.

Table 2. Grain yield and grain quality of 16 hard red spring wheat varieties commonly grown in MD of Fairview and area

Cultivars	Yield kg/ha	Yield bus/ac	Yield % of Check Stettler)	Test Weight lbs/bus	Protein %	Lodging 1-9
Stettler	**4586 abcd**	**120.2 abcd**	**100**	**62.7 fg**	**21.56 ab**	**1.0**
AAC Connery	3117 e	83.3 e	69	61.9 gh	19.7 ef	1.0
Thorsby	3802 d	99.7 d	83	64.3 bcd	19.3 fg	1.0
AC Cameron	4724 ab	123.8 ab	103	63.7 cde	20.9 bc	1.0
AAC Crossfield	5033 ab	131.9 ab	110	62.9 ef	18.8 g	1.0
AAC Redwater	4787 ab	125.5 ab	104	65.7 a	21.6 a	1.0
AC Splendor	3885 cd	101.8 cd	85	63.7 cdef	19.6 efg	1.0
AAC Brandon	5094 a	133.5 a	111	64.1 cd	20.2 de	1.0
Superb	4682 abc	122.7 abc	102	63.5 def	19.7 ef	1.0
Shaw VB	4717 abc	123.6 abc	103	65.1 ab	20.4 cd	1.0
CDC Bradwell	4212 bcd	110.4 bcd	92	64.1 cd	19.4 fg	1.0
AAC Tisdale	4843 ab	126.9 ab	106	61.6 h	21.4 ab	1.0
Parata	4698 abc	123.2 abc	102	63.7 cdef	20.5 cd	1.0
CDC Landmark	4702 bcd	123.3 bcd	103	64.5 bc	19.3 fg	1.0
AAC Viewfield	4727 ab	123.9 ab	103	64.2 bcd	19.6 efg	1.0
CDC Plentiful	4694 abc	123.1 abc	102	64.1 cd	19.3 fg	1.0
Mean	*4523*	*119*	*99*	*63.7*	*20.1*	
P<0.05	*Significant*	*Significant*		*Significant*	*Significant*	
CV,%	*13.0*	*13.0*		*0.85*	*1.97*	

THANK YOU TO ALL OUR FUNDING PARTNERS

Agriculture Opportunity Fund

SINCE 1969 Alberta Beef Producers

CANADIAN AGRICULTURAL PARTNERSHIP
Innovate. Grow. Prosper.

ALBERTA PULSE GROWERS

Alberta Barley

Alberta Wheat COMMISSION

Alberta Agriculture and Forestry

GPRC

ALBERTA CANOLA PRODUCERS COMMISSION

WORKING TOGETHER WITH AGRICULTURAL SERVICE BOARDS ACROSS THE PEACE

MUNICIPAL DISTRICT OF GREENVIEW No. 16

BIG LAKES COUNTY

CLEAR HILLS COUNTY

Saddle Hills COUNTY

MD 133 SPIRIT RIVER 780 864-3500

County of Grande Prairie No. 1 Alberta, Canada

Municipal District of Peace No. 135

Municipal District of Fairview No. 136 Inc. 1914

Birch Hills County

NORTHERN SUNRISE COUNTY