

2014 ANNUAL REPORT





Mission Statement

Battle River Research Group is an independent, producer-driven applied agricultural research association that exists to improve agriculture in a sustainable manner.

Vision Statement

Battle River Research Group is a grass roots organization whose focus is agricultural sustainability. It provides credible, unbiased information, promoting an integrated approach to research through partnerships with producers, industry and government.

Sponsoring Counties



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Alvin Eyolfson
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Amanda Schmidt

Andre Bonneau (volunteered
during seeding)



2014 BRRG Board of Directors

Acknowledgements



THANK YOU

To the Counties of Beaver, Camrose, Flagstaff, Stettler and Paintearth for you financial support and advice

The work conducted by the Battle River Research Group is the result of support by many individuals and groups. We have highlighted many of these on the next page. Further thanks go to:

Major Funding Agencies

- Agricultural Opportunity Fund (AOF)

BRRG Field Crop Sponsors

- Canola Council of Canada
- Alberta Canola Producers Commission
- Alberta Barley Commission
- Alberta Pulse Growers
- AgQuest
- Canada Humalite
- ENR Distribution (McRae Holdings Ltd)
- CPS, Forestburg

Agricultural Research and Extension Council of Alberta (ARECA)

and Partner Associations



Project Sponsors and Support

- Agricultural Opportunity Fund (AOF)
- AB Agriculture & Rural Development (ARD)
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- AgQuest/Western Grain
- Alberta Barley Commission
- Alberta Beef Producers
- Alberta Canola Producers Commission
- Alberta Wheat Commission
- Alberta Pulse Growers
- Canola Council of Canada
- Canalta Humalite International
- Alberta Pulse Growers
- Monsanto/Novozymes
- McRae Holdings Ltd
- Mosaic Canada
- Sponsoring seed companies of variety testing program

Thanks to our many other Sponsors and Advisors who helped in 2014

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- CPS, Forestburg

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- Shelley Barkley
- Harry Brook
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- Neil Whatley
- Barry Yaremcio

Agriculture and Agri-Food Canada

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- GRO (Gateway Research Organization)
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- Bayer Crop Science
- CPS

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- Howard Vincent - Galahad
- Gerald Kuefler - Galahad & Forestburg
- Tom & Ron Streit - Stettler
- Barry Mosby - Tofield
- Kevin James – Castor
- Flagstaff County

Tour And Workshop Support

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- Cows & Fish
- Grazing School for Women Committee
- Battle River Watershed Alliance
- McRae Holdings Ltd
- Heisler Ag Society
- FMC Corporation

We apologize to anyone we unintentionally omitted

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Manger and Forage & Livestock Report

This has been a year of ups and downs. I've had the opportunity to experience optimism for the future of the organization and the staff employed, but like a majority of Albertan's during the later part of 2014 we are watching the dropping price of oil and wondering how that is going to effect the funding we receive through AOF (Agriculture Opportunity Fund).

In early 2014 we and the other forage and applied research associations in Alberta received good news that the funding pool from which we receive the majority of our funding was doubling. The 1.5 million from which all the research association and forage in the province access with the AOF grant was doubling to 3 million. The doubling was welcome news as the dollar amount allocated by the Alberta Government had not changed in close to a decade leaving a number associations working with budgets similar to a decade earlier. The doubling was announced as part of Endowment Fund in March, allowed BRRG to apply for additional funds for 2014. Some of these dollars were put towards staff wages to bring them closer to industry standards (I'd still make more if I worked for CPS), we were also able to plan a few extension events outside of our normal geographical area. A nice chunk also went towards upgrading and replacing aging equipment.

But as we head into our next AOF application for 2015-2018 funding cycle we wondering with the current economic atmosphere if the doubling will continue to be a reality or a dream that failed to materialize. I hope for the future success of the organization that the dream becomes reality, but I imagine we'll have to wait for the Alberta Government budget next March to be sure. The next couple of months will be long for BRRG as we wait to hear the results of the AOF application we made in early January and how the current influence the low oil prices might have on what is allocated to our association and similar association within the Province.



Fixing corn seeder



The staff has had a real change in the last year, the cat and I are the longest at 3 1/2 yr and 2 1/2 yrs. Alvin retired early December, but I am incredibly positive about the two full-time staff members currently working with me. Manjit is full of idea's and with his PhD we will be able to do projects and apply for funding that in the past would not have been an option. Eric has such a unique skill set with animal science degree and the time he's spent as a teacher. We have the makings of a super strong and effect team. Watch us as we bring this association to next level by improving the quality and consistency of work and research we do.

...big things are to come!!

Vicki Heidt

Crop Agronomist Report



Combing Fababeans - Forestburg

I joined Battle River Research Group in May 2014 as a Field Crop Agronomist after Alvin decided to retire at the end of 2014. My goal is to contribute to agronomic research and help farmers grow profitable crops in sustainable way.

I completed my Ph. D. in Agronomy with a specialization in nutrient management in 2006. My master's degree involved studying the efficacy of different pre-emergence and post-emergence herbicides in Soybeans.

I came to Canada in 2008 when my wife was studying at the University of Manitoba for her Master's degree in plant science. In Winnipeg (2009-2010), I worked in a soil chemistry lab at the University of Manitoba and in a private soil testing lab doing soil nutrient analysis. During 2011, I joined the

Internationally Educated Agrologist Program to learn about the Canadian Agriculture Industry.

From 2012 to 2013 I worked as an Agronomist at Marquette Co-op in Manitoba, after spending the summer of 2012 at Integrated Crop Management Services. During 2014 I worked as Crop Inputs Inspector at Canadian Food Inspection Agency in Saskatoon.

In India, I worked as a Research Fellow at Punjab Agricultural University (2006-2007), where I conducted small plot research trials on residue management in rice/wheat/mustard cropping systems.

Presently, my wife and I live in Camrose with our two young children.

Manjit Deol

You may have heard I was retiring from the BRRG, well that day arrived. My last day in the office was December 5.

As I was putting together the 20 year report on the BRRG group a couple of years ago it brought to mind the field seasons, projects, events and changes in the past 21 years. But it's most of all the staff, directors, sponsors, and producers that have been involved with the BRRG since it all started in 1993 that bring the best memories. I feel very fortunate to have worked for a group that conducts such valuable work in east central Alberta.

In the past year I have been working with our new crop agronomist, Manjit Deol, Ph.D, he will be your contact for field crop topics in the future. Manjit and I have enjoyed working together and he brings a lot of experience, ideas, knowledge and passion to the group. I wish you all the best in the future. This is not goodbye I hope to see many of you, perhaps at an agriculture event. My wife and I will continue to live in Camrose, you can reach me at alvineyolfson@gmail.com or at 780-672-6459.

Alvin Eyolfson



Combing at Stettler site

Environmental Report

I joined Battle River Research Group this fall and it has been a pleasure getting to know staff, members, producers, and industry people. I look forward to the challenges and rewards that this career will bring and hope to contribute and make a difference in the way that we do things with the land that we are stewards of. I will begin my report with a brief bio.

I grew up on a mixed farm north of Halkirk and attended the U of A, graduating in 1988 with a BSc Ag, animal science major. After university, I worked as a feed sales representative with Masterfeeds out of Calgary. In 1990 I married my high school sweetheart, Josie Wetter, from Fleet, and we will be celebrating our 25th anniversary this summer, along with our three kids that are 19, 16 and 13. In 1998, we moved back home to Castor and launched a small business, which we sold in 2004; the same year that we built our house north of Fleet on the farm yard that my wife's father, Gordon Wetter wintered cows in the 1970's. I graduated with an after degree BEd from the U of A in 2006 where I was trained as a secondary science teacher, biology major, chemistry minor. The highlight of my teaching career was teaching at my old school in Halkirk for four years, where I taught the entire Alberta science curriculum from grades 1-9 along with junior high math. In 2014, being somewhat disillusioned with the school system (especially the math curriculum!), I jumped at the opportunity to get back into the agriculture sector by joining BRRG.

As of this writing we are currently in the planning for a busy extension season, with our first event being a Farm Succession Workshop at Killam on January 14. I am currently working on an online extension course through Lakeland College. The course content is very timely for this part of my work. I look forward to meeting people at our crop production workshops this spring and other events throughout the year.

We have had a busy fall this year with the environmental program, having helped several producers complete their environmental farm plans and assisting with Growing Forward 2 applications. I enjoyed getting some EFP training this fall in Edmonton, just before the Grazing Conference. Priorities on the environmental front for 2015 include being a resource and helping raise producer awareness of the benefits of off-site watering and promoting the use of best management practices for increasing soil organic matter content. I also look forward to working with Vicki and the County of Flagstaff staff towards the establishment of a permanent forage plot site south of the County building where I am planning for a demonstration eco-buffer shelter belt.

As a former shop teacher and someone who is quite mechanically inclined, I have relished getting to know and working on our equipment, especially the Wintersteiger combine. Another priority for me in the upcoming year is assisting Vicki and Manjit in the training of our summer students and to do an excellent job of seeding and maintaining our plots in 2015.

I have always sought to be a lifelong learner and as the extension coordinator I welcome and value your suggestions. If you have input or questions about issues, ideas, trends, or something really amazing that you have learned, I would love to hear from you.



Heading to Tech Centre in Lethbridge to have seeder worked on

Eric Neilson

Extension / Environmental Program Coordinator

President Report

As the newly elected President/Chair of the Battle River Research Group I am pleased to give my first report. I have been fortunate to be involved with BRRG as both a local producer and through summer employment during my university studies. Our farm has benefited from the local, unbiased, and producer driven research carried out by this group and others within ARECA.

2014 has been a significant year for Western Canadian farmers as well as BRRG.

After encountering record prices, grain producers were tasked with adapting to new marketing structures while dealing with the challenges of record crops and sluggish grain movement. Cattle producers are experiencing record prices after conquering recent downturns in the industry. There have certainly been both opportunities and challenges for farmers throughout 2014

Within our organization we have had notable changes with the retirement of Alvin Eyolfson. He served BRRG for over 20 years as a crop agronomist and Manager. We truly appreciate his long standing work and determination in providing research for local producers throughout his tenure.

Taking Alvin's place as our crop agronomist has been Manjit Deol. Hailing from India, Manjit comes to our organization with his Ph.D in agriculture and has thorough knowledge in Ag. research and Western Canadian agronomy. We are fortunate to have his expertise in our region.

Eric Nielson has also joined our organization this year as our Environmental Program and Extension Coordinator. Eric is an asset for BRRG with his enthusiasm for agriculture and previous teaching abilities. It is important to engage the public and maintain a focus on sustainability. Eric will be ensuring our group does both.

Vicki has settled into her role as Manager of BRRG. She is certainly a resource for our new employees. With strong markets in the beef industry, there has been much interest in her forage and beef extension activities. We thank Vicki for providing continuity and leadership during this time of transition.

I am excited about the coming years for both farmers and Battle River Research Group. I have confidence in our group and am enthusiastic about the continuing producer driven research in our geographic area. It is important to provide new ideas and techniques through research and development for sustainable farming.



Blair Kuefler

Areca Report

2014 saw rapid and dynamic change at ARECA. A new Board structure was implemented which was needed, and will help propel ARECA forward in the coming years.

The funding from AOF has doubled from 1.5 million to 3 million dollars. We are extremely pleased with this substantial and much needed increase in funding. This is a great opportunity for our member associations to grow, and bring wages and benefits up to industry standards. This will help to retain and attract excellent staff which is key to our member associations' successes, that ultimately leads to a more profitable and sustainable agriculture industry.

There were many changes at ARECA in 2014. We have a new office in Leduc; we also have a lot of new staff members. Janette McDonald has joined us as our new Executive Director, Colleen Hensel as our new

Executive Assistant, and Ileana Berezanki served as our intern Communications Manager. Early in 2015, Paul Watson joined Ashley Steeple to complete our Environmental Farm Plan team. Paul will serve as Director and lead our Environmental Farm Plan. The new ARECA staff along with the Board of Directors and member association managers and

their staff have really pulled together to create one harmonious and energetic team.

We would like to thank our partners at the provincial government for seeing the need, and believing that ARECA and our member associations are the best way to deliver applied research and extension to Alberta farmers.

We would like to take this opportunity to thank all the staff and Directors, and Chairmen, for their dedication and service. It has taken a lot of energy and commitment from everyone involved with ARECA over the years to get us to the present.

We believe that ARECA's great success and challenges lay ahead. All the changes and team building that have occurred in 2014 will help drive ARECA and our member associations' success in the future.



Janette McDonald



Paul Watson



ARECA Chair Bill Gauthier and Vice-Chair Ian Murray meet with Minister of Agriculture



Extension Activities

Funding provided by: **Agricultural Opportunity Fund (AOF), Local Counties and numerous other partners**

Extension is a key component of BRRG's programing. Funding for extension events will increase in 2015. Please look for the tours, workshops, and seminars you would like to attend. Please contact the BRRG office with ideas for speakers or events that you would like us to host.

January

January 16th – Farm Succession Workshop - Castor Community Hall

Sponsored by the Alberta Canola Producers Commission, AFSC, and

- Paul McLaughlin, Turning Point Law, Sherwood Park; Allan Sawiak, Kingston Ross Pasnak LLP; and Art Lange, AJL Consulting were the guest speakers at this event. Preparing for succession, Family farm rollover, capital gains, Proprietorships, Partnerships, and Farmco's were discussed along with many other business and tax issues related to farm succession. 40 in attendance

January 21st - CowBytes Program Workshop Stettler & District Adult Learning Council - Stettler

February

Feb 11th and 12th - Precision Agriculture Seminar - Calgary

- Another successful ARECA planned Precision Ag event was held at the Deerfoot Inn and Casino in Alberta. A great learning opportunity.

February 18th - Battle River Research Group Annual General Meeting - Camrose

- The Annual meeting was held at the Best Western Plus Resort Casino in Camrose on a Tuesday afternoon and evening. Members were

given notice that an intern was to be hired to work along with Alvin in 2014 and that he would be leaving the group at year end. The featured guest speaker was Harley Robinson from the Robcan Group, he gave a humorous and thought provoking presentation on communication between the generations.

March

March 25th - Energy... The Possibilities, co-sponsored by the Heisler Ag Society

- Held at the Heisler Community Hall this event featured Gordon Howell (Howell-Mayhew Engineering) who spoke on new advances in solar power. Also featured were John Kolk from Picture Butte who spoke on his eco-friendly yard site, and Olivia Sieniewicz from ARD who spoke on new technologies in lighting and the use of sub meters to monitor electricity use.

March 27th - Crop Production Workshop - Forestburg - sponsored by the AB Canola Growers

- This workshop was held at the Forestburg community hall, and featured a great selection of speakers. Keith Gabert (Canola Council of Canada) spoke on Canola Production issues, (Bashaw processors) spoke on Fababeans, Sherry Strudhorst (Agronomy Research Scientist, ARD) gave a presentation on "Stacking Agronomic Practices to Achieve Maximum Wheat Yield", Nevin Rosaasen (Research Economist ARD) spoke on marketing the remainder of the 2013 crop and keys to remaining profitable, Matthew Enright (Grains Manager, Battle River Railway) gave an update on the Battle River Railway. The last speaker was Trevor Miller (Sales and marketing manager, Cargill) who gave an update on the construction progress of the Camrose Canola Crush Plant and on new opportunities for producers.



Field tour at Castor

June

June 24th - Cleavers crop walk, sponsored by FMC

- Nolan Kowalchuk from FMC showed a group of producers the good control achieved by a new pre-seeding herbicide at a Research Field Scale Demonstration in a Liberty Link Canola field just east of Forestburg. The group went on to tour the BRRG winter wheat site at Galahad and then some other fields of interest.



Cleavers control crop walk

July

July 10th - Jim Gerrish - Coronation

- The Chinook Applied Research Association and Battle River Research Group hosted Jim Gerrish for a class room session and pasture walk

July 29th - Castor Plot Tour

- This morning tour had a group of 15 producers join the BRRG staff for an informative tour of canola fertility, cereal and silage variety and corn plots. Before lunch a presentation was made on farm and rural traffic safety.

July 30th - Stettler Plot Tour

- There was a disappointing turnout for a morning tour featuring barley and silage cultivars, lentils, flax, canola and gypsum/calcium fertility plots.

August

August 7th - Forestburg Plot Tour

- This successful tour featured Keith Gabert

form Canada Canola Council, Rick McIntyre from BEST Environmental, Sydney Vos from the Alberta Pulse Growers, Neal Perssion from Novozymes, and Edwin Liem from Canadian Humalite. Of most interest were the Canola, Soybeans, Fababeans, corn at the site



4-H presentation at Forestburg Tour

and presentation from the 4-H crop project participants.

August 8th - Bounty in Beaver County Tour Open House - Tofield

- This tour was a site featured as part of the “Bounty in Beaver County” day. Producers and several county councilors dropped by and toured the Field Peas, Canola, Fababeans and Corn at the site.



Bounty in Beaver County Tour Open House

Unfortunately

later on in the morning it started to rain, at first lightly. Luckily there were a lot of umbrellas and a tent erected at the site.

October 29th - Harvest Sunlight - Feed the Soil - Vermilion Regional Centre

- Co-sponsored with the Counties of Vermillion River and Minburn this successful event featured Gabe Brown. Topics included cocktail crops and cover crops to reduce erosion, increase soil organic matter, manage nutrients, fix nitrogen, and to improve infiltration.

November 4th - Dr. Christine Jones - Building Soil-Creating Land - Olds College

- Co-sponsored with Mountain View County, Foothills Forage and Grazing Association, Chinook Applied Research Association, along with other members of the Agriculture Research and Extension Council of Alberta (ARECA). Dr. Christine Jones a soil research from Australia spoke to a group of approximately 100



Dr. Christine Jones

attendees at Olds College.

December 9th - 11th - Western Canadian Grazing Conference - Edmonton

- Nora Paulovich (North Peace Applied Research Association) and Vicki Heidt (Battle River Research Group) co-chair the sold-out conference at the Radisson Edmonton South hotel. The conference featured speakers from across western Canada and the northern United States. The

Keynote speaker Josh Dukart at 2014 WCGC



theme for the conference was “Going Beyond Sustainability”.



Jim Gerrish pasture walk

Statistical Definitions

The terms below are used throughout our report. Statistics are needed to determine if the differences between treatments are likely due to the variable in question (variety, herbicide treatment etc.) or are due to other factors.

LSD - Least Significant Difference: the difference required for one treatment to be statistically different from one another. The LSD test can be calculated to different levels of confidence (99%, 95%, 90% etc.). The confidence level used in this report is 95%. Another way to express this is to the 5% error level. If a difference between treatments is statistically different, it means that it is 95% certain that the differences are due to a treatment factor and not from random error.

Example - If Variety A yielded 30 bushels per acre and Variety B yielded 34 bushels per acre and the LSD is 2.5 bushels, then Variety A is different from variety B because $34-30=4$ which is greater than 2.5. Some reports have letters behind results that have significant differences. This is to aid in picking out key treatments; numbers followed by the same letter are not significantly different.

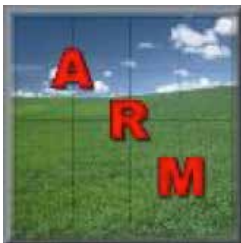
NSD - No Significant Difference

CV - It is the Coefficient of Variance as a percentage. The lower the CV, the closer the results of each block in a replicated test were to each other. Generally, to compare crop yield a CV of less than 15% is acceptable but a CV of less than 10% is more desirable to detect differences among experimental treatments. A yield variation among different plots could be due to other factors such as: soil fertility variation, change in soil moisture, weeds and human error etc.

NR - Not Recorded

RCBD - Randomized Complete Block design: This is the most used experimental design for agronomic field experiments in which all experimental treatments are grouped randomly into uniform blocks. Soil conditions within each block should be as uniform as possible so that observed differences among treatments is largely due to treatment effect and not due to a soil fertility variation or difference in weed density. Blocks are replicated three or more times to separate the treatment effect from the variation due to other factors at the experimental site.

Split Plot Design – This design is mainly used to conduct interaction studies between two or more treatments. In a split plot design each main plot has sub plots. For example, main plots could be different seeding dates or rate of fertilizer application, while sub-plots could be different crop varieties. Different experimental designs such as RCBD or a Latin square design can be arranged as a split-plot design. Treatments in sub-plots are compared with more precision than main plots.



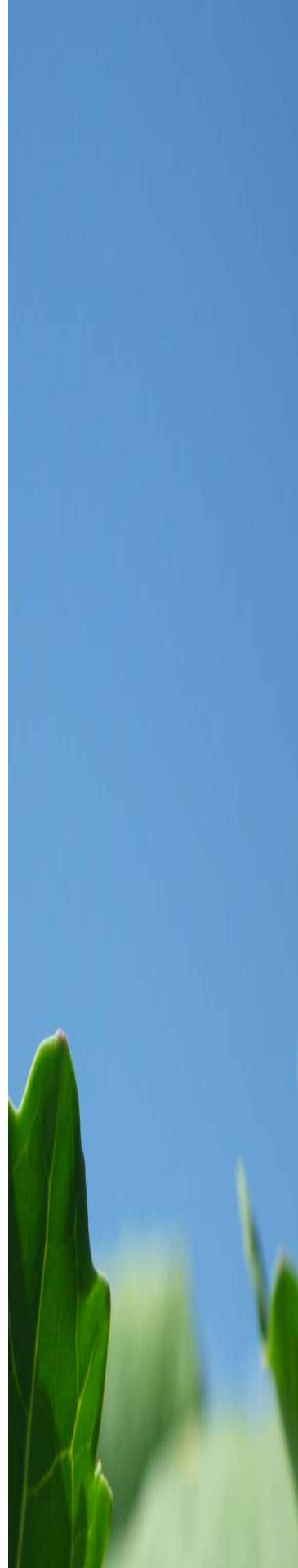
ARM Program - BRRG purchased the “ARM project management software” in 2008. This program is an industry standard in its field; many other associations are using this program. This program helps with project design, plot plans, making seeding and harvesting labels, and statistical analysis. It has proven to be a real time saver and is a key tool for our group.



Castor Site



Stettler Site



Regional Crop Variety Trials 2014

Introduction:

In 2009 the Special Crops Regional Variety Testing Program was reinstated by Alberta Agriculture and Rural Development (ARD). Staff at the Alberta Agriculture Crop Diversification Centre North did the compilation and coordination of the program.

The Regional Variety Testing Program is sponsored by ARD, Agricultural Research and Extension Council of Alberta (ARECA), Agriculture and Agri-food Canada, Cereal, Pulses and Oilseed Commodity groups, seed companies and the Canadian Seed Growers Association, with local support from the Counties of Beaver, Camrose, Flagstaff, Paintearth, and Stettler.

Each year, a variety trials summary report is compiled for all the sites within Alberta and the British Columbia Peace region. Only sites with coefficient of variances (CV) of less than 15 % were used. When a CV is high some other factor like weeds, uneven soil or human error may be adding variation among replications. CV is an indication of the degree of precision to which the treatments are compared (Gomez and Gomez 1976).

LSD – The least significant difference indicates that the differences between different varieties are statistically significant or not. Generally, LSD is calculated at 5% level of probability for agricultural field experiments. LSD at a 5% level of probability means that there are 5% chances of error in yield data. Varieties are different in yield performance only if the numerical difference between them is greater than the LSD value.

In the example table below, if the LSD is 6.0, varieties A and B and B and C are not statistically different, but A and C are statistically different. Site Years – Six station years or more yield data over two years is required for publication in the Alberta Seed Guide. 16 site years means the cultivar was only tested for 1 year at 16 sites or 32 site years would mean it was

tested at the 16 sites per year for 2 years. A higher number of site years provides a better comparison among varieties or experimental treatments.

Variety	Yield (bu./ac.)
A	52
B	54
C	60
LSD	6.0

A comparison among varieties at one location based on three or more years can help in the selection of a variety suitable for that particular location and soil type (Manjit Deol - BRRG).

- + and – signs indicates significantly higher and lower than check, respectively
- The use of ⌘ indicates a variety is protected under plant breeder rights
- ▲ indicates that protection under plant breeder rights has been applied for that Variety.
- Refer to the Alberta Seed Guide for information on more agronomic issues such as vine length, maturity, and disease resistance.
- Standability Ratings 1=erect, 9=flat
- Seed Weight: It is important to calculate seeding rates using thousand seed weight seed weights from the individual seed lot. Seed weight can be influenced by seed moisture. Final yield in plots were measured after drying harvested bags for >3 days at 35°C.
- For more information on disease resistance and other agronomic characteristics refer to the Alberta Seed Guide. The ARD fact sheets can be found in many publications and on Ropin' the Web (www.agric.gov.ab.ca). Click on “Decision making tools”, then on ‘Variety Description and relative yield report’. There are also several other useful links here.

Soil Test Results – 2014								
	Organic matter %	Nitrate-N (lbs/ac)	Extractable Phosphorus (P ₂ O ₅) (lbs/ac)	Extractable Potassium (lbs/ ac)	Copper (ppm)	Soil pH	EC (ds/m)	Texture (sand, silt, clay)
Forestburg	8.3	37	36	1130	0.8	5.8	.27	27.6%, 45%, 27.5%
Tofield	10	34	40	703	1.6	5.5	0.27	36%, 40%, 24.4%
Castor	4.4	32	61	980	0.6	5.2	0.27	41.6%, 40%, 19%
Stettler	5.6	49	32	843	0.8	6.3	0.39	

Experimental Sites - 2014		
Nearest Town	Site Location	Co-operator
Forestburg	North East Corner of Hwy 856 & Township Road 424, and second about 500 meters north from first site on the west side of Hwy 856	Gerald Kuefler
Castor	2 miles North of Hwy 599 to RR115 (Broad leaf and Corn) and RR114 (cereals)	Kevin James
Stettler	4.5 miles East of Hwy 56 on TWP 392	Ron & Tom Streit
Tofield	Highway 834, North of range road 500, appox 4.5 miles south of Tofield beside Bardo Cemetery	Barry Mosey



Combing at Stettler site

Regional Pulse Crop Variety Trials 2014

Funded by: The Regional Pulse Variety Testing Program, Seed Companies, and The Alberta Pulse Growers.



Abstract

Two sites of the regional field pea variety trial were sown near Tofield and Forestburg. The yields of the check cultivars for green and yellow field peas were 72 and 85 bu/acre respectively at the Tofield location and 54 and 60 bu/acre respectively at Forestburg location (Tables 1 and 2).

Among yellow pea varieties, at Forestburg, Abarath yielded higher (108%) followed by AAC Lacombe (107%). At Tofield the yield difference among varieties was less. AAC Lacombe yields were

somewhat higher (103%) than the check variety CDC Meadow (Table 1).

Introduction

Field peas vary considerably in growth type, days to maturity, seed type, and yield potential. The Field Pea Regional Variety Trial is a valuable tool in comparing variety characteristics at different locations across Alberta. There were 16 Regional field pea variety sites in Alberta in 2012 and 2013.

Method and Materials

Locations:	Forestburg	Tofield
Previous crop	Barley	Wheat
Seeding dates	May 13	May 15
Herbicide spray	June 11 (Odyssey)	June 12 (Odyssey)
Harvest dates	Sept 2 and 3	Sept 3
Experimental design	5 X 22 feet, randomized complete block design, 4 reps	
Fertilizer:	Granular rhizobium inoculant, 25 lbs/ac phosphate with seed	
Seeding method	Minimum tillage Technotill openers at 9 inch spacing and 2 inches deep	

Table 1: Regional Yellow Pea results 2014, compared to provincial data, 2013

Yellow Peas	Yield = % of CDC Meadow								East Central Zone 2013	Station Years of Testing 2013	Standability (1-9) 2013
	Forestburg				Tofield						
	2014	2013	2012	Mean	2014	2013	2012	Mean			
CDC Meadow (Check) (bu/acre)	55.8	71.5	51.3	60	85	84.5	-	85	63.4		
CDC Meadow	100	100	100	100	100	100	-	100	100	101	3.6
AAC Lacombe	94	120	NR	100	105	101	-	103	110	16	3.7
AAC Peace River	94	106	NR	100	93	101	-	97	95	16	3.7
Abarath ☼	109	116	99	108	99	97	-	98	104	32	4.1
CDC Amarillo	97	115	102	105	89	99	-	94	100	32	3.4
CV %	14.7				14.6%	7.1	-				
LSD (P=.05)	11.5				17.6	NSD					

Table 2: Regional Green Pea results 2014, compared to provincial data, 2013

Green Peas	Forestburg (bu/ac) 2014	Tofield (bu/ac) 2014	Zone East Central 2013	Index All Sites 2013	Station Years of Testing 2013	Seed Size All Sites 2013 (1000 seed wt)	Standability (1-9) 2013
CDC Patrick (bu/ac)	53.5	72.5	64.6	69.7			
CDC Patrick	100	100	100	100	93	188	4.6
CDC Limerick	96	103	107+	105+	34	211	3.8
Greenwater	96	115					
CV %	13.9	11.4					
LSD (P=.05)	11.7	13.4					



References cited

- 2013 Field Pea and Fababean Regional Trial Results, Alberta Seed Guide, Spring 2014
- Pulse Crop News, Winter 2014, RVT results 2013
- Agri-Facts: Fababean Seeding Management in Alberta

Tofield site

Fababeen Variety Trials

Abstract

One Fababeen regional trial was sown near Forestburg in 2014. The results in this report are compared to the provincial averages from 2014 (Table 3). Yields of the check cultivar SNOWBIRD were 65 bushels/acre. The new cultivar “Tabasco” has only a few site years of testing. Varieties with colored flower such as Malik have tannin in their seed coat and are suitable for export food markets if the seed size and quality meets customer demands.

Introduction

Fababeen cultivars from both the European and Canadian Breeding programs are included in the regional variety testing program.

Malik was bred by the Crop Diversification Centre in Saskatoon and is available for contract production. Due to tannins in the seed coat of these cultivars, they are not suitable as monogastric livestock such as pigs, horses, rabbits, cats and dogs (Agri-Facts June 2013).

Snowbird and Snowdrop have white flowers and seed coats that do not contain tannins. These are more suitable for livestock feed. Snowbird was bred in the Netherlands.



Method and Materials

Fababeen Location	Forestburg	Tofield
Previous crop	Barley	Wheat
Seeding dates	May 13	May 15
Herbicide spray	June 11 (Basagran & Post Ultra)	June 12 (Odyssey)
Harvest dates	Sept 2 and 3	Sept 3
Experiment design	4.5' x 22' plots, randomized complete blk design, 4 replications	
Fertilizer	Granular rhizobium inoculant, 25lbs/ac phosphate with seed	
Seeding Method	Minimum tillage Techno-till openers at 9 inch spacing and 2-3 inch deep seed placement	



Results

Fababeans should be seeded in early May. This is especially important in years of early fall frosts like 2014. If seeded early, the plants should have 85-

95% black pods and be ready for desiccation by the second week of September. The Forestburg fababeans were sown on May 13th. Frost occurred in 2014 on September 10th, close to full maturity but before desiccation. There was some frost damage evident.

Table 3: Fababean results 2014, compared to provincial 2013 data

Fababeans	Yield = % of Snowbird		Station years of Testing 2014	Type	Seed Size All Sites 2013 1000 seed wt	Relative Maturity E=early M=Medium	Flower Color
	Forestburg 2014	All Sites 2014					
Snowbird (bu/ac)	65.1	114					
Snowbird ☼	100	100	22	Zero Tannin	486	E	W
Snowdrop ☼	96	86-	17	Zero Tannin	338	E	W
Malik	94	97	17	Tannin	621	M	C
Tabasco	89	80-	9	Zero tannin	374	M	W
CV	8.23						
LSD (P=0.05)	8.13						

☼ Protected by Plant Breeders Rights ▲ Plant Breeder rights protection has been applied for

References

- 2013 Field Pea and Fababean Regional Trial Results, Alberta Seed Guide, Spring 2015
 Pulse Crop News, Winter 2014, RVT results 2013
 Agri-Facts: Fababean Seeding Management in Alberta, June 2013.

Lentil Variety Trial

Sponsored by the Agricultural Research and Extension Council of Alberta

Abstract

Small red varieties (CDC Imax, CDC Dazil CL, CDC Maxim R, CL) have a better overall yield. Due to a high CV% at Castor, it is difficult to interpret whether the yield difference is due to treatment or just field variation. However, average yield of all varieties at the Castor site during 2014 indicates that lentils can yield about 2000 kg/ha (1786 pounds/acre). With 25 cents/pound rate (\$25 per cwt), gross returns could be \$450/acre as shown below.

Estimated Gross Income with Red Lentils with average yield of 1800 lbs/ac	
Price	Gross Income (\$/ac)
\$0.20/lbs	\$360
\$0.25/lbs	\$450
\$0.30/lbs	\$540
Price source used - http://www.agriculture.gov.sk.ca/MarketTrends (Feb 1, 2015)	

Introduction

Lentil plants are short, ranging from 20 to 75 cm in height, so rolling the ground will improve harvest efficiency, combine safety, and quality of harvest. Lentils can tolerate about -5°C frost and should be seeded as soon soil temperatures reach 5°C (Lentil Production Manual, Saskatchewan Pulse Growers).

Method and Materials

Locations:	Castor
Previous crop	Barley
Seeding date	May 22, 2014
Herbicide spray	June 11 (Odyssey)
Harvest dates	Sept 25, 2014
Fertilizer:	Granular rhizobium inoculant, 25 lbs/acre phosphate with seed
Experiment design	4.5' X 22' plots, randomized complete block design, 4 replications
Seeding method	Minimum tillage Techno-till openers at 9 inch spacing and 2 inch deep seed placement.

Results and Discussion

Market Class	Castor Yield (Kg/ha)	Overall Yield	Site Years	TSW (g)	Disease Tolerance	
					Asochyta	Anthracnose
	--	2480 (Kg/ha) 100%		43	G	
Small red	2234.8	110%	16	45	G	F
Medium green	2068	95	12	51	G	P
Small red	2006.8	111	15	36	G	F
Large Green	1846.8	98	12	658	G	VP
Extra small red	1598.5	92	20	30	G	G
	LSD	641				
	CV	21.9				

R=registered with CFIA

CL=Clearfield variety

Disease Tolerance: G=good, F=fair, P=poor, VP=very poor

References

Lentil Production Manual (Probably 2014), Saskatchewan Pulse Growers
Alberta Seed Guide (Spring 2015).



Soybean Variety Trial



Abstract

During 2014, Twenty one glyphosate resistant soybean varieties were seeded on 24 May at Forestburg site (52.6°N) as the part of regional variety trial. None of varieties reach full maturity and were damaged by September 8 – 10 frost. However, variety P001T34 and NSC Moosomin were close to maturity as compare to all other varieties in the trial. Both P001T34 and NSC Moosomin were showed their first flower on 14 July which were earlier than other varieties in the trial, it also indicated that they need dark period longer than 7.5 hours to initiate flowering. It look like for a variety to be successful around Forestburg (52.6°N) they need to start flowering during first week of July or early and mature a week or two earlier than the present varieties available in the market. At Forestburg, frost free September may help some varieties to reach full maturity. Due to slow growth narrow row spacing would be good in this area.

Introduction:

According to Dr. Istvan (University of Guelph) all of the soybeans grown in Canada are of the indeterminate type, the flowering and pod maturing occurs gradually over several weeks of the growing season. We consider the plant mature when 95% of the pods on the main stem have turned brown.

At present, soybeans are growing with less risk below (50°N), which is close to township road 124. There is relatively more risk closer to 51°N (Calgary), and no successful variety has been found between 52°N to 53°N based on Alberta's regional variety trials.

According to Canadian Grain Commission, Protein content for 2011 Canadian food-type soybeans ranged from 35.9 % DM to 49.9 %. The average protein content in 2011 was 42.3 %. Oil content for 2011 Canadian food-type soybeans varied from 17.0% to 24.2%. The average oil content in 2011 was 20.8%. Variations in protein and oil content for soybeans can be affected by variety and growing conditions. Inverse correlation ($r=-0.865$, $p < 0.001$) between oil and protein content was observed.

Methods and Materials

Soybeans were seeded 2 inch deep at nine inch spacing with the aim of 4 to 5 seeds per square feet. Seed was inoculated with *Bradyrhizobium japonicum*. Herbicide control was done with Odyssey and glyphosate. 25 pounds of phosphate per acre was applied with seed.

Future Plans:

Battle River Research group will test new early varieties during 2015 in collaboration with Dr. Elroy Cobe from Agriculture and Agri-Food Canada. In addition we will reseed Both P001T34 and NSC Moosomin which were close to maturity at Forestburg during 2014.

Reference:

<http://www.grainscanada.gc.ca/soybeans-soja/harvest-recolte/2011/hqso11-qrs011-2-eng.htm> (Acessed 6 February 2015)

Regional Flax Variety Trial

Sponsored by the Regional Variety Testing Program, with support from Flagstaff County



Abstract

CDC Neela yielded higher at Forestburg during 2014 although it has a very few number of site years. All other varieties did not differ significantly as compare to the check variety, CDC Bethune (Table 11). Flax does well in areas suitable for wheat, as it requires a similar frost free season. Flax grows best on heavy loam soils that retain moisture well; flax has a limited root system. Late maturity, lack of heat in the late summer and the management of straw are some of the issues that limit flax production in east central Alberta. Flax is daylight sensitive and maturity will vary depending on the zone it is grown in.

Introduction

The trial was sponsored by the Regional Variety Testing Program, with support from Flagstaff County. Regional Flax trials have been conducted by the BRRG since 2006. Even so there has been a growing interest in Flax for a number of reasons. There is a need for another crop to diversify production and expand options for different rotations. Flax prices in most years are stronger than cereals. Also, recent variety developments have resulted in some earlier maturity and improved quality for human consumption.

Flax is grown either for food, oil or fiber. Oilseed flax is the type grown in Alberta. Alberta flax has a reputation for yielding very high quality linseed oil that dries quickly, a trait that expresses when grown in cool climate. For food use, flax with its high

alpha-linoleic fatty acid complex, ample fiber, and colon cancer fighting lignin, is a unique ‘functional’ food. Flaxseed also has feed uses. For example, is used to produce eggs with high levels of omega-3 fatty acids.

The handling of flax straw is one of the greatest challenges in growing the crop. There is no market for the fiber in east central Alberta and burning the straw is not recommended. A good straw chopper on your combine increases surface area, allowing the flax straw to decompose and be less of a problem in subsequent field operations. Spreading unchopped straw results in long fibrous stems, which can remain intact for several years.

Methods

Location	Forestburg and Stettler Project sites
Treatment size	4.5 X 22 feet, 4 replicates
Fertilizer	60 lbs Nitrogen banded, 20 lbs phosphate with seed
Tillage:	Direct seeded with Technotill openers
Previous crop	Barley at both sites
Seeding date	Forestburg: May 20 Stettler: May 21
Weed control	Forestburg: June 23 Poast + Buctril M Stettler: June 20 Flax Max
Harvest date	Forestburg Oct 9; Stettler Oct 6

Results

Past average yields of flax in BRRG trials and harvest dates.

- 2006 Camrose, 27 bu/acre (Oct 27)
- 2007 Stettler, 28.3 bu/acre (Sept 19)
- 2008 Stettler, 42.6 bu/acre (Oct 3)
- 2009 Stettler, 26 bu/acre (Oct 23)
- 2010 Stettler, variance too high (Oct 20)
- 2011, Stettler , variance high, 34.9 bu/acre (Oct 17)
- 2012, Stettler, 48 bu/acre (Sept 28)
- 2013, Forestburg, 46 bu/acre (Sept 20)

2014 Stettler site results are not included due to seeding error and results not being reliable.

Table 1: Flax Results: Forestburg and Stettler 2014 compared to provincial results

Flax Variety	Overall Station Years of Testing	Yield=% of CDC Bethune			Maturity Rating
		Overall Prov. yield 2014	Alberta average medium yield (20-35 bu/ac)	Forestburg 2014	
CDC Bethune (bu/acre)		36	29	26.3	110 days
CDC Bethune ☼	123	100	100	100	L
CDC Glas	23	106+		119	L
Prairie Grande ☼	67	98-	101	112	M
Westlin 71 ▲	16	95	--	116	L
CDC Neela	Few	--	--	140+	
CV				6.8 %	

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Maturities rated as: E=Early, M=Medium, L=late, VL=Very Late

Flax is daylight sensitive and maturity will vary by the zone it is grown in.

(+) and (-) following index's indicate whether significant differences exist.

Reference

www.agric.gov.ab.ca

Regional Cereal Variety Trial Barley Results 2014

Sponsored by the Regional Variety Testing Program (ARD, ARECA, Agriculture and Agri-food Canada, Cereal and Oilseed Commodity groups, and the Canadian Seed Growers Association), with support from the Counties of Beaver, Flagstaff, Paintearth, and Stettler.

Abstract

In 2014, regional cereal variety trials were established at the BRRG's Castor, Forestburg, and Stettler project sites. Among two row barley feed varieties, Xena and Canmore yielded significantly higher than AC Metcalfe at both sites. Champion yielded significantly higher at Forestburg and significantly lower at Stettler than all cultivars during 2014. The malt cultivar ACC Synergy yielded significantly higher than AC Metcalfe at both locations during 2014 (Table 4).

Among six row barley feed varieties (Table 5), there was no significant difference at Forestburg. However, at Stettler (2014), all the tested varieties yielded significantly higher than AC Metcalfe, with Amisk yielding the highest followed by Vivar.

A quality Evaluation of 2013 Crop Barley Samples from the Alberta Regional Crop Trials found that the highest selection rates for malt were recorded with barley samples of AAC Synergy, ABI Voyage, CDC Anderson and Major, which were similar to the control, AC Metcalfe; the second highest selection rate was from samples of TR10214; the third highest rates were from samples of CDC Clear and CDC PolarStar; the lowest selection rates with samples of TR10694 and TR11698. Across all the barley varieties (lines) and the ten growing locations, the Oyen site offered the highest selection, seconded by Lethbridge, followed by Fort Kent and Big Lakes, then Stettler, St. Paul and Forestburg. Sites at Neerlandia and Stony Plain produced barley with 0% selection rate (Canadian Malting Barley Technical Centre 2013).



Introduction

The Alberta Cereal Regional Variety Testing Program tests varieties of cereal crops to evaluate yield, disease, lodging resistance, and maturity. The use of ⌘ indicates a variety is protected under plant breeder rights, and seed of this variety of this variety cannot be sold without permission and a royalty payment. ▲ indicates that protection under plant breeder rights has been applied for.

Method and Materials

Barley Variety Trial			
Locations	Forestburg	Castor	Stettler
Previous crop	Field Pea	Canola	Canola
Seeding dates	May 20	May 22	May 21
Harvest dates	Sept 25	Sept 21	Sept 22
Experiment design	4.5 X 22 feet plots, randomized complete block design, 4 replications		
Seeding method	Minimum tillage Techno-till openers at 9 inch spacing and 2 -3 inch deep seed placement.		
Fertilizer	All sites: 70 Lbs/acre of Nitrogen side placed as Urea, 25lbs/acre of Phosphate with seed as MAP		
Herbicide Spray	Sprayed Infinity and Achieve between June 16 to 20		

- Yield test categories (low, medium and high) are based on the site means for small plot trials across Alberta. In the Medium yield zone plots are included where the check cultivar yielded between 60-90 bushels per acre.
- Awn types described as R=rough, S=smooth, and SS=semi-smooth
- Maturities rated as VE= Very Early, E=Early, M=Medium, L=Late and VL=Very Late.



Seeding at Forestburg site - GoPro camera attached to drawbar on tractor

Results

Table 4: Two row Feed and Malt Barley results from Stettler and Forestburg 2014, compared to the provincial averages.

Feed and Food Barley Variety	2 row	Awn type	Station years of testing	Medium 60-90 (bu/ac) 2014	Stettler 2014	Forestburg 2014	Maturity rating
AC Metcalf(bu/acre)				79	79.1	81	
AC Metcalf☼	2	R	510	100	100	100	95 days
Brahma☼	2	R	87	109+	106	100	M
Champion☼	2	S	139	113+	91	127 +	M
Canmore▲	2	R	28	105	109	113	M
Xena☼	2	R	271	109+	108	113	M
Malt Cultivar							
AAC Synergy▲	2	R	42	115+	117+	121+	M
LSD (P=0.05)					7.45	10.3	
CV					6.15	8.13	

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Table 5: Six Row Feed Barley results Stettler and Forestburg 2014, compared to provincial averages.

Feed and Food Barley Variety	6 row	Awn type	Station years of testing	Medium 60-90 (bu/ac) 2014	Stettler 2014	Forestburg 2014	Maturity rating
				Index: per cent of AC Metcalf			
AC Metcalf☼	2	R	510	79	56.4		
Amisk▲	6	SS	28	109	137	106	M
Breton▲	6	S	42	108	132	103	M
Vivar☼	6	R	216	105+	125	106	M
LSD (P=0.05)					7.84	9.72	
CV					5.57	6.8	

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New Registrations: Amisk (BT593) and Canmore (TR10694)

Regional Cereal Variety Trial Wheat Results 2014

Abstract

Among CWRS wheat varieties, AAC Elie and AAC Brandon yielded the highest, followed by CDC Plentiful, both at Forestburg and Castor, although the difference was not significant when compare to AC Barrie (Check). The trend was similar to provincial averages. Average yields of all varieties was 17 bu/acre (40%) higher at Forestburg site (8% organic matter) than Castor site (Organic matter 4%).

Recent CPRS varieties have improved quality in comparison to Foremost. CPS varieties are more susceptible to take-all root than other wheat classes. General purpose varieties are intended for ethanol and livestock purposes. CWSWS may have demand for feedstock ethanol production. AC Andrew (CWSWS check) yields about 35% more than AC Barrie (Alberta Seed Guide – Spring 2015).

Introduction

Along with yield, wheat variety choices should be based on a combination on various factors based on the purpose and area. The most common factors to consider are disease or insect resistance, protein or starch content, milling quality, competitive ability, and straw strength (Alberta Seed Guide 2015). Wheat is grown on about 34% of the crop land covered by Battle River Research Group (2011 Agriculture Census). Growing conditions can influence maturity. For example, a wheat variety may take 103 days to mature in Edmonton as compare to 98 days in Lethbridge.

Method and Materials

Wheat Variety Trial		
Location	Forestburg	Castor
Previous crop	Field Pea	Canola
Seeding date	May 14	May 12
Harvest date	Sept 23 (CWRS, CPS) & Oct 7 (Durum)	Sept 21
Experiment design	4.5' X 22' plots, randomized complete block design, 4 replications	
Seeding Method	Minimum tillage Techno-till openers at 9 inch spacing and 2 -3 inch deep seed placement.	
Fertilizer	All sites: 70lbs/ac of N side placed as Urea, 25lbs/ac of P with seed as MAP	
Herbicide spray	Sprayed Infinity and Achieve between June 16 to 20	

Table 6: CWRS Wheat results Forestburg and Castor 2014, compared to the 2013 regional averages

Cultivar	Station years of testing 2013	Yield=% of AC Barrie								Maturity Rating	FHB*
		All AB sites 2013	Medium 45-70 (bu/ac) 2013	Forestburg			Castor				
				2013	2014	Mean	2013	2014	Mean		
AC Barrie (bu/ac)		59	55	65.8	61.4	63.6	54.9	42.4	48.7	106 days	MR
AC Barrie ☼	398	100	100	100	100	100	100	100	100	M	MR
AAC Bailey ☼	44	104	104	104	87	96	106	88	97	M	I
AAC Brandon ▲	27	112+	115+	128	103	116	123	110	117	M	MR
AAC Elie ▲	27	114+	118+	124	114	119	133	101	117	M	I
AAC Iceberg				-	99	99	-	97	97		
AAC Redwater ▲	27	102	103	110	95	103	107	95	101	E	I
Cardale ☼	27	105+	107	107	95	101	119	94	107	M	MR
CDC Plentiful ☼	27	105+	107	122	103	113	110	109	113	M	MR
Katepwa	328	98	98-	102	89	96	98	109	102	E	I
LSD (P=0.05)					11.8			9.79			
CV (%)					13.9			15			

*FHB – Fusarium head blight

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Castor site

Table 7: CPSR, SWGP, and CWSW wheat, 2014 Forestbrug and Castor results compared to the 2014 regional averages.

Cultivar	Station years of testing	Yield =% of AC Barrie				Maturity rating	FHB*
		Index all AB sites 2014	Medium 45-70 (bu/ac) 2014	Forestbrug 2014	Castor 2014		
AC Barrie (bu/ac)		59	55	54.7	44.7	106 days (M)	
AC Barrie (check)	398		100	100	100	M	MR
Canadian Prairie Spring Red (CPSR)							
AAC Ryley ☼	23	121+	118+	127+	109	M	MS
Enchant VB ☼	23	118+	117+	122+	105	M	S
Canadian Western General Purpose (CWGP)							
Pasteur	23	140+	135+	137+	115	L	I
AAC Proclaim ▲				104	121		MR
Canadian Western Soft White (CWSW) Yields compared to AC Andrew							
AC Andrew (bu/ac)		81	76	79.1	55.5	110 Days	
AC Andrew	140	100	100	100	100	L	L
AAC Chiffon ▲				99	96	L	L
LSD							
				8.07	-		
CV (%)							
				8	11.9		

*FHB – Fusarium head blight

** VB – designate a varietal blend to preserve the Sm1 midge tolerant gene

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References

Alberta Seed Guide: Spring 2015

2011 Census of Agriculture for Alberta

Regional Cereal Variety Trial Winter Wheat Results 2014

Abstract

The top yielding winter wheat varieties during 2013-14 were CDC Ptarmigan, Swainson, Peregrine, Pintail, CDC Chase, Accipter, CDC Buteo, Emerson. Provincial averages for medium yielding areas (75 to 105 bu/ac) Swainson yielded highest (Table 8). CDC Ptarmigan and Pintail could be more suitable for forage or silage due to the awnless heads (Alberta Seed Guide).

Introduction

Winter wheat can be grown in all areas of Alberta when seeded before September 15 in the standing stubble of a previous crop. Adequate snow cover is important. According to the Alberta Seed Guide (2015), varieties that are susceptible (S) to bunt should be treated with a systemic seed treatment before seeding to reduce chance of infection.

Method and Materials

Winter wheat was seeded near Galahad in pea stubble. The seeding depth was about 2 inches with 9 inch row spacing. Phosphate was applied with the seed and urea was side banded.



Results

Table 8: CWRS Wheat results Forestburg and Castor 2014, compared to the 2013 regional averages

Winter Wheat Variety trial 2013-2014							
Variety name	Kernel type	Yield (bu/ac)	Difference significant or not*	Yield=% of Radiant		Disease Tolerance	
				Forestburg 2013-2014	AB 75-105 bu average	FHB	Bunt
CDC Ptarmigan	Soft White	95	a	119	106+	I	S
Swainson	Hard Red	94	ab	118	114+		S
Peregrine	Hard Red	92	abc	115	108+	I	S
Pintail (awnless)	Hard Red	90	a-d	113	108+	S	S
CDC Chase	Hard Red	87	a-e	110	109	MS	S
Accipter	Hard Red	87	a-e	109	104+	S	S
CDC Buteo		86	a-e	108	96-	MR	S
Emerson ☼		85	a-e	108	99	R	S
Sunrise	Soft Red	85	a-e	108	107+		S
Blend 1: Flourish + Emerson		85	b-e	107			
Blend 2: Emerson + Gateway		85	b-e	107			
AAC Gateway ☼	Hard Red	84	cde	106	101	I	S
Broadview ☼	Hard Red	83	cde	105	100	S	S
Moats ☼	Hard Red	82	c-f	104	103	S	MS
Blend 3: Gateway +Flourish		82	c-f	104	103	S	MS
DH00W31N*34		82	def	103			
Radiant ☼	Hard Red	78	ef	100% (79 bu/ac)	100% (77 bu/ac)	S	S
W495		78	ef	98			
Flourish ☼	Hard Red	78	ef	98	99	S	MR
CDC Falcon	General Purpose	73	f	92	100		
LSD (P=0.05)		9.61					
CV (%)		5.82					

*There is no significant difference among varieties sharing same letter. Ex. a, ab, abc all have a in them, so they did not differ significantly at p=0.05

*Disease Tolerance: S=susceptible, MS=moderately susceptible, R=resistant, MR=moderately resistant

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References

Alberta Seed Guide: Spring 2015

Regional Cereal Variety Trial Oat Results 2014

Abstract

During 2014, CDC Ruffian and AAC Justice oat varieties yielded higher with a significant difference in the high yield (100 – 130 bu/ac) category. At Forestburg, the coefficient of variance (CV) was higher, possibly due to lodging in some plots.

Introduction

Oat variety selection should be based on the market or end-use. There are 4 major markets that a producer has in western Canada. These are: the milling oat market (human consumption), the racehorse market (pony oats), the feed oats market, and the forage oats market (green-feed or silage). Growers may wish to select two or three of the best available varieties. It is always a good management practice to spread the risk. Selecting different varieties may reduce disease potential and the risk of environmental impacts such as lodging or heat blast and spreads the harvest workload (Prairie Oats Grower Association).

Method and Materials

Oat Variety Trial		
Location	Forestburg	Castor
Previous crop	field peas	Canola
Seeding dates	May 20	May 22
Harvest dates	Sept 25	Sept 21
Experiment design	4.5' X 22' plots, randomized complete block design, 4 replications	
Seeding method	Minimum tillage Techno-till openers at 9 inch spacing and 2 -3 inch deep seed placement.	
Fertilizer	All sites: 70 Lbs/ac of N side placed as Urea, 25lbs/ac of P with seed as MAP	
Herbicide spray	Sprayed Buctril-M on June 17	



Castor site

Results

Table 9: Oats (milling) variety yield at Forestburg and Castor as compare to Alberta average during 2014.

Milling Oats Variety Trial – 2014							
Variety name	AB site years of testing	Yield=% of CDC Dancer				Standability	Tolerance to Smut
		Forestburg	Castor	AB Average for Medium & High yield Category			
				(Medium) 70-100 bu/ ac	(High) 100-130 bu/ac		
CDC Dancer (bu/ac)	126	101	114	84	113		
CDC Dancer ☼	126	100	100	100	100	G	R
Bia	New	84	102	-	-	G	-
CDC Hay-maker	18	92	95	104	105	F	G
CDC Ruffian▲	28	103	104	105	116+	G	R
Nice	New	88	107	-	-	G	
Souris ☼	28	105	95	103	111	VG	R
AAC Justice▲	18	100	109	98	110+	G	R
LSD (P=0.05)		23	12				
CV (%)		15.97	7				

☼ Protected by Plant Breeders Rights ▲ Plant Breeder rights protection has been applied for

References

Alberta Seed Guide – Spring 2015

<http://www.poga.ca/grower-manual/variety-selection> (Accessed on 1 Feb, 2015)

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BEAVER COUNTY



Canola Performance Trial – 2014

Medium Maturing Zone

Abstract

At Forestburg, based on 2013 and 2014 average, the top yielding varieties were Canterra 1990, 09H7757, 10DL30509, V12-1, SY4135, 13DL30323, L252, and SY4114 with average yields of above 60 bu/acre. Statistically there was no-significant difference at a 5% level of probability among the above mentioned varieties. Days to maturity in the mid-season zone were 93 to 96 days during 2014 for all varieties (Table 10 and Alberta Seed Guide).

Introduction

Dr. Rale Gjuric of Halotech coordinated the program. Individual location data and other information for the small plot trials are available at: www.canolaPerformancetrials.ca . The results are also found in the spring 2015 Alberta Seed Guide.

The three Prairie Canola Grower groups: the Alberta Canola Producers Commission, the Saskatchewan Canola Development Commission, and the Manitoba Canola Growers Association funded the program. Seed companies that contributed in the program paid entry fees. For 2014, participants in the trials consist of line companies including: Bayer Crop Science, BrettYoung Seeds, CANTERRA SEEDS, Cargill, DL Seeds, Monsanto, Syngenta, Proven Seed/Crop Production Services(CPS), and Growers group.

Method and Materials

There were 18 varieties from 2013 that are in the 2014 trials. In this trial, there were 2 Clearfield, 4 Liberty Link, and 19 Roundup Ready cultivars. The table on the following page compares yields at Forestburg and Tofield with Medium Season Zone averages. Tofield is in the black soil zone, while Forestburg is in the thin black soil zone.

Seeding dates: Forestburg - May 20, Tofield - May 27

Harvest Dates: Forestburg - September 15, Tofield - September 29

Co-operators: Forestburg - Gerald Kuefler, Tofield - Barry Mosby

Results

Table 10: 2014 Canola Performance Trials, Forestburg and Tofield vs Medium Zone Averages of 2014.

System/Cultivar	Forestburg 2013 (bu/ac)	Forestburg 2014 bu/ac	Tofield 2014 bu/ac	Medium Season Zone 2014 (95- 115 frost free days) bu/ac	Distributor
Clearfield					
5525CL	59.6	44.1	66.6	54	Growers group
VR 9560 CL	57.1	44.5	66.7	58	CPS
Liberty Link					
5440	63.4	53.3	74.6	61	Growers group
L130	51.8	53.8	66.4	59	Bayer
L252	63.4	58	68.8	64	Bayer
L261	54.2	55.4	75.4	64	Bayer
Roundup Ready®					
Canterra 1990	70.9	61.7	72.7	59	Canterra
CS 2000		53.9	72.1	-	Canterra
6044 RR	61.3	56.7	69.1	59	BrettYoung
10DL30509	66.9	58.8	71.6		BrettYoung
73-75RR	61.9	54.8	65.7	58	Growers group
74-45RR		54.9	75.7	59	Monsanto
74-44RR	63.3	56	76.3	57	Monsanto
SY4114	66.9	54.3	71.9	57	Syngenta
SY4135	66.4	56.3	63.7	55	Syngenta
09H7757	69.5	57.9	81	-	Cargill
08H0004		59.8	74.8	59	Cargill
09H7763		59.3	82.7	-	Cargill
V12-1	66.6	59.1	69.9	60	Cargill
V12-2	61.3	54.2	70.9	54	Cargill
VR 9562GC	60.9	55.0	75.1	61	CPS
VT-SN 11-2786		55.6	74.3	58	CPS
11DL30318		54.9	74.8	57	DL Seeds
13DL30323		60.9	70.3	64	DL Seeds
LSD (P=0.05)					
		6.1	8.73	5	



mowing between plots at Forestburg site

Corn Plant Population Trial

Abstract

At Castor during 2014 (seeded 4th June and soil organic matter 4.5%), a final plant population of 29000 plants/acre with an average dry weight of 3 t/acre (see graph below). Corn dry weight averaged about 2 t/acre, with a final average plant population of 16000 plants/acre. For 80% of the seeds to survive and reach the harvest stage, a seeding rate should be 35000 seeds/acre to get 29000 mature plants/acre. At the Tofield site (seeded 26 May 2014 & with soil organic matter 10%) the average dry matter production was 6 t/acre. Photos below from the Tofield site shows how mature the corn cobs were 3 days before September 8-10 frost during 2014.



Introduction

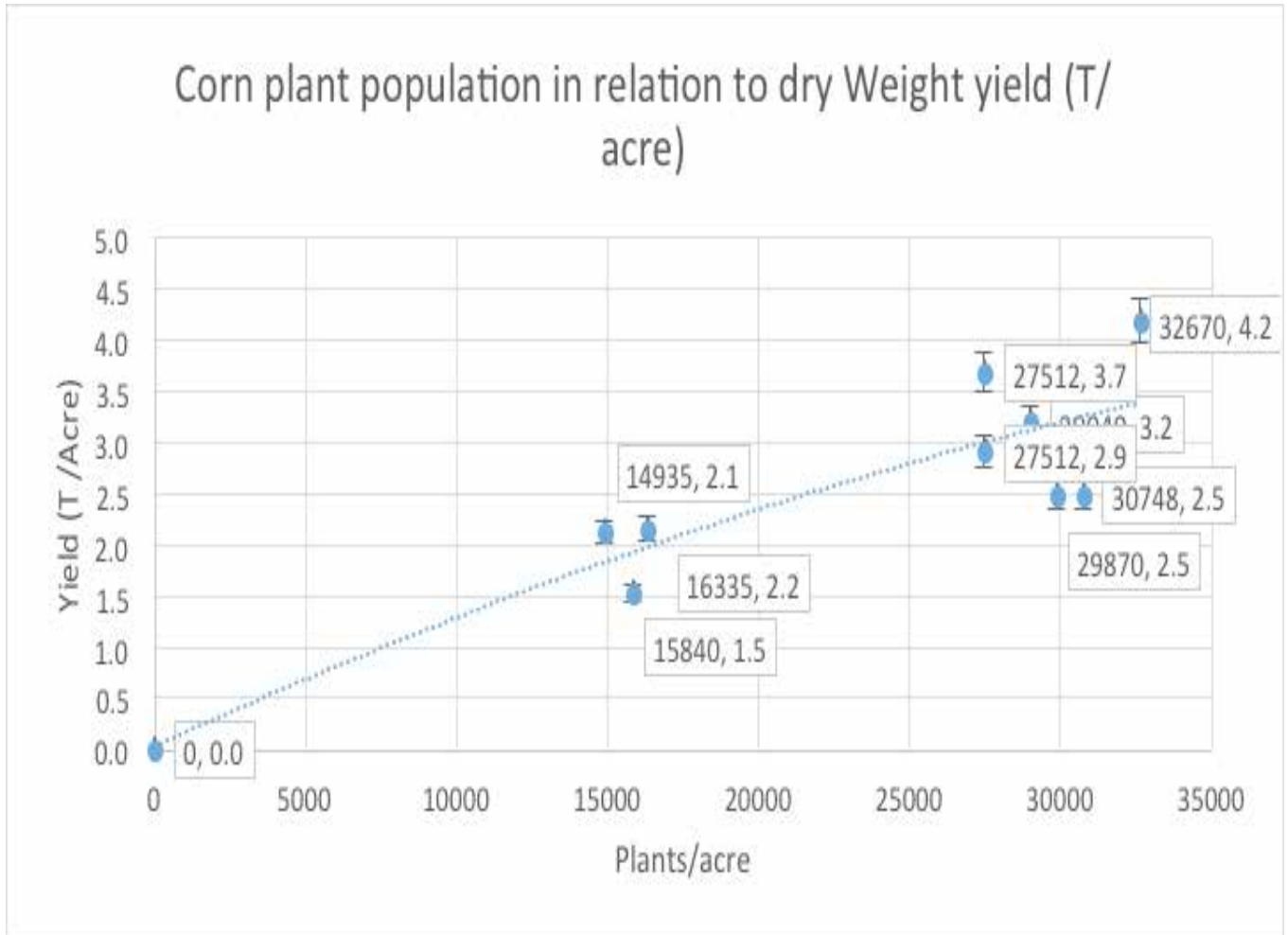
All the corn varieties seeded at Forestburg, Castor, and Stettler died prematurely due to early frost from 8-10 September 2014. Growing degree days near Forestburg averages around 2000 to 2200, which is not suitable for present varieties of grain corn. According to Dennis Pennington (2013), as a general rule, in a normal year (without weather extremes) the harvest index of corn (grain yield/total plant biomass) will be close to 0.50; however it can vary widely (0.35 to 0.79) from year-to-year and from soil type to soil type. During excessively wet or dry years when grain yields are reduced, the harvest index is usually lower (higher stover yield than grain yield).

Method and Materials

15 different round-up ready corn varieties were seeded to test their maturity in around 52°N to 53°N near Forestburg, Castor, Stettler and Tofield. A corn plant population trial was conducted at Castor site. About 70 lbs/acre nitrogen was applied and weed control was done with glyphosate. The dry matter yield was estimated by harvesting 5 plants from each plot during the second week of October. Plants were dried in the drying shed at 350C for about a week.

Results

A small number of data points were recorded to estimate the dry matter yield are shown below in graph.



References

Harvest index: A predictor of corn stover yield. Posted on January 28, 2013 by Dennis Pennington, Michigan State University Extension. http://msue.anr.msu.edu/news/harvest_index_a_predictor_of_corn_stover_yield (Accessed February 1, 2015).



Regional Silage Variety Trials Results 2014

Abstract

Cattle producers grow ever increasing amounts of annual crops for feed (silage, green feed and swath grazing), and measuring those that produce the highest forage yield becomes increasingly important. Silage is an integral forage source in feedlots across the province and has become more prevalent in cow herds as well. With many producers trying to lower production costs, swath grazing of cow herds has increased dramatically in the last few years. It could also be argued that there is more grain forage than cereal grain fed to take a market animal from conception to plate.

Participating Organizations

Under the umbrella of the Agricultural Research and Extension Council of Alberta, eight applied research groups performed the project at twelve locations throughout the province.

- Agricultural Research and Extension Council of Alberta, Leduc, AB, (780) 612-9712
- Battle River Research Group, Forestburg, AB, (780) 582-7308
- Chinook Applied Research Association, Oyen, AB, (403) 664-3777
- Gateway Research Organization, Westlock, AB, (780) 349-4546
- Lakeland Agricultural Research Association, Bonnyville, AB, (780) 826-7260
- Smoky Applied Research and Demonstration Association, Falher, AB, (780) 837-2900
- West-Central Forage Association, Evansburg, AB, (780) 727-4447
- North Peace Applied Research Association, Manning AB, (780) 836-5230
- Peace Country Beef and Forage, Fairview, AB, (780) 835-6799

Major Sponsors

- Government of Alberta (ARD) – Alex Fedko Coordinator
- Agricultural Opportunity Fund – Fred Young Coordinator
- A & L Canada Laboratories Inc.
- Association of Alberta Co-op Seed Cleaning Plants
- Alberta Seed Growers' Association

Trial Information

This is the sixth year the groups have conducted forage testing of various varieties. The tables show the summaries from the last two years as compared to the control variety (in bold). Test Yield categories are similar to the crop variety tables.

Varieties of barley, oats, triticale and peas commonly used for silage, greenfeed and swath grazing were included in the trial, as well as new varieties showing good potential for these uses. The cereal trials, (Barley, Oats & Triticale), were seeded at recommended seeding density rates and at recommended fertility; its objective was to determine yield and nutritional values. The pulse mixture trial looked at increasing the nutritional value of silage, as well as decreasing nitrogen costs. Thus, the pulse mix plots were seeded with 50

pounds of 11-52-0-0 only, while the monoculture cereal comparison plots were fertilized with 50 percent of the recommended cereal rates. Peas were seeded at 75 percent of their recommended seeding rate and cereals at 50 percent when in mixtures. The monoculture cereal comparison plots were seeded at 100 percent the recommended seeding rate.

Test Yield Categories

The defined range for each Test Yield Category is provided in tons per acre. Variety yields are reported as average yields in Low, Medium and High Test Yield Categories for comparison with the check for productivity regimes and environments that may be anticipated. Varieties that are statistically higher (+) or lower (-) yielding than the standard check are indicated. No symbol after the yield figure indicates that there is no statistical difference. Caution is advised when interpreting the data with respect to new varieties that have not been fully tested.

To make effective use of the yield comparison tables, producers first need to decide if their target yield for the season fits within the Low, Medium or High Test Yield categories. It should be noted that the indicated yield levels are those from small plot trials, which are often 15 to 20 per cent higher than yields expected under commercial production. Also remember that yield is not the only factor that affects net return. Be sure to consider the other important agronomic and disease resistance characteristics. The genetic yield potential of a variety is often masked by various crop management factors, some of which can be controlled.

Site Information

There were 12 sites across the province, representing various agroecological zones. Sites were located near Castor, Stettler, Fort Kent, Lac La Biche, New Fish Creek, Wildwood, Hanna, Manning, Fairview, St. Paul, Stony Plain, and Westlock. The Fairview site seeded the barley and pulse mixed trials only. The Stony Plain and Westlock sites did not report their data, but is available locally. The New Fish Creek site abandoned the oats and pulse mixture. Maturity, plant height and lodging were not measured in the trials as it extensively reported on in the Cereal RVT program.

Nutritional Analysis

Nutrition was assessed using wet chemistry analysis. Full nutritional analysis was done on each sample, however, we have only reported on six nutritional categories; crude protein (CP), total digestible nutrients (TDN) which is an estimation of energy, calcium (Ca), phosphorus (P), potassium (K) and magnesium (Mg).



BARLEY										
Variety	Overall Yield	Overall Station Years of Testing	Area (t/ac)					Yield Category (% Vivar)		
			2	3	4	5	6	Low < 2.0 (t/ac)	Medium 2.0 - 4.0 (t/ac)	High > 4.0 (t/ac)
Varieties tested in the 2012 - 2014 trials (Yield and agronomic data only directly comparable to Vivar)										
Vivar (t/ac)	4		4.7	4.8	3	4.5	2.5	1.7	3.3	5.2
Vivar	100	25	100	100	100	100	100	100	100	100
Busby	100	25	99	101	94	105+	95	96	99	103
CDC Aus-tenson	109+	25	103	105	127	106	109	121	104	110
CDC Coalition	98	25	103	96	104	91	106	102	95	100
CDC Cowboy	109+	25	99	110	120	109	108+	115	107	109
CDC Maverick	106	15	94	97	89	109	116	117	108	100
Chigwell	96-	25	90-	91	100	93-	105	110	92-	96
Conlon	91-	15	78-	92	98	85-	104	104	88	90-
Gadsby	109+	25	102	108	119	108+	111	123	105	109
Muskwa	96	15	108	90	102	90-	102	101	96	95
Ponoka	106	25	102	104	112	107+	104	115	101	108
Ranger	100	15	116	99	90	99	98	97	100	102
Seebe	105+	25	101	106	113	105	102	111	103	105
Sundre	95-	25	88	95	95	95	101	101	94	95
Trochu	97	24	96	92	101	99	94	103	94	96
Xena	103	25	97	108	106	101	107	106	103	103



Barley Nutritional Data					
CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
Varieties tested in the 2012-2014 trials (Yield and agronomic data only directly comparable to Vivar)					
10.5	66.2	0.4	0.2	1.3	0.2
100	100	100	100	100	100
99	99	97	104	96	88
101	100	82	106	102	88
100	100	80	107	102	84
95	97	97	108	112	101
92	98	94	105	97	99
100	98	109	102	105	98
92	99	88	112	94	84
98	99	100	106	99	93
98	99	108	106	116	97
96	99	114	105	102	97
96	98	111	106	118	102
104	97	102	114	110	87
103	99	104	109	115	100
99	101	102	109	103	99
101	100	82	111	97	86



Amanda weighing sample to be dried (determine moisture content) - Stettler site



Vicki entering tub weight (plot yield) into iPad - Castor site

OATS										
Variety	Overall Yield	Overall Station Years of Testing	Area (t/ac)					Yield Category (% Murphy)		
			2	3	4	5	6	Low < 2.0 (t/ac)	Medium 2.0 - 4.0 (t/ac)	High > 4.0 (t/ac)
Varieties tested in the 2012 - 2014 trials (Yield and agronomic data only directly comparable to Murphy)										
Murphy (t/ac)	3.9		3.8	4.7	3.2	4.4	1.9	1.6	3.4	4.8
Murphy	100	25	100	100	100	100	100	100	100	100
AC Juniper	95	20	96	98	95	85-	119	112	90	95
AC Morgan	101	25	101	95	100	97	122	111	99	100
AC Mustang	98	25	106	97	86	98	105	112	94	100
CDC Baler	96	24	85-	100	103	96	93	98	95	97
CDC Haymaker	99	17	98	100	125	95	102	117	99	97
CDC So-i	94-	25	91	104	79-	95	95	98	90-	97
Everleaf	86	7	XX	98	108	73-	68	68	95	76
Foothills	99	25	95	97	107	98	102	110+	94	102
Jordan	98	25	107	96	84	97	108	107	95	99
Waldern	100	25	93	104	99	99	111	113	99	100

Nutritional Data

CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
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Varieties tested in the 2012 - 2014 trials (Yield and agronomic data only directly comparable to Murphy)

8.7	58.8	0.3	0.2	1.9	0.2
100	100	100	100	100	100
121	107	100	116	99	108
112	106	105	115	96	95
124	105	98	110	98	100
123	107	106	113	101	102
119	106	104	110	103	99
119	107	101	105	99	105
117	104	112	107	100	102
120	103	106	109	101	101
119	105	100	106	97	112
110	105	109	104	93	98



Amanda unloading silage harvester into tub - Stettler site

PULSE MIXTURES										
Variety	Overall Yield	Overall Station Years of Testing	Area (t/ac)					Yield Category (% Vivar)		
			2	3	4	5	6	Low < 2.0 (t/ac)	Medium 2.0 - 4.0 (t/ac)	High > 4.0 (t/ac)
Varieties tested in the 2012 - 2014 trials (Yield and agronomic data only directly comparable to Vivar)										
Vivar (t/ac)	3.5		3.7	4.3	2.3	3.4	3.1	2.5	3.5	4.7
Vivar	100	25	100	100	100	100	100	100	100	100
Murphy	116	24	94	107	157	126+	98	124	117	107
Pronghorn	110	25	98	95	109	119+	112	107	112	108
40-10 /murphy	96	18	55	76	132	102	95	105	97	75
40-10 /pronghorn	95	18	62	78	113	103	97	99	94	92
40-10 /vivar	94	18	70	77-	108	94	116	101	94	83
CDC Horizon/murphy	108	25	67	97	144	120	97	112	107	106
CDC Horizon/pronghorn	106	25	76	91	132+	113	112	108	110	97
CDC Horizon/vivar	99	25	84	94	112	103	98	95	102	96
CDC Meadow/murphy	110	7	84	105	XX	125+	103	84	109	121+
CDC Meadow/pronghorn	103	7	81	91	XX	117	106	81	112	101
CDC Meadow/vivar	104	7	92	94	XX	116	98	92	113	98

Nutritional Data

CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
--------	---------	--------	-------	-------	--------

Varieties tested in the 2012 - 2014 trials (Yield and agronomic data only directly comparable to Vivar)

9.3	63.2	0.4	0.2	1.4	0.2
100	100	100	100	100	100
90	95	76	101	126	89
102	101	62	110	101	77
130	98	153	122	119	133
125	97	148	117	103	126
143	99	174	112	106	137
111	95	125	99	126	111
124	98	139	106	107	105
130	98	157	107	105	117
104	95	116	101	129	95
122	99	124	113	111	95
115	100	197	89	105	129



Manjit running silage harvester - Castor Site

TRITICALE										
Variety	Overall Yield	Overall Station Years of Testing	Area (t/ac)					Yield Category (% Pronghorn)		
			2	3	4	5	6	Low < 3.0 (t/ac)	Medium 3.0 - 4.5 (t/ac)	High > 4.5 (t/ac)
Varieties tested in the 2012 - 2014 trials (Yield and agronomic data only directly comparable to Pronghorn)										
Pronghorn (t/ac)	4.2		4.3	4.4	3.4	4.8	2.1	2.5	4	5.3
Pronghorn	100	26	100	100	100	100	100	100	100	100
Bunker	97	26	87	96	98	101	93	93	97	99
Sunray	97	17	85	94	129	99	90	87	101	98
Taza	100	26	96	102	95	102	96	101	97	101
Tyndal	95-	26	91	101	92	96	92	92	97	96
Nutritional Data										
CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)					
Varieties tested in the 2012 - 2014 trials (Yield and agronomic data only directly comparable to Pronghorn)										
9.3	62.8	0.2	0.3	1.4	0.1					
100	100	100	100	100	100					
101	98	118	95	94	109					
108	102	111	100	97	102					
99	100	108	103	94	97					
96	100	102	99	91	98					



Alvin and Manjit measuring plot lengths, Manjit using iPad to enter length - Castor Site

Summary of Field Crop Contract Projects 2014

BEST Environmental Technologies

For the second year we were contracted by Rick McIntyre of BEST Environmental Technologies to sow Canola and Wheat on last year's project site and on the appropriate stubble. Some errors were made on product application, and the trial was only partly successful.

AgQuest/Western Feed Grain Development Co-op Ltd (WFGD)/DL Seeds

Dana Rouke of AgQuest contracted the Battle River Research Group to conduct four different studies. One was a prairie wide wheat registration trial for AgQuest, another was an evaluation of several wheat lines for WFGD, and the third was an evaluation of numbered cultivars for DL Seeds. A fourth study was an evaluation of Winter wheat lines. This was located beside the winter wheat regional trial at Galahad. Several of the numbered lines had poor winter survival.

WFGD is a cooperative that was formed to develop new feed grains. Its vision is to provide prairie farmers with access to feed grains suitable for livestock and ethanol production. DL seeds has been primarily been involved in canola. Their goal is to create and produce superior canola hybrid varieties that are profitable to producers in North America. Their canola cultivars are distributed through Brett Young and Canterra Seeds.

Canadian Humalite

We were contracted to conduct a study on several liquid humalite products which had different nutrient levels. These were sprayed on the soil surface before seeding.

FMC Agricultural Solutions

Nolan Kowalchuk, account manager with FMC contracted the BRRG to help find two cooperators growing Liberty Link canola that would be interested in spraying a field scale demonstration for a Federal Research Permit Protocol. These field scale size protocols are needed before product registration. Cooperator's were Dennis Prehn and Mike Keichinger, both of Galahad.

Clomazone (no trade name in 2014) was sprayed before seeding and gave good control of emerging cleavers. A crop walk tour was held on June 24th. It is hoped that Clomazone will be registered in 2015.

The Mosaic Company

A canola trial was established at BRRG's Castor broadleaf location to evaluate Mosaic phosphate and sulphur products in canola. Premium fertility products such as MES15 were also compared.

ENR Distribution (McRae Holding Ltd)

For the third year Terry Waddell of McRae Holdings Ltd., Stettler contracted the BRRG to conduct research trials on Gypsum and Calcium products at our Stettler project site. Broadcast and seed row placed products in wheat. This was sown on the 2013 Canola project site. This study will continue in 2015.



Andre, Inga and Alvin seeding ENR plots - Stettler Site

Insect survey results - 2014

Bertha Army worm (BAW)



Photo taken in Beaver County by Manjit Deol during 2014

Populations are normally kept in check by such factors as weather and natural enemies. Potential damage may be more or less severe than suggested by the moth count data depending on weather and crop conditions and localized population dynamics. Field scouting is critical for pest management decisions. These numbers are generated from paired pheromone traps in individual fields.

County	LLD	June 15		June 22		June 29		July 6		July 13		July 20		July 27		Trap totals	Trap average
		Trap 1	Trap 2	Trap 1	Trap 2	Trap 1	Trap 2	Trap 1	Trap 2	Trap 1	Trap 2	Trap 1	Trap 2				
Flagstaff	NW 35 42 15 W4	0	0	0	0	1	13	13	40	27	46	28	21	6	8	203	101.5
Stettler	SE 18 39 18 W4	0	0	1	2	33	23	38	48	82	54	24	12	5	12	334	167

Cabbage seedpod weevil (CSPW)

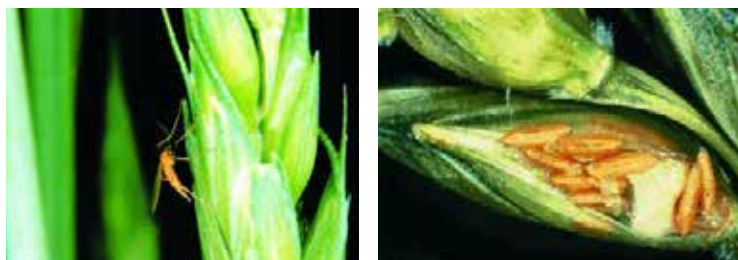


Source:
Canola
Council

The earliest flowering canola crops tend to have the highest risk from the cabbage seedpod weevil and should be monitored very closely. Cabbage seedpod weevil overwinters as an adult so the risk of infestation is further indicated by the adult population of the preceding fall. High numbers of weevil adults in fall will likely mean significant infestation levels in the following spring. These numbers are generated from sweep net samples (25-180 degree sweeps) from individual fields and from online reporting from agronomists

County	LLD	# Of sweeps	CSPW	Lygus Nymph	Lygus Adult	Leaf-hopper	Flea beetle	Turnip beetle
Flagstaff	SE 32 41 16 W4	25	0	0	3	0	0	0
Flagstaff	SE 32 41 13 W4	25	0	0	0	0	0	0
Flagstaff	NE 11 40 13 W4	25	0	0	0	0	0	0
Flagstaff	NW 35 42 15 W4	25	0	0	0	0	0	0
Flagstaff	SW 3 42 14 W4	25	0	0	0	0	0	0
Paintearth	SW 19 39 10 W4	25	0	0	0	0	0	0
Paintearth	NE 26 38 16 W4	25	0	0	1	0	0	0
Paintearth	NE 11 39 16 W4	25	0	0	0	0	0	0
Paintearth	SW 22 38 14 W4	25	0	1	0	0	0	0

Wheat midge (WM)



Source: Alberta Agriculture and Rural Development

There is no definitive way to know the exact in any given field so field scouting is critical. The numbers shown here give the general trend of midge populations. Individual fields may have a different risk. Field scouting is critical as wheat heads out. These numbers were generated by taking soil samples from wheat fields after harvest using a standard soil probe.

County	LLD	Viable	Not Viable	Parasite #	Total Midge
Flagstaff	W 30 42 11 W4	6	0	3	9
Flagstaff	E 26 42 15 W4	3	0	0	3
Flagstaff	SW 31 39 14 W4	1	0	0	1
Flagstaff	W 19 41 10 W4	7	0	0	7
Flagstaff	SW 6 42 14 W4	0	0	0	0
Paintearth	SE 4 39 14 W4	0	0	0	0
Paintearth	NW 35 39 14 W4	4	0	0	4
Paintearth	SE 10 39 14 W4	0	0	0	0
Paintearth	NE 15 39 14 W4	0	0	0	0

The risk level as shown on our maps is determined as follows:

- Zero midge will be displayed as light grey (No infestation)
- Two or less midge will be shown as dark grey on the map (<600/m²)
- 3 to 5 will be shown as yellow (600 to 1200/m²)
- 6 to 8 will be shown as orange (1200 to 1800/m²)
- 9 or more will be shown as red. (>1800/m²)

Weather Data 2014

Those of you who took in world weather forecaster Drew Learner at Farm Tech last winter may remember him talking about a 18 year polar vortex cycle. He showed charts of the winter weather patterns of this year, 1996, 1978 etc., showing similarities. When I got back to the office and looked at the 1996 report, the title that year was “A year to remember Or to Forget”. That year, there was a cool May and June, which delayed seeding followed by a cloudy summer, a good August, a rainy September, and a cool October harvest. Do you remember that year? I was hoping this year wouldn't be a repeat.

In 2014 April weather was cool, but there enough warm days to melt the snow. The cool weather continued into early May, for instance highs on May 3 and 4 were 2.7 and 4.1 C with light rain! This week of weather delayed seeding until the week of May 12. We were mostly finished by May long weekend, but many larger producers were hurt by the late start and ended up seeding until the end of May and into early June. Timely rains in June and into July and a warm summer led to good yield potential. In the end, yields were lower than the records set in 2013. An early area of wide frost on September 10th and 11th resulted in lower yields and/or grades in some late seeded crops. In some local areas such as around Killam, a slight frost on August 25 resulted in grade loss in wheat.

In mid-November we are once again colder than normal with very little snow cover. It will be interesting to see how our winter wheat plots look like in the spring. Now that the term “Polar Vortex” has come into fashion, Canada is no longer blamed for weather patterns such as the “Alberta clipper” or “Canadian high”.

Table 1: Growing Degree Days, Stettler, 2005 to 2014

Month	2006	2007	2008	2009	2010	2011	2012	2013*	2014	Long term average**
April	66	31	23	23	46	9	37	21	24	38
May	193	145	154	101	104	148	138	225	150	177
June	306	296	246	235	240	254	274	284	250	289
July	407	450	338	342	322	325	403	336	400	370
August	295	258	339	302	301	331	370	384	364	343
September	185	144	153	255	111	234	220	270	198	186
Total	1452	1324	1253	1258	1124	1301	1442	1520	1386	1403

*The 2013 and 2014 data was recorded from a Hail and Crop weather station less than a mile from the BRRG plots. The long term average data is from Hail and Crop while the rest of the data is from the farmzone.ca website.

Climate Data 2014

Data was obtained from the Alberta Hail and Crop weather stations in the area. The data presented is a summary of information from the Station Viewer on ARD “Ropin the Web” site. (AgroClimatic Information Service)

Table 2: Shonts (near Tofield) Weather Data, April to September, 2014

Tofield (Shonts)						
Month	Precipitation mm	Precipitation Long term	Mean Minimum Temp C	Mean Maximum Temp C	Mean Temp C	Mean Long term Temp C
April	34.8	23.9	-3.8	8.9	2.6	3.8
May	35.3	41.7	1.3	15.7	9.0	10.4
June	77.3	75	7.0	20.3	14.0	14.4
July	129.8	87.9	16.5	17.8	17.8	16.5
August	26.4	61.4	8.7	23.5	16.1	15.6
September	31.3	38.9	3.0	18.1	10.4	10.4
Total	334.9	328.8				

334 mm is approximately 13.6 inches.

The last spring frosts recorded were on May 12 (-3.9C) and May 17 (-1.4C).

The first fall frosts were on August 25 (-0.5C) and Sept 10 and 11 (-2.4 and -5.4).

Corn Heat Units were slightly lower than normal especially in September. From a potential corn seeding date on May 20 to September 9 there were 1891 Corn Heat Units.

Table 3: Stettler Weather Data, April to September 2014

Stettler						
Month	Precipitation mm	Precipitation Long term	Mean Minimum Temp C	Mean Maximum Temp C	Mean Temp C	Mean Long term Temp C
April	12.4	22.7	-3.2	8.8	2.7	4.2
May	30.7	46.4	3.0	15.5	9.5	10.5
June	96.9	81.5	7.4	19.3	13.7	14.6
July	62.5	89.1	11.0	24.8	17.9	16.9
August	68.3	58.8	10.3	23.2	16.5	16.1
September	50.2	41.8	5.0	17.8	10.8	11.0
	321	340.3				

321 mm is approximately 13 inches.

The last spring frosts recorded were on May 12 (-2.8C) and May 17 (-2.5 C).

The first fall frosts were on September 11 (-3.1 C).

From a potential corn seeding date of May 20 to September 9 there were 1924 Corn Heat Units.

Table 4: Kessler Weather Data, April to September 2014

Kessler (East of Castor on 599)						
	Precipitation mm	Precipitation Long term mm	Mean Minimum Temp C	Mean Maximum Temp C	Mean Temp C	Mean temp Long term
April	34.2	25.8	-3.4	9.3	2.9	4.0
May	29.7	41.8	2.0	16.1	9.7	10.5
June	143.5	75.9	7.0	19.7	13.7	14.7
July	69.5	70.2	11.2	24.6	18.2	17.2
August	51.9	50.7	10.5	23.5	16.8	16.3
September	26	33.6	3.5	18.5	10.9	10.9
Total	354.8	298				

354 mm is approximately 14.4 inches. The nearby weather station of Fleet recorded 278 mm of precipitation in the same period.

The last spring frosts were recorded on May 12 (-1.7 C) and May 17 (-2.2 C).

The first fall frosts were on September 11 (-2.7 C).

From a potential corn seeding date of May 20 to September 9 there were 1959 Corn Heat Units.

Table 5: Forestburg Weather Data, April to September 2014

Forestburg						
Month	Precipitation	Precipitation Long term mm	Mean Minimum Temp C	Mean Maxi- mum Temp C	Mean Temp C	Mean temp Long term
April	19.3	23.1	-3.5	8.8	2.6	4.4
May	21.3	41.4	2.5	15.6	9.6	10.9
June	77.3	75.6	7.0	19.7	13.8	15.1
July	47.6	77.6	10.5	25.1	17.9	17.3
August	28.3	55.3	9.1	24.2	16.8	16.4
September	40.2	36.6	4.0	18.7	10.9	11.2
Total	278					

234 mm is approximately 9.5 inches. The Killam weather station recorded 323 mm in the same period.

The last spring frosts were recorded on May 12 (-1.9 C) and May 17 (-0.8 C).

The first fall frosts were recorded on September 11 (-2.6).

From a potential corn seeding date of May 20 to September 9 there were 1920 Corn Heat Units.

4-H Crop Trials



Kiersten speaking about her 4-H crop trial at the Forestburg Field Tour

Are micronutrients cost effective in the thin black soil zone?

Abstract

In my experiment I tried to compare the yield, quality, and quantity of the control, seed applied, spray applied, and spray and seed applied. If there is a notable margin then I will compare the price difference. I want to see if the micronutrients will produce a large enough profit difference to pay for the cost of the nutrients.

Method and Materials

Treatment 1-Control group

Treatment 2-Spray applied micronutrients

Treatment 3-Seed applied micronutrients

Treatment 4- Seed and spray applied micronutrients

Plot Plan

Plot 101 Trtmnt:1	Plot 201 Trtmnt:3	Plot 301 Trtmnt:4
Plot 102 Trtmnt:2	Plot 202 Trtmnt:1	Plot 302 Trtmnt:3
Plot 103 Trtmnt:3	Plot 203 Trtmnt:4	Plot 303 Trtmnt:2
Plot 104 Trtmnt:4	Plot 204 Trtmnt:2	Plot 304 Trtmnt:1

Results and Discussion

There was 4 different groups in which I varied the micronutrients and the application. Group one was control, using what would be expected out of a average farmer including general macro fertilizer, and herbicides. The second group was seed applied micronutrients which was treated seed with Phos PX then also has the general application as well. The third group was spray applied micronutrients and the fourth was spray and seed applied micronutrients and they both had general treatments as well.



Kiersten and Alvin measure plot length on the 4-H trials

In my experiment there was no notable difference in the yield from plot to plot. The average bu/ac is 63.225, the data points ranged in group 1 from 53.4-72.1, group 2 63.1-65.6, group 3 60.3-69, and finally in group 4 55.1-70.9. The averages in the group from group 1-group 4 were: 61.87, 63.94, 63.7, and 63.37. None of the data had a difference of more than 5% so data concluded that the micronutrients were not cost effective in the conditions tested being as there was no notable difference between the yields of crops with no micronutrients and crops with.

Treatment	Plot Number	bu/ac
1	101	53.4
2	102	63.1
3	103	61.9
4	104	55.1
2	201	63.1
3	202	69
4	203	70.9
1	204	72.1
3	301	60.3
4	302	64.1
1	303	60.1
2	304	65.6





Ian and Jeremy tagging and tying a harvest bag from one of their trial plots

What Difference does Seeding and Fertilizer rate make in a crop?

Question

We wanted to see how different seeding and fertilizer rates affected yield, weeds, disease and harvestability of a wheat crop.

Method

We planted a control group that had a regular seeding rate of 24 bu/acre and standard fertilizer (treatment 2). Then we planted 3 other treatments. A low seeding rate of 19 bu/acre and standard fertilizer (treatment 1). A high seeding rate of 30 bu/acre and standard fertilizer (treatment 3). A high seeding rate of 30 bu/acre and a high fertilizer rate (treatment). We visited our crop plots a few times in the growing season, looked for weeds and disease and recorded our observations.

Results

Treatment	Weeds	Disease	Harvestability	Yield (bu/ ac)	Protein (%)	Observational Ranking
Low Seeding	++	none	good	68.1	14.04	4
Regular	+	none	good	67.1	14.27	3
High Seeding	+	none	good	71.1	14.34	1
High Seeding and Fertilizer	+	none	good	67	14.46	2

Discussion

Even though the low seeding plot had a higher weed count at first, by harvest we could not tell the difference. We did not observe any disease in the test plots. Every plot fed through the harvester well. The High seeding treatment looked the best each time we observed our plots and did have a little bit higher yield, however there is not enough difference between the yields to make a conclusion.

We really enjoyed working with the research group to plan, plant, observe and harvest our test plots. It was a lot of fun. Thank-you!



Combining crew for 4-H trials



Eric, Alvin and Vicki combining at the Castor site on a Sunday evening

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