

# Alberta Seed Guide

ADVANCING SEED IN ALBERTA

SPRING 2015

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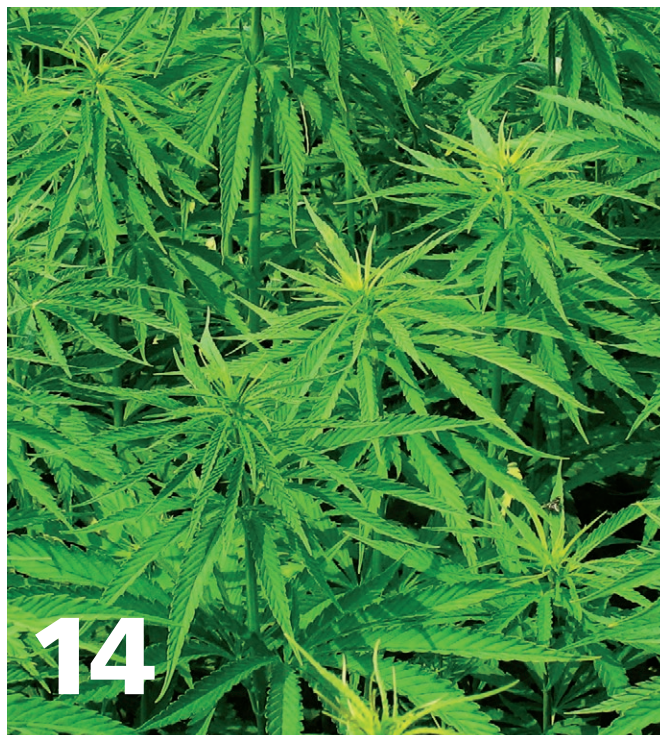
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## FEATURES

- 08** A NEW PATH FORWARD  
We take a look at how today's evolving landscape will impact you and the seed you buy.
- 12** ADVANCES IN BARLEY BREEDING  
New transgenic technologies may signal a brave new world of barley breeding.
- 14** BIG THINGS AHEAD FOR SMALL CROPS  
Hemp, faba beans and Ethiopian mustard are making their mark on Alberta.
- 24** GETTING SEED OFF TO THE BEST START  
By helping seed get the best possible start, seed treatments are helping farmers grow more from less.
- 30** LONG-AWAITED LEGISLATION  
Bill C-18 is moving quickly through Parliament, bringing with it the promise of increased investment, more trade opportunities and less red tape for Canada's agricultural sector.
- 34** GROWERS ON HIGH ALERT FOR STRIPE RUST  
Stripe rust has been developing earlier than ever before on winter wheat in central Alberta — which may mean it is overwintering in the region.



- 40** NEW CLUBROOT PATHOTYPE ON THE HORIZON  
Alberta researchers have identified a new clubroot pathotype. Proactive management will be key in 2015.
- 116** NEW DEAN LOOKING AHEAD TO NEXT 100 YEARS  
Stan Blade is excited for the future of seed in Alberta and beyond.



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## 48 PROVEN PERFORMERS: PERFORMANCE TRIALS AND GROWER DIRECTORY

The 2014 data from the Regional Variety Trials and the Canola Performance Trials will help you make one of your most important management decisions — choosing the best varieties for your farm. Once you've made your picks, you'll find the grower directory immediately following the performance trial results.

### CEREALS 50 PERFORMANCE TRIALS AND GROWER DIRECTORY

### CANOLA 80 PERFORMANCE TRIALS AND GROWER DIRECTORY

### FLAX 86 PERFORMANCE TRIALS AND GROWER DIRECTORY

### SILAGE 88 PERFORMANCE TRIALS

### HAY AND PASTURE 92 GROWER DIRECTORY

### SPECIAL CROPS 97 PERFORMANCE TRIALS AND GROWER DIRECTORY

## DEPARTMENTS

03 MINISTER'S GREETING

04 PRESIDENTS' MESSAGES

44 SEED PLANT PROFILES

79 MIDGE-TOLERANT WHEAT  
STEWARDSHIP TEAM

114 SEED GROWER AND SEED PLANT MAPS

112 ON THE EDGE



**ON THE COVER:** The Field Crop Development Centre in Lacombe, Alta. focuses on variety development, and this plant is one of thousands of genetic lines in its breeding program. This specific plant is early generation, meaning it's from a recent cross and is early in the breeding process. It will be tested and analyzed for several years to come, and if it displays the yield, agronomic traits, disease resistance, and quality that researchers are looking for, it may be released as a variety.



# Alberta Seed Guide

Spring 2015



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MINISTER OLSON

**AS** Minister of Agriculture and Rural Development, it is my pleasure to extend greetings to the readers of the Alberta Seed Guide and to thank the Alberta Seed Growers' Association and Association of Alberta Co-op Seed Cleaning Plants for their continued work on behalf of the agriculture industry.

The theme of this edition, Advancing the Alberta Seed Industry, is an important reminder that innovation is at the heart of agriculture's long-term success in today's competitive global marketplace. Through valuable tools like the Alberta Seed Guide, producers can stay connected and up-to-date about the latest developments in crop science and agricultural practices that result in enhanced quality and efficiency of production.

Working closely with important partners like the seed industry, our government will continue to position Alberta as a preferred and reliable world supplier of top-quality agriculture products. Together, we will enhance access to new markets, encourage innovation, and ensure consumers have the confidence that Alberta is an environmental steward and leader in areas such as plant health and safe food products.

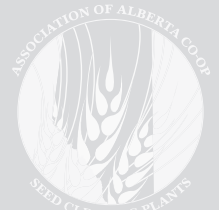
Best wishes for a successful and productive 2015.

**Verlyn Olson, QC**  
Minister





JOHN MCBAIN



**ADVANCEMENTS** in agriculture are alive and well in Western Canada. Taking a look from east to west, investment in research and development in all crop sectors from a variety of funding sources is fueling sustainability for this business of feeding the world. I know I will err in not being able to acknowledge all the awesome work that is being conducted by regional research organizations, industry groups, educational institutions, federal, and provincial governments, multinationals, and even by individual farmers.

The sheer amount of resources focused on the goal to understand biological systems in which we operate, and to ensure sustainability and efficiency, is a real eye opener. I believe the agriculture industry should be proud of all this effort and resourcefulness, and the collaboration within the industry at large.

Crop sector research in seed and variety development continues to create value for growers, whether it is in the form of a new canola seed variety being released from a multinational, or a new cereal variety developed at an Agriculture and Agri-Food Canada facility. Steps forward in variety development have brought the industry region-specific varieties that capitalize on regional environmental conditions, disease tolerance, and yield enhancements. The future of plant breeding hints at more advancements to come, possibly in water & nutrient use efficiency, end-use specific attributes, new crop entries for low heat unit climates, etc.

The amount and quality of agronomic research conducted with the goal of enhancing sustainability, and efficiency of cropping systems, is one of Western Canada's pinnacles of ongoing success. Everyone who operates within the research community will agree the "work" is not even close to being done. At times, the more we know about cropping systems, the more questions are generated as a result.

Recently at the Farming Smarter conference held in Medicine Hat, Sheri Srydhorst of AARD reviewed her work over the past year which included 64 different treatments dealing with agronomic practices on barley, and 48 different management practices on wheat. Further, these trials were in five different locations within the province as well. This is just the tip of the iceberg as far as research and development goes in Alberta, as Srydhorst is only one person of many who is dedicated to crop production research.

One of the crop sector's "crown jewels" is the Canadian International Grains Institute. It has a goal of ensuring cereal crops grown in Canada meet or exceed international market requirements. With milling, baking, pasta and even brewing capabilities, CIGI has the capabilities to measure and ensure Canadian-grown crops remain world market leaders. This research completes the circle from seed to field to market, which in turn assures the sustainability of western Canadian agriculture.

Research funding comes from many streams. Some research funding is included in seed and crop protection pricing, commodity checkoffs, and federal/provincial tax allocations. All funding models are not perfect, but there is effort on the part of the governing body to ensure that all research dollars allocated are relevant, and add value to the industry.

Next time you deliver grain to market, buy seed or a crop input, or even pay taxes, remember that you are part of the research circle that is tirelessly working to answer these many questions regarding crop production, crop efficiency, and marketability.

**John McBain**  
**President**

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ASSOCIATION OF  
ALBERTA CO-OP  
SEED CLEANING PLANTS



DONALD SENDZIAK



**AS** with every spring edition of the *Alberta Seed Guide*, we have frantically searched for the published data from Alberta’s regional variety trials. Whether it’s to compare how “newer” varieties are performing against your current ones or you are looking for potential replacements to address specific areas of concern, remember — it’s not all just about the yield. Agronomic or quality characteristics may be just as important or even more so when trying to fix a particular problem encountered in last year’s growing season.

Regional variety trial data is just one of many tools to help with your decision making — check out all available information on varieties through your local seed growers, seed companies and agronomists, ensuring your next new variety will add to your bottom line. It all starts with the seed. Certified seed ensures you are getting the true genetic potential of that particular variety. Using certified seed is one of many risk management tools, along with protecting that seed with seed treatment to ensure the seedling can overcome any challenges at that all-important early growth stage.

As seed growers, we are at the forefront of experimenting with crops that are not what you typically think are “made for Alberta.” Considerable risk is at stake, which we are willing to accept as we continue to improve productivity on our farms. New, niche crops may do this by diversifying our crop rotations, breaking up existing disease and/or insect issues, and expanding marketing options. Check out the articles as we dig deeper into the exploding acreages of hemp and faba bean and why Ethiopian mustard may have a fit as an alternative to canola for the hotter and drier regions of the province.

With recent advancements in Canada’s variety registration system and as amendments to Canada’s Plant Breeders’ Rights move through Parliament, we are seeing renewed optimism in cereal plant breeding investment and research. A thorough review of how varieties receive registration in Canada resulted in streamlining the process to ensure efficiency, transparency, and flexibility which will ensure access to new and improved varieties.



Ethiopian mustard is a niche crop with potential in Alberta. See p.16.

But at the same time, it’s crucial to understand the importance of quality parameters of certain crop kinds that Canada has built its reputation around. Updating Plant Breeders’ Rights legislation to UPOV 1991 compliance will increase investment, resulting in new varieties from both within Canada and outside. Prior to now, many international breeding companies would not send varieties to Canada because we were not UPOV 1991 compliant, some even refusing to evaluate varieties in Canada.

Whether it’s commenting on any of the articles, topics that you would like more information on or finding certified seed of a particular variety, we would love to hear from you!

**Don Sendziak**  
**President**  
Alberta Seed Growers’ Association  
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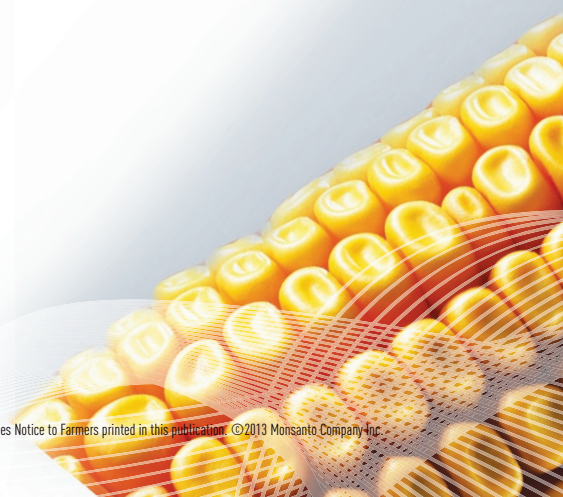
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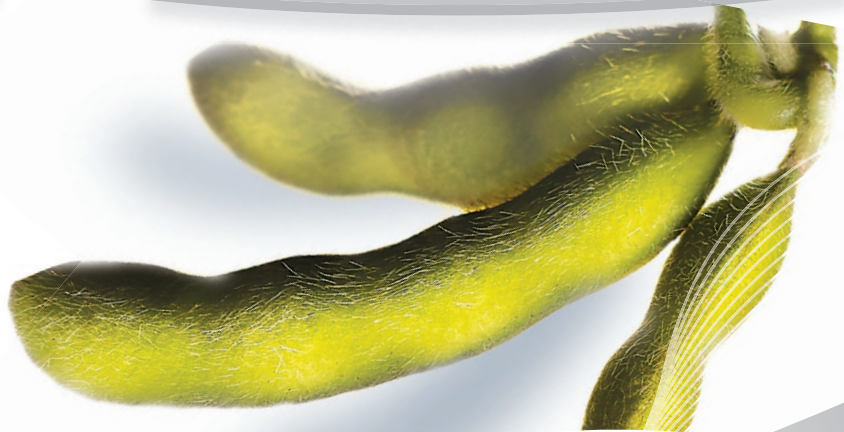
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# A New Path Forward

There are many moving pieces in the Canadian seed industry today — changes to Plant Breeders' Rights legislation, changes to variety registration, changes to seed crop inspection delivery. All of these changes might leave growers scratching their heads. We take a look at how today's evolving landscape will impact you and the seed you buy.

**I**n the last few years, seed has benefited from rapidly evolving technology and innovation. "Farmers today are using a paraphrase from Jim Helm—'driving race cars, not horse and buggy,'" says Patricia Juskiw, a barley breeder at the Field Crop Development Centre in Lacombe. "While Helm was referring to the feed industry and the genetics of the cattle being fed, this also applies to our modern farming systems with pedigreed seed being the fuel for that car. We have GPS, ICM and precision farming that requires the 'best' seed technology available.

"So for the plant breeder it is imperative that we understand that farmers are better able to access information from their farm and the industry to make informed decisions and may therefore be able to select genetics uniquely suited for their cropping system from delivery of the seed into the ground to the product harvested," says Juskiw.

This makes investment in seed innovation more critical today than ever before. "Canada needs to remain competitive in both domestic and foreign markets. As foreign markets and competitors innovate and advance, Canada must also. Canada cannot compete with many countries as a low cost producer, so our option is to compete on quality and innovation. Innovation takes investment," says Dale Adolphe, executive director of the Canadian Seed Growers' Association.

Thanks to Bill C-18, which will bring Canada's Plant Breeders' Rights legislation in line with UPOV '91, Canada is poised to see an increased investment in seed across the country and across various crops.

"The large part of the legislation that is very important to the seed industry are the proposed amendments to Plant Breeders' Rights," says Dave Baute, president of the Canadian Seed Trade Association. "These amendments would put Canadian plant breeders on an equal footing with plant breeders around the world, giving them the confidence to invest in plant breeding and variety development in Canada. It would also give international plant breeders the confidence to send their superior varieties to Canada."

## Variety Registration

A responsive and efficient seed regulatory system also contributes to the success of a country's crop production sector. As the



In the last few years, seed has benefited from rapidly evolving technology and innovation.

seed industry evolves, it's becoming clear that Canada needs a flexible variety registration system that meets the needs of the various value chains of the many different crops grown.

The Canadian government has taken a leadership role in updating its variety registration system. In 2013, it began reviewing Canada's crop variety registration system with the goal of streamlining it. In June of 2014 amendments to the Seeds Regulations resulted in oilseed soybeans and forage crop kinds moving from Part I of Schedule III in the Regulations to Part III of Schedule III.

"This means that varieties of these crop kinds are no longer subject to merit assessment and recommendation by an approved recommending committee in order to obtain variety registration. Applications for registration of these varieties can be made

directly to the CFIA's Variety Registration Office," explains Tammy Jarbeau, media relations coordinator for the Canadian Food Inspection Agency.

The theory is that new varieties of soybeans and forages will be available to farmers at the same time as they are available to competing growers in, for example, the United States, says Adolphe. "The previous argument was that the Canadian testing system for the introduction of new varieties and may have been an impediment to introduction of new varieties," he adds.

Consultations on the variety registration system were ongoing in 2014. "The CFIA distributed a draft Model Operating Procedures document to the recommending committees for their review and comments in October. Each recommending committee has been asked to provide their comments on the MOP to the Variety Registration Office within 30 days following their annual meeting," says Jarbeau.

**"These amendments would put Canadian plant breeders on an equal footing with plant breeders around the world"**

—Dave Baute

In the coming years, Adolphe doesn't see too much more change coming for variety registration. "With the CFIA proposal for two categories, enhanced and basic, likely not too many changes will occur in terms of crop placement," he says. "I expect pressure will stay on the recommending committees to continue to streamline their variety review procedures. This should result in more transparency, more predictability and a friendlier environment for investment into variety development."

Juskiw agrees. "The simplified process should allow the same quality of products to enter the system, but with reduced need for field testing and its concurrent costs."

She says that while some look on these changes as opportunities, others look on them as potentially threatening to marketing systems. "In a time of change there is always the uncertainty about what may be lost, especially with regards to germplasm. As well, quality and disease evaluations may no longer be conducted with the potential for corruption of quality classes and

**Variety Registration**

The current system – Three parts



Crops require up to three years of merit based testing and the recommendation of an expert committee



Crops are tested, but proof of merit is not required



Crops don't have to provide testing info, but must demonstrate the variety is new, distinguishable from others, uniform, and stable

Merit: equal to or better than established check varieties

The proposed changes – Two parts



Similar to Part 1. Includes pre-registration testing and merit assessment



Similar to Part 3. Application for registration submitted

Moving crops from one category to another will be easier, as it will no longer require regulatory change. However, industry consensus will still be required.

Infographic source: Canterra Seeds





Reports from seed growers indicate the quality of their inspections in 2014 were very good, so commercial farmers can expect the high quality of certified seed to continue.

epidemics. However, the Canadian system is very mature and should be able to adjust to these changes and challenges.”

### Seed Crop Inspection

It has been one year since Alternative Service Delivery for seed crop inspection was implemented. To see how year one under the new framework went, the CFIA conducted a series of surveys of various stakeholders in ASD in October 2014.

“Based on the information collected to date, things went well in the first year of seed crop inspection,” says Jarbeau. “Almost 90 per cent of seed crop inspections were conducted by licensed seed crop inspectors in 2014 and the remaining 10 per cent of the inspections were conducted by Canadian Food Inspection Agency inspectors. This is above the targeted goal.

“The number of fields needing inspection did not decrease from previous years and the lag time for receiving and processing inspection reports has improved with the electronic reporting system. Each region had more than one service provider and the CFIA is not aware of any complaints from growers not being able to find a service provider,” she adds.

From the grower’s perspective, Adolphe agrees. “Those surveys generally rated year one of ASD fairly positively,” says Adolphe. “Yes, there were glitches, but those were either overcome in 2014 or are being addressed for 2015.”

For seed growers, this evolution has resulted in higher inspection fees than in the past. “However, generally speaking, when this is converted to a per-bushel increase in cost, it results in cents per bushel. The commercial farmer will see these costs passed

**“(T)he Canadian system is very mature and should be able to adjust to these changes and challenges.”**

—Patricia Juskiw

along to them but because it is cents per bushel, they might not distinguish this cost increase from typical market price shifts,” says Adolphe.

Reports from seed growers indicate the quality of their inspections in 2014 were very good, so commercial farmers can expect the high quality of certified seed to continue. “The independent third party inspection continues to provide assurance in the marketplace,” says Stettler-based seed grower Norm Lyster.

The CFIA anticipates there may be minor modifications to “fine tune” the program in 2015 and beyond.

**Julie McNabb**



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# ADVANCES IN BARLEY BREEDING

New transgenic technologies may signal a brave new world of barley breeding.

**I**n Alberta, fusarium head blight, a fungal disease of small grain cereals, presents a major problem that crops up annually for seed growers in the southern and central parts of the province. While it has troubled wheat growers for years, FHB caused by the pathogen *Fusarium graminearum* was also detected in barley several years ago.

FHB results in reductions in yield, grade, and end-use quality. It can also cause the production of mycotoxins in grain, especially deoxynivalenol or DON, which can negatively impact feed quality as well as baking and malting quality — and poses a slight risk to humans and animals.

But there may be a new potential solution on the horizon. Using transgenic technologies, Phil Bregitzer, a research geneticist with the United States Department of Agriculture (USDA) Agricultural Research Service (ARS) is using novel technologies in the quest to develop a barley line with resistance to FHB.

“The products of my research potentially can assist any producer, in Alberta or elsewhere, to produce barley that is free of FHB and/or mycotoxin without using fungicides, thus contributing to producer profitability, consumer health, and environmental sustainability,” says Bregitzer.

The need for FHB-resistant varieties is growing yearly in Alberta.

According to James Helm, outgoing head of research at the Field Crop Development Centre in Lacombe, Alta., while seed-borne *F. graminearum* levels in barley still clock in at lower levels than in wheat in the province, they rose from five per cent in

2013 to eight per cent in 2014, according to data from 20/20 Seed Labs and Biovision Seed Labs. The companies’ tests also showed that *F. graminearum* levels in Alberta reached record highs in 2014, with 15 per cent of samples overall testing positive for cereal crops.

Helm is the spokesperson for a team of scientists at the Field Crop Development Centre including lead pathologist Kequan Xi, pathologist Kurshan Kumar, and plant breeder Flavio Cappettini.

The team says that merely the threat of FHB comes at a cost to barley producers. The zero tolerance regulation for mycotoxins in malting barley may restrict the growth and production of malting barley. Add to this the increased input costs from the use of fungicides and seed testing.

“The steady increase in the levels of *F. graminearum* along Hwy. 16 has proven that Alberta’s environment is not a barrier to the spread of *F. graminearum*,” says Helm. “With the wide spread of inoculum and a large acreage of susceptible cereal crops, there is a risk of an epidemic if conducive conditions such as abundant rainfall with relative high temperature coincide with the flowering stage of cereal crops.”

With the risk of FHB compounding annually, resistant varieties are still the grower’s top tool for battling the disease.

## Transgenic Technologies

Bregitzer’s project involves introducing a gene into barley that creates double-stranded (ds) RNA, the gene’s “messenger” that carries information from DNA for controlling the synthesis of proteins.

“We are attempting to use a phenomenon called RNA interference (RNAi) to target important fusarium genes, thus disrupting its ability to infect barley and/or produce mycotoxins.”

RNAi involves introducing a transgene that encodes an inverted repeat of sequences that match the critical fusarium gene, Bregitzer explains. This produces an RNA that will fold back on itself, creating double-stranded RNA (dsRNA).

“dsRNA is recognized by a system for gene control — which can function in some cases like this one as sort of an immune system — that results in the RNA from the targeted fusarium gene being destroyed or inactivated,” Bregitzer says. “If we can inactivate the main gene that drives mycotoxin production, for instance, we hope to produce a plant that even if infected with fusarium will not produce contaminated grain.”

Bregitzer and his team will deliver the transgenes into the new varieties using a system based on DNA transposons (or mobile genetic sequences, which can include genes) isolated from maize.

“No one has used transposition for plant breeding in this way to my knowledge, although its capacity to do this has been known for several decades,” Bregitzer says.

“Because of the end result — an intact transgene — without extraneous sequences except for some very short termini derived from another, safe food crop, the resulting barley plants are expected to more reliably express the transgene.”

Bregitzer’s research is funded by competitive grant funds from the U.S. Wheat and Barley Scab Initiative (USWBSI), as well as a special grant from the USDA-ARS. The project is a long-term initiative, but Bregitzer is in it for the long haul. “The process of producing any truly useful barley line is a decade-long process,” he says.

Until the varieties that Bregitzer and his team are working on become available, he cautions that producers should use the best resistant varieties available and employ recommended best practices to combat FHB.

## Management Strategies

Garson Law, research manager for Alberta Barley, says the new transgenic breeding project will have no immediate impact in Alberta, as transgenic barley is not approved for use in Canada.

“If any transgenic-derived variety is ever approved for use in Canada, the impact would be huge,” Law says. “FHB is an existing and growing problem for Alberta’s barley growers, and the economic impact for Alberta agriculture is estimated to be as high as \$49 million.”

According to Law, the economic impact of the disease on Alberta’s barley growers was similar in 2014 as in 2013, with FHB noticeably concentrated primarily in southern Alberta, and higher than normal incidence in central Alberta.

“It’s difficult to predict for 2015, but we’ve seen in the last 10 years that FHB has spread throughout the province, and if the conditions are optimal — for example, high moisture during flowering — then we expect this trend to continue,” Law says. “It’s a problem that’s not going away.”

He says education is key to managing FHB in barley, as well as crop rotation, the use of resistant varieties, fungicides, seed treatments, and best agronomic practices. “Individually, they won’t



Alberta’s Field Crop Development Centre focuses on variety development, and this barley plant is one of thousands of genetic lines in its breeding program.

manage the problem. However, taken together, these methods are much more effective,” says Law.

Helm adds that seed or feed should not be imported from eastern provinces or FHB-infested areas.

**Julienne Isaacs**



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# BIG THINGS AHEAD for Small Crops

Hemp, faba beans and Ethiopian mustard are making their mark on Alberta.

## NICHE

**noun** \ˈnich *also* ˈnʃ or ˈnɪʃ\

A distinct segment of a market

Although Jan Slaski will admit that hemp acres are still small in Alberta, don't tell him it's a niche crop. The researcher with Alberta Innovates Technology Futures doesn't care for that term.

"In 2013 in Canada, we had 67,000 acres of hemp grown. In 2014, we had 108,000 acres. This 20 to 30 per cent annual increase has been observed every year over the last five or six years. Projections in Alberta and Canada are that it will grow 20 to 30 per cent every year in years to come. This increase is market driven," he says. "To me, that doesn't say 'niche crop.'"

In fact, Alberta alone accounts for 30 per cent of the national hemp acreage, Slaski notes.

Indeed, hemp has gone from a specialty item to a mainstream product found commonly in the marketplace. "Eight or 10 years ago you found these products in health food stores on the bottom shelf — now you find them at Superstore and Sobeys," Slaski adds. "This crop has been de-stigmatized. When I started working with it, people would laugh when I told them I work with hemp, because they couldn't distinguish between marijuana and industrial hemp."

Hemp products, of course, come from the cannabis plant — the same plant marijuana is derived from. Hemp, though, differs in that it contains virtually no Tetrahydrocannabinol (THC) — the active component in marijuana that causes psychoactive effects. Hemp became legal to grow in Canada in 1998, although it is still regulated by Health Canada and anyone wanting to grow it must apply for a license.

Grain from industrial hemp is used in food products, cosmetics, plastics and fuel. The market for hemp grain is large, with \$50 million in hemp products being exported from Canada in 2014, according to Slaski. Although the market for hemp fiber isn't as large at the moment, it's growing fast — two hemp fibre processing facilities are currently being developed in Alberta. In mid-January, Cylab International announced its plan to move operations from China to an undisclosed location in Southern Alberta. The new facility will process hemp fibre into construction materials, animal bedding and other products.

Stemia Group Ltd., a company Alberta Innovates Tech Futures has collaborated with for five years, is building a flax and hemp straw decortication facility in Lethbridge. The company plans to make products for the construction, automotive and paper industries.



Photo courtesy AITF

Jan Slaski and John Wolodko of Alberta Innovates Technology Futures conduct research on hemp fibre products at an Edmonton lab.

Will Van Roessel of Alberta's Specialty Seeds Ltd. has grown hemp for five years. He produces seed varieties used to produce hemp grain, and says being in the seed business, he's always looking for new ventures and opportunities. That's why he began growing it.

"We had to learn a few things. The plant is very different from anything else we grow. The major concern is harvest," he says. The height of hemp plants, and the fact that seeds can mature at different rates on the same plant, can make harvest a challenge. "Everyone has heard horror stories about how difficult hemp can be to harvest. The last couple years harvest has been pretty minimal as far as issues go."

Optimal growing conditions make harvest easier. According to the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), hemp responds to a well drained, loam soil with a pH (acidity) above 6.0. Neutral to slightly alkaline (pH 7.0 - 7.5) is preferred. The higher the clay contents of the soil, the lower the yield of fibre or grain produced. For optimum germination, industrial hemp seed requires good seed-to-soil contact. The seedbed



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should be firm, level and relatively fine; similar to that prepared for direct-seeded forages. The soil can be worked and planted as soon as the ground is dry enough to avoid compaction.

Numerous hemp varieties are available to be grown in Canada, but the most common that are being contracted and grown presently are Alyssa, Anka, CRS-1, CFX-1, CFX-2, Delores and Finola.

"Everyone wants to grow it because everyone makes money — from growers to processors," Slaski adds. Although Alberta is No. 3 in Canada for number of hemp acres grown — Saskatchewan ranks first with Manitoba second — he says the market will only continue to grow as time goes on. "People in the past didn't treat the crop seriously, but that has changed."

### Growing the Faba Bean

The faba bean was once an up-and-coming crop in Manitoba, before the soybean exploded onto the scene and took over. Leave it to Alberta to usher in a faba bean revival on the Prairies.

According to statistics from Alberta Agriculture and Rural Development (AARD), faba bean acreage in Alberta nearly tripled in 2014 compared to the year before, jumping from 30,000 to 80,000 acres.

"Faba bean acreage is exploding," says Mark Olson, head of the pulse crops unit at AARD. "Alberta has been the leader in this rebirth of the faba bean."

The reason for the explosion in faba bean acreage? "A lot of companies have really stepped forward to market it," Olson says. That includes Saskcan Pulse Trading and Parkland Alberta Commodities, which are marketing the beans for Alberta growers.

Much of the faba bean grown in Alberta is sold into the Middle East, where faba bean flour is widely used in sauces as well as falafel, a traditional Middle Eastern food served in a pita. The beans themselves are a popular food staple there. There are two types of faba beans — tannin varieties and low-tannin varieties. Low-tannin faba bean is often used in hog rations, while the tannin-containing varieties are used largely in food products.

Tannin also acts a natural seed protectant, Olson notes. Also, it's a crop that doesn't have to be heavily fertilized, he adds, because faba beans fix nitrogen and it is the highest nitrogen-fixing — approximately 90 per cent — annual grain legume globally. "As nitrogen prices increase, farmers are looking for a way to cut costs," Olson adds.

Clifford Cyre of Westlock's Cyre Seed Farms can attest to the benefits of faba beans. He's been growing them for 15 years. He



Faba beans are taking off in Alberta.



holds the rights to the Snowbird faba bean variety in Western Canada, a low tannin type suitable for both food and feed uses.

"The standability is excellent for thrashing," Cyre says. "As far as combining goes, it's very easy. The seeds are bigger, so you have to have the right equipment."

Another benefit Cyre has noted is the fact that there's little pest and disease pressure with faba beans. "There is one fungicide you can use for diseases on faba bean which is for sclerotinia, but we haven't had an issue with that," he notes.

Growers should watch herbicide residues where they plan to seed faba beans. He also advises not planting them on high nitrogen grounds, and avoiding fields with a history of having a lot of manure spread on them.


There are currently 13 faba bean varieties registered in Canada, but only two are commonly grown in Alberta. These are Malik (9-4) and Snowbird. Two new varieties, Snowdrop and Tabasco, are currently in the seed multiplication process and should be available to commercial growers in the next couple years.

### Ethiopian Mustard Taking Off

It's hard to imagine an airplane being fueled by mustard, but in 2012, the first flight of a jet aircraft powered with biofuel made entirely from Ethiopian mustard took place in Ottawa.

Ethiopian mustard — or *Brassica carinata* — holds tremendous promise as a biofuel and is prized as a food source in countries such as Africa. And it's beginning to get noticed in Alberta, where it's being tested as a startup crop in the hopes of it filling a niche market demand.

"It is quite a different animal to grow — it broadens the scope of crops that producers can look at," says Kevin Falk, a researcher



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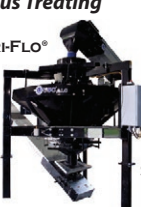
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with Agriculture and Agri-Food Canada based in Saskatoon, Sask. He's testing the crop in locations in southern Alberta, a province he says shows promise for growing it.

"It needs a hot, dry climate, so for it to be grown in Canada, you have to stay south," he says. "I've tried growing it as far north as Beaverlodge, Alta., but it didn't do well."

In 2012 and 2013, carinata acres were contracted in Saskatchewan and Alberta. No Ethiopian mustard acres were contracted in 2014, however, because its exclusive Canadian distributor — Agrisoma Biosciences — put its contracting program on hold while it sought regulatory approval for its use in livestock protein. The approval was granted, and Agrisoma estimates at least 25,000 acres of Ethiopian mustard will be grown in Canada in 2015.

When processed, Ethiopian mustard oil can be used as an industrial oil suited for biofuel production. According to Falk, there's been a focus on reducing the glucose content of the plant so it can be used as a feed ration. In Ethiopia, it's used as a food product, as it provides flavour to food similar to that of a Dijon mustard, although less hot.

It's a late-maturing crop, Falk notes, and takes around 10 days longer than Argentine canola to mature. White rust and blackleg are not an issue, and Falk has seen yields as good if not better than those seen with canola. It's also heat and drought tolerant, he adds, and yields as good — if not better — than canola in the hotter, drier areas.

"It's an up-and-coming crop that we're going to see more of," Falk says.

**Marc Zienkiewicz**



Photo courtesy of Kevin Falk

Ethiopian mustard is an emerging niche crop in Alberta.

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# Take your place in the conversation

**There's been a lot of talk about food and farming lately - online, in the media and at the dinner table.**

That's a really good thing. It means people are concerned about their health and well-being, and that they're in a position to make positive choices about what they eat. It also spells opportunity for Canada's agriculture industry. What we do has never been so important to so many people here at home and around the world.

Unfortunately, too many of these conversations are generating false perceptions about what we produce and how we produce it. That's often because for all the people talking about food, too few are actually part of the agriculture industry. And if we're not telling our story, someone else will. The good news is, it's not too late - and we've got lots of positive news to share.

Canadian agriculture is remarkably diverse and dynamic. Yet for all the change

the industry has seen over the years, one important constant remains: the family farm. In fact, 98 per cent of Canadian farms are family farms. That's a key part of the conversation, because from the ground up, what we eat every day is produced by people who want the same things all families want: safe, nutritious food. Those same values also extend to how our food is produced. Canadian farms produce more than ever in ways that are more sustainable than ever. What a great legacy for future generations!

**You're an important part of the conversation. So speak up - tell the real story.**





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# Every fact


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The world is growing, and everyone deserves to have access to safe, high quality food. It's a huge responsibility and an incredible opportunity for Canadian agriculture. Canadian farmers are responding by producing more food than ever, all while using fewer resources. That's good news here at home and around the world.




# tells a story



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ag and agri-food**




Source: An Overview of the Canadian Agriculture and Agri-Food System 2014 (Agriculture and Agri-Food Canada)

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# Be an AGvocate

## Agvocates unite!

Looking to channel your passion for ag? Adding your name to our advocate list is a great way to get started. You'll join a community of like-minded people and receive an email from us every month, with agvocate tips to help you speak up for the industry.

Visit [AgMoreThanEver.ca/agvocates](http://AgMoreThanEver.ca/agvocates) to join.

## Resources to get you started

Joining the ag and food conversation isn't always easy. What you say is important. So is how you say it. If you're feeling a little unsure about what to do next, you're definitely not alone. Fortunately, we've got practical expert advice to help you become an effective advocate.

Our online webinar series brings recognized experts in communication, social media and media relations right to your screen. Topics include:

- The art and science of the ag and food conversation
- Social media 101 for advocates
- Getting in on the tough conversations
- Working with the media as an advocate

Visit [AgMoreThanEver.ca](http://AgMoreThanEver.ca) and click on Ag Conversations.

The screenshot shows the website's layout for the 'Agvocates' section. At the top, there are navigation links for 'En français', 'Find us on' (with social media icons), and 'Join the 476 people and groups on our advocate list'. The main header features the 'Agriculture' logo with the tagline 'inspire, flow, ever' and a navigation menu with 'Resources', 'Ag Conversations', 'Partners', and 'Shop'. Below the header is a large image of hands holding a plant. The main content area is titled 'From the team' and includes several articles with 'Read more' buttons. To the right, there are 'Agvocate tips' with 'Read more' buttons. The bottom section is titled 'From the community' and also features several articles with 'Read more' buttons.

# We all share the same table. Pull up a chair.



“We take pride in knowing we would feel safe consuming any of the crops we sell. If we would not use it ourselves it does not go to market.”

- Katelyn Duncan, Saskatchewan

“The natural environment is critical to farmers - we depend on soil and water for the production of food. But we also live on our farms, so it's essential that we act as responsible stewards.”

- Doug Chorney, Manitoba



“The welfare of my animals is one of my highest priorities. If I don't give my cows a high quality of life they won't grow up to be great cows.”

- Andrew Campbell, Ontario

Safe food; animal welfare; sustainability; people care deeply about these things when they make food choices. And all of us in the agriculture industry care deeply about them too. But sometimes the general public doesn't see it that way. Why? Because, for the most part, we're not telling them our story and, too often, someone outside the industry is.

The journey from farm to table is a conversation we need to make sure we're a part of. So let's talk about it, together.

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# Getting Seed Off to the Best Start

With the technology available today, farmers are increasing their production. Seed treatments are among the newest technologies available — by helping seed get the best possible start, they are helping farmers grow more from less.

**THERE** are several best practices producers can follow to get good yields — proper crop rotations, good disease and insect management, seeding in ideal conditions and consistent seeding depth. However, it's easy to fall short on one or more of these each growing season, and that is where seed treatments come in.

"Seed treatments should be considered an insurance policy. If you have ideal conditions at seeding, then the seed treatments may not pay. However, most springs do not provide those ideal conditions," says Harry Brook, a crop specialist with Alberta Agriculture and Rural Development.

A seed treatment is a chemical or biological substance or physical process applied to seeds or seedlings to protect against insects, seed and soil-borne diseases and certain weather conditions such as frost, drought or flooding. By protecting the seed from early-season stressors, seed treatments help seeds reach their full genetic potential.

The primary role of any cereal seed treatment is to improve germination and emergence, and get young seedlings established through to the two- to four-leaf stage. At that point, the plants should have developed root and stem structures strong enough to outgrow further seed-

ling disease attack.

Brook says seed treatments protect the seed from pathogens in the soil for about two weeks and then their efficacy declines. "Cool, wet, slow springs should give you a benefit using seed treatments," he says.

## Product Pipeline

A wide variety of seed treatments are currently available, and these products have come a long way in recent years. Some of the newest products boast significantly lower application rates than older products, operate via multiple modes of action to control more diseases and/or insects, and



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\*\*Calculation based on net sales of JumpStart from 1997-2014.

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are available in ready-to-apply formulations.

“Since we released our first seed treatment in 1991, the needs of growers have changed a lot with continuous cropping and new crop rotations,” says Ted Labun, seed treatment specialist for Syngenta Crop Protection Canada. “We kept adding to our first solution, but now we’ve taken all those solutions and put them into one solution that’s easy to apply.”

Labun is referring to Syngenta’s new Vibrance Quattro seed treatment, which contains four fungicides in one product and comes in a ready-to-apply formulation. The company also offers Cruiser Vibrance Quattro which has the Cruiser insecticide for wireworm protection.

Both products can be applied by commercial seed treaters, but are also available in a convenient, pre-mix formulation that can be applied on-farm without the requirement of a closed system.

Bayer CropScience also launched two new seed treatments this year. Raxil PRO is a new cereal seed treatment that combines the power of three fungicides in an easy-to-apply micro-dispersion formulation. Raxil Pro Shield incorporates the systematic and contact disease protection from Raxil with the plant health benefits and wireworm protection of Stress Shield.

Bayer has also recently launched the SeedGrowth brand, which represents the company’s four segments of seed treatment expertise: products, equipment, services and coatings. “Through Bayer SeedGrowth, farmers get support beyond just seed treatments to the quality and life of their seed and crops,” says Derrick Rozdeba, manager, integrated communications for Bayer. In 2014, Bayer partnered with Ag Growth International (AGI) to co-design the STORM Seed Treater for computerized, self-adjusting/metered, in-yard seed treatment for cereals.

Meanwhile, in the fall of 2014 Nufarm Agriculture was named the exclusive distributor of Valent Canada’s NipsIt seed treatments for on-farm use in Canadian markets.

NipsIt INSIDE is an insecticide seed treatment containing the active ingredient clothianidin, offering Canadian wheat growers protection of key insects, including wireworms, through contact and



The primary role of any seed treatment is to improve germination and emergence, and get young seedlings established through to the two- to four-leaf stage.

**“Seed treatments should be considered an insurance policy. If you have ideal conditions at seeding, then the seed treatments may not pay. However, most springs do not provide those ideal conditions.”**

—Harry Brook

super-systemic activity. According to the company, NipsIt INSIDE stays in the seed/root zone longer than other insecticide seed treatments due to its lower water solubility.

A second product, NipsIt SUITE, is an all-in-one seed treatment containing the fungicidal active ingredients metconazole and metalaxyl, and insecticidal active ingredient clothianidin. Metconazole is a new fungicide seed treatment which provides superior protection against key seed and seedling diseases incited by seed-

borne and soil-borne fungal pathogens such as the bunt and smut fungi, seed rot and seedling diseases caused by fusarium and rhizoctonia, says the company.

Since releasing its Insure Cereal seed treatment in early 2013, BASF Canada has been reminding growers about the benefits of using seed treatments. “By using a seed treatment with plant health benefits, crops can get off to a good start in spring,” says Russell Trischuk, technical marketing specialist, functional crop care for BASF Canada. Through 2011



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and 2012, BASF conducted an extensive trial program using Insure. In 30 trials for wheat, Insure-treated seed had a two-bushel increase over competitors. In barley, the increase was three bushels and in oat it was more than a four-bushel advantage for the Insure-treated seed. Insure is a ready-to-use seed treatment with three modes of action: pyraclostrobin, triticonazole and metalaxyl.

**Application Options**

No matter how good the product, it can only be effective if applied evenly and at the proper volume to all sides of each and every seed. While getting seed treated commercially might be more expensive than treating on-farm, the payoff from a job done right can be worth the extra cost.

Brook says producers should avoid drip and gravity-fed applications as they result in inconsistent and unreliable coverage. For best results, he recommends buying pre-treated, certified seed, or using a good on-farm seed treater.

“On farm application is convenient, but to maximize the effectiveness of the fungicide, it needs to be on every seed. Most on-farm applicators can’t do as good a

**“What is really important is that the quality of application is the best it can be. That is critical for field performance.”**

—Ted Labun

job getting an even coating on the seed as a seed treater in the local seed plant,” he says. “Many producers use their local seed cleaning plant to apply the seed treatment because of this.”

According to Labun, Syngenta supports both commercially treated seed


and on-farm application. “What is really important is that the quality of application is the best it can be. That is critical for field performance.”


Labun says the application method really depends on the crop. “For pulses and cereals we recommend both on-farm applications and commercial application, but canola is much more challenging to treat so we recommend growers only go through commercial treating for canola,” says Labun.

If a producer chooses to go the on-farm route, Labun says they have lots of support available to them. “We have five seed treatment specialists in the field that help with application best practices. Last year we held a clinic in Regina to train producers. We brought in five pieces of equipment, treated seed and talked about safety and proper equipment. We also hold grower meetings where we bring equipment in and do some training,” he says. “The quality of application is critical to see field performance; poor treatment isn’t going to get the return on investment that producers need.”

**Julie McNabb**

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# Long-Awaited Legislation

Bill C-18 is moving quickly through Parliament, bringing with it the promise of increased investment, more trade opportunities and less red tape for Canada's agricultural sector.

**BILL C-18**, the Agricultural Growth Act, passed second reading in the Senate in early December and has now been referred to the Standing Committee on Agriculture and Forestry for detailed examination early in 2015.

The bill was first introduced by Federal Agriculture Minister Gerry Ritz in early December 2013. The Act proposes changes to nine pieces of federal legislation — seven under the oversight of the Canadian Food Inspection Agency, and two under Agriculture and Agri-Food Canada.

"The consensus of the vast majority of farmers, seed industry participants and value chain organizations from coast-to-coast is strong support for the changes to Plant Breeders' Rights legislation that are proposed in Bill C-18," says Dave Baute, president of the Canadian Seed Trade Association.

## Breaking Breeding Barriers

The biggest discussions around the bill have involved the proposed changes to the Plant Breeders' Rights Act that will bring Canada under UPOV '91. Most UPOV members are already meeting UPOV '91 requirements, including many of Canada's key trading partners, such as Australia, the European Union, Japan, South Korea and the United States.

"The large part of the legislation that is very important to the seed industry are the proposed amendments to Plant Breeders' Rights," says Baute. "These amendments would put Canadian plant breeders on an equal footing with plant breeders around the world, giving them the confidence to invest in plant breeding and variety development in Canada. It would also give international plant breeders the confidence to send their superior varieties to Canada. This is very important to the seed industry and to the farmers we serve. We have been working for this for over 20 years and are very anxious to see the amendments implemented."

According to Anthony Parker, Commissioner of Plant Breeders' Rights at the Canadian Food Inspection Agency, specific revisions to the PBRA include:

- Extending the duration of protection from 18 to 20 years (25 years for trees and vines);
- Allowing plant breeders to sell a variety in Canada for up to one year before applying for Plant Breeders' Rights protection in order to test the market, advertise, or to increase stock;
- Providing automatic provisional protection for a new plant variety from the date of filing, which would allow applicants



Photo courtesy Canterra

Agriculture Minister Gerry Ritz (seen here with Canterra Seeds President David Hansen) has introduced Bill C-18, the Agricultural Growth Act, which proposes changes to nine pieces of federal legislation — seven under the oversight of the Canadian Food Inspection Agency, and two under Agriculture and Agri-Food Canada.

to exercise their rights while "grant of rights" applications are pending; and

- Extending plant breeders rights to include reproduction, import, export, conditioning (clean, treat), and stocking for the commercial purposes of propagating, in addition to the current system that already allows for the sale of propagating material and the production of propagating material intended for sale.

"These changes will encourage increased investment in plant breeding in Canada and encourage foreign breeders to protect and sell their varieties here. As a result, Canada's farmers will benefit from improved access to innovative new varieties that have been bred to enhance crop yields, improve disease and drought resistance and meet specific market demands," says Parker.

While there has already been a lot of excitement within Canada on what the bill means for the future of plant breeding, there has also been interest internationally.

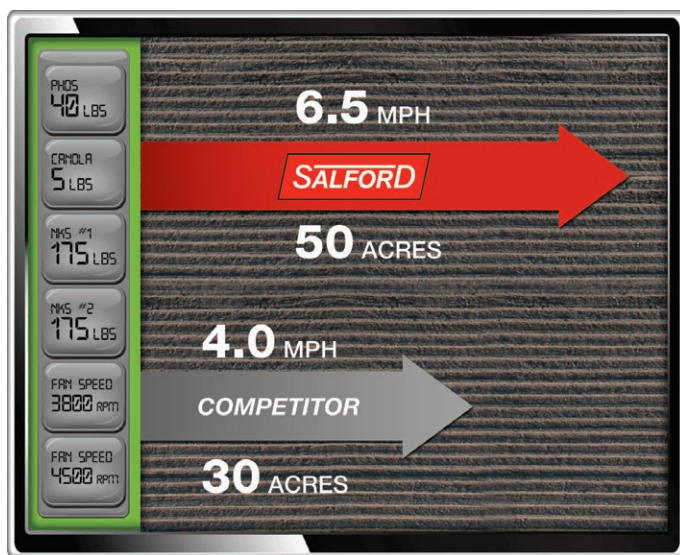
"The topic of Bill C-18 and, in particular, the impending changes to Canada's Plant Breeders' Rights Act comes up regularly, especially with breeders and colleagues from overseas. International breeders are reluctant, at best, to send material to Canada for evaluation or to develop material specifically for Canada due to the limited ability to protect their intellectual property and



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be compensated for its use," says Erin Armstrong, director of industry and regulatory affairs for Canterra Seeds. "However, new material started flowing as soon as the introduction of the bill was announced in December 2013, with the expectation that by the time some of these lines are eligible to become registered varieties, they will be able to get PBR with UPOV '91 terms."

On the domestic level, Armstrong says there remains some degree of misunderstanding about the terms of UPOV '91 and, "what it will mean once our PBRA complies with its terms. This leads to hesitation among some, but overall there is good support," she says. "There is recognition it is required to grow investment in plant breeding, especially in cereals. This investment will ultimately benefit growers who will have access to more and better genetics. More investment means more private involvement in plant breeding in addition to the public programs, leading to increased competition as well as increased opportunities for collaboration; new breeding tools and technologies; more diverse germplasm; improved agronomics such as yield, disease packages and end-use quality."

### Improving Seed Trade

At the end of the day, stronger PBR legislation will improve Canada's seed trade globally.

"Strengthened intellectual property framework will encourage foreign breeders to release new varieties into the Canadian market for evaluation and sale, providing growers and farmers with increased choice when sourcing seed varieties to meet their specific needs," says Parker.

In addition, increased investment in domestic plant breeding



Photo courtesy CSTA

Dave Baute, President of the Canadian Seed Trade Association, says the consensus of the vast majority of farmers, seed industry participants and value chain organizations from coast-to-coast is strong support for the changes to Plant Breeders' Rights legislation that are proposed in Bill C-18.

programs will develop innovative and higher yielding varieties. "Two key elements of the UPOV framework applied internationally are harmonization and reciprocity," explains Parker. "What this means is a breeder can apply for protection in any UPOV member country and receive consistent and harmonized intellectual property protection. As such, Canadian plant breeders will benefit from protection for their varieties not just here in Canada, but when they export propagating material of these successful varieties for use in other UPOV member countries."

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## Further Benefits

There are other positive implications of the bill, including changes to variety registration. "Among those of us who deal with the regulations surrounding variety registration, the sections of Bill C-18 which will move crop types from one part to another through Incorporation by Reference, rather than the current cumbersome process are very welcome also," says Armstrong.

Baute says it will also amend the Seeds Act to allow for foreign data to be used in approval systems in Canada, "speeding up the availability of new varieties and attributes for farmers, without compromising our science based regulatory system."

"It also proposes an amendment that would allow for certain things which may not be changed without going through the complicated and time-sensitive regulatory process, to be moved out of regulation and incorporated by reference. For example, the list of weeds in the Weed Seeds Order could be moved out of regulation, and then after the appropriate consultation and economic impact analysis, the list could be changed with the approval of the minister," he adds.

According to CFIA's Parker, several groups within the ag sector are excited for what the bill means for the future. "Plant breeders, both public and private and at the domestic and international level, continue to be very encouraged by progress of the bill through Parliament. Producer organizations such as the Canadian Federation of Agriculture and Partners in Innovation continue to voice their strong support for the PBRA UPOV '91 amendments."

While some commentators have expressed concern that the bill covers too many changes, making it hard to fully understand

the implications of the change, Baute thinks it is simple. "The provisions in Bill C-18 will ensure that farmers have more timely access to new and improved varieties, developed both inside and outside of Canadian borders. The seed trade will be able to deliver those varieties," he says.

In addition, the legislation provides an exception to Plant Breeders' Rights to allow farmers to save, store and condition grain produced from protected varieties on their farms to use as seed on their own farms. Within the legislation, this is called the Farmers' Privilege, something currently not addressed in existing legislation.

Julie McNabb

## A Closer Look

The Acts to be amended under the Agricultural Growth Act include: Plant Breeders' Rights Act, Feeds Act, Fertilizers Act, Seeds Act, Health of Animals Act, Plant Protection Act, Agriculture and Agri-Food Administrative Monetary Penalties Act, all under the CFIA, and the Agricultural Marketing Programs Act, and Farm Debt Mediation Act under Agriculture and Agri-Food Canada.



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# GROWERS ON HIGH ALERT FOR STRIPE RUST

Stripe rust has been developing earlier than ever before on winter wheat in central Alberta — which may mean it is overwintering in the region.

**EARLY IN** the 2014 crop season, two Alberta Agriculture and Rural Development (AARD) pathologists, Krishan Kumar and Kequan Xi, observed heavy infections of stripe rust on winter wheat in the Olds, Alta. cereal breeding nursery.

Samples of stripe rust-infected winter wheat were also observed in breeding plots and commercial fields near Lacombe and Bentley. Kumar and Xi suggested that as they'd never before observed such severe early infection, the stripe rust pathogen might have overwintered in central Alberta.

According to Michael Harding, a research scientist with AARD, it is unusual for the stripe rust pathogen (*Puccinia striiformis*) to overwinter in Alberta. Most years, he says, it enters the province from a westerly direction — the Pacific Northwest states, where it normally overwinters.

“Due to the predominant westerly wind trajectories, the disease is almost always observed first in southwestern Alberta because it is the first region in Alberta along the natural dissemination pathway to receive stripe rust spore showers from the overwintering sources in the USA,” Harding notes. “After appearing in southwestern Alberta, the disease will move north and east depending on prevailing winds and environmental conditions.”

Harding believes there are several convincing observations that back the suggestion that stripe rust overwintered in central Alberta. The first is its early appearance in central Alberta without concurrent infection found in southern Alberta, where stripe rust spores would normally have entered the province. “The arrival of stripe rust first in central Alberta, and so early in the growing season, is unusual and very suggestive of an overwintering event there,” Harding says.

Xi and Kumar confirmed the overwintering potential, Harding explains, by collecting leaf samples from beneath snow drifts and bringing them indoors for testing. Their findings were illuminative: they discovered that viable stripe rust infections were surviving through the winter under the insulated snow cover.

Denis Gaudet, a cereal pathologist with Agriculture and Agri-Food Canada (AAFC), believes there is plenty of merit to Xi and Kumar's claims. “I would concur with their assessment,” he says. “The onset of moderate to severe symptoms early in the growth season that was observed in Olds is not typical of the usual spring infection pattern, which is a trace to light infection, or less than one per cent severity.”



Secondly, Gaudet says, the region frequently has an uninterrupted snow cover during the winter that helps protect the fungus and plant tissues from cold injury and death, which can lead to widespread survival of stripe rust from a fall infection throughout the winter.

There are other possible reasons for early infection, however. "It is possible that heavy spore showers originating from the Pacific Northwest USA occurred in early spring and this could have accounted for the early, severe stripe rust observed," he says. "Cool, moist growing conditions during the early spring would have promoted the development of the fungus in the wheat plant."

Regardless of the causes for the early development of stripe rust in central Alberta, seed growers and farmers should be on high alert early in 2015 and use proactive management techniques to ensure minimal damage in winter wheat.

### Management Techniques

Harding says the use of cereal cultivars with resistance to stripe rust is the most important strategy seed growers and farmers can employ to combat the disease.

"In cases where stripe rust resistance is not available, management of the disease can be achieved by vigilant scouting and timely fungicide applications," Harding notes. "Stripe rust disease can develop and spread very, very rapidly, so frequent scouting for the characteristic stripes that have orange spore pustules is critical."



Photo courtesy AARD

Early in the 2014 crop season, two Alberta Agriculture and Rural Development pathologists observed heavy infections of stripe rust on winter wheat in the Olds, Alta. cereal breeding nursery.

He says fungicides may be applied preventatively — in other words, for susceptible varieties, fungicides should either be applied in advance or as soon as stripes appear if stripe rust has been reported in the region. Applying upper canopy leaves with fungicide (flag leaves and penultimate leaves) will help avoid yield loss, because these two leaves are the greatest contributors to

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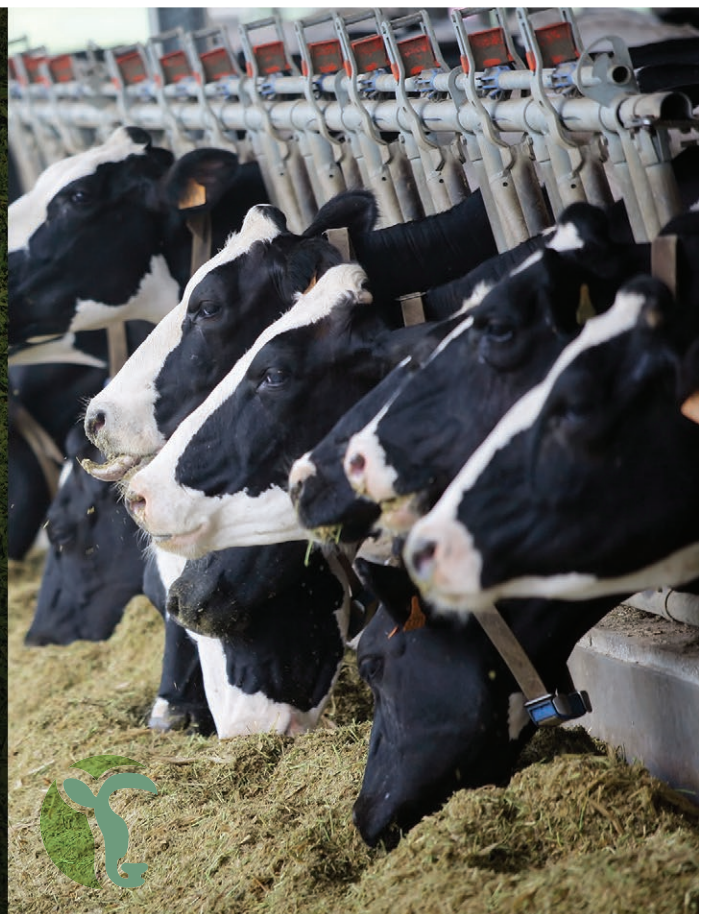
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yield in cereals. If the disease is not present on the upper leaves, or comes in late in the season when grain fill will no longer be affected, the use of fungicides is not cost-effective.

“The optimum time for applying fungicides is around flowering, during which these two leaves are fully expanded,” Gaudet explains. “If fungicides are applied too early in the growing season before full development and extension of these two

**“New sources of resistance are being incorporated and stacked so that the resistance will be long lasting.”**

— Robert Graf

leaves, an additional spray may be necessary. Monitor fields for stripe rust, and if incidence or severity levels exceed five per cent, particularly in June and July, fungicides can be applied.”

Gaudet’s team at the Lethbridge Research Centre performs weekly stripe rust surveillance in southern Alberta during the summer months and offers fungicide recommendations — a service that should continue into 2015.

Harding and Gaudet both caution that issues with stripe rust infecting and overwintering in the fall-sown winter wheat can also be avoided if growers resist seeding winter wheat too early — in August or early September — because this can create a “green bridge” between the spring wheat crop and the winter wheat crop.

## Resistant Varieties

Robert Graf, a research scientist in winter wheat breeding with Agriculture and Agri-Food Canada, says that the variety Radiant, which carries Yr10, was effective in resisting stripe rust until a few years ago, when new strains of stripe rust began to overcome its resistance.

“The good news is that there are some new winter wheat varieties that have effective resistance,” he says.

Varieties classified by the Alberta Seed Guide as boasting varying levels of resistance to stripe rust include the following:

Within the CWRW wheat class, these varieties have “moderate resistance”:

- AC Tempest
- Moats
- Emerson
- AAC Gateway (available in fall 2015)
- CDC Chase (potentially available in 2016)

Among the General Purpose winter wheat varieties, these have “moderate resistance”:

- Peregrine
- Pintail
- Sunrise
- Swainson

Graf has positive news about the development of new varieties with stripe rust resistance. “Within the breeding program, I have lines with very good stripe rust resistance at all stages of development,” he says. “In collaboration with my colleagues, new sources of resistance are being incorporated and stacked so that the resistance will be long lasting.”

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**“Stripe rust disease can develop and spread very, very rapidly, so frequent scouting for the characteristic stripes that have orange spore pustules is critical.”**

— Michael Harding

Gaudet’s team has already observed stripe rust pustules in winter wheat seeded this fall during a recent survey of Southern Alberta. “We will be monitoring the survival of stripe rust throughout the winter so we will have an answer by next spring.”

Stripe rust can only survive on a living host, but it can move into a fall-seeded crop from a spring-seeded crop if the former is planted too early, or if volunteer cereals are growing nearby. “In rare instances where stripe rust overwinters on a winter wheat crop, or on grassy or cereal volunteers, there a bridge from one green crop to another, and from one season to the next,” Harding says.

Julienne Isaacs



Photo courtesy AARD

According to Michael Harding, a research scientist with AARD, it is unusual for the stripe rust pathogen (*Puccinia striiformis*) to overwinter in Alberta.

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# New Clubroot Pathotype on the Horizon

Alberta researchers have identified a new clubroot pathotype. Proactive management will be key in 2015.

**A NEW** clubroot pathotype that can overcome clubroot resistance has been confirmed in Alberta fields.

A 2014 clubroot survey written by a team of researchers headed by Stephen Strelkov, division director of Plant BioSystems and professor at the University of Alberta, claims that 648 commercial canola crops in 36 counties and municipalities in Alberta were surveyed, to reveal 104 new cases of clubroot. "Additional surveys by county and municipal personnel identified another 279 new records of the disease, for a total of 383 clubroot-infested fields in 2014," the survey states.

Of the fields surveyed, several planted to resistant canola were found to have mild to medium levels of clubroot infection — signs of a pathotype that can overcome clubroot resistance.

In 2013's clubroot survey, Strelkov identified higher-than-normal levels of clubroot pathogens in fields of apparently resistant canola. Subsequently, Strelkov and his team inoculated certified canola seed with the collected pathogen under greenhouse conditions.

The new strain caused almost 100 per cent damage in the greenhouse trial, even though the canola variety used was resistant to existing clubroot pathogens.

This year, Strelkov's team tested seed from all major companies. "We wanted to find out whether the other varieties were holding up against this strain," says Strelkov. "We inoculated products from all the different companies and we discovered this new strain could overcome all of the current resistant varieties in use."

Strelkov and his team have been working with Alberta Agriculture and Rural Development (AARD) and the Canola Council to collect samples and conduct further testing.

The pathotype was identified this year in many fields where clubroot had not previously been confirmed. Even though the damage in those fields was low to moderate, Strelkov says there might be a yield impact down the road, especially in areas where the problem continues to intensify.

Michael Harding, a research scientist with AARD, says the findings have serious implications for canola growers in Alberta. "The appearance of a new pathotype that can overcome the clubroot resistance is of great concern, especially since all of our currently available clubroot-resistant cultivars are ineffective against this pathotype," he says.

Harding believes the findings, while worrying, are not surprising in the larger context of clubroot resistance gene deployment in other areas of the world. "The clubroot pathogen is a very dif-



Photo courtesy AARD

A new clubroot pathotype that can overcome clubroot resistance has been confirmed in Alberta fields.

icult organism to stay ahead of in terms of deployment of major gene resistance because it has the capacity to generate great diversity (pathotypes) and produce extremely high numbers of long-lived resting spores," he says.

Added together, high diversity, "extreme reproductive potential," and the pathotypes' ability to survive long periods of time in the soil means that new pathotypes can develop after only two or three resistant crop cycles, Harding argues.

AARD continues to assess the situation with surveillance and research activities to analyze the new pathotype. Harding says damage in 2015 will be dependent on a variety of factors. "First, the environment will determine the clubroot disease potential to some extent. A dry spring will be less conducive for disease development," he says.

Crop history and rotation will also have impact on specific regions' susceptibility to the new pathotype. Growers who

emphasize biosecurity and sanitization to prevent movement of infested soil on their operations will have a better chance of preventing new infestations.

### Sanitization Key to Management

In Strelkov's view, the most valuable tool for managing clubroot resistance is the continued use of resistant varieties. In cases where resistance has been overcome, longer rotations are warranted and can help maintain the integrity of the resistance by reducing selection pressure on the pathogen.

The University of Alberta's canola breeding and research team has developed a great deal of germplasm which is currently being screened against the new pathogen, according to Habibur Rahman, a research scientist with the department of Agricultural, Food and Nutritional Science. Rahman says the team has completed one round of tests and is currently completing its second round.

**“Resistance is a most useful and important tool to manage the disease, and in areas where clubroot is very severe, longer rotations are warranted.”**

— Stephen Strelkov

“By the end of this year we'll know if we have resistance to this pathotype,” he says. It's too soon to say whether the results of those tests might lead to new varieties resistant to the new clubroot pathotypes, but in the meantime, growers cannot afford to bypass best management practices.

“Sanitization of equipment is important,” says Strelkov. “I realize it's difficult to clean off all equipment, but mechanical cleaning should be practiced at least.” Working clubroot-infested fields last is also a recommended strategy as total sanitization of equipment can be difficult.

Harding seconds the claim that sanitization is key. “Proper sanitization of any equipment carrying soil will reduce the spread of disease,” he says. “Sanitization involves cleaning all soil and organic material from equipment and then applying a disinfectant to kill any remaining spores.”

But Harding claims that scouting should be the first step in managing clubroot, beginning at flowering and ending at swathing. “Early detection of clubroot could mean the difference

between a problem that is 10 m<sup>2</sup> as opposed to one that goes unnoticed and becomes a problem across an area of 25 ha or larger,” he says.

A good way to begin scouting is at the entrance to fields — growers should pull 50 to 100 plants and inspect the roots for signs of clubroot. Patches of dead or prematurely ripened plants should also be inspected.

Minimizing tillage is another recommended strategy for minimizing the spread of the pathogen.

According to Clint Jurke, agronomy director at the Canola Council of Canada, an integrated system of good stewardship practices will help mitigate the problem. A combined strategy including the use of resistant varieties, lengthy rotations in infested fields, vigilant weed control, reduced or zero tillage and equipment sanitization is the best bet for growers in high-risk clubroot zones.

“Stewardship of our management tools is essential,” he says.

Julienne Isaacs

## Blackleg Management

According to Clint Jurke, agronomy director at the Canola Council of Canada, blackleg heavily infected some fields in Alberta in 2014.

“We recommend that growers scout for blackleg more thoroughly at harvest each year to determine if it is becoming a problem in their farming situation,” says Jurke. “If it is increasing, [growers] need to lengthen their rotation, or start changing varieties that they plant in order to reduce the potential for the disease.”

Michael Harding, a research scientist with AARD, says blackleg was not worse in 2014 in Alberta compared to previous years, but was still present in most canola fields.

Strategies for stewardship include practices such as scouting, growing blackleg-resistant cultivars, and the use of three- to four-year rotations. “Blackleg management may also benefit from use of registered seed treatments and foliar-applied fungicides,” Harding says.



# The Lowdown on Clubroot



## What is Clubroot?

Clubroot is a serious soil-borne disease of crucifer crops in many parts of the world. The crucifer family includes vegetable crops like cabbage, broccoli, and cauliflower as well as field crops such as canola and mustard. In British Columbia, Quebec and Ontario, clubroot is a major concern for commercial vegetable producers. Clubroot is especially problematic because the pathogen persists in soil for many years, and cannot be controlled with crop protection products currently registered in Canada. Clubroot has the potential to be a significant threat to canola production in parts of Alberta.

## How much yield loss will clubroot cause?

Research with canola indicates infestations approaching 100 per cent led to 50 per cent yield losses, while 10 to 20 per cent infestations led to 5-10 per cent yield losses. As a rough estimate, the per cent yield loss from clubroot is about half the per cent of infected plants.

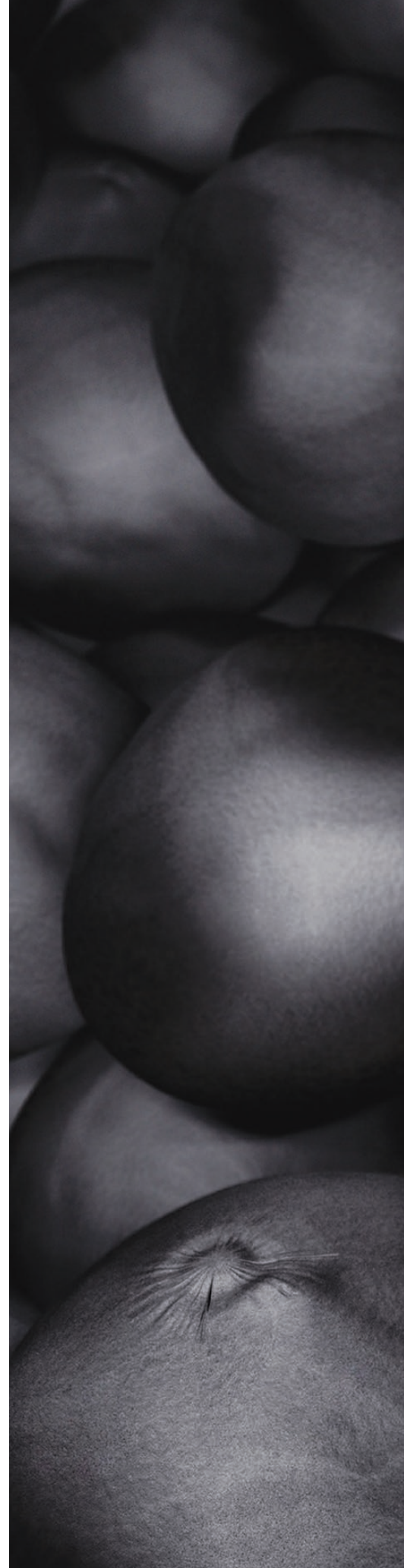
## Does Alberta currently have a clubroot problem?

In 2003, the first case of clubroot in western Canadian canola was found in a field near St Albert. Surveys of neighboring fields suggested that the problem was not isolated to one field or one producer. Surveys conducted since 2003 have confirmed clubroot throughout much of central Alberta and two counties in southern Alberta. Survey results indicate that clubroot poses a serious threat to canola production in Alberta.

## Where is clubroot likely to be a problem?

Computer simulations based on disease and environmental factors suggested that the Edmonton region was the only part of Alberta likely to have significant clubroot problems. Field surveys since then, however, have found clubroot in many of the counties in the Edmonton region, but also one county in southern Alberta.


—Source: AARD







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**CHANGE.** It's a word Bill Sinclair is very familiar with. The manager of the Bashaw Seed Cleaning Co-op knows that for a seed plant to stay in business, change is something it has to embrace.

"It's been quite a dynamic change period for the seed industry — the last 10 years especially," he says. "Our business today is double what it was 10 years ago."

Sinclair took over as manager of the Bashaw seed plant two decades ago. Built in 1959, the original portion of the plant still exists, but three major expansions have taken place since then, and it's now triple its original size. It has to be big — business has increased a lot. It now serves around 200 active farmers, but has a total shareholder base of 300.

"For the size of the plant we are, we process a high volume of pedigreed seed. We're about 15th in the province for total bushels processed, but in pedigreed seed we're sixth", Sinclair says.

Bashaw is a community of only 873 located in central Alberta at the junction of Hwy. 21 and Hwy. 53. The town might be small, but is located on a major rail line. "Our farmers are at a definite advantage," Sinclair says.

The seed plant — which is now operated by four employees — is also located near a malt plant, which is another advantage. Sinclair says despite those logistical advantages, it's the plant's stellar reputation that makes it the seed plant of choice for its customers.

“Our client base is quite wide. We have clients hauling grain an hour to get here, and we have seed plants located 40 minutes in every direction from us. There are a lot of seed plant cooperatives very close. Sometimes we share customers with other plants, sometimes they bypass other plants. That’s the business. The quality of service is very indicative of how busy you’re going to be in today’s world.”

**Keeping Up with Technology**

Technology upgrades have allowed the plant being able to keep up with demand. “I have a very progressive-thinking board of directors always thinking beyond today,” Sinclair says. “Even looking at the technology of colour sorting, that’s been huge for us.”

The plant’s colour sorter allows it to process more seed than ever. Thirty on-site customer owned seed bins offer a selection of pedigreed seed suitable for all seeding requirements.

“I have my sights set on some more technical upgrades — I have a list. Going from colour sorting to true shape recognition, to near infrared where you’re doing protein separation — technology-wise, there’s no end to what you can do.”

The plant does face challenges, as all seed plants do. More red tape than ever is a big one.

“The regulatory requirements now are huge. The daily paperwork requirements are a heck of a lot more significant than they used to be. The whole traceability and accountability thing is beginning to look like a download from the top to the bottom, and we’re at the bottom. You used to be able to function more on your abilities to operate and do things as a manager. It’s turned into more of a ‘Keep the paperwork in order and keep all your licensing and auditing protocols in place,’” Sinclair says.

But those challenges are all in a day’s work for the plant, which will continue to see more change as time goes on, Sinclair notes. “We’re an authorized establishment and have been cleaning pedigreed seed here for many years, probably for the last 40. That entails a little more protocol than just seed cleaning to begin with.” **Marc Zienkiewicz**



The seed plant — which is now operated by four employees — is also located near a malt plant, which is another advantage.



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# Efficiency is Key

The High Prairie Seed Cleaning Co-op runs an efficient operation thanks to new technology.

**COMPUTERS** have made all the difference for the High Prairie Seed Cleaning Co-op. Since building its new plant at a new location across town three years ago, the facility is now totally automated, which means precision work and unprecedented efficiency for the plant and its staff.

“Everything is run remotely from the office computer. All the equipment starts and shuts off from there,” plant manager Bryant Kushner says. “At the old plant you had to walk around and flip switches.”

**“Everything is run remotely from the office computer. All the equipment starts and shuts off from there.”**

— Bryant Kushner

Such changes are par for the course at the High Prairie plant. When it moved into its newly-built facility three years ago (the old plant, opened in 1967, had outlived its usefulness), it was with a whole new lineup of machines, including a colour sorter, that allow it to process three times what the old plant did.

“We processed 300,000 bushels a year at our old plant. We did 800,000 last year at the new plant,” Kushner says.

High Prairie has authorized establishment status for cleaning pedigreed seed. It cleans cereal grains, oilseeds and pulse crops, and also offers cleaning and bagging of some clovers, alfalfa and timothy. It also provides separation services, scalping and dockage removal, cereal grain treating, Champion Feed sales and custom grain rolling.



It is also involved in the contracting, processing and bulk railcar loading of export peas.

"If need be, we could put two million bushels a year through the plant," Kushner says. "It's large enough to handle a lot of expansion yet."

### Less Disease Pressure

High Prairie is a community of around 2,600 in northern Alberta. Because of its geographical location, Kushner says it has the benefit of less disease pressure seen in other parts of the province, which is a benefit to the plant.

"Peace Country is a little segregated from the other regions in terms of disease. There's lots of bush between us and other areas," he says.

Ergot wasn't an issue for years, until, coincidentally, the year the plant installed its colour sorter, which separates ergot-affected kernels from healthy ones.

Having such technology allows the plant to offer its customers quick service that is getting more important in these times of growing more with less.

"Time is money to farmers, especially nowadays. If they can drop their grain off and haul it back home the same day or next day, that's a win for them," Kushner says. "Turnaround time is quick with the newer, bigger equipment."

**"If need be, we could put two million bushels a year through the plant."**

—Bryant Kushner

New regulations and processes are a challenge for the plant, as they are for many seed cleaning operations.

"There's annuals, upgrades, staff requirements, manuals for feed businesses, manuals for seed businesses, safety manuals, treating manuals — everything has changed so much over the years," Kushner says.

He's been at the plant for 33 years, 15 of them as manager, and says the changes are bound to keep coming — but the plant will be ready to face them.

"We started out on a small scale, and it just grows and grows," he says. **Marc Zienkiewicz**

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For details visit:  
[FarmTechConference.com](http://FarmTechConference.com)



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# 2014 Regional Variety Trials

**THE** 2014 data from the Regional Variety Trials will help you make one of your most important farm management decisions — choosing the best seed for your farm. Once you have found a variety that fits your farm, you can source seed available with grower directory charts that appear with the RVT data. New for 2015: Grower information that is followed by an \* indicates that this is carryover seed from a previous crop year.

## Legend for Cereals & Oilseeds

### Symbols

- † Denotes variety is flagged for removal.
- NS Denotes variety generally not suited for area.
- XX Denotes insufficient test data to describe.
-  Denotes variety protected by Plant Breeders' Rights.
-  Denotes protection under Plant Breeders' Rights has been applied for.

\* Numerical yield data followed by a star (e.g. 101\*) denotes limited data.

### Resistance

- Ldg. Lodging.
- Shat. Shattering: EX = Excellent, VG = Very Good, G = Good, F = Fair, P = Poor, VP = Very Poor.
- Com. Rt. Rot Common root rot.
- Fl. & Cov. Smut False loose & covered smuts.
- Net Blt. Net Blotch: R = Resistant, I = Intermediate, S = Susceptible.
- Sprout Toler. Sprouting Tolerance: Ex = Excellent, G = Good, F = Fair, P = Poor.
- Leaf Spot VG = Very Good, G = Good, F = Fair, P = Poor, VP = Very Poor.

### Abbreviations

- Comp. Mat. Comparative maturity in (+ or -) days from the check variety.
- Comp. Prot. Comparative protein in (+ or -) percent from the check variety.
- Te. Wt. Test Weight (lb/bu). Multiply lb/bu by 1.25 to get kilograms per hectolitre.
- Kn. Wt. Kernel Weight (grams/1,000 kernels).
- Seed size S = Small, M = Medium, ML = Medium Large, L = Large.
- Ht. Height in centimetres.
- Awn type R = Rough, S = Smooth, SS = Semi-smooth.
- Toler. FHB Fusarium Head Blight Tolerance: G = Good, F+ = Somewhat better than fair, F = Fair, P = Poor, VP = Very Poor.
- Wint. Surv. Winter Survival
- Mat. Rating Maturity Rating
- TSW Thousand seed weight



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# Varieties of Cereal and Oilseed Crops for Alberta

**THIS ANNUAL** publication provides information on cereal and oilseed variety performance within Alberta and northeastern British Columbia. Important agronomic characteristics and disease resistance information is provided for varieties of wheat, barley, oat, rye, triticale, flax and canola.

The Alberta Regional Variety Testing program is coordinated by the Alberta/British Columbia Grain Advisory Committee (ABCGAC) and Alberta Agriculture and Rural Development (AARD). Funding for the program is provided by AARD, the Alberta Seed Growers' Association, the Association of Alberta Co-op Seed Cleaning Plants, the Alberta Wheat Commission, and entry fees for the varieties being tested.

Data for this publication are contributed by numerous applied research associations, the Prairie Grain Development Committee, the Canola Council of Canada, CPS Canada, Agriculture and Agri-Food Canada, and AARD. Test results and updated tables are prepared, reviewed and approved by members of the ABCGAC. Sincere thanks are extended to all individuals and organizations who contribute to this publication.

## Yield Results and Reporting

Variety choice should never be based solely on yield performance, as it is only one factor that affects net return. The genetic yield potential of a variety is often masked by numerous factors, some of which can be controlled through variety choice and others through astute agronomic management. Producers are encouraged to consider other characteristics such as maturity, plant height, lodging and disease/pest resistance when deciding which varieties to grow. Long-term satisfaction with a variety is often related to non-yield characteristics.

Exercise caution when making yield comparisons among varieties. Variety yield should only be directly compared to the standard reference check. Actual head-to-head yield comparisons between other varieties may not have occurred. Small plot agronomic trials are expensive to grow and new varieties are registered every year. It is simply impractical to grow all varieties at the same time. Following several years of data collection, the yield performance for a particular variety stabilizes relative to the check and further testing is no longer required. It is for these reasons that the check varieties are grown every year (e.g. AC Barrie

for CWRS wheat, AC Metcalfe for barley) and that changes to these checks are infrequent. The "Overall Station Years of Testing" column provides an indication of the unbalanced nature of the dataset.

At least six station-years of yield data collected over two years are required prior to reporting the figures in this publication. For new varieties, Overall Yield is often the first indication of yield potential relative to the check. As additional data become available, yield performance is also expressed on the basis of environmental productivity (Yield Test Categories of Low, Medium, High and Very High). Yield rankings among varieties can change substantially due to growing conditions. To reflect these differences, results from a test site that produced high yield in a particular year are placed into the database for 'high' yielding environments. The same site may contribute to the 'low' yield category in a drought year, when yields are low. Consistent performance over all Yield Test Categories indicates that a variety has environmental responses similar to the check and may have good yield stability over a wide range of environments. Scientific studies conducted on variety performance in Western Canada have shown that Yield Test Category analysis provides a more reliable indication of yield performance than results organized by geographic region.

The yield comparison tables have several features:

- Overall actual yield of the check (bushels per acre) based on all data available to the testing program is provided along with the number of station years of testing.
- The range in yield for each Yield Test Category is defined.
- Actual yield of the check in each Yield Test Category is reported.

For varieties with sufficient data, the Overall Yield and performance in each Yield Test Category is expressed relative to the check.

Significant statistical differences relative to the check are indicated.

Yields that are statistically higher (+) or lower (-) than the check are indicated to aid in the selection process. No symbol after the yield figure indicates that there is no statistical difference from the check. Pay particular attention to data on new varieties that have not been fully tested. If a large difference from the check

is reported but is not significant, it could mean that yields have varied widely, and/or there are not enough data to prove a statistical difference. With additional years of testing, the reported yield differences will become more accurate.



To make effective use of the yield comparison tables, producers should set a realistic yield target for the season and determine where it fits within the Low, Medium, High and Very High Yield Test Categories. This approach facilitates matching of variety choice to expected productivity levels and is similar to that used when making decisions on other levels of inputs. Please note that the actual yield levels indicated are from small plot trials, which may be 15 to 20 per cent higher than yields expected under commercial production.

### Maturity Ratings

As is the case for yield, growing conditions have a tremendous influence on the date of maturity. For example, a variety of CWRS wheat may mature in 98 days in Lethbridge, but take 103 days in Edmonton. Likewise, a two day difference in maturity between varieties in southern Alberta may amount to a five day difference in a more northerly location. To take this into account, maturity is expressed using a five category scale: Very Early, Early, Medium, Late and Very Late. To aid producers with this relative scale, the

average number of days to maturity for the check is reported. Note that this scale is different for each crop type. For example, an early barley variety will mature much earlier than an early flax variety.

### Plant Breeders' Rights

The use of Plant Breeders' Rights (PBR) logo  indicates a variety is protected by law and that seed of the variety cannot be sold without permission and royalty payment. The use of the  logo indicates that an application for PBR has been submitted.

### Canola

The Alberta/British Columbia Cereal and Oilseed Advisory Committee (ABCGAC) does not take any responsibility for accuracy or validity of the canola performance data.

### Diseases, Seed Treatment and Seed Testing

- Disease ratings are compiled from various data sources in Alberta and other Prairie provinces.
- Disease resistance/tolerance ratings are reported as follows: R = Resistant (previously VG); MR = Moderately Resistant (previously G); I = Intermediate (previously F); MS = Moderately Susceptible (previously P); S = Susceptible (previously VP).



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- Treat rye and flax seed to control seedling blight, cereal seed for smuts and fusarium, canola seed to control flea beetle, seedling blight and the seed borne phase of virulent blackleg.
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- Treated seed must not be fed to livestock, poultry or wildlife, and cannot be sold for feed.
- Leaf spot ratings in the wheat tables are a combination of resistance to tan spot and septoria leaf disease complex.
- Fusarium head blight (FHB), caused by *Fusarium graminearum*, is an increasing problem in Alberta. The relative ranking of crops from most susceptible to least susceptible is durum wheat, common wheat, triticale, barley and oat. Corn is a host of *F. graminearum* and can serve as a source of infection when residue is left on the ground. Under severe epidemics, all cereal varieties will suffer damage. All seed, especially seed brought in from infected areas of the eastern Prairies, should be tested for the presence of FHB and treated with an appropriate seed treatment. Producers are advised to choose varieties with the best FHB tolerance whenever possible and always use best management practices to slow the spread of this disease.
- Seed used in the Alberta Regional Variety Testing program comes with a “fusarium-free” certificate and trials are inspected for FHB during the growing season.

### Laboratories participating in the FHB testing program:

- 20/20 Seed Labs Ltd., Nisku, Alta.: 1-877-420-2099
- BioVision Seed Research Ltd., Edmonton, Alta.: 1-800-952-5407
- BioVision Seed Research Ltd., Grande Prairie, Alta.: 1-877-532-8889
- Parkland Laboratories, Red Deer, Alta.: (403) 342-0404
- Precision Seed Testing, Beaverlodge, Alta.: (780) 354-2259
- Seed Check Technologies Inc., Leduc, Alta.: (780) 980-8324

### Other Variety Information

For additional information, including varieties not listed in this publication, please call the Alberta Ag-Info Centre toll-free at 1-310-FARM (3276) or check the Alberta Agriculture and Rural Development website, *Ropin' the Web* at: [www.agriculture.alberta.ca/rvt](http://www.agriculture.alberta.ca/rvt).

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  - Harvest
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# FEED AND FOOD BARLEY

Variety	2 or 6 row	Awn Type <sup>1</sup>	Overall Station Years of Testing	Overall Yield	Yield Category <sup>2</sup> (% AC Metcalfe)				Agronomic Characteristics:				
					Low < 60 (bu/ac)	Medium 60-90 (bu/ac)	High 90-120 (bu/ac)	V. High > 120 (bu/ac)	Maturity Rating <sup>4</sup>	Test Weight (lb/bu)	TSW <sup>5</sup> (g)	Height (cm)	Resistance to Lodging <sup>6</sup>
<b>GENERAL PURPOSE - HULLED</b>													
<b>Varieties tested in the 2014 trials (Yield and agronomic data only directly comparable to AC Metcalfe)</b>													
<b>AC Metcalfe (bu/ac)</b>				<b>99</b>	<b>46</b>	<b>79</b>	<b>103</b>	<b>133</b>					
<b>AC Metcalfe<sup>3</sup> ☼</b>	<b>2</b>	<b>R</b>	<b>510</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>M</b>	<b>52</b>	<b>46</b>	<b>79</b>	<b>F</b>
Amisk ▲	6	SS	28	106+	XX	109	104	109+	M	49	45	71	VG
Brahma ☼	2	R	87	111+	112+	109+	113+	111+	M	53	47	74	G
Breton ▲	6	S	42	107+	97	108	106+	110+	M	49	45	80	F
Canmore ▲	2	R	28	108+	XX	105	112+	108+	M	53	49	76	G
Champion ☼	2	R	139	113+	125+	113+	113+	110+	M	53	49	77	G
Vivar ☼	6	R	216	109+	98	105+	111+	117+	M	49	44	73	VG
XENA ☼	2	R	271	112+	111+	109+	114+	112+	M	52	49	77	G
<b>Previously tested varieties (Yield and agronomic data only directly comparable to AC Metcalfe)</b>													
AC Harper ☼	6	SS	166	103+	95	96-	102	111+	M	48	40	80	G
AC Ranger	6	S	48	107+	101	99	118+	107+	L	49	43	74	F
AC Rosser ☼	6	S	166	108+	101	102	109+	113+	M	48	41	82	G
Busby ☼	2	R	45	104+	107	103	106	103	M	53	49	78	G
CDC Austenson ☼	2	R	65	112+	108	113+	111+	112+	L	54	46	78	G
CDC Bold †	2	R	77	106+	111+	107+	106+	102	M	53	48	72	VG
CDC Coalition ☼	2	R	57	110+	107	112+	108+	109+	L	53	47	74	G
CDC Cowboy ☼	2	R	75	95-	107	94-	93-	96-	L	52	55	103	F
CDC Dolly †	2	R	184	101	97	100	103+	100	M	53	49	74	F
CDC Maverick ☼	2	S	43	95-	XX	90-	97	96	M	54	55	98	F
CDC Trey ☼	2	R	106	103+	101	105+	101	105+	M	52	50	80	G
Chigwell ☼	6	S	43	104	XX	98	106	111+	M	49	41	76	G
CONLON ☼	2	S	63	94-	97	93-	93-	96-	VE	52	52	80	G
Gadsby ☼	2	R	45	112+	XX	114+	114+	108+	M	53	51	83	F
Muskwa ☼	6	S	44	105+	XX	103	105	110+	M	50	42	73	G
Ponoka ☼	2	R	120	108+	101	107+	110+	109+	L	51	46	80	G
Seebe	2	R	229	101	97	100	102	100	VL	52	50	86	G
Sundre ☼	6	S	72	110+	100	105	112+	117+	L	51	43	86	G
Trochu ☼	6	S	136	107+	101	102	109+	112+	M	49	41	78	G
<b>HULLESS</b>													
<b>Previously tested varieties (Yield and agronomic data only directly comparable to AC Metcalfe)</b>													
CDC Clear ☼	2	R	43	95-	XX	92-	100	XX	L	62	47	85	G
CDC Carter ☼	2	R	45	97-	97	99	94-	XX	M	62	39	77	VG
CDC McGwire ☼	2	R	107	93-	88-	93-	99	XX	M	61	39	80	VG
Tyto	6	S	72	81-	79-	84-	96	96	M	55	40	73	VG

**REMARKS:** In hullless varieties the hull is left in the field, thus grain yields comparable to hulled varieties are 9-12% lower. Handling of hullless varieties should be minimized to avoid seed damage. CDC Carter, CDC McGwire and Tyto are normal starch hullless varieties. CDC Clear is a hullless malting variety. New registrations: Amisk (BT593) and Canmore (TR10694). ☼ - Protected by Plant Breeders' Rights. ▲ - Plant Breeder's Rights applied for. XX - Insufficient data to describe. † - Flagged for removal. <sup>1</sup>Awn types: R = rough; S = smooth; SS = semi-smooth. <sup>2</sup>Yield Test Categories are based on the site means for small plot trials. The defined range for each Yield Test Category is provided in bu/ac. The actual yields for AC Metcalfe are reported in the Overall, Low, Medium, High, and Very High Yield Test Categories. Note that small plot yields may be 10-15% higher than field scale results. <sup>3</sup>Yield is reported relative to AC Metcalfe. Varieties that are statistically higher (+) or lower (-) yielding than AC Metcalfe are indicated. No symbol after the yield figure indicates no statistical difference from AC Metcalfe. <sup>4</sup>Maturities rated as: VE = Very Early; E = Early; M = Medium; L = Late and VL = Very Late. The long term average maturity for AC Metcalfe is 95 days and rated as Medium (M). <sup>5</sup>TSW: Thousand Seed Weight. <sup>6</sup>Resistance to Lodging: VG = Very Good; G = Good; F = Fair; P = Poor; VP = Very Poor. <sup>7</sup>Disease tolerance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate; MS = Moderately Susceptible; S = Susceptible. <sup>8</sup>Varieties with ratings of Intermediate (I) to Susceptible (S) for smuts should be seed-treated with a systemic fungicide to reduce the potential for infection.

# FEED AND FOOD BARLEY— CONTINUED

 Disease Tolerance:<sup>7</sup>

Variety	Loose Smut <sup>8</sup>	Other Smuts <sup>8</sup>	Root Rot	Scald	Net Blotch:		Fusarium Head Blight
					Spot Form	Net Form	

## GENERAL PURPOSE - HULLED

Varieties tested in the 2014 trials (Yield and agronomic data only directly comparable to AC Metcalfe)

### AC Metcalfe (bu/ac)

AC Metcalfe <sup>3</sup> ☼	R	I	I	S	I	S	I
Amisk ▲	S	MS	MS	I	MR	I	S
Brahma ☼	MS	R	MR	S	I	I	I
Breton ▲	MS	MR	I	I	MR	I	S
Canmore ▲	R	R	I	MR	MR	MS	I
Champion ☼	S	R	MR	S	I	S	I
Vivar ☼	I	R	MR	I	MR	R	S
XENA ☼	MS	MS	MR	S	I	S	MR

Previously tested varieties (Yield and agronomic data only directly comparable to AC Metcalfe)

AC Harper ☼	MS	I	I	I	I	I	MS
AC Ranger	MS	I	MR	MS	MR	I	S
AC Rosser ☼	MS	R	MR	S	MR	I	S
Busby ☼	S	MR	S	I	MR	MS	I
CDC Austenson ☼	S	R	I	S	R	MS	I
CDC Bold †	MS	MR	MR	S	I	S	S
CDC Coalition ☼	R	R	I	S	MR	S	I
CDC Cowboy ☼	MS	MR	I	MS	MR	I	MR
CDC Dolly †	S	I	I	I	MS	S	MR
CDC Maverick ☼	S	R	I	MS	MR	I	I
CDC Trey ☼	MS	R	MR	MS	R	I	I
Chigwell ☼	MS	MR	MS	MR	MR	I	S
CONLON ☼	I	I	MR	S	MR	I	MR
Gadsby ☼	R	R	I	R	MR	MS	I
Muskwa ☼	MS	R	MS	MR	MR	MS	S
Ponoka ☼	R	R	I	MR	MR	MS	I
Seebe	S	R	I	MR	MS	S	MR
Sundre ☼	MS	R	MS	R	I	MS	S
Trochu ☼	MS	MR	MR	I	MR	S	I

## HULLESS

Previously tested varieties (Yield and agronomic data only directly comparable to AC Metcalfe)

CDC Clear ☼	R	R	I	S	R	MS	MR
CDC Carter ☼	R	R	S	MS	MR	I	I
CDC McGwire ☼	MS	MR	MR	I	MR	I	MR
Tyto	S	R	I	MS	I	S	MS

## Alberta and British Columbia Pedigreed Seed Growers Directory of Varieties Produced in 2014

Grower listings were prepared by the Canadian Seed Growers' Association for varieties eligible for sale in Canada and crops issued certificates at the time of publication. Breeding institution and distributor listings were prepared by the publisher. CSGA assumes no responsibility for errors or omissions in any listings. Pedigreed class code is listed after the grower's phone number. S=Select; F=Foundation; R=Registered; C=Certified. BI=Breeding Institution; Dist.=Canadian Distributor(s)



# MALTING BARLEY

Variety	2 or 6 row	Awn Type <sup>1</sup>	Overall Station Years of Testing	Overall Yield	Yield Category <sup>2</sup> (% AC Metcalfe)				Agronomic Characteristics:				
					Low < 60 (bu/ac)	Medium 60-90 (bu/ac)	High 90-120 (bu/ac)	V. High > 120 (bu/ac)	Maturity Rating <sup>4</sup>	Test Weight (lb/bu)	TSW <sup>5</sup> (g)	Height (cm)	Resistance to Lodging <sup>6</sup>
<b>Varieties tested in the 2014 trials (Yield and agronomic data only directly comparable to AC Metcalfe)</b>													
AC Metcalfe (bu/ac)				99	46	79	103	133					
AC Metcalfe <sup>3</sup> ☼	2	R	510	100	100	100	100	100	M	52	46	79	F
AAC Synergy ☼	2	R	42	114+	XX	115+	115+	113+	M	51	48	75	F
<b>Previously tested varieties (Yield and agronomic data only directly comparable to AC Metcalfe)</b>													
Bentley ☼	2	R	77	105+	109	102	105+	106+	M	52	47	81	G
CDC Anderson ☼	6	R	44	96	XX	96	92	100	M	50	39	80	G
CDC Copeland ☼	2	R	137	103+	96	101	106+	104+	M	51	47	81	F
CDC Kindersley ☼	2	R	47	104+	XX	102	104	104+	E	53	43	78	G
CDC Mayfair ☼	6	R	56	97	XX	93-	96	104	E	49	40	76	G
CDC Meredith ☼	2	R	65	107+	102	108+	108+	107+	L	51	46	76	F
CDC PolarStar ☼	2	R	43	101	XX	103	105+	97	M	52	44	79	G
Cerveza ☼	2	R	49	109+	XX	109+	108+	109+	M	51	46	74	F
Harrington	2	R	284	93-	96-	94-	93-	91-	M	51	44	78	F
LEGACY ☼	6	SS	122	99	93	95-	102	103	M	49	39	82	G
Major ☼	2	R	72	107+	104	108+	107+	106+	M	51	45	73	G
Merit 57 ☼	2	R	87	109+	110+	108+	109+	111+	VL	51	44	79	F
Newdale ☼	2	R	94	105+	106	104+	105+	106+	M	52	46	73	F
Tradition ☼	6	SS	121	98	90-	95-	101	103	E	50	40	81	G

**REMARKS:** The Canadian Malting Barley Technical Centre (CMBTC) evaluates and recommends malting barley varieties for industry acceptance. Please refer to the 2015-2016 CMBTC Recommended Malt Barley Variety List for more information. Insufficient data to describe: TR07921. ☼ - Protected by Plant Breeders' Rights. ▲ - Plant Breeder's Rights applied for. XX - Insufficient data to describe. <sup>1</sup>Awn types: R = rough; S = smooth; SS = semi-smooth. <sup>2</sup>Yield Test Categories are based on the site means for small plot trials. The defined range for each Yield Test Category is provided in bu/ac. The actual yields for AC Metcalfe are reported in the Overall and Low, Medium, High, and Very High Yield Test Categories. Note that small plot yields may be 10-15% higher than field scale results. <sup>3</sup>Yield is reported relative to AC Metcalfe. Varieties that are statistically higher (+) or lower (-) yielding than AC Metcalfe are indicated. No symbol after the yield figure indicates no statistical difference from AC Metcalfe. <sup>4</sup>Maturities rated as: VE = Very Early; E = Early; M = Medium; L = Late and VL = Very Late. The long term average maturity for AC Metcalfe is 95 days and rated as Medium (M). <sup>5</sup>TSW: Thousand Seed Weight. <sup>6</sup>Resistance to lodging: VG = Very Good; G = Good; F = Fair; P = Poor; VP = Very Poor. <sup>7</sup>Disease tolerance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate; MS = Moderately Susceptible; S = Susceptible. <sup>8</sup>Varieties with ratings of Intermediate (I) to Susceptible (S) for smuts should be seed-treated with a systemic fungicide to reduce the potential for infection.

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C

**AC ROSSER**

**BI: AAFC (Brandon), Dist: SeCan Members**

Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617

F

**AMISK**

**BI: FCDC (Lacombe), Dist: SeCan Members**

Dyck, Heinz W. & Colin & Alan / Rosemary / (403) 378-3321

S

R

Jones, Greg Thomas / Ponoka / (403) 783-6495

S

R

Mans, John / Nobleford / (403) 824-3585

S

F

Thompson, M. Ellwood & Kelly / Red Deer County / (403) 728-3535

S

F

Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617

S

Webber, Curtis / Stony Plain / (780) 963-6897

R

Witdouck, Dale & Calvin / Iron Springs / (403) 738-4395

R

**BENTLEY**

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Cameron, Linda, Craig & Ryan / Millet / (780) 387-5313

R

King, Harold & Webb, David Gordon / Three Hills / (403) 443-7330

R

Parkland Fertilizers / Wetaskiwin / (780) 352-3359

C

Sendziak, Don P. & Stephen / Edmonton / (780) 434-1322

R

Solick, Leonard & Kelsey & Corwin / Halkirk / (403) 884-2358

F

**BRAHMA & CHAMPION**

**BI: N/A, Dist: CPS (Canada) Inc.**

Proven Seed / CPS (Canada) Inc. / High River / (403) 336-4826

R

**BRETON**

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Cross, Douglas / Westlock / (780) 349-2587

R

**BUSBY**

**BI: FCDC (Lacombe), Dist: Mastin Seeds**

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C

Mastin, Robert B. / Sundre / (403) 556-2609

C

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Benci, Dennis / Carmangay / (403) 643-2294

R

Sendziak, Don P. & Stephen / Edmonton / (780) 434-1322

F

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S

F

**CDC ANDERSON**

**BI: CDC, Dist: SeCan Members**

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C

**CDC AUSTENSON**

**BI: CDC, Dist: SeCan Members**

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Crooymans, John, Joseph & Andrew / Bow Island / (403) 545-6333

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Dallas, Bradley C. / Bowden / (403) 224-2162

C

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Fabian, Patrick V. / Tilley / (403) 377-2000

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S

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C

Huvenaars, Richard / Hays / (403) 725-2213

C

Jones, Greg Thomas / Ponoka / (403) 783-6495

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Kemp, Richard L. / Innisfail / (403) 227-4836

C

King, Harold & Webb, David Gordon / Three Hills / (403) 443-7330

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Lindholm, Craig & Stevan & Dane & L. / New Norway / (780) 352-3240\*

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<b>BI: CDC, Dist: N/A</b>	
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Eliason, Bruce W. / Wrentham / (403) 222-2258	R C
Ellis, Brian / Olds / (403) 556-2890	C
Goldstrom, David / Red Deer County / (403) 227-2133	R
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Hallett, Dale R. & Richard / Carstairs / (403) 337-3072	C
Hartzler, Leonard / Carstairs / (403) 337-2416	C
Kemp, Richard L. / Innisfail / (403) 227-4836	R
King, Harold & Webb, David Gordon / Three Hills / (403) 443-7330*	C
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Nisbet, Andrew E. & Diane E. / Bowden / (403) 224-3788	F R
Penwest Seeds / Three Hills / (403) 443-7212	C
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Selte, Donald / Vermilion / (780) 853-2484	C
Sich, Louis John & Ivan & Martin / Trochu / (403) 442-2112	C
Victoor, Rene & Jamie / Sturgeon County / (780) 459-3253	R C
Wagner, Terry & Loree / Lacombe / (403) 782-2107	C
Weigum, Garry / Three Hills / (403) 443-2476	C
Zwack, Thomas / Daysland / (780) 374-2450	R C
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Webber, Curtis / Stony Plain / (780) 963-6897		C
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Goldstrom, David / Red Deer County / (403) 227-2133		R
Hadway, W. Tom & Carol / Didsbury / (403) 335-4929		R C
Kittle, James William & Andrew / Viking / (780) 336-2583		C
Knight, William, Craig & Brian / Tees / (403) 784-3633		C
Lindholm, Craig & Stevan & Dane & L. / New Norway / (780) 352-3240	S	
Niemela, Terrance & Tracy / Sylvan Lake / (403) 746-2645		C
Oatway, Grant / Lacombe / (403) 784-3418		C
Wagner, Terry & Loree / Lacombe / (403) 782-2107		R
Weigum, Garry / Three Hills / (403) 443-2476		C
<b>CDC MAVERICK</b>		
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Degenhardt, Keith L., Terry L. & Kerry / Hughenden / (780) 856-2383	F	C
Goldstrom, David / Red Deer County / (403) 227-2133		C
Hadland, Edward / Balldonnel / (250) 789-3646	F	C
Hallett, Dale R. & Richard / Carstairs / (403) 337-3072		C
McDonald, Gerald / Co. Of Grande Prairie #1 / (780) 538-3868		C
Mueller, Darcy / Three Hills / (403) 823-9788		C
St. Paul Municipal Seed Cleaning Assoc. Ltd / St. Paul / (780) 645-3939		C
Selte, Donald / Vermilion / (780) 853-2484		R
Solick, Leonard & Kelsey & Corwin / Halkirk / (403) 884-2358	F	C
Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617	F	R
<b>CDC MAYFAIR</b>		
<b>BI: N/A, Dist: Canterra Seeds</b>		
Senziaik, Don P. & Stephen / Edmonton / (780) 434-1322*		R C
<b>CDC MEREDITH</b>		
<b>BI: CDC, Dist: SeCan Members</b>		
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Chin Ridge Seeds Ltd. / Taber / (403) 223-3900*		C
Cornish, Bob / Airdrie / (403) 948-3070		C
Davidson, E.Daryl & Dean / Kitscoty / (780) 846-2456		R
Eliason, Bruce W. / Wrentham / (403) 222-2258		C
Foster, Norman R. / Beaverlodge / (780) 354-2107		R C
Gibson, Donald / Sangudo / (780) 785-2214		C
Goldstrom, David / Red Deer County / (403) 227-2133		C
Hadway, W. Tom & Carol / Didsbury / (403) 335-4929		F
Harris, William & Peter & Linda & Thomas & A. / Beaverlodge / (780) 354-2823	S	F
Hartzler, Leonard / Carstairs / (403) 337-2416		C
King, Harold & Webb, David Gordon / Three Hills / (403) 443-7330*		C
Kopjar, Gerald M. / Rowley / (403) 368-2409		C
Lindholm, Craig & Stevan & Dane & L. / New Norway / (780) 352-3240*		C
Logan, Glenn C. & Marie & Douglas / Lomond / (403) 792-3696		C
McDonald, Gerald / Co. Of Grande Prairie #1 / (780) 538-3868		C
Mercer, Lloyd A. & C. & Ryan & Bolstad, Leslie / Lethbridge / (403) 308-2297*	S	C
Niemela, Terrance & Tracy / Sylvan Lake / (403) 746-2645		C
Nisbet, Andrew E. & Diane E. / Bowden / (403) 224-3788	F	
Penwest Seeds / Three Hills / (403) 443-7212		R
Selte, Donald / Vermilion / (780) 853-2484		R
Svanes, Ronald J. / Picture Butte / (403) 317-0981		C
Wagner, Terry & Loree / Lacombe / (403) 782-2107		C
<b>CDC THOMPSON</b>		
<b>BI: CDC, Dist: FP Genetics</b>		
Galloway Seeds Ltd. / Fort Saskatchewan / (780) 998-3036	F	R
Thompson, M. Ellwood & Kelly / Red Deer County / (403) 728-3535		R C

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Calmar, AB

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**Wheat:** AC Stettler • AC Conquer • AC NRG010 • CDC NRG003 • AAC Redwater • AAC Brandon

**Barley:** CDC Yorkton • CDC Mayfair • Bentley • Merit-57 • CDC Austenson • Canmore

**Oats:** Triactor • CDC Seabiscuit

**Peas:** AC Thunderbird • CDC Raezer • CDC Tetriss

**Flax:** CDC Sorrel | **Soybean:** TH 33003R2Y

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**Barley:** Amisk, Vivar, AC Harper, Chigwell, CDC Austensen

**Forage Peas**

**Triticale:** Pronghorn

**Flax:** CDC Sorrel

Custom Forage Blends  
Dual Mix/Triple Mix







**CDC TREY**

**BI: CDC, Dist: FP Genetics**  
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S F R C

**CDC YORKTON**

**BI: CDC, Dist: Canterra Seeds**  
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R C

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McDonald, Grant / Didsbury / (403) 335-8188  
Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617\*  
Webber, Curtis / Stony Plain / (780) 963-6897

R  
C  
C  
C  
F  
C

**CONLON**

**BI: NSDU, Dist: Seed Depot**  
Welsh, Donald Alan / Milk River / (403) 647-2228

C

**GADSBY**

**BI: FCDC (Lacombe), Dist: SeCan Members**  
Harris, William & Peter & Linda & Thomas & A. / Beaverlodge / (780) 354-2823  
Ohm, Norman / Thorsby / (780) 985-2263  
Stewart, E. Wilbur & Eldon / Big Valley / (403) 876-2784  
Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617  
Webber, Curtis / Stony Plain / (780) 963-6897

R  
C  
C  
F  
R  
C

**LEGACY**

**BI: Busch Ag. Res., Dist: CPS (Canada) Inc./FP Genetics**  
Wood, Robert & Patricia & Marshall / Bowden / (403) 224-3928

C

**MERIT 57**

**BI: Busch Ag. Res., Dist: Canterra Seeds**  
Haney Farms / Picture Butte / (403) 738-4517  
Sendziak, Don P. & Stephen / Edmonton / (780) 434-1322\*  
Solick, Leonard & Kelsey & Corwin / Halkirk / (403) 884-2358

F  
R  
C  
S  
C

**MUSKWA**

**BI: FCDC (Lacombe), Dist: N/A**  
Chin Ridge Seeds Ltd. / Taber / (403) 223-3900  
Stamp Seeds / Enchant / (403) 739-2233\*  
Witdouck, Dale & Calvin / Iron Springs / (403) 738-4395

C  
C  
C

**NEWDALE**

**BI: AAFC (Brandon), Dist: FP Genetics**  
Dalton, Dennis / Wainwright / (780) 842-2361  
King, Harold & Webb, David Gordon / Three Hills / (403) 443-7330\*  
Wood, Robert & Patricia & Marshall / Bowden / (403) 224-3928

C  
C  
C

**PONOKA**

**BI: FCDC (Lacombe), Dist: SeCan Members**  
Webber, Curtis / Stony Plain / (780) 963-6897

R  
C

**SEEBE**

**BI: FCDC (Lacombe), Dist: SeCan Members**  
Beamish, Dale / Jarvie / (780) 954-2166  
Webber, Curtis / Stony Plain / (780) 963-6897

C  
R

**SUNDRE**

**BI: FCDC (Lacombe), Dist: Mastin Seeds**  
Feenstra, Lloyd / Barons / (403) 757-3737  
Hallett, Dale R. & Richard / Carstairs / (403) 337-3072  
Jones, Danny / Beaverlodge / (780) 354-8089  
Lyster, Norman / Stettler / (403) 742-4456  
Mastin, Robert B. / Sundre / (403) 556-2609  
Mueller, Richard J. & R.R. & Rosemary / Barrhead / (780) 674-2595  
Richard, Gerald / Spirit River / (780) 864-3716

S  
F  
R  
C  
R  
R  
C  
C

**TROCHU**

**BI: FCDC (Lacombe), Dist: SeCan Members**  
Kittle, James William & Andrew / Viking / (780) 336-2583  
Smith, Gary W. / Eckville / (403) 746-5878  
Webber, Curtis / Stony Plain / (780) 963-6897

C  
R  
C

**VIVAR**

**BI: FCDC (Lacombe), Dist: SeCan Members**  
Beamish, Dale / Jarvie / (780) 954-2166  
Mans, John / Nobleford / (403) 824-3585  
McDonald, Grant / Didsbury / (403) 335-8188  
Sim, Darwin & Derek / Ponoka / (780) 372-2111  
Witdouck, Dale & Calvin / Iron Springs / (403) 738-4395

S  
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**THE** following varieties of two-row and six-row malting barley are registered with the Canadian Food Inspection Agency based on good agronomic and industry malting quality evaluations. Since registration these varieties have been pilot scale tested by the CMBTC for their malting and brewing properties. All varieties listed below exhibit good malting and brewing properties. In addition to market opportunities, seeding decisions should be based on agronomic considerations and feedback from your grain company representative, local elevator operators and malting companies. The CMBTC and its members recommend that you talk with your local malting barley buyer about opportunities in your area to grow and market two-row and six-row malting barley varieties. Visit CMBTC's website for detailed pilot malting and brewing data - [www.cmbtc.com/CMBTC\\_Site/Variety\\_Technical\\_Data.html](http://www.cmbtc.com/CMBTC_Site/Variety_Technical_Data.html)

## TWO ROW VARIETIES

VARIETY	MARKET COMMENTS
CDC COPELAND <sub>1</sub>	ESTABLISHED DEMAND
AC METCALFE <sub>1</sub>	ESTABLISHED DEMAND
CDC MEREDITH <sub>1</sub>	LIMITED, INCREASING DEMAND
BENTLEY <sub>2</sub>	LIMITED, STABLE DEMAND
CDC KINDERSLEY <sub>1</sub>	UNDERGOING COMMERCIAL MARKET DEVELOPMENT
CERVEZA <sub>6</sub>	UNDERGOING COMMERCIAL MARKET DEVELOPMENT
AAC SYNERGY <sub>5</sub>	UNDERGOING COMMERCIAL MARKET DEVELOPMENT

## Additional Two-Row Varieties:\*

VARIETY	MARKET COMMENTS
NEWDALE <sub>4</sub>	LIMITED, STABLE DEMAND
CDC POLARSTAR <sub>2</sub>	LIMITED, STABLE DEMAND
MERIT 57 <sub>2</sub>	UNDERGOING COMMERCIAL MARKET DEVELOPMENT

\*These two-row varieties are primarily handled by one company. For interest in growing Newdale, please contact Canada Malting Company. CDC PolarStar is produced in a closed loop, identity preserved program. For interest in growing CDC PolarStar, please contact Prairie Malt-Cargill. For interest in growing Merit 57, please contact BARI-Canada.

Note: CDC Landis is not yet grown for commercial use. Production is limited to quantities required for pre-market development testing.

## SIX-ROW VARIETIES\*\*


VARIETY	MARKET COMMENTS
LEGACY <sub>3,4</sub>	LIMITED DEMAND
TRADITION <sub>4</sub>	LIMITED DEMAND
CELEBRATION <sub>2</sub>	LIMITED DEMAND

\*\*Demand for six-row malting barley has been declining. Please talk to your local malting company selector in regard to demand for six-row varieties in your area. Note: CDC Anderson is not yet grown for commercial use. Production is limited to quantities required for pre-market development testing.

The following companies have pedigreed seed distribution rights for those varieties that are footnoted: 1-SeCan; 2 - CANTERRA SEEDS; 3 - Crop Production Services; 4 - FP Genetics; 5 - Syngenta; 6 - Mastin Seeds. CMBTC and its' members strongly recommend use of certified seed to ensure varietal purity and increase opportunity for selection.

**CMBTC Members:** Parrish & Heimbecker, Prairie Malt-Cargill, Public Barley Breeders, Richardson International, Viterra, Canadian Grain Commission, ADM-Benson Quinn, SABMiller, CWB, Manitoba Liquor & Lotteries, Molson Coors, SeCan, Syngenta, Tsingtao Brewery, Alberta Barley Commission, CANTERRA SEEDS, Hailar MDL Beer Material, Alberta Agriculture, Manitoba Agriculture, Saskatchewan Agriculture, New Glarus Brewing. Other organizations providing input to this list: The BMBRI and BARI-Canada.

**Questions?** Call your selector, seed company, grain handling company, or contact the CMBTC at 204-984-4399 ([cmbtc@cmbtc.com](mailto:cmbtc@cmbtc.com)).



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CDC Utmost  
AC Muchmore


**Barley**


**Oats**  
AC Morgan

**Yellow Peas**  
CDC Meadow

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We are ready to meet your needs. Give us a call to discuss what we can do to help you this spring.*









# OATS

Variety	Overall Sta- tion Years of Testing	Overall Yield	Yield Category <sup>1</sup> (% CDC Dancer)				Agronomic Characteristics					
			Low < 70 (bu/ac)	Medium 70-100 (bu/ac)	High 100-130 (bu/ac)	V. High > 130 (bu/ ac)	Maturity Rating <sup>3</sup>	Test Weight (lb/bu)	TSW <sup>4</sup> (g)	Height (cm)	Resistance to Lodging <sup>5</sup>	Tolerance to Smuts <sup>6</sup>
<b>MILLING</b>												
<b>Varieties tested in the 2014 trials (Yield and agronomic data only directly comparable to CDC Dancer)</b>												
<b>CDC Dancer (bu/ac)</b>		<b>93</b>	<b>50</b>	<b>84</b>	<b>113</b>	<b>146</b>						
<b>CDC Dancer<sup>2</sup> ☼</b>	<b>126</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>E</b>	<b>41</b>	<b>37</b>	<b>94</b>	<b>G</b>	<b>R</b>
AAC Justice ▲	18	103	XX	98	110+	XX	M	42	37	97	G	R
CDC Ruffian ▲	28	110+	110	105	116+	XX	M	40	39	94	G	R
Souris ☼	28	110+	120+	103	111	XX	M	41	34	91	VG	R
<b>Previously tested varieties (Yield and agronomic data only directly comparable to CDC Dancer)</b>												
AC Juniper	80	104+	102	104	106+	105+	E	41	38	94	VG	I
AC Morgan	95	111+	110+	110+	111+	115+	M	40	40	92	VG	I
Bradley ☼	31	104+	XX	103	108	106	M	39	39	92	VG	R
CDC Boyer	89	102	103	102	100	105	M	39	42	101	G	MS
CDC Minstrel ☼	61	104+	103	103	105	105+	M	39	38	88	VG	R
CDC Orrin ☼	52	109+	113+	107+	107+	XX	M	41	40	84	G	R
CDC Seabiscuit ☼	30	111+	124	106	108	108	M	39	41	101	G	MR
CDC Weaver ☼	44	104	108+	103	100	100	M	40	43	91	F	R
Derby	79	101	103	102	96-	105	L	41	39	103	G	MS
Jordan ☼	36	112+	112+	109+	117+	XX	VL	38	44	87	G	R
Stride ☼	30	104+	101	102	107	106	M	42	35	104	G	R
Triactor ☼	47	110+	109	108+	114+	110+	M	38	38	89	G	R

<b>FEED</b>												
<b>Previously tested varieties (Yield and agronomic data only directly comparable to CDC Dancer)</b>												
AC Mustang *	108	114+	118+	112+	110+	116+	L	42	37	103	G	I
CDC Nasser	31	116+	132	107	115+	110	L	38	36	98	G	MR
Lu *	58	100	99	98	99	108	VE	41	39	85	G	R

<b>FORAGE</b>												
<b>Varieties tested in the 2014 trials (Yield and agronomic data only directly comparable to CDC Dancer)</b>												
CDC Haymaker	18	104	XX	104	105	XX	L	39	41	109	F	MR
<b>Previously tested varieties (Yield and agronomic data only directly comparable to CDC Dancer)</b>												
CDC Baler *	42	99	96	106	96	XX	L	40	43	99	XX	S
Murphy ☼*	51	95-	93	96	97	94	M	39	36	108	XX	S

**Remarks:** Use higher seeding rates for large seeded varieties. New registrations: AAC Justice (OT2084), Bia, CS Camden(OT4001), Nice and CDC Haymaker. Insufficient data to describe: Bia, CS Camden, Nice. ☼ - Protected by Plant Breeders' Rights. ▲ - Plant Breeder's Rights applied for. \* Yield figures based on direct and indirect comparisons with CDC Dancer. <sup>1</sup>Yield Test Categories are based on the site means for small plot trials. The defined range for each Yield Test Category is provided in bu/ac. The actual yields (bu/ac) for CDC Dancer are reported in the Overall, Low, Medium, High, and Very High Yield Test Categories. Note that small plot yields may be 10-15% higher than field scale results. <sup>2</sup>Yields are reported relative to CDC Dancer. Varieties that are statistically higher (+) or lower (-) yielding than CDC Dancer are indicated. No symbol after the yield figure indicates that there is no statistical difference from CDC Dancer. <sup>3</sup>Maturities rated as: VE = Very Early; E = Early; M = Medium; L = Late; VL = Very Late. The long term average maturity for CDC Dancer is 98 days and rated as Early (E). <sup>4</sup>TSW: Thousand Seed Weight. <sup>5</sup>Rating Categories: VG = Very Good; G = Good; F = Fair; P = Poor; VP = Very Poor. <sup>6</sup>Disease tolerance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate; MS = Moderately Susceptible; S = Susceptible. It is advisable that varieties with Intermediate (I) to Susceptible (S) ratings for the smuts be treated with a systemic fungicide.



## Stamp Seeds

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Box 3030  
Enchant, AB, T0K 0V0

**Greg: 403-634-1586**  
greg@stampseeds.com  
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# OATS

## AC MORGAN

**BI: AAFC (Lacombe), Dist: SeCan Members**

Chin Ridge Seeds Ltd. / Taber / (403) 223-3900				C
Corns, Bryan & Gary / Grassy Lake / (403) 655-2464				C
Degenhardt, Keith L., Terry L. & Kerry / Hughenden / (780) 856-2383				C
Harbin, Clifford Thomas & Bruce Clifford / Rivercourse / (780) 745-2268				C
Hill, Gordon P & Blair / Taylor / (250) 789-3469				C
Jonk, Nicholas / Westlock / (780) 349-5458				C
Kemp, Richard L. / Innisfail / (403) 227-4836				C
Macyk, Don & Timothy / Waskatenau / (780) 358-2411				C
McDonald, Gerald / Co. Of Grande Prairie #1 / (780) 538-3868				C
Meinczinger, Matthew Jr. / Busby / (780) 349-2456				C
Miller, Brian / Barrhead / (780) 674-5001				C
Mueller, Richard J. & R.R. & Rosemary / Barrhead / (780) 674-2595				C
Ohrn, Norman / Thorsby / (780) 985-2263				C
Richard, Gerald / Spirit River / (780) 864-3716				C
Selte, Donald / Vermilion / (780) 853-2484	F			C
Tomlinson, Chelsea / Redwater / (780) 777-5885				C
Victoor, Rene & Jamie / Sturgeon County / (780) 459-3253				C
Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617	F	R		C

## AC MURPHY

**BI: AAFC (Lacombe), Dist: SeCan Members**

Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617*	F	R		C
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## AC MUSTANG

**BI: AAFC (Lacombe), Dist: Mastin Seeds**

Hadland, Edward / Balldonnel / (250) 789-3646				C
Hallett, Dale R. & Richard / Carstairs / (403) 337-3072				R
King, Harold & Webb, David Gordon / Three Hills / (403) 443-7330*				C
Mastin, Robert B. / Sundre / (403) 556-2609				C

## CDC BALER

**BI: CDC, Dist: FP Genetics**

Sand, Ron W. & David R. / McLaughlin / (780) 745-2251			F	C
Sim, Darwin & Derek / Ponoka / (780) 372-2111			R	
Wood, Robert & Patricia & Marshall / Bowden / (403) 224-3928	S	F		C

## CDC HAYMAKER

**BI: CDC, Dist: SeCan Members**

Degenhardt, Keith L., Terry L. & Kerry / Hughenden / (780) 856-2383			F	
Hoffmann, Curtis / Oyen / (403) 664-9617				R
Mueller, Darcy / Three Hills / (403) 823-9788				C
St. Paul Municipal Seed Cleaning Assoc. Ltd / St. Paul / (780) 645-3939				C
Selte, Donald / Vermilion / (780) 853-2484				R
Shultz, Shawn / Didsbury / (403) 335-3694				C
Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617	S	F	R	

## CDC NASSER

**BI: CDC, Dist: N/A**

Davidson, E.Daryl & Dean / Kitscoty / (780) 846-2456				C
Harbin, Clifford Thomas & Bruce Clifford / Rivercourse / (780) 745-2268				C
Sand, Ron W. & David R. / McLaughlin / (780) 745-2251				C

## CDC RUFFIAN

**BI: CDC, Dist: FP Genetics**

Sim, Darwin & Derek / Ponoka / (780) 372-2111				R
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## CDC SEABISCUIT

**BI: CDC, Dist: Canterra Seeds**

Jonk, Nicholas / Westlock / (780) 349-5458				R
Sendziak, Don P. & Stephen / Edmonton / (780) 434-1322				R

## CDC SO-I

**BI: CDC, Dist: N/A**

Gibson, Donald / Sangudo / (780) 785-2214				C
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## CDC WEAVER

**BI: CDC, Dist: N/A**

Solick, Leonard & Kelsey & Corwin / Halkirk / (403) 884-2358				R
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## STRIDE

**BI: AAFC (Winnipeg), Dist: SeCan Members**

Jones, Greg Thomas / Ponoka / (403) 783-6495			S	
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## TRIACTOR

**BI: SW Seed Ltd., Dist: Canterra Seeds**

Sendziak, Don P. & Stephen / Edmonton / (780) 434-1322*			F	R
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# SPRING TRITICALE

Variety	Overall Station Years of Testing	Overall Yield	Yield Category <sup>1</sup> (% AC Ultima)				Agronomic Characteristics:							Disease Tolerance: <sup>6</sup>			
			Low < 60 (bu/ac)	Medium 60-80 (bu/ac)	High 80-110 (bu/ac)	V. High > 110 (bu/ac)	Maturity Rating <sup>3</sup>	Test Weight (lb/bu)	TSW <sup>4</sup> (g)	Height (cm)	Resistance to: <sup>5</sup>			Ergot	Stripe Rust	Bunt	FHB <sup>7</sup>
			Ldg.	Shat.	Sprt.												
<b>Varieties tested in the 2013 trials (Yield and agronomic data only directly comparable to AC Ultima)</b>																	
AC Ultima (bu/ac)		86	47	73	99	143											
AC Ultima <sup>2</sup>	188	100	100	100	100	100	E	56	45	97	G	G	F	MS	MR	R	I
Brevis	35	109+	103	107+	112+	110+	M	60	45	91	G	G	F	MR	MR	R	I
Sunray	48	98-	100	98	97	95	E	56	45	92	VG	G	F	MR	MR	R	MS
Taza ☉	48	98	101	97	100	95-	M	57	47	99	G	G	F	I	MR	R	S
<b>Previously tested varieties (Yield and agronomic data only directly comparable to AC Ultima)</b>																	
Bumper ☉	41	104	117+	99	101	96	E	45	45	89	VG	G	F	XX	MR	R	MS
Bunker ☉	49	91-	87-	93-	89-	93	VL	48	48	107	F	G	F	XX	MR	R	I
Pronghorn	179	101	99	100	101	100	M	43	43	99	G	G	F	I	MR	R	MR
Tyndal ☉	55	101	106	101	97	96	L	44	44	97	G	G	P	XX	MR	R	MS

**REMARKS:** Triticale is late maturing compared to CWRS wheat (approximately five days later). AC Ultima yields about 30% more than AC Barrie (CWRS wheat) in areas of adaptation. Bunker, Taza, and Tyndal have heads with reduced-awns which may be beneficial when harvested as forage or silage. ☉ - Protected by Plant Breeders' Rights. <sup>1</sup>Yield Test Categories are based on the site means for small plot trials. The defined range for each Yield Test Category is provided in bu/ac. The actual yields for AC Ultima are reported in the Overall, Low, Medium, High, and Very High Yield Test Categories. <sup>2</sup>Yields are reported relative to AC Ultima. Varieties that are statistically higher (+) or lower (-) yielding than AC Ultima are indicated. No symbol after the yield figure indicates that there is no statistical difference from AC Ultima. <sup>3</sup>Maturities rated as: VE = Very Early; E = Early; M = Medium; L = Late; VL = Very Late. The long term average maturity for AC Ultima is 112 days and rated as Early (E). <sup>4</sup>TSW: Thousand Seed Weight. <sup>5</sup>Rating categories: VG = Very Good; G = Good; F = Fair; P = Poor; VP = Very Poor. <sup>6</sup>Disease tolerance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate; MS = Moderately Susceptible; S = Susceptible. <sup>7</sup>Fusarium Head Blight (FHB) infection is highly influenced by the environment and heading date. Under high levels of FHB all varieties will sustain damage.

## TRITICALE - SPRING

S	F	R	C
S	F		

### AC ULTIMA

BI: N/A, Dist: FP Genetics

Solick, Leonard & Kelsey & Corwin / Halkirk / (403) 884-2358

### BREVIS

BI: AAFC, Dist: N/A

Sim, Darwin & Derek / Ponoka / (780) 372-2111

### BUNKER

BI: FCDC (Lacombe), Dist: FP Genetics

Airth, Jock & Linda / Brooks / (403) 362-4372

Solick, Leonard & Kelsey & Corwin / Halkirk / (403) 884-2358

### PRONGHORN

BI: FCDC (Lacombe), Dist: No Rep

Mans, John / Nobleford / (403) 824-3585

### SUNRAY

BI: AAFC, Dist: N/A

Fabian, Patrick V. / Tilley / (403) 377-2000

Jonk, Nicholas / Westlock / (780) 349-5458

Markert Seeds Ltd. / Vulcan / (403) 485-6708

Witdouck, Dale & Calvin / Iron Springs / (403) 738-4395

### TAZA

BI: FCDC (Lacombe), Dist: Solick Seeds

Solick, Leonard & Kelsey & Corwin / Halkirk / (403) 884-2358

### TYNDAL

BI: FCDC (Lacombe), Dist: SeCan Members

Card, Gordon B. / Magrath / (403) 758-3444


Corns, Bryan & Gary / Grassy Lake / (403) 655-2464

Dyck, Heinz W. & Colin & Alan / Rosemary / (403) 378-3321

Feenstra, Lloyd / Barons / (403) 757-3737

Lyons, Keith / Fairview / (780) 835-5435

S			
S			
	F	R	C
		R	C
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S	F	R	C
		R	C
S			C
		R	C
			C



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CDC Buteo Winter Wheat      Meredith Barley  
Morgan Oats

# CANADA WESTERN AMBER DURUM

Variety	Overall Station Years of Testing	Overall Yield	Yield Category <sup>1</sup> (% Strongfield)			Agronomic Characteristics:					Disease Tolerance: <sup>6</sup>					
			Low < 45 (bu/ac)	Medium 45-90 (bu/ac)	High > 90 (bu/ac)	Maturity Rating <sup>3</sup>	Test Weight (lb/bu)	TSW <sup>4</sup> (g)	Height (cm)	Resistance to: <sup>5</sup>		Loose Smut <sup>7</sup>	Bunt <sup>7</sup>	Stripe Rust	Leaf Spot	FHB <sup>8</sup>
<b>Varieties tested in the 2014 trials (Yield and agronomic data only directly comparable to Strongfield)</b>																
<b>Strongfield (bu/ac)</b>		<b>64</b>	<b>35</b>	<b>61</b>	<b>96</b>											
<b>Strongfield<sup>2</sup> ☼</b>	<b>128</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>M</b>	<b>63</b>	<b>45</b>	<b>85</b>	<b>F</b>	<b>F</b>	<b>S</b>	<b>I</b>	<b>MR</b>	<b>MS</b>	<b>S</b>
AAC Current ☼	21	98	107	95	XX	M	62	44	88	F	F	MS	MR	MR	I	MS
AAC Marchwell VB ▲	23	101	XX	97	99	M	63	46	83	F	F	MR	R	R	MS	MS
AAC Raymore ☼	34	97	99	98	94	M	62	47	82	F	F	MS	MR	MR	I	S
CDC Desire ▲	34	102	106	101	101	E	62	44	83	F	G	MS	R	MR	I	S
CDC Fortitude ▲	23	103	XX	101	103	M	63	45	83	G	F	MS	R	R	MS	MS
CDC Vivid ▲	34	100	104	99	98	M	62	45	83	G	F	I	R	MR	I	S
<b>Previously tested varieties (Yield and agronomic data only directly comparable to Strongfield)</b>																
AC Avonlea ☼ †	60	94-	100	89-	95-	M	63	44	90	F	F	S	R	I	MS	MS
AC Navigator ☼	65	95-	102	93-	93-	M	63	45	77	G	G	S	R	R	S	S
Brigade ☼	69	103	105	103	102	L	63	48	88	G	F	MS	R	MR	I	MS
CDC Verona ☼	46	102	103	103	99	M	62	46	82	G	F	MS	R	R	MS	MS
Enterprise ☼	48	101	104	100	102	M	63	44	83	G	F	MS	MR	R	I	MS
Eurostar ☼	47	102	100	105+	99	L	64	47	88	G	F	MS	R	R	I	MS
Transcend ☼	35	102	103	101	100	M	62	47	89	F	F	S	R	R	I	MS

**REMARKS:** Generally, durum wheat is best adapted to southern Alberta. Outside of this area, durum is late maturing and often subject to quality loss. Strongfield yields about 10% higher than AC Barrie in areas of best adaptation. VB - designates a varietal blend to preserve the Sm1 midge tolerance gene. AAC Raymore and CDC Fortitude have a solid stem that confers resistance to the wheat stem sawfly. AAC Marchwell VB has tolerance to the orange wheat blossom midge. All durum varieties are susceptible to two new races of loose smut and are generally more susceptible to Fusarium Head Blight than CWRS wheat varieties. New registrations: AAC Current (DT813), AAC Durafield (DT832), AAC Cabri (DT840), AAC Marchwell VB (DT833), AAC Spitfire (DT844), CDC Carbide (DT574) and CDC Fortitude (DT570). Insufficient data to describe: AAC Cabri, AAC Durafield, AAC Spitfire, CDC Carbide VB. ☼ - Protected by Plant Breeders' Rights. ▲ - Plant Breeders' Rights applied for. XX - Insufficient data to describe. † - Flagged for removal. <sup>1</sup>Yield Test Categories are based on the site means for small plot trials. The defined range for each Yield Test Category is provided in bu/ac. The actual yields for Strongfield are reported in the Overall and Low, Medium, and High Yield Test Categories. Note that small plot yields may be 10-15% higher than field scale results. <sup>2</sup>Yields are reported relative to Strongfield. Varieties that are statistically higher (+) or lower (-) yielding than Strongfield are indicated. No symbol after the yield figure indicates no statistical difference. <sup>3</sup>Maturities rated as: VE = Very Early; E = Early; M = Medium; L = Late; VL = Very Late. The long term average maturity for Strongfield is 105 days and is rated as Medium (M). <sup>4</sup>Thousand Seed Weight. <sup>5</sup>Rating Categories: VG = Very Good; G = Good; F = Fair; P = Poor; VP = Very Poor. <sup>6</sup>Disease tolerance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate; MS = Moderately Susceptible; S = Susceptible. <sup>7</sup>Varieties rated Intermediate (I) to Susceptible (S) for loose smut or bunt should be treated with a systemic seed treatment to reduce the potential for infection. <sup>8</sup>Fusarium Head Blight (FHB) infection is highly influenced by the environment and heading date. Under high levels of FHB all varieties will sustain damage.

## WHEAT - DURUM

### AAC CURRENT

BI: AAFC (Swift Current), Dist: N/A

Stamp Seeds / Enchant / (403) 739-2233

### AAC RAYMORE

BI: AAFC (Swift Current), Dist: SeCan Members

Chin Ridge Seeds Ltd. / Taber / (403) 223-3900

Corns, Bryan & Gary / Grassy Lake / (403) 655-2464

Hierath, Michael Wayne & Philip / Milk River / (403) 647-2347

Huvenaars, Carl / Hays / (403) 725-2213

Kiffiak, Edwin Harry & Nathan John / Foremost / (403) 867-2338

Mercer, Lloyd A. & C. & Ryan & Bolstad, Leslie / Lethbridge / (403) 308-2297

Stamp Seeds / Enchant / (403) 739-2233

Welsh, Donald Alan / Milk River / (403) 647-2228

Welsh, Stuart Jason / Milk River / (403) 647-2228

Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434

Willms, Kevin J. / Grassy Lake / (403) 655-2450

### AC NAVIGATOR

BI: AAFC (Swift Current), Dist: CPS (Canada) Inc.

Crop Production Services Canada / Didsbury / (403) 335-3055

### CDC BRIGADE, CDC FORTITUDE & CDC VIVID

BI: N/A, Dist: CPS (Canada) Inc.

Proven Seed / CPS (Canada) Inc. / High River / (403) 336-4826

### ENTERPRISE

BI: AAFC (Swift Current), Dist: Canterra Seeds

Haney Farms / Picture Butte / (403) 738-4517

Mercer, L. A. & C. & Ryan & Bolstad, Leslie / Lethbridge / (403) 308-2297

Welsh, Donald Alan / Milk River / (403) 647-2228

### STRONGFIELD

BI: AAFC (Swift Current), Dist: SeCan Members

Chin Ridge Seeds Ltd. / Taber / (403) 223-3900\*

Crooymans, John, Joseph & Andrew / Bow Island / (403) 545-6333

Hierath, Michael Wayne & Philip / Milk River / (403) 647-2347

Willms, Kevin J. / Grassy Lake / (403) 655-2450

### TRANSCEND

BI: AAFC, Dist: FP Genetics

Benci, Dennis / Carmangay / (403) 643-2294

Chin Ridge Seeds Ltd. / Taber / (403) 223-3900

Logan, Glenn C. & Marie & Douglas / Lomond / (403) 792-3696

Welsh, Donald Alan / Milk River / (403) 647-2228



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# CANADA WESTERN RED SPRING

Variety	Overall Station Years of Testing	Yield Category <sup>1</sup> (% AC Barrie)				Agronomic Characteristics:							Disease Tolerance: <sup>6</sup>				
		Overall Yield	Low < 45 (bu/ac)	Medium 45-70 (bu/ac)	High > 70 (bu/ac)	Mat. Rating <sup>3</sup>	Protein %	Test Weight (lb/bu)	TSW <sup>4</sup> (g)	Height (cm)	Resistance to: <sup>5</sup>		Loose Smut <sup>7</sup>	Bunt <sup>7</sup>	Stripe Rust	Leaf Spot	FHB <sup>8</sup>
											Ldg.	Sprt.					
<b>Varieties tested in the 2014 trials (Yield and agronomic data only directly comparable to AC Barrie)</b>																	
<b>AC Barrie (bu/ac)</b>	<b>59</b>	<b>35</b>	<b>55</b>	<b>79</b>													
<b>AC Barrie<sup>2</sup> ☼</b>	<b>426</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>M</b>	<b>14.1</b>	<b>63</b>	<b>37</b>	<b>89</b>	<b>G</b>	<b>G</b>	<b>MR</b>	<b>I</b>	<b>S</b>	<b>MS</b>	<b>I</b>
5605HR CL ☼	29	110+	XX	116+	107+	M	-0.1	65	39	95	G	XX	R	MR	I	MS	MR
AAC Bailey ☼	58	103	102	104	103	M	-0.6	63	37	92	G	G	MS	I	I	I	I
AAC Brandon ▲	41	114+	106	117+	113+	M	-0.2	65	38	81	G	P	MR	S	MR	I	MR
AAC Elie ▲	41	115+	107	120+	112+	M	-0.1	64	38	81	G	F	I	I	MR	I	I
AAC Redwater ▲	41	103	96	106	104	E	0.0	64	35	87	G	VG	MS	I	MR	MS	I
Cardale ☼	41	105+	100	106+	105	M	-0.3	63	37	84	G	G	I	S	MR	MS	MR
Coleman	29	102	XX	108	98	M	0.0	65	38	97	F	P	S	S	MR	I	MR
CDC VR Morris ☼	27	107+	XX	111+	106	M	0.0	65	37	88	G	P	I	I	XX	I	MR
CDC Plentiful ☼	41	106+	100	108+	106+	M	-0.2	64	35	87	VG	P	R	I	MR	I	MR
CDC Titanium VB ▲	29	108+	XX	115	103	E	0.5	65	41	91	G	P	MS	I	R	MS	MR
Katepwa	342	98-	97-	98-	98-	E	-0.2	62	35	93	F	F	MR	MR	MS	MS	I
Thorsby ▲	29	106	XX	113	103	E	-0.4	64	39	93	G	F	I	S	R	MS	I
<b>Previously tested varieties (Yield and agronomic data only directly comparable to AC Barrie)</b>																	
5602HR ☼ †	80	105+	101	104	109+	M	0.7	63	37	91	G	F	R	MR	I	MS	MR
5603HR ☼	63	105+	104	107+	104+	L	-0.5	63	33	87	G	VG	MS	I	MS	MR	I
5604HR CL ☼	76	99	102	98	99	E	-0.7	63	33	87	G	G	MS	I	XX	MS	I
AC Eatonia ☼	78	94-	87-	97	92-	M	0.4	62	35	92	P	G	I	MR	I	MS	XX
AC Elsa ☼	110	103+	99	105	104	M	0.2	62	35	89	G	F	MR	I	I	I	MS
AC Intrepid ☼	107	102	98	103	105+	E	0.0	62	39	90	G	P	I	MR	MR	MS	MS
AC Splendor	153	95-	93-	96-	98	VE	0.9	61	37	89	F	F	I	I	I	I	MS
Alvena ☼	68	101	100	101	103	E	0.1	63	37	90	G	P	MR	MR	I	XX	MS
Carberry ☼	51	108+	117+	104	105	L	-0.6	64	38	79	VG	F	MR	R	MR	MS	MR
CDC Abound ☼	88	110+	108+	110+	112+	M	-0.1	63	40	82	G	F	I	I	MS	MS	S
CDC Go	92	110+	103	111+	116+	M	-0.1	61	42	83	G	VP	MS	I	MR	S	MS
CDC Imagine ☼	76	104+	102	104	109+	M	0.1	61	37	83	G	F	MR	MR	I	MS	S
CDC Kernen ☼	61	107+	110	102	110+	M	-0.3	63	37	92	G	F	R	I	I	MS	I
CDC Osler	74	106+	103	106+	108+	E	0.0	61	35	85	G	F	MR	MR	I	I	S
CDC Stanley ☼	76	113+	114+	114+	113+	M	-0.8	63	34	87	G	G	MR	S	I	I	MS
CDC Thrive ☼	66	108+	107	107+	110+	M	-0.4	63	36	88	G	P	MR	I	I	I	MS
CDC Utmost VB ☼	53	112+	115+	112+	111+	M	-0.2	64	36	85	G	G	MS	S	I	I	MS
Fieldstar VB ☼	50	102	102	102	102	M	-0.4	63	33	88	F	VG	I	I	MS	I	I
Glenn ☼	61	104	110+	100	104	L	-0.2	65	36	85	VG	F	I	I	MR	I	I
Goodeve VB ☼	96	105+	107+	103	104	M	-0.1	62	36	88	VG	G	MR	MS	I	MS	S
Harvest ☼	118	102	98	103	104	M	-0.1	62	36	84	VG	VG	MR	S	MR	MS	S
Infinity ☼	74	104+	104	104+	106+	M	-0.4	62	33	89	G	G	MR	MR	MS	MS	S
Kane ☼	51	99	95-	98	102	M	0.4	64	36	85	G	VG	MS	I	I	I	I
Lillian ☼	87	104+	111+	100	104	M	0.2	61	37	86	F	G	I	MR	R	MR	S
McKenzie †	104	103+	101	104	105+	M	-0.4	62	34	90	F	VG	MS	R	MS	I	I
Muchmore ☼	53	111+	119+	107	110	L	-0.9	63	37	75	VG	G	MR	R	MR	MS	MS
Park	45	97	91-	98	102	VE	-0.2	62	35	92	F	G	MR	XX	MS	MS	S
Peace	53	100	100	97	103	M	0.1	63	37	92	G	P	R	R	MR	XX	S
Shaw VB ☼	53	112+	116+	109+	113+	M	-0.9	63	37	92	G	G	S	MR	I	MS	MS
Stettler ☼	69	112+	119+	109+	111+	M	-0.3	63	37	84	G	G	R	I	I	S	MS
Superb ☼	184	112+	110+	112+	115+	L	-0.4	62	42	85	G	F	I	MR	S	S	MS
SY433 ☼	44	104	101	104	104	M	-1.0	64	39	95	G	G	I	S	XX	I	MR
Unity VB ☼	71	110+	111+	110+	111+	M	-0.7	64	36	89	G	G	MS	R	MS	MS	MS
Vesper VB ☼	45	106+	106	108+	104	M	-1.5	63	37	90	F	F	I	S	S	I	I
WR859 CL ☼	79	106+	110+	103	107+	M	-0.4	64	34	81	G	G	R	R	I	MS	MR
Waskada ☼	67	100	101	98	102	M	0.1	64	37	92	G	VG	MR	R	MS	MS	MR

**REMARKS:** CWRS wheat grown under irrigation tends to have lower grades than when grown under rainfed conditions. AC Eatonia and Lillian have a solid stem that confers resistance to the wheat stem sawfly. 5604HR CL, 5605HR CL, CDC Abound, CDC Imagine, CDC Thrive and WR589 CL are tolerant to the CLEARFIELD® herbicides Adrenalin SC and Allitude FX. VB - designates a varietal blend to preserve the Smt1/midg2 tolerance gene. New CWRS registrations: 5605HR CL (BW918), AAC Prevail VB (BW462), AAC W1876 (BW957), Coleman (PT765), CDC Titanium VB (PT584) and Thorsby (BW947). ☼ - Protected by Plant Breeders' Rights. ▲ - Plant Breeders' Rights applied for. XX - Insufficient data to describe. † - Flagged for removal. <sup>1</sup>Yield Test Categories are based on the site means for small plot trials. The defined range for each Yield Test Category is provided in bu/ac. The actual yields for AC Barrie are reported in the Overall, Low, Medium, and High Yield Test Categories. Note that small plot yields may be 10-15% higher than field scale results. <sup>2</sup>Yields are reported relative to AC Barrie. Varieties that are statistically higher (+) or lower (-) yielding than AC Barrie are indicated. No symbol after the yield figure indicates no statistical difference from AC Barrie. <sup>3</sup>Maturities rated as: VE = Very Early; E = Early; M = Medium; L = Late; VL = Very Late. The long term average maturity for AC Barrie is 106 days and rated as Medium (M). <sup>4</sup>Thousand Seed Weight. <sup>5</sup>Rating Categories: VG = Very Good; G = Good; F = Fair; P = Poor; VP = Very Poor. <sup>6</sup>Disease tolerance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate; MS = Moderately Susceptible; S = Susceptible. <sup>7</sup>Varieties rated Intermediate (I) to Susceptible (S) for loose smut or bunt should be treated with a systemic seed treatment to reduce the potential for infection. <sup>8</sup>Fusarium Head Blight (FHB) infection is highly influenced by the environment and heading date. Under high levels of FHB all varieties will sustain damage. Moderately Resistant (MR) and Resistant (R) ratings for FHB do not equate to immunity.

# CANADA WESTERN HARD WHITE SPRING

Variety	Overall Station Years of Testing	Yield Category <sup>1</sup> (% AC Barrie)			Agronomic Characteristics:							Disease Tolerance: <sup>6</sup>					
		Overall Yield	Low < 45 (bu/ac)	Medium 45-70 (bu/ac)	High > 70 (bu/ac)	Mat. Rating <sup>3</sup>	Protein %	Test Weight (lb/bu)	TSW <sup>4</sup> (g)	Height (cm)	Resistance to: <sup>5</sup>		Loose Smut <sup>7</sup>	Bunt <sup>7</sup>	Stripe Rust	Leaf Spot	FHB <sup>8</sup>
											Ldg.	Sprt.					
<b>Varieties tested in the 2014 trials (Yield and agronomic data only directly comparable to AC Barrie)</b>																	
AAC Iceberg ▲	39	104	96	106	107	M	-0.7	64	39	86	G	P	MS	I	MR	MS	I
CDC Whitewood ▲	29	106	XX	113	103	M	-0.9	64	39	87	G	G	S	S	I	MS	I
<b>Previously tested varieties (Yield and agronomic data only directly comparable to AC Barrie)</b>																	
Snowbird ☉	94	101	99	101	101	M	-0.2	62	36	89	G	G	MR	MS	MS	S	I
Snowstar ☉	58	102	99	103	102	M	-0.8	64	30	82	G	G	MS	S	MS	I	MS
Whitehawk ☉	42	107	112+	108+	106	E	-0.9	63	33	90	G	G	I	MS	MS	MS	I

**REMARKS:** New CWHWS registrations: AAC Whitefox (HW027) and CDC Whitewood (HW612). Insufficient data to describe: AAC Prevail VB, AAC W1876, AAC Whitefox, CDC Whitewood. ☉ - Protected by Plant Breeders' Rights. ▲ - Plant Breeders' Rights applied for. XX - Insufficient data to describe. † - Flagged for removal.

# CANADA PRAIRIE SPRING RED

Variety	Overall Station Years of Testing	Yield Category <sup>1</sup> (% AC Barrie)			Agronomic Characteristics:							Disease Tolerance: <sup>6</sup>					
		Overall Yield	Low < 45 (bu/ac)	Medium 45-90 (bu/ac)	High > 90 (bu/ac)	Maturity Rating <sup>3</sup>	Protein %	Test Weight (lb/bu)	TSW <sup>4</sup> (g)	Height (cm)	Resistance to: <sup>5</sup>		Loose Smut <sup>7</sup>	Bunt <sup>7</sup>	Stripe Rust	Leaf Spot	FHB <sup>8</sup>
											Ldg.	Sprt.					
<b>Varieties tested in the 2014 trials (Yield and agronomic data only directly comparable to AC Barrie)</b>																	
<b>AC Barrie (bu/ac)</b>	<b>59</b>	<b>35</b>	<b>55</b>	<b>79</b>													
AAC Ryley ☉	37	118+	XX	120+	114+	M	-0.6	60	48	82	G	G	I	R	S	MS	MS
Enchant VB ☉*	37	115+	XX	119+	112	M	-0.7	62	48	85	F	G	MS	R	XX	MS	S
AAC Penhold ▲	28	115+	XX	121+	111+	M	-0.4	62	46	73	VG	G	I	R	MR	I	MR
AAC Foray VB ▲	28	127+	XX	131+	118+	M	-0.7	62	52	88	G	G	MS	I	MR	MS	I
SY985 ☉*	51	112+	XX	115+	109+	M	0.1	61	44	78	G	P	R	MR	XX	I	I
SY995 ▲	28	117+	XX	119+	111+	M	-1.3	61	45	82	G	P	S	MR	MR	MS	MS
<b>Previously tested varieties (Yield and agronomic data only directly comparable to AC Barrie)</b>																	
5700PR ☉*	117	117+	XX	121+	113+	L	-1.9	62	42	75	VG	F	MS	R	MS	MS	MS
5701PR ☉†*	113	115+	XX	119+	112+	M	-1.6	61	42	78	G	P	I	I	MR	MS	S
5702PR ☉*	52	117+	XX	119+	114+	M	-1.8	61	40	79	G	P	MS	I	MS	I	MS
AC Crystal *	278	115+	XX	119+	113+	L	XX	62	42	79	G	P	I	R	S	I	S
AC Foremost *	124	116+	XX	119+	112+	M	XX	62	43	73	VG	F	I	R	S	MS	S
Conquer VB ☉*	51	121+	XX	123+	120+	M	-0.8	62	45	84	G	P	MS	R	MR	I	MS

# CANADA WESTERN GENERAL PURPOSE

Variety	Overall Station Years of Testing	Yield Category <sup>1</sup> (% AC Barrie)			Agronomic Characteristics:							Disease Tolerance: <sup>6</sup>					
		Overall Yield	Low < 45 (bu/ac)	Medium 45-90 (bu/ac)	High > 90 (bu/ac)	Ma-turity Rating <sup>3</sup>	Pro-tein %	Test Weight (lb/bu)	TSW <sup>4</sup> (g)	Height (cm)	Resistance to: <sup>5</sup>		Loose Smut <sup>7</sup>	Bunt <sup>7</sup>	Stripe Rust	Leaf Spot	FHB <sup>8</sup>
											Ldg.	Sprt.					
<b>Varieties tested in the 2014 trials (Yield and agronomic data only directly comparable to AC Barrie)</b>																	
AAC NRG097 ▲	28	123+	XX	123+	119+	L	-2.4	61	47	83	G	F	I	R	S	I	I
AAC Proclaim ▲	28	115+	XX	118+	115+	M	-2.2	62	40	92	F	G	MR	S	MS	I	MR
Pasteur *	37	137+	XX	142+	132+	VL	-2.3	62	42	82	VG	G	MS	S	MR	I	I
SY087 ▲	28	122+	XX	124+	111+	M	-0.8	62	41	85	G	F	MS	MR	MR	I	MR
<b>Previously tested varieties (Yield and agronomic data only directly comparable to AC Barrie)</b>																	
CDC NRG003 ☉*	51	121+	XX	125+	118+	M	-1.9	61	43	80	G	F	MS	R	XX	MS	S
NRG010 ☉*	51	126+	XX	130+	122+	L	-2.6	62	41	83	G	P	MS	R	R	I	MS
Minnedosa ☉*	44	120+	XX	124+	117+	M	-1.9	62	43	82	G	G	I	MR	MR	MS	MS

**REMARKS:** Recent CPSR varieties have improved quality compared to AC Foremost. VB - designates a varietal blend to preserve the Sm1 midge tolerance gene. CPS varieties are more susceptible to take-all root rot than other wheat classes. Varieties in the General Purpose market class are intended for ethanol and livestock feed purposes. New CPSR registrations: AAC Crusader (HY1603), AAC Foray VB (HY1610), AAC Penhold (HY1319), AAC Tenacious VB (HY1615) and SY995 (HY995). New CWGP registrations: AAC Innova (GP47), AAC NRG097 (GP097), AAC Proclaim (GP80), SY087 (GP087). Insufficient data to describe: AAC Crusader, AAC Tenacious VB, AAC Innova. ☉ - Protected by Plant Breeders' Rights. ▲ - Plant Breeders' Rights applied for. XX - Insufficient data to describe. † - Flagged for removal. \* Yield figures based on direct and indirect comparisons with AC Barrie. <sup>1</sup>Yield Test Categories are based on the site means for small plot trials. The defined range for each Yield Test Category is provided in bu/ac. The actual yields for AC Barrie are reported in the Overall, Low, Medium, and High Yield Test Categories. Note that small plot yields may be 10-15% higher than field scale results. <sup>2</sup>Yields are reported relative to AC Barrie. Varieties that are statistically higher (+) or lower (-) yielding than AC Barrie are indicated. No symbol after the yield figure indicates no statistical difference from AC Barrie. <sup>3</sup>Maturities rated as: VE = Very Early; E = Early; M = Medium; L = Late; VL = Very Late. The long term average maturity for AC Barrie is 106 days and rated as Medium (M). <sup>4</sup>Thousand Seed Weight. <sup>5</sup>Rating Categories: VG = Very Good; G = Good; F = Fair; P = Poor; VP = Very Poor. <sup>6</sup>Disease tolerance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate; MS = Moderately Susceptible; S = Susceptible. <sup>7</sup>Varieties rated Intermediate (I) to Susceptible (S) for loose smut or bunt should be treated with a systemic seed treatment to reduce the potential for infection. <sup>8</sup>Fusarium Head Blight (FHB) infection is highly influenced by the environment and heading date. Under high levels of FHB all varieties will sustain damage. Moderately Resistant (MR) and Resistant (R) ratings for FHB do not equate to immunity.



# CANADA WESTERN SOFT WHITE SPRING

Variety	Overall Station Years of Testing	Yield Category <sup>1</sup> (% AC Andrew)				Agronomic Characteristics:							Disease Tolerance: <sup>6</sup>					
		Overall Yield	Low < 45 (bu/ac)	Medium 45-90 (bu/ac)	High > 90 (bu/ac)	Mat. Rating <sup>3</sup>	Protein %	Test Weight (lb/bu)	TSW <sup>4</sup> (g)	Height (cm)	Resistance to: <sup>5</sup>			Loose Smut <sup>7</sup>	Bunt <sup>7</sup>	Stripe Rust	Leaf Spot	FHB <sup>8</sup>
											Ldg.	Shat.	Sprt.					
<b>Varieties tested in the 2014 trials (Yield and agronomic data only directly comparable to AC Andrew)</b>																		
AC Andrew (bu/ac)		82	43	77	115													
AC Andrew <sup>2</sup>	154	100	100	100	100	L	10.9	62	39	79	VG	VG	P	S	S	I	MS	I
AAC Chiffon ▲	26	105+	XX	105+	102	L	-0.5	62	46	92	G	VG	P	S	S	MR	I	S
<b>Previously tested varieties (Yield and agronomic data only directly comparable to AC Andrew)</b>																		
AC Meena	51	97-	101	97-	95	L	0.0	61	37	80	G	G	F	MS	S	MR	I	S
Sadash ☉	51	110+	113+	109+	109+	L	0.2	63	39	82	VG	VG	P	I	S	R	I	S

**REMARKS:** AC Andrew yields about 35% more than AC Barrie. SWS wheat varieties may have demand as a feedstock for ethanol production. New registrations: AAC Chiffon (SWS408). ☉ - Protected by Plant Breeders' Rights. ▲ - Plant Breeders' Rights applied for. XX - Insufficient data to describe. <sup>1</sup>Yield Test Categories are based on the site means for small plot trials. The defined range for each Yield Test Category is provided in bu/ac. The actual yields for AC Andrew are reported in the Overall, Low, Medium, and High Yield Test Categories. Note that small plot yields may be 10-15% higher than field scale results. <sup>2</sup>Yields are reported relative to AC Andrew. Varieties that are statistically higher (+) or lower (-) yielding than AC Andrew are indicated. No symbol after the yield figure indicates no statistical difference from AC Andrew. <sup>3</sup>Maturities rated as: VE = Very Early; E = Early; M = Medium; L = Late; VL = Very Late. The long term average maturity for AC Andrew is 110 days and rated as Late (L). <sup>4</sup>Thousand Seed Weight. <sup>5</sup>Rating Categories: VG = Very Good; G = Good; F = Fair; P = Poor; VP = Very Poor. <sup>6</sup>Disease tolerance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate; MS = Moderately Susceptible; S = Susceptible. <sup>7</sup>Varieties rated Intermediate (I) to Susceptible (S) for loose smut or bunt should be treated with a systemic seed treatment to reduce the potential for infection. <sup>8</sup>Fusarium Head Blight (FHB) infection is highly influenced by the environment and heading date. Under high levels of FHB all varieties will sustain damage.

## WHEAT - MIDGE TOLERANT

	S	F	R	C
<b>AAC TENACIOUS - HY1603</b> BI: N/A, Dist: N/A Stamp Seeds / Enchant / (403) 739-2233		F		
<b>CDC UTMOST - HARVEST</b> BI: N/A, Dist: FP Genetics Dalton, Dennis / Wainwright / (780) 842-2361 Galloway Seeds Ltd. / Fort Saskatchewan / (780) 998-3036 Hoff, Peter Edward / Gleichen / (403) 734-2140 Laliberté, Adam & Vos, Henry / Fairview / (780) 835-5286 Markert Seeds Ltd. / Vulcan / (403) 485-6708 Solick, Leonard & Kelsey & Corwin / Halkirk / (403) 884-2358			R R R	C C C
<b>CONQUER - 5701PR</b> BI: AAFC (Winnipeg), Dist: Canterra Seeds Berge, James Garnet / Dawson Creek / (250) 759-4773 Haney Farms / Picture Butte / (403) 738-4517 Lefsrud, Kevin J. & Edmund J. / Viking / (780) 336-2500 Markert Seeds Ltd. / Vulcan / (403) 485-6708 Parkland Fertilizers / Wetaskiwin / (780) 352-3359 Rasmussen, Brian Dale & Joel Trevor / Standard / (403) 644-3800 Richards, Cliff & Dan / Sexsmith / (780) 766-2266 Sendziak, Don P. & Stephen / Edmonton / (780) 434-1322 Unrau, George / La Crete / (780) 928-0096				C R C C C C C C C
<b>ENCHANT - AC CRYSTAL</b> BI: N/A, Dist: FP Genetics Dalton, Dennis / Wainwright / (780) 842-2361 Sand, Ron W. & David R. / McLaughlin / (780) 745-2251			R R	C C

	S	F	R	C
<b>GOODEVE - AC INTREPID</b> BI: AAFC (Winnipeg), Dist: Alliance Seed Lefsrud, Kevin J. & Edmund J. / Viking / (780) 336-2500				C
<b>HY1610 - AAC PENHOLD</b> BI: AAFC (Winnipeg), Dist: SeCan Members Dyck, Heinz W. & Colin & Alan / Rosemary / (403) 378-3321 Hoff, Peter Edward / Gleichen / (403) 734-2140 Klassen, Ken / Rosemary / (403) 378-4408		S S		R
<b>SHAW - AC DOMAIN</b> BI: AAFC (Winnipeg), Dist: SeCan Members Solick, Leonard & Kelsey & Corwin / Halkirk / (403) 884-2358 Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617				C F R

## WHEAT - SPRING

	S	F	R	C
<b>5604HR, 5605HR, 5700PR &amp; 5702PR</b> BI: N/A, Dist: CPS (Canada) Inc. Proven Seed / CPS (Canada) Inc. / High River / (403) 336-4826				C
<b>AAC BRANDON</b> BI: AAFC (Swift Current), Dist: SeCan Members Crooymans, John, Joseph & Andrew / Bow Island / (403) 545-6333 Dyck, Heinz W. & Colin & Alan / Rosemary / (403) 378-3321 Huvenaars, John & Lisa / Hays / (403) 725-2126 Kittle, James William & Andrew / Viking / (780) 336-2583 Mueller, Darcy / Three Hills / (403) 823-9788 Pare, Raymond A. / Wainwright / (780) 842-2073 Sendziak, Don P. & Stephen / Edmonton / (780) 434-1322				R C C C S S S F



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<b>AAC CHIFFON</b>				
<b>BI: AAFC, Dist: N/A</b>				
Chin Ridge Seeds Ltd. / Taber / (403) 223-3900		F		
Kiffiak, Edwin Harry & Nathan John / Foremost / (403) 867-2338	S	F		
Markert Seeds Ltd. / Vulcan / (403) 485-6708		F		
Stamp Seeds / Enchant / (403) 739-2233	S	F		
Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434	S			
<b>AAC ELIE</b>				
<b>BI: AAFC, Dist: Alliance Seed</b>				
Logan, Glenn C. & Marie & Douglas / Lomond / (403) 792-3696			R	
Mercer, Lloyd A. & C. & Ryan & Bolstad, Leslie / Lethbridge / (403) 308-2297	F	R		
Sich, Louis John & Ivan & Martin / Trochu / (403) 442-2112		R		
Stamp Seeds / Enchant / (403) 739-2233	S	F	R	C
Van Roessel, William & Jean / Bow Island / (403) 545-6018		R		
<b>AAC ICEBERG</b>				
<b>BI: AAFC, Dist: Alliance Seed</b>				
Logan, Glenn C. & Marie & Douglas / Lomond / (403) 792-3696			R	
Mercer, Lloyd A. & C. & Ryan & Bolstad, Leslie / Lethbridge / (403) 308-2297*	S	F		C
<b>AAC PENHOLD</b>				
<b>BI: AAFC (Swift Current), Dist: SeCan Members</b>				
Baier, Bill & Dean / Clyde / (780) 348-5791	S		R	
Cyre, Clifford & Greg / Westlock / (780) 349-4775		R		
Ellis, Brian / Olds / (403) 556-2890		R		
Galloway Seeds Ltd. / Fort Saskatchewan / (780) 998-3036	S		R	
Goldstrom, David / Red Deer County / (403) 227-2133		R		
Hadway, W. Tom & Carol / Didsbury / (403) 335-4929		R		
Hallett, Dale R. & Richard / Carstairs / (403) 337-3072		R		
Hoff, Peter Edward / Gleichen / (403) 734-2140		R		
Holmstrom, Darrell & Barbara / Killam / (780) 385-3574	S		R	
Jackson, Thomas / Killam / (780) 385-2332		F	R	
Lindholm, Craig & Stevan & Dane & L. / New Norway / (780) 352-3240	S	F		
Lopushinsky, Julian / Bruderheim / (780) 796-2048		R		
Macy, Don & Timothy / Waskatenau / (780) 358-2411		R		
Mueller, Richard J. & R.R. & Rosemary / Barrhead / (780) 674-2595	S		R	
Nisbet, Andrew E. & Diane E. / Bowden / (403) 224-3788	S		R	
Oatway, Ward / Lacombe / (403) 784-3001	S		R	
Radke, Bryan Victor / Barrhead / (780) 674-5715	S		R	

Thompson, M. Ellwood & Kelly / Red Deer County / (403) 728-3535				R
Victoor, Rene & Jamie / Sturgeon County / (780) 459-3253				R
<b>AAC REDWATER</b>				
<b>BI: AAFC (Winnipeg), Dist: SeCan Members</b>				
Galloway Seeds Ltd. / Fort Saskatchewan / (780) 998-3036			F	R C
Hadland, Edward / Baldonnel / (250) 789-3646			F	
Hadway, W. Tom & Carol / Didsbury / (403) 335-4929	S	F	R	
Mueller, Darcy / Three Hills / (403) 823-9788		S		
Oatway, Ward / Lacombe / (403) 784-3001			R	
Sendziak, Don P. & Stephen / Edmonton / (780) 434-1322			F	
Trueblood, Brian G. / Dapp / (780) 954-3745			R	
Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617	S	F	R	
Weigum, Garry / Three Hills / (403) 443-2476			R	
Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434			R	
Witdouck, Dale & Calvin / Iron Springs / (403) 738-4395			R	
<b>AAC RYLEY</b>				
<b>BI: AAFC (Swift Current), Dist: SeCan Members</b>				
Baier, Bill & Dean / Clyde / (780) 348-5791			F	C
Dyck, Heinz W. & Colin & Alan / Rosemary / (403) 378-3321	S	F		
Foster, Norman R. / Beaverlodge / (780) 354-2107			R	
Gibson, Donald / Sanguo / (780) 785-2214			C	
Hadland, Edward / Baldonnel / (250) 789-3646			F	C
Hadway, W. Tom & Carol / Didsbury / (403) 335-4929			R	
Harris, William & Peter & Linda & Thomas & A. / Beaverlodge / (780) 354-2823	S	F	R	
Kopjar, Gerald M. / Rowley / (403) 368-2409			F	C
Lindholm, Craig & Stevan & Dane & L. / New Norway / (780) 352-3240			R	
McDonald, Gerald / Co. Of Grande Prairie #1 / (780) 538-3868			R	
Mercer, Lloyd A. & C. & Ryan & Bolstad, Leslie / Lethbridge / (403) 308-2297*		F	R	
Metzger, Don / Three Hills / (403) 572-3284			C	
Ohrn, Norman / Thorsby / (780) 985-2263			R	
Penwest Seeds / Three Hills / (403) 443-7212			R	C
Shultz, Shawn / Didsbury / (403) 335-3694		F	R	
Smithers, Graydon / Three Hills / (403) 443-7737			C	
Trueblood, Brian G. / Dapp / (780) 954-3745			C	
Wuthrich, David / Cecil Lake / (250) 781-3527			C	
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<b>BI: AAFC (Lethbridge), Dist: SeCan Members</b>				
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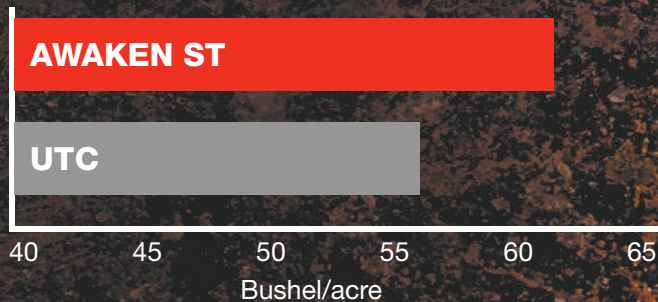
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# WINTER WHEAT

Variety	Overall Station Years of Testing	Yield Category <sup>1</sup> (% Radiant)				Agronomic Characteristics:										Disease Tolerance: <sup>7</sup>				
		Overall Yield	Low < 45	Medium 45-75	High 75-105	V. High > 105	Wint. Surv. <sup>3</sup>	Mat. Rating <sup>4</sup>	Prtn. %	Test			Resistance to: <sup>3</sup>		Bunt	Stripe Rust	Leaf Rust	Stem Rust	FHB <sup>8</sup>	
			(bu/ac)	(bu/ac)	(bu/ac)	(bu/ac)				Weight (lb/bu)	TSW <sup>5</sup> (g)	Height (cm)	Kernel Type <sup>6</sup>	Ldg.						Shat.
<b>CANADA WESTERN RED WINTER</b>																				
<b>Yield and agronomic data only directly comparable to Radiant</b>																				
<b>Radiant (bu/ac)</b>	<b>77</b>	<b>37</b>	<b>62</b>	<b>89</b>	<b>114</b>															
<b>Radiant<sup>2</sup> ☉</b>	<b>211</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>VG</b>	<b>L</b>	<b>12.0</b>	<b>63</b>	<b>36</b>	<b>89</b>	<b>HR</b>	<b>VG</b>	<b>G</b>	<b>S</b>	<b>MS</b>	<b>S</b>	<b>S</b>	<b>S</b>	
AAC Gateway ☉	46	101	XX	101	100	XX	F	M	0.9	64	34	77	HR	VG	G	S	MR	I	MR	I
AC Bellatrix †	188	98	105	100	96-	100	F	L	0.3	64	36	91	HR	F	G	I	S	S	S	I
AC Tempest	117	97-	96	97	96-	99	P	VL	1.5	63	37	91	HR	VG	G	MS	MR	S	S	I
CDC Buteo	154	96-	93-	99	94-	102	VG	M	0.3	65	34	91	HR	F	G	S	S	I	I	MR
CDC Chase	14	109	XX	XX	XX	XX	F	M	0.6	65	33	94	HR	F	G	S	MR	R	R	MS
CDC OSPREY †	190	99	98	101	98	102	VG	M	0.1	63	31	93	HR	G	G	S	S	MS	MS	MS
Emerson ☉	59	99	XX	97	100	XX	G	M	0.5	64	30	86	HR	VG	G	S	MR	I	R	R
Flourish ☉	84	99	XX	100	98	104	F	E	0.5	63	35	80	HR	VG	G	MR	I	I	I	S
Moats ☉	55	103	XX	100	105	XX	G	M	0.7	65	33	92	HR	F	G	MS	MR	R	R	S

## CANADA WESTERN GENERAL PURPOSE

### Yield and agronomic data only directly comparable to Radiant

Accipiter ☉	61	104+	XX	107+	104	101	G	M	-0.6	64	30	83	HR	VG	G	S	S	R	MR	S
Broadview ☉	87	100	XX	103	99	101	G	E	-0.5	64	32	81	HR	G	G	S	S	R	R	S
CDC Falcon <sup>9</sup>	181	100	89-	102	99	101	F	E	-0.5	63	31	75	HR	VG	G	S	S	MR	MR	S
CDC Ptarmigan	95	106+	101	108+	105+	104	G	M	-1.7	61	34	93	SW	F	G	S	S	S	S	I
Peregrine ☉	53	108+	XX	107	109+	XX	VG	M	-0.7	64	34	97	HR	F	G	S	MR	MR	I	I
Pintail ☉	59	108+	XX	107+	109+	XX	VG	L	-1.4	61	29	88	HR	G	G	S	MR	MS	MS	S
Sunrise	53	107+	XX	105	107+	XX	G	M	-0.9	61	32	89	SR	G	G	S	MR	MR	MR	XX
Swainson	29	114+	XX	108	115+	XX	F	M	-0.2	64	39	95	HR	F	G	S	MR	R	R	XX

**REMARKS:** Winter wheat can be grown successfully in all areas of Alberta if seeded into standing stubble within the optimal seeding date period (generally before September 15) and if there is adequate snowfall. Varieties with poor winter survival are generally not suitable outside of southern Alberta. Radiant has resistance to the wheat curl mite, the vector for Wheat Streak Mosaic Virus. Varieties rated Moderately Susceptible (MS) or Susceptible (S) to bunt should be treated with a systemic seed treatment to reduce the potential for infection. CDC Ptarmigan and Pintail have an awnless head which may improve palatability when harvested as forage or silage. Fusarium head blight infection may be reduced if varieties with Intermediate (I) or better resistance are used and when seeding occurs before September 15. Fields in southern Alberta should be inspected in the fall for infestation by Russian wheat aphid, as it may reduce winter survival. AAC Gateway will be available in fall 2015. CDC Chase will not be available in fall 2015. ☉ - Protected by Plant Breeders' Rights. ▲ - Plant Breeders' Rights applied for. XX - Insufficient data to describe. † Flagged for removal. <sup>1</sup>Yield Test Categories are based on the site means for small plot trials. The defined range for each Yield Test Category is provided in bu/ac. The actual yields for Radiant are reported in the Overall, Low, Medium, High and Very High Yield Test Categories. Note that small plot yields may be 10-15% higher than field scale results. <sup>2</sup>Yields are reported relative to Radiant. Varieties that are statistically higher (+) or lower (-) yielding than Radiant are indicated. No symbol after the yield figure indicates no statistical difference from Radiant. <sup>3</sup>Rating Categories: VP = Very Poor; P = Poor; F = Fair; G = Good; VG = Very Good. <sup>4</sup>Maturity ratings: VE = Very Early; E = Early; M = Medium; L = Late; VL = Very Late. The long term average maturity for Radiant is 222 days after January 1 (August 10) and is rated as Late (L). <sup>5</sup>Thousand Seed Weight. <sup>6</sup>Kernel Type: HR = Hard Red; SW = Soft White; SR = Soft Red. <sup>7</sup>Disease Tolerance Ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate; MS = Moderately Susceptible; S = Susceptible. <sup>8</sup>Fusarium Head Blight (FHB) infection is highly influenced by the environment and heading date. Under high levels of the FHB, all varieties will sustain damage. A Resistant (R) rating for FHB does not equate to immunity. <sup>9</sup>CDC Falcon was moved to the Canada Western General Purpose class on August 1, 2014. For more information, please refer to the Variety Designation Lists at the CGC website ([www.grainscanada.gc.ca](http://www.grainscanada.gc.ca)).

# WHEAT - WINTER

	S	F	R	C
<b>AAC GATEWAY</b>				
<b>BI: AAFC, Dist: Seed Depot</b>				
Stamp Seeds / Enchant / (403) 739-2233	S		R	C
Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434		F		
<b>AC TEMPEST</b>				
<b>BI: AAFC (Lethbridge), Dist: SeCan Members</b>				
Murray, Bruce & Wesley / Lethbridge / (403) 327-9389		F		
<b>CDC CHASE</b>				
<b>BI: CDC, Dist: Canterra Seeds</b>				
Benci, Dennis / Carmangay / (403) 643-2294	S			
<b>CDC PTARMIGAN</b>				
Mercer, Lloyd A. & C. & Ryan & Bolstad, Leslie / Lethbridge / (403) 308-2297*		F		C
<b>EMERSON</b>				
<b>BI: AAFC, Dist: Canterra Seeds</b>				
Airth, Jock & Linda / Brooks / (403) 362-4372	S			
Corns, Bryan & Gary / Grassy Lake / (403) 655-2464	S	F		
<b>FLOURISH</b>				
<b>BI: AAFC (Lethbridge), Dist: SeCan Members</b>				
Corns, Bryan & Gary / Grassy Lake / (403) 655-2464				
Brummelhuis, Tara / Vauxhall / (403) 654-2734			R	
Haney Farms / Picture Butte / (403) 738-4517				C
Stamp Seeds / Enchant / (403) 739-2233				R
Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434		F		R
Witdouck, Dale & Calvin / Iron Springs / (403) 738-4395				R

## MOATS

### BI: CDC, Dist: SeCan Members

Airth, Jock & Linda / Brooks / (403) 362-4372			F	R	C
Benci, Dennis / Carmangay / (403) 643-2294				R	C
Gibson, Donald / Sangudo / (780) 785-2214				R	
Macyk, Don & Timothy / Waskatenau / (780) 358-2411				R	
Mercer, Lloyd A. & C. & Ryan & Bolstad, Leslie / Lethbridge / (403) 308-2297		S	F	R	C
Metzger, Don / Three Hills / (403) 572-3284				R	C
Sekulic, John Jr. / Rycroft / (780) 765-2280				R	C
Sekulic, Warren, F / Rycroft / (780) 765-2234				R	C
Stamp Seeds / Enchant / (403) 739-2233				R	C
Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434			F	R	C

## PINTAIL

### BI: FCDC (Lacombe), Dist: Mastin Seeds

Mastin, Robert B. / Sundre / (403) 556-2609				R	C
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## RADIANT

### BI: AAFC (Lethbridge), Dist: Canterra Seeds

Airth, Jock & Linda / Brooks / (403) 362-4372					C
Corns, Bryan & Gary / Grassy Lake / (403) 655-2464					C
Crooymans, John, Joseph & Andrew / Bow Island / (403) 545-6333					C
Haney Farms / Picture Butte / (403) 738-4517					R
Van Roessel, William & Jean / Bow Island / (403) 545-6018					C



# FALL RYE

Variety	Overall Station Years of Testing	Overall Yield	Yield Category <sup>1</sup> (% Prima)				Agronomic Characteristics:							
			Low < 48 (bu/ac)	Medium 48-80 (bu/ac)	High 80-112 (bu/ac)	V. High > 112 (bu/ac)	Winter Survival <sup>3</sup>	Maturity Rating <sup>4</sup>	Test Weight (lb/bu)	TSW <sup>5</sup> (g)	Falling Number (sec)	Height (cm)	Resistance to: <sup>3</sup>	
Yield and agronomic data only directly comparable to Prima														
Prima (bu/ac)		82	36	62	89	125								
Prima <sup>2</sup>	98	100	100	100	100	100	EX	E	58	33	181	121	F	F
Brasetto	15	154+	XX	XX	XX	141+	EX	M	59	37	249	105	G	XX
Hazlet	41	123+	XX	125+	134	114	EX	M	59	39	137	108	G	XX
AC Remington †	39	99	120	100	94	87	EX	M	57	32	181	99	G	VG
AC Rifle †	98	100	114	105	100	86	EX	E	57	30	174	88	VG	VG

**REMARKS:** AC Rifle and AC Remington are semi-dwarf varieties. Brasetto is a hybrid variety. Hazlet has reduced viscosity which improves feed performance in monogastric livestock. Hazlet has lower falling number than other varieties. No fall rye variety performance data were collected in 2010 and 2011. XX-Insufficient data to describe. †-Flagged for removal. <sup>1</sup>Yield Test Categories are based on the site means for small plot trials. The defined range for each Yield Test Category is provided in bu/ac. The actual yields for Prima are reported in the Overall, Low, Medium, High and Very High Yield Test Categories. Note that small plot yields may be 10-15% higher than field scale results. <sup>2</sup>Yields are reported relative to Prima. Varieties that are statistically higher (+) or lower (-) yielding than Prima are indicated. No symbol after the yield figure indicates no statistical difference from Prima. <sup>3</sup>Resistance/Tolerance rating categories: EX = Excellent; VG = Very Good; G = Good; F = Fair; P = Poor; VP = Very Poor. <sup>4</sup>Maturities rated as: VE = Very Early; E = Early; M = Medium; L = Late; VL = Very Late. The long term average maturity for Prima is 215 days after January 1 (August 3) and is rated as Early (E). <sup>5</sup>Thousand Seed Weight.

## TRITICALE - WINTER

	S	F	R	C
<b>BOBCAT</b> BI: AAFC (Swift Current), Dist: Corns Brothers Farms Corns, Bryan & Gary / Grassy Lake / (403) 655-2464		F	R	C
<b>LUOMA</b> BI: FCDC (Lacombe), Dist: Corns Brothers Farms Corns, Bryan & Gary / Grassy Lake / (403) 655-2464		F	R	C
<b>METZGER</b> BI: FCDC (Lacombe), Dist: Haney Farms Ltd. Corns, Bryan & Gary / Grassy Lake / (403) 655-2464 Haney Farms / Picture Butte / (403) 738-4517		F	R	C
<b>PIKA</b> BI: FCDC (Lacombe), Dist: N/A Airth, Jock & Linda / Brooks / (403) 362-4372 Kiffiak, Edwin Harry & Nathan John / Foremost / (403) 867-2338			R	C

## RYE

	S	F	R	C
<b>AC HAZLET</b> BI: AAFC (Swift Current), Dist: SeCan Members Degenhardt, Keith L., Terry L. & Kerry / Hughenden / (780) 856-2383				R
<b>BRASETTO</b> BI: N/A, Dist: FP Genetics McNaughton, Brian / Lethbridge / (403) 308-9914				C
<b>MUSKETEER</b> BI: AAFC (Swift Current), Dist: SeCan Members Degenhardt, Keith L., Terry L. & Kerry / Hughenden / (780) 856-2383 Weigum, Sarah / Three Hills / (403) 443-9599				R
<b>PRIMA</b> BI: AAFC (Swift Current), Dist: SeCan Members Mueller, Darcy / Three Hills / (403) 823-9788 Stamp Seeds / Enchant / (403) 739-2233 Weigum, Sarah / Three Hills / (403) 443-9599 Willms, Kevin J. / Grassy Lake / (403) 655-2450		F	R	C

## WINTER TRITICALE

Variety	Overall Station Years of Testing	Overall Yield <sup>1</sup> (% Pika)	Winter Survival <sup>3</sup>	Maturity Rating <sup>4</sup>	Test			Lodging Resistance <sup>3</sup>
					Weight (lb/bu)	TSW <sup>5</sup> (g)	Height (cm)	
Yield and agronomic data only directly comparable to Pika								
Pika (bu/ac)		73						
Pika <sup>2</sup>	42	100	VG	L	54	38	119	VP
Bobcat	40	94	F	VL	54	36	99	G
Luoma	14	105	VG	VL	54	39	118	F
Metzger	14	102	VG	L	54	35	107	G
CDC OSPREY (W. Wheat)	28	111 +	VG	M	64	32	88	G

**REMARKS:** Winter triticale has a winter hardiness potential slightly lower than winter wheat. Bobcat, Luoma and Metzger have heads with reduced awn length (awnletted), making them more palatable in forage applications. No winter triticale variety performance data were collected from 2009-2014. <sup>1</sup>The actual yields for Pika are provided in bu/ac. Note that small plot yields may be 10-15% higher than field scale results. <sup>2</sup>Yields are reported relative to Pika. Varieties that are statistically higher (+) or lower (-) yielding than Pika are indicated. No symbol after the yield figure indicates no statistical difference from Pika. <sup>3</sup>Rating categories: VG = Very Good; G = Good; F = Fair; P = Poor; VP = Very Poor. <sup>4</sup>Maturities rated as: VE = Very Early; E = Early; M = Medium; L = Late; VL = Very Late. The long term average maturity for Pika is 224 days after January 1 (August 12) or about a week later than most winter wheat varieties. <sup>5</sup>Thousand Seed Weight.



# Midge Tolerant Wheat Reaches Five-Year Milestone

Stewardship efforts ensure midge tolerance remains strong.

**2015 MARKS THE FIFTH ANNIVERSARY** of producers in Western Canada growing and protecting midge tolerant wheat.

Since the launch of the first commercial varieties in 2010, the industry has witnessed strong uptake of the technology that helps producers defend against orange blossom wheat midge, which can significantly reduce crop yield and grade. Not surprisingly, popularity of midge tolerant wheat continues to grow.

According to the Canadian Grain Commission, 18 per cent of total western wheat acres in 2014 were midge tolerant — that's up from 16 per cent the previous year. In Alberta, producers in the Peace River area were caught off-guard with a midge infestation in 2013. In 2014, midge tolerant varieties were shipped into the region and producers took advantage of the technology in anticipation of more midge pressure.

"Wheat producers really value this technology and are committed to maintaining its viability," says Mike Espeseth, communications manager for the Western Grains Research Foundation (WGRF) and co-chair of the Midge Tolerant Wheat Stewardship Team.

"The proof is in the numbers. Nearly four million acres of midge tolerant wheat were planted in 2013 and 2014 alone," he says. "The adoption is a testament to the quality of the varieties and the benefit and convenience that they provide producers."

Midge tolerant wheat varieties offer flexibility in crop rotations and seeding dates. Most importantly, they eliminate the need to use insecticide as a control method. Instead, midge damage is dramatically reduced with help of Sm1, a midge tolerant gene that is moved into wheat varieties using traditional plant breeding techniques.

"Growers told us they didn't have to worry about their wheat," says Ed Mazurkewich, business development consultant for AgCall, whose team interviewed producers in 2014. "They didn't have to scout and they didn't have to spray. Not spraying an insecticide was pretty critical to them," he says.

Midge tolerant wheat is sold as a varietal blend; 90 per cent is made up of a midge tolerant variety and the remaining 10 per cent is a midge susceptible variety. But that doesn't mean producers sacrifice any agronomic benefits. Those who grow midge tolerant wheat report significant yield and grade benefits — approximately \$36 per acre (based on wheat priced at \$6 bu/ac).

The varietal blends provide an "interspersed refuge system" that disrupts the midge's ability to produce resistant offspring, preventing a build-up of the resistant midge population. Without an interspersed refuge system, midge tolerance could break down within 10 years.

There are currently nine varieties of midge tolerant wheat available in Western Canada. Producers are anticipating the release of the first durum variety in 2016, which features the same Sm1 gene as the other varieties. Hence, the same stewardship principles will apply.

## STEWARDSHIP EFFORTS PAY OFF

"At the same time that we celebrate this five-year milestone, we need to keep vigilant to ensure the technology is protected for future growing seasons. To date, there is no other known source of midge tolerance. In other words, there is no Plan B if we lose the Sm1 gene," says Brenda Trask, communications manager, SeCan and co-chair of the Midge Tolerant Wheat Stewardship Team. The industry coalition, which includes plant breeders, government, seed growers, seed distributors and producer groups, has been active educating Western Canadian wheat producers on the importance of proper stewardship of the technology since before the launch of the technology.

To preserve midge tolerance, producers who buy midge tolerant wheat sign a Stewardship Agreement that limits the use of farm-saved seed to one generation past certified seed, keeping the refuge at the desired level.

"Five years of diligent stewardship communications has led to a strong awareness of the practices that are critical to preserving the technology," says Trask. "In addition to producer education, monitoring and enforcement are a key part of our committee's mandate."

It appears the efforts are paying off. Results of an annual audit show 96 per cent of producers were in compliance with the stewardship practices in 2014.

"By far, the majority of growers said that the technology and the stewardship was really critical for them. They understand it and they are doing everything they can to protect the technology," says Mazurkewich, whose auditors contacted a randomized list of producers and set up on-farm visits to ask questions about the status of their stewardship requirements.

According to Mazurkewich, the midge tolerant wheat audit was a pleasant experience for everyone involved. "Our auditors enjoyed working on this. It was a kitchen table, eyeball-to-eyeball conversation about farming and the use of good technology. The growers were absolutely appreciative and supportive that someone was following up and driving toward better awareness."

With this outlook, it looks promising that the industry will celebrate more midge tolerance milestones in the future.

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*Editor's Note: This article has been brought to you by the Midge Tolerant Wheat Stewardship Team, a broad industry coalition representing plant breeders, government, seed growers, seed distributors and producer groups.*



# Canola Variety Information

**CANOLA** Performance Trials (CPT) have been conducted since 2011 and represent the next generation in variety evaluation for western Canadian canola growers. The trials were designed to provide:

- Relevant, unbiased and timely performance data that reflects actual production practices;
- Comparative data on leading varieties and newly introduced varieties; and,
- Detailed reporting on agronomic characteristics such as yield, height, lodging, maturity and economic performance, and site specific performance variables including weather, soil type, crop nutrition, seeding and harvest management.

The CPT trials are conducted under the guidance of a governance committee that approves participating varieties, protocol design, data collection, analyses, reports and finance management. The Canola Council of Canada delivers the program on the committee's behalf.

The CPT summaries provided in this factsheet are based on successful trials that did not show confounding factors during field inspections. There were 25 successful small plot trials and more than 100 field scale trials in 2014. The small trial sites were distributed based on seeded acres in Manitoba, Saskatchewan and Alberta.

Small plot trials included popular varieties and varieties that are newly introduced. The new small plot system ensured that:

- All varieties are treated with appropriate commercially associated herbicides and seed treatments;
- An independent third party representative inspected all trials; and,
- Harvest occurred at the most appropriate time to minimize harvest losses due to maturity differences.

Field scale comparisons add extra perspective for assessing consistency in variety performance. A check variety 73-75 RR was included in all field scale trials since 2012. The field scale comparisons are 2012-2014 averages that provide robust estimates of performance relative to the check.

To ensure quality data and statistical analysis, the CPT technical committee established protocols and developed research plot designs. Performance objectives were established to provide guidelines on timely field operations and data collection. All sites were inspected to verify that guidelines were followed for fair comparisons among the varieties tested. Audits of field scale projects give growers the confidence that the protocol was conducted in a scientifically sound manner and that comparisons are appropriate. Qualified professionals with extensive background in conducting field scale research trials performed the audits.

Small yield differences can easily be random variation and thus are less likely to be real effects of varieties. When comparing average zone yields for varieties in the small plot data, the least significant difference (LSD) ranged from nine to 13 per cent in 2014. This is based on a confidence level that significant differences would occur by chance less than five per cent of the time. A confidence level of 10 per cent is sometimes used in statistical analyses, and this would result in a slightly smaller LSD. In the small plot design used, varieties are grouped by herbicide system, which means that the LSD shown strictly applies only to comparisons between a few varieties of the same herbicide system. Comparisons between many varieties or between different herbicide systems are still valid but the LSD would be larger. More importantly, comparisons between varieties within the same herbicide system reveal only genetic differences, whereas variety comparisons from different herbicide systems involve the net effect of both genetic and herbicide effects (weed control + crop tolerance).

When comparing variety yields in the field scale summaries, an asterisk (\*) indicate yields that are statistically different than 73-75 RR (5 per cent level).

As you combine results from more sites, the statistical power to determine if small differences are not due to chance often improves quickly up to 15 to 20 sites, and then marginally after that. This means that smaller differences are more relevant when all sites are averaged than just a few selected sites. Also, when there are a high number of individual sites for comparing two varieties, this increases the predictability that the average yield differences would likely occur in other fields in future years.

## Where are CPT results available?

Results are available through an online interactive tool at [www.canolaperformancetrials.ca](http://www.canolaperformancetrials.ca). The interactive tool allows growers to explore many agronomic factors and to search for trial data in specific geographic areas near their farming operations. Details on management, operations and environmental data for each individual site will be reported online. The online tool has an economic calculator that includes the costs associated with growing the selected variety to assist growers in determining potential profitability.

Data is also available in booklet form that will be distributed through various publications, and can be obtained from your local agri-retailer.

NOTE: *Brassica rapa* (Polish Canola) and Canola Quality *Brassica juncea* – no varieties were tested under PCT in 2012 through 2014.

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\*115 independent large-plot trials in Canada between 1997 and 2012 showed an average yield increase of 8%. Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

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# 2014 CANOLA VARIETY YIELDS (SMALL SCALE TRIALS)

Main Characteristics of Varieties

Variety	Distributor	2014 Yield (bu/ac)				Maturity (days)			Height (cm)			Clubroot Rating
		Long (5)*	Mid (14)*	Short (6)*	Average	Long	Mid	Short	Long	Mid	Short	
<b>Clearfield</b>												
5525 CL	BrettYoung	76	54	62	58	94	95	101	122	107	110	S
VR 9560 CL***	Crop Production Services	79	58	64	61	97	96	102	124	118	110	S
<b>LSD</b>		<b>9</b>	<b>8</b>	<b>8</b>								
<b>Liberty Link</b>												
5440	Bayer CropScience	82	61	69	65	96	95	100	126	113	115	S
L130	Bayer CropScience	81	59	67	63	93	93	98	121	110	108	S
L252	Bayer CropScience	92	64	74	69	96	95	101	124	109	111	S
L261	Bayer CropScience	85	64	72	67	96	96	102	136	122	124	S
<b>LSD</b>		<b>8</b>	<b>5</b>	<b>6</b>								
<b>Roundup Ready</b>												
6044 RR	BrettYoung	78	57	61	60	95	95	101	119	104	104	S
6060 RR	BrettYoung	77	57	63	60	98	97	103	122	108	112	S
6064 RR	BrettYoung	79	59	64	62	97	97	103	118	106	107	S
1990	CANTERRA SEEDS	81	59	67	63	94	95	101	114	107	116	S
08H0004	Cargill - VICTORY Canola	80	59	63	62	100	98	104	130	115	112	S
09H7763	Cargill - VICTORY Canola	84	59	63	63	95	96	101	119	109	111	S
V12-1**	Cargill - VICTORY Canola	82	60	64	63	95	95	101	118	108	108	S
V12-2**	Cargill - VICTORY Canola	78	54	60	58	97	96	102	121	103	101	S
VR 9562 GC	Crop Production Services	82	61	68	64	94	94	100	123	112	114	R
73-15 RR	DEKALB	XX	XX	58	50			97			99	S
73-75 RR	DEKALB	81	58	65	62	93	94	99	112	102	105	S
74-44 RR	DEKALB	82	57	63	61	94	95	100	113	105	104	S
74-54 RR	DEKALB	82	59	66	63	94	93	99	113	105	106	R
11DL30318	DL Seeds	80	57	62	60	95	95	101	121	107	113	S
SY4157	Syngenta Canada	85	62	66	65	98	97	102	130	112	114	S
SY4114	Syngenta Canada	78	57	61	60	94	93	100	112	105	104	S
SY4135	Syngenta Canada	78	55	63	59	94	94	100	109	102	105	S
<b>Varieties that have been supported for registration</b>												
13DL30122	CANTERRA SEEDS	81	60	65	63	97	96	101	127	107	116	S
13DL30323	DL Seeds	87	64	71	68	97	94	102	123	108	110	S
VT-SN 11-2786	Crop Production Services	79	58	64	62	94	94	100	119	105	108	S
<b>LSD</b>		<b>8</b>	<b>5</b>	<b>7</b>								

\* Long, mid and short growing seasons. The number of sites tested is included in brackets. All these tested varieties are rated resistant for blackleg.

\*\* specialty oil profile and available for premium pricing. \*\*\*Higher oil content and may be eligible for pricing premiums. XX = less than 5 sites in zone and data not shown.

LSD = least significant yield difference (5% level) within herbicide system.

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## 2012-2014 CANOLA VARIETY YIELDS (LARGE SCALE STRIP TRIALS)

Variety	Long	Mid	Short	Average
<b>Check</b>				
73-75 RR (yield in bu/ac)	48	48	49	48
<b>% Yield of 73-75 RR</b>				
<b>Liberty Link</b>				
5440	101 (35)	106* (63)	106* (22)	104* (120)
L130	101 (54)	104* (98)	109* (35)	104* (187)
L154	99 (16)	101 (25)	99 (9)	100 (50)
L159	95 (14)	100 (22)	101 (8)	98 (44)
L252	108* (29)	106* (57)	107* (18)	107* (104)
L261	104* (30)	105* (48)	108* (15)	105* (93)
<b>Roundup Ready</b>				
1990	97 (19)	101 (58)	102 (12)	101 (89)
6044 RR	XX	95 (8)	XX	94* (10)
6060 RR	95* (15)	97 (23)	96 (6)	96* (44)
73-15 RR	99 (5)	103* (53)	102 (30)	103* (88)
73-45 RR	99 (23)	102* (69)	103* (29)	101 (121)
74-44 BL	101 (59)	105* (124)	105* (46)	104* (229)
74-47 CR	99 (8)	99 (37)	99 (8)	99 (53)
74-54 RR	102* (40)	102* (89)	104* (29)	102* (158)
SY4135	XX	102 (11)	XX	102 (16)
V12-1	XX	103 (18)	XX	102 (19)
V12-2	XX	101 (15)	XX	100 (16)

Long, mid and short growing seasons. The number of comparison sites is included in brackets.

XX - less than 5 site-years data in zone. \* Indicates that the yield average was significantly different than 73-75 RR (paired, two-tailed t-test).

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## CANOLA - JUNCEA

S F R C

X121 CL

BI: N/A, Dist: CPS (Canada) Inc.

Proven Seed/CPS (Canada) Inc / High River / (306)480-8520

C

## CANOLA - NAPUS

S F R C

1012 RR, 1016 RR, 2012 CL, 2016 CL & 2020 CL

BI: N/A, Dist: Dow AgroSciences

Dow AgroSciences / Calgary / (403) 735-8800

C

1990

BI: N/A, Dist: DL Seeds Inc.

Adams, Jayson / Winnipeg / (204) 331-3611

McNaughton, Brian / Lethbridge / (403) 308-9914

C

C

43E02

BI: N/A, Dist: DuPont Pioneer

Pioneer Hi-Bred International Inc. / Lethbridge / (403) 327-6135

C

43E03

BI: N/A, Dist: DuPont Pioneer

Pioneer Hi-Bred International Inc. / Lethbridge / (403) 327-6135

C

45H29

BI: N/A, Dist: DuPont Pioneer

Pioneer Hi-Bred International Inc. / Lethbridge / (403) 327-6135

C

45H31

BI: N/A, Dist: DuPont Pioneer

Pioneer Hi-Bred International Inc. / Lethbridge / (403) 327-6135

C

45H33

BI: N/A, Dist: DuPont Pioneer

Pioneer Hi-Bred International Inc. / Lethbridge / (403) 327-6135

C

45H76

BI: N/A, Dist: DuPont Pioneer

Pioneer Hi-Bred International Inc. / Lethbridge / (403) 327-6135

C

45S56

BI: N/A, Dist: DuPont Pioneer

Pioneer Hi-Bred International Inc. / Lethbridge / (403) 327-6135

C

46H75

BI: N/A, Dist: DuPont Pioneer

Pioneer Hi-Bred International Inc. / Lethbridge / (403) 327-6135

C

InVigor 5440

BI: N/A, Dist: Bayer CropScience

Bayer CropScience Inc. / Lethbridge / (403) 329-0706

C

5525CL

BI: N/A, Dist: BrettYoung Seeds

McNaughton, Brian / Lethbridge / (403) 308-9914

C

5535 CL

BI: N/A, Dist: BrettYoung Seeds

McNaughton, Brian / Lethbridge / (403) 308-9914

C

6056CR

BI: N/A, Dist: BrettYoung Seeds

McNaughton, Brian / Lethbridge / (403) 308-9914

C

6064 RR

BI: N/A, Dist: BrettYoung Seeds

McNaughton, Kevin / Lethbridge / (403) 317-4181

C

72P01 CL

BI: U of A, Dist: N/A

Lefsrud, Kevin J. & Edmund J. / Viking / (780) 336-2500

F

73-15RR

BI: N/A, Dist: Monsanto Canada Inc.

Monsanto Canada Inc. / Lethbridge / (403) 360-8043

C

74-44BL

BI: N/A, Dist: Monsanto Canada Inc.

Monsanto Canada Inc. / Lethbridge / (403) 360-8043

C

74-54RR

BI: N/A, Dist: Monsanto Canada Inc.

Monsanto Canada Inc. / Lethbridge / (403) 360-8043

C

CAFE

BI: SW Seed, Dist: N/A

Degenhardt, Keith L., Terry L. & Kerry / Hughenden / (780) 856-2383

F

D3155C

BI: N/A, Dist: DuPont Pioneer

Pioneer Hi-Bred International Inc. / Lethbridge / (403) 327-6135

C

HY HEAR1

BI: N/A, Dist: N/A

McNaughton, Kevin / Lethbridge / (403) 317-4181

C

**InVigor L130**  
**BI: N/A, Dist: Bayer CropScience**  
 Bayer CropScience Inc. / Lethbridge / (403) 329-0706

**InVigor L135C**  
**BI: N/A, Dist: Bayer CropScience**  
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**BI: N/A, Dist: Bayer CropScience**  
 Bayer CropScience Inc. / Lethbridge / (403) 329-0706

**InVigor L160S**  
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 Bayer CropScience Inc. / Lethbridge / (403) 329-0706

**InVigor L252**  
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 Bayer CropScience Inc. / Lethbridge / (403) 329-0706

**PV 530 G**  
**BI: N/A, Dist: CPS (Canada) Inc.**  
 Proven Seed / CPS (Canada) Inc / High River / (306) 480-8520

**PV 531 G**  
**BI: N/A, Dist: CPS (Canada) Inc**  
 Proven Seed / CPS (Canada) Inc / High River / (306) 480-8520

**PV 532 G**  
**BI: N/A, Dist: CPS (Canada) Inc.**  
 Proven Seed / CPS (Canada) Inc / High River / (306) 480-8520

**PV 533 G**  
**BI: N/A, Dist: CPS (Canada) Inc**  
 Proven Seed / CPS (Canada) Inc / High River / (306) 480-8520

**RUGBY**  
**BI: DL Seeds Ltd., Dist: SeCan Members**  
 Warkentin, Harold Kenneth & Errol / Tofteld / (780) 662-2617\*

**SW WIZZARD**  
**BI: SW Seed, Dist: Bonis & Company Ltd.**  
 Lefsrud, Kevin J. & Edmund J. / Viking / (780) 336-2500

**SY4114**  
**BI: N/A, Dist: Syngenta Canada Inc.**  
 McNaughton, Brian / Lethbridge / (403) 308-9914

**SY4157**  
**BI: N/A, Dist: Syngenta Canada Inc.**  
 Syngenta Canada Inc. / Calgary / 1-877-964-3682

**SY4135**  
**BI: N/A, Dist: Syngenta Canada Inc.**  
 McNaughton, Brian / Lethbridge / (403) 308-9914

**VR 9560**  
**BI: N/A, Dist: CPS (Canada) Inc.**  
 Proven Seed / CPS (Canada) Inc / High River / (306) 480-8520

**VR 9561 GS**  
**BI: N/A, Dist: CPS (Canada) Inc.**  
 Proven Seed / CPS (Canada) Inc / High River / (306) 480-8520

**VR 9562 GC**  
**BI: N/A, Dist: CPS (Canada) Inc.**  
 Proven Seed / CPS (Canada) Inc / High River / (306) 480-8520

**VT 500 G**  
**BI: N/A, Dist: CPS (Canada) Inc**  
 Proven Seed / CPS (Canada) Inc / High River / (306) 480-8520

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S F R C

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**BI: AAFC, Dist: Mastin Seeds**  
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**SYNERGY**  
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 BrettYoung / 1-800-665-5015 / [www.brettyoung.ca](http://www.brettyoung.ca)  
 Canterra Seeds Ltd. / (204) 988-9750 / [www.canterra.com](http://www.canterra.com)  
 Cargill Specialty Seeds & Oils / 1-800-323-6232 / [www.victorycanola.com](http://www.victorycanola.com)  
 DEKALB Canada/Monsanto Canada Inc. / 1-800-667-4944 / [www.DEKALB.ca](http://www.DEKALB.ca)  
 DL Seeds / (204) 331-2361 / [www.dlseeds.ca](http://www.dlseeds.ca)  
 Dow AgroSciences / 1-800-667-3852 / [www.dowagro.ca](http://www.dowagro.ca)  
 DuPont Pioneer / (306) 385-3001 / [www.pioneer.com/canada](http://www.pioneer.com/canada)  
 Mastin Seeds / (403) 556-2609 / [www.mastinseeds.com](http://www.mastinseeds.com)  
 Proven Seed/CPS (Canada) Inc. / (306) 480-8520 / [provenseed.ca](http://provenseed.ca)  
 SeCan / 800-665-7333 / [www.secan.com](http://www.secan.com)  
 Syngenta Canada Inc. / 1-877-964-3682 / [www.syngentafarm.ca](http://www.syngentafarm.ca)

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 Alberta Agriculture and Rural Development / 310-FARM (3276) / [www.agriculture.alberta.ca](http://www.agriculture.alberta.ca)  
 Alberta Canola Producers Commission / 1-800-551-6652 / [www.canola.ab.ca](http://www.canola.ab.ca)



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\*Access to other varieties



# FLAX

Variety	Overall Station Years of Testing	Yield Category <sup>1</sup> (% CDC Bethune)					Agronomic Characteristics:			
		Overall Yield	Low < 20 (bu/ac)	Medium 20-35 (bu/ac)	High 35-50 (bu/ac)	V. High > 50 (bu/ac)	Maturity Rating <sup>3</sup>	Seed Size	Height (cm)	Resistance to Lodging <sup>4</sup>
<b>Varieties tested in the 2014 trials (Yield and agronomic data only directly comparable to CDC Bethune)</b>										
<b>CDC Bethune (bu/ac)</b>		<b>36</b>	<b>15</b>	<b>29</b>	<b>45</b>	<b>59</b>				
<b>CDC Bethune<sup>2</sup> ☼</b>	<b>123</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>L</b>	<b>M</b>	<b>58</b>	<b>VG</b>
CDC Glas ☼	23	106+	XX	XX	106	XX	L	M	61	VG
Prairie Grande ☼	67	98-	101	101	92-	99	M	M	54	VG
WestLin 71 ▲	16	95	XX	XX	90	XX	L	M	59	VG
<b>Previously tested varieties (Yield and agronomic data only directly comparable to CDC Bethune)</b>										
AAC Bravo ☼	23	104	XX	XX	103	104+	VL	L	64	VG
CDC Sanctuary ☼	28	105+	XX	100	100	108+	VL	M	64	G
CDC Sorrel ☼	32	104	112	104	100	99	L	L	61	G
Flanders †	49	99	93	101	101	99	VL	S	58	G
Hanley ☼	37	97-	99	97	95	97	M	M	53	VG
Prairie Sapphire ☼	23	96	XX	XX	97	101	L	M	64	G
Prairie Thunder ☼	40	99	101	98	99	99	M	M	55	VG
Taurus ☼	27	98-	103	97	XX	XX	L	M	53	VG


**REMARKS:** New registrations: Westlin 71 (FP2347), CDC Neela (FP2314) and VT50. Insufficient data to describe: CDC Neela, VT50. ☼ - Protected by Plant Breeders' Rights. ▲ - Plant Breeders' Rights applied for. XX-Insufficient data to describe. †-Flagged for removal. <sup>1</sup> Yield Test Categories are based on the site means for small plot trials. The defined range for each Yield Test Category is provided in bu/ac. The actual yields for CDC Bethune are reported in the Overall, Low, Medium, High and Very High Yield Test Categories. <sup>2</sup> Yields are reported relative to CDC Bethune. Varieties that are statistically higher (+) or lower (-) yielding than CDC Bethune are indicated. No symbol after the yield figure indicates that there is no statistical difference from CDC Bethune. <sup>3</sup> Maturity rating: VE = Very Early; E = Early; M = Medium; L = Late; VL = Very Late. The long term average maturity for CDC Bethune in Alberta is 110 days and rated as Late (L). <sup>4</sup> Rating categories: VG = Very Good; G = Good; F = Fair; P = Poor; VP = Very Poor.

FLAX	S	F	R	C
<b>AAC BRAVO</b> BI: AAFC (Morden), Dist: FP Genetics Dalton, Dennis / Wainwright / (780) 842-2361 Logan, Glenn C. & Marie & Douglas / Lomond / (403) 792-3696 Sim, Darwin & Derek / Ponoka / (780) 372-2111			R	
<b>HANLEY</b> BI: AAFC (Morden), Dist: SeCan Members Lefsrud, Kevin J. & Edmund J. / Viking / (780) 336-2500 Stamp Seeds / Enchant / (403) 739-2233			R	
<b>NuLin 70</b> BI: N/A, Dist: CPS (Canada) Inc. Proven Seed / CPS (Canada) Inc / High River / (403) 336-4826				C
<b>PRAIRIE GRANDE</b> BI: AAFC (Lacombe), Dist: SeCan Members Kopjar, Gerald M. / Rowley / (403) 368-2409				C
<b>PRAIRIE SAPPHIRE</b> BI: AAFC (Morden), Dist: Alliance Seed Stamp Seeds / Enchant / (403) 739-2233	S	F		C
<b>WESTLIN 70</b> BI: N/A, Dist: CPS (Canada) Inc. Proven Seed / CPS (Canada) Inc / High River / (403) 336-4826				C
<b>WestLin 71</b> BI: N/A, Dist: CPS (Canada) Inc. Proven Seed / CPS (Canada) Inc / High River / (403) 336-4826				C

<b>WestLin 72</b> BI: N/A, Dist: CPS (Canada) Inc. Proven Seed / CPS (Canada) Inc / High River / (403) 336-4826				C
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## FLAX - RECONSTITUED

FLAX - RECONSTITUED	S	F	R	C
<b>CDC GLAS</b> BI: CDC, Dist: SeCan Members Airth, Jock & Linda / Brooks / (403) 362-4372 Bouw, Curtis / Bow Island / (403) 545-0007 Dovchak, Michael / Brooks / (403) 501-5420 Dyck, Heinz W. & Colin & Alan / Rosemary / (403) 378-3321 Hoff, Peter Edward / Gleichen / (403) 734-2140 Hoffmann, Curtis / Oyen / (403) 664-9617 Holmstrom, Darrell & Barbara / Killam / (780) 385-3574 Huvenaars, Carl / Hays / (403) 725-2213 Huvenaars, John & Lisa / Hays / (403) 725-2126 Huvenaars, Richard / Hays / (403) 725-2213 Jackson, Thomas / Killam / (780) 385-2332 Kopjar, Gerald M. / Rowley / (403) 368-2409 Sich, Louis John & Ivan & Martin / Trochu / (403) 442-2112 Stamp Seeds / Enchant / (403) 739-2233 Weigum, Garry / Three Hills / (403) 443-2476 Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434 Witdouch, Dale & Calvin / Iron Springs / (403) 738-4395			R	C
<b>CDC SANCTUARY</b> BI: CDC, Dist: SeCan Members Benci, Dennis / Carmangay / (403) 643-2294 Feenstra, Lloyd / Barons / (403) 757-3737 Mercer, L. A. & C. & Ryan & Bolstad, L. / Lethbridge / (403) 308-2297*				C
<b>CDC SORREL</b> BI: CDC, Dist: SeCan Members Degenhardt, Keith L., Terry L. & Kerry / Hughenden / (780) 856-2383 King, Harold & Webb, David Gordon / Three Hills / (403) 443-7330 Mans, John / Nobleford / (403) 824-3585 Sendziak, Don P. & Stephen / Edmonton / (780) 434-1322 Zwack, Bryan / Daysland / (780) 374-3577		F		C



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# 2014 Regional Silage Variety Trials

**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, Alta., (780) 612-9712

Battle River Research Group, Forestburg, Alta., (780) 582-7308

Chinook Applied Research Association, Oyen, Alta., (403) 664-3777

Gateway Research Organization, Westlock, Alta., (780) 349-4546

Lakeland Agricultural Research Association, Bonnyville, Alta., (780) 826-7260

Smoky Applied Research and Demonstration Association, Falher, Alta., (780) 837-2900

West-Central Forage Association, Evansburg, Alta., (780) 727-4447

North Peace Applied Research Association, Manning Alta., (780) 836-5230

Peace Country Beef and Forage, Fairview, Alta., (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 and 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 per cent of the recommended cereal rates. Peas were seeded at 75 per cent of their recommended seeding rate and cereals at 50 per cent when in mixtures. The monoculture cereal comparison plots were seeded at 100 per cent 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 Regional Variety Trial 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)			Nutritional Data					
			2	3	4	5	6	Low < 2.0 (t/ac)	Medium 2.0-4.0 (t/ac)	High > 4.0 (t/ac)	CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
<b>Varieties tested in the 2012-2014 trials (Yield and agronomic data only directly comparable to Vivar)</b>																
<b>Vivar (t/ac)</b>	<b>4</b>		<b>4.7</b>	<b>4.8</b>	<b>3</b>	<b>4.5</b>	<b>2.5</b>	<b>1.7</b>	<b>3.3</b>	<b>5.2</b>	<b>10.5</b>	<b>66.2</b>	<b>0.4</b>	<b>0.2</b>	<b>1.3</b>	<b>0.2</b>
<b>Vivar</b>	<b>100</b>	<b>25</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Busby	100	25	99	101	94	105+	95	96	99	103	99	99	97	104	96	88
CDC Austenson	109+	25	103	105	127	106	109	121	104	110	101	100	82	106	102	88
CDC Coalition	98	25	103	96	104	91	106	102	95	100	100	100	80	107	102	84
CDC Cowboy	109+	25	99	110	120	109	108+	115	107	109	95	97	97	108	112	101
CDC Maverick	106	15	94	97	89	109	116	117	108	100	92	98	94	105	97	99
Chigwell	96-	25	90-	91	100	93-	105	110	92-	96	100	98	109	102	105	98
Conlon	91-	15	78-	92	98	85-	104	104	88	90-	92	99	88	112	94	84
Gadsby	109+	25	102	108	119	108+	111	123	105	109	98	99	100	106	99	93
Muskwa	96	15	108	90	102	90-	102	101	96	95	98	99	108	106	116	97
Ponoka	106	25	102	104	112	107+	104	115	101	108	96	99	114	105	102	97
Ranger	100	15	116	99	90	99	98	97	100	102	96	98	111	106	118	102
Seebe	105+	25	101	106	113	105	102	111	103	105	104	97	102	114	110	87
Sundre	95-	25	88	95	95	95	101	101	94	95	103	99	104	109	115	100
Trochu	97	24	96	92	101	99	94	103	94	96	99	101	102	109	103	99
Xena	103	25	97	108	106	101	107	106	103	103	101	100	82	111	97	86

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# PULSE MIXTURES

Variety	Overall Yield	Overall Station Years of Testing	Area (t/ac)					Yield Category (% Vivar)			Nutritional Data					
			2	3	4	5	6	Low < 2.0 (t/ac)	Medium 2.0-4.0 (t/ac)	High > 4.0 (t/ac)	CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
<b>Varieties tested in the 2012-2014 trials (Yield and agronomic data only directly comparable to Vivar)</b>																
<b>Vivar (t/ac)</b>	<b>3.5</b>		<b>3.7</b>	<b>4.3</b>	<b>2.3</b>	<b>3.4</b>	<b>3.1</b>	<b>2.5</b>	<b>3.5</b>	<b>4.7</b>	<b>9.3</b>	<b>63.2</b>	<b>0.4</b>	<b>0.2</b>	<b>1.4</b>	<b>0.2</b>
<b>Vivar</b>	<b>100</b>	<b>25</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Murphy	116	24	94	107	157	126+	98	124	117	107	90	95	76	101	126	89
Pronghorn	110	25	98	95	109	119+	112	107	112	108	102	101	62	110	101	77
40-10/Murphy	96	18	55	76	132	102	95	105	97	75	130	98	153	122	119	133
40-10/Pronghorn	95	18	62	78	113	103	97	99	94	92	125	97	148	117	103	126
40-10/Vivar	94	18	70	77-	108	94	116	101	94	83	143	99	174	112	106	137
CDC Horizon/Murphy	108	25	67	97	144	120	97	112	107	106	111	95	125	99	126	111
CDC Horizon/Pronghorn	106	25	76	91	132+	113	112	108	110	97	124	98	139	106	107	105
CDC Horizon/Vivar	99	25	84	94	112	103	98	95	102	96	130	98	157	107	105	117
CDC Meadow/Murphy	110	7	84	105	XX	125+	103	84	109	121+	104	95	116	101	129	95
CDC Meadow/Pronghorn	103	7	81	91	XX	117	106	81	112	101	122	99	124	113	111	95
CDC Meadow/Vivar	104	7	92	94	XX	116	98	92	113	98	115	100	197	89	105	129

# OATS

Variety	Overall Yield	Overall Station Years of Testing	Area (t/ac)					Yield Category (% Murphy)			Nutritional Data					
			2	3	4	5	6	Low < 2.0 (t/ac)	Medium 2.0-4.0 (t/ac)	High > 4.0 (t/ac)	CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
<b>Varieties tested in the 2012-2014 trials (Yield and agronomic data only directly comparable to Murphy)</b>																
<b>Murphy (t/ac)</b>	<b>3.9</b>		<b>3.8</b>	<b>4.7</b>	<b>3.2</b>	<b>4.4</b>	<b>1.9</b>	<b>1.6</b>	<b>3.4</b>	<b>4.8</b>	<b>8.7</b>	<b>58.8</b>	<b>0.3</b>	<b>0.2</b>	<b>1.9</b>	<b>0.2</b>
<b>Murphy</b>	<b>100</b>	<b>25</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
AC Juniper	95	20	96	98	95	85-	119	112	90	95	121	107	100	116	99	108
AC Morgan	101	25	101	95	100	97	122	111	99	100	112	106	105	115	96	95
AC Mustang	98	25	106	97	86	98	105	112	94	100	124	105	98	110	98	100
CDC Baler	96	24	85-	100	103	96	93	98	95	97	123	107	106	113	101	102
CDC Haymaker	99	17	98	100	125	95	102	117	99	97	119	106	104	110	103	99
CDC So-i	94-	25	91	104	79-	95	95	98	90-	97	119	107	101	105	99	105
Everleaf	86	7	XX	98	108	73-	68	68	95	76	117	104	112	107	100	102
Foothills	99	25	95	97	107	98	102	110+	94	102	120	103	106	109	101	101
Jordan	98	25	107	96	84	97	108	107	95	99	119	105	100	106	97	112
Waldern	100	25	93	104	99	99	111	113	99	100	110	105	109	104	93	98

# TRITICALE

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



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**Forage Helpline – Alberta Ag-Info Centre: 310-FARM (3276) in Alberta and 403-742-7901 outside Alberta.**

### Forage references:

How to Purchase High Quality Forage Seed – FS120 / 45-1

Establishing Perennial Hay and Pasture Crops – FS120 / 22-2

These publications can be obtained from the Alberta Agriculture Publications Office. Call the toll-free line at 1-800-292-5697.

Other forage species and new varieties not listed in this publication are sometimes seeded by producers in Alberta.

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# Special Crops

**THIS PUBLICATION** provides information on pulse variety performance within Alberta and northeastern British Columbia. Important agronomic characteristics and disease resistance information is provided for varieties of field peas, chickpeas, lentils, faba beans, dry beans and soybeans.

The Alberta Regional Variety Testing program for pulse crops is coordinated by Alberta Pulse Growers Commission (APGC) and Alberta Agriculture and Rural Development (AARD). Funding for the program is provided by Agriculture Agri-Food Canada (Growing Forward II), AARD, APG and entry fees (private companies) for the varieties being tested.

Data for this publication are contributed by numerous applied research associations, Prairie Grain Development Committee and AARD.

Variety choice is one of the important decisions any crop producer makes and it should never be based solely on genetic yield potential of a variety. Producers are encouraged to select varieties based on local growing conditions and planned end use. As well, growers should consider other factors such as plant height, standability (lodging) at physiological maturity and disease/pest resistance when selecting which variety to grow. Using long-term, multi-site data will lead to the selection of the best, yield-stable varieties. The yield comparison tables have several features:

- Overall actual yield of the standard check (kg/ha) based on all data available to the testing program is provided along with the number of station years of testing.
- Actual yield of the standard check in each growing area for field pea is reported.

- Overage yield of each variety is expressed relative to the standard check.
- Significant statistical differences relative to the standard check are indicated.

Yields that are statistically higher (+) or lower (-) than the check are indicated. No symbol after the yield figure indicates that there is no statistical difference from the check. Pay particular attention to data on new varieties that have not been fully tested. If a large difference from the check is reported but is not significant, it could mean that yields have varied widely, and/or there are not enough data to prove a statistical difference. With additional years of testing, the reported yield differences will become more accurate.

The following trials were grown in 2014:

- Sixteen green and yellow pea sites established across Alberta and two sites in north eastern British Colombia;
- Four chickpea trials at Bow Island, Brooks, Lethbridge and Medicine Hat;
- Five lentil trials at Bow Island, Brooks, Lethbridge, Medicine Hat and Oyen;
- Three wide row dry bean trials at Bow Island, Lethbridge and Vauxhall;
- Two narrow row dry bean Lethbridge and Vauxhall;
- Eleven fababeans and ten soybean trials established across Alberta.

For additional information, including varieties not listed in this factsheet, please call Alberta Ag-Info Centre toll-free at 1-310-FARM (3276) or check the Alberta Agriculture and Rural Development website, Ropin' the Web at [www.agriculture.alberta.ca/rvt](http://www.agriculture.alberta.ca/rvt).

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# DRY BEANS - NARROW ROW

Variety	Type	Site Years 1997-2014	Yield (% of check)	Days to Bloom <sup>1</sup>	Days to Maturity	TSW <sup>2</sup> (g)	Plant Height (cm)	Lodging <sup>3</sup> (1-5)	Growth Habit <sup>4</sup>
<b>AC BLACK DIAMOND (kg/ha)</b>			<b>2993</b>						
<b>AC BLACK DIAMOND</b>	<b>Black Shiny</b>	<b>20</b>	<b>100</b>	<b>57</b>	<b>102</b>	<b>250</b>	<b>38</b>	<b>2.2</b>	<b>II</b>
AAC Black Diamond 2 (A)	Black Shiny	2	114	64	6	265	34	1.8	II
CDC Blackcomb	Black Matte	4	83	64	2	193	37	1.3	II
<b>ISLAND (kg/ha)</b>			<b>3628</b>						
<b>ISLAND</b>	<b>Pinto</b>	<b>10</b>	<b>100</b>	<b>60</b>	<b>102</b>	<b>338</b>	<b>43</b>	<b>2.6</b>	<b>II</b>
AAC Burdett	Pinto	3	99	61	1	379	40	1.3	II
CDC Marmot	Pinto	3	88	57	-4	425	35	2.0	II
CDC WM 2	Pinto	7	77	58	2	347	41	2.4	II
Medicine Hat	Pinto	6	99	64	5	338	44	1.9	II
Winchester	Pinto	5	80	58	2	302	45	2.1	II
<b>AAC TUNDRA (kg/ha)</b>			<b>4452</b>						
<b>AAC TUNDRA</b>	<b>Great Northern</b>	<b>4</b>	<b>100</b>	<b>55</b>	<b>101</b>	<b>375</b>	<b>44</b>	<b>2.4</b>	<b>II</b>
AAC Whitehorse	Great Northern	3	111	55		400	41	2.2	II
AC Polaris	Great Northern	14	76	58	5	329	35	3.4	II
AC Resolute	Great Northern	16	65	54	0	372	39	2.4	II
<b>AC REDBOND (kg/ha)</b>			<b>2569</b>						
<b>AC REDBOND</b>	<b>Small Red</b>	<b>17</b>	<b>100</b>	<b>51</b>	<b>100</b>	<b>303</b>	<b>39</b>	<b>2.3</b>	<b>II</b>
<b>CDC Sol (kg/ha)</b>			<b>1887</b>						
<b>CDC Sol</b>	<b>Yellow</b>	<b>6</b>	<b>100</b>	<b>59</b>	<b>111</b>	<b>385</b>	<b>33</b>	<b>1.6</b>	<b>I</b>
<b>VIVA (kg/ha)</b>			<b>2307</b>						
<b>VIVA</b>	<b>Pink</b>	<b>15</b>	<b>100</b>	<b>52</b>	<b>99</b>	<b>249</b>	<b>32</b>	<b>3.5</b>	<b>III</b>

REMARKS: A = First year entries; <sup>1</sup>Days to bloom from seeding; <sup>2</sup>Thousand Seed Weight; <sup>3</sup>Lodging: 1 = erect, 5 = flat. <sup>4</sup>Growth Habit: I = determinate bush, II = indeterminate bush, III = indeterminate prostrate.

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# DRY BEANS - WIDE ROW

Variety	Type	Site Years 1997-2014	Yield (% of check)	Days to Bloom <sup>1</sup>	Days to Maturity	TSW <sup>2</sup> (g)	Plant Height (cm)	Lodging <sup>3</sup> (1 - 5)	Growth Habit <sup>4</sup>
<b>AC BLACK DIAMOND (kg/ha)</b>			<b>3021</b>						
<b>AC BLACK DIAMOND</b>	<b>Black Shiny</b>	<b>45</b>	<b>100</b>	<b>57</b>	<b>104</b>	<b>262</b>	<b>39</b>	<b>2.1</b>	<b>II</b>
AAC Black Diamond 2 (A)	Black Shiny	3	97	57	2	268	39	1.9	II
CDC Blackcomb	Black Matte	9	76	62		176	35	1.8	II
<b>ISLAND (kg/ha)</b>			<b>3694</b>						
<b>ISLAND</b>	<b>Pinto</b>	<b>19</b>	<b>100</b>	<b>55</b>	<b>100</b>	<b>371</b>	<b>41</b>	<b>2.8</b>	<b>II</b>
AAC Burdett (A)	Pinto	3	97	54		387	44	1.9	II
CDC WM-2	Pinto	14	76	56	1	369	40	2.5	II
Medicine Hat	Pinto	12	93	61	4	354	42	2.4	II
Othello	Pinto	8	90	58	0	353	36	3.5	III
Winchester	Pinto	16	86	55	0	335	40	2.5	II
<b>AAC TUNDRA (kg/ha)</b>			<b>3390</b>						
<b>AAC TUNDRA</b>	<b>Great Northern</b>	<b>9</b>	<b>100</b>	<b>51</b>	<b>96</b>	<b>357</b>	<b>41</b>	<b>2.6</b>	<b>II</b>
AAC Whitehorse	Great Northern	6	98	51	0	382	41	2.5	II
AC Polaris	Great Northern	25	96	62	6	301	37	4.1	II
AC Resolute	Great Northern	25	85	50	2	352	42	2.1	II
<b>AC REDBOND (kg/ha)</b>			<b>3203</b>						
<b>AC REDBOND</b>	<b>Small Red</b>	<b>39</b>	<b>100</b>	<b>53</b>	<b>101</b>	<b>316</b>	<b>41</b>	<b>2.4</b>	<b>II</b>
<b>CDC Sol (kg/ha)</b>			<b>2313</b>						
<b>CDC Sol</b>	<b>Yellow</b>	<b>12</b>	<b>100</b>	<b>55</b>	<b>103</b>	<b>406</b>	<b>33</b>	<b>1.5</b>	<b>I</b>
Myasi	Yellow	9	89	63	9	354	34	2.1	I
<b>VIVA (kg/ha)</b>			<b>3090</b>						
<b>VIVA</b>	<b>Pink</b>	<b>39</b>	<b>100</b>	<b>55</b>	<b>104</b>	<b>255</b>	<b>36</b>	<b>3.6</b>	<b>III</b>

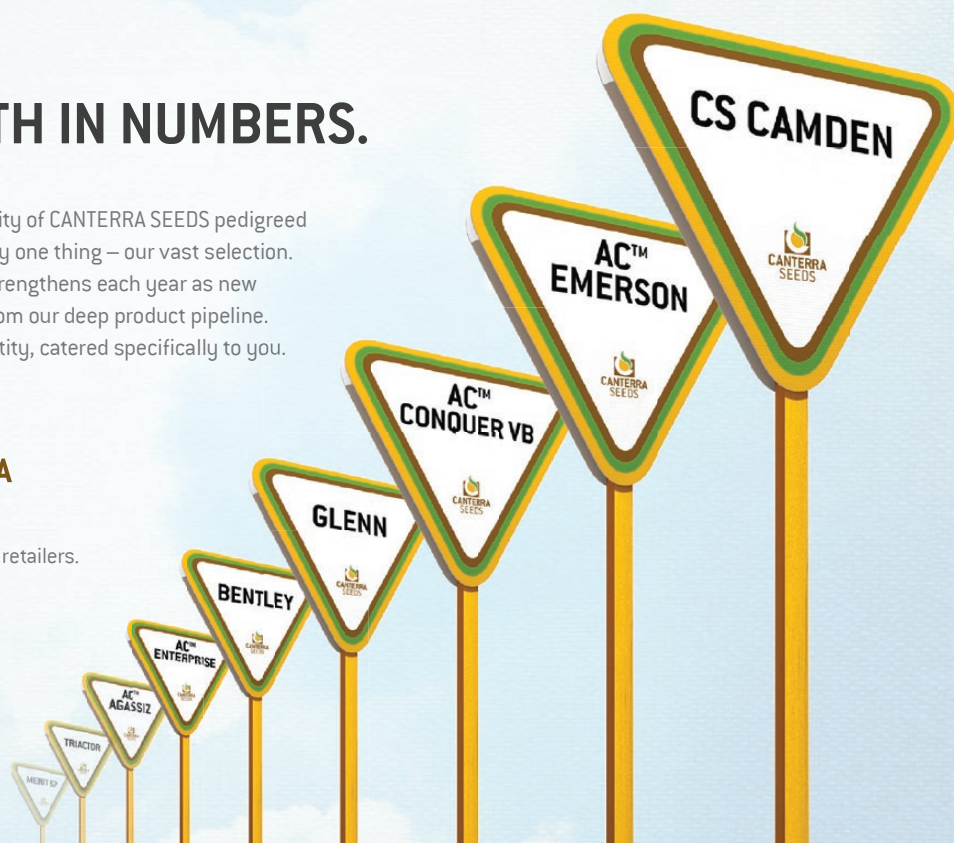
REMARKS: A = First year entries; <sup>1</sup>Days to bloom from seeding; <sup>2</sup>Thousand Seed Weight; <sup>3</sup>Lodging: 1 = erect, 5 = flat. <sup>4</sup>Growth Habit: I = determinate bush, II = indeterminate bush, III = indeterminate vine.

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# CHICKPEAS

Variety	Type	Overall Yield <sup>1</sup>	Station Years of Testing	Agronomic Characteristics			Tolerance to Ascochyta <sup>4</sup>
				TSW <sup>2</sup> (g)	Maturity Rating <sup>3</sup>	Plant Height (cm)	
<b>Varieties tested in the 2014 trials</b>							
<b>CDC FRONTIER (kg/ha)</b>		<b>3825</b>					
<b>CDC FRONTIER<sup>1</sup></b>	<b>Kabuli</b>	<b>100</b>	<b>29</b>	<b>364</b>	<b>L</b>	<b>44</b>	<b>F</b>
CDC Cabri	Desi	93*	25	324	E	46	F
CDC Corinne	Desi	113	10	248	M	48	F
CDC Cory	Desi	102	10	280	M	50	F
CDC Vanguard	Desi	93*	13	230	ML	46	F
Amit (R)	Kabuli	90*	29	269	L	45	F
CDC Alma	Kabuli	88*	14	386	ML	41	VP
CDC Leader	Kabuli	100	10	403	ML	44	F
CDC Luna	Kabuli	88*	14	377	ML	41	P
CDC Orion	Kabuli	94	14	455	ML	44	P
<b>Previously tested varieties</b>							
CDC Chichi	Kabuli	77	8	343	M	47	P
CDC Chico	Kabuli	87	8	251	E	46	VP
CDC Diva	Kabuli	71*	15	447	L	41	F
CDC Xena	Kabuli	72*	15	445	L	41	VP
CDC Yuma	Kabuli	73*	15	418	L	45	P
Sanford	Kabuli	69*	15	407	L	47	VP

**REMARKS:** Note - yield results for some varieties are not significantly different, due to limited years of testing. All four trials: Bow Island, Brooks, Lethbridge and Medicine Hat were grown in Area 1. <sup>1</sup> Yields are reported relative to CDC Frontier. \*Seed yields are statistically significant from that of CDC Frontier at p=0.05 level. No symbol after the yield figure indicates that seed yields are statistically comparable. <sup>2</sup> TSW: Thousand Seed Weight (g). <sup>3</sup> Maturity Ratings: E = Early, M = Medium, ML = Medium Late, L = Late. <sup>4</sup> Tolerance to Ascochyta: VP = Very Poor, P = Poor, F = Fair.

## CHICKPEAS

### CDC ORION

BI: CDC, Dist: N/A

Klempnauer, Joerg / Vauxhall / (403) 524-4705

Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434

### CDC PALMER

BI: CDC, Dist: N/A

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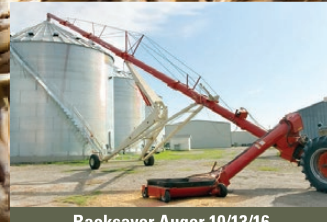
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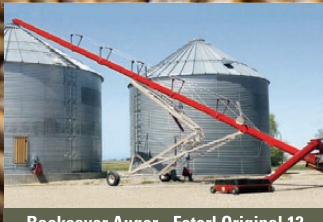
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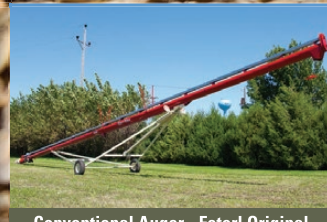
Backsaver Auger - Feterl Original 12/14



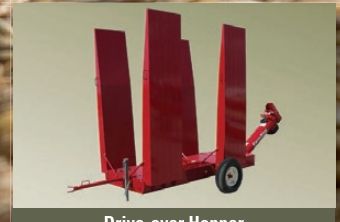
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Conventional Auger - Feterl Original



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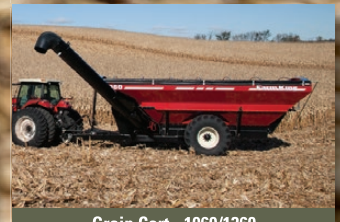
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# FABA BEANS

Variety	Overall Yield	Station Years of Testing	Type	Relative Maturity <sup>1</sup>	Plant Height (cm)	Thousand Seed Weight (g)	Flower Colour <sup>2</sup>
<b>Varieties tested in the 2014 trials</b>							
<b>SNOWBIRD (KG/HA)</b>	<b>7650</b>						
<b>SNOWBIRD</b> ☼	<b>100</b>	<b>22</b>	<b>Zero Tannin</b>	<b>E</b>	<b>92</b>	<b>486</b>	<b>W</b>
Malik	97	17	Tannin	M	87	621	C
Snowdrop ☼	86-	17	Zero Tannin	E	86	338	W
Tabasco	80-	9	Zero Tannin	M	92	374	W
<b>FULLY TESTED VARIETIES: 2000-2007</b>							
<b>EARLIBIRD KG/HA<sup>1</sup></b>	<b>7300</b>						
<b>EARLIBIRD</b> ☼	<b>100</b>	<b>16</b>	<b>Tannin</b>	<b>E</b>	<b>93</b>	<b>520</b>	<b>C</b>
Ben ☼	112+	8	Tannin	E	101	580	C
CDC Blitz R †	102	14	Tannin	ML	96	460	C
CDC Fatima R †	97	14	Tannin	M	92	530	C
Cresta †	96	7	Zero Tannin	M	86	590	W
Scirocco †	106	8	Tannin	ML	89	580	C

**REMARKS:** All coloured flower types have seed coats that contain tannins and may be suitable for export food markets if seed size and quality match customer demand. Varieties tested for minimum three years are fully tested. ☼ - Protected by Plant Breeders' Rights (PBR); R - Registered with CFIA. New entry - Tabasco; new name - Malik (FB9-4). Varieties removed from the table: FB18-20 and Imposa. † - Flagged for removal. <sup>1</sup> Maturity: E = early, M = medium, ML = medium late, L = late; <sup>2</sup> Flower Colour: W = white flower, zero tannin; C = coloured flower, tannin.

# FABA BEANS

## CDC SNOWDROP

**BI: CDC, Dist: University of Saskatchewan**

- Jonk, Nicholas / Westlock / (780) 349-5458
- Kittle, James William & Andrew / Viking / (780) 336-2583
- Klempnauer, Joerg / Vauxhall / (403) 524-4705
- Kopjar, Gerald M. / Rowley / (403) 368-2409
- Pare, Raymond A. / Wainwright / (780) 842-2073
- Sim, Darwin & Derek / Ponoka / (780) 372-2111
- Stamp Seeds / Enchant / (403) 739-2233
- Stickland, Brian, Melvin G. & Irma / Red Deer / (403) 886-4875
- Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617

## MALIK (FB 9-4)

**BI: N/A, Dist: N/A**

- Stamp Seeds / Enchant / (403) 739-2233

## SNOWBIRD

**BI: Innoseeds B. V., Dist: Bob Park**

- Cyre, Clifford & Greg / Westlock / (780) 349-4775
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- Ellis, Brian / Olds / (403) 556-2890
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- Harbin, Clifford Thomas & Bruce Clifford / Rivercourse / (780) 745-2268

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Jackson, Thomas / Killam / (780) 385-2332				C
Lindholm, Craig & Stevan & Dane & Luke / New Norway / (780) 352-3240				C
Markert Seeds Ltd. / Vulcan / (403) 485-6708	S			R
Shultz, Shawn / Didsbury / (403) 335-3694				C
Stamp Seeds / Enchant / (403) 739-2233				C
Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617				C
Weigum, Garry / Three Hills / (403) 443-2476				R
<b>HEMP</b>				
	S	F	R	C
<b>CFX-2</b>				
<b>BI: N/A, Dist: N/A</b>				
Hansen, Charles R. / Duchess / (403) 362-7505				C
Mercer, Lloyd A. & C. & Ryan & Bolstad, Leslie / Lethbridge / (403) 308-2297				C
<b>FINOLA</b>				
<b>BI: N/A, Dist: Hemp Oil Canada Inc.</b>				
Hansen, Charles R. / Duchess / (403) 362-7505				R
Witdouch, Dale & Calvin / Iron Springs / (403) 738-4395				C
<b>HEMPNUT</b>				
<b>BI: N/A, Dist: N/A</b>				
Wiens, David Paul / Lomond / (403) 739-3762				C



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# LENTILS

Market Class	Variety	Overall Yield	Station Years of Testing	Agronomic Characteristics					Disease Tolerance <sup>6</sup>	
				TSW <sup>2</sup> (g)	Plant Height (cm)	Maturity Rating <sup>3</sup>	Cotyledon Colour <sup>4</sup>	Seed Coat Colour <sup>5</sup>	Ascochyta	Anthraco-nose
<b>Varieties tested in the 2014 trials</b>										
	<b>CDC REDBERRY (kg/ha<sup>1</sup>)</b>	<b>2480</b>								
	<b>CDC REDBERRY<sup>1</sup></b>	<b>100</b>	<b>27</b>	<b>43</b>	<b>36</b>	<b>E</b>	<b>R</b>	<b>GR</b>	<b>G</b>	<b>G</b>
Extra Small Red	CDC Impala (CL)	103	17	31	36	E	R	GR	G	G
	CDC Imperial (R, CL)	92*	20	30	36	E	R	GR/BR	G	G
	CDC Rosetown	104	20	31	38	E	R	GR	G	G
	CDC Rosie	110	8	31	37	EM	R	GR	G	G
	CDC Ruby	99	15	29	34	E	R	GR	G	G
Small Red	CDC Dazil (CL)	111	15	36	38	E-M	R	GR	G	F
	CDC Imax (CL)	110	16	45	39	E-M	R	GR	G	F
	CDC Maxim (R, CL)	114*	17	41	36	E-M	R	GR	G	G
	CDC Redcliff	118*	15	38	37	E-M	R	GR	G	F
	CDC Scarlet	125*	8	39	38	EM	R	GR	G	F
Large Red	CDC KR-1	115	12	52	41	M	R	GR	G	G
Small Green	CDC Invincible (CL)	109	16	34	38	E	Y	G	G	G
Medium Green	CDC Imigreen (CL)	89	12	59	45	M	Y	G	G	VP
	CDC Impress (R, CL)	97	12	51	39	M	Y	G	G	P
Large Green	CDC Greenland (R)	98	12	64	39	M-L	Y	G	G	VP
	CDC Impower (CL)	98	12	68	43	ML	Y	G	G	VP
	CDC Improve (R, CL)	100	12	71	41	M	Y	G	F	VP
<b>Previously tested varieties</b>										
Extra Small Red	CDC Robin (R)	87*	15	28	34	E	R	BR	G	G
	CDC Redbow	104	12	32	35	E	R	GR	G	G
	CDC Rosebud	100	12	30	35	E	R	T	G	G
Small Red	CDC Blaze (R)	85*	10	38	30	E-M	R	GR	G	P
	CDC Cherie	108	3	41	35	E-M	R	G	G	F
	CDC Impact (R, CL)	84*	8	36	37	E	R	GR	G	P
	CDC Redcoat	100	12	42	35	E	R	GR	G	G
	CDC Rouleau (R)	106	5	37	37	M	R	GR	G	G
	Crimson (R)	75	10	39	27	E	Y	BR	VP	VP
Small Green	CDC Milestone (R)	101	18	39	32	E	Y	G	G	VP
	CDC Viceroy (R)	107	13	35	33	E	Y	G	G	G
	Eston (R)	89	5	34	35	E	Y	G	VP	VP
French Green	CDC Peridot (CL)	116	1	37	XX	E	Y	MRB	F	P
Spanish Brown	Pardina	106	1	40	XX	X	Y	GR/DT	VP	VP

**REMARKS:** Weight, diameter and thickness of lentil seeds were dependent upon environmental conditions and agronomic factors. Note: Yield results for the new varieties (2014) are significantly comparable, due to limited years of testing. All five trials: Bow Island, Brooks, Lethbridge, Medicine Hat and Oyen were grown in Area 1. R = Registered with CFIA; CL= Clearfield variety; XX = No data. <sup>1</sup> Yields are reported relative to CDC Redberry. CDC Redberry belongs to Small Red Market Class. \*Seed yields are statistically significant from that of CDC Redberry at p=0.05 level. No symbol after the yield figure indicates that there is no statistical difference. <sup>2</sup> Thousand Seed Weight; <sup>3</sup> Maturity: E = Early, M = Medium, L = Late, VL = Very Late. <sup>4</sup> Cotyledon colour: R = Red, Y = Yellow, G = Green; <sup>5</sup> Seed Coat colour/Patterns: G = Green, GR = Grey, BR = Brown, FG = French Green, T = Tan, MRB = Marbled, DT = Dotted; <sup>6</sup> Disease tolerance: VP = Very Poor, P = Poor, F = Fair and G = Good.

## LENTILS

### CDC DAZIL

BI: CDC, Dist: BASF

Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434

### CDC GREENSTAR

BI: CDC, Dist: University of Saskatchewan

Chin Ridge Seeds Ltd. / Taber / (403) 223-3900

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### CDC IMAX

BI: CDC, Dist: University of Saskatchewan

Kiffiak, Edwin Harry & Nathan John / Foremost / (403) 867-2338

### CDC IMPULSE

BI: CDC, Dist: Saskatchewan Pulse Growers

Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434

### CDC MARBLE

BI: CDC, Dist: University of Saskatchewan

Chin Ridge Seeds Ltd. / Taber / (403) 223-3900

C

S

S



CAMELINA	S	F	R	C
<b>MIDAS</b> BI: AAFC, Dist: Linnaeus Plant Sciences Inc. McNaughton, Brian / Lethbridge / (403) 308-9914		F		
MUSTARD	S	F	R	C
<b>AC Pennant</b> BI: N/A, Dist: Saskatoon Research Centre Proven Seed / CPS (Canada) Inc / High River / (306) 531-7054				C
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<b>ANDANTE</b> BI: N/A, Dist: Saskatoon Research Centre Proven Seed / CPS (Canada) Inc / High River / (306) 531-7054				C
<b>CENTENNIAL</b> BI: N/A, Dist: Saskatoon Research Centre Proven Seed / CPS (Canada) Inc / High River / (306) 531-7054 Mercer, Lloyd A. & C. & Ryan & Bolstad, Leslie / Lethbridge / (403) 308-2297		F		C
<b>Cutlass</b> BI: N/A, Dist: Saskatoon Research Centre Proven Seed / CPS (Canada) Inc / High River / (306) 531-7054				C

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# FIELD PEAS - GREEN

Variety	South		East Central		West Central		Peace		Total Site Years	Overall Yield (%)	Agronomic Characteristics			
	Site Years	Yield (%)	Site Years	Yield (%)	Site Years	Yield (%)	Site Years	Yield (%)			Maturity Rating <sup>1</sup>	Vine Length (cm)	TSW <sup>2</sup> (g)	Standability <sup>3</sup> (1-9)
<b>Varieties tested in the 2014 trials (Relative Yield as % of CDC PATRICK)</b>														
<b>CDC PATRICK (kg/ha)</b>	<b>4291</b>		<b>4511</b>		<b>6323</b>		<b>4305</b>		<b>4727</b>					
<b>CDC PATRICK</b>	<b>25</b>	<b>100</b>	<b>31</b>	<b>100</b>	<b>16</b>	<b>100</b>	<b>38</b>	<b>100</b>	<b>110</b>	<b>100</b>	<b>M</b>	<b>79</b>	<b>186</b>	<b>4.4</b>
CDC Limerick	9	106	14	105+	6	100	15	98	51	101	L	77	208	3.4
Greenwater (A)	5	101	4	106	3	109	5	97	17	102	L	72	219	2.2
MP1867 (A)	5	91	4	93	3	79-	11	86-	23	87-	M	78	208	3.8
<b>Fully Tested Varieties (Relative Yield as % of CDC PATRICK)</b>														
CDC Pluto	14	100	14	94	5	91	19	96	52	96-	M	82	170	6
CDC Raezer	14	95	14	116+	5	103	19	104	52	105	M	89	227	4.2
CDC Tetris	14	104	14	111+	5	98	19	106	52	106	L	91	215	4.4
<b>Fully Tested Varieties (Relative Yield as % of COOPER: 2004-2012)</b>														
<b>COOPER (kg/ha)</b>	<b>4111</b>		<b>3843</b>		<b>5979</b>		<b>4793</b>		<b>4609</b>					
<b>COOPER ☼</b>	<b>100</b>		<b>100</b>		<b>100</b>		<b>100</b>		<b>100</b>		<b>L</b>	<b>75</b>	<b>270</b>	<b>3.5</b>
CDC Sage	5	79-	8	83-	8	81-	15	85-	36	82	M	72	198	3.1
CDC Striker	5	96	12	108	5	104	22	95-	44	100	M	70	253	2.9
Mendel ☼	6	85-	11	95	4	92	17	90-	38	91	M	78	205	3.9

**REMARKS:** CDC Tetris is an Espace type with blocky seed shape; A = First year entries (2014). ☼ = Protected by Plant Breeder's Rights (PBR); XX = No data available; † = Flagged for removal. <sup>1</sup> Maturity: E = Early, M = Medium, L = Late; <sup>2</sup> Thousand Seed Weight: g; <sup>3</sup> Standability: 1 = Erect, 9 = Flat; <sup>4</sup> Tolerance to: P = Poor, F = Fair, G = Good, VG = Very Good; <sup>5</sup> Seed Coat Dimpling: VG = Very Good (0-5%), G = Good (6-20%), F = Fair (21-50%).



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# FIELD PEAS - GREEN — CONT.

Tolerance to:<sup>4</sup>

Variety	Powdery Mildew	Mycosphaerella Blight	Fusarium Wilt	Bleaching	Seed Coat Breakage	Seed Coat Dimpling <sup>5</sup>
<b>Varieties tested in the 2014 trials (Relative Yield as % of CDC PATRICK)</b>						
<b>CDC PATRICK (kg/ha)</b>						
<b>CDC PATRICK</b>	<b>VG</b>	<b>F</b>	<b>G</b>	<b>G</b>	<b>G</b>	<b>G</b>
CDC Limerick	VG	F	F	G	VG	G
Greenwater (A)	VG	F	G	G	F	F
MP1867 (A)	VG	F	F	G	G	G
<b>Fully Tested Varieties (Relative Yield as % of CDC PATRICK)</b>						
CDC Pluto	VG	F	F	G	G	G
CDC Raezer	VG	F	G	G	G	G
CDC Tetris	VG	F	G	G	G	G
<b>Fully Tested Varieties (Relative Yield as % of COOPER: 2004-2012)</b>						
<b>COOPER (kg/ha)</b>						
<b>COOPER</b> 	<b>VG</b>	<b>F</b>	<b>F</b>	<b>G</b>	<b>F</b>	<b>G</b>
CDC Sage	VG	F	G	G	VG	G
CDC Striker	P	F	G	G	G	F
Mendel 	VG	F	F	G	F	G

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# FIELD PEAS - YELLOW

Variety	South		East Central		West Central		Peace		Agronomic Characteristics					
	Site Years	Yield (%)	Site Years	Yield (%)	Site Years	Yield (%)	Site Years	Yield (%)	Total Site Years	Overall Yield (%)	Maturity Rating <sup>1</sup>	Vine Length (cm)	TSW <sup>2</sup> (g)	Standability <sup>3</sup> (1-9)
<b>VARIETIES TESTED IN THE 2014 TRIALS (RELATIVE YIELD AS % OF CDC MEADOW)</b>														
<b>CDC MEADOW (kg/ha)</b>	<b>3748</b>		<b>4555</b>		<b>6350</b>		<b>5198</b>		<b>4904</b>					
<b>CDC MEADOW</b>	<b>26</b>	<b>100</b>	<b>33</b>	<b>100</b>	<b>19</b>	<b>100</b>	<b>40</b>	<b>100</b>	<b>118</b>	<b>100</b>	<b>E</b>	<b>82</b>	<b>209</b>	<b>3.6</b>
AAC Lacombe ▲	9	116+	9	105	5	115	10	111+	33	112+	M	80	251	2.8
AAC Peace River	9	97	9	92	5	92	10	100	33	96	VE	74	211	4.7
Abarth ▲	13	106	14	103	8	101	14	99	49	102	M	77	249	3.6
CDC Amarillo	13	106	14	99	8	115+	14	105+	49	105+	M	83	221	2.9
CM3404 (A)	5	105	4	89	3	96	5	101	17	99	M	79	261	3
LN4228 (A)	5	101	4	96	3	93	5	92	17	96	M	70	242	1.8
<b>FULLY TESTED VARIETIES (RELATIVE YIELD AS % OF CDC MEADOW)</b>														
CDC Saffron	13	108	14	101	4	100	16	101	47	103	M	84	236	4.3
Hugo ☼	11	102	14	83-	5	90	17	96	47	93-	M	73	210	5.2
Stella ☼ NR F	11	76-	14	80-	5	83-	15	81-	45	80-	M	95	213	3.9
<b>FULLY TESTED VARIETIES (RELATIVE YIELD AS % OF CUTLASS: 2003-2011)</b>														
<b>CUTLASS (kg/ha)</b>	<b>3243</b>		<b>3485</b>		<b>5665</b>		<b>4684</b>		<b>4292</b>					
<b>CUTLASS ☼</b>	<b>26</b>	<b>100</b>	<b>38</b>	<b>100</b>	<b>25</b>	<b>100</b>	<b>61</b>	<b>100</b>	<b>151</b>	<b>100</b>	<b>M</b>	<b>71</b>	<b>228</b>	<b>4</b>
Agassiz ☼	6	100	11	102	9	102	20	104	46	103	M	77	236	2.9
Argus ☼	7	100	9	114+	3	103	14	101	33	105+	M	89	227	4.1
CDC Centennial	5	101	12	99	9	104	14	100	40	101	E	61	259	4.8
CDC Hornet	10	101	12	116+	6	110	15	103	43	107+	M	89	215	3.7
CDC Prosper NR	6	93	12	97	8	97	19	98	45	97-	E	73	149	4
CDC Treasure NR	6	96	12	105	8	98	19	100	45	101	E	81	217	3.5
DS-Admiral ☼	13	97	18	108	13	98	24	104	69	102	M	68	246	3.1
Eclipse ☼	17	103	27	103	20	99	33	103	98	102	M	64	255	3.2
Polstead ☼	5	97	12	99	9	99	16	104	42	101	E	62	262	3.7
Reward ☼	5	86	12	106	9	102	13	101	39	101	M	76	248	2.5
SW Midas ☼	10	103	17	106	11	91-	21	99	59	100	E	65	213	3.1
Thunderbird	6	89	11	96	9	99	14	99	40	97	M	76	229	2.1
<b>FULLY TESTED VARIETIES (RELATIVE YIELD AS % OF CARRERA: 2000-2005)</b>														
<b>CARRERA (kg/ha)</b>	<b>2593</b>		<b>2926</b>		<b>5098</b>		<b>3986</b>		<b>3677</b>					
<b>CARRERA ☼</b>	<b>14</b>	<b>100</b>	<b>28</b>	<b>100</b>	<b>15</b>	<b>100</b>	<b>33</b>	<b>100</b>	<b>96</b>	<b>100</b>	<b>E</b>	<b>53</b>	<b>257</b>	<b>4.6</b>
CDC Bronco	11	91	14	102	8	94	15	117	49	102	M	63	218	4.1
CDC Golden	11	101	14	105	8	102	15	109	49	105	M	68	224	3.4
CDC Minuet	12	97	26	100	11	92	22	111	76	102	M	64	192	4.9
CDC Mozart	8	108	17	100	7	97	14	105	48	103	M	62	241	5.9

**REMARKS:** Stella is a silage type pea. ☼ = Protected by Plant Breeder's Rights (PBR). ▲ = Applied for PBR protection. A = First year entries (2014). NR = Variety not registered with CFIA. F = Forage type. XX = No data available. <sup>1</sup> Maturity: E = early, M = medium, L = Late; <sup>2</sup> Thousand Seed Weight: g; <sup>3</sup> Standability: 1 = erect, 9 = flat; <sup>4</sup> Tolerance to: P = poor, F = fair, G = good, VG = very good; <sup>5</sup> Seed Coat Dimpling: VG = very good (0 - 5%), G = good (6 - 20%), F = fair (21 - 50%); <sup>6</sup> Green Seed Coat: G = good (0 - 10%), F = fair (11 - 25%).

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Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434

### AAC PEACE RIVER

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Hadland, Edward / Balldonnel / (250) 789-3646

### ABARTH

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BI: CDC, Dist: University of Saskatchewan

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# FIELD PEAS - YELLOW — CONT.

Variety	Tolerance to <sup>1</sup>					
	Pow- dery Mildew	Myc- sphe- rella Blight	Fusar- ium Wilt	Seed Coat Break- age	Seed Coat Dim- pling <sup>5</sup>	Green Seed Coat <sup>6</sup>
<b>VARIETIES TESTED IN THE 2014 TRIALS (RELATIVE YIELD AS % OF CDC MEADOW)</b>						
<b>CDC MEADOW (kg/ha)</b>						
<b>CDC MEADOW</b>	<b>VG</b>	<b>F</b>	<b>F</b>	<b>G</b>	<b>G</b>	<b>G</b>
AAC Lacombe ▲	VG	F	P	G	F	G
AAC Peace River	VG	F	F	F	G	G
Abarth ▲	VG	F	F	F	G	G
CDC Amarillo	VG	F	G	F	F	G
CM3404 (A)	VG	F	F	F	XX	XX
LN4228 (A)	VG	F	F	F	F	G
<b>FULLY TESTED VARIETIES (RELATIVE YIELD AS % OF CDC MEADOW)</b>						
CDC Saffron	VG	F	F	G	F	G
Hugo ☼	VG	F	F	G	F	F
Stella ☼ NR F	VG	F	F	G	G	F
<b>FULLY TESTED VARIETIES (RELATIVE YIELD AS % OF CUTLASS: 2003-2011)</b>						
<b>CUTLASS (kg/ha)</b>						
<b>CUTLASS ☼</b>	<b>VG</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>G</b>
Agassiz ☼	VG	F	F	G	VG	G
Argus ☼	VG	F	F	F	F	G
CDC Centennial	VG	F	G	G	G	F
CDC Hornet	VG	F	F	F	F	G
CDC Prosper NR	VG	F	G	G	F	G
CDC Treasure NR	VG	F	F	G	F	F
DS-Admiral ☼	VG	P	F	F	G	F
Eclipse ☼	VG	F	F	G	F	G
Polstead ☼	VG	P	P	F	VG	F
Reward ☼	VG	F	F	G	VG	F
SW Midas ☼	VG	P	F	G	G	G
Thunderbird	VG	F	F	G	VG	XX
<b>FULLY TESTED VARIETIES (RELATIVE YIELD AS % OF CARRERA: 2000-2005)</b>						
<b>CARRERA (kg/ha)</b>						
<b>CARRERA ☼</b>	<b>P</b>	<b>P</b>	<b>F</b>	<b>F</b>	<b>G</b>	<b>XX</b>
CDC Bronco	VG	F	F	G	G	G
CDC Golden	VG	F	F	G	G	G
CDC Minuet	VG	F	F	F	G	F
CDC Mozart	VG	F	F	G	G	F

Thompson, M. Ellwood & Kelly / Red Deer County / (403) 728-3535	S					
Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434	S					
<b>CDC HORIZON</b>						
<b>BI: CDC, Dist: University of Saskatchewan</b>						
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Hadland, Edward / Baldonnel / (250) 789-3646		R				
Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617*	F	R				
<b>CDC HORNET</b>						
<b>BI: CDC, Dist: University of Saskatchewan</b>						
Solick, Leonard & Kelsey & Corwin / Halkirk / (403) 884-2358		F				
<b>CDC LEROY</b>						
<b>BI: CDC, Dist: University of Saskatchewan</b>						
Klempnauer, Joerg / Vauxhall / (403) 524-4705		R				
Solick, Leonard & Kelsey & Corwin / Halkirk / (403) 884-2358					C	
<b>CDC LIMERICK</b>						
<b>BI: CDC, Dist: University of Saskatchewan</b>						
Chin Ridge Seeds Ltd. / Taber / (403) 223-3900		S				
Galloway Seeds Ltd. / Fort Saskatchewan / (780) 998-3036					R	
Hoff, Peter Edward / Gleichen / (403) 734-2140		S				
Kopjar, Gerald M. / Rowley / (403) 368-2409		S				
Lindholm, Craig & Stevan & Dane & Luke / New Norway / (780) 352-3240		S	F	R		
McDonald, Gerald / Co. Of Grande Prairie #1 / (780) 538-3868				R		
Shultz, Shawn / Didsbury / (403) 335-3694				R		
Thompson, M. Ellwood & Kelly / Red Deer County / (403) 728-3535				R		
Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617			F			
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Bouw, Curtis / Bow Island / (403) 545-0007						C
Chin Ridge Seeds Ltd. / Taber / (403) 223-3900						C
Davidson, E.Daryl & Dean / Kitscoty / (780) 846-2456						R
Hadland, Edward / Baldonnel / (250) 789-3646		S	F			
Haney Farms / Picture Butte / (403) 738-4517						C
Harbin, Clifford Thomas & Bruce Clifford / Rivercourse / (780) 745-2268						C
Hartzler, Leonard / Carstairs / (403) 337-2416						C
Hoff, Peter Edward / Gleichen / (403) 734-2140						C
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Kiffiak, Edwin Harry & Nathan John / Foremost / (403) 867-2338						R
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Kittle, James William & Andrew / Viking / (780) 336-2583						C
Lefsrud, Kevin J. & Edmund J. / Viking / (780) 336-2500						C
Limoges, Richard / McLennan / (780) 324-2335						C
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Logan, Glenn C. & Marie & Douglas / Lomond / (403) 792-3696						C
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Markert Seeds Ltd. / Vulcan / (403) 485-6708						C
Massey, Derwin / Stettler / (403) 883-2503						R
Mastin, Robert B. / Sundre / (403) 556-2609		S	F			



Mueller, Darcy / Three Hills / (403) 823-9788				C
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Nemetz, Charlie & Jerritt & Lewis & Brandon / Stettler / (403) 742-0436				C
Page, Dan / Didsbury / (403) 335-4563				C
Pare, Raymond A. / Wainwright / (780) 842-2073	F	R		
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Radke, Bryan Victor / Barrhead / (780) 674-5715		R		
Richard, Gerald / Spirit River / (780) 864-3716				C
Richards, Cliff & Dan / Sexsmith / (780) 766-2266				C
Sand, Ron W. & David R. / McLaughlin / (780) 745-2251				C
Shultz, Shawn / Didsbury / (403) 335-3694		R		
Solick, Leonard & Kelsey & Corwin / Halkirk / (403) 884-2358				C
Svanes, Ronald J. / Picture Butte / (403) 317-0981				C
Tomlinson, Chelsea / Redwater / (780) 777-5885				C
Van Roessel, William & Jean / Bow Island / (403) 545-6018				C
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Weigum, Garry / Three Hills / (403) 443-2476				C
Welsh, Donald Alan / Milk River / (403) 647-2228				C
<b>CDC PATRICK</b>				
<b>BI: CDC, Dist: University of Saskatchewan</b>				
Howard, Fred / Wanham / (780) 694-2427				C
King, Harold & Webb, David Gordon / Three Hills / (403) 443-7330		R		
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Sand, Ron W. & David R. / McLaughlin / (780) 745-2251				C
Shultz, Shawn / Didsbury / (403) 335-3694				C
Sich, Louis John & Ivan & Martin / Trochu / (403) 442-2112		R		C
Thompson, M. Ellwood & Kelly / Red Deer County / (403) 728-3535				C
Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617	S	F		
<b>CDC PLUTO</b>				
<b>BI: CDC, Dist: University of Saskatchewan</b>				
Chin Ridge Seeds Ltd. / Taber / (403) 223-3900		F		
Hunter, Tom				C
Stamp Seeds / Enchant / (403) 739-2233				C
Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434				C
<b>CDC RAEZER</b>				
<b>BI: CDC, Dist: University of Saskatchewan</b>				
Dewindt, Harry & Renee / Thorhild / (780) 398-2377				C
Kapitski, Lawrence / Andrew / (780) 365-2134		R		C
King, Harold & Webb, David Gordon / Three Hills / (403) 443-7330				R
Knight, William, Craig & Brian / Tees / (403) 784-3633		S		
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Krywko, Ronald / Sturgeon County / (780) 459-8224			R	
Lefsrud, Kevin J. & Edmund J. / Viking / (780) 336-2500		S	F	
Sayer, Roger / Carstairs / (403) 337-5847				C
Sendziak, Don P. & Stephen / Edmonton / (780) 434-1322			F	C
Sim, Darwin & Derek / Ponoka / (780) 372-2111		S	F	C
Stickland, Brian, Melvin G. & Irma / Red Deer / (403) 886-4875		S		
Zwack, Thomas / Daysland / (780) 374-2450				C

<b>CDC SAFFRON</b>				
<b>BI: CDC, Dist: University of Saskatchewan</b>				
Benci, Dennis / Carmangay / (403) 643-2294				C
Bouw, Joe P. / Bow Island / (403) 545-2871			R	
Chin Ridge Seeds Ltd. / Taber / (403) 223-3900		S		R
Kiffiak, Edwin Harry & Nathan John / Foremost / (403) 867-2338		S		R
Kopjar, Gerald M. / Rowley / (403) 368-2409				R
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Stamp Seeds / Enchant / (403) 739-2233				R
Svanes, Ronald J. / Picture Butte / (403) 317-0981				C
Warkentin, Harold Kenneth & Errol / Tofield / (780) 662-2617			F	R
Welsh, Donald Alan / Milk River / (403) 647-2228				C
Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434				C
<b>CDC STRIKER</b>				
<b>BI: CDC, Dist: N/A</b>				
Sim, Darwin & Derek / Ponoka / (780) 372-2111		S		
<b>CDC TETRIS</b>				
<b>BI: CDC, Dist: University of Saskatchewan</b>				
Hegland, David Olaf / Wembley / (780) 766-2450				C
McDonald, Gerald / Co. Of Grande Prairie #1 / (780) 538-3868				C
Mueller, Darcy / Three Hills / (403) 823-9788				C
Mueller, Richard J. & R.R. & Rosemary / Barrhead / (780) 674-2595		S	F	R
Rewerts, Ken / Fairview / (780) 835-3474				R
Sendziak, Don P. & Stephen / Edmonton / (780) 434-1322				R
Zwack, Bryan / Daysland / (780) 374-3577				R
<b>COOPER</b>				
<b>BI: Cebeco Zaden, Dist: Canterra Seeds</b>				
Cyre, Clifford & Greg / Westlock / (780) 349-4775		S	F	C
Lindholm, Craig & Stevan & Dane & L. / New Norway / (780) 352-3240				C
Plante, Jacques / St. Paul / (780) 645-4604				C
<b>LN4228</b>				
<b>BI: N/A, Dist: Lindholm Seed Farm</b>				
Lindholm, Craig & Stevan & Dane & L. / New Norway / (780) 352-3240		S		
<b>REDBAT 8</b>				
<b>BI: N/A, Dist: N/A</b>				
Willms, Henry & Timothy H. / Grassy Lake / (403) 655-2434		S	F	
<b>THUNDERBIRD</b>				
<b>BI: AAFC (Lacombe), Dist: Canterra Seeds</b>				
Jonk, Nicholas / Westlock / (780) 349-5458				C
Sendziak, Don P. & Stephen / Edmonton / (780) 434-1322*			F	R

**Producers in areas where *f. graminearum* is present: employ **Best Management Practices** that include the use of diverse rotational crops, irrigation scheduling, seed and foliar fungicide applications, composted manure, disease-tolerant wheat and barley varieties, and testing seed for the presence of *f. graminearum*.**







### New Investment Model Seeks to Increase Innovation

A new model is under discussion by Canada's cereals sector. The intention: to significantly increase investment for wheat and barley varietal development, allowing these crops to compete with others such as pulses, canola and other oilseeds.



The model calls for an increased investment by producers and increased partnerships between private companies and public entities. "Partnerships' is a key word because this type of investment can't be funded by producers alone," says Stuart Garven of the Saskatoon-based Garven & Associates. A private management consultant that specializes in agriculture, Garven was commissioned by the consortium to develop a conceptual model says many producers want to play a strategic role in cereal innovation while creating an attractive business environment for the private sector.

"It's designed to allow breeders and the cereal value chain to transition from the current situation to a new model that makes the whole industry stronger," Garven says.

One of the core components of the model is the establishment of a not-for-profit entity that is producer owned and producer financed. Garven calls this the Grain Investment Corp or GIC, which is a hypothetical name but helps to make an abstract concept more concrete.

This entity, or GIC, would become an agent for AAFC, whereby GIC — alone or in partnership with others — would take on the role of finishing AAFC lines, registering varieties and licensing lines. The consortium, which was organized by the Alberta Seed Growers' Association, is comprised of 13 organizations, including the Alberta Barley Commission, Alberta Wheat Commission, Grain Growers of Canada, Keystone Agricultural Producers, Manitoba Seed Growers Association, Saskatchewan Seed Growers Association, Western Barley Growers Association, Western Canadian Wheat Growers and the Western Grains Research Foundation.

### Buyer Beware

At the request of some of its members, the Canadian Seed Trade Association recently developed a "Buyer Beware" fact sheet for its members regarding the purchase and sale of forage and grass seed in Canada.



Titled **Buying Grass Seed? Buyer Beware: It's the Law**, the fact sheet is designed to help seed buyers ensure that the seed they are requesting and buying is legal for use and sale in Canada.

Additionally, it helps to remind individuals and companies that sell seed about Canada's law surrounding the selling of grass seed.

"Municipalities and cities often request specific varieties of grasses for parks and berms, and there's often not a lot of understanding of the Seeds Act," says Patty Townsend, CEO for CSTA. "Sometimes the municipality or city will release a tender requesting varieties that are not registered in Canada or they request varieties by name without knowing that the seed can't be sold by variety name unless it is certified. We just want them to be aware of the law when they issue tenders and make purchases."

All registered varieties are listed on CFIA's website at [inspection.gc.ca/english/plaveg/variet/regvare.shtml](http://inspection.gc.ca/english/plaveg/variet/regvare.shtml). Interested individuals can also download CSTA's fact sheet at [cdnseed.org](http://cdnseed.org).

### Stewardship in Action

At many farms, empty seed bags often end up either in the trash or getting burned in the middle of a field. Now, there's a more environmentally responsible way to get rid of all those bags, thanks to a



pilot project for the safe collection and disposal of pesticide and seed bags that's available in parts of Ontario, Quebec and the Maritimes.

The program is run by CleanFARMS, a not-for-profit organization committed to environmental stewardship through the proper management of agricultural waste. It's also supported by Canadian Seed Trade Association, which contributes financially to the pilot project and is a member of the CleanFARMS steering committee. Additional funders include CropLife Canada, the Ontario Ministry of Agriculture, Food and Rural Affairs and the Quebec Ministry of Agriculture.

Under the program, farmers bring used seed bags to collection centres set up in heavy seed bag usage areas. Farmers are asked to fill large plastic bags, available at all collection centres, with empty paper seed bags. For bulk seed, growers are urged to place a number of empty bags inside one bulk bag and return it to a collection location.

There are plans to add even more locations next year, with the goal of establishing a permanent program for pesticide and seed bag collection and disposal by 2016. "We will further expand the pilot program to approximately 200 retail locations in Ontario and Quebec, in addition to all of the major retail locations in the Maritimes in 2015," says Barry Friesen, general manager of CleanFARMS.





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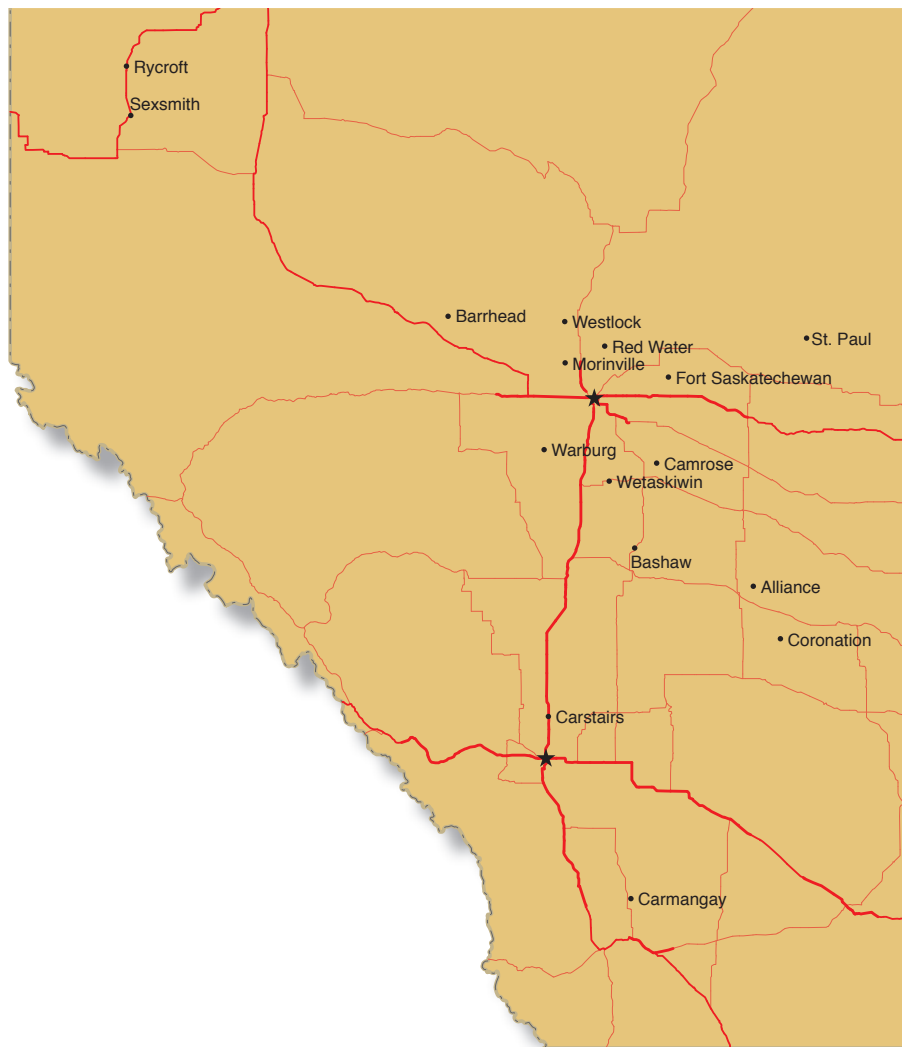
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Farmers can get seed cleaned and treated at facilities across the province. Additional services available at several facilities include pulse processing, value processing, pedigreed seed processing, specialty processing, and seed inoculating, as well as seed and chemical sales.



### Location / ad page #

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# New Dean Looking Ahead to Next 100 Years

Stan Blade is excited for the future of seed in Alberta and beyond.

**STAN** Blade is the founding CEO of Alberta Innovates Bio Solutions, and the new dean of and a full professor for the University of Alberta's Faculty of Agricultural, Life and Environmental Sciences (ALES). He recently sat down with the Alberta Seed Guide to talk about successes in the industry and what he sees for the future.

**Alberta Seed Guide: What excites you the most when you think about the Alberta seed industry over the last 100 years?**

**Stan Blade:** The advancements made by Alberta's seed industry over the past century are a testament to the people who work in and fuel the innovation that keeps the industry thriving. Just think about the changes of the last century. There are all kinds of other things that will come into play over the next 100 years that we can't even anticipate right now. It's unbelievable the productivity gains that have been achieved.

**ASG: You will spend a good portion of 2015 celebrating the achievements in seed that have come out of the Faculty of Agricultural, Life and Environmental Sciences, which is celebrating its 100th birthday this year. As dean, how does it feel to be leading such a prominent institution?**

**SB:** I'm very proud when I look across our entire faculty. When I think about the work we did at Bio Solutions, we invested very early on in Randy Weselake's work here at the U of A in phytola and oilseed

genomics, which has received significant support from the major private genetics companies. [We were] making sure we were getting the pipeline full of those interesting new ideas to increase oil content, to look at other elements on digestibility of meal and those kinds of things. Now I'm here and I see the work Dean Spaner is doing with his wheat breeding program, releasing new varieties, putting together powerful rust packages. The canola program here has really been a western Canadian leader over decades. There's a reason why companies are signing on and making investments in that work.

**ASG: How does that interest on behalf of the industry translate into direct support for the faculty?**

**SB:** We have the highest amount of funding per faculty member of all the faculties across campus, because industry is voting with their dollars. They see we're doing important work that is going to make them more competitive and allow them to do new things they haven't been able to do in the past.

**ASG: What are some big questions you feel the industry is wrestling with at the moment as we move into 2015?**

**SB:** How do we handle big data? What are the new ways we can use variable rate technology? What can we do in precision farming that we didn't dream of a generation ago? Those are the interesting things I see our industry being able to respond to because of new science being developed.

**ASG: What's a major hurdle the industry faces in the future that you think needs attention?**

**SB:** If you look across the world, we have seen a decrease in investments by public research agencies in the area of agron-



Stan Blade is the new dean of the University of Alberta's Faculty of Agricultural, Life and Environmental Sciences (ALES).

omy. If we're going to realize the extraordinary genetic potential we're developing, I think agronomy is going to be a key piece. As yields increase, if we're going to make those yields sustainable, I think we have to know how to connect genetics to agronomy and soil health. That's where we find the next level of productivity

**ASG: Can you list your major goals as dean of the faculty?**

**SB:** My vision for building on its success is focused on three key areas: strengthening engagement with the Government of Alberta, forging deeper partnerships with non-government agencies, and creating and executing a thoughtful and intentional communications strategy.

**ASG: I imagine the faculty's 100th birthday is a chance to do just that.**

**SB:** We're going to profile the success we had in our first 100 years and talk about the cool things we're looking at doing over the next 100. When we think about what's come out of this program, we have a great deal to be proud of — but we have to plan for the future as well.

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