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**ON THE COVER:** The Spring 2018 issue of *Alberta Seed Guide* contains stories that focus on mitigation strategies – ways to ensure you're ready for the coming crop year. Stories include crop disease watches, using new technologies such as drones, and ensuring BMPs in seed treatments. Enjoy this spring issue, and be sure to let us know your thoughts. Visit seed.ab.ca for more stories, and to contact us.

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NARD OATWAY

**WELCOME** to 2018 and what promises to be a busy spring season.

This is such a significant time of year as we start to make the decisions that fuel our fields and yields. What better tool to have at your disposal at this critical juncture than the *Alberta Seed Guide*?

In the following pages, you will see how new varieties perform in the compiled regional variety trials along with the latest and greatest agronomic traits that are now available. Nowhere else will you have access to such experienced growers with first-hand experience on these cutting edge varieties.

I encourage all of you to go through this handy guide and find a solution that works best for your farm. Our members with the Alberta Seed Growers (ASG) are so proud to have the opportunity to provide you with the best seed possible. We are all in this together as we contribute to the best agricultural industry in the world.

The past year was a very busy one for your seed grower representatives, as the ASG board of directors has been at the forefront of the central policy issues facing the world of seed. One of the most important of these is the Seed Synergy project. This is one you will hear plenty in the months to come as we consult with stakeholders about changes that will affect all of us.

As always, our goal is to make sure Canadian farmers are competitive globally and that they can provide a viable future for successive generations. We will continue to provide updates on these discussions as they come available via our newsletter and website, seedalberta.ca. When looking through these pages and choosing your varieties, we know that one of the chief considerations is disease management. With Fusarium continuing to spread throughout the province, ASG and our industry partners are looking to provide farmers with a full toolbox of prevention and management methods. This will remain a tireless focus for us.

On a final note, as I wrap up my first year as president of this great organization, I have to say that it has been a pleasure to represent Alberta's seed growers. By being at the forefront of agricultural policy, I have learned, now more than ever, how important it is to have producers speak up for their interests.

We are just approaching our 89th annual general meeting in Banff where the theme is Building Partnerships. The basic message we will carry throughout the weekend is that we are all in this together. When we combine forces to better our industry, there is nothing that we cannot accomplish.

I hope this year is fruitful for all of you. I look forward to what is ahead, the future is bright!

#### Ward Oatway President

Alberta Seed Growers Email: wloatway@yahoo.ca





ALBERTA SEED PROCESSORS

#### DAVID BISHOP

**GREETINGS** and Happy New Year to all of you on behalf of the Alberta Seed Processors.

As we transition from the winter into the planting season, our 67 cooperative seed and grain cleaning facilities have been busy processing seed grain and ensuring that all of you are ready for the upcoming year.

Speaking of 2018, this issue of the *Alberta Seed Guide* is all about planning and thinking ahead. As partners in the agricultural industry, we know that being ahead of the curve is critical to our survival and something that we all do. That is why we are so proud of this spring's issue.

In the following pages, we will arm and inform you with disease mitigation strategies ranging from on-farm solutions to research projects that will ensure profitability for generations to come. Our industry is on the forefront of tackling complex issues – ranging from data management systems to Fusarium head blight. As you will see, our editorial team is committed to bringing you the latest sound science to help you craft your business strategy. You will also see this in our new and improved variety guide that now, more than ever, delivers the key information about the seed varieties you may be selecting.

As we celebrate our 65th year representing our members, our organization has also been busy preparing our industry for the road ahead. As we learn more and more about the importance of global crop issues – from a changing climate to the shifting landscape of pest control – we have been going full bore with our strategy of education and mitigation as opposed to just simple prevention.

A critical part of this strategy is our Seed Smart initiative, which encourages all farmers to utilize seed tests as an important tool on your farm. Only through a comprehensive test can you properly assess the quality of your seed and ensure that your resources are being allocated efficiently and effectively. Coupled with a 4R nutrient stewardship strategy for soil testing, we are aiming to equip all of you with the tools you need to succeed.

Alberta's seed processors are your partners in the fight to stay at the forefront of disease management, and are always happy to send your seed sample to an accredited lab for testing. Our members can handle both seed and grain, and can also upgrade your grain to get a better grade. Let us help you – we are all in this together!

On a personal and bittersweet note, I am retiring from the board of directors this year. I have really treasured my time representing this organization and have never been more optimistic about our direction and the future of our industry. Representing your sector through a farmer board is a great way to be involved, and I encourage any of you who have thought about it to take the plunge. There is no better way to influence policy, expand your network and contribute to the greater good – and you get to have a few laughs along the way!

Thank you all for your support. Please keep in touch.

David Bishop President Alberta Seed Processors dmbishopfarms@gmail.com



#### Greetings



**AS** Minister of Agriculture and Forestry, it is my pleasure to extend greetings on behalf of the Government of Alberta to *Alberta Seed Guide* readers. This edition's theme is "Mitigation Strategies – being successful is all about hoping for the best but planning for the worst," a sentiment to which all producers and business owners can relate.

Weather, pests, market demand, trade agreements, prices – any number of factors can impact the province's crops. Knowing what to do to prepare for such events is crucial to maintaining a viable business.

Alberta's agricultural sector continues to be one of the pillars of our province's economic diversification. Expanding the yield of our agricultural production while elevating the quality of the crops grown begins with the seeds selected for planting.

The Alberta Seed Guide is an important tool for producers. Beyond providing our farming community with key information, it also showcases our seed system's quality and variety, an essential part of keeping our agriculture sector sustainable and successful. The guide is a chance to stay up-to-date on issues affecting the industry, best practices, crop science developments, new products and more.

To the Alberta Seed Growers and Alberta Seed Processors: thank you for putting together the seed guide and your dedication to Alberta's producers. My sincerest wishes for your continued success.

Den Cui

**Oneil Carlier** Minister Agriculture and Forestry

#### Alberta Seed Guide

#### Spring 2018



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### **Treated Seed Offers Insurance Against Threats**

#### Start your season off right.

AS THE technology and the application of seed treatments is becoming more effective, growers are turning to treated seed to give their crop a fighting chance against seed and soil-borne disease and insects. Early seeding is becoming more common in Alberta, however seeding into cold soils can be risky – the seed sits in the soil longer and is vulnerable to threats below the ground. To combat that, seed treatments are helping growers start their season off right.

"Treating seed is a lot like insurance," says Harry Brook, crop specialist with Alberta Agriculture and Forestry. "Ideally, you'd be seeding into warm, moist soils for rapid emergence. But that's the ideal and then there's the reality. Early spring weather is unpredictable and growers have a lot of acres to cover. Seed treatments allow growers to seed when it works best for them without the negative impact early seeding can have on their crop."

Brook says that ideally, soil temperatures would be a minimum of five degrees before seeding begins; however, today many growers attempt to seed as soon as the soil has defrosted. The general rule is the earlier a crop is seeded, the greater the yield potential. But that's only true if it emerges strong and healthy. By keeping disease and insects at bay, seed treatments



Russel Hurst

help offset the risks of a delayed emergence.

Some crops are treated more than others. Canola is treated with combination products that contain both fungicides and insecticides to combat soil-borne diseases as well as protection from flea beetle damage. For cereal growers, the use of seed treatments is becoming more of a requirement, as diseases such as smut, bunt, damping off and root rot are increasing in incidence. And as there is a resurgence of wireworms in Alberta, seed treatment insecticides for cereals become more important. The available seed treatment insecticides put the wireworms in a coma-like state so they are unable to feed during the critical period of emergence.

Tight rotations with little cropping variation have meant an almost provincewide buildup of disease inoculum in the soil, meaning that every season has the potential for damaging disease, regardless of weather the previous season.

"Seed treatments offer security against early season threats, but they won't provide long-term protection," says Brook. "The seed treatment will help you achieve a good seedling, but you may still need to apply a foliar fungicide or insecticide if the conditions warrant it."

Brook cautions that good agronomics are still a crucial component at seeding. "Seeding is risky, and growers are participating in even riskier behaviour by shortening their rotation and seeding really early. Seed treatments are a relatively low-cost insurance. It may not pay every year, but as our disease and insect pressure increases, it will pay more often than not."

#### New Regulations Standardize Commercial Seed Treatment Processes

Advances in seed treatment technology has produced products that are applied at lower rates for a reduced impact on the environment, coupled with the development of products with several modes of action to offer higher levels of crop protection. While some growers treat seed on-farm, much of the seed treated in Alberta is done by a commercial seed treater.

As commercial application of seed treatments becomes more commonplace, the rules for how certain seed treatments are transported, stored and applied have evolved. As of January 2018, commercial seed treaters that apply designated seed treatment products will be required to follow the standards under the Accredited Seed Treatment Operation Standards as developed by CropLife Canada in co-operation with industry and government groups. Under these standards, designated seed treatment products destined for commercial use on corn, canola and soybeans can only be handled by accredited facilities.

"Today, commercial treaters [that are handling certain products] have a set of industry standards that were developed to ensure [certain] seed treatment products are handled and stored safely," says Russel Hurst, vice-president, Sustainability and Stewardship with CropLife Canada. "Commercial storage and handling facilities [that are handling restricted products] have to follow a set of practices that are checked every two years by a third-party auditor to ensure compliance."

The set of uniform health and safety standards for the storage and handling of seed treated in Canada creates targeted solutions that contribute to improved safety and productivity. The standards were developed by a working group made up of members from industry, government and seed growers. While Alberta already has very high government requirements for commercial seed treatment facilities, these new standards were put in place to make sure everyone treating seed for commercial use is meeting or reaching these goals at a national level.

In Alberta, commercial seed treaters include seed treatment companies,

agricultural retail facilities, seed growers who treat commercial seed and seed cleaning co-ops. The new standards include 76 protocols, 66 of which were already covered under existing government regulation, and 10 additional industry best management practices.

"For the long-term sustainability of the seed treatment industry, we needed to be involved in developing these standards in order to create a vibrant industry going forward," says Hurst. "If we didn't come up with these guidelines we risked having standards imposed on us that weren't necessarily in the best interests of the industry."

Effective January 2018, only seed treatment operations that have successfully completed an accredited seed treatment operations standards audit will be able to receive certain seed treatments for application on seed. However, not all seed treatments are on this designated list; only products that are deemed to pose elevated risk to people or the environment are placed on this "restricted-use" list.

"This no-ship policy is similar to what other sectors of the crop input industry have developed," says Hurst. "The fertilizer industry, for example, has these types of protocols in place so that their products are treated with care. We aren't necessarily saying anyone is doing anything wrong, we are just making sure we are all reaching toward the same standards."

Hurst says there can be a fine line between rigorous and onerous standards, but he says the consultation process has been ongoing since 2009 and he thinks the standards developed today are obtainable by Alberta's commercial seed treatment industry. While on-farm treaters are not subject to the same standards, they still are expected to follow the product label and use good management practices when treating their seed.

"These guidelines will likely be updated every five years unless a new regulation or new product is put in place that requires us to adjust our protocols," says Hurst. "Growers want to protect their seed and their crop, and new products are always being added to our list of designated seed treatments. Our standards will change as products and growers' use of them continues to evolve." Jennifer Barber

#### Getting More Bang For Your Seed Treatment Buck

According to industry surveys, close to 100 per cent of canola is treated, while 69 per cent of pulse crops and just over 65 per cent cereals are being treated.

There are a few basic practices farmers are following to get the best value for their seed treatment investment:

Select the right product – Field scouting coupled with a review of seed test results that includes disease screening data is a great way to make sure the right product is selected to protect the seed from possible threats.

Be Informed – Always read, understand and follow label directions, as manufacturers constantly update label statements. If using a rhizobia inoculant or other biological product, consult the manufacturer of the biological product for any special handling tips if using in conjunction with a seed treatment product.

Pay attention to application -No one would dump a load of fertilizer in the corner of a field and expect it to supply fertility to the entire field. The same goes for seed treatments. An untreated seed is an unprotected seed; seed treatments need to be evenly applied to the seed in a manner so that subsequent handling of the seed does not cause any dusting off of the seed treatment product. Many seed cleaning co-ops and seed growers offer professional commercial application services, which are gaining in popularity as a means to evenly apply seed treatments.



### Planning for Fusarium in 2018

#### Plan for the worst, hope for the best.

IT will be easy for growers to let their guard down this year when it comes to managing for Fusarium head blight (FHB). The bone-dry summer in 2017 meant there was little issue with FHB or any other disease.

However, going into the 2018 season, growers need to stay vigilant against the yield- and quality-robbing cereal disease.

"There's little one can do at this point in time to eliminate the risk for Fusarium if the pathogen is present," says Brian Beres, research scientist with Agriculture and Agri-Food Canada in Lethbridge. "We know the inoculum is there, and while you can't control the amount of pathogen in the soil this year, nor can you predict the weather, you can control your agronomics and give your crop a fighting chance against the disease."

*Fusarium graminearum* is the most common cause of FHB in Alberta, and is particularly well established in the southern areas of the province. It affects yield and grade as it produces the mycotoxin deoxynivalenol (DON), which makes the grain a poor grade for the feed, malting milling and biofuels industries. High humidity and warm weather in late June and July favour spore development on infected residue, and those spores can spread through the wind or through moisture splashed onto the plant.

"After what appears to have been a year of low *Fusarium* head blight damage, we hope it is not out of sight, out of mind," says Michael Harding, research scientist, plant pathology with Alberta Agriculture and Forestry's Crop Diversification Centre South in Brooks. "The inoculum overwinters in the soil and on residue, and if we have a wetter season this summer, it could still be a very bad year for FHB."

Going into the growing season, the first thing growers can do to manage for *Fusarium* is carefully choose their variety based on their local risk. While no cereal varieties are truly resistant to *Fusarium*, some tolerate the disease better than others. Durum varieties can be the most difficult to choose as they are all susceptible to moderately susceptible to the disease.

Once a variety is chosen, Beres says uniformity is the main theme to allow a crop to battle FHB. A uniform crop will flower at the same time with a shortened flowering duration, ideally before *Fusarium* spores begin invading the crop. To achieve uniformity, growers need to turn up their seeding rate and then seed early. "Two beneficial things happen with a higher seeding rate," says Beres. "First, you achieve uniform growth stages throughout the field; and second, you have increased main stem production and fewer tillers, both which makes foliar fungicide timing easier and improves fungicide efficacy greatly."

The ideal winter wheat seeding rate of 450 seeds/sq. metre has been established through previous research Beres and his team conducted. Combined with timely planting further enables winter wheat the opportunity to "escape" FHB infection as it can complete flowering ahead of the onset of spore inoculation. For spring wheat, research was also conducted to gauge what response growers get from a high seeding rate.

"Traditionally, spring cereal growers have seeded around 200 to 250 seeds per square metre. However, we've observed spring wheat such as durum and high-yielding CWRS varieties respond to rates as high as 450 seeds per square metre," says Beres. "While the yield response may stop at 300 to 350 seeds per square metre in some environments and with some varieties, the *Fusarium* risk may be lower because you have a much more uniform crop that also happens to be much more competitive with weeds."

Once the resistance package is established and the decision is made to seed at a higher rate, growers should consider lodging risk. A crop seeded at a high rate is at greater risk for lodging later in the season if lodging resistance is overlooked when choosing a variety. However, taller wheat can also be a benefit when battling FHB in low to moderate disease severity with low spore dispersal, as the disease spores that splash up from the ground during wet periods may not reach the (head) vulnerable areas of the spike.

Before the seed is even placed in the ground, cereal growers should consider a seed treatment.

"Seed treatments won't directly tackle FHB, which happens later in the season," says Harding. "But it will battle seed- and soil-borne pathogens as well as abiotic factors which could weaken your crop and its stand establishment. You don't know what's in the soil. Treated seed is exposed to less stress early in the season so it has a better chance for success after emergence."



Brian Beres

#### **Calculating Seeding Rates**

Crop uniformity is the main theme to allow a crop to battle FHB. To achieve uniformity, growers need to turn up their seeding rate and then seed early.

To calculate optimum seeding rates, use 1,000 kernel weight of each seed lot. By using the 1,000 K weight, you can account for seed size variations when calculating seeding rates, calibrating seed drills and estimating shattering and combine losses.

Alberta Agriculture and Forestry provides online seeding rate calculators to help you decide how much seed you need to plant to obtain the desired plant population and calibrate your seeder.

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#### "Treated seed is exposed to less stress early in the season so it has a better chance for success after emergence."

-Michael Harding

While you want to have your field come into maturity at the same time, high risk FHB areas should consider seeding different fields at different times. "You really don't want to plant all of your wheat during the same week," says Harding. "If they are all coming into anthesis at the same time, your entire season is at risk. But if fields mature at different times, you are spreading out the risk of a total loss."

Rotation is another way to reduce the disease pathogen in the soil, but given Alberta's short growing season and cropping options, effective rotations can be challenging.

"Ideally you would only have one crop in four years that is a host for *Fusarium*," says Beres. "But that's impractical as many of the crops that comprise today's cropping systems are hosts for the disease. Even if the field is rested in chemical fallow, the undisturbed stubble, tissue and plant roots can be colonized with *Fusarium*."

Harding says even though ideal rotations are difficult, inoculum levels can be reduced by managing that rotation. "Durum and corn are the best hosts for the disease, so if you are growing corn, which is likely to have more *Fusarium* residue, don't grow durum right away. Allow the residue to break down on a less susceptible crop. You should work out your field selection in the fall and winter so that you can minimize the buildup of the pathogen."

If the plant is more uniform and flowering more even, the timing window to apply a fungicide is also easier. More heads will come out of the boot at the same time, and the more heads available to the fungicide, the better its efficacy. Recent research shows that waiting until as many heads are visible will reduce *Fusarium* and DON at harvest. A fungicide will remain effective four to six days after flowering, or seven to 10 days following head emergence.

You also have to take caution as to how you apply the fungicide," says Beres. "You need to consider ground speed, keep your boom levels low around 30 centimetres above the canopy for better coverage, and make sure your nozzle is configured so that the angle and pattern covers as much of the plant as possible utilizing a coarse spray pattern. You'll get as much out of an input that you put into how you apply it."

Harvest management can be tricky once *Fusarium* has infected a field. Many growers will increase the fan speed on their combine and blow the lighter, infected seed out the back end. However, then the stubble has been seeded with infected material.

"The opinions around the utility of tillage for FHB management in the science community are somewhat mixed," says Beres. "However, studies conducted on the Canadian Prairies show no increase in FHB under no-till, and there is only agreement that *F*. *avenaceum* has been controlled with tillage, not *F*. *graminearum*." Jennifer Barber

#### Assess your Fusarium Head Blight Risk

If you are concerned about your risk for an FHB outbreak in your area, visit the Fusarium Disease Severity Risk website at agriculture.alberta.ca/acis/m#!fusarium. The site is a mobile, local, disease severity risk assessment tool that can be used by growers throughout Alberta.

The risk assessment tool was developed by the Alberta Wheat Commission in collaboration with Ralph Wright and Dr. Pavel Pytlak at Alberta Climate Information Services (ACIS), Agriculture and Forestry (AF) plant pathologist Dr. Michael Harding, AF crop specialist Neil Whatley, Agriculture and Agri-Food Canada (AAFC) plant disease researcher Dr. Kelly Turkington and industry partners.

The tool takes data from over 300 weather stations from around the province to provide local risk warnings. ACIS collects 120,000 hourly weather observations from more than 370 stations each day. The site uses weather data to help growers make informed disease management decisions.

To determine your risk, click on the red pin in the top right of the page to open a map of the province. Each weather station is marked with a green dot. Zoom in on the green dot nearest your field and click on the dot to view the FHB disease severity index (DSI) gauge for that location. The site developers used a risk model created in Manitoba which determines DSI based on air temperature, relative humidity and rainfall over the past week.

The tool is not a FHB forecast; it is used to gauge risk in order to make timely fungicide application decisions. There are other risk factors such as crop staging, the amount of Fusarium in the soil, the varietal susceptibility, if a seed treatment was applied, and the rotation and stubble management history in the field. However, this tool will help you make an informed decision.

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# EYETHE SKY

Drones are proving to be valuable crop scouting tools for growers and agronomists in Alberta.

**THE** benefits of using unmanned aerial vehicles (UAVs) or drones as crop scouting tools are obvious. They enable farmers to spot problems in the field they didn't even know they had, often more quickly and easily than traditional scouting methods.

That — coupled with the fact UAVs have dropped dramatically in price in recent years — is why more growers in Alberta are utilizing them to help nurture their crops and improve overall farm management.

Markus Weber is co-founder of Landview Drones, an Edmonton-based company that sells fixed wing and multi-rotor UAVs and also provides operator training. Since the start of the business in 2015, the vast majority of their customers have been farmers and agronomists, reflecting the rising interest in drone technology in the agriculture sector.

Weber says his company integrates everything a farmer or agronomist requires in order to operate a drone themselves, rather than hiring a professional UAV service provider.

"We outfit them with everything they need, from the drone itself to the sensors and all the software they need to be able to process the data; and lastly, we would provide the training to be able to do it legally and safely," he says.

UAVs today are generally easier to operate than ever. Weber notes while some of their farm customers originally bought drones for fun, they later discovered how useful they could be for spotting problems in their fields.

"People often buy them for recreational uses, and then once they start using them, they realize what a great scouting tool it makes and they start using it on their farm," Weber says.

"Almost without fail, once they get an aerial view of their farm from relatively low altitude, they're finding out about problems they didn't know they had."

Weber says the insights gained from an eye in the sky can help assess general crop health and inform farm management decisions, such as where to spray to best control weeds, insects and disease.

He adds drones are also useful for spotting patterns in the field that could indicate serious issues with farm equipment, such as a problem with a seeder not operating properly that may be causing uneven germination in a field.

"All these kinds of things that just become plainly visible from the air aren't as easily visible from the ground," says Weber.

"If you can discover a problem with your equipment that you can remedy, that's worth thousands of dollars to a farmer. So that currently is providing the most value."



Landview Drones co-founder Markus Weber with a FireFLY6 fixed-wing drone.



Jan Zalud from JZAerial collaborated with Chris Neeser in his research work.

Robin Harrison is chief drone pilot for JTS Agrow, a farm input dealership near Bruce, Alta., that also provides UAV services for farmers. He believes time is a big reason why drones are growing in popularity among farmers and agronomists.





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"I think that it's probably a time saver and increases the efficiency of your scouting time," Harrison says. "You can go out and take a look at a field much more quickly and in much more detail [with a drone] than you can on foot or by just driving by the field."

#### **Drone Data**

Ag drones are capable of producing a lot of data, such as Normalized Difference Vegetation Index or NDVI maps, which can be used to assess variability in crop vigour. But managing vegetative remote sensing data such as this can be a daunting prospect, which is why many growers who want to go beyond simple crop scouting and have their fields mapped for precision ag purposes, such as variable rate input applications, often choose to go the service provider route.

"I think the biggest thing that might scare growers off is the data processing and the technology itself," says Harrison. They're not familiar with it necessarily and it might kind of spook them a little bit. They would likely tend to maybe hire somebody like me to do it for them, and then they don't have to worry about that part."

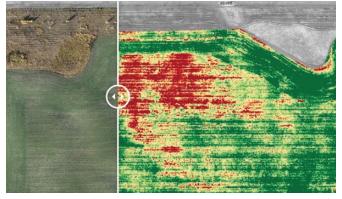
Chris Neeser, a weed scientist with the pest surveillance section of Alberta Agriculture and Forestry, has utilized UAVs in some of his research work. He believes those utilizing drones for precision ag need to develop the necessary expertise to be able use the software and interpret the data correctly.

"The technology itself is always changing and developing rapidly," Neeser says. "There's still a learning curve associated with using UAVs."

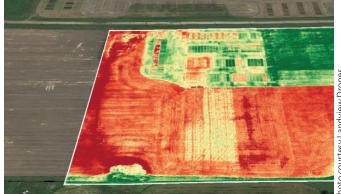
While he believes drones can perform a very useful role, Neeser stresses the current technology is not yet up to par with what a human scout can do — namely diagnosing a problem after it's been spotted.

"I would say UAVs are useful for field scouting but they're not a replacement for boots in the field. You still have to go in there and verify what the images show, because the images do not necessarily provide you with the details you need to make a diagnostic of what's going on," he says.

Weber agrees the analytical capabilities of drones may be limited, but it likely won't be that much longer due to rapid advances in artificial intelligence and the accelerating pace of sensor development.



A winter wheat field mapped with a standard UAV camera (left) and a NDVI map of the same field (right).



NDVI map of canola demonstration plots at the Lacombe Research and Development Centre.

"The flight technology has gone way ahead of the ability to produce good data from it. Right now, there are many kinds of maps you can generate with it but none of those really tell you what the problem is in a particular part of the field — they just tell you where there might be a problem," Weber says.

"I see in the next two to three years that drone sensor and software technology will change drastically through the use of better spectral data and machine learning. True diagnostic maps will make the biggest change in the industry."

#### **Mark Halsall**





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### Seed Man Still Growing Strong

#### Vulcan-based Ron Markert helps industry live long and prosper.

IF you were asked to name a good career for a people person, you might not blurt out "seed grower"; but then, you're not Ron Markert.

As a third generation grower with 40 years in the business, Markert has donned many different hats in the industry and worn them all well.

"My dad was a grower and I thought I would give it a try," said Markert. "Four decades later I still love it, largely because of the great people."

#### The Seeds of Success

On his 5,000-acre farm near Vulcan, Markert grows wheat, barley, canola and peas. In 1990 he moved his dad's processing plant onto his farm and set about making changes, increasing the capacity and installing a colour sorter.

Today, the seed part of the business is his main focus. Yet while it's a lot of work, he has always made time to do his part for the industry as a whole.

A prime example was his work on the Alberta Seed Growers (ASG) board. Starting in 1999, he served for 12 years in a number of roles including director, vicepresident and president.

"It's so important to have such an organization that looks after all industry

members and represents their interests. If you don't have representation like that, the government or other seed industry players can make changes and you don't have a say. The ASG is a voice for the industry, and without it our voices wouldn't be heard."

#### **Passing the Test**

Those voices spoke loudly in 2012 when the Alberta government proposed an end to funding for the Regional Variety Testing (RVT) program.

Since the program was having financial problems, the Alberta government wanted industry to run it, saying it was the seed industry that received the benefit. The ASG argued that everyone in the province would benefit because of the increased revenue farmers received through the choice of better varieties. The seed growers proposed the government fund the co-coordinator of the program so that role would be viewed as third party and unbiased. The rest of the RVT program would be funded by stakeholders that have interests in variety testing. After some determined lobbying, the government agreed.

That was a highlight for Markert, as was his chairing of the committee that hosted

the Canadian Seed Growers Association (CSGA) convention in Calgary, also in 2012. It was his last year on the ASG board, and after taking a year off, he stepped up to the national level.

"You have to think differently on the [national] CSGA board as you're not just working for Alberta, you're representing the entire country. Instead of interpreting the rules, we're actually making them."

That's the case with the Circular 6 Committee on which Markert sits, which deals with rules and regulations governing how we grow seed in Canada. It has been a real eye-opener for him on dealing with the whole seed industry and learning what you can and can't do in that arena.

While discussions sometimes get heated, he appreciates the mutual respect and recognition of common goals. "We disagree, but at the end of the day we go for dinner and we're all friends again."

#### An Awarding Experience

That ability to work with others may have lead to the BMO Farm Family Award in 2016 for Markert and his clan. The annual award honours outstanding families who best represent values of the family farm within their rural community, and



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it recognizes both farming business practices and community involvement.

"You don't get many pats on the back in this business, so it was nice to be recognized," says Markert.

The award was fitting, as farming, and the seed business in particular, is truly a family affair for the Markerts. Louise, Ron's wife of 36 years, is an integral part of the seed operation, and son Lee and his wife Lindsay are partners. While daughter Danielle and son-in-law Shawn work on the farm at Del Bonita, Danielle also works for Monsanto and does crop inspections in her off time. Her younger sister Beth is a seed growth specialist for Bayer CropScience.

#### **Family Values**

One issue that Markert, his family and his colleagues must deal with in the near future is value creation. In 2015, amendments to the Plant Breeders' Rights Act were enacted that impact how the plant breeding system in Canada can be funded.

"Right now when I sell seed, there is a one-time royalty in that cost which I pay back to the plant breeder, but sometimes



Ron Markert

people distribute seed to other growers even though that is prohibited," notes Markert. "The amendments may mean that the royalty is collected on the harvested seed instead and collected every year rather than upfront. That means that everyone who uses the seed would pay for it. For example, instead of the initial buyer paying say \$2 per bushel on certified seed, it may become 10 cents per bushel every year on your harvested production. This approach would balance out the cost for the industry."

At present, Canada hasn't decided what route to go on the royalty collection, as it must be negotiated with all producers, commissions and seed growers.

"This will be one of the industry's biggest issues going forward. If we don't get it right, we could have a huge mess that will be with us forever. I urge everyone in the seed industry and all producers to pay close attention to this matter."

#### **Follow the Leader**

It is challenges like this that has driven Markert to be so active in his industry, and he encourages others to do the same.

"Sitting on these boards has taken me from one end of Canada to the other. I would encourage young people in the business to get involved with the ASG, CSGA or other boards. It's a great opportunity to really understand how the seed business works in Canada and around the world, and to grasp the key issues."

If it sounds like he's getting ready to pass the torch, there may be some truth to that.

"Louise and I are going to slow down a bit now and do more travelling while our son runs the business. You never know when the maker will take you; at some point you have to stop and smell the roses." **Geoff Geddes** 

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### **Learning To Live With Fusarium**

Kevin Auch outlines best management practices to mitigate this disease.

**ALBERTA'S** Fusarium Management Plan, developed to limit mycotoxin production and subsequent grain contamination, and to prevent the spread of *Fusarium graminearum* into Alberta was a good idea – at the time it was implemented. But now that *Fusarium* is established in Alberta, growers need to take matters into their own hands to mitigate the effects of this serious disease of cereals. *Alberta Seed Guide* spoke with Kevin Auch, chair of the Alberta Wheat Commission and a farmer in the Carmangay area, about the issue and what farmers can do to diminish the chance of *Fusarium* appearing in their fields.

#### Alberta Seed Guide: Fusarium head blight is top of mind for Alberta cereal seed growers and farmers. Why is this specific disease such a threat?

**Kevin Auch:** *Fusarium* is a severe downgrading factor for wheat and its slow creep into Alberta has the potential to severely affect wheat production here. The disease is adversely affecting wheat production in other provinces where it is prevalent, and is curbing wheat profitability and production. For example, durum used to be a popular crop in Manitoba, but since durum is more susceptible to *Fusarium* than other wheats, the prevalence of *Fusarium* in Manitoba has virtually eliminated durum production in that province.

#### ASG: The Alberta Fusarium graminearum Management Plan has been in place since 2002, to "limit the introduction, escalation, spread and economic impact of *F.* graminearum in Alberta." Is the plan doing what it set out to do? Why or why not?

**KA:** I think the Alberta *Fusarium graminearum* Management Plan was reasonably effective at slowing the introduction of the disease into Alberta. But now that the disease is here, and seed is no longer the main threat or source of transmission of the disease, it is becoming more apparent that other alternative strategies may now need to be employed.

#### ASG: Currently, Fusarium graminearum (Fg) is listed as a pest in the Alberta Agricultural Pests Act, and no person or company can sell, transport or plant infected seed. Are most farmers testing their seed or purchasing tested seed to know that it is Fg free?

**KA:** I think a good percentage of farmers are testing, and it makes sense for farmers to plant the best quality seed possible. However, to enforce zero per cent *Fusarium* seed limits on a farmer who already has *Fusarium* in the fields he is planting doesn't make too much sense anymore. While higher germination seed is better, we don't enforce the use of 100 per cent germination seed; and in a case like this one where a farm



Kevin Auch

already has *Fusarium*, zero per cent *Fusarium* seed doesn't make sense either.

### ASG: With the spread of *Fusarium* throughout the province, the access to disease-free seed is limited. How can Alberta farmers overcome this challenge?

**KA:** Properly applied seed treatments are one of the best management practices that can help control the spread of the disease, and protect seedlings from other diseases as well.

#### ASG: Why is changing the Pests Act important in the management of *Fusarium* now and into the future?

**KA:** Currently the way the legislation is written, it's illegal to plant anything but disease-free seed. But proper seed treatment of wheat that is going into fields that already contain low levels of *Fusarium* may be a better management practice.

### *ASG:* Until changes are made, what can the crop industry and farmers do to mitigate *Fusarium*, now and into the future?

**KA:** I can't stress enough the importance of adhering to best management practices that help slow the spread of the disease and properly using all the tools available to us.

### Are Seed Testing Methods Keeping Up with the Times?

Seed quality is important not only to farmers, but a company's reputation hinges on it. We ask some of the industry's foremost experts if testing methods are keeping up with technological advancements.

**WHEN** it comes to seed quality, customers want to know exactly what they are buying and what they can expect.

High quality seed is determined by its parent's genetic makeup, physical integrity and purity of the seed, seed health and physiological seed quality, explains Lahcen Grass, the global manager for seed biology testing and product marketing support at the Syngenta Seedcare Institute.

Alison Powell, a long-time member of the International Seed Testing Association (ISTA) and an honorary senior lecturer at the University of Aberdeen, says it's important to define what we mean by "seed quality."

The term is wide ranging, she says, and encompasses purity, variety, problems of seed health, germination and vigour. She says it also includes whether or not the seed is genetically modified, and factors such as moisture content and seed weight.

"We hear a great deal about plant breeding, but the product of plant breeding is only as good as the quality of seed produced," Powell says, noting much of that depends on seed production conditions.

Grass agrees. "The quality of a given year's seed is determined by the prevailing weather and field conditions from the previous year, and subsequent processing and handling practices," he says, adding that you also have to consider if it was harvested at its highest point of physiological maturity.

The latter property can be determined by two separate tests: a germination test and a vigour test. However, these tests are not created equal.

While each seed company has its own proprietary method for conducting vigour tests, Powell points out that standardized vigour tests are published in the ISTA Rules for Seed Testing and are used worldwide. Vigour tests often impose stressful conditions on the seed during germination and emergence. The ISTA tests include several different tests but are all based on the main cause of differences in vigour, namely seed aging.

"High germination seed lots from the same variety and year can yield good germination test results but score very different on vigour tests," Grass says. "Generally, seed susceptibility to stresses that lead to poor and uneven field emergence are typical features of seed with lower vigour, not of lower germination capacity.

"On the other hand, higher and uniform emergence and vigorous seedling growth are properties of seed with higher vigour and germination."

Seed vigour is unlike germination in that it's not an absolute number. The expression of vigour depends on field conditions





Sarah Foster is president of 20/20 Seed Labs.

Alison Powell is an international seed testing expert.

and is affected by oxygen uptake, water uptake and soil temperature. Thus all seeds will emerge well in favourable conditions, and differences in emergence due to vigour only arise in poor conditions.

"Industry shouldn't rely solely on germination tests, because it doesn't give the complete story," Grass says. "The good thing is all seed companies go the extra mile to conduct their own vigour tests. They invest their own resources because they don't want to sell low vigour seed to customers."

Sarah Foster, president of 20/20 Seed Labs, agrees.

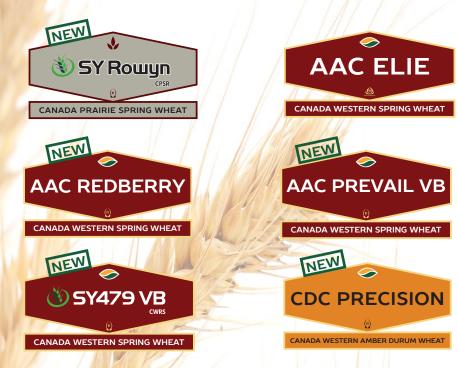
"We have our sights set on seed quality and how the environment could influence vigour," she says. "With hybrid wheat on the horizon, quality, performance and vigour are key competing factors. As scientists we have to work on new tests to determine what's needed in the near future."

Grass says this information can then be used to rank seed lots based on germination. For example, if the germination rate is low, there's no need to test it for vigour.

With a focus on vigour, Powell and the ISTA Vigour Committee constantly think about the development of new tests and the potential for automation, which can dramatically speed the test results. For example, Powell says the radicle emergence test depends on the physical counting of emerged radicles, but the use of image analysis can drastically speed the process.

Just as scientific advancements are made in plant breeding, so too are they in the seed testing sector. But are the rules and standards set forth keeping up with these new breakthroughs?

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Powell acknowledges there are new technologies, developed by equipment companies, which are beginning to come into the market. The challenge, she says, with many of the tempting new technologies is that they've only been tested using select material, not commercial material.

Powell explains that ISTA's Seed Science and Advisory Group can evaluate the efficacy of equipment that is marketed as a means of testing seed.

"We get as much information as possible from the company and published research, and then evaluate the evidence that the equipment is effective and publish the results," she says. "The results of the seed tests need to be comparable everywhere because that is the basis of international trade."

However, having worked with students from Nepal, Bangladesh and Kenya, Powell says she's particularly aware that not all countries have modern laboratories and equipment. "That's why it's necessary for the association to recognize a wide range of tests," she points out.

#### **Tested and Trusted**

"Our vision within the International Seed Testing Association is 'uniformity in seed testing,'" Powell says. "We've worked hard to get the rules and testing standards we have today in place.

"The tests that exist now are the ones that have been and can be replicated around the world in any laboratory, and that give people in the seed industry a great deal of confidence. They are also the basis for international trade."

In some cases, the different types of tests to evaluate one characteristic of seeds reflect the changes in approach to testing. "When I think about a variety test, there are many different types of tests that can be used to verify the variety," Powell says.

#### Questions To Ask Your Seed Lab About Your Results

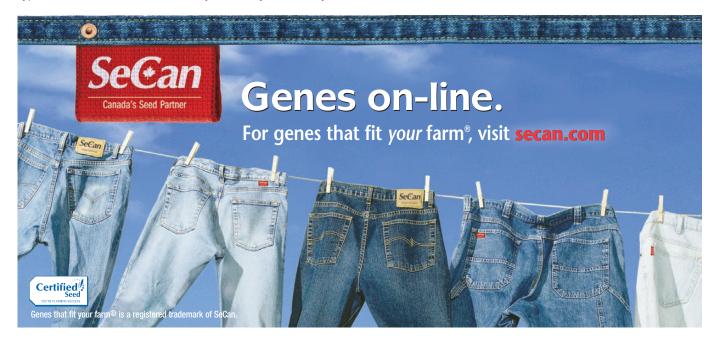
#### By Janet Kanters

Seed quality is determined after genetics by the environment it was grown in. Every year seed quality varies.

"Seed labs are equipped to assess the seeds' full potential for viability and health, using both accredited and informational tests," says Sarah Foster, president and senior seed analyst with 20/20 Seed Labs Inc. "It is important to know that while the germination test has been standardized, the other tests have not."

Use your seed lab's knowledge and ask how your seed can be managed best. Here are some questions to ask:

- How often should seed be tested during the season?
- How does the germination test differ from the vigour?
- How close together should the germination and vigour test results be?
- What vigour methods do we use and for which crops?
- What kinds of environmental stress affect quality?
- What temperature do you use for vigour?
- How much seed is tested for germination and vigour?
- How can a vigour & 1000 kwt be used for seeding rates?
- · How does mechanical damage affect seed quality?
- How does aging affect seed quality?
- How does seed health impact quality?





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"These range from traditional methods that evaluate if features of the seed are 'characteristic of the variety' to extraction of proteins or DNA techniques, followed by electrophoresis or PCR [polymerase chain reaction]."

Foster, who is also an ISTA auditor, which means she helps to audit government laboratories and is committed to promoting the seed industry, says: "Yes, ISTA is current with the times and keeps working toward introducing new rules." There's a great deal of work going on internationally, she adds, and ISTA's focus remains strong to incorporate new standards.

Powell explains the test methods approved by ISTA today underwent rigorous research and numerous studies to ensure accuracy and the ability to replicate.

The characteristics tested for today are the ones industry has found to influence seed performance. If you want good emergence, then the seed needs to have a high germination rate and good vigour, Powell emphasizes. If you need seed of a certain variety, then you want excellent purity, she adds.

#### **Adoption of New Rules**

When working toward adoption of new testing methods, ISTA follows a Method Validation Programme. Technical committees conduct appropriate background research and development for different tests. This is followed by six laboratories completing the test using the specified protocol and preparation of a report from the data. Then there's a technical and a statistical review of the report to determine if the validation has shown that the test is repeatable and reproducible. If the validation is satisfactory, then the test is proposed as a new rule. If approved by ISTA members, it can be introduced into the ISTA Rules.

The subsequent application of the test by ISTA laboratories is monitored through an auditing process and proficiency tests in which ISTA accredited laboratories are sent the same sample, asked to perform a test and expected to get the same results.

For some tests, there are a number of methods that can be used. As an example, a number of approaches and equipment have been developed to determine if seed has been genetically modified. Powell explains the approach ISTA has taken to ensure uniformity in testing is that a laboratory can use a combination of approaches, as long as we get the same results.

#### Future

It's important for testing methods to remain relevant. "We are looking at and keeping our eye on automation, the use of robotics moving into image analysis, and the requirements for uniformity in horticulture and precision agriculture," Powell says.

ISTA's Seed Science Advisory Group looks at practical and applied research. Comprised of eight people, representing Denmark, France, the Philippines, the United Kingdom and the United States, the group is responsible for reading publications and scientific literature to see if there are ideas, concepts or technologies that need to be further developed.

"We all want seed to perform for customers," Powell says, noting seed performance impacts the entire value chain.

Foster adds: "Farmers continue to adopt precision ag practices and depend on every single seed put into the ground to grow and perform — the only way to achieve that is by doing some very high profile vigour work. Every inch of the field counts, and seed testing plays an important role." **Julie Deering** 



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### ALBERTA'S FIRST SEED PLANT DOESN'T ACT ITS AGE

Rebuilding and revamping helped recharge the Camrose facility.

**AT 71,** you're supposed to slow down a bit and not overdo it. Clearly, someone forgot to share that with the Camrose County Seed Cleaning Plant, which seems to get bigger and better with age.

In 1946, the Agricultural Service Board (ASB) in the Municipal District of Camrose saw that good clean seed was hard to find and chose to do something about it.

"The old army drill hall was rented through the Town of Camrose from 1946 to 1948 to clean and store seed grain," says current plant manager Murray Van Petten. "The Alberta government rented cleaning machines to the operators and a profit of \$7,000 was turned over to the M.D. of Camrose No.63."

#### A Clean Start

Nothing against army drill halls, but the ASB decided in 1948 to build a new plant, thanks in part to a \$10,000 grant from the province. Thus was born the first seed cleaning plant built in Alberta with municipal and provincial funding for use by the agricultural community.

"It's from this basic idea that the co-op seed cleaning plants were built back then, with one-third financing from each of the provincial government, municipal government and shareholders," says Van Petten. "In the case of the Camrose plant, the shareholder portion of the funds was provided by the proceeds of the first operation in the Camrose Drill Hall. As a result, this plant was owned completely by the M.D. of Camrose and operated by the Agricultural Service Board."

Just as armies must face adversity, so too did plant operators. In 1963, the recently formed County of Camrose No. 22 built a new, more modern seed plant on the existing site. One year later, it had burned to the ground, leaving only the office and driveway. The present plant was constructed on the surviving foundation in 1964; fortunately, it has fared much better than its predecessor.

#### **Onward and Upward**

"There have been numerous additions and renovations over the years to enhance efficiency and production," says Van Petten. "In 1980, we built a loading bay and power door, and followed that up in 1981 with a new driveway floor deck including a digital readout truck scale. That year, we also added a bin monitoring system, a 3,000 bushel per hour receiving leg, a debearder and an additional elevating leg."

But they were just getting warmed up. Brand new offices and overhead doors appeared in 1982, while 1983 saw a 1,500bushel clean seed bin and two 275-bushel screening bins installed. Over the next 10 years, the plant would add more storage and screening bins, loading bays, a more effective cyclone and an LMC Mark 500 Gravity Table at a cost of \$232,000.

"The last renovation, completed in 2001, included 10,000 bushels of grain storage, a 5,000 bushel per hour receiving leg,



The Camrose County Seed Cleaning Plant today.

clean seed leg, an upgraded treating facility and three 2,000 bushel hopper bins for clean seed."

#### **Candid Cameras**

Today, the plant runs like a well-oiled machine where nothing is left to chance. All bin levels and leg shafts are monitored, as is the chemical pressure, treated grain flow and mixing auger shaft rotation. To ensure staff safety and work efficiency, the plant has a video monitor system complete with eight cameras.

Thanks to a full line of new equipment installed over the last five years – including a debearder, 6 drum indent, precision grader, Ceres 686 Clipper and a Buhler Sortex color sorter – the plant now averages 700,000 to 800,000 bushels per year.

In keeping with its commitment to not be slowed by age, the plant upgraded its treating system last year to a Graham G-40, capable of treating seed between 30 and 40 bushels per minute.

#### **Counting on the County**

Apart from its storied past and status as "Alberta's first," the Camrose County Seed Cleaning Plant is also unique in its county ownership, something Van Petten says offers many advantages.

"The Agricultural Service Board offices at the plant are a natural because we are patronized mostly by farmers. One office assistant is able to support both the ASB and seed plant offices' reception requirements and maintain all financial aspects for the plant. As well, the ASB shop being on the same premises gives the plant access to welders and other necessary equipment for maintenance."

Finally, two of the seed plant operators are used by the ASB department during summers, giving qualified personnel full-time positions and saving the hassle of retraining part-time help every year for both departments. **Geoff Geddes** 

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# Blackleg and Clubroot in Canola

#### An update on incidence, severity and best management practices.

**BLACKLEG** and clubroot are both serious diseases that are growing in severity across Alberta, but with proper and diligent management by all farmers, they can be effectively controlled.

#### Blackleg

Blackleg is a fungal canker or dry rot that results in stem girdling and lodging. The disease has been present in canola fields since the 1980s.

Today, the availability and use of canola cultivars with resistance to blackleg has helped to avoid significant damage, notes Michael Harding, a research scientist with Alberta Agriculture and Forestry (AAF). However, it is still very common to see blackleg in canola crops.

Harding and his colleagues have undertaken recent surveys for blackleg (and stem rot) on Alberta canola. In 2016, they found that of 480 canola fields, 432 of them had blackleg symptoms. Indeed, Harding states "the prevalence of blackleg in Alberta has been measured at 55 to 99 per cent in the six surveys conducted over the past eight years. Prevalence was slightly lower in 2017 compared with 2016, as it was a relatively dry year in comparison."

Long-term survey trends show the pathogen to be present throughout the province, and Harding does not believe any area or farm should consider itself "blackleg free." Some fields experience little to no loss due to blackleg while others may have significant disease pressure, and he says economic loss experienced by individual farms depends on their location in the province, local weather and field history, as well as cropping and disease management practices.

"Blackleg is always a risk for canola producers and blackleg management practices should be proactive," Harding



Blackleg overwinters on infected stubble (old cankers).



10to courtesy S.E. Strelkov, U of A

'hoto courtesy Michael Harding, AAF

Severe clubroot pulled from infested soil (note wilting of plants in the background).

says. "Crop rotation (one host crop every four years) is a very effective way to keep disease pressure from building. The pathogen does not survive in soil without a host. So, once the canola residues are decomposed, there is little to no risk of economically-damaging blackleg pressure originating within that field."

Harding also notes that genetic resistance in the MR- and R-rated canola cultivars is keeping disease severity very low in most fields, as was seen in the

survey data. However, Ralph Lange Team Lead Crop Pathology and Molecular Biology at InnoTech Alberta, notes there are now yearly cases of severe loss in cultivars labelled "resistant," a significant change from the 1990s and 2000s that indicates the pathogen is adapting.

Lange says there are about eight different blackleg strains in Western Canada, and in Alberta, about 80 per cent of all isolates belong to just three strains.

"We continue to have good resistance genes available, and what's changed is that we now need to actively manage the crop resistance genes we present to blackleg fungus populations," he explains. "So, frequent and accurate scouting with excellent record keeping is essential for determining if the genes we're presenting are working or not. Then, producers need to eliminate the non-functioning resistance genes when selecting which canola cultivar to plant (at least one functioning resistance gene)." This is now much easier, Lange notes, because seed companies are starting to reveal which genes are in which cultivar.

Another tool for blackleg management is fungicides. Harding notes while all certified canola seed is cleaned and treated to make it essentially blacklegfree (although infection can still occur due to spores being released from infected stubble), in high-risk situations during the growing season, foliar fungicides may be applied at the one-tothree leaf stage.

Going forward, Harding says the risk of resistance-building in the pathogen is very real when crop rotation



When blackleg-infected seed is sown, the seedlings that emerge may be infected with lesions on the seedling leaves or stems.

recommendations are ignored, especially in wetter years when blackleg has a better chance to infect and cause disease.

"If genetic resistance were to erode due to selection of virulent pathotypes of the fungus, it would have a devastating impact in areas where genetic resistance was no longer effective," he notes.

"While we are not currently seeing widespread changes in blackleg severity, it has been seen in some individual fields. This is a warning sign that we need to think carefully about crop rotation practices and resistance stewardship in order to stay ahead of blackleg."

#### Clubroot

In canola, this soil-borne fungus-like disease causes swellings to form on the roots, ultimately stunting the plant and even causing premature plant death. Infection and severity are supported by warm, moist, acidic soil.

University of Alberta scientists and staff from Alberta Agriculture and Forestry currently conduct yearly clubroot surveys, which began in 2003 when clubroot was first identified in the province. The 2016 survey found 289 new clubroot-infested fields and the 2017 survey another 301.

"What we've found is that clubroot is spreading fairly rapidly for a soilborne plant pathogen, and this seems to be due mainly to the movement of infested soil and machinery," explains Stephen Strelkov, professor in the faculty of Agricultural, Life and Environment

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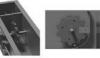
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Sciences at the University of Alberta. "We've also found significant numbers of spores in wind-blown dust from infested fields which could contribute to local spread."

There is a continued spread eastward, he adds, with several new infestations recently found near the Saskatchewan border.

"Part of why it often takes a few years for growers to 'up their game' when dealing with clubroot is because the impact on yield is often very slight," notes Dan Orchard, agronomy specialist with the Canola Council of Canada. "It's almost always found in a patch at the field entrance, and the overall field yield isn't really affected. But if not managed, that patch will become much, much larger and potentially cause total loss of the entire crop."

At least 12 new strains of clubroot have been identified in Alberta since 2013, and they are all capable of overcoming the resistance in many clubroot-resistant canola varieties.

"In 2016, these strains were confirmed in over 60 fields in Alberta, and in 2017, we identified another 42 fields with potential resistance issues," Strelkov notes. "These new strains have likely emerged as a result of cropping of clubroot-resistant canola in short rotation in fields with moderate to severe clubroot infestations."

Orchard notes while best management strategies make a big difference, they are difficult to deploy. "This would include equipment sanitation, which growers have suggested could be hours and hours per piece of equipment for each field," he says. "Not cleaning equipment is a risk growers seem to be accepting, although I believe many or most of them make sure equipment from unknown regions or potential clubroot regions is clean before entering their lands, which is a great practice to follow."

He adds there is evidence around the world and preliminary evidence in Alberta suggesting pH plays a major role in clubroot spread and severity.

"Liming fields could reduce clubroot impact, but it's another excellent management strategy that's easier said than done," Orchard says. "I'm convinced, however, that over the next few years and with the help of new technology, the industry will produce better lime recommendations, better pH mapping, better application techniques, and just a better understanding of lime and the benefits/challenges."

While he believes genetic resistance is currently the most significant factor in keeping this disease at bay, the fact that new clubroot strains are quickly appearing means growers need to deploy a multi-pronged approach.

"The recipe for success would seem to be liming badly-infested patches and seeding them to a perennial grass until spore loads are manageable, coupled with planting resistant canola varieties and rotating sources of resistance on top of crop rotation."

Strelkov agrees that with the new strains appearing, it's unwise to use resistant canola varieties as a sole management strategy. He stresses longer rotations are important, and adds while "sanitation often is not viewed as practical, even steps such as trying to remove large chunks of soil from machinery or working infested fields last can be helpful." **Treena Hein** 

### Midge Tolerant Wheat Stewardship Goes Online

#### New system simplifies process for protecting midge tolerance.

**GROWERS** of midge tolerant wheat are accustomed to putting pen to paper and signing a stewardship agreement with their seed retailers every year. All of that changes this growing season as the Midge Tolerant Wheat Stewardship Team has launched a digital platform and evergreen agreement. The move online is expected to improve the process for growers and retailers, and help ensure continued protection of the midge tolerance gene.

The Midge Tolerant Wheat Stewardship Assurance Site (MTWSAS) is a secure, web-based tool for use by seed distributors, seed retailers and seed growers that makes the process of documenting the movement of certified midge tolerant wheat seed more efficient. It allows users to create electronically signed stewardship agreements and to post sales transactions.

#### **Digital Agreement is Evergreen**

"The new system creates a state-of-the-art means of managing midge tolerant wheat stewardship while also making the process very efficient for everyone who utilizes this valuable technology," says Rod Merryweather, CEO of FP Genetics, one of the six official distributors of midge tolerant wheat in Western Canada. "It is a big step forward in protecting this valuable trait so resistance does not develop," he adds, noting that midge tolerant wheat continues to deliver "\$36 per acre of value to those who use it each and every year."

All midge tolerant wheat is sold to farmers under an agreement in order to ensure proper stewardship of the technology, which limits the use of farm-saved seed to one generation past certified seed. With MTWSAS, the stewardship principles do not change, but the process becomes a lot easier.

"This online agreement replaces the paper-based version and manual process that we've used since the launch of midge tolerant wheat in 2009," explains Mike Espeseth, communications manager for the Western Grains Research Foundation and co-chair of the Midge Tolerant Wheat Stewardship Committee.

"The online stewardship agreements are evergreen, which really simplifies things for everyone. Agreements are now signed digitally and farmers will only need to sign once, no matter where they buy their seed," he says.

#### **System Provides Savings for Retailers**

While stewardship agreements have been a vital part of protecting midge tolerant wheat technology for the past eight years, Espeseth and the team knew the process could be improved.

"The new MTWSAS is simple and technologically advanced," says Ed Mazurkewich, a business development consultant with AgCall, the developer and host of the new retailer-driven platform.

"All wholesale and retail movement of certified midge tolerant wheat seed is posted to the MTWSAS by seed growers and retailers with a user-friendly interface," he says.

Merryweather anticipates the new process will save time and money for retailers. It will eliminate the nuisance of duplicate agreements and add report-generating capabilities for their specific varieties.

"MTWSAS enables them to manage their customer base and create reports that will help them to manage current and future sales of products," he says. "It will also eliminate the onerous task of accumulating data for each farmer."

Merryweather adds that distributors can expect to benefit as well. "We will have access to complete information on the sale of all of our products, along with the absolute confidentiality we need in our business and for our farm and seed grower customers," he says. MTWSAS is administered and managed by AgCall with oversight by the Canadian Plant Technology Agency to ensure privacy and confidentiality.

#### Shining a Light on Stewardship

An added bonus of the new system is that it serves as a good reminder to growers and retailers on the vital need for stewardship.

In a survey conducted in spring 2017 with more than 1,000 wheat growers in Western Canada, 94.1 per cent of Alberta growers agreed that "it is critical to have a stewardship program in place to ensure that the effective life of the midge tolerance gene is protected." The survey also found that 95.1 per cent are familiar with the stewardship agreement for midge tolerant wheat. However, results showed new growers are less familiar with the agreement than existing growers.

"The new system enables us to identify any grower who may be out of compliance so we can follow up," says Merryweather. "The key is we have the tools to protect this valuable technology and to keep it working for farmers for many years to come."

#### Accessing the New System

Mazurkewich explains that in order for distributors, retailers and seed growers to access the new system, they require a new authorized retailer number. This is obtained by successfully passing the updated retailer training located at midgetolerantwheat.ca and by signing a new retailer stewardship agreement at MTWSA.ca.

"New processes incur new actions and perhaps new questions," says Mazurkewich, adding AgCall is committed to providing ongoing support. "Users will have access to four videos outlining how to use MTWSAS once they receive their login information." Karen Lewis

### Industry Taking Action on Pollinators

Pollinator protection has been a hot-button issue in Canada for the last five years. We look at some of the efforts in this country to protect pollinators and what the implications of them could be for the seed sector.

**RECENT** headlines regarding overwintering of honeybees in Canada and the rest of North America over the past decade have often not been good. Annual honeybee colony losses have averaged 25.03 per cent in Canada since 2007, while the rate in the U.S. was slightly higher at 28.4 per cent.

That's why a recent report out of the U.S. was welcomed as good news by members of the agricultural sectors and scientific communities on both sides of the border. In May, the Bee Informed Partnership (BIP), in collaboration with the Apiary Inspectors of America (AIA) and the U.S. Department of Agriculture (USDA), announced 21.1 per cent of managed colonies in the U.S. were lost over the winter of 2016-17. That number represents an improvement of 5.8 per cent over the previous winter and is well below the nation's average during the past decade.

There is reason for optimism north of the border. According to the Canadian Association of Professional Apiculturists (CAPA), the number of overwintering colony losses in Canada the past two years was well below the national average for the past decade (16.8 per cent in 2015-16 and 16.4 per cent in 2014-15).

"I think the fact the overwintering losses continue to decline shows that the cooperative working practices that have been emphasized the last few years are working, that beekeepers are stepping up their management on managing health-related issues with bees and growers are starting to modify their practices, understanding they have to use agronomic practices that help ensure a healthy environment for pollinators as well," says Calgary-based Paul Thiel, vice-president of product development and regulatory science for the Crop Science Division of Bayer in Canada. "Here in Canada, we're very reliant on honeybees for our InVigor hybrid canola seed production. It's essential for our business and for our customers - this hybrid canola could not be grown without the pollination service they provide."

Several efforts are currently underway in this country to help protect honeybees and other pollinators such as bumblebees, and butterflies.

#### **From Emotion to Science**

Stephen Denys is director of business management for Maizex Seeds and a long-time member of the Canadian Seed Trade Association (CSTA). He's been following the issue of pollinator health closely since the debate over honeybee losses and their connection to the use of neonicotinoids flared up five years ago.

Denys says he's been encouraged by the efforts made by the ag industry, government and other groups to promote pollinator health and protect natural habitats. Even more encouraging, he says, is the fact that the debate over treatment methods appears to be shifting away from being emotion-driven to science-based.

"The concern from the seed industry is that we've been successful at agriculture on this continent and in Western civilization because we've always taken a scientific approach to things," says Denys, a former president of the CSTA.

"We don't make decisions emotionally — we look at the science and then [use that] to make a decision. If the science showed you've got a real issue and you've got to make a change, farmers here have always adapted to that change and industry has adapted to that change."

Denys was heartened by recent news that Health Canada plans to hold off on a making a decision on a possible federal ban

on the use of imidacloprid, a neonicotinoid insecticide, until the end of this year.

"I view that as very good news. It says they're looking at the base research that was used, they're looking at some of the points that were brought forward by a whole spectrum of groups including the horticulture industry and crop production industry and saying, 'Wait a minute, we've got to look at this too,'" says Denys, adding a ban on neonicotinoids could create an even bigger problem by creating an even heavier reliance on some foliar sprays.

Denys says one of the things the seed industry needs to do is work together to better educate the public about what it has accomplished to date and "walk them through the evolution of why we're doing the things we're doing today."

#### **New Products in the Pipeline**

Bayer has teamed up with several industry partners and organizations as part of the Bees Matter initiative. The outreach program aims to share information on honeybee health in Canada with the Canadian public and raise awareness with everyone from agricultural producers to backyard gardeners about practices they can adopt to ensure pollinator health. Bayer is also part of a bee health roundtable group spearheaded by Agriculture and Agri-Food Canada that has been tasked with identifying and addressing risks and opportunities related to bee health.

One of the projects the company is involved with that will be of interest to the seed sector is the creation of a new fluency agent for negative pressure air seeders. In the past, a mixture of talc and graphite was used to expedite the movement of corn and other seed as it was vacuumed through the seeder. The waxbased fluency agent means there is far less dust created when treated seed exits the seeder.

"There's been a significant reduction in the creation of any dust that might contain the seed treatment compound," Thiel says. "It's been effective and the growers have adopted it. They're very interested in maintaining the biodiversity and the natural surroundings of their farms."

Bayer is also working on a new miticide designed to help beekeepers control the Varroa mite, which has been referred to as the vampire of the honeybee industry. There are currently few ways to control the deadly parasite, which originated in Asia. Research has indicated the strips can control as much as 95 per cent of mites.





Stephen Denys is director of business management for Maizex Seeds and a long-time member of the Canadian Seed Trade Association (CSTA).

Nigel Raine, a pollinator expert at the University of Guelph and Rebanks family chair in pollinator conservation, is seeking to raise awareness of pollinator health in Canada.

"It will give a rotational option to beekeepers so they are not as reliant on too few compounds and help to reduce the potential for resistance development in the Varroa mite population," Thiel says.

#### **First-of-its-Kind Study**

While pollinators have been making plenty of news, knowledge of their habits and habitats here in Canada remains lacking.

Nigel Raine, a pollinator expert at the University of Guelph and Rebanks family chair in pollinator conservation, is seeking to change that. Raine is leading a team of researchers that will be monitoring pollinator activity at 50 different locations throughout the province of Ontario as part of a multi-year study that began in 2016. It's believed to be the first time a study of this kind has been conducted on such a large scale anywhere in Canada.

"What we're hoping to get is a broader picture of the distribution of wild pollinator species and how they're related to different habitat types and different land use categories. We're trying to include everything from provincial parks and conservation areas through to intensive agriculture and even some urban sites," Raine says.

"The main aim the first few years is to get a baseline to see which species are where. If we can see areas where they have very healthy populations, we can look at the types of habitats in that



The "bee hotel" project was started in 2014 in conjunction with the Fairmont hotel chain to build sustainable resting places, or 'hotels', for solitary bees.

area and we can say this is the sort of matrix that we want to look at [being part of the landscape] on a scale that pollinators need."

One of the biggest challenges with the study, according to Raine, is the large number of different pollinators that call Canada home. There are more than 850 species of bees in this country, with most of them being solitary ground-dwellers.

Raine says the study has potential implications for the agriculture industry in not only Ontario but the rest of the country, since three-quarters of the leading food crops are pollinated by some form of animal. The data from the study could eventually help determine where pollinator habitats need to be located and how widely they should be distributed.

As for the seed sector, Raine says the study could lead to more integration with industry in terms of how plants, particularly native plants, are sourced to create the mixes for habitats that will support pollinators and wildlife in general. It could also increase demand for seed required to produce pollinator-friendly habitats in some cases, he adds.

#### **Raising Public Awareness**

Pollinator Partnership Canada (PPC) is a registered non-profit that does mission-based work across the country aimed at promoting and protecting pollinators and their ecosystems. It's comprised of more than 140 stakeholder organizations including university faculty and researchers, farmers, corporate agriculture, seed producers and corporations with an environmental ethics platform.

It's one of the partners behind the Million Pollinator Garden Challenge, a campaign to register one million public and private spaces as pollinator habitats. It's also created a series of 15 regional guides designed to help gardeners, farmers and land managers select plants for pollinator-friendly habitats. "What we're hoping to get is a broader picture of the distribution of wild pollinators species and how they're related to different habitat types and different land use categories."

-Nigel Raine

The partnership has also been one of the driving forces behind the creation of a series of so-called bee hotels across the country. The project was started in 2014 in conjunction with the Fairmont hotel chain to build sustainable resting places, or 'hotels', for solitary bees.

PPC research director Vicki Wojcik says it's difficult to qualify the impact the hotels are having on bee populations. However, she says the project has had a huge impact in terms of raising awareness regarding the importance of pollinator health.

"We often have more of an opportunity to get people interested in the concept within a more urbanized context. Eventually, over time, the idea does take hold," she says.

The partnership has also teamed with Bayer and the University of Guelph to look at how cover crops can be used to enhance pollinator nutrition. "What this research study is trying to see is what kind of plant-pollinator interaction we see with cover crops so that we can give farmers more tools," Wojcik says.

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# CSI CONTEMPLATES A RESPONSIVE ROLE FOR THE FUTURE

The Canadian Seed Institute's executive director says the organization is a relevant model to look to for future discussions on a next-generation seed system.

AS executive director of the single point of contact for many seed processing and testing establishments in Canada, Roy van Wyk can imagine a future in which the Canadian Seed Institute (CSI) plays a different and more adaptive role than it does now in its response to the outcome of the Seed Synergy Collaboration Project, which is designed to forge a next-generation seed regulatory system for the country.

Currently, CSI is responsible for the oversight of approximately 1,000 Canadian businesses that are either registered seed establishments, authorized importers or accredited seed testing laboratories. Want to be an accredited seed testing lab, an authorized importer, approved conditioner or an accredited bulk storage facility? You must first be audited by CSI.

Van Wyk can see those responsibilities also extending to seed certification itself as the industry begins to build a nextgeneration seed system through the Seed Synergy Collaboration Project. Currently, the Canadian Seed Growers' Association (CSGA) is responsible for certifying pedigreed seed crop production for all agricultural crops in Canada except potatoes, while the CFIA is responsible for the blue tag and the grade tables.

"One thing I think we'd benefit from is if all the oversight and final certification services were delivered under one roof," van Wyk says.

"The delegation of full responsibility for the labelling of seed with the certification label, namely the blue tag, would move us along quite nicely towards a single window for seed certification. I believe this is one change that could strengthen the industry by demonstrating a stronger sense of ownership and impartiality for seed certification."

CSI was originally formed in 1997 when the Canadian Food Inspection Agency (CFIA) was looking to delegate





Jim McCullagh

Roy van Wyk

the oversight of registered seed establishments and accredited seed labs. It was a costly and time-consuming role the government simply didn't want to take on anymore.

Today, CSI has five major industry members — the CSGA, Canadian Seed Trade Association (CSTA), Commercial Seed Analysts Association of Canada, Alberta Seed Processors and Quebec Conditioners.

Contemplating the role of CSI is nothing new. In the months leading up to its formation in the late 1990s, the seed industry was forced to grapple with the idea of an entirely new organization being formed to take over seed facility inspections, says former CSI executive director Jim McCullagh.

"The hardest work in forming CSI was done through the executives of the CSGA and the CSTA in particular — they were responsible for convincing their memberships this was a good idea," McCullagh says.

"For the CSTA, where many of its members were already looking at ISO 9001 as a quality management system standard, it wasn't too much of a new concept to grasp. For CSGA members, it was more daunting. They were more comfortable with the services being provided by the CFIA, and they had a little more difficulty acknowledging that change was needed." But change did happen. And van Wyk feels it needs to happen again as the Seed Synergy project begins in earnest. Seed Synergy is tentatively scheduled to provide the federal government with its initial recommendations for a next-generation seed system for the spring of 2018.

In March, the CFIA officially declared its intentions to modify Canada's Seeds Regulations in order to "reduce overlap and redundancy, increase responsiveness to industry changes, address gaps, weaknesses and inconsistencies, and provide clarity and flexibility to affected regulated parties for seeds imported, conditioned, stored, tested, labeled, exported and sold in Canada."

"Our industry as a whole recognizes that so many issues are coming at us, and that seed program modernization is here. There are pressures to streamline our six seed sector associations, and while that might seem like the natural thing to do, it might not necessarily mean any cost savings," van Wyk says.

"Through Seed Synergy, it's easier to see the value each organization brings to the seed industry. We all have very unique roles and responsibilities. For CSI, it's been that much more of an eye-opener, to gain an even deeper understanding of how all those parts fit together."

The Seed Synergy exercise will help CSI gain more knowledge of the other organizations and better understand if there are roles it can take on to help support the other groups, van Wyk adds.

"In 18 months I think the future design for Canada's next generation seed system will be a lot more clear. CSI is still the most relevant model to look to for future discussions on a next-generation seed system. It's still early, and we have a lot of ground to cover, but we're ready to begin talking in a lot more detail and consulting with our clients, members and industry stakeholders to determine what the future seed industry should look like."



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# When Production and Marketing Decisions Collide

There is no magic formula, but following some bigger picture trends can help.

**MARKETS** are challenging to predict at the best of times, and the hurdle is even greater the further one looks into the future. You can tilt the field in your favour by fully understanding the current fundamentals, keeping an eye on long-term demand trends, and knowing the extent to which potential crop sales match the operating needs on your farm.

Production and prices are two of the factors that vary the most from one year to the next on a farm, and yet are the biggest driver of profitability. Revenues need to be higher than expenses. Revenue is a function of both grain quantity and quality and, ultimately, the price received for the grain. There is little relationship between a given farm's production and the overall price. Both are out of the farmer's control.

For the most part there is not a great deal of overlap between production practices and marketing decisions. Around the margins there might be some influence when, for example, a grower applies extra nitrogen to the wheat crop in an effort to bump up protein levels to take advantage of elevated protein premiums. It is easier to justify investing more into a crop that has a favourable price outlook. However, the price outlook has little bearing on most production decisions – once the decision to plant a crop has been made, farmers do what they can to maximize yield and promote quality.

There is one place where production and marketing decisions do collide: the decision on what to plant in the first place. Of course, cropping decisions are confined by agronomic considerations and other factors, but at the end of the day, the business needs to make money over the longer term if it is to be sustainable. Within the range of potential crops that can be planted on a given field, the prospects of making money is a critical part of what ultimately goes in the ground.

Since planting decisions are being made as early as harvest (or earlier), farmers must have an opinion on prices between 12 to nearly 24 months out. There is a limited ability to make lastminute decisions. Given that weather and government policy are the two biggest influences on grain prices, and both are completely unknown that far in advance, how can farmers have a good grasp on price expectations?



Jonathon Driedger

There is no magic formula, but following some bigger picture trends can help guide us.

First, try to understand the fundamental setup for the current marketing year. The goal is the next marketing year but the current season sets the table for the ensuing price action. Crops that have a tighter carry-out situation going into the next harvest have a greater sensitivity to yield threats. Crops that are projected to have comfortable supplies going into the next harvest have a smaller probability of seeing upward price movement. Large stocks provide a cushion that the market can fall back on in the event of a weather scare, reducing future upside potential. In these cases, a lot more needs to go "right" before the market gets excited. Medium quality wheat is a case in point, where the world is awash with stocks.

# Here's to the **FARMER**

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Producers sometimes consider "reverse psychology", and think about planting crops that are doing poorly in the expectation that most farmers will avoid those, creating a potential shortfall down the road. This isn't entirely without merit, although two important things need to be kept in mind. First, the cushion going into the season will help to buffer a potential acreage shortfall. And second, yield swings usually trump shifts in seeded area in terms of the final production outcome. This means that you still need adverse weather to spark the eventual hoped for rally. Also keep in mind Canada's role in any given market – we can reduce soybean acres all we want, and it hardly moves the global needle. Swings in some crops where we are a dominant player would have a greater influence, both good and bad.

Second, long-term demand trends can act as a tailwind for some crops. Demand overall is growing for nearly all grains as world population and standards of living rise. However, the pace of growth can differ considerably. All else being equal, crops with stronger demand growth have a better chance of seeing supplies shrink faster than anticipated during the marketing year. Global vegetable oil and meal consumption is a case in point, where it seems the USDA is perpetually reducing their projected carryout for soybeans as the crop year wears on. Canola consumption also seems to have no trouble using up whatever is grown. A crop such as barley (both feed and malt) doesn't have the same pace of demand growth behind it.

Finally, how patient can you be in selling a crop? Does a good portion need to move in fall, and then steadily throughout the year, to generate the cash needed to operate your business? Or are you able to be patient in making sales, and wait for the right

#### "Within the range of potential crops that can be planted on a given field, the prospects of making money is a critical part of what ultimately goes in the ground."

-Jonathon Driedger

window? Pulse crops are a good example where this factor may come into play for some farms. Global demand growth is solid, but we rely heavily on India as an export market, and their recent policy decisions have badly hurt shipments and prices. It's possible that eventually these policies get revised, once again opening up key demand. If this coincides with a reduction in pulse acres on the Prairies, buying interest could pick up in the face of smaller supplies. However, the timing of this is uncertain, if it happens at all. Perhaps that is too big a risk if growers are relying on peas and lentils to provide the consistent cash needed to keep the farm running. For those who can wait it out and take on the risk, there is the potential for a favourable outcome.

Jonathon Driedger is a senior market analyst with FarmLink Marketing Solutions in Winnipeg

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# Varieties of Cereal and Oilseed Crops for Alberta

**THIS** annual publication provides information on cereal and oilseed variety performance in 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 for cereals and flax is coordinated by the Alberta Regional Variety Advisory Committee (ARVAC) and Alberta Agriculture and Forestry (AAF). Funding for the program is provided by:

- Alberta Agriculture & Forestry
- Alberta Wheat Commission
- Alberta Barley Commission
- Alberta Oat Growers Association
- Alberta Seed Growers
- Alberta Seed Processors
- Prairie Oat Growers Association
- Entry fees for the varieties being tested

Data for this publication come from various sources, including:

- Alberta Agriculture & Forestry
- Agriculture & Agri-Food Canada
- British Columbia Grain Producers
- CPS Canada
- University of Alberta
- Alberta Innovates Technology Futures
- Farming Smarter
- SARDA Ag Research
- Battle River Research Group (BRRG)
- Chinook Applied Research Association (CARA)
- Gateway Research Organization (GRO)
- Lakeland Applied Research Association (LARA)
- McKenzie Applied Research Association (MARA)
- Northern Peace Applied Research Association (NPARA)
- Prairie Grain Development Committee
- Canola Council of Canada

The following individuals are the Regional Variety Trial and crop specific coordinators:

- Alex Fedko, Regional Variety Trial Coordinator
- Spring wheat, Drs. H. Randhawa, D. Spaner and S. Strydhorst
- Barley, J. Anderson
- Oat, Dr. J. Mitchell-Fetch
- Triticale, Dr. H. Randhawa
- Winter Wheat, Dr. R. Graf
- Fall Rye, Dr. J. Larsen
- Winter Triticale, Dr. J. Larsen
- Flax, M. Hartman

Sincere thanks are extended to all individuals and organizations that 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.

#### New for 2018

On a trial basis for 2018, the yield data for CWRS wheat are reported in two ways. The first method is the traditional manner that has been used since 2010 (see below). New for 2018 is an alternative method that reports head-to-head comparisons of all varieties on the annual trials within a five-year timeframe. This new method retains low and high yield test categories based on the average yield of AC Barrie (60 bu/ac), the long-term check. The advantage of this method is that all comparisons within a column are statistically valid, rather than only to the check. An Overall Yield column is also presented, but in this case all data are reported resulting is a dataset with varying numbers of comparisons over different years. Thus, for the Overall Yield Column, the only valid comparison is back to common check, as has been the case in the traditional method of reporting. Statistical differences among the varieties are also reported for the Overall Yield column. We welcome for comments on this new data reporting format.

Also new for 2018 is the inclusion of "benchmark" varieties. Producers have asked for additional checks in the regional variety trials that reflect more commonly grown varieties. To accommodate this request, two additional varieties are now grown as "benchmark" checks and reflect the two most popular varieties for the crop or within a market class during the previous year, based on crop insurance data. These checks will change as the popularity of varieties change.

#### **Traditional Yield Reporting Method**

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/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 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 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 this scale is different for each crop type. For example, an early barley variety will mature much earlier than an early flax variety.



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#### **Seed Size and Plant Populations**

Seed size within a crop kind will vary from variety to variety, requiring adjustment of seeding volumes to achieve desired plant populations. Some of the tables provide an average 1000 kernel weight (TKW) which can be used as a guide for variety differences. The best approach is to determine the 1000 kernel weight of the seed to be planted, germination rate, emergence mortality, and in the case of fall seeded crops, an estimate of winterkill. For more information and user-friendly seeding rate calculators that take into account these and other considerations, please see www.agric.gov.ab.ca/app21/ldcalc.

#### **Plant Breeders' Rights**

Plant Breeders' Rights (PBR) are a form of intellectual property rights by which plant breeders can protect new varieties in the same way an inventor protects a new invention with a patent. In 2015, Canada amended the PBR Act to bring it into conformity with UPOV 91. Varieties protected under the previous legislation (UPOV 78) are indicated with the <sup>(2)</sup> logo, whereas those protected under the new legislation are shown with a new <sup>(2)</sup> logo. The use of the ▲ logo indicates that an application for PBR has been accepted. For more information on Plant Breeders' Rights, please see www.pbrfacts.ca or the Canadian Food Inspection Agency website at www.inspection.gc.ca.

#### Canola

The Alberta Regional Variety Advisory Committee (ARVAC) 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.
- 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.
- Wheat with Moderately Susceptible (MS) or Susceptible (S) ratings for common bunt should be treated with a systemic fungicide as low levels of infection will restrict marketability.
- Refer to labels for maximum storage periods of treated seed.
- 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* and other species, 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. FHB infection is highly influenced by the environment and heading date. A resistant (R) tolerance rating for FHB does not equate to immunity. Under severe epidemics, all varieties will sustain damage. All seed should be tested for the presence of FHB and treated with an appropriate seed treatment if required. 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, AB: 1-877-420-2099
- BioVision Seed Research Ltd., Edmonton, AB: 1-800-952-5407
- BioVision Seed Research Ltd., Grande Prairie, AB: 1-877-532-8889
- Parkland Laboratories, Red Deer, AB: 403-342-0404
- Precision Seed Testing, Beaverlodge, AB: 780-354-2259
- Seed Check Technologies Inc., Leduc, AB: 780-980-8324

#### Abbreviations and Rating Scales

- TKW = Thousand kernel weight.
- XX = Insufficient data to describe.
- Maturity: VE = Very Early, E = Early, M = Medium, L = Late, VL = Very Late.
- Resistance Ratings: VP = Very Poor, P = Poor, F = Fair, G = Good, VG = Very Good, EX = Excellent.
- Disease Tolerance Ratings: R = Resistant, MR = Moderately Resistant, I = Intermediate, MS = Moderately Susceptible, S = Susceptible.
- Kernel Type (winter wheat): HR = Hard Red, SR = Soft Red, HW = Hard White, SW = Soft White.
- Awns (wheat): Y = Yes (bearded), N = No (awnless).
- Awn Type (barley): R = Rough, S = Smooth, SS = Semi-smooth.
- Seed Size (flax): S = Small, M = Medium, L = Large.

#### **Other Variety Information**

For additional information, including varieties not listed in this publication, please call the Alberta Ag-Info Centre toll-free at 310-FARM (3276) or check the Alberta Agriculture and Forestry website, www1.agric.gov.ab.ca/\$department/deptdocs.nsf/all/agdex4069 and

www1.agric.gov.ab.ca/\$department/deptdocs.nsf/all/agdex3795.

## Fact sheet information and tables prepared, reviewed and approved by:

Alberta Regional Variety Advisory Committee (formerly the Alberta British Columbia Grain Advisory Committee – ABCGAC).

#### Data preparation and factsheet coordination by:

Alex Fedko Coordinator RVT/Crop Research Technologist Alberta Agriculture and Forestry

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	• CDC
OATS	Much
- AC Morgan	Stett
- CDC Haymaker	
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# Cereal and Flax Breeding Institutions and Seed Distributors

New for 2018 we are pleased offer readers a quick reference tool to look up cereal varieties by class, their breeding institutions and distributor information

#### **DISTRIBUTOR CONTACT INFORMATION**

Alliance Seed	
CANTERRA SEEDS	
Crop Development Centre – University of Saskatchewan	
Field Crop Development Centre Lacombe	403-782-8033 / www1.agric.gov.ab.ca/\$department/deptdocs.nsf/all/fcd5615
FP Genetics	
Haney Farms	
La Coop Federee	
Lefsrud Seed	
Mastin Seeds	
Progressive Seeds Ltd.	403-347-4925 
Proven Seed/CPS Canada Inc.	
Richardson International	
SeCan	
Seed Depot	204-825-2000 / seeddepot.ca 
SeedNet Inc	
Syngenta Canada	

#### **BREEDING INSTITUTIONS AND SEED DISTRIBUTORS OF VARIETIES LISTED IN THIS PUBLICATION**

Variety	<b>Breeding Institution</b>	Distributor	Falcon
FEED and FO	OD BARLEY		Tyto
Two-Row			MALTIN
Altorado	Highland Specialty Grains	Proven Seed/CPS Canada Inc.	Two-Row
Brahma	Westbred, LLC.	Proven Seed/CPS Canada Inc.	AAC Con
Busby	FCDC (Lacombe)	Mastin Seeds	AAC Syne
Canmore	FCDC (Lacombe)	CANTERRA SEEDS	AC Metca
CDC Austenson	U of S - CDC	SeCan Members	Bentley
CDC Coalition	U of S - CDC	CANTERRA SEEDS	CDC Bow
CDC Cowboy	U of S - CDC	SeCan Members	CDC Clea
CDC Maverick	U of S - CDC	SeCan Members	CDC Cop
CDC Trey	U of S - CDC	FP Genetics	CDC Fras
Champion	Westbred, LLC.	Proven Seed/CPS Canada Inc.	CDC Kind
Claymore	Highland Specialty Grains	Proven Seed/CPS Canada Inc.	CDC Mer
CONLON	NDSU	Seed Depot	CDC Plat
Gadsby	FCDC (Lacombe)	SeCan Members	CDC Pola
Oreana	Highland Specialty Grains	Proven Seed/CPS Canada Inc.	Cerveza
Ponoka	FCDC (Lacombe)	SeCan Members	Harringto
Seebe	FCDC (Lacombe)	SeCan Members	Lowe
XENA	Westbred, LLC.	Proven Seed/CPS Canada Inc.	Major
Six-Row			Merit 57
	AAEC (Lathbridge)	SeCan Members	Newdale
AC Harper AC Ranger	AAFC (Lethbridge) AAFC (Brandon)	FP Genetics	Sirish
AC Rosser	AAFC (Brandon)	SeCan Members	TR13606
Amisk	FCDC (Lacombe)	SeCan Members	Six-Rov
Chigwell	FCDC (Lacombe)	SeCan Members	Legacy
Muskwa	FCDC (Lacombe)	SeedNet Inc.	OAT
Sundre	FCDC (Lacombe)	Mastin Seeds	UAI
Trochu	FCDC (Lacombe)	SeCan Members	Milling
	DOD and FEED BARLEY		AAC Just
			AC Junipe
CDC Ascent	U of S - CDC	SeCan Members	AC Morga
CDC Carter	U of S - CDC	SeCan Members	Akina

SeCan Members

Falcon	FCDC (Lacombe)	Progressive Seeds Ltd
Tyto	FCDC (Lacombe)	Progressive Seeds Ltd
MALTING BARL	.EY	
Two-Row		
AAC Connect	AAFC (Brandon)	CANTERRA SEEDS
AAC Synergy	AAFC (Brandon)	Syngenta Canada
AC Metcalfe	AAFC (Brandon)	SeCan Members
Bentley	FCDC (Lacombe)	CANTERRA SEEDS
CDC Bow	U of S - CDC	SeCan Members
CDC Clear (hulless)	U of S - CDC	SeCan Members
CDC Copeland	U of S - CDC	SeCan Members
CDC Fraser	U of S - CDC	SeCan Members
CDC Kindersley	U of S - CDC	SeCan Members
CDC Meredith	U of S - CDC	SeCan Members
CDC PlatinumStar	U of S - CDC/Sapporo/PML	CANTERRA SEEDS
CDC PolarStar	U of S - CDC/Sapporo/PML	CANTERRA SEEDS
Cerveza	AAFC (Brandon)	Mastin Seeds
Harrington	U of S - CDC	SeCan Members
Lowe	FCDC (Lacombe)	SeCan Members
Major	AAFC (Brandon)	Alliance Seed
Merit 57	Busch Ag Res. Inc.	CANTERRA SEEDS
Newdale	AAFC (Brandon)	FP Genetics
Sirish	Syngenta AG	Syngenta Canada
TR13606	FCDC (Lacombe)	FCDC (Lacombe)
Six-Row		
Legacy	Busch Ag Res. Inc.	Proven Seed/FP Genetics
OAT		
Milling		
AAC Justice	AAFC (Winnipeg)	FP Genetics
AC Juniper	AAFC (Lacombe)	Mastin Seeds
AC Morgan	AAFC (Lacombe)	SeCan Members
Akina	Lantmannen SW Seed	La Coop Fédérée
Bradley	AAFC - ECORC	SeCan Members

U of S - CDC

CDC McGwire

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CDC Seabiscuit       U of S - CDC       CANTERRA SEEDS         CDC Weaver       U of S - CDC       FP Genetics         CS Canden       Lantmannen SW Seed       CANTERRA SEEDS         Derby       U of S - CDC       Proven Seed/Mastin Seeds         Jordan       AAFC - ECORC       SeCan Members         Kara       Lantmannen SW Seed       La Coop Fédérée         Pomona       University of Minnesota       La Coop Fédérée         Souris       NDSU       Seed Depot         Stride       AAFC (Lacombe)       Mastin Seeds         CDC Nasser       U of S - CDC       T & L Seeds         Lu       AAFC (Lacombe)       Secan Members         Forage       Forage       Forage         CDC Baler       U of S - CDC       F & L Seeds         Lu       AAFC (Lacombe)       Secan Members         Forage       CDC Baler       U of S - CDC         CDC Baler       U of S - CDC       Secan Members         Murphy       AAFC (Lacombe)       Secan Members         Forage       CDC       Secan Members         CDC Baler       U of S - CDC       Secan Members         Murphy       AAFC (Lacombe)       Secan Members         Forage       Secan Memb			÷
CS Camden       Lantmannen SW Seed       CANTERRA SEEDS         Derby       U of S - CDC       Proven Seed/Mastin Seeds         Jordan       AARC - CEORC       Secan Members         Kara       Lantmannen SW Seed       La Coop Fédérée         Souris       NDSU       Seed Depot         Stride       AAFC (Winnipeg)       Secan Members         Triactor       Lantmannen SW Seed       La Coop Fédérée         Souris       NDSU       Seed Depot         Stride       AAFC (Lacombe)       Mastin Seeds         CDC Nasser       U of S - CDC       T & L Seeds         Lu       AAFC (Lacombe)       SeCan Members         Forage       CDC Baler       U of S - CDC       FP Genetics         CDC Baler       U of S - CDC       SeCan Members         Murphy       AAFC (Lacombe)       SeCan Members         FALL RYE       Bono       KWS Lochow GMBH       FP Genetics         Brasetto       KWS Lochow GMBH       FP Genetics       Gatano         Gutino       KWS Lochow GMBH       Secan Members       FP         Frima       AAFC (Swift Current)       SeCan Members       FP         Prima       AAFC (Swift Current)       SeCan Members       Secan Members </td <td>CDC Seabiscuit</td> <td></td> <td>CANTERRA SEEDS</td>	CDC Seabiscuit		CANTERRA SEEDS
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Stride       AAFC (Winnipeg)       Secan Members         Triactor       Lantmannen SW Seed       CANTERRA SEEDS         Feed		,	
Triactor         Lantmannen SW Seed         CANTERRA SEEDS           Feed			
Feed           AC Mustang         AAFC (Lacombe)         Mastin Seeds           CDC Nasser         U of S - CDC         T & L Seeds           Lu         AAFC (Lacombe)         SeCan Members           Forage         CDC Baler         U of S - CDC         FP Genetics           CDC Haymaker         U of S - CDC         SeCan Members           Murphy         AAFC (Lacombe)         SeCan Members           FALL         RYE         Bono         KWS Lochow GMBH         FP Genetics           Brasetto         KWS Lochow GMBH         FP Genetics         Daniello           Gatano         KWS Lochow GMBH         SeedNet Inc.         Gatano           Guttino         KWS Lochow GMBH         SeedNet Inc.         Hazlet           AAFC (Swift Current)         SeCan Members         Trima         AAFC (Swift Current)         SeCan Members           TITICALE         AAFC (Lethbridge)         Fabian Seeds Ltd.         AC Ultima         AAFC (Lethbridge)         Fabian Seeds         Secan Members           Bumper         AAFC (Lethbridge)         Fabian Seeds         Secan Members         Secan Members           Jyndal         FCDC (Lacombe)         Progressive Seeds         Suray         AAFC (Combe)         Solick Seeds         Sprodat		( 1 8)	
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Forage         Forage           CDC Baler         U of S - CDC         FP Genetics           CDC Haymaker         U of S - CDC         SeCan Members           Murphy         AAFC (Lacombe)         SeCan Members           FALL RYE         Bono         KWS Lochow GMBH         FP Genetics           Brasetto         KWS Lochow GMBH         FP Genetics         Gatano           Gatano         KWS Lochow GMBH         FP Genetics         Gatano           Guttino         KWS Lochow GMBH         FP Genetics         Gatano           Guttino         KWS Lochow GMBH         Secan Members           Prima         AAFC (Swift Current)         SeCan Members           Prima         AAFC (Swift Current)         SeCan Members           Bumper         AAFC (Swift Current)         SeCan Members           Bunker         FODC (Lacombe)         FP Genetics           Sunray         AAFC (Lethbridge)         Secan Members           Sunray         AAFC (Lethoridge)         Secan Members           FLAX         Import         SeCan Members           ACC Bravo         AAFC (Morden)         FP Genetics           CDC Bethune         U of S - CDC         SeCan Members           CDC Clas         U of S - CDC <td></td> <td></td> <td></td>			
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AAC Congress AAFC (Swift Current) CANTERRA SEEDS	Topaz VT50 WestLin 60 WestLin 61 WestLin 71 WestLin 72	CPS Canada Inc. CPS Canada Inc. CPS Canada Inc. CPS Canada Inc. CPS Canada Inc. CPS Canada Inc. CPS Canada Inc.	Proven Seed/CPS Canada Inc. Proven Seed/CPS Canada Inc. Proven Seed/CPS Canada Inc. Proven Seed/CPS Canada Inc. Proven Seed/CPS Canada Inc.
AAC Current AAFC (Swift Current) Alliance Seed.	Topaz VT50 WestLin 60 WestLin 61 WestLin 71 WestLin 72 CANADA WES	CPS Canada Inc. CPS Canada Inc. CPS Canada Inc. CPS Canada Inc. CPS Canada Inc. CPS Canada Inc. CPS Canada Inc. <b>TERN AMBER DURUN</b>	Proven Seed/CPS Canada Inc. Proven Seed/CPS Canada Inc. Proven Seed/CPS Canada Inc. Proven Seed/CPS Canada Inc. Proven Seed/CPS Canada Inc.
	Topaz VT50 WestLin 60 WestLin 61 WestLin 71 WestLin 72 CANADA WES AAC Cabri	CPS Canada Inc. CPS Canada Inc. CPS Canada Inc. CPS Canada Inc. CPS Canada Inc. CPS Canada Inc. CPS Canada Inc. <b>TERN AMBER DURUN</b> AAFC (Swift Current)	Proven Seed/CPS Canada Inc. Proven Seed/CPS Canada Inc. Proven Seed/CPS Canada Inc. Proven Seed/CPS Canada Inc. Proven Seed/CPS Canada Inc. A SeCan Members

AAC Durafield	AAFC (Swift Current)	SeCan Members
AAC Marchwell VB	AAFC (Swift Current)	SeCan Members
AAC Raymore	AAFC (Swift Current)	SeCan Members
AAC Spitfire	AAFC (Swift Current)	SeCan Members
AC Navigator	AAFC (Swift Current)	Proven Seed/CPS Canada Inc.
Brigade	AAFC (Swift Current)	Proven Seed/CPS Canada Inc.
CDC Alloy	U of S - CDC	FP Genetics
CDC Carbide VB	U of S - CDC	Proven Seed/CPS Canada Inc.
CDC Desire	U of S - CDC	Syngenta Canada
CDC Dynamic	U of S - CDC	Proven Seed/CPS Canada Inc.
CDC Fortitude	U of S - CDC	Proven Seed/CPS Canada Inc.
CDC Verona	U of S - CDC	Alliance Seed.
CDC Vivid	U of S - CDC AAFC (Swift Current)	Proven Seed/CPS Canada Inc.
Enterprise	AAFC (Swift Current)	CANTERRA SEEDS SeCan Members
Strongfield Transcend	AAFC (Swift Current)	FP Genetics
CANADA WES	TERN RED SPRING	
5604HR CL	Syngenta Seeds Canada Inc.	Proven Seed/CPS Canada Inc.
5605HR CL	Syngenta Seeds Canada Inc.	Proven Seed/CPS Canada Inc.
AAC Bailey	AAFC (Swift Current)	CANTERRA SEEDS
AAC Brandon	AAFC (Swift Current)	SeCan Members
AAC Cameron VB	AAFC (Brandon)	CANTERRA SEEDS
AAC Connery	AAFC (Swift Current)	CANTERRA SEEDS
AAC Elie	AAFC (Swift Current)	Alliance Seed
AAC Pervail VB	AAFC (Winnipeg)	Alliance Seed
AAC Redberry	AAFC (Swift Current)	Alliance Seed
AAC Redwater	AAFC (Winnipeg)	SeCan Members
AAC Tisdale	AAFC (Swift Current)	SeCan Members
AAC Viewfield	AAFC (Swift Current)	FP Genetics
AC Barrie	AAFC (Swift Current)	SeCan Members
AC Intrepid	AAFC (Swift Current)	CANTERRA SEEDS
AC Splendor	AAFC (Winnipeg)	SeCan Members
Carberry	AAFC (Swift Current)	SeCan Members
Cardale	AAFC (Winnipeg)	Seed Depot
Coleman	U of Alberta	Lefsrud Seed
CDC Adamant VB	U of S - CDC	FP Genetics
CDC Abound CDC Bradwell	U of S - CDC U of S - CDC	Proven Seed/CPS Canada Inc. SeCan Members
CDC Bradwein	U of S - CDC	Public release U of S - CDC
CDC GO CDC Hughes VB	U of S - CDC	Proven Seed/CPS Canada Inc.
CDC Landmark VB	U of S - CDC	FP Genetics
CDC Plentiful	U of S - CDC	FP Genetics
CDC Stanley	U of S - CDC	Proven Seed/CPS Canada Inc.
CDC Titanium VB	U of S - CDC	Proven Seed/CPS Canada Inc.
CDC Utmost VB	U of S - CDC	FP Genetics
CDC VR Morris	U of S - CDC	Proven Seed/CPS Canada Inc.
Glenn	NDSU	CANTERRA SEEDS
Go Early	U of Alberta	Mastin Seeds
Goodeve VB	AAFC (Swift Current)	Alliance Seed
Muchmore	AAFC (Swift Current)	FP Genetics
Peace	AAFC (Winnipeg)	CANTERRA SEEDS
Shaw VB	AAFC (Winnipeg)	SeCan Members
Stettler	AAFC (Swift Current)	SeCan Members
Superb	AAFC (Winnipeg)	SeCan Members
SY433	Syngenta Seeds Canada Inc.	Syngenta Canada
SY479 VB	Syngenta Seeds Canada Inc.	Alliance Seed
SY Slate	Syngenta Seeds Canada Inc.	Syngenta Canada
SY Sovite	Syngenta Seeds Canada Inc.	Syngenta Canada
Thorsby	U of Alberta	CANTERRA SEEDS
Vesper VB	AAFC (Winnipeg)	SeCan Members
WR859CL	Syngenta Seeds Canada Inc.	Richardson Intl
CANADA WEST	FERN HARD WHITE SP	RING
AAC Iceberg	AAFC (Winnipeg)	Alliance Seed
CDC Whitewood	U of S - CDC	SeCan Members
Snowbird	AAFC (Winnipeg)	FP Genetics
Snowstar	AAFC (Winnipeg)	SeCan Members
Whitehawk	AAFC (Winnipeg)	SeCan Members

#### **CANADA PRAIRIE SPRING RED**

5700PR	Syngenta Seeds Canada Inc.	Proven Seed/CPS Canada Inc.
AAC Crossfield	AAFC (Winnipeg)	CANTERRA SEEDS
AAC Crusader	AAFC (Winnipeg)	CANTERRA SEEDS
AAC Entice	AAFC (Winnipeg)	Proven Seed/CPS Canada Inc.
AAC Foray VB	AAFC (Winnipeg)	SeCan Members
AAC Goodwin	AAFC (Swift Current)	SeCan Members
AAC Penhold	AAFC (Swift Current)	SeCan Members
AAC Ryley	AAFC (Swift Current)	SeCan Members
AAC Tenacious VB	AAFC (Winnipeg)	Alliance Seed
AC Crystal	AAFC (Swift Current)	SeCan Members
CDC Terain	U of S - CDC	FP Genetics
SY985	Syngenta Seeds Canada Inc.	Proven Seed / Richardson Intl
SY995	Syngenta Seeds Canada Inc.	Syngenta Seeds Canada Inc.
SY Rowyn	Syngenta Seeds Canada Inc.	Alliance Seed

#### **CANADA WESTERN SPECIAL PURPOSE**

		-
AAC Awesome VB	AAFC (Lethbridge)	SeCan Members
AAC Innova	AAFC (Lethbridge)	Alliance Seed
AAC NRG097	AAFC (Swift Current)	CANTERRA SEEDS
Alderon	KWS-UK	SeCan Members
CDC NRG003	U of S - CDC	CANTERRA SEEDS
Charing VB	KWS-UK	SeCan Members
Pasteur	Wiersum Plant Breeding	SeCan Members
Sparrow VB	KWS-UK	SeCan Members
SY087	Syngenta Seeds Canada Inc.	Syngenta Canada

#### **CANADA WESTERN SOFT WHITE SPRING**

AAC Chiffon VB	AAFC (Lethbridge)	SeedNet Inc.	
AAC Indus VB	AAFC (Lethbridge)	SeCan Members	
AC Andrew	AAFC (Lethbridge)	SeCan Members	
AC Meena	AAFC (Lethbridge)	Haney Farms	
Sadash VB	AAFC (Lethbridge)	SeCan Members	

#### **CANADA NORTHERN HARD RED** AAC Concord AAFC (Swift Current) CANTERRA SEEDS AC Foremost AAFC (Swift Current) SeCan Members Conquer VB AAFC (Winnipeg) CANTERRA SEEDS Elgin ND FP Genetics NDSU AAFC (Winnipeg) Harvest FP Genetics Lillian AAFC (Swift Current) SeCan Members AAFC (Winnipeg) Unity VB SeCan Members CANADA WESTERN RED WINTER AAC Elevate AAFC (Lethbridge) SeCan Members AAC Gateway AAFC (Lethbridge) Seed Depot AAC Goldrush AAFC (Lethbridge) FP Genetics SeCan Members AAC Wildfire AAFC (Lethbridge) AC Tempest SeCan Members AAFC (Lethbridge) CDC Buteo U of S - CDC SeCan Members CDC Chase U of S - CDC CANTERRA SEEDS Emerson AAFC (Lethbridge) CANTERRA SEEDS Flourish AAFC (Lethbridge) SeCan Members Moats U of S - CDC SeCan Members CANADA WESTERN EXPERIMENTAL WINTER WHEAT AAC Icefield AAFC (Lethbridge) FP Genetics CANADA WESTERN SPECIAL PURPOSE WINTER WHEAT Pintail FCDC (Lacombe) Mastin Seeds

#### **GLD AGVentures** Pedigree Seed Sales | Box 270 Andrew, AB TOB OCO | Ikapitski@mcsnet.ca Phone: (780) 365-3536 | Cell: (780) 945-6107 | Lawrence Kapitski (780) 365-2134 PEAS: Certified cereals and pulses, on farm scale. WHEAT: **BARLEY:** CDC Meadows AC Metcalfe Stettler CDC Amarillo CDC NRG 003 CDC Raezer CDC Plentiful OATS: FPGenetics. SeCan Muchmore CS Camden AAC Brandon AC Morgan 🗆 - BASF Certified ( CYRE SEED FARMS Wheat Peas **AAC Brandon** Cooper (Green) AAC Penhold Faba Beans Westlock, AB Snowbird **Clifford Cyre Greg Cyre** Bus. (780) 349-4775 Cell (780) 307-4332 SGA CANTERRA dian Seed rers' Association Cell (780) 307-4246 gcyre@xplornet.com Canada's Seed Partner SEEDS

					Yiel	d Category	ry (% AC Metcalfe): Agronomic Characteristics: Dis						Agronomic Characteristics:				isease Tolerance:					
	2 or		Overall Station	Querell	Low < 75	Medium	High	V. High	Mot	Test	TVW	Uoiaht	Resis.	10000	Other	Deet			Blotch:	-		
Variety	6 row	Awn Type	Years of Testing	Overall Yield	(bu/ ac)	75 - 100 (bu/ac)	100 - 125 (bu/ac)	> 125 (bu/ac)	Mat. Rating	Weight (lb/bu)	TKW (g)	Height (cm)	to Ldg	Loose Smut	Other Smuts	Root Rot	Scald	Spot form	Net form	FHE		
GENERAL PURPOSE																						
	v	arietie	es tested	in the 20	17 trial	s (Yield, s	ignificant	difference	s and ag	ronomic	data o	only dire	ctly com	parable	to AC M	etcalfe	:)					
AC Metcalfe (bu/ac)				100	59	88	110	137														
AC Metcalfe	2	R		100	100	100	100	100	М	52	46	79	F	R	I	Т	S	Т	S	Т		
Altorado 🐵	2	R	39	112+	XX	117	109+	114+	Μ	52	48	74	G	MR	MR	MR	S	MR	S	I.		
CDC Austenson 💩	2	R	77	112+	110	112+	110+	115+	L	53	47	78	G	S	R	Ι	S	R	MS	Т		
Champion 💩	2	R	178	112+	120+	111+	111+	111+	М	53	49	76	G	S	R	MR	S	Ι	S	I		
Claymore 🕲	2	R	54	113+	106	113+	110+	118+	L	51	47	77	G	S	R	Ι	S	Ι	S	Ι		
Oreana 🛞	2	R	54	111+	105	108+	115+	114+	L	53	50	66	VG	S	R	1	S	MR	S	S		
		Pre	viously te	sted var	ieties ()	/ield, sign	ificant diff	erences a	nd agron	omic da	ta only	directly	compar	able to A	AC Metca	alfe)						
Brahma 💩	2	R	87	111+	112+	109+	113+	111+	М	53	47	74	G	MS	R	MR	S	I		I		
Busby 💩	2	R	45	104+	107	103	106	103	М	53	49	78	G	S	MR	S	I	MR	MS	Т		
CDC Coalition 🐵	2	R	57	110+	107	112+	108+	109+	L	53	47	74	G	R	R	I	S	MR	S	I		
CDC Cowboy 🐵	2	R	75	95-	107	94-	93-	96-	L	52	55	103	F	MS	MR	Ι	MS	MR	T	MR		
CDC Maverick 👁	2	S	43	95-	XX	90-	97	96	Μ	54	55	98	F	S	R	I	MS	MR	1	MR		
CDC Trey	2	R	106	103+	101	105+	101	105+	Μ	52	50	80	G	MS	R	MR	MS	R	I	I		
Canmore (9)	2	R	40	107+	XX	104	111+	108+	Μ	52	49	73	G	R	R	I	MR	MR	MS	I		
CONLON 🐵	2	S	63	94-	97	93-	93-	96-	VE	52	52	80	G	I.	I	MR	S	MR	I	MR		
Gadsby 🐵	2	R	45	112+	XX	114+	114+	108+	Μ	53	51	83	F	R	R	I	R	MR	MS	I		
Ponoka † 🐵	2	R	120	108+	101	107+	110+	109+	L	51	46	80	G	R	R	Ι	MR	MR	MS	- 1		
Seebe †	2	R	229	101	97	100	102	100	VL	52	50	86	G	S	R	I	MR	MS	S	MR		
XENA †	2	R	271	112+	111+	109+	114+	112+	М	52	49	77	G	MS	MS	MR	S	Ι	S	MR		
AC Harper †	6	SS	166	103+	95	96-	102	111+	М	48	40	80	G	MS	I	- I	I	I	1	MS		
AC Ranger	6	S	48	107+	101	99	118+	107+	L	49	43	74	F	MS	Ι	MR	MS	MR	Ι	S		
AC Rosser †	6	S	166	108+	101	102	109+	113+	Μ	48	41	82	G	MS	R	MR	S	MR		S		
Amisk	6	SS	40	105+	XX	105	104	108+	Μ	49	46	69	VG	S	MS	MS	Ι	MR	1	S		
Chigwell 🕸	6	S	43	104	XX	98	106	111+	Μ	49	41	76	G	MS	MR	MS	MR	MR		S		
Muskwa † 🐵	6	S	44	105+	XX	103	105	110+	Μ	50	42	73	G	MS	R	MS	MR	MR	MS	S		
Sundre @	6	S	72	110+	100	105	112+	117+	L	51	43	86	G	MS	R	MS	R	I	MS	S		
Trochu 🕸	6	S	136	107+	101	102	109+	112+	М	49	41	78	G	MS	MR	MR	Ι	MR	S	- 1		
Vivar @	6	R	175	109+	97	105+	109+	115+	М	49	44	73	VG		R	MR		MR	R	S		
HULLESS							-							_				-				
						•	ignificant		-					-		etcalfe	,					
CDC Ascent 🔺	2	R	27	95-	XX	102	92	94-	М	60	44	81	G	MR	MR	I	MS	MR	S	MR		
					•		ificant diff		-													
CDC Carter †	2	R	45	97-	97	99	94-	XX	М	62	39	77	VG	R	R	S	MS	MR				
CDC McGwire † 💩	2	R	107	93-	88-	93-	99	XX	M	61	39	80	VG	MS	MR	MR		MR		MR		
Falcon	6	S	181	83-	72-	83-	91-	89	E	58	35	68	VG	MS	MR	I	I	I		S		
Tyto †	6	S	72	81-	79-	84-	96	96	Μ	55	40	73	VG	S	R	Ι	MS	Ι	S	MS		

FFFD AND FOOD BARI FY

**REMARKS:** For explanations on data summarization methods, abbreviations and other pertinent information, please see the comments at the beginning of this publication. The long-term average maturity for AC Metcalfe is 95 days and is rated as Medium (M). Varieties rated Intermediate (I) to Susceptible (S) for smuts should be treated with a systemic seed treatment to reduce the potential for infection. Hulless varieties leave the hull in the field and thus grain yields comparable to hulled varieties are 9-12% lower. Handling of hulless varieties should be minimized to avoid seed damage. CDC Carter, CDC McGwire, Falcon and Tyto are normal starch barleys suitable for food use. New registrations: CDC Ascent (HB13324).  $\dagger$  - Flagged for possible removal in 2019.  $\blacktriangle$  = Applied for PBR protection. B = Protected by the 1978 Act of the UPOV Convention.

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ctor	BARLEY - FEED & FOOD	S	F	R	C
cereals – performance trials and grower directory	TWO-ROW AC MAJOR ↔ BI: AAFC, Dist: Alliance Seed Logan, Glenn C., Marie & Douglas / Lomond / AB / (403) 792-3696 CANMORE ↔ BI: FCDC (Lacombe), Dist: Canterra Seeds Benci, Dennis / Carmangay / AB / (403) 643-2294 Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517 King Seed Farm (Webb, David G.) / Three Hills / AB / (403) 443-7330 Lindholm Seed Farm / New Norway / AB / (780) 352-3240 Penwest Seeds / Three Hills / AB / (403) 443-2577 Stamp Seeds / Enchant / AB / (403) 739-2233 Rasmussen, Brian D. & Joel Trevor / Standard / AB / (403) 644-3800 Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228 Solick Seeds Ltd. / Halkirk / AB / (403) 884-2358	S S*	F*	R R* R* R R	C C C* C* C*
cereals – performance	CDC AUSTENSON ↔ BI: CDC, Dist: SeCan Members Brummelhuis, Mitchell & Mack / Vauxhall / AB / (403) 654-7515 Crooymans, John, Joseph & Andrew / Bow Island / AB / (403) 545-6333 Dallas, Bradley C. / Bowden / AB / (403) 224-2162 Dyck, Heinz W., Colin, Alan & Kelton / Rosemary / AB / (403) 378-3321 Fabian, Patrick V. / Tilley / AB / (403) 377-2000 Feenstra, Lloyd / Barons / AB / (403) 757-3737 Galloway Seeds Ltd. / Fort Saskatchewan / AB / (780) 998-3036 Gibson, Donald / Sangudo / AB / (780) 785-2214 Hadland, Edward / Baldonnel / BC / (250) 793-9746 Hallett's Hay and Seed / Carstairs / AB / (403) 337-3072 Hoff, Peter Edward / Gleichen / AB / (403) 734-2140 Huvenaars, Carl / Hays / AB / (403) 725-2213 Jones, Greg Thomas & Tristan / Ponoka / AB / (403) 783-6495 Kemp, Richard L. / Red Deer County / AB / (403) 227-4836 Limoges, Richard / McLennan / AB / (780) 324-2335 Markert Seeds Ltd. / Vulcan / AB / (403) 485-6708 Massey, Derwin & Kirby / Stettler / AB / (403) 883-2503 McDonald, Gerald / Co. Of Grande Prairie #1 / AB / (780) 538-3868 McNelly, Bevin / Clyde / AB / (780) 348-5749 Meinczinger, Matthew Jr. / Busby / AB / (780) 349-2456 Mueller, Richard J., R.R. & Rosemary / Barrhead / AB / (780) 674-6713 Nemetz, Charlie, Jerritt & Lewis / Stettler / AB / (403) 742-0436 Niemela, Terrance & Tracy / Sylvan Lake / AB / (403) 742-0436 Niemela, Terrance & Tracy / Sylvan Lake / AB / (403) 742-0436 Niemela, Terrance & Tracy / Sylvan Lake / AB / (403) 742-2436 Niemela, Terrance & Tracy / Sylvan Lake / AB / (403) 742-0436 Niemela, Terrance & Tracy / Sylvan Lake / AB / (403) 742-0436 Niemela, Terrance & Tracy / Sylvan Lake / AB / (403) 742-0436 Niemela, Terrance & Tracy / Sylvan Lake / AB / (403) 742-0436 Niemela, Terrance & Tracy / Sylvan Lake / AB / (403) 742-0436 Niemela, Terrance & Tracy / Sylvan Lake / AB / (403) 742-0436 Niemela, Terrance & Tracy / Sylvan Lake / AB / (403) 742-0436 Niemela, Terrance & Tracy / Sylvan Lake / AB / (403) 742-0436 Niemela, Terrance & Tracy / Sylvan Lake / AB / (403) 742-0436 Niemela, Terrance & T	S	F	R R R R R R R R R R	

Selte, Donald / Vermilion / AB / (760) 853-2441 Sounding Creek Seeds / Oyen / AB / (403) 664-9617 Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617 CDC THOMPSON		F	R	C C
BI: CDC, Dist: FP Genetics Thompson, M. Ellwood & Kelly / Red Deer County / AB / (403) 728-3535 CDC TREY (403) 728-3535				С
BI: CDC, Dist: FP Genetics Wood, Robert, Patricia & Marshall / Bowden / AB / (403) 588-3548 CLAYMORE (9)			R	С
BI: N/A, Dist: CPS (Canada) Inc. Waldner, George / Taber / AB / (403) 223-8073				С
CONLON BI: NSDU, Dist: Seed Depot Airth, Jock & Linda / Brooks / AB / (403) 362-4372				С
GADSBY ↔ BI: FCDC (Lacombe), Dist: SeCan Members Harris, William P., Linda, Thomas & A. / Beaverlodge / AB / (780) 354-2823 Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617 Webber, Curtis / Parkland County / AB / (780) 963-6897	S	F	R	C* C
SIX-ROW AC RANGER RI: AAEC (Prondon) Dist: EB Constino				
BI: AAFC (Brandon), Dist: FP Genetics Airth, Jock & Linda / Brooks / AB / (403) 362-4372 AC Rosser		F		
BI: AAFC, Dist: SeCan Members Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617 AMISK (9)	S*	F*		
BI: FCDC (Lacombe), Dist: SeCan Members Beamish, Dale / Jarvie / AB / (780) 954-2166 Benci, Dennis / Carmangay / AB / (403) 643-2294 Jones, Greg Thomas & Tristan / Ponoka / AB / (403) 783-6495 Kittle, James W. & Andrew / Viking / AB / (780) 336-2583	S		R	C C
Plante, Jacques / St. Paul / AB / (780) 64S-4604 Smith, Gary W. / Eckville / AB / (403) 746-5878 Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617 Webber, Curtis / Parkland County / AB / (780) 963-6897 Wildeman, Russell / Clive / AB / (403) 470-8528	S	F	R	C C C* C C
CDC EARL BI: CDC, Dist: N/A Airth, Jock & Linda / Brooks / AB / (403) 362-4372			R	
CHIGWELL & BI: FCDC (Lacombe), Dist: SeCan Members Anderson, Ken & Evelyn / Barrhead / AB / (780) 674-5670 Feenstra, Lloyd / Barons / AB / (403) 757-3737			R	С
SUNDRE (a) BI: FCDC (Lacombe), Dist: Mastin Seeds Card, Gordon B. & Rhett / Magrath / AB / (403) 758-3444 Feenstra, Lloyd / Barons / AB / (403) 757-3737 Hallett's Hay and Seed / Carstairs / AB / (403) 337-3072 Jones, Danny / Beaverlodge / AB / (780) 354-8089			R	C C C
Klassen, Ken / Rosemary / AB / (403) 378-4408 Lyster, Norman / Stettler / AB / (403) 742-4456 Mastin, Robert B. / Sundre / AB / (403) 556-2609 Richard, Gerald / Spirit River / AB / (780) 864-2339 <b>TROCHU</b>			R	C C C
BI: FCDC (Lacombe), Dist: SeCan Members Webber, Curtis / Parkland County / AB / (780) 963-6897				С
BARLEY - HULLESS	s	F	R	c
CDC ASCENT <sup>(a)</sup> Pending BI: CDC, Dist: SeCan Members Sim, Darwin & Derek / Ponoka / AB / (780) 372-2111 CDC HILOSE (a) BI: CDC, Dist: N/A Sendziak, Don P. & Stephen / Edmonton / AB / (780) 434-1322	S		R	

Mueller, Darcy / Three Hills / AB / (403) 820-4115

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

Templeton, Doran & Brant / Lethbridge / AB / (403) 345-4144 Trueblood, Brian G. / Dapp / AB / (780) 954-3745 Webber, Curtis / Parkland County / AB / (780) 963-6897

Weigum, Garry & Sarah / Three Hills / AB / (403) 443-9599

Wood, Robert, Patricia & Marshall / Bowden / AB / (403) 588-3548

Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617

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

Foster's Seed & Feed Limited / Beaverlodge / AB / (780) 354-2107

McDonald, Gerald / Co. Of Grande Prairie #1 / AB / (780) 538-3868

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

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

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

Webber, Curtis / Parkland County / AB / (780) 963-6897

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

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

Hadland, Edward / Baldonnel / BC / (250) 793-9746 Hallett's Hay and Seed / Carstairs / AB / (403) 337-3072

Metzger, Don / Carbon / AB / (403) 572-3284

Selte, Donald / Vermilion / AB / (780) 853-2484

Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517

Lindholm Seed Farm / New Norway / AB / (780) 352-3240 Meinczinger, Matthew Jr. / Busby / AB / (780) 349-2456

**CDC COALITION** 

CDC COWBOY @

CDC MAVERICK @

BI: CDC, Dist: Canterra Seeds

BI: CDC, Dist: SeCan Members

BI: CDC, Dist: SeCan Members

Smith, Gary W. / Eckville / AB / (403) 746-5878 Stamp Seeds / Enchant / AB / (403) 739-2233



# 2018-19 Recommended Malting Barley Varieties

**THE** following varieties of two-row and six-row malting barley are recognized by the CMBTC as having good agronomic and quality characteristics, as well as substantial or growing market demand. The varieties have been pilot scale tested by the CMBTC and all exhibit good malting and brewing characteristics. All two-row and six-row varieties on the CMBTC recommended list are registered with the Canadian Food Inspection Agency (CFIA). A comprehensive list of all malting barley varieties designated by the Canadian Grain Commission can be found at https://www.grainscanada.gc.ca/legislation-legislation/orders-arretes/ocgcm-maccg-en.html.

#### **TWO-ROW BARLEY VARIETIES**

VARIETY	MARKET COMMENTS
CDC COPELAND <sup>1</sup>	ESTABLISHED DEMAND
CDC COPELAND	
AC METCALFE <sup>1</sup>	ESTABLISHED DEMAND
AAC SYNERGY <sup>4</sup>	GROWING DEMAND
AAC CONNECT <sup>2</sup>	UNDER COMMERCIAL MARKET DEVELOPMENT
CDC BOW <sup>1</sup>	UNDER COMMERCIAL MARKET DEVELOPMENT

**SIX-ROW VARIETIES** 

VARIETY	MARKET COMMENTS
LEGACY <sup>3</sup>	LIMITED DEMAND
<b>TRADITION</b> <sup>3</sup>	LIMITED DEMAND
CELEBRATION <sup>2</sup>	LIMITED DEMAND

NOTE: CDC PLATINUMSTAR<sup>2</sup> AND CDC POLARSTAR<sup>2</sup> ARE CURRENTLY CLOSED-LOOP VARIETIES. FOR CONTRACTING OPPORTUNITIES CONTACT PRAIRIE MALT - CARGILL BIGGAR. MARKETING OPPORTUNITIES REMAIN FOR THE VARIETIES BENTLEY<sup>2</sup> AND NEWDALE<sup>3</sup> AND CDC KINDERSLEY<sup>1</sup> IN CERTAIN AREAS.

#### The CMBTC and its members recommend:

• Talk with your local malting barley buyer about opportunities in your area to grow and market two-row and six-row malting barley varieties.

• Use certified seed to ensure varietal purity, reduce disease incidence and increase the likelihood of selection for malt.

• For contracting opportunities, contact your grain company representative, local elevator operators, malting companies, or the representative seed company.

#### **New Varieties in Development**

The following varieties have been registered with CFIA and are undergoing seed propagation. Both varieties have been pilot scale tested at the CMBTC and exhibit good quality characteristics suitable for all malt and/or adjunct brewing styles.

VARIETY	COMMENTS
CDC FRASER <sup>1</sup>	TWO-ROW - UNDERGOING SEED PROPAGATION
LOWE <sup>1</sup>	TWO-ROW - UNDERGOING SEED PROPAGATION

The following companies have pedigreed seed distribution rights for those varieties that are footnoted: 1 – SeCan; 2 – CANTERRA SEEDS; 3 – FP Genetics; 4 – Syngenta

Questions? Call your selector, seed company, grain handling company or contact the CMBTC.

Peter Watts - Managing Director Tel: 204-983-1981 Email: pwatts@cmbtc.com Dr. Yueshu Li - Director of Malting & Brewing Operations Tel: 204-984-0561 Email: yli@cmbtc.com





AAC Barrhead Peas, AAC Brandon Wheat, CDC Coalition, AC Morgan, CDC Austenson



57311 - Highway 44 Box 34, Busby, AB TOG 0H0 Matt Meinczinger 349-2456 Cell 349-9515 Steven Meinczinger 349-3328 email – dmeinczinger@gmail.com

# **MALTING BARLEY**

			Overall		١	rield Catego	ory (% AC Met	calfe):		Agronom	nic Chara	acteristics	:
Variety	2 or 6 row	Awn Type	Station Years of Testing	Overall Yield	Low < 75 (bu/ac)	Medium 75 - 100 (bu/ac)	High 100 - 125 (bu/ac)	V. High > 125 (bu/ac)	Maturity Rating	Test Weight (Ib/bu)	TKW (g)	Height (cm)	Resistance to Lodging
	Varieties t	tested ir	n the 2017	trials (Yiel	d, signific	ant differen	ces and agron	omic data only	directly comp	arable to A	C Metca	lfe)	
AC Metcalfe (bu/ac)				100	59	88	110	137					
AC Metcalfe	2	R		100	100	100	100	100	М	52	46	79	F
AAC Connect 🔺	2	R	27	103+	XX	XX	106	104+	Μ	50	49	77	G
AAC Synergy 💩	2	R	54	114+	121+	112+	114+	113+	М	51	48	76	F
CDC Fraser▲	2	R	39	109+	XX	114	110+	108+	М	51	49	76	G
Lowe 🔺	2	R	27	110+	XX	XX	115+	105+	L	51	48	84	F
Sirish 🔺	2	R	27	111+	XX	XX	108	114+	Μ	51	48	67	G
TR13606 🔺	2	R	27	109+	XX	XX	107	109+	М	51	46	79	G

#### Previously tested varieties (Yield, significant differences and agronomic data only directly comparable to AC Metcalfe)

					-		-						
Bentley 🕲	2	R	77	105+	109	102	105+	106+	Μ	52	47	81	G
CDC Bow	2	R	42	104+	XX	106	105	104	Μ	51	48	77	VG
CDC Clear (hulless) 🐵	2	R	43	95-	XX	92-	100	XX	L	62	47	85	G
CDC Copeland 💩	2	R	137	103+	96	101	106+	104+	Μ	51	47	81	F
CDC Kindersley 💩	2	R	47	104+	XX	102	104	104+	E	53	43	78	G
CDC Meredith @	2	R	65	107+	102	108+	108+	107+	L	51	46	76	F
CDC PlatinumStar 🔺	2	R	42	106+	XX	108	107+	102	М	53	49	82	F
CDC PolarStar 🐵	2	R	43	101	XX	103	105+	97	Μ	52	44	79	G
Cerveza 🐵	2	R	49	109+	XX	109+	108+	109+	Μ	51	46	74	F
Harrington †	2	R	284	93-	96-	94-	93-	91-	Μ	51	44	78	F
Major 💩	2	R	72	107+	104	108+	107+	106+	М	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+	Μ	52	46	73	F
LEGACY	6	SS	122	99	93	95-	102	103	Μ	49	39	82	G
Tradition † 🐵	6	SS	121	98	90-	95-	101	103	E	50	40	81	G

REMARKS: For explanations on data summarization methods, abbreviations and other pertinent information, please see the comments at the beginning of this publication. The long-term average maturity for AC Metcalfe is 95 days and is rated as Medium (M). Varieties rated Intermediate (I) to Susceptible (S) for smuts should be treated with a systemic seed treatment to reduce the potential for infection. The Canadian Malting Barley Technical Centre (CMBTC) evaluates and recommends malting barley varieties for industry acceptance. Please refer to the 2017-2018 CMBTC Recommended Malt Barley Variety List for more information. CDC Clear is a hulless malting variety. New registrations: AAC Connect (TR12225), CDC GoldStar (TR13812), Lowe (TR13609), Sirish (TR14928), † - Flagged for possible removal in 2019. ▲ = Applied for PBR protection. ֎ = Protected by the 1978 Act of the UPOV Convention. @ = Protected by the 1991 Act of the UPOV Convention.



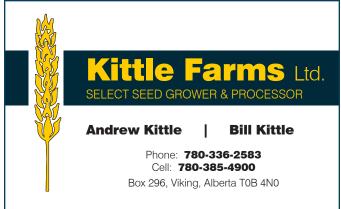
# MALTING BARLEY — CONT.

	Disease Tolerance:												
	Loose	Other			Net B	lotch:	_						
Variety	Smut	Smuts	Root Rot	Scald	Spot form	Net form	Fusarium Head Blight						
Varieties tested in	the 2017 t	rials (Yield,	significant d	ifferences and	agronomic data d	only directly con	nparable to AC Metcalfe)						
AC Metcalfe (bu/ac)													
AC Metcalfe	R	I.	I.	S	I.	S	I.						
AAC Connect 🔺	S	R	MS	S	MR	I	MR						
AAC Synergy 💩	S	I.	I.	S	R	MR	MS						
CDC Fraser▲	R	MR	MS	MS	MR	MR	MR						
Lowe 🔺	R	R	XX	MR	MR	I	MR						
Sirish 🔺	S	R	XX	MR	MS	MS	MS						
TR13606 🔺	R	R	XX	MS	MR	I	I.						
Previously test	ed varieties	s (Yield, sig	nificant diffe	rences and agr	onomic data only	directly compa	rable to AC Metcalfe)						
Bentley 💩	MS	MR	MR	S	R	MS	MS						
CDC Bow	S	I.	MS	MS	MR	S	MS						
CDC Clear (hulless) 💩	R	R	I	S	R	MS	MR						
CDC Copeland 💩	MS	I.	I.	S	I	I	I						
CDC Kindersley 💩	S	R	I	S	MR	MS	I						
CDC Meredith 💩	R	MR	MR	S	R	S	I						
CDC PlatinumStar 🔺	R	R	S	S	MR	Ι	MR						
CDC PolarStar 💩	S	R	MS	S	MR	S	MR						
Cerveza 🐵	R	R	I	S	MR	MS	I						
Harrington †	MS	MS	I.	S	MS	S	MR						
Major 🕲	R	MR	Ι	MS	MR	Ι	I						
Merit 57 † 💩	MS	S	I	MS	MR	MS	MS						
Newdale	S	MR	MR	MS	MR	I	I						
LEGACY	I.	MR	MR	S	MR	S	MS						
Tradition † 🐵	S	MR	MR	S	I	S	S						

#### $Alberta \, and \, British \, Columbia \, Pedigreed \, Seed \, Growers \, Directory \, of Varieties \, Produced \, in \, 2017 \, Content \, Conten$

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. PBR status is noted following the variety. 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). Varieties with a star after the pedigreed class code are carryover seed.





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performance trials and grower directory	TWO-ROW AAC CONNECT <sup>®</sup> Pending BI: AAFC, Dist: Canterra Seeds Cross, Douglas / Westlock / AB / (780) 349-2587 Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517 Penwest Seeds / Three Hills / AB / (403) 443-2577 Rasmussen, Brian D. & Joel Trevor / Standard / AB / (403) 644-3800 Richards, Cliff & Dan / Sexsmith / AB / (780) 766-2266 Sendziak, Don P. & Stephen / Edmonton / AB / (780) 434-1322 Solick Seeds Ltd. / Halkirk / AB / (403) 884-2358 AAC SYNERGY BI: AAFC, Dist: Syngenta Canada Eliason, Bruce W. / Wrentham / AB / (403) 222-2258 Ellis, Brian / Olds / AB / (403) 556-2890 Gatez, Blaine Gerald / Crossfield / AB / (403) 946-3994 Harbin, Clifford T. & Bruce C. / Rivercourse / AB / (780) 745-2268 Holtman, Scott / Taber / AB / (403) 634-4525 Lindholm Seed Farm / New Norway / AB / (780) 352-3240 Markert Seeds Ltd. / Vulcan / AB / (403) 485-6708 Strathmore Seed Cleaning Plant / Strathmore / AB / (403) 934-3421 Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 AC METCALFE BI: AAFC (Brandon), Dist: SeCan Members Chin Bidne Seeds Ltd. / Taber / AB / (403) 223-3900	S		R R	C C C C C C C C C C C C C C C C C C C	<ul> <li>Webber, Curtis / Parkland County / AB / (780) 963-6897</li> <li>BENTLEY  BI: FCDC (Lacombe), Dist: Canterra Seeds Penwest Seeds / Three Hills / AB / (403) 443-2577 Rasmussen, Brian D. &amp; Joel Trevor / Standard / AB / (403) 644-3800 Sendziak, Don P &amp; Stephen / Edmonton / AB / (780) 434-1322 Sendziak, Don P &amp; Stephen / Edmonton / AB / (780) 434-1322 Solick Seeds Ltd. / Halkirk / AB / (403) 884-2358 CDC BOW  BI: CDC, Dist: SeCan Members Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900 Eliason, Bruce W. / Wrentham / AB / (403) 222-2258 Goldstrom, David / Red Deer County / AB / (403) 325-4929 Huvenaars, Carl / Hays / AB / (403) 725-2213 Knight, William, Craig &amp; Brian / Tees / AB / (403) 784-3633 Kopjar, Gerald M. / Rowley / AB / (403) 368-2409 Logan, Glenn C., Marie &amp; Douglas / Lornond / AB / (403) 224-3788 Shultz, Shawn / Didsbury / AB / (403) 335-3694 Sim, Darwin &amp; Derek / Ponoka / AB / (403) 834-2358 Stamp Seeds Ltd. / Halkirk / AB / (403) 739-2233 Thompson, M. Ellwood &amp; Kelly / Red Deer County / AB / (403) 728-3535</li></ul>		F F F	C R R R R R C C C C C C C C C C C C C C
cereals – p	Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900 Cornish, Bob / Airdrie / AB / (403) 948-3070 Dueck, Ralph E. & Brent / Olds / AB / (403) 556-2602 Eliason, Bruce W. / Wrentham / AB / (403) 222-2258 Foster's Seed & Feed Limited / Beaverlodge / AB / (780) 354-2107 Lefsrud, Kevin J. & Edmund J. / Viking / AB / (780) 336-2500 Limoges, Richard / McLennan / AB / (780) 324-2335 Logan, Glenn C., Marie & Douglas / Lomond / AB / (403) 792-3696 McNelly, Bevin / Clyde / AB / (780) 348-5749 Murray, Bruce & Wesley / Lethbridge / AB / (403) 327-9389 Ohrn, Norman / Thorsby / AB / (780) 985-2263 Penwest Seeds / Three Hills / AB / (403) 609-3588 Stamp Seeds / Enchant / AB / (403) 739-2233	S	F F	R R R R R R	C C	Wagner, Terry & Loree / Lacombe / AB / (403) 782-2107 Weigum, Garry & Sarah / Three Hills / AB / (403) 443-9599 Witdouck, Dale / Iron Springs / AB / (403) 738-4395 <b>CDC COPELAND &amp;</b> <b>BI: CDC, Dist: SeCan Members</b> Archer, Nathan / Didsbury / AB / (403) 335-8678 Benci, Dennis / Carmangay / AB / (403) 643-2294 Bright, David / New Norway / AB / (780) 855-2240 Carlson, David / Gwynne / AB / (780) 352-6871 Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900 Dallas, Bradley C. / Bowden / AB / (403) 224-2162 Dueck, Ralph E. & Brent / Olds / AB / (403) 556-2602 Eliason, Bruce W. / Wrentham / AB / (403) 222-2258 Ellis, Brian / Olds / AB / (403) 556-2890	S	F	R C C C C C C C C C C C C C C C C C C C
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BI: CDC, Dist: SeCan Members				
Niemela, Terrance & Tracy / Sylvan Lake / AB / (403) 746-2645				С
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BI: CDC, Dist: SeCan Members				
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Logan, Glenn C., Marie & Douglas / Lomond / AB / (403) 792-3696	S			
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LOWE (*) Pending				
BI: FCDC (Lacombe), Dist: SeCan Members				
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Mueller, Darcy / Three Hills / AB / (403) 820-4115				С
SIRISH				
BI: Syngenta Canada Inc., Dist: Syngenta Canada Inc.				
Ellis, Brian / Olds / AB / (403) 556-2890		F		
Nisbet, Andrew E. & Diane E. / Mountain View County / AB / (403) 224-3788	S			
SIX-ROW				
LEGACY				
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Laliberté, Adam & Vos, Henry / Fairview / AB / (780) 835-5286 S S F Wood, Robert, Patricia & Marshall / Bowden / AB / (403) 588-3548 R C



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- Hairy Vetch Crimson Clover
- Sorghum

**ΠΛΤ** 

Variety MILLING CDC Dancer (bu/ac)	I	Overall Yield sted in the 2 96	Low < 70 (bu/ac) 2017 trials (	Medium 70 - 100 (bu/ac)	High 100 - 130 (bu/ac)	V. High > 130 (bu/ac)	Mat.	Test Weight	ткw	Height	Resistance	-
	I		2017 trials (			(uu/au)	Rating	(lb/bu)	(g)	(cm)	to Lodging	Tolerance to Smuts
CDC Dancer (bu/ac)	I		2017 trials (									
CDC Dancer (bu/ac)		96		Yield, signif	icant differen	ces and agr	onomic data	only directly co	mparable	e to CDC Da	incer)	
	70		49	84	111	148						
CDC Dancer 🕲	= 0	100	100	100	100	100	E	41	37	95	G	R
AC Morgan	73	113+	113+	110+	114+	115+	Μ	40	41	91	VG	l I
Akina	30	109 +	XX	103	114+	111+	Μ	40	39	90	VG	R
CDC Ruffian 💩	38	110+	108	109	116+	108	М	40	39	93	G	R
Kara 🖲	20	108	XX	101	112	110	Μ	41	41	95	VG	MR
Kyron 🔺	20	115+	XX	108	121+	117+	М	41	40	98	VG	XX
Pomona 🔺	20	104	XX	101	103	107	Μ	42	39	104	G	XX
	Previous	ly tested va	rieties (Yie	ld, significa	nt differences	and agrono	mic data on	ly directly comp	arable to	CDC Dance	er)	
AAC Justice 🖲	28	104	XX	99	109+	XX	Μ	42	36	91	G	R
AC Juniper	80	104+	102	104	106+	105+	E	41	38	94	VG	1
Bradley † 🐵	31	104+	XX	103	108	106	Μ	39	39	92	VG	R
CDC Boyer †	89	102	103	102	100	105	Μ	39	42	101	G	MS
CDC Minstrel 💩	61	104+	103	103	105	105 +	М	39	38	88	VG	R
CDC Norseman 🖲	27	101	XX	100	101	XX	E	41	38	94	G	MS
CDC Orrin 💩	52	109+	113+	107+	107+	XX	Μ	41	40	84	G	R
CDC Seabiscuit 💩	30	111+	124	106	108	108	Μ	39	41	101	G	MR
CDC Weaver †	44	104	108+	103	100	100	М	40	43	91	F	R
CS Camden 👳	27	109+	XX	109+	106	XX	L	41	39	90	G	l I
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
Souris † 💩	28	110+	120+	103	111	XX	М	41	34	91	VG	R
Stride 💩	30	104+	101	102	107	106	М	42	35	104	G	R
Triactor 💩	47	110+	109	108+	114+	110+	М	38	38	89	G	R
FEED												
			rieties (Yie	ld, significa				ly directly comp			,	
AC Mustang *	108	114+	118+	112+	110+	116+	L	42	37	103	G	l l
CDC Nasser	31	116+	132	107	115+	110	L	39	36	98	G	MR
Lu *†	58	100	99	98	99	108	VE	41	39	85	G	R
FORAGE												
		Previous	sly tested v	arieties (Yie	ld and agrono	mic data or	ly directly c	omparable to CD	C Dance	r)		
CDC Baler *	42	99	96	106	96	XX	L	40	43	99	XX	S
CDC Haymaker	28	104	XX	103	105	XX	L	39	40	100	F	MR
Murphy 🕸 *	51	95-	93	96	97	94	Μ	39	36	108	XX	S

**REMARKS:** For explanations on data summarization methods, abbreviations and other pertinent information, please see the comments at the beginning of this publication. The long-term average maturity for CDC Dancer is 98 days and rated as Early (E). Varieties rated Intermediate (I) to Susceptible (S) for the smuts should be treated with a systemic seed treatment to reduce the potential for infection. New registrations: Kara (CFA1102), Kyron (CFA1207), 0Re3541M (0T6008), 0Re3542M (0T6009), 0T3085 and Pomona (CFA1220). Insufficient data to describe: ORe3541M (0T6008), ORe3542M (0T6009) and 0T3085. \* Yield figures based on direct and indirect comparisons with CDC Dancer. † - Flagged for possible removal in 2019. A = Applied for PBR protection.

OATS - FEED	S	F	R	C	CDC NASSER BI: CDC, Dist: N/A Devideon F. Devid & Devn / Kiteget: (AD / (700) 046, 2456				
AC MUSTANG BI: AAFC (Lacombe), Dist: Mastin Seeds Feenstra, Lloyd / Barons / AB / (403) 757-3737 Hadland, Edward / Baldonnel / BC / (250) 793-9746 Hallett's Hay and Seed / Carstairs / AB / (403) 337-3072 King Seed Farm (Webb, David G.) / Three Hills / AB / (403) 443-7330				C C C*	<ul> <li>Davidson, E. Daryl &amp; Dean / Kitscoty / AB / (780) 846-2456</li> <li>Repka, Gerald / Willingdon / AB / (780) 636-3458</li> <li>Sand, Ron W. &amp; David R. / McLaughlin / AB / (780) 745-2251</li> <li>WALDERN</li> <li>BI: AAFC, Dist: SeCan Members</li> <li>Richard, Gerald / Spirit River / AB / (780) 864-2339</li> </ul>				(
Mastin, Robert B. / Sundre / AB / (403) 556-2609 Tolway, Wilfred / Clairmont / AB / (780) 567-2422 CDC ARBORG @ Pending	S S	F			OATS - FORAGE	s	F	R	(
BI: CDC, Dist: FP Genetics Laliberté, Adam & Vos, Henry / Fairview / AB / (780) 835-5286	S				CDC BALER BI: CDC, Dist: FP Genetics Sand, Ron W. & David R. / McLaughlin / AB / (780) 745-2251 Wood, Robert, Patricia & Marshall / Bowden / AB / (403) 588-3548			R R	(

CDC HAYMAKER BI: CDC, Dist: SeCan Members				
Degenhardt, Keith L., Terry L. & Kerry / Hughenden / AB / (780) 856-2383			R	
Hadland, Edward / Baldonnel / BC / (250) 793-9746	S		R	С
Jonk, Nicholas / Westlock / AB / (780) 349-5458			R	С
McDonald, Gerald / Co. Of Grande Prairie #1 / AB / (780) 538-3868				С
Selte, Donald / Vermilion / AB / (780) 853-2484				С
Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617	S	F	R*	С
MURPHY				
BI: AAFC, Dist: SeCan Members				
Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617		F*		С*

## OATS - MILLING

AC JUNIPER				
BI: AAFC, Dist: Mastin Seeds				
Tolway, Wilfred / Clairmont / AB / (780) 567-2422			R	
AC MORGAN				
BI: AAFC (Lacombe), Dist: SeCan Members				
Hill, Gordon P. & Blair / Taylor / BC / (250) 789-3469				С
Jonk, Nicholas / Westlock / AB / (780) 349-5458			R	С
Kemp, Richard L. / Red Deer County / AB / (403) 227-4836				С
Limoges, Daniel / Girouxville / AB / (780) 833-1287				С
Meinczinger, Matthew Jr. / Busby / AB / (780) 349-2456				С
Miller, Brian / Barrhead / AB / (780) 674-5001			R	
Mueller, Richard J., R.R. & Rosemary / Barrhead / AB / (780) 674-6713			R	
Selte, Donald / Vermilion / AB / (780) 853-2484				С
Smith, Gary W. / Eckville / AB / (403) 746-5878			R	
Victoor, Rene & Jamie / Sturgeon County / AB / (780) 459-3253				С
Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617	S	F	R	С*
Webber, Curtis / Parkland County / AB / (780) 963-6897			R	С
Wildeman, Russell / Clive / AB / (403) 470-8528				С
AC SUMMIT				
BI: AAFC, Dist: FP Genetics				
Pizzey, J. David / Canmore / AB / (403) 609-3588				С
CDC SEABISCUIT 🐵				
BI: CDC, Dist: Canterra Seeds				
Sendziak, Don P. & Stephen / Edmonton / AB / (780) 434-1322		F*	R	С

#### CS CAMDEN (\*) BI: Lantmannen SW Seed AB, Dist: Canterra Seeds Fairview Seed Cleaning Coop / Fairview / AB / (780) 835-2478 Jonk, Nicholas / Westlock / AB / (780) 349-5458 Lefsrud, Kevin J. & Edmund J. / Viking / AB / (780) 336-2500 Lindholm Seed Farm / New Norway / AB / (780) 352-3240 Logan, Glenn C., Marie & Douglas / Lomond / AB / (403) 792-3696

Perwest Seeds / Three Hills / AB / (403) 443-2577 Plante, Jacques / St. Paul / AB / (780) 645-4604 Sekulic, Nick / Rycroft / AB / (780) 814-2849 Sendziak, Don P. & Stephen / Edmonton / AB / (780) 434-1322 True Seeds / Redwater / AB / (780) 777-5885 **ORE3542M** 

#### BI: Oat Advantage, Dist: SeCan Members

SFRC

Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900 Hill, Gordon P. & Blair / Taylor / BC / (250) 789-3469 Jones, Greg Thomas & Tristan / Ponoka / AB / (403) 783-6495 Ohrn, Norman / Thorsby / AB / (780) 985-2263 Pizzey, J. David / Canmore / AB / (403) 609-3588 Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617



#### HRS: Muchmore CPS: Rowyn Yellow Peas: Lacombe Cover Crops: Tillage Radishes and Turnips

Justin Nanninga: 780-307-4343 Dawna Nanninga: 780-674-3822 E: forwardseedfarm@gmail.com 2505 TWP RD 620, County of Barrhead, AB TOG 1R2

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> Pattie Ganske, Agvocate Former Owner, Ag Retail

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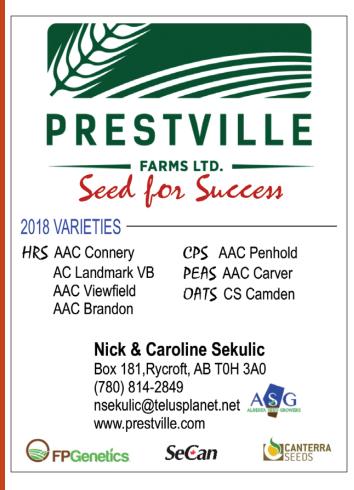
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# **SPRING TRITICALE**

					ategory Ultima)		Agron	omic Cha	racteris	stics:				Disease Tole			lerance:	
	Overall Station	Over-	Low	Medium	High	V. Hiah		Test			Re	sistance	to:					
Variety	Years of Testing	all Yield	< 70 (bu/ac)	70 - 100 (bu/ac)	100-130 (bu/ac)	> 130 (bu/ac)	Maturity Rating	Weight (lb/bu)	TSW⁴ (g)	Height (cm)	Lodging	Shat- tering	Sprout- ing	Ergot	Stripe Rust	Bunt	FHB	
	١	/arieties	tested in	the 2017 t	rials (Yield	, significar	nt difference	es and ag	ronomi	c data or	nly directly	compar	able to Br	evis)				
Brevis (bu/ac)		102	61	90	124	158												
Brevis		100	100	100	100	100	М	60	46	92	G	G	F	MR	MR	R	- I	
AAC Delight 🔺	21	95-	XX	XX	98	94	Μ	57	55	96	G	G	XX	MR	R	R	I	
			Previousl	y tested va	rieties: 201	1 - 2013 (	Yield and a	gronomic	data oı	nly direc	tly compar	able to B	Brevis)					
Sunray	35	90-	93-	91-	XX	91-	Μ	57	45	94	VG	G	F	MR	MR	R	MS	
Taza 🐵	35	88-	91-	89-	XX	90-	Μ	58	47	100	G	G	F	I	MR	R	S	
		Pi	eviously t	tested varie	eties: 2001	- 2013 (Yi	eld and agr	onomic d	ata only	y directly	/ comparat	ole to AC	Ultima)					
AC Ultima (bu/ac)		82	54	85	117	146												
AC Ultima		100	100	100	100	100	E	57	45	96	G	G	F	MS	MR	R	I	
Bumper † 💩	41	104	114+	100	99	96	E	59	45	90	VG	G	F	XX	MR	R	MS	
Bunker 🕲	49	90-	88-	92-	92-	XX	VL	57	48	107	F	G	F	XX	MR	R	I	
Pronghorn	120	101	100	101	103	102	Μ	55	43	98	G	G	F	I	MR	R	MR	
Taza 🕲	48	98	98	100	93-	XX	Μ	57	47	99	G	G	F	I	MR	R	S	
Tyndal 🐵	55	101	104	99	98	96	L	57	44	97	G	G	Р	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. New registration: AAC Delight (T225). XX = Insufficient data to describe  $\dagger =$  Flagged for possible removal in 2019.  $\blacktriangle$  = Applied for PBR protection. B = Protected by the 1978 Act of the UPOV Convention.



TRITICALE - SPRING	S	F	R	C
AAC DELIGHT 😟 Pending				
BI: AAFC (Lethbridge), Dist: N/A		-		
Fabian, Patrick V. / Tilley / AB / (403) 377-2000 BUNKER @		F		
BI: FCDC (Lacombe), Dist: FP Genetics				
Solick Seeds Ltd. / Halkirk / AB / (403) 884-2358				С
PRONGHORN				Ũ
BI: FCDC (Lacombe), Dist: N/A				
Mans, John / Nobleford / AB / (403) 824-3585				С
TAZA 💩				
BI: FCDC (Lacombe), Dist: Solick Seeds				~
Solick Seeds Ltd. / Halkirk / AB / (403) 884-2358 TYNDAL @			R	С
BI: FCDC (Lacombe), Dist: SeCan Members				
Card, Gordon B. & Rhett / Magrath / AB / (403) 758-3444				С
				Ũ
				Ű
		-	_	
SPRING - CWAD	s	F	R	-
SPRING - CWAD	S	F	R	
SPRING - CWAD	S	F	R	
	S	F	R	
SPRING - CWAD AAC CABRI @ BI: AAFC (Swift Current), Dist: SeCan Members Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 AAC CONGRESS @ Pending	s	F		
AAC CABRI @ BI: AAFC (Swift Current), Dist: SeCan Members Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 AAC CONGRESS @ Pending BI: AAFC (Swift Current), Dist: Canterra Seeds	S	F	R	
SPRING - CWAD AAC CABRI @ BI: AAFC (Swift Current), Dist: SeCan Members Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 AAC CONGRESS @ Pending BI: AAFC (Swift Current), Dist: Canterra Seeds Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517	S		R	
SPRING - CWAD AAC CABRI © BI: AAFC (Swift Current), Dist: SeCan Members Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 AAC CONGRESS © Pending BI: AAFC (Swift Current), Dist: Canterra Seeds Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517 Huvenaars, Carl / Hays / AB / (403) 725-2213	S	F	R	
SPRING - CWAD AAC CABRI © BI: AAFC (Swift Current), Dist: SeCan Members Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 AAC CONGRESS © Pending BI: AAFC (Swift Current), Dist: Canterra Seeds Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517 Huvenaars, Carl / Hays / AB / (403) 725-2213 Kiffiak, Nathan J. & Anderson, Tim / Foremost / AB / (403) 867-2338			R R R	
AAC CABRI BI: AAFC (Swift Current), Dist: SeCan Members Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 AAC CONGRESS Pending BI: AAFC (Swift Current), Dist: Canterra Seeds Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517 Huvenaars, Carl / Hays / AB / (403) 725-2213 Kiffiak, Nathan J. & Anderson, Tim / Foremost / AB / (403) 867-2338 Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736		F	R R R R	
SPRING - CWAD AAC CABRI ® BI: AAFC (Swift Current), Dist: SeCan Members Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 AAC CONGRESS ® Pending BI: AAFC (Swift Current), Dist: Canterra Seeds Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517 Huvenaars, Carl / Hays / AB / (403) 725-2213 Kiffiak, Nathan J. & Anderson, Tim / Foremost / AB / (403) 867-2338 Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228		F	R R R	
AAC CABRI <sup>®</sup> BI: AAFC (Swift Current), Dist: SeCan Members Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 AAC CONGRESS <sup>®</sup> Pending BI: AAFC (Swift Current), Dist: Canterra Seeds Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517 Huvenaars, Carl / Hays / AB / (403) 725-2213 Kiffiak, Nathan J. & Anderson, Tim / Foremost / AB / (403) 867-2338 Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228 AAC RAYMORE ∞		F	R R R R	
AAC CABRI <sup>®</sup> BI: AAFC (Swift Current), Dist: SeCan Members Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 AAC CONGRESS <sup>®</sup> Pending BI: AAFC (Swift Current), Dist: Canterra Seeds Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517 Huvenaars, Carl / Hays / AB / (403) 725-2213 Kiffiak, Nathan J. & Anderson, Tim / Foremost / AB / (403) 867-2338 Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228 AAC RAYMORE <sup>®</sup> BI: AAFC (Swift Current), Dist: SeCan Members		F	R R R R	
AAC CABRI <sup>®</sup> BI: AAFC (Swift Current), Dist: SeCan Members Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 AAC CONGRESS <sup>®</sup> Pending BI: AAFC (Swift Current), Dist: Canterra Seeds Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517 Huvenaars, Carl / Hays / AB / (403) 725-2213 Kiffiak, Nathan J. & Anderson, Tim / Foremost / AB / (403) 867-2338 Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228 AAC RAYMORE ∞		F	R R R R	C

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# CANADA WESTERN AMBER DURUM

				ield Catego 6 Strongfiel			Ag	ronomic C	haracte	eristics:				Disea	se Tolera	nce:	
	Overall Station		Low	Medium	High			Test				stance o:					
Variety	Years of Testing	Overall Yield	< 45 (bu/ac)	45 - 70 (bu/ac)	> 70 (bu/ac)	Mat. Rating	Protein %	Weight (lb/bu)	TKW (g)	Height (cm)	Ldg.	Sprt.	Loose Smut	Bunt	Stripe Rust	Leaf Spot	FHB
	Varietie	s tested i	n the 201	7 trials (Yie	ld, significa	ant differe	nces and	agronomi	c data o	nly direct	lly com	parable	to Strong	field)			
Strongfield (bu/ac)		64	35	60	93												
Strongfield 🐵		100	100	100	100	М	14.3	63	45	84	F	F	S	1	MR	MS	S
AAC Congress 🔺	23	104	109	100	104	М	-0.3	63	44	81	F	Р	MR	R	R	MS	MS
Brigade 💩	77	103+	105	103	101	L	-0.6	63	47	87	G	F	MS	R	MR		MS
CDC Alloy 🔺	14	102	XX	97	99	М	0.2	63	44	85	F	F		R	R	MS	MS
CDC Dynamic 🔺	14	97	XX	99	93-	М	0.6	62	44	82	F	F		R	MR		MS
Transcend 🐵	43	101	102	103	99	Μ	XX	63	45	87	F	F	S	R	R	1	MS
	Prev	viously tes	sted varie	ties (Yield, s	significant	difference	s and agr	onomic da	ata only	directly of	compar	able to	Strongfiel	d)			
AAC Cabri 🖲	25	94-	98	93-	XX	М	0.1	62	45	86	G	Р	MR	R	R		MS
AAC Current 🐵	30	99	104	98	XX	М	0	62	44	85	F	F	MS	MR	MR		MS
AAC Durafield + 🖲	22	99	XX	99	XX	Μ	-1	64	46	76	F	F	S	R	MR	- 1	S
AAC Marchwell VB (9)	32	99	107	96	98	М	-0.1	63	46	83	F	F	MR	R	R	MS	MS
AAC Raymore @	34	97	99	98	94	М	0.8	62	47	82	F	F	MS	MR	MR	1	S
AAC Spitfire (9)	25	97	100	96	XX	М	-0.4	61	46	82	G	Р	MS	R	R	MS	S
AC Navigator	65	95-	102	93-	93-	М	XX	63	45	77	G	G	S	R	R	S	S
CDC Carbide VB	25	100	104	100	XX	М	0	62	45	85	G	Р	MS	R	R	MS	MS
CDC Desire 🔺	34	102	106	101	101	E	0	62	44	83	F	G	MS	R	MR	1	S
CDC Fortitude 🖲	32	102	102	102	103	М	-0.6	63	45	81	G	F	MS	R	R	MS	MS
CDC Verona @	46	102	103	103	99	М	XX	62	46	82	G	F	MS	R	R	MS	MS
CDC Vivid 🔺	34	100	104	99	98	М	0.1	62	45	83	G	F		R	MR		S
Enterprise † 🐵	48	101	104	100	102	М	XX	63	44	83	G	F	MS	I	R	1	MS

**REMARKS:** For explanations on data summarization methods, abbreviations and other pertinent information, please see the comments at the beginning of this publication. Generally, durum wheat is best adapted to southern Alberta. Outside of this area, durum tends to be late maturing and often subject to quality loss. The long-term average maturity for Strongfield is 105 days and is rated as Medium (M). Strongfield yields about 10% higher than AC Barrie in areas of best adaptation. Durum varieties are generally more susceptible to Fusarium head blight than CWRS wheat varieties. AAC Cabri, AAC Raymore and CDC Fortitude have a solid stem that confers resistance to the wheat stem sawfly. VB - designates a varietal blend to preserve the Sm1 orange wheat blossom midge tolerance gene. New registrations: AAC Succeed VB (DT871). Insufficient data to describe: AAC Succeed. XX - Insufficient data to describe. † - Flagged for possible removal in 2019. A = Applied for PBR protection. B = Protected by the 1978 Act of the UPOV Convention.

#### AAC SPITFIRE

AAC SPITFIRE (1)				
Bi: AAFC (Swift Current), Dist: SeCan Members				
Benci, Dennis / Carmangay / AB / (403) 643-2294				С
Brummelhuis, Mitchell & Mack / Vauxhall / AB / (403) 654-7515				С
Catherwood, James / Calgary / AB / (403) 836-9699			R	
Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900				С
Crooymans, John, Joseph & Andrew / Bow Island / AB / (403) 545-6333				С
Eliason, Bruce W. / Wrentham / AB / (403) 222-2258		F		С
Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517				С
Hierath, Michael Wayne & Philip / Milk River / AB / (403) 647-2347				С
Kiffiak, Nathan J. & Anderson, Tim / Foremost / AB / (403) 867-2338			R	С
Klassen, Ken / Rosemary / AB / (403) 378-4408			R	
Penwest Seeds / Three Hills / AB / (403) 443-2577	S			
Sim, Darwin & Derek / Ponoka / AB / (780) 372-2111				С
Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228		F	R	
Stamp Seeds / Enchant / AB / (403) 739-2233			R*	С
Van Roessel, William & Jean / Bow Island / AB / (403) 545-6018				С
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434	S	F	R	
Witdouck, Dale / Iron Springs / AB / (403) 738-4395				С
AAC SUCCEED VB 🛞				
BI: AAFC (Swift Current), Dist: FP Genetics				
Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228	S			
Stamp Seeds / Enchant / AB / (403) 739-2233	S			
AC BRIGADE				
BI: AAFC (Swift Current), Dist: CPS (Canada) Inc.				
Proven Seed/CPS (Canada) Inc. / High River / (403) 603-6011	S		R	С
AC NAVIGATOR 💩				
BI: AAFC (Swift Current), Dist: Proven Seed/CSP (Canada) Inc.				
Logan, Glenn C., Marie & Douglas / Lomond / AB / (403) 792-3696			R	
CDC ALLOY (9)				
BI: CDC, Dist: FP Genetics				
Benci, Dennis / Carmangay / AB / (403) 643-2294	S	F		
Geldreich, Dave / Bow Island / AB / (403) 545-2222	S	F		
Quattro Ventures Inc. / Bow Island / AB / (403) 545-2222			R	
Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228	S	F		
CDC CARBIDE				
BI: CDC, Dist: CPS (Canada) Inc.				
Proven Seed/CPS (Canada) Inc. / High River / (403) 603-6011	S	F		С

CDC FORTITUDE (9)				
BI: CDC, Dist: CPS (Canada) Inc.				
Anderson, Stephen F. / Scandia / AB / (403) 362-5886				С
Proven Seed/CPS (Canada) Inc. / High River / (403) 603-6011	S		R	С
CDC PRECISION (9)				
BI: CDC, Dist: Alliance Seed				
Crooymans, John, Joseph & Andrew / Bow Island / AB / (403) 545-6333			R	С
Hierath, Michael Wayne & Philip / Milk River / AB / (403) 647-2347			R	
Markert Seeds Ltd. / Vulcan / AB / (403) 485-6708	0	F	R	
Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736	S	F	R	
Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228 Stamp Seeds / Enchant / AB / (403) 739-2233		F*	R	R
Van Roessel, William & Jean / Bow Island / AB / (403) 545-6018		Г	R	ĸ
STRONGFIELD			n	
BI: AAFC (Swift Current), Dist: SeCan Members				
Catherwood, James / Calgary / AB / (403) 836-9699				С
Jensen, Colin / Drumheller / AB / (403) 820-0181				C
Quattro Ventures Inc. / Bow Island / AB / (403) 545-2222				C
Penwest Seeds / Three Hills / AB / (403) 443-2577			R	Ŭ
TRANSCEND				
BI: AAFC (Swift Current), Dist: FP Genetics				
Benci, Dennis / Carmangay / AB / (403) 643-2294			R	
Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900	S	F		С
Geldreich, Dave / Bow Island / AB / (403) 545-2222	S			
Markert Seeds Ltd. / Vulcan / AB / (403) 485-6708				С
Quattro Ventures Inc. / Bow Island / AB / (403) 545-2222			R	С
Sim, Darwin & Derek / Ponoka / AB / (780) 372-2111			R	
Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228			R	С
Strain, Arthur George / Foremost / AB / (403) 867-2227		R		

# **CANADA WESTERN RED SPRING**

				ield Categor % AC Barrie				Agrono	mic Cha	aracteris	tics:				Diseas	e Tolera	nce:	
Variety	Overall Station Years of Testing	Over- all Yield	Low < 45 (bu/ ac)	Medium 45 – 75 (bu/ac)	High > 70 (bu/ ac)	Maturity Rating	Pro- tein %	Test Weight (Ib/bu)	TKW (g)	Height (cm)	Awns (Y/N)		stance o: Sprt.	Loose Smut	Bunt	Stripe Rust	Leaf Spot	FHB
	Var	ieties tes	ted in the	e 2017 trials	(Yield, s	significant di	fferenc	es and ag		c data on	ly direct	ly comp	arable t	o AC Barri	e)			
AC Barrie (bu/ac)		60	42	63	84													
AC Barrie		100	100	100	100	М	14.0	63	37	89	Ν	G	G	MR	1	S	MS	1
Carberry - check 🐵	95	107 +	110 +	106 +	104	L	0	63	39	79	Y	VG	F	MR	R	MR	MS	MR
AAC Cameron VB 💩	42	117+	110+	123+	115+	М	-0.6	62	44	94	Y	G	F	S	R	S		
AAC Redberry 💩	42	108 +	108 +	109+	106	М	-0.1	63	41	84	Y	G	G	R	I.	R	MS	I
AAC Tisdale 🔺	28	106+	106	107	106+	М	0.4	63	43	89	Y	F	F	MR	MR	S	MS	MR
AAC Viewfield 🔺	42	117+	116+	118+	117+	L	-0.3	63	40	76	Y	VG	G	S	MR	R	I	I
CDC Adamant VB	28	111+	103	118+	110+	М	-0.3	63	40	83	Y	Р	F	S	S	MS	MS	1
CDC Bradwell	42	108 +	107 +	108 +	110 +	L	-0.3	63	38	84	Y	VG	F	MR	R	MS	MS	I
CDC Go	104	111+	106 +	113+	115 +	М	0.1	61	42	82	Y	G	VP	MS	1	MS	S	MS
CDC Hughes VB ▲	28	111+	110 +	111	112+	М	-0.2	64	44	84	Y	G	G	MR	MS			I
CDC Landmark VB 🔺	28	113+	108	117	113+	М	-0.1	64	44	85	Y	VG	VG	MR	MS	MR		- T -
Stettler 💩	83	112+	115 +	110+	112+	М	0	62	38	84	Y	G	G	R	MR	1	MS	MS
SY Slate A	42	108+	108	110+	106 +	М	0.2	62	41	85	Y	F	Р	MS	S	MR	MS	
SY Sovite 🖲	28	104	105	109	101	M	0	62	43	89	Y	F	F	R	MS	R	MR	MR
		Previous	ly tested	varieties (Y	ield, sign	ificant differ	ences	and agron	omic da	ata only c	directly c	ompara	ble to A	C Barrie)				
5604HR CL	76	99	102	98	99	E	-0.7	63	33	87	Y	G	G	MS	Ι	XX	MS	Ι
5605HR CL † 🕲	43	109+	XX	114+	106 +	М	-0.2	64	38	91	Y	G	XX	R	MR		MS	MR
AAC Bailey † 💩	58	103	102	104	103	М	-0.6	63	37	92	Ν	G	G	MS				
AAC Brandon 🐵	41	114+	106	117+	113+	М	-0.2	64	38	81	Y	VG	Р	MR	S	MR		MR
AAC Connery	42	106+	XX	108	108+	E	0	62	40	81	Ν	VG	G	MR	I	R		MR
AAC Elie 🕲	41	115+	107	120+	112+	М	-0.1	64	38	81	Y	G	F			MR		
AAC Prevail	42	106+	XX	107+	107+	L	-0.6	62	39	96	Y	G	G	S	S	R	MS	I
AAC Redwater	41	103	96	106	104	E	0	64	35	87	Y	G	VG	MS		MR	MS	
AC Intrepid †	107	102	98	103	105 +	E	0	62	39	90	Ν	G	Р	I	MR	MR	MS	MS
AC Splendor †	153	95-	93-	96-	98	VE	0.9	61	37	89	Ν	F	F	l I		1		MS
Cardale 🐵	41	105 +	100	106+	105	М	-0.3	63	37	84	Y	G	G	I	S	MS	MS	MR
Coleman	43	101	XX	105	98	М	0	64	37	93	Y	F	Р	S	S	MR		MR
CDC Abound 🕲	88	110+	108+	110+	112+	М	-0.1	63	40	82	Y	G	F	I		MS	MS	S
CDC VR Morris @	41	109+	105	111+	107	М	-1	65	37	84	N	G	Р	I		XX		MR
CDC Plentiful @	41	106+	100	108+	106+	М	-0.2	64	35	87	N	VG	Р	R		MR		MR
CDC Stanley @	76	113+	114+	114+	113+	M	-0.8	63	34	87	N	G	G	MR	S			MS
CDC Titanium VB 🛞	41	108+	XX	112+	103	E	0.5	65	41	87	Y	G	Р	MS		R	MS	MR
CDC Utmost VB 💩	53	112+	115+	112+	111+	M	-0.2	64	36	85	N	G	G	MS	S			MS
Glenn 🐵	61	104	110+	100	104	L	-0.2	65	36	85	Y	VG	F	1		MR		-
Go Early 🕲	42	104	XX	105	104	VE	0.3	61	40	93	Y	G	Р		MR		S	1
Goodeve VB † @	96	105+	107+	103	104	M	-0.1	62	36	88 75	N	VG	G	MR	S	MD	MS	S
Muchmore 💩 Peace †	53 53	111+ 100	114+ 100	107 97	111 103	L	-0.9 0.1	63	37 37	92	Y	VG G	G	MR R	R R	MR	MS XX	MS
Shaw VB @	53	112+	116+	109+	113+	M	-0.9	63 63	37	92	N	G	G	S	MR	MR	MS	S MS
Superb @	53 184	112+	110+	112+	115+	L	-0.9	62	42	92 85	Y	G	F	<u>з</u>	MR	S	S	MS
SY433 @	44	104	101	104	104	M	-0.4	64	42 39	95	Y	G	G		S	XX	5	MR
SY479 VB (9)	44	97-	XX	104	95-	M	0.8	62	39 40	95 94	r Y	VG	VG	MS	R	S	MS	IVIN
						L					Y							MD
SY637 🖲	42	103	XX	101	103		0.8	62	39	91		G	XX	MS	MR	MR		MR
Thorsby 🕲	43	106+	XX	110	105	E	-0.5	64	38	89	N	G	F	1	S	R	MS	I
Vesper VB † 🐵	45	106+	106	108+	104	M	-1.5	63	37	90	Y	F	F		S	S		
WR859 CL † @	79	106 +	110+	103	107 +	М	-0.4	64	34	81	Y	G	G	R	R	I	MS	MR

REMARKS: For explanations on data summarization methods, abbreviations and other pertinent information, please see the comments at the beginning of this publication. Several CWRS varieties will be reclassified to the new CNHR wheat class, effective August 1, 2018. The varieties affected are AC Abbey, AC Cora, AC Eatonia, AC Majestic, AC Minchael, AC Minto, Alvena, Alikat, CDC Makwa, CDC Osler, Columbus, Conway, Harvest, Kane, Katepwa, Leader, Lillian, McKenzie, Neepawa, Park, Pasqua, Pembina, Thatcher, Unity VB and 5603HR. For more information see the Canadian Grain Commission website www. grainscanada.gc.ca. The long-term average maturity for AC Barrie is 106 days and rated as Medium (M). Fusarium head blight (FHB) infection is highly influenced by the environment and heading date. Under built should be treated with a systemic seed treatment to reduce the potential for infection. CDC Adamant VB, CDC Landmark VB and CDC Hughes VB 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 Altitude FX. VB - designates a varietal blend to preserve the Sm1 orange wheat blossom midge tolerance gene. New CWRS registrations: AAC Jatharia VB (BW483), AAC Alida (BW980), CDC Adamant VB (BW488). Insufficient data to describe: AAC Jatharia VB, AAC Alida, and Parata. XX - Insufficient data to describe: A- Flagged for possible removal in 2019. A = Applied for PBR protection. @ = Protected by the 1978 Act of the UPOV Convention.

# CANADA WESTERN RED SPRING

Yield: Annual Means by Productivity Environment \*

		Low Yiel	d Sites (<	60 bu/ac)			High Yiel	d Sites (>=		_ 。 "	Station	
Variety	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017	Overall Yield	Years of testing
AC Barrie (bu/ac)	36	44	46	48	47	75	71	69	78	75	60	363
AC Barrie (check)	100	100	100	100	100	100	100	100	100	100	100	363
Carberry 🕲			106	104	113			107	101	109	107+	138
5604HR CL 💩	95					101					99	76
5605HR CL 💩	114	95	105			114	109	108			109+	43
AAC Bailey 🐵	106	94				98	104				103	58
AAC Brandon 💩	119	104				114	122				114+	41
AAC Elie 🕸	135	105				114	121				115+	41
AAC Redwater	103	97				107	109				103	41
Cardale 💩	113	96				103	108				105+	41
CDC VR Morris 💩	105		115			113		110			109+	41
CDC Plentiful 💩	111	101				108	110				106+	41
CDC Stanley 🐵	106					120					113+	76
CDC Titanium VB 🕲	112	102	110			107	111	104			108+	41
Coleman	104	92	94			103	104	101			101	43
Katepwa	95	96				98	99				97	278
SY433 🕲	108					105					104	44
Thorsby 🖲	98	97	103			106	113	109			106 +	43
AAC Connery ®		94	104	107			108	108	108		106+	42
AAC Prevail VB 🛞		99	104	106			107	107	109		106+	42
Go Early 💩		97	107	102			105	109	102		104	42
SY479 VB		95	98	99			97	98	97		97-	42
SY637 (*)		95	101	98			107	104	103		103	42
AAC Cameron VB 💩			112	113	105			118	118	122	117+	42
AAC Redberry 🐵			109	109	107			111	104	108	108+	42
AAC Viewfield 🔺			118	116	110			116	117	119	117+	42
CDC Bradwell			104	112	106			105	112	109	108+	42
SY Slate 🔺			109	106	109			106	105	113	108+	42
AAC Tisdale 🔺				107	103				106	107	106	28
CDC Adamant VB 🔺				109	96				110	116	111+	28
CDC Hughes VB ▲				111	107				109	114	111+	28
CDC Landmark VB 🔺				110	103				112	119	113+	28
SY Sovite				105	105				102	106	104	28
CDC Go (benchmark)					110					115	111+	104
Stettler 💩 (benchmark)					107					112	112+	83
Number of Sites	4	4	5	4	3	11	10	9	10	11		

**REMARKS:** \* Please see the INTRODUCTION for an explanation of this new yield format

SPRING - CWRS	s	F	R	C
5605HR-CL @				
BI: Syngenta Seeds Canada Inc., Dist: CPS (Canada) Inc.				
Logan, Glenn C., Marie & Douglas / Lomond / AB / (403) 792-3696 Proven Seed/CPS (Canada) Inc. / High River / (403) 603-6011		R		C C
AAC BRANDON @				
BI: AAFC (Swift Current), Dist: SeCan Members			D	0
Baier, Bill & Dean / Clyde / AB / (780) 348-5791 Benci, Dennis / Carmangay / AB / (403) 643-2294			R	C C
Brummelhuis, Mitchell & Mack / Vauxhall / AB / (403) 654-7515				C
Carlson, David / Gwynne / AB / (780) 352-6871				С
Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900 Clark, Todd / Edmonton / AB / (780) 499-5060				C C
Crooymans, John, Joseph & Andrew / Bow Island / AB / (403) 545-6333			R	С
Cyre, Clifford & Greg / Barrhead / AB / (780) 307-4332				C C
Davidson, E. Daryl & Dean / Kitscoty / AB / (780) 846-2456 Dovichak, Michael / Brooks / AB / (403) 501-5420				C
Dyck, Ernie / La Crete / AB / (780) 821-9445			R	
Dyck, Heinz W., Colin, Alan & Kelton / Rosemary / AB / (403) 378-3321	S	F	D	С
Ellis, Brian / Olds / AB / (403) 556-2890 Fabian, Patrick V. / Tilley / AB / (403) 377-2000		F	R	С
Galloway Seeds Ltd. / Fort Saskatchewan / AB / (780) 998-3036				С
Geeraert, Gerald / Rockyford / AB / (403) 533-2421 Gibson, Donald / Sangudo / AB / (780) 785-2214				C C
Globoli, Donald / Sangudo / AB / (760) 785-2214 Good, Kevin / Carstairs / AB / (403) 852-2389				C
Hadway, W. Tom & Carol / Didsbury / AB / (403) 335-4929			R	
Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517			D	C
Harbin, Clifford T. & Bruce C. / Rivercourse / AB / (780) 745-2268 Hierath, Michael Wayne & Philip / Milk River / AB / (403) 647-2347			R	C C
Hoff, Peter Edward / Gleichen / AB / (403) 734-2140				С
Hundeby, Arron / Wetaskiwin / AB / (780) 335-5111			D	С
Huvenaars, Carl / Hays / AB / (403) 725-2213 Jensen, Colin / Drumheller / AB / (403) 820-0181			R	C C
Kapitski, Lawrence / Andrew / AB / (780) 365-2134			R	С
Kemp, Richard L. / Red Deer County / AB / (403) 227-4836			D.+	С
King Seed Farm (Webb, David G.) / Three Hills / AB / (403) 443-7330 Kittle, James W. & Andrew / Viking / AB / (780) 336-2583			R*	C C
Kopjar, Gerald M. / Rowley / AB / (403) 368-2409	S		R	C
Limoges, Richard / McLennan / AB / (780) 324-2335			R	C
Lindholm Seed Farm / New Norway / AB / (780) 352-3240 Lindholm, Luke & Stevan / New Norway / AB / (780) 608-4277			R R	C C
Lopushinsky, Julian / Bruderheim / AB / (780) 796-2048			R	
Massey, Derwin & Kirby / Stettler / AB / (403) 883-2503				C
Meinczinger, Matthew Jr. / Busby / AB / (780) 349-2456 Metzger, Don / Carbon / AB / (403) 572-3284				C C
Miller, Brian / Barrhead / AB / (780) 674-5001			R	C
Mueller, Darcy / Three Hills / AB / (403) 820-4115		F		0
Nemetz, Charlie, Jerritt & Lewis / Stettler / AB / (403) 742-0436 Pare, Raymond A. / Wainwright / AB / (780) 842-2073	S	F	R	С
Penwest Seeds / Three Hills / AB / (403) 443-2577	Ŭ	F		С
Pepneck, David / Vauxhall / AB / (403) 424-0096			D	С
Pizzey, J. David / Canmore / AB / (403) 609-3588 Rix, Graham / Wetaskiwin / AB / (780) 360-9234			R	С
Sand, Ron W. & David R. / McLaughlin / AB / (780) 745-2251				С
Sekulic, Nick / Rycroft / AB / (780) 814-2849			D	C
Sendziak, Don P. & Stephen / Edmonton / AB / (780) 434-1322 Shultz, Shawn / Didsbury / AB / (403) 335-3694			R	C C
Solick Seeds Ltd. / Halkirk / AB / (403) 884-2358	S	F	R	C
Solick, Corwin / Halkirk / AB / (403) 916-5582	S			
Sounding Creek Seeds / Oyen / AB / (403) 664-9617 Stamp Seeds / Enchant / AB / (403) 739-2233				C C
Stewart, Murray / Big Valley / AB / (403) 876-2784			R	C
Thompson, M. Ellwood & Kelly / Red Deer County / AB / (403) 728-3535				С
Van Roessel, William & Jean / Bow Island / AB / (403) 545-6018 Victoor, Rene & Jamie / Sturgeon County / AB / (780) 459-3253			R	C C
Wagner, Terry & Loree / Lacombe / AB / (403) 782-2107			п	C
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434				
Witdouck, Dale / Iron Springs / AB / (403) 738-4395 Wood, Robert, Patricia & Marshall / Bowden / AB / (403) 588-3548	S	F	R	C C
Zwack, Bryan / Daysland / AB / (780) 608-9426	0	1	n	C
Zwack, Thomas / Daysland / AB / (780) 374-2450				C
AAC CAMERON VB (2) BI: AAFC (Brandon), Dist: Canterra Seeds				
Bi: AAFC (Brandon), Dist: Canterra Seeds Boisvert, Marc / Girouxville / AB / (780) 618-4724			R	
Huvenaars, Carl / Hays / AB / (403) 725-2213			R	С
Lefsrud, Kevin J. & Edmund J. / Viking / AB / (780) 336-2500	S			

cereals – performance trials and grower directory

Penwest Seeds / Three Hills / AB / (403) 443-2577		F		
Solick Seeds Ltd. / Halkirk / AB / (403) 884-2358	S	·		
AAC CONNERY (9)				
BI: AAFC (Swift Current), Dist: Canterra Seeds				~
Airth, Jock & Linda / Brooks / AB / (403) 362-4372 Crooymans, John, Joseph & Andrew / Bow Island / AB / (403) 545-6333				C C
Galloway Seeds Ltd. / Fort Saskatchewan / AB / (780) 998-3036		F		C
Goode, Tim / Lacombe / AB / (403)506-9424		'		C
Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517				Ĉ
Lindholm Seed Farm / New Norway / AB / (780) 352-3240	S*		R*	
Rix, Graham / Wetaskiwin / AB / (780) 360-9234				С
Sekulic, Nick / Rycroft / AB / (780) 814-2849				С
Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228 Solick Seeds Ltd. / Halkirk / AB / (403) 884-2358			R	С
Stickland, Brian / Penhold / AB / (403) 886-4875				C
Victoor, Rene & Jamie / Sturgeon County / AB / (780) 459-3253	S	F		Č
AAC ELIE 💩				
BI: AAFC (Swift Current), Dist: Alliance Seed				
Hierath, Michael Wayne & Philip / Milk River / AB / (403) 647-2347				С
Holmstrom, Darrell / Killam / AB / (780) 385-3574			R	C
Howard, Fred / Wanham / AB / (780) 694-2427 King Seed Farm (Webb, David G.) / Three Hills / AB / (403) 443-7330	S	F		C C
King Seed Failth (Webb, David C.) / Three Finits / AD / (403) 443-7330 Klassen, Ken / Rosemary / AB / (403) 378-4408	0	1		C
Logan, Glenn C., Marie & Douglas / Lomond / AB / (403) 792-3696				Č
Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736				С
Sich, Louis J., Ivan & Martin / Trochu / AB / (403) 442-2112		F	R	С
Sim, Darwin & Derek / Ponoka / AB / (780) 372-2111	~	-	-	С
Stamp Seeds / Enchant / AB / (403) 739-2233	S	F	R	С
True Seeds / Redwater / AB / (780) 777-5885 Van Roessel, William & Jean / Bow Island / AB / (403) 545-6018				C C
AAC REDBERRY				0
BI: AAFC (Swift Current), Dist: Alliance Seed				
Hierath, Michael Wayne & Philip / Milk River / AB / (403) 647-2347	S	F	R	
Holmstrom, Darrell / Killam / AB / (780) 385-3574		F	R	
Howard, Fred / Wanham / AB / (780) 694-2427	c	F	R	
Stamp Seeds / Enchant / AB / (403) 739-2233 AAC REDWATER (9)	S	Г	R	
BI: AAFC (Winnipeg), Dist: SeCan Members				
Bright, David / New Norway / AB / (780) 855-2240				С
Galloway Seeds Ltd. / Fort Saskatchewan / AB / (780) 998-3036			R	С
Goldstrom, David / Red Deer County / AB / (403) 227-2133				С
Good, Kevin / Carstairs / AB / (403) 852-2389 Hadland, Edward / Baldonnel / BC / (250) 793-9746			R	С
Hadiand, Edward / Bardonner / BC / (200) 793-3740 Hadway, W. Tom & Carol / Didsbury / AB / (403) 335-4929			R	
Hallett's Hay and Seed / Carstairs / AB / (403) 337-3072		F		С
Harris, William P., Linda, Thomas & A. / Beaverlodge / AB / (780) 354-2823	S		R	
Hegland, David Olaf / Wembley / AB / (780) 766-2450				С
Holmstrom, Darrell / Killam / AB / (780) 385-3574				С
Lopushinsky, Julian / Bruderheim / AB / (780) 796-2048 McDonald, Gerald / Co. Of Grande Prairie #1 / AB / (780) 538-3868			R	С
Oatway's Seed Farm / Clive / AB / (403) 784-3001			R	U
Pizzey, J. David / Canmore / AB / (403) 609-3588				С
Richard, Gerald / Spirit River / AB / (780) 864-2339			R	
Sayer, Roger / Carstairs / AB / (403) 337-5847				С
Sendziak, Don P. & Stephen / Edmonton / AB / (780) 434-1322			R	
Trueblood, Brian G. / Dapp / AB / (780) 954-3745 Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617		F*	R R	C*
Warkenun, Harold K. & Eind / Beaver County / AB / (700) 002-2017 Weigum, Garry & Sarah / Three Hills / AB / (403) 443-9599		1	n	C
Witdouck, Dale / Iron Springs / AB / (403) 738-4395			R	C
AAC TISDALE				
BI: AAFC (Swift Current), Dist: SeCan Members				
Hill, Gordon P. & Blair / Taylor / BC / (250) 789-3469		F	-	
Strain, Arthur George / Foremost / AB / (403) 867-2227 AAC VIEWFIELD @ Pending			R	
BI: AAFC (Swift Current), Dist: FP Genetics				
Airth, Jock & Linda / Brooks / AB / (403) 362-4372	S			
Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900	S		R	
Galloway Seeds Ltd. / Fort Saskatchewan / AB / (780) 998-3036		F	R	
Geldreich, Dave / Bow Island / AB / (403) 545-2222 Hoff Pater Edward / Gleichen / AB / (403) 734, 2140	S		R	
Hoff, Peter Edward / Gleichen / AB / (403) 734-2140 King Seed Farm (Webb, David G.) / Three Hills / AB / (403) 443-7330	S		R	
Massey, Derwin & Kirby / Stettler / AB / (403) 883-2503	Ű		R	
Sand, Ron W. & David R. / McLaughlin / AB / (780) 745-2251	S	F	R	
Sekulic, Nick / Rycroft / AB / (780) 814-2849			R	С*
Stamp Seeds / Enchant / AB / (403) 739-2233	S		R	
Thompson, M. Ellwood & Kelly / Red Deer County / AB / (403) 728-3535 True Seeds / Redwater / AB / (780) 777-5885			R R	
100 00000 / 100 mator / /D/ (100) 111-0000			П	

AC MUCHMORE @					Mark
BI: AAFC, Dist: FP Genetics	0	-		~	Mas: Sano
Airth, Jock & Linda / Brooks / AB / (403) 362-4372 Forward Seed Farm / County Of Barrhead / AB / (780) 674-3822	S	F		C C	Slee
Galloway Seeds Ltd. / Fort Saskatchewan / AB / (780) 998-3036			R	C	CDC S
Harbin, Clifford T. & Bruce C. / Rivercourse / AB / (780) 745-2268			n	C	BI: (
Kapitski, Lawrence / Andrew / AB / (780) 365-2134			R*	C	Loga
King Seed Farm (Webb, David G.) / Three Hills / AB / (403) 443-7330			R*	C	Prov
Lindholm Seed Farm / New Norway / AB / (780) 352-3240				C	CDC T
Markert Seeds Ltd. / Vulcan / AB / (403) 485-6708				С	BI: N
Massey, Derwin & Kirby / Stettler / AB / (403) 883-2503				С	Ande
Quattro Ventures Inc. / Bow Island / AB / (403) 545-2222				С	Lalib
Sand, Ron W. & David R. / McLaughlin / AB / (780) 745-2251				С	Prov
Sim, Darwin & Derek / Ponoka / AB / (780) 372-2111				С	GLENN
Thompson, M. Ellwood & Kelly / Red Deer County / AB / (403) 728-3535 True Seeds / Redwater / AB / (780) 777-5885				C C	BI: I Airth
IC SHAW VB				6	GOEA
BI: AAFC, Dist: SeCan Members					BI: I
Maisonneuve, Andre / Guy / AB / (780) 925-3074			R		Amy
Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617	S	F*		С*	Berg
CARBERRY @					Mas
BI: AAFC (Swift Current), Dist: SeCan Members					STETT
Cailliau, John, Dana, Sebastien, Dave & Danielle / Enchant / AB / (403) 739-3785			R		BI: /
Crooymans, John, Joseph & Andrew / Bow Island / AB / (403) 545-6333				C*	Baie
Dyck, Heinz W., Colin, Alan & Kelton / Rosemary / AB / (403) 378-3321				C	Dycł Fost
Macyk, Tim / Radway / AB / (780) 699-4073 Schmermund, Donnie / Sturgeon County / AB / (780) 967-2850				C C	Fost Harri
CARDALE @				6	Lim
BI: AAFC (Winnipeg), Dist: Seed Depot					Mille
Crooymans, John, Joseph & Andrew / Bow Island / AB / (403) 545-6333				С*	Mrad
Schmermund, Donnie / Sturgeon County / AB / (780) 967-2850			R		Nem
COLEMAN					Pare
BI: U of Alberta, Dist: 6 King Genetics					SUPEF
Lefsrud, Kevin J. & Edmund J. / Viking / AB / (780) 336-2500			R	С	BI: A
CDC ABOUND @					Jone THORS
BI: CDC, Dist: CPS (Canada) Inc. Moffitt, Kenneth & Raymond / Radway / AB / (780) 818-6550			R		BI: U
Proven Seed/CPS (Canada) Inc. / High River / (403) 603-6011			R	С	Bois
CDC ADAMANT VB				0	Fairv
BI: CDC, Dist: FP Genetics					Rich
Geldreich, Dave / Bow Island / AB / (403) 545-2222	S	F			Unra
Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228			R		SY433
CDC BRADWELL (9)					BI: I
BI: CDC, Dist: SeCan Members					Gate
McDonald, Gerald / Co. Of Grande Prairie #1 / AB / (780) 538-3868			R		ZEALA BI: I
Pepneck, David / Vauxhall / AB / (403) 424-0096 CDC GO			R		Lefsr
BI: CDC, Dist: Mastin Seeds					LUIJI
Airth, Jock & Linda / Brooks / AB / (403) 362-4372			R		
Crooymans, John, Joseph & Andrew / Bow Island / AB / (403) 545-6333			R*		
Huvenaars, Carl / Hays / AB / (403) 725-2213				С	
King Seed Farm (Webb, David G.) / Three Hills / AB / (403) 443-7330				С*	
Murray, Bruce & Wesley / Lethbridge / AB / (403) 327-9389				С	
Penwest Seeds / Three Hills / AB / (403) 443-2577				С	
Schmermund, Donnie / Sturgeon County / AB / (780) 967-2850			R	0	
Sich, Louis J., Ivan & Martin / Trochu / AB / (403) 442-2112	S*	F*		C C*	
Stamp Seeds / Enchant / AB / (403) 739-2233 Templeton, Doran & Brant / Lethbridge / AB / (403) 345-4144	3	Г		C* C	
Weigum, Garry & Sarah / Three Hills / AB / (403) 443-9599				C	
CDC HUGHES VB				0	
BI: CDC, Dist: CPS (Canada) Inc					
Proven Seed/CPS (Canada) Inc. / High River / (403) 603-6011	S	F	R		
CDC LANDMARK VB					
BI: CDC, Dist: FP Genetics					
Airth, Jock & Linda / Brooks / AB / (403) 362-4372	S				
Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900	S		R		1
Galloway Seeds Ltd. / Fort Saskatchewan / AB / (780) 998-3036			R		
Hoff, Peter Edward / Gleichen / AB / (403) 734-2140	c	E	R		1 1
Markert Seeds Ltd. / Vulcan / AB / (403) 485-6708 Pizzey, J. David / Canmore / AB / (403) 609-3588	S	F	R	С	
Sand, Ron W. & David R. / McLaughlin / AB / (780) 745-2251	S	F	R	U	
Sekulic, Nick / Rycroft / AB / (780) 814-2849	0	1	n R	С*	
True Seeds / Redwater / AB / (780) 777-5885			R	Ŭ	W N
CDC PLENTIFUL @					-
BI: CDC, Dist: FP Genetics					
King Seed Farm (Webb, David G.) / Three Hills / AB / (403) 443-7330	S*	F*	R*	C*	
Lindholm Seed Farm / New Norway / AB / (780) 352-3240			R*	C*	
					1

Markert Seeds Ltd. / Vulcan / AB / (403) 485-6708 Massey, Derwin & Kirby / Stettler / AB / (403) 883-2503 Sand, Ron W. & David R. / McLaughlin / AB / (780) 745-2251 Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228			R	C C C
CDC STANLEY @				
BI: CDC, Dist: CPS (Canada) Inc. Logan, Glenn C., Marie & Douglas / Lomond / AB / (403) 792-3696 Proven Seed/CPS (Canada) Inc. / High River / (403) 603-6011	S		R	C C
CDC TITANIUM VB				
BI: N/A, Dist: CPS (Canada) Inc. Anderson, Stephen F. / Scandia / AB / (403) 362-5886				С
Laliberté, Adam & Vos, Henry / Fairview / AB / (780) 835-5286 Proven Seed/CPS (Canada) Inc. / High River / (403) 603-6011			R	C
GLENN &				
BI: NDSU, Dist: Canterra Seeds Airth, Jock & Linda / Brooks / AB / (403) 362-4372				С
GO EARLY (9)				Ũ
BI: U of Alberta, Dist: Mastin Seeds				_
Amyotte, Phillip / Mallaig / AB / (780) 635-4010 Berge, James Garnet / Dawson Creek / BC / (250) 759-4773 Mastin, Robert B. / Sundre / AB / (403) 556-2609			R	C C C
STETTLER @			n	U
BI: AAFC (Winnipeg), Dist: SeCan Members Baier, Bill & Dean / Clyde / AB / (780) 348-5791			R	
Dyck, Ernie / La Crete / AB / (780) 821-9445			ĸ	С
Foster's Seed & Feed Limited / Beaverlodge / AB / (780) 354-2107				C
Harris, William P., Linda, Thomas & A. / Beaverlodge / AB / (780) 354-2823	S	F	R	
Limoges, Richard / McLennan / AB / (780) 324-2335 Miller, Brian / Barrhead / AB / (780) 674-5001				C C
Mracek, Stan John / Dawson Creek / BC / (250) 843-7359				C
Nemetz, Charlie, Jerritt & Lewis / Stettler / AB / (403) 742-0436				С
Pare, Raymond A. / Wainwright / AB / (780) 842-2073				С
SUPERB BI: AAFC (Winnipeg), Dist: SeCan Members				
Jones, Danny / Beaverlodge / AB / (780) 354-8089 THORSBY (9)				С
BI: U of Alberta, Dist: Canterra Seeds				
Boisvert, Marc / Girouxville / AB / (780) 618-4724				С
Fairview Seed Cleaning Coop / Fairview / AB / (780) 835-2478				C
Richards, Cliff & Dan / Sexsmith / AB / (780) 766-2266 Unrau, George / La Crete / AB / (780) 928-0096				C C
SY433 @				Ŭ
BI: N/A, Dist: Syngenta Seeds Canada Inc.				~
Gatez, Blaine Gerald / Crossfield / AB / (403) 946-3994 ZEALAND				С
BI: U of Alberta, Dist: N/A				
Lefsrud, Kevin J. & Edmund J. / Viking / AB / (780) 336-2500	S		R	
(A)				
(SG)				
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# **CANADA WESTERN HARD WHITE SPRING**

				'ield Catego % AC Barrie	,	Agronomic Characteristics:									Disease Tolerance:						
	Overall		Low									Resista	nce to:								
Variety	Station Years of Testing	Overall Yield	< 45 (bu/ ac)	Medium 45 – 75 (bu/ac)	High > 70 (bu/ ac)	Matu- rity Rating	Protein %	Test Weight (Ib/bu)	TKW (g)	Height (cm)	Awns (Y/N)	Ldg.	Sprt.	Loose Smut	Bunt	Stripe Rust	Leaf Spot	FHB			
			Previo	usly tested	varieties ('	Yield and	agronom	ic data or	ıly dire	ctly comp	arable t	to AC Ba	rrie)								
AC Barrie (bu/ac)		60	42	63	84																
AC Barrie		100	100	100	100	М	14	62	38	87	Ν	G	G	MR	- I	S	MS	1			
AAC Iceberg (9)	39	104	96	106	107	М	-0.7	64	39	86	Y	G	Р	MS	I	MR	MS				
CDC Whitewood	43	107 +	XX	110	105	М	-0.9	64	38	87	Y	G	G	S	S	I.	MS	1			
Snowbird 💩	94	101	99	101	101	М	-0.2	62	36	89	Ν	G	G	MR	MS	MS	S	1			
Snowstar 💩	58	102	99	103	102	М	-0.8	64	30	82	Ν	G	G	MS	S	MS		MS			
Whitehawk 🐵	42	107	112+	108 +	106	Е	-0.9	63	33	90	Ν	G	G		MS	MS	MS	1			

**REMARKS:** For explanations on data summarization methods, abbreviations and other pertinent information, please see the comments at the beginning of this publication. The long term average maturity for AC Barrie is 106 days and rated as Medium (M). 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. 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. XX - Insufficient data to describe. † - Flagged for possible removal in 2019. (a) = Protected by the 1978 Act of the UPOV Convention. (b) = Protected by the 1991 Act of the UPOV Convention.

SPRING - CWHWS	S	F	R	C
AAC ICEBERG (2) BI: AAFC (Winnipeg), Dist: Alliance Seed				
Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 Stamp Seeds / Enchant / AB / (403) 739-2233	S	F	R R	
AC WHITEHAWK ∞ BI: AAFC (Winnipeg), Dist: SeCan Members				
Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-973	ò			С



#### AAC Lacombe Pea Semi-leafless, high vielding ve

Semi-leafless, high yielding yellow pea with mildew resistance

#### AAC Chiffon Soft Wheat

Outyields AC Andrew & Sadash, with a large kernal size, good straw strength & shattering resistance

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Exceptional yields, very high falling numbers, strong straw

AAC Gateway Winter Wheat High yielding with improved FHB resistance

#### **Cardale HRSW**

Semi-dwarf, good lodging, moderate FHB resistant with good yield

#### **Muskwa Barley**

6-row, smooth awn, semi-dwarf, one of the top yielders in 2012 AB variety trials

#### **Sunray Triticale**

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# **CANADA PRAIRIE SPRING RED**

				ield Catego % AC Barri				Disease Tolerance:										
	Overall Station	Over-	Low < 65	Medium	High			Test					tance D:					
Variety	Years of Testing	all Yield	(bu/ ac)	65 - 90 (bu/ac)	> 90 (bu/ac)	Maturity Rating	Protein %	Weight (lb/bu)	TKW (g)	Height (cm)	Awns (Y/N)	Ldg.	Sprt.	Loose Smut	Bunt	Stripe Rust		FHB
	Varieti	ies teste	d in the f	2016 trials	(Yield, sig	nificant dif	ferences	and agro	nomic	data only	directly	y comp	arable t	to AC Bar	rie)			
AC Barrie (bu/ac)		66	42	64	89													
AC Barrie		100	100	100	100	М	13.8	63	40	90	Ν	G	G	MR	1	S	MS	1
Carberry - check 💩		106+	107+	107+	104+	L	0	63	40	79	Y	VG	F	MR	R	MR	MS	MR
AAC Crossfield (9)	43	122+	119+	124+	122+	М	-1.2	62	42	80	Y	G	XX	MS	I	R		I
AAC Entice 🔺	30	119+	114+	125+	119+	М	-0.7	62	40	77	Y	G	XX	MS	S	R	MS	1
AAC Goodwin 🔺	31	123+	121+	126+	122+	М	-0.4	63	41	83	Y	VG	G	MS	MS	R	- I -	1
AAC Penhold	58	118+	113+	123+	118+	М	-1	63	45	71	Y	VG	G	I	R	MR	I	MR
CDC Terrain ▲	30	122+	124+	122+	119+	М	-1.4	62	44	88	Y	G	G	MR	MR	R	1	MS
SY Rowyn 🔺	30	114+	113+	117+	111+	М	-1	62	36	78	Y	G	F		S	MR		MR
	Pre				eld, signifi	cant differe		-		a only dii	rectly co		ble to A	,				
5700PR * 🐵	117	117+	XX	121+	113+	L	-1.9	62	42	75	Y	VG	F	MS	R	MS	MS	MS
AAC Crusader † 💩	40	116+	XX	116+	117+	М	-1.2	60	41	80	Y	G	Р	MR		XX	MS	
AAC Foray VB 🛞	41	128+	XX	130+	120+	М	-1.7	63	51	85	Y	G	G	MS	I	MR	MS	Ι
AAC Ryley 🕲	37	118+	XX	120+	114+	Μ	-0.6	60	48	82	Y	G	G	I	R	S	MS	MS
AAC Tenacious VB † 🛞	40	107+	XX	109+	101	Μ	-1.3	62	39	97	Y	Р	VG	R	R	MR	MS	R
AC Crystal	278	115+	XX	119+	113+	L	XX	62	42	79	Y	G	Р	1	R	S	1	S
SY985 * 💩	51	112+	XX	115+	109+	Μ	0.1	61	44	78	Y	G	Р	R	MR	XX	I	Ι
SY995 🐵	41	118+	XX	119+	113+	М	-1.9	63	45	79	Y	G	Р	S	MR	MR	MS	MS

REMARKS: For explanations on data summarization methods, abbreviations and other pertinent information, please see the comments at the beginning of this publication. Several CPSR varieties will be reclassified to the CNHR wheat class. AC Foremost, AC Taber, Conquer and Oslo will be reclassified on August 1, 2018 and AC Crystal will be reclassified on August 1, 2019. For more information see the Canadian Grain Commission website www.grainscanada.gc.ca. The long-term average maturity for AC Barrie is 106 days and rated as Medium (M). 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. 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. VB - designates a varietal blend to preserve the Sm1 orange wheat blossom midge tolerance gene. New CPSR registrations: AAC Goodwin (BW968). XX - Insufficient data to describe. \* Yield figures based on direct and indirect comparisons with AC Barrie. + Flagged for possible removal in 2019. A = Applied for PBR protection. ) = Protected by the 1978 Act of the UPOV Convention. the 1991 Act of the UPOV Convention.



**Bill Sinclair** Office/Plant Manager

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PRING - CPSR	S	F	R	C	McDonald, Gerald / Co. Of Grande Prairie #1 / AB / (780) 538-3868			
	_	-	_		Mueller, Richard J., R.R. & Rosemary / Barrhead / AB / (780) 674-6713			
CROSSFIELD 🛯 Pending					Niemela, Terrance & Tracy / Sylvan Lake / AB / (403) 746-2645			
: AAFC (Winnipeg), Dist: Canterra Seeds	-				Nisbet, Andrew E. & Diane E. / Mountain View County / AB / (403) 224-3788	S		
asmussen, Brian D. & Joel Trevor / Standard / AB / (403) 644-3800	S	_	R		Oatway's Seed Farm / Clive / AB / (403) 784-3001		F	
endziak, Don P. & Stephen / Edmonton / AB / (780) 434-1322 FORAY VB (9) Pending		F			Plante, Jacques / St. Paul / AB / (780) 645-4604			
I: AAFC (Winnipeg), Dist: SeCan Members					Radke, Bryan Victor / Barrhead / AB / (780) 674-5715			
off, Peter Edward / Gleichen / AB / (403) 734-2140				С	Sayer, Roger / Carstairs / AB / (403) 337-5847			
luvenaars, Carl / Hays / AB / (403) 725-2213			R	U	Schmermund, Donnie / Sturgeon County / AB / (780) 967-2850 Sekulic, Nick / Rycroft / AB / (780) 814-2849			
ensen, Albert / Drumheller / AB / (403) 823-9976				С	Sendziak, Don P. & Stephen / Edmonton / AB / (780) 434-1322		F*	
lassen, Ken / Rosemary / AB / (403) 378-4408				С	Shultz, Shawn / Didsbury / AB / (403) 335-3694		Ľ	
opushinsky, Julian / Bruderheim / AB / (780) 796-2048				С	Smith, Gary W. / Eckville / AB / (403) 746-5878			
Markert Seeds Ltd. / Vulcan / AB / (403) 485-6708				С	Stamp Seeds / Enchant / AB / (403) 739-2233			
C PENHOLD (9)					Thompson, M. Ellwood & Kelly / Red Deer County / AB / (403) 728-3535			
BI: AAFC (Swift Current), Dist: SeCan Members Anderson, Ken & Evelyn / Barrhead / AB / (780) 674-5670				С	Trueblood, Brian G. / Dapp / AB / (780) 954-3745			
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Beamish, Dale / Jarvie / AB / (780) 954-2166			R	C	Wood, Robert, Patricia & Marshall / Bowden / AB / (403) 588-3548 Zwack, Thomas / Daysland / AB / (780) 374-2450	S	F	
Bright, David / New Norway / AB / (780) 855-2240				C	AAC RYLEY @			
Carlson, David / Gwynne / AB / (780) 352-6871				Ċ	Bi: AAFC (Swift Current), Dist: SeCan Members			
Clark, Todd / Edmonton / AB / (780) 499-5060				С	Gibson, Donald / Sangudo / AB / (780) 785-2214			
Cyre, Clifford & Greg / Barrhead / AB / (780) 307-4332				С*	CDC TERRAIN () Pending			
Dallas, Bradley C. / Bowden / AB / (403) 224-2162			R		BI: CDC, Dist: FP Genetics			
Ellis, Brian / Olds / AB / (403) 556-2890			R		Geldreich, Dave / Bow Island / AB / (403) 545-2222	S	F	
Galloway Seeds Ltd. / Fort Saskatchewan / AB / (780) 998-3036 Hadway, W. Tom & Carol / Didsbury / AB / (403) 335-4929				C C	Laliberté, Adam & Vos, Henry / Fairview / AB / (780) 835-5286	S		
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Jackson, Thomas / Killam / AB / (780) 385-2332			R		Holmstrom, Darrell / Killam / AB / (780) 385-3574	S	F	
Jones, Greg Thomas & Tristan / Ponoka / AB / (403) 783-6495			R		Klassen, Ken / Rosemary / AB / (403) 378-4408	Ŭ		
Kemp, Richard L. / Red Deer County / AB / (403) 227-4836				С	Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736	S*	F*	t
Lawrence, Cody / Wainwright / AB / (780) 842-0285		F*	R	C C	Sich, Louis J., Ivan & Martin / Trochu / AB / (403) 442-2112			
Lindholm Seed Farm / New Norway / AB / (780) 352-3240 Lopushinsky, Julian / Bruderheim / AB / (780) 796-2048		Г	R	0	Stamp Seeds / Enchant / AB / (403) 739-2233			
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Seed Farms Inc. A Seed Farms Inc. A Prograin Soybea We are Alberta's most experienced soybean grower/dealers with our clients now breaking 60 bu acre average viel	ns g	1	8		SECON WESTEEL WINNER	 T0   884   884   322   322   910   910	Box C 1 4-2 4-2 3-0 3-0 6-5 an	x 11 33 33 35 .r
Seed Farms Inc. A Seed Farms In	ns g	18	8		Secan University of the second	 T0   884   884   322   322   910   910	Box C 1 4-2 4-2 3-0 3-0 6-5 an	x 11 33 33 35 .r
Seed Farms Inc. A Seed Farms Inc. A Prograin Soybea We are Alberta's most experienced soybean grower/dealers with our clients now breaking 60 bu acre average yiel Robcat Fall Triticale* Sunray Spring Triticale*	ns g	1	8		SECON WESTEEL WINNER	 T0   884   884   322   322   910   910	Box C 1 4-2 4-2 3-0 3-0 6-5 an	x 11 33 33 35 .r
Seed Farms Inc. A Seed Farms Inc. A Prograin Soybea We are Alberta's most experienced soybean grower/dealers with our clients now breaking 60 bu acre average yiel Roundup Ready Roundup Xtend	ns g	1	8		SECON WESTEEL WINNER	 T0   884   884   322   322   910   910	Box C 1 4-2 4-2 3-0 3-0 6-5 an	x 11 33 33 35 .r
Seed Farms Inc. A Seed Farms In	ns g d!		8		SECON SE	) 884 ) 884 ) 32 ) 32 ) 32 ) 91( Psyb	Bo> C 1 4-2 4-2 3-0 3-0 6-5 an. iil.c	
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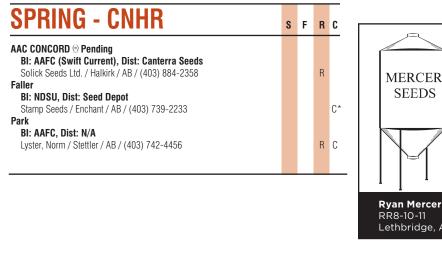
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## **CANADA NORTHERN HARD RED**

				ield Catego % AC Barrie				Agronom	ic Char	acteristic	cs:			Disease Tolerance:						
	Overall Station Years of	Overall	Low < 55	Medium 55 - 75	High > 75	Mat.	Protein	Test Weight	ткw	Height	Awns		stance o:	Loose		Stripe	Leaf			
Variety	Testing	Yield	(bu/ac)	(bu/ac)	(bu/ac)	Rating	%	(lb/bu)	(g)	(cm)	(Y/N)	Ldg.	Sprt.	Smut	Bunt	Rust	Spot	FHB		
	Vari	ieties teste	ed in the 2	017 trials (	Yield, sign	ificant dif	ferences	and agror	nomic d	lata only	directly	compa	arable t	o AC Barı	rie)					
AC Barrie (bu/ac)		66	44	60	83															
AC Barrie		100	100	100	100	М	13.8	63	40	89	N	G	G	MR	Т	S	MS	- I		
Carberry - check 💩		106+	107	106+	106+	L	0	64	40	79	Y	VG	F	MR	R	MR	MS	MR		
AAC Concord	45	110+	112+	105	113+	М	-0.6	62	41	87	Ν	F	F	I	MR	R	I	MS		
Elgin ND 🛞	43	118+	122+	118+	116+	Μ	-0.6	63	38	87	Y	G	XX	XX	S	MR	Ι	I		
		E	ffective Au	igust 1, 20 <sup>-</sup>	18 the follo	wing vari	eties are	designate	d as C	ANADA N	ORTHEF	RN HAI	RD RED							
AC Foremost *	141	119+	116+	123+	117+	L	-1.3	62	42	73	Y	VG	F	I	R	S	MS	S		
Conquer VB * 🕲	51	121+	XX	123+	120+	М	-0.8	62	45	84	Y	F	Р	MS	R	MR	1	MS		
Harvest @	118	102	98	103	104+	М	-0.1	62	36	84	Ν	VG	VG	MR	S	MR	MS	S		
Lillian 🕲	87	104+	111+	100	104	М	0.2	61	37	86	Ν	F	G	I	MR	R	MR	S		
Unity VB † 👁	71	110+	111+	110+	111+	М	-0.7	64	36	89	Y	F	G	MS	R	MS	MS	MS		

REMARKS: For explanations on data summarization methods, abbreviations and other pertinent information, please see the comments at the beginning of this publication. Several CWRS and CPSR varieties will be reclassified to this new CNHR class, effective August 1, 2018. The CWRS varieties are AC Abbey, AC Cora, AC Eatonia, AC Majestic, AC Michael, AC Minto, Alvena, Alikat, CDC Makwa, CDC Osler, Columbus, Conway, Harvest, Kane, Katepwa, Leader, Lillian, McKenzie, Neepawa, Park, Pasqua, Pembina, Thatcher, Unity VB and 5603HR. The CPSR varieties are AC Foremost, AC Taber, Conquer and Oslo. AC Crystal will be reclassified on August 1, 2019. For more information see the Canadian Grain Commission website www.grainscanada.gc.ca. The long-term average maturity for AC Barrie is 106 days and rated as Medium (M). 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. AAC Concord has a solid stem that confers resistance to the wheat stem sawfly. 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. Insufficient data to describe: Faller, Prosper. cXX- Insufficient data to describe. c<sup>+</sup> - Flagged for possible removal in 2019. 🔺 = Applied for PBR protection. 🗆 = Protected by the 1978 Act of the UPOV Convention. 💮 = Protected by the 1991 Act of the UPOV Convention.



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## **CANADA WESTERN SPECIAL PURPOSE**

			Yield	l Category Barrie):	(% AC			Agronor	nic Cha	racterist	ics:				Diseas	e Tolera	nce:	nce:					
	Overall Station	Over-	Low < 65	Medium	High > 90	Matu-	Pro-	Test				Resis te											
Variety	Years of Testing	all Yield	(bu/ ac)	65 - 90 (bu/ac)	(bu/ ac)	rity Rating	tein %	Weight (lb/bu)	TKW (g)	Height (cm)	Awns (Y/N)	Ldg.	Sprt.	Loose Smut	Bunt	Stripe Rust	Leaf Spot	FHB					
	Varieties	tested i	n the 201	17 trials (Y	ield, signi	ificant diffe	erences	and agro	nomic o	data only	directly	comp	arable t	o AC Bar	rie)								
AC Barrie (bu/ac)		66	42	66	92																		
AC Barrie 🐵		100	100	100	100	М	14.2	63	40	90	Ν	G	G	MR	- I	S	MS	Т					
Carberry - check 🕸		106+	107+	107+	103	L	0.1	63	40	79	Υ	VG	F	MR	R	MR	MS	MR					
AAC Awesome VB	26	140+	141	135+	142+	L	-2.7	62	43	89	Y	G	Р	I.	T	R	I.	1					
Alderon	26	137+	125	133+	146+	VL	-2.9	58	41	75	Ν	VG	F	XX	MS	MR	I	XX					
Charing VB 🔺	26	143+	134	144+	145+	VL	-2.4	61	41	80	Ν	VG	G	XX	XX	R	MR	XX					
Sparrow VB	26	141+	133+	143+	143+	VL	-2.5	61	41	80	Ν	VG	G	XX	Ι	MR	I	XX					
Pasteur *	43	140+	139+	141+	139+	VL	-2	63	41	81	Ν	VG	G	MS	S	MR	1	1					

	Prev	iously test	ed varie	eties (Yield	l, significar	nt differe	ences and	d agronor	nic data	only dir	ectly co	mparal	ble to A	C Barrie)				
AAC Innova 🕲	38	134+	XX	135+	135+	L	-3.2	60	41	82	Y	G	Р	S	S	R	Ι	S
AAC NRG097 (9)	41	124+	XX	121+	126+	L	-3	63	47	80	Y	G	F	I	R	S	I	- I
CDC NRG003 * † 💩	51	121+	XX	126+	112+	М	-1.9	61	43	80	Υ	G	F	MS	R	XX	MS	S
SY087 @	41	120+	XX	122+	114+	М	-1.4	63	40	82	Y	G	F	MS	MR	MR	I.	MR

**REMARKS:** For explanations on data summarization methods, abbreviations and other pertinent information, please see the comments at the beginning of this publication. The long-term average maturity for AC Barrie is 106 days and rated as Medium (M). 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. 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. \* Yield figures based on direct and indirect comparisons with AC Barrie. XX - Insufficient data to describe.  $\dagger$  - Flagged for possible removal in 2019.  $\blacktriangle$  = Applied for PBR protection.  $\circledast$  = Protected by the 1978 Act of the UPOV Convention. = Protected by the 1991 Act of the UPOV



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- **PEAS:** AAC Carver, AAC Ardill, CDC Amarillo, CDC Meadow, CDC Patrick
- HRS WHEAT: CDC Go, AAC Brandon
- **CPS WHEAT:** AAC Ryley
- **DURUM:** Strongfield
- WINTER WHEAT: Emerson
- OATS: CS Camden
- FABA BEANS: CDC Snowdrop
- CANOLA: Brett Young & Canterra
- FORAGES: Brett Young
- Nodulator XL, Tag Team, Bio-Boost, Diatomaceous Earth

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SPRING - CWSP	S	F	R	C
AAC AWESOME (9) Pending				
BI: AAFC, Dist: SeCan Members				
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434	S	F		
CDC NRG003 🐵				
BI: CDC, Dist: Canterra Seeds				
Kapitski, Lawrence / Andrew / AB / (780) 365-2134				С
PASTEUR				
BI: Wiersum Plant Breeding, Dist: SeCan Members				
Sim, Darwin & Derek / Ponoka / AB / (780) 372-2111			R	
Stamp Seeds / Enchant / AB / (403) 739-2233				C*
KWS ALDERON				
BI: KWS, Dist: SeCan Members				
Templeton, Doran & Brant / Lethbridge / AB / (403) 345-4144			R	
Witdouck, Dale / Iron Springs / AB / (403) 738-4395			R	





AAC Lacombe Pea, AAC Redwater Wheat, AAC Penhold CPS Wheat, CDC Austenson Barley, and CDC Copeland Malt Barley

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Peas CDC Meadow(4) CDC Horizon(4) CDC Amarillo(2,4,5) CDC Limerick(5) CDC Raezor(5)

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## **Processors For The Following Growers:**

1 Hegland Seed Farm 780-831-0807

Harris Select Seed Farms 780-933-3074 / 780-830-8113

> 3 Danny Jones 780-814-2418

4 Fosters Seed and Feed Ltd. 800-379-4804 / 780-354-2107

5 Ger-Den Seed Farm Ltd. 780-518-1505

## **CANADA WESTERN SOFT WHITE SPRING**

	Overall			ield Catego 6 AC Andrev				Agı	ronomi	c Charac	teristics	:				Disea	se Tolera	ance:	
	Station Years of	Over- all	Low < 65	Medium 65 - 100	High > 100	Mat.	Pro- tein	Test Weight	TKW	Height	Awno	Re	sistanc	e to:	10000		Stripe	Loof	
Variety	Testing	Yield	< 05 (bu/ac)	(bu/ac)	> 100 (bu/ac)	Rating	%	(lb/bu)	(g)	(cm)	Awns (Y/N)	Ldg.	Shat.	Sprt.	Loose Smut	Bunt	Rust	Leaf Spot	FHB
	Va	rieties te	ested in th	ne 2017 tria	als (Yield,	statistica	l differ	ences an	d agror	nomic dat	a only d	irectly	compar	able to l	AC Andre	w)			
AC Andrew (bu/ac)		85	54	86	123														
AC Andrew *		100	100	100	100	L	11.0	62	40	80	Y	VG	VG	Р	S	S	1	MS	- I
AAC Indus VB	39	104	96	108	105	VL	-0.2	61	42	87	Y	VG	VG	Р	S	MS	R	MS	MS
Sadash VB 💩	61	107+	110+	106+	104	L	-0.1	63	39	81	Y	VG	VG	Р	1	S	R	I	S
		Previou	sly tested	d varieties (	(Yield, sta	itistical di	fferenc	es and aç	jronom	ic data o	nly direo	ctly con	nparabl	e to AC /	Andrew)				
	20	104	106	105	101	1	0.4	60	16	00	V	C	VC	D	c	c	MD	1	c

AAC Chiffon VB 39 104 +106 105 +101 -0.4 62 46 88 VG MR S 97-AC Meena † 51 97-101 95-MR S 62 37 80 REMARKS: For explanations on data summarization methods, abbreviations and other pertinent information, please see the comments at the beginning of this publication. AC Andrew yields about 35% more

han AC Barrie. In addition to traditional markets, SWS wheat varieties may have demand as a feedstock for ethanol production. \* Maturity, resistance to lodging and sprouting are compared with AC Barrie. 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. New CWSWS registrations: AAC Paramount (SWS433). Insufficient data to describe: AAC Paramount. \* Yield figures based on direct and indirect comparisons with AC Andrew. † - Flagged for possible removal in 2019. @ = Protected by the 1978 Act of the UPOV Convention.

SPRING - CWSWS	S	F	R	C
AAC CHIFFON ® BI: AAFC (Lethbridge), Dist: SeedNet Stamp Seeds / Enchant / AB / (403) 739-2233 Witdouck, Dale / Iron Springs / AB / (403) 738-4395				C* C



AAC INDUS  Pending				
BI: AAFC (Lethbridge), Dist: SeCan Members				
Huvenaars, Carl / Hays / AB / (403) 725-2213			R	
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434	S			С
AAC PARAMOUNT 👳 Pending				
BI: AAFC (Lethbridge), Dist: N/A				
Weigum, Garry & Sarah / Three Hills / AB / (403) 443-9599				С
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434	S		R	
AC ANDREW				
BI: AAFC (Lethbridge), Dist: SeCan Members				
Degenhardt, Keith L., Terry L. & Kerry / Hughenden / AB / (780) 856-2383			R	С
Galloway Seeds Ltd. / Fort Saskatchewan / AB / (780) 998-3036				С
Sand, Ron W. & David R. / McLaughlin / AB / (780) 745-2251				С
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434	S	F		
AC SADASH VB 🕸				
BI: AAFC (Lethbridge), Dist: SeCan Members				
Benci, Dennis / Carmangay / AB / (403) 643-2294				С
Crooymans, John, Joseph & Andrew / Bow Island / AB / (403) 545-6333		F		
Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517				С
Shultz, Shawn / Didsbury / AB / (403) 335-3694				С
Stamp Seeds / Enchant / AB / (403) 739-2233				C*
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434				С
Witdouck, Dale / Iron Springs / AB / (403) 738-4395				С



## FALL RYE

		Overall			Yield Catego	ory (% Hazlet	i)		Agronomic Characteristics:								
Variety	Hybrid or OP Variety	Station Years of Testing	Overall Yield	Low < 48 (bu/ac)	Medium 48 - 80 (bu/ac)	High 80 - 112 (bu/ac)	V. High > 112 (bu/ac)	Winter Survival	Test Weight (Ib/bu)	TKW (g)	Falling Number (sec)	Height (cm)	Resistance to Lodging				
			Yield, signif	iicant differ	ences and a	gronomic da	ta only dire	ctly compara	ble to Hazle	t							
Hazlet (bu/ac)			101	48	67	94	137										
Hazlet	OP	54	100	100	100	100	100	EX	59	39	145	108	G				
KWS Bono	Hybrid	24	137 +	XX	115	130 +	133 +	EX	58	34	258	101	VG				
Brasetto	Hybrid	20	123+	XX	121	134	120+	EX	59	36	246	104	VG				
KWS Daniello	Hybrid	11	123+	XX	115	126	122+	VG	59	35	258	104	G				
KWS Gatano	Hybrid	14	124+	XX	XX	125+	120+	VG	58	33	250	102	F				
Guttino	Hybrid	20	120+	XX	119	122+	120+	EX	60	36	279	101	VG				
Prima	OP	51	85	77-	75-	91	89-	EX	58	33	188	120	F				

**REMARKS:** Hazlet has lower viscosity which improves feed performance in monogastric livestock. Fall rye is much more cold tolerant than winter wheat or winter triticale. The long-term average heading date and maturity for Hazlet is June 1 and August 6, respectively. All fall rye varieties are similar for heading and maturity and are considered early. A major factor in marketing rye grain into the milling market is sprouting. This is generally measured using the Hagberg falling number test and is measured in seconds. Typically, a falling number of 180 seconds or greater is preferred by the rye milling market. Falling number is heavily influenced by moisture around harvest time and producers must make sure rye is harvested in a timely manner, similar to wheat crops. There is considerable variation in fall rye varieties for falling number and this must be considered if the milling market is the targeted end-user for rye grain. All fall rye is susceptibile to ergot, however Daniello and Gatano have reduced susceptibility. AFSC crop insurance deadlines for seeding fall rye is September 20 north of the Bow River, and September 30 south of the Bow River. XX - Insufficient data to describe.

					,				_
RYE - FALL	s	F	R	C	TRITICALE - WINTER	s	F	R	C
BRASETTO, KWS BONO & KWS GATANO BI: KWS, Dist: FP Genetics FP Genetics / Regina / SK / 1-877-791-1045 GUTTINO BI: KWS, Dist: SeedNet Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 Stamp Seeds / Enchant / AB / (403) 739-2233 Van Roessel, William & Jean / Bow Island / AB / (403) 545-6018 Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 Witdouck, Dale / Iron Springs / AB / (403) 738-4395 PRIMA Bi: AAFC (Swift Current), Dist: SeCan Members Stamp Seeds / Enchant / AB / (403) 739-2233				C C* C C C C	BOBCAT BI: FCDC (Lacombe), Dist: N/A Fabian, Patrick V. / Tilley / AB / (403) 377-2000 METZGER & BI: FCDC (Lacombe), Dist: Haney Farms Ltd. Corns, Bryan / Taber / AB / (403) 223-1614 PIKA BI: FCDC (Lacombe), Dist: N/A Kiffiak, Nathan J. & Anderson, Tim / Foremost / AB / (403) 867-2338				C
BARLEY: WHEAT:			P	Y SEI					
CDC Coalition AAC Connery CDC Copeland AAC Penhold CDC Austenson AAC Redwater CDC Thompson AAC Brandon AAC Viewfield (NEW CDC Landmark VB Roundup Ready Liberty Link CDC Plentiful Stettler		N)	C C C C C C C C C C C C C C C C C C C	DC DC DC DC C ABA now now NOT adia		and ilab			
E-Mail: gallseed@galloway Contact Jim Gallowa	vsee y, D	eds. Dan	.co Vis	m   I sser	askatchewan, Alberta T8L 3Z9 Bus. (780) 998-3036   Fax (780) 998-1288 · (CCA) or Dave King to book seed. ds.com   ♥ @gallowayseeds				
CALIFORN SEEDS SEEDS	n	6	FPC	Genetic	s Certified Score Certified Constant				

## WINTER WHEAT

			Yi	eld Catego	ry (% Rad	iant)		Ag	ronom	ic Charac	teristic	s:			Disea	se Tolera	ince:	
Variety	Overall Station Years of Testing	Overall Yield	Low < 45 (bu/ ac)	Medium 45 - 75 (bu/ac)	High 75 - 105 (bu/ac)	V. High > 105 (bu/ac)	Winter Survival	Mat. Rating	Pro- tein %	Test Weight (Ib/bu)	TKW (g)	Height (cm)	Resis. to Ldg	Stripe Rust	Leaf Rust	Stem Rust	Bunt	Fŀ
			١	lield, signi	ficant diffe	rences a	n <mark>d agrono</mark> r	nic data	only di	rectly con	iparabl	e to Radi	ant					
CANADIAN WES	STERN RED	76	37	63	87	114	-			-								
Radiant		100	100	100	100	100	VG	L	12.0	63	36	90	VG	S	S	S	S	:
AAC Elevate	72	106+	106	107+	107+	XX	G	M	+0.3	63	39	84	VG	MS	1	MR	MR	
AAC Gateway	75	100	XX	99	103	XX	F	M	+0.9	63	33	77	VG	MR	1	MR	S	
AAC Goldrush	29	102	XX	98	105	XX	VG	M	+0.5	63	34	86	G	1	R	MR	S	
AC Wildfire	43	114+	XX	117+	114+	XX	VG	VL	+0.3	64	38	86	G	R	1	S	MR	Ν
C Tempest †	117	97-	96	97	96-	99	Р	VL	+1.5	63	37	91	VG	MR	S	S	MS	
DC Buteo †	198	97-	94-	98	95-	101	VG	М	+0.3	65	34	91	F	S	1	1	S	Ν
CDC Chase †	43	101	XX	96	104	XX	F	М	+0.6	64	33	94	F	MR	R	R	S	N
Emerson	79	98	96	95	100	XX	G	М	+0.7	64	30	86	G	MR		R	S	F
Flourish †	119	100	99	98	102	104	F	E	+0.6	63	35	80	VG	I		1	MR	S
Moats	90	104 +	91	102	107+	108 +	G	Μ	+0.7	64	33	91	F	MR	R	R	MS	ç
CANADA WEST	ERN EXPER	IMENTAL		_														
				lield, signi			0											
AAC Icefield	39	105	XX	98	111+	XX	F	М	-0.6	63	32	82	VG	R	R	MR	S	N
CANADA WEST	ERN SPECI	AL PURPO																
				lield, signi			-	nic data					ant					
Pintail	79	108 +	XX	109 +	109 +	XX	VG	L	-1.4	61	29	88	F	MR	MS	MS	S	;

ate (L). Fusarium head ve tolerance to the wheat curl ant material that serves as a nter survival. AAC Wildfire registration, eligible for experimental grades to facilitate market research under an Identity Preserved system. AAC Icefield expresses high milling yield of very white flour and good gluten strength at lower protein concentrations that may be of interest in some niche markets. For more information contact FP Genetics. Pintail has an awnless head which may improve palatability when harvested for forage or silage. AAC Wildfire will be available in 2018. Limited quantities of AAC Goldrush and AAC Icefield may be available in 2019. XX - Insuficient data to describe. + - Flagged for possible removal in 2019.

## **THIS GUY JUST PICKED UP 44MT OF PERFECTLY TREATED WHEAT IN 38 MINUTES!**

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AAC ELEVATE (9)				
BI: AAFC (Lethbridge), Dist: SeCan Members				
Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517				С
Hoffman, Curtis / Oyen / AB / (403) 664-9617			R*	
Kiffiak, Nathan J. & Anderson, Tim / Foremost / AB / (403) 867-2338			R	
Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736	5			С
Sounding Creek Seeds / Oyen / AB / (403) 664-9617			R	
Stamp Seeds / Enchant / AB / (403) 739-2233		F*	R	C*
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434	S	F	R	
AAC GATEWAY 🐵				
BI: AAFC (Lethbridge), Dist: Seed Depot				
Crooymans, John, Joseph & Andrew / Bow Island / AB / (403) 545-6333				С
Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736			R'	* C*
Stamp Seeds / Enchant / AB / (403) 739-2233				С
AAC GOLDRUSH (9) Pending				
BI: AAFC (Lethbridge), Dist: FP Genetics				
Brummelhuis, Mitchell & Mack / Vauxhall / AB / (403) 654-7515			R	
AAC WILDFIRE (9) Pending				
BI: AAFC (Lethbridge), Dist: SeCan Members				
Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900	S			
Crooymans, John, Joseph & Andrew / Bow Island / AB / (403) 545-6333	S		R	
Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228			R	
Sounding Creek Seeds / Oyen / AB / (403) 664-9617			R	
, , ,				

S F

R C

WINTER - CWEW	s	F	R	C
				_
BI: CDC, Dist: SeCan Members Hoffman, Curtis / Oyen / AB / (403) 664-9617 Metzger, Don / Carbon / AB / (403) 572-3284 Stamp Seeds / Enchant / AB / (403) 739-2233				C* C C*
Corns, Bryan / Taber / AB / (403) 223-1614 Logan, Glenn C., Marie & Douglas / Lomond / AB / (403) 792-3696 AC RADIANT & BI: AAFC (Lethbridge), Dist: Canterra Seeds Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517 MOATS				C C C
Stamp Seeds / Enchant / AB / (403) 739-2233 Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 AC EMERSON & BI: AAFC (Lethbridge), Dist: Canterra Seeds	S S	F F		



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**Peggy Erion** 

Manager

ALBERTA



## 2017 Canola Variety Information

The 2017 CPT program was funded by Alberta Canola, SaskCanola and the Manitoba Canola Growers Association, with contributions from the BCGPA. The Canola Council of Canada delivers the program on their behalf. You can learn more about the CPT program and the CPT Technical and Governance Committee in the Canola Variety Selection Guide, available at www.canolaperformancetrials.ca/.

**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 from participating companies.
- 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.

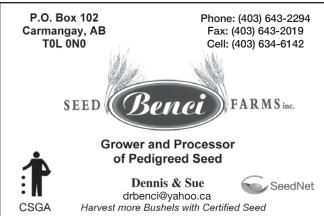
The CPT trials are conducted under the guidance of a governance committee that approves participating varieties, protocol design, data collection, analyses, reports and finance management. The Canola Council of Canada delivers the program on the committee's behalf.

The CPT summaries provided in this factsheet are based on successful trials that did not show confounding factors during field inspections. The combination of drought and excessive moisture in different areas resulted in only 10 successful small plot trials in 2017. The small trial sites were distributed based on seeded acres in Manitoba, Saskatchewan and Alberta.

Small plot trials included a limited selection of popular and newly introduced varieties. 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. In 2015, the large scale comparisons were changed to assess the yield impact of selected shatter tolerant varieties under swath or straight cut harvest systems. In 2017, selected clubroot resistant varieties were also tested in large scale trials (but not on clubroot infested land).



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 due to random variation and thus are unlikely 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 10 to 14% in 2017. This is based on a confidence level that similar differences would occur by chance less than 5% of the time. 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 (5% level) using the paired t-test.

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 -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 from zones with less than 5 sites of data are not shown in this publication due to limited reliability. Full results are available through an online interactive tool at 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.

*Brassica rapa* (Polish Canola) and Canola Quality *Brassica juncea* – no varieties were tested under PCT in 2012 through 2017.

## **Small Plots**

			Mid season	zone (5 sites)			Overall 10	sites in 2017		
Distributor	Name	Yield (% 5440)	Days to maturity	Lodging <sup>1</sup>	Height (Inches)	Yield (% 5440)	Days to maturity	Lodging <sup>1</sup>	Height (Inches)	Disease tolerance <sup>2</sup>
			(	Clearfield						
BrettYoung	5545 CL	96	97	1.7	42	96	98	1.5	47	BL
CANTERRA SEEDS	CS2200 CL	89	100	1.6	42	90	100	1.4	46	BL
Crop Production Services / Proven Seed	PV 200 CL	93	98	1.7	43	94	98	1.4	47	BL
DuPont Pioneer	46H75	96	100	1.6	43	96	100	1.4	47	BL
	LSD (5%)	13				13				
			Li	iberty Link						
Bayer CropScience	5440	100	96	1.3	43	100	97	1.2	47	BL
Bayer CropScience	L241C	97	96	1.3	42	98	96	1.2	45	BL, CR
Bayer CropScience	L252	105	96	1.4	43	105	98	1.3	46	BL
	LSD (5%)	14				11				
				indup Ready						
DuPont Pioneer	45H33	100	95	1.7	42	99	96	1.5	48	BL, CR
DuPont Pioneer	45M35	103	97	1.5	41	102	97	1.4	45	BL
BrettYoung	6074 RR	99	100	1.7	40	99	99	1.4	44	BL, S
BrettYoung	6076 RR	95	98	1.5	44	95	98	1.3	48	BL, CR, S
BrettYoung	6080 RR	91	97	1.5	38	91	97	1.3	43	BL
BrettYoung	6090 RR	101	99	1.5	45	99	98	1.4	49	BL, CR
DEKALB	74-44 BL	87	95	1.7	39	90	96	1.4	42	BL
CANTERRA SEEDS	CS2000	94	98	1.7	41	94	97	1.4	46	BL, CR
CANTERRA SEEDS	CS2100	97	97	1.8	40	95	97	1.6	44	BL
CANTERRA SEEDS	CS2300	103	98	1.5	42	101	99	1.3	48	BL
DL Seeds	DL1634 RR	96	100	1.5	43	96	100	1.3	48	BL
Crop Production Services / Proven Seed	PV 540 G	94	96	1.6	40	96	97	1.3	44	BL
Crop Production Services / Proven Seed	PV 581 GC	97	99	1.5	43	95	99	1.3	48	BL, CR
BrettYoung	4187 RR	97	99	1.4	43	97	99	1.3	47	BL, CR
Cargill	V12-1*	95	96	1.6	41	95	97	1.4	44	BL
	LSD (5%)	10				10				
CHECK 5440 AVERAGE YIELD (BU/AC)		67				65				

\* Indicates varieties with Specialty oil profiles and premiums associated with pricing. Visit www.canolaperformancetrials.ca for more details

1- Lodging score, 1 to 5 scale, lower score indicates less lodging

<sup>2</sup> - Indicates genetic disease resistance with an "R" or resistant rating to BL=Blackleg, CR=Clubroot and improved tolerance to sclerotinia "S", based on variety descriptions submitted to CFIA LSD - least significant difference at 5% level



## **Standard Harvest Trials**

		Season zone		Overall
Variety	Long (7)	Mid (14)	Short (5)	sites
		Yield (bu/a	c)	
45H33	56	53	50	53
L252	61*	57*	53*	57*
			50(1 1)	

\* - indicates statistically significant different yield (5% level)

## **Straight Cut Trials**

Variety	Zone Long (9)	Overall sites (12)	
		Yield (bu/ac)	
45M35	43	47	
75-65 RR	43	47	
L140P	45*	49*	

\* - indicates L140P yield is statistically different than the other 2 varieties (5% level) while 45M35 and 75-65 RR yields are statistically similar

## **Clubroot Resistant Trials**

Yield (bu/ac)	
CS2000 61	
L241C 62ns	

ns - indicates the yields were not statistically different

## **CANOLA SEED DISTRIBUTORS**

For additional canola varieties available for purchase and detailed variety information please contact these canola seed distributors.

BASF / 1-800-371- 2273 / www.agsolutions.ca Bayer / 1-888-283-6847 / www.bayercropscience.ca BrettYoung / 1-800-665-5015 /www.brettyoung.ca Canterra Seeds Ltd. / (204) 988-9750 / www.canterra.com Cargill Specialty Seeds & Oils / 1-800-323-6232 / www.victorycanola.com DEKALB Canada/Monsanto Canada Inc. / 1-844-633-5252 / www.DEKALB.ca DL Seeds / (204) 331-2361 / www.dlseeds.ca Dow AgroSciences / 1-800-667-3852 / www.dowagro.ca DuPont Pioneer / (306) 385-3001 / www.pioneer.com/canada Lefsrud Seed Ltd / 6King Genetics / (780) 336-6700 Ed or (780) 336-5700 Kevin Mastin Seeds / (403) 556-2609 / www.mastinseeds.com Proven Seed/CPS (Canada) Inc. / (306) 480-8520 / provenseed.ca SeCan / 800-665-7333 / www.secan.com Syngenta Canada Inc. / 1-877-964-3682 / www.syngentafarm.ca ADDITIONAL RESOURCES: Canola Council of Canada / 1-866-834-4378 / www.canolacouncil.org Alberta Agriculture and Rural Development / 310-FARM (3276) / www.agriculture.alberta.ca

Alberta Canola Producers Commission / 1-800-551-6652 / www.canola.ab.ca



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FPGenetics.

**Glenn & Marie, Douglas & Heather Logan** Box 249, Lomond, AB TOL 1G0 Phone (403) 792-3696 | Fax (403) 792-3397 www.wheatcrest.com | e-mail: seed@wheatcrest.com

SeCan

SeedNet



PH/FAX: 780-848-2365 MANAGER: Tom Luethi Box 60, Warburg, Alberta TOC 2TO

- •Cleaning services for cereals, oilseeds and forage seed
- Treating available for cereals and oilseeds
- Optical sorting now available

#### Retailers for: Proven Seed, Inland Plastics

#### PEDIGREED SEED AVAILABLE

- Wheat: AAC Brandon, AAC Redwater, AAC Penhold, AAC Ryley, AAC Crossfield
- Barley: Bentley, AC Metcalfe, Canmore, ACC Connect, CDC Hilose
- CDC Sea Biscuit, CS Camden, ORe 3542M Oats:
- Peas: CDC Amarillo, CDC Limerick Soybeans: Dario R2X



#### **CANOLA - NAPUS** S F 43E03 BI: N/A, Dist: DuPont Pioneer Pioneer Hi-Bred Production Company / Lethbridge County / AB / (403) 327-6135 Nexera 1022 BB BI: N/A, Dist: Dow AgroSciences Dow AgroSciences Canada Inc. / Lethbridge / AB / (403) 328-1817

#### BI: N/A, Dist: Dow AgroSciences Dow AgroSciences Canada Inc. / Lethbridge / AB / (403) 328-1817 Nexera 1026 RR BI: N/A, Dist: Dow AgroSciences Dow AgroSciences Canada Inc. / Lethbridge / AB / (403) 328-1817 Nexera 2020 CL BI: N/A, Dist: Dow AgroSciences Dow AgroSciences Canada Inc. / Lethbridge / AB / (403) 328-1817 Nexera 2024 CL BI: N/A, Dist: Dow AgroSciences Dow AgroSciences Canada Inc. / Lethbridge / AB / (403) 328-1817

#### Nexera 2026 CL BI: N/A, Dist: Dow AgroSciences Dow AgroSciences Canada Inc. / Lethbridge / AB / (403) 328-1817

#### 45CM36 BI: N/A, Dist: DuPont Pioneer

Nexera 1024 RR

#### Pioneer Hi-Bred Production Company / Lethbridge County / AB / (403) 327-6135 45CS40

#### BI: N/A, Dist: DuPont Pioneer Pioneer Hi-Bred Production Company / Lethbridge County / AB / (403) 327-6135 45H33 BI: N/A, Dist: DuPont Pioneer

#### Pioneer Hi-Bred Production Company / Lethbridge County / AB / (403) 327-6135 45H37

#### BI: N/A, Dist: DuPont Pioneer Pioneer Hi-Bred Production Company / Lethbridge County / AB / (403) 327-6135 45M35

#### BI: N/A, Dist: DuPont Pioneer Pioneer Hi-Bred Production Company / Lethbridge County / AB / (403) 327-6135

#### 46H75 BI: N/A, Dist: DuPont Pioneer

#### Pioneer Hi-Bred Production Company / Lethbridge County / AB / (403) 327-6135 5545 CL

#### BI: DL Seeds, Dist: BrettYoung Seeds Ltd. BrettYoung Seeds Limited / Rycroft / AB / (780) 765-3069

#### 6074 RR

#### BI: DL Seeds, Dist: BrettYoung Seeds Ltd. BrettYoung Seeds Limited / Rycroft / AB / (780) 765-3069

#### 6090 RR

#### BI: DL Seeds, Dist: BrettYoung Seeds Ltd. BrettYoung Seeds Limited / Rycroft / AB / (780) 765-3069 74-44 BL

#### BI: Monsanto Canada Inc., Dist: DEKALB Canada

#### Monsanto Canada Inc. / Winnipeg / MB / 1-844-633-5252 75-42CR BI: Monsanto Canada Inc., Dist: DEKALB Canada Monsanto Canada Inc. / Winnipeg / MB / 1-844-633-5252

#### 75-45 RR BI: Monsanto Canada Inc., Dist: DEKALB Canada

## Monsanto Canada Inc. / Winnipeg / MB / 1-844-633-5252

#### 75-65RR BI: Monsanto Canada Inc., Dist: DEKALB Canada Monsanto Canada Inc. / Winnipeg / MB / 1-844-633-52523

#### D3155C

#### BI: N/A, Dist: DuPont Pioneer Pioneer Hi-Bred Production Company / Lethbridge County / AB / (403) 327-6135

#### InVigor L135C BI: N/A, Dist: Bayer CropScience Inc.

#### Bayer CropScience Inc. / Lethbridge / AB / (403) 329-0706 InVigor L140P

#### BI: N/A, Dist: Bayer CropScience Inc. Bayer CropScience Inc. / Lethbridge / AB / (403) 329-0706 InVigor L233P

#### BI: N/A, Dist: Bayer CropScience Inc. Bayer CropScience Inc. / Lethbridge / AB / (403) 329-0706 InVigor L241C

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

InVigor L252		
BI: N/A, Dist: Bayer CropScience Inc.		
Bayer CropScience Inc. / Lethbridge / AB / (403) 329-0706		
PV 200 CL		
BI: N/A, Dist: DuPont Pioneer		
Pioneer Hi-Bred Production Company / Lethbridge County / AB / (403) 327-6135		
PV 540 G		
BI: N/A, Dist: CPS (Canada) Inc.		
Proven Seed/CPS Genetics / Lethbridge / AB / (403) 715-4514		
PV 590 GCS		
BI: N/A, Dist: DuPont Pioneer		
Pioneer Hi-Bred Production Company / Lethbridge County / AB / (403) 327-6135		
UA ALFAGOLD		
BI: University of Alberta, Dist: 6 King Genetics		
Lefsrud, Kevin J. & Edmund J. / Viking / AB / (780) 336-2500		
UA BOUNTYGOLD		
BI: University of Alberta, Dist: N/A		
Lefsrud, Kevin J. & Edmund J. / Viking / AB / (780) 336-6700	S	F

## Lefsrud, Kevin J. & Edmund J. / Viking / AB / (780) 336-6700

## **CANOLA - RAPA**

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BI: N/A, Dist: Mastin Seeds Mastin, Robert B. / Sundre / AB / (403) 556-2609

## CANOLA - SPECIALTY

## HYHEAR 3

#### BI: N/A, Dist: Bunge McNaughton, Kevin / Lethbridge / AB / (403) 317-4181

RED RIVER 1861
BI: N/A, Dist: CPS (Canada) Inc.
Provon Cood/CPC Constice / Lothbridge / AP / (102) 7







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			Yield	Category (%	6 CDC Betl	nune):		Agronomi	ic Chara	cteristics:			ease ance:		Quality	:
Variety	Overall Station Years of Testing	Over- all Yield	Low < 20 (bu/ac)	Medium 20 - 30 (bu/ac)	High 30 - 37 (bu/ac)	V. High > 37 (bu/ac)	Mat. Rating	Seed Colour	Seed Size	Height (cm)	Resis. to Ldg	Fusar- ium Wilt	Pow- dery Mildew	Oil Con- tent (%)	ALA Con- tent (%)	lodine Value
	Varieties	tested in	the 2017	trials (Yield	, significa	nt differend	es and ag	ronomic d	data only	directly c	omparab	le to CDC	Bethune)			
CDC Bethune (bu/ac)		31	14	26	34	46										
CDC Bethune 🐵		100	100	100	100	100	L	brown	М	57	G	MR	MR	46	55	189
CDC Buryu 🔺	26	100	97	104	99	97	L	brown	L	57	G	MR	MR	46	56	193
CDC Plava	34	101	98	109	101	93	М	brown	Μ	53	G	MR	XX	47	57	196
Topaz 🖲	26	101	104	100	97	105	L	brown	Μ	55	G	MR	MR	47	55	189
WestLin 61 ®	26	101	99	106	100	97	Μ	brown	S	52	G	MR	MR	48	61	197
WestLin 72 👳	26	100	96	106	103	94	VL	brown	S	53	VG	MR	MR	47	57	193
	Previo	ously test	ed varietie	es (Yield, sig	gnificant d	lifferences	and agron	omic data	n only di	rectly com	parable t	o CDC Be	thune)			
AAC Bravo 🐵	23	104	XX	XX	XX	105+	L	brown	Ĺ	64	G	MR	MR	45	60	194
CDC Glas 🕲	23	106 +	XX	XX	106	108 +	L	brown	Μ	61	G	MR	MR	46	57	192
CDC Neela	24	109 +	108	116	108	XX	L	brown	Μ	55	G	MR	MR	46	59	194
CDC Sanctuary 💩	27	106 +	112	99	XX	104	VL	brown	Μ	64	G	MR	MR	46	57	191
CDC Sorrel 🕲	32	104	112	104	100	99	L	brown	L	61	F	MR	MR	45	58	193
Hanley † 🐵	37	97-	99	97	95	97	Μ	brown	Μ	53	VG	R	MR	45	59	198
Prairie Grande † 💩	76	98-	103	101	94	96	М	brown	Μ	53	G	MR	MR	46	58	193
Prairie Sapphire 🕲	23	96	XX	XX	XX	100	L	brown	Μ	64	G	MR	MR	48	57	193
Prairie Thunder 🕲	40	100	106	95	XX	99	М	brown	М	55	G	R	MR	45	58	195
Taurus † 🕲	27	98-	103	97	XX	XX	Μ	brown	М	53	VG	MR	R	46	54	187
VT50 @	24	103	XX	109	104	97	VL	yellow	S	51	VG	MR	XX	47	68	209
WestLin 60 🕲	24	100	100	105	XX	98	Μ	brown	М	50	G	MR	XX	46	60	198
WestLin 71 👳	25	95-	99	91	XX	94	L	brown	Μ	56	G	MR	MS	48	61	198

**REMARKS:** For explanations on data summarization methods, abbreviations and other pertinent information, please see the comments at the beginning of this publication. The long-term average maturity for CDC Bethune in Alberta is 110 days and rated as Late (L). All varieties are immune to flax rust. Insufficient data to describe: AAC Prairie Sunshine.  $\dagger$  - Flagged for possible removal in 2019.  $\blacktriangle$  = Applied for PBR protection. B = Protected by the 1978 Act of the UPOV Convention. D = Protected by the 1991 Act of the UPOV Convention.

FLAX	S	F	R	C	VT50 BI: N/A, Dist: CPS (Canada) Inc.				
AAC BRAVO @					Proven Seed/CPS (Canada) Inc. / High River / (403) 603-6011			R	
BI: AAFC (Lacombe), Dist: FP Genetics					Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 WESTLIN 72 (9)			К	
Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900				С	BI: N/A, Dist: CPS (Canada) Inc.				
King Seed Farm (Webb, David G.) / Three Hills / AB / (403) 443-7330			R*	С	Logan, Glenn C., Marie & Douglas / Lomond / AB / (403) 792-3696				(
Logan, Glenn C., Marie & Douglas / Lomond / AB / (403) 792-3696			R		Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736	c*	F*	R*	
AAC BRIGHT					Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434	3	'	D	
BI: AAFC (Morden), Dist: SeCan Members					WIIIIIS SEEUS LLU. / GIASSY LAKE / AD / (403) 033-2434			n	
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434			R					_	H
AAC PRAIRIE SUNSHINE (9) Pending					FLAX - RECONSTITUTED				
BI: AAFC (Morden), Dist: SeCan Members						S	F	R	1
Stamp Seeds / Enchant / AB / (403) 739-2233			R						Г
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434	S		R		CDC GLAS 🐵				
AC PRAIRIE SAPPHIRE					BI: CDC, Dist: SeCan Members				
BI: AAFC, Dist: Alliance Seed					Crooymans, John, Joseph & Andrew / Bow Island / AB / (403) 545-6333			R*	
Feenstra, Lloyd / Barons / AB / (403) 757-3737				С	Dovichak, Michael / Brooks / AB / (403) 501-5420				(
Kiffiak, Nathan & Mercer, Ryan / Foremost / AB / (403) 867-2338	S				Dyck, Heinz W., Colin, Alan & Kelton / Rosemary / AB / (403) 378-3321				
Kiffiak, Nathan J. & Anderson, Tim / Foremost / AB / (403) 867-2338				С	Fabian, Patrick V. / Tilley / AB / (403) 377-2000			R	
Stamp Seeds / Enchant / AB / (403) 739-2233	S*	F*	$R^{*}$	С	Hoff, Peter Edward / Gleichen / AB / (403) 734-2140			R	
CDC DORADO					Hoffman, Curtis / Oyen / AB / (403) 664-9617				(
BI: CDC, Dist: N/A					Holmstrom, Darrell / Killam / AB / (780) 385-3574			R	
Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900	S				Huvenaars, Carl / Hays / AB / (403) 725-2213			R	
Mercer, Lloyd A., Connie, Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-973	6 S				Lefsrud, Kevin J. & Edmund J. / Viking / AB / (780) 336-2500				(
Stamp Seeds / Enchant / AB / (403) 739-2233	S				Stamp Seeds / Enchant / AB / (403) 739-2233				(
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434	S				Weigum, Garry & Sarah / Three Hills / AB / (403) 443-9599				(
CDC PLAVA 🕲					CDC SANCTUARY &				
BI: CDC, Dist: SeCan Members					BI: CDC, Dist: SeCan Members				
Goossen, Virgil / Fort Vermilion / AB / (780) 926-6472				С	Benci, Dennis / Carmangay / AB / (403) 643-2294				1
Klassen, Ken / Rosemary / AB / (403) 378-4408			R		CDC SORREL ®				
Lefsrud, Kevin J. & Edmund J. / Viking / AB / (780) 336-2500	S	F			BI: CDC, Dist: SeCan Members				
Stamp Seeds / Enchant / AB / (403) 739-2233			R		Catherwood, James / Calgary / AB / (403) 836-9699			R	
Wuthrich, David / Cecil Lake / BC / (250) 781-3527			R		Degenhardt, Keith L., Terry L. & Kerry / Hughenden / AB / (780) 856-2383			R	
TOPAZ					King Seed Farm (Webb, David G.) / Three Hills / AB / (403) 443-7330			R*	
BI: CPS (Canada) Inc., Dist: Alliance Seed					Zwack, Bryan / Daysland / AB / (780) 608-9426				Ľ
Stamp Seeds / Enchant / AB / (403) 739-2233	S				Zwack, Thomas / Daysland / AB / (780) 374-2450				(

## 2017 Regional Silage Variety Trials

**AN** important component of the annual feed supply for Alberta's cattle producers comes in the form of silage, green feed and swath grazing. It could be argued that there is more grain forage than cereal grain fed to take many market animals from conception to plate. Selection of annual crop varieties which produce the highest forage yield and/or nutritional quality becomes increasingly important.

#### **Participating Organizations (2017)**

- Battle River Research Group, Forestburg, AB, (780) 582-7308
- Chinook Applied Research Association, Oyen, AB, (403) 664-3777
- Gateway Research Organization, Westlock, AB, (780) 349-4546
- Lakeland Agricultural Research Association, Bonnyville, AB, (780) 826-7260
- Mackenzie Applied Research Association, Fort Vermilion, AB, (780) 927-3776
- Peace Country Beef and Forage, Fairview, AB, (780) 836-3354
- Smoky Applied Research and Demonstration Association, Falher, AB, (780) 837-2900

#### **Major Sponsors**

- Doug McCaulay, AOF Coordinator
- A & L Canada Laboratories Inc.
- Davidson Seeds, Degenhardt Farms, Dyck Seed Farm, Kevin Elmy, Fabian Seeds, Lindholm Seed Farm, Mastin Seeds, Solick Seeds, H. Warkentin

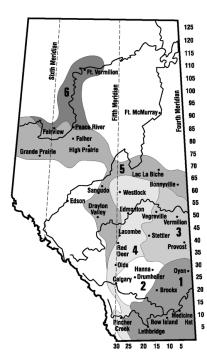
#### **Trial Information**

Silage yield and nutritional information was collected by seven applied research associations in 2017 at sites from Oyen in the south to Fort Vermilion in the north. Data from additional sites grown during the past six years has been included in the variety summaries below. Varieties of barley, oats, triticale and peas commonly used for silage, green feed and swath grazing were included in the trial. The cereal trials (barley, oats and triticale) were seeded at recommended seeding density rates with recommended fertility. The pulse mixture trial looked at increasing the nutritional value of silage, with a potential side benefit of decreasing future nitrogen costs. The pulse mix plots were seeded with 50 pounds of 11-52-0-0. Peas were seeded at 75 per cent of their recommended seeding rate and cereals at 50 per cent when in mixtures. Growing conditions at the trial sites in 2017 ranged from below average to excessive moisture.

The tables below show a summary of data from 2012 through 2017 as compared to the control variety (in bold). Yield of the test varieties are expressed as wet tons/acre (i.e. 65% moisture, typical of silage production). Data sets which did not meet minimum quality standards and variance levels were excluded.

#### **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. This allows for comparison with the check when growing conditions, management regimes and/or target yields are anticipated to be of low, medium or high productivity. Caution is advised when interpreting the data with respect to new varieties that have not been fully tested. It should also be noted that the indicated yield



levels are those from small plot trials, which can be 15 to 20 per cent higher than yields expected under commercial production. As yield is not the only factor that affects net return, other important agronomic and disease resistance characteristics should also be considered. The genetic yield potential of a variety can be influenced by various management and environmental factors.

#### **Nutritional Analysis**

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

## TABER SEED CLEANING CO-OPERATIVE Association Ltd.

### JOE HANSON - MANAGER

*joe.hansontsc@yahoo.ca* Box 4115, Taber, Alberta T1G 2C6 Phone: (403) 223-4141 • Fax: (403) 223-1345 • Cell: (403) 382-1611

> "Where quality seed is our first priority" You Grow It - We Clean It

OAT

				Yield Category:			N	lutritional	Data:		
Variety	Overall Station Years of Testing	Overall Yield	Low < 8.0 (t/ac)	Medium 8.0 - 11.0 (t/ac)	High > 11.0 (t/ac)	CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
	Varieties tested in the	e 2017 trials (	Yield, significant (	differences and agr	onomic data only	directly co	mparable to	o CDC Bale	r)		
CDC Baler (t/ac)		9.9	5.9	9.9	13.3	9.5	61.4	0.3	0.2	1.8	0.2
CDC Baler	39	100	100	100	100	100	100	100	100	100	100
AC Juniper	29	93-	103	78-	93	101	101	94	107	103	106
AC Morgan	38	101	105	96	101	98	101	100	111	100	97
AC Mustang	39	98	99	97	99	101	99	99	103	101	99
CDC Haymaker	34	100	105	97	98	98	100	98	101	103	98
CDC Seabiscuit	12	98	97	96	101	99	100	88	99	95	97
CDC SO-1	39	96-	100	93-	95-	102	102	95	103	98	104
Murphy	33	103	105	101	103	92	95	94	96	103	98
Waldern	32	103	104	107	98	94	99	105	102	95	98
	Previously tested	varieties (Yie	ld, significant diffe	erences and agrono	omic data only dire	ctly compa	arable to Cl	DC Baler)			
Derby	6	96	XX	XX	XX	89	100	98	99	100	110
Everleaf	5	94	XX	XX	XX	96	98	105	97	110	92
Foothills	21	99	99	97	102	99	98	103	103	102	100
Jordan	20	100	103	100	94	97	100	96	105	97	112



Introduces AAC Barrhead peas, an early maturing, medium size, human consumption yellow pea.

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Dealer inquiries can be made by calling 780-674-6713

#### CANSEED CANADA LID

Barrhead, Alberta 780-674-6713



PLANT MANAGER - CHRIS BLENKIN carmangay@seedcleaningplant.com

For all your cleaning and treating needs give us a call.

- Specialize in all cereals, pulses and oilseed crops
- Pedigreed seed certified
- Mobile and on-site treating

## BARLEY

				Yield Category:			I	Nutritio	nal Data	a:	
Variety	Overall Station Years of Testing	Overall Yield	Low < 9.0 (t/ac)	Medium 9.0 - 12.0 (t/ac)	High > 12.0 (t/ac)	CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
	Varieties test	ted in the 2017	trials (Yield and	agronomic data only dire	ectly comparable to	D CDC Aus	tenson)				
CDC Austenson (t/ac)		10.7	6.8	11.4	14.8	10.3	67.2	0.3	0.2	1.4	0.2
CDC Austenson	41	100	100	100	100	100	100	100	100	100	100
Altorado	22	102	107	98	102	98	99	101	103	100	92
Amisk	29	91-	90-	91-	92-	103	102	130	106	104	108
CDC Coalition	33	94-	96	91-	XX	101	100	104	108	105	100
CDC Cowboy	33	101	102	100	XX	96	99	117	110	108	117
CDC Maverick	35	104	106	102	102	96	99	122	108	95	116
CDC Meredith	22	100	102	99	101	95	98	99	101	102	94
Canmore	22	99	101	95	101	99	99	118	102	98	102
Champion	22	102	107	99	102	99	100	103	100	102	99
Claymore	22	100	100	93	105	93	97	119	97	96	99
Conlon	27	86-	82-	88-	XX	97	102	125	113	97	103
Gadsby	33	99	101	98	XX	96	100	127	100	96	101
Ranger	19	94-	91-	96	XX	99	99	161	105	122	128
Sundre	33	93-	91-	94-	XX	102	100	132	106	112	113
	Previous	y tested variet	ies (Yield and agr	onomic data only directly	y comparable to CI	OC Austen	son)				
Busby	19	93-	87-	97	XX	100	99	128	100	100	103
Chigwell	19	90-	90-	91-	XX	101	99	152	101	105	116
Muskwa	13	90-	89	90-	XX	104	100	167	107	121	127
Ponoka	19	96	95	97	XX	97	99	148	103	104	115
Seebe	19	96-	95	98	XX	103	96	136	109	113	103
Trochu	18	88-	82-	92-	XX	99	101	139	107	109	119
Vivar	19	93-	90-	94	XX	103	100	144	99	104	123
Xena	19	95-	95	95	XX	101	99	111	105	102	106



Harold & Jan King David & Lori Webb RR2, Three Hills, AB TOM 2A0 Er

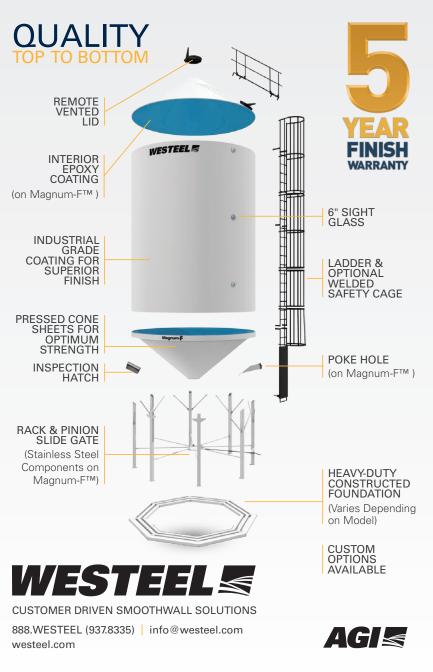
Fax (403) 443-7992 Fax (403) 443-7992 Harold Cell (403) 443-0005 David Cell (403) 443-3333 Email: kingsseedfarm@gmail.com





## TRITICALE

				Yield Category:				Nutriti	onal Data:		
Variety	Overall Sta- tion Years of Testing	Overall Yield	Low < 10.0 (t/ac)	Medium 10.0 - 12.5 (t/ac)	High > 12.5 (t/ac)	CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
	Varie	eties tested	in the 2017	trials (Yield and	agronomic d	ata only dir	ectly compa	rable to Taz	a)		
Taza (t/ac)		10.9	7.5	11.3	14.7	9	62.7	0.2	0.2	1.4	0.1
Taza	44	100	100	100	100	100	100	100	100	100	100
AAC Chiffon	15	104	XX	102	XX	107	100	87	94	109	111
Bunker	36	99	102	98	98	103	99	109	94	95	115
Sunray	37	100	100	102	99	104	103	106	102	103	109
Tyndal	43	99	100	99	99	103	101	100	103	96	105
	P	reviously te	sted varieti	es (Yield and ag	ronomic data	only directl	y comparab	le to Taza)			
AAC Innova	8	104	XX	XX	XX	108	100	87	106	109	107
AAC Ryley	8	97	XX	XX	XX	103	100	95	106	89	117
AC Ultima	7	103	XX	XX	XX	110	100	101	93	97	122
Pasteur	8	94	XX	XX	XX	107	103	96	99	107	117
Pronghorn	21	102	105	8	XX	103	100	102	99	109	106
Sadash	8	102	XX	XX	XX	99	99	88	91	110	105



## **PULSE MIXTURES**

				Yield Category			Nutritio	nal Data:			
Variety	Overall Station Years of Testing	Overall Yield	Low < 8.0 (t/ac)	Medium 8.0 - 10.0 (t/ac)	High > 10.0 (t/ac)	CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
	Varieties tested in	the 2017 tria	ls (Yield and	agronomic data	only directly co	omparable t	o CDC Au	stenson)			
CDC Austenson (t/ac)	9	8.4	6.1	9.1	12	10.5	66.8	0.3	0.2	1.5	0.2
CDC Austenson	9	100	100	100	100	100	100	100	100	100	100
CDC Baler	9	106	101	XX	XX	95	95	106	106	113	115
Taza	9	106	107	108	XX	93	95	75	108	101	84
CDC Austenson/CDC LeRoy	4	86	XX	XX	XX	128	97	167	120	116	119
CDC Austenson/CDC Meadow	9	100	102	99	XX	116	86	162	110	107	143
CDC Baler/CDC LeRoy	4	87	XX	XX	XX	107	95	135	108	121	109
CDC Baler/CDC Meadow	9	96	XX	100	XX	107	96	152	106	120	132
Taza/CDC LeRoy	4	95	XX	XX	XX	122	95	183	109	98	120
Taza/CDC Meadow	9	98	108	103	XX	106	95	181	105	103	129
	Previously test	ed varieties ('	Yield and agr	onomic data only	y directly comp	arable to C	DC Auster	ison)			
CDC Austenson/CDC Horizon	5	105	XX	XX	XX	101	97	156	102	111	133
CDC Baler/CDC Horizon	5	101	XX	XX	XX	109	94	173	101	123	145
Taza/CDC Horizon	5	108	XX	XX	XX	116	96	179	106	106	137
	Varieties tested i	n the 2012 - 2	2014 trials (Y	ield and agronor	nic data only d	irectly com	parable to	Vivar)			
Vivar (t/ac)		8.6	5.8	9.7	10.3	9.4	63.5	0.5	0.2	1.2	0.2
Vivar	19	100	100	100	100	100	100	100	100	100	100
Murphy	18	119+	XX	108	125+	88	94	77	99	129	88
Pronghorn	19	111	106	105	122	96	101	63	105	103	75
Murphy/40-10	12	105	XX	XX	XX	142	98	161	129	117	141
Pronghorn/40-10	12	104	XX	XX	XX	125	98	150	115	103	134
Vivar/40-10	12	97	XX	XX	XX	140	98	170	107	108	141
Murphy/CDC Horizon	19	112	121	97	120+	114	94	130	100	124	114
Pronghorn/CDC Horizon	19	111	120	101	112	125	98	143	105	105	106
Vivar/CDC Horizon	19	98	103	87-	105	128	97	162	101	107	116
Murphy/CDC Meadow	7	105	XX	XX	XX	104	95	116	101	123	95
Pronghorn/CDC Meadow	7	101	XX	XX	XX	122	99	124	113	105	95
Vivar/CDC Meadow	7	99	XX	XX	XX	115	100	187	89	98	119

## Pedigreed and Commercial Seed Cleaning and Seed Sales.

Tom Measures Manager

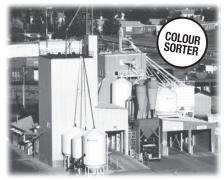
#### Barrhead District Seed Cleaning Co-op Ltd.

 Email
 barrseed@telus.net

 Phone
 (780) 674-2569
 Box 4408

 Fax
 (780) 674-3701
 Barrhead, Alberta T7N 1A3





MANAGER Murray Van Petten

4728 - 41 Street Camrose, Alberta T4V 0Z6 Phone: (780) 672-2371 Fax: (780) 672-4997 Email: mvanpetten@county.camrose.ab.ca



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## Hay and Pasture Crops

#### **DISTRIBUTOR INFORMATION:**

BrettYoung	
CPS (Canada) Inc	
FP Genetics	
Foster's Seed & Feed Ltd	1-800-379-4804/doug.thiessen@fosterseed.com/www.fosterseed.com
Hannas Seeds Ltd.	
Johnson Seeds	1-800-363-9442 / info@johnsonseeds.com / www.johnsonseeds.com
	1-800-805-0765 / info@northstarseed.com / www.northstarseed.com
Pickseed Canada Ltd	
Pioneer Hi-Bred Ltd.	
Seed-Link Inc.	705-324-0544/sloffice@seed-link.ca/www.seed-link.ca
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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3010				
BI: N/A, Dist: BrettYoung Seeds Ltd.				
BrettYoung Seeds Limited / Rycroft / AB / (780) 765-3069				C
Calvert, Brad / Brooks / AB / (403) 362-3587				C C
Williamson, Mel / Lomond / AB / (403) 633-2370 <b>1030</b>				6
BI: N/A, Dist: BrettYoung Seeds Ltd.				
Friesen, Raymond / Fort Vermilion / AB / (780) 927-4803				С
4010BR				
BI: N/A, Dist: BrettYoung Seeds Ltd.				
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4020MF BI: N/A, Dist: BrettYoung Seeds Ltd.				
Friesen, Danny Jim / Fort Vermilion / AB / (780) 927-4900				С
54Q14				ľ
BI: N/A, Dist: DuPont Pioneer				
Brummelhuis, Mitchell & Mack / Vauxhall / AB / (403) 654-7515				С
Vanderstoel, Jeroen / Enchant / AB / (403) 654-2653				С
55027				
BI: N/A, Dist: DuPont Pioneer				0
Cailliau, John, Dana, Sebastien, Dave & Danielle / Enchant / AB / (403) 739-3785 Vanderstoel, Jeroen / Enchant / AB / (403) 654-2653				C C
AC YELLOWHEAD @				
BI: AAFC, Dist: SeCan Members				
Kerschbaumer, John A. / Fairview / AB / (780) 835-4508				С
ABLE				
BI: N/A, Dist: DLF Pickseed				
Pickseed Canada Inc. / Winnipeg / MB / (204) 633-0088				С
AKORI BI: N/A, Dist: DLF Pickseed				
Pickseed Canada Inc. / Winnipeg / MB / (204) 633-0088				С
ALGONQUIN				ľ
BI: N/A, Dist: Pask Farms Ltd.				
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Friesen, Danny Jim / Fort Vermilion / AB / (780) 927-4800				С
BARRICADE SLT				
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Logan, Glenn C., Marie & Douglas / Lomond / AB / (760) 765-3069				C
BEAVER				
BI: N/A, Dist: Pickseed Canada Inc.				
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COMPASS				
BI: N/A, Dist: N/A				0
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EQUINOX				
BI: Forage Genetics, Dist; CPS (Canada) Inc.				
Gold Medal Seeds Limited / Brooks / AB / (403) 362-3444				С
FOOTHOLD Dist. Dist. Dis				
BI: N/A, Dist: BrettYoung Seeds Ltd. Giesbrecht, Peter W. / Rolling Hills / AB / (403) 622-2297				С
FORTUNE				
BI: N/A, Dist: DLF Pickseed				
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FOUNDATION APR				
BI: N/A, Dist: Gold Medal Seeds				
Virostek, Derek / Rolling Hills / AB / (403) 633-0520				С
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HALO				
BI: N/A, Dist: CPS (Canada) Inc.				
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BI: N/A, Dist: Quality Seeds Ltd.				
Nikkel, Ed & Darren / Lethbridge / AB / (403) 312-4070				С

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Vanderstoel, Jeroen / E
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OPTIMUS BI: N/A, Dist: BrettYoung Seeds Ltd. Giesbrecht, Peter W. / Rolling Hills / AB / (403) 622-2297				С
POWER 4.2 BI: N/A, Dist: Power Seed Inc. Nikkel, Ed & Darren / Lethbridge / AB / (403) 312-4070				С
PV ULTIMA BI: N/A, Dist: Gold Medal Seeds Gold Medal Seeds Limited / Brooks / AB / (403) 362-3444		F		С
RAMBLER BI: N/A, Dist: DLF Pickseed		I		
Kerschbaumer, John A. / Fairview / AB / (780) 835-4508 <b>REBOUND PLUS</b> <b>BI: N/A, Dist: Gold Medal Seeds</b>				С
Gold Medal Seeds Limited / Brooks / AB / (403) 362-3444 Nikkel, Ed & Darren / Lethbridge / AB / (403) 312-4070 <b>RESPONSE WT</b>				C C
BI: N/A, Dist: Northstar Seed Ltd. Nikkel, Ed & Darren / Lethbridge / AB / (403) 312-4070 ROBUST				С
BI: N/A, Dist: Northstar Seed Ltd. Kerschbaumer, John A. / Fairview / AB / (780) 835-4508				С
SHOWDOWN BI: N/A, Dist: Quality Seeds Ltd. Nikkel, Ed & Darren / Lethbridge / AB / (403) 312-4070				С
SPREDOR 4 BI: Forage Genetics, Dist: CPS (Canada) Inc. Gold Medal Seeds Limited / Brooks / AB / (403) 362-3444 Nikkel, Ed & Darren / Lethbridge / AB / (403) 312-4070				C C
SPREDOR 5 BI: N/A, Dist: Gold Medal Seeds Gold Medal Seeds Limited / Brooks / AB / (403) 362-3444				С
SPYDER BI: N/A, Dist: BrettYoung Seeds Ltd. Anderson, Stephen F. / Scandia / AB / (403) 362-5886				С
STOCKPILE BI: N/A, Dist: BrettYoung Seeds Ltd. Giesbrecht, Peter W. / Rolling Hills / AB / (403) 622-2297				С
Versteegen, Erik / Rolling Hills / AB / (403) 964-2740 STRONGHOLD BI: N/A, Dist: Gold Medal Seeds				С
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#### ADMIRAL

grower

nav and pasture crops

#### BI: AAFC, Dist: SeCan Members

Card, Gordon B. & Rhett / Magrath / AB / (403) 758-3444 CARLTON

BI: AAFC (Saskatoon), Dist: Phillips' Seeds Ltd. BrettYoung Seeds Limited / Rycroft / AB / (780) 765-3069 Downey, Gordon / Manning / AB / (780) 836-2292 Dynamic Seeds Ltd. / Fairview / AB / (780) 835-5435 Enns, Walter / Clayhurst / BC / (250) 781-3357 Froese, Cornelius H. / La Crete / AB / (780) 927-4645 Hadland, Edward / Baldonnel / BC / (250) 793-9746 Hanson, Troy / Valhalla Centre / AB / (587) 343-2286 Hegland, David Olaf / Wembley / AB / (780) 766-2450 Kerschbaumer, John A. / Fairview / AB / (780) 835-4508 Noble, Robert / Manning / AB / (780) 836-2337 FLEET

#### BI: AAFC (Saskatoon), Dist: SeCan Members

BrettYoung Seeds Limited / Rycroft / AB / (780) 765-3069 Dynamic Seeds Ltd. / Fairview / AB / (780) 835-5435 Froese, Isaac / La Crete / AB / (780) 926-6945 Hadland, Edward / Baldonnel / BC / (250) 793-9746 Hostettler, Fritz / Bluesky / AB / (780) 835-4761 Kerschbaumer, John A. / Fairview / AB / (780) 835-4508 Mueller, Darcy / Three Hills / AB / (403) 820-4115 Van Garderen, Kees / Picture Butte / AB / (403) 738-4203

#### MANCHAR BI: N/A, Dist: No Rep

Dynamic Seeds Ltd. / Fairview / AB / (780) 835-5435 PEAK

#### BI: N/A, Dist: Quality Seeds Ltd.

Moskalyk, Kent / Fairview / AB / (780) 835-8378 YORK

#### BI: N/A, Dist: Quality Seeds Ltd.

Dynamic Seeds Ltd. / Fairview / AB / (780) 835-5435

	S	F	R	C
VELDT BI: AAFC (Lethbridge), Dist: N/A Vanderstoel, Jeroen / Enchant / AB / (403) 654-2653				С
CLOVER	s	F	R	C
AURORA BI: N/A, Dist: BrettYoung Seeds Ltd. Maisonneuve, Andre / Guy / AB / (780) 925-3074 Moore Seed Processors Inc. / Debolt / AB / (780) 957-3964 Richard, Michel / Spirit River / AB / (780) 864-4220 FRIDA BI: N/A, Dist: N/A BrettYoung Seeds Limited / Rycroft / AB / (780) 765-3069				C C C
FESCUE	s	F	R	c
BOREAL BI: AAFC (Beaverlodge), Dist: CPS (Canada) Inc. Jones, Danny / Beaverlodge / AB / (780) 354-8089 BOREAL		F		
Minarovich, Duane & Rick / Falher / AB / (780) 837-8103 Moore Seed Processors Inc. / Debolt / AB / (780) 957-3964 Richard, Gerald / Spirit River / AB / (780) 864-2339 Richard, Michel / Spirit River / AB / (780) 864-4220 ORACLE				C C C C



F

F



PARDUS BI: N/A, Dist: N/A Dynamic Seeds Ltd. / Fairview / AB / (780) 835-5435 PRADEL BI: N/A, Dist: N/A Dynamic Seeds Ltd. / Fairview / AB / (780) 835-5435					TIFFANY BI: N/A, Dist: Seed-Link inc. Dynamic Seeds Ltd. / Fairview / AB / (780) 835-5435 TILLER BI: N/A, Dist: DLF Pickseed Pickseed Canada Inc. / Winnipeg / MB / (204) 633-0088				c c
ORCHARDGRASS	s	F	R		L TUUKKA BI: N/A, Dist: Moore Seed Processors Inc. Moore Seed Processors Inc. / Debolt / AB / (780) 957-3964				С
KILLARNEY BI: AAFC, Dist: N/A Card, Gordon B. & Rhett / Magrath / AB / (403) 758-3444					WHEATGRASS	s	F	R	C
RYEGRASS	s	F	R				F		
NORLEA BI: AAFC, Dist: N/A Hadland, Edward / Baldonnel / BC / (250) 793-9746					<ul> <li>AC SALTLANDER</li> <li>BI: AAFC (Swift Current), Dist: Miller Seeds</li> <li>Miller, Kenneth F. / Milk River / AB / (403) 647-2127</li> <li>ELBEE</li> <li>BI: AAFC (Lethbridge), Dist: SeCan Members</li> </ul>		F		С
ТІМОТНҮ	s	F	R		BrettYoung Seeds Limited / Rycroft / AB / (780) 765-3069     Limones Daniel / Girouxville / AB / (780) 833-1287		F		
ALMA BI: N/A, Dist: Moore Seed Processors Inc. Moore Seed Processors Inc. / Debolt / AB / (780) 957-3964 BARPENTA				,	BI: N/A, Dist: N/A Dynamic Seeds Ltd. / Fairview / AB / (780) 835-5435 GREENLEAF BI: N/A, Dist: SeCan Members Card Cardon D. <sup>2</sup> , Dist: (Magrath (AD / (400) 759, 2444				C
BI: N/A, Dist: Union Forage Moore Seed Processors Inc. / Debolt / AB / (780) 957-3964 CATAPULT BI: N/A, Dist: BrettYoung Seeds Ltd.		F		1	Card, Gordon B. & Rhett / Magrath / AB / (403) 758-3444 Kramer, Steve / Fairview / AB / (780) 835-4494 KIRK BI: AAFC (Saskatoon), Dist: SeCan Members Dynamic Seeds Ltd. / Fairview / AB / (780) 835-5435				
Collins, Michael / Spirit River / AB / (780) 864-3407 CLIMAX BI: N/A, Dist: DLF Pickseed BrettYoung Seeds Limited / Rycroft / AB / (780) 765-3069 Heuston, Scott / Creston / BC / (250) 428-7026		Г			Limoges, Daniel / Girouxville / AB / (780) 833-1287		F		C
COMER BI: N/A, Dist: DLF Pickseed Pickseed Canada Inc. / Winnipeg / MB / (204) 633-0088 COMTAL BI: N/A, Dist: DLF Pickseed Moore Seed Processors Inc. / Debolt / AB / (780) 957-3964 PROMESSE BI: N/A, Dist: BrettYoung Seeds Ltd. BrettYoung Seeds Limited / Rycroft / AB / (780) 765-3069 RICHMOND BI: N/A, Dist: DLF Pickseed Pickseed Canada Inc. / Winnipeg / MB / (204) 633-0088 SUMMERGRAZE BI: N/A, Dist: BrettYoung Seeds Ltd. Caron, Albert & Roland / Valleyview / AB / (780) 524-2027 Danyliuk, Jetf / Sunset House / AB / (780) 524-2029 TENHO BI: N/A, Dist: Moore Seed Processors Inc. Moore Seed Processors Inc. / Debolt / AB / (780) 957-3964					<ul> <li>TONY CROOYNANS SO</li> <li>Pedigreed Seed</li> <li>Durum: AC Strongfield, AAC Spitfire, o. CDC Precision</li> <li>HRSW: CDC Go, AC Carberry, AAC Bi Cardale, AAC Connery</li> <li>HRSW: CDC Go, AC Carberry, AAC Bi Cardale, AAC Connery</li> <li>HRWW: AAC Gateway, AAC Wildfire</li> <li>SWSW: AC Sadash VB Barley: CDC Austenson</li> <li>Flax: CDC Glas</li> <li>Peas: AAC Lacombe</li> <li>* We can source other varietie</li> <li>Dealers for:</li> <li>Dekalb: Canola, Corn, Soybeans</li> <li>Pickseed: Alfalfa, Grasses, Forages, C Canterra Seeds: Cereals, Pulses, Cand</li> <li>403-580-7264</li> <li>403-545-6333(shop)</li> <li>403-545-6509</li> <li>403-545-6509</li> </ul>	CDC rand es *	For	tituc	nts
Hallett's Hay & seed Growing Pedigreed Seed since 1983		<u>()</u> <u>()</u> <u>()</u> <u>()</u> ()	WRS EAS reer reer	<u>Re</u> <u>S:</u> n: nv	T     BARLEY       d: AAC Penhold     Feed/Forage:       AAC Redwater     CDC Austenson,       CDC Limerick,     Malt: CDC Copeland       vater     OATS       ,AAC Lacombe     Mustang	a	n		

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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 pea, chickpea, lentil, fababean, dry bean and soybean.

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

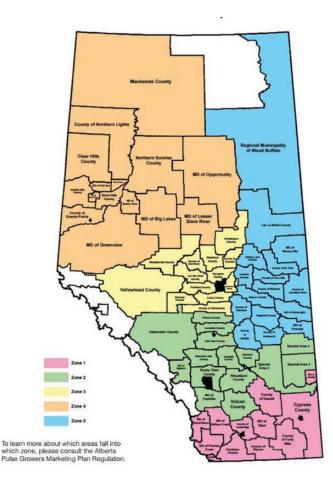
Data for this publication are contributed by numerous applied research associations, Prairie Grain Development Committee and AAF.

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 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 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 2017:

- 18 green and yellow pea sites established across Alberta and one site in Fort St. John, British Columbia;
- 13 fababean trials;
- Four chickpea trials at Bow Island, Brooks, Lethbridge and Medicine Hat;
- Six lentil trials at Bow Island, Brooks, Lethbridge, Medicine Hat, Oyen and Strathmore;
- Three wide row dry bean trials at Bow Island, Lethbridge and Vauxhall;
- A narrow row dry bean trial in Lethbridge; and
- Four soybean trials established at Bow Island, Brooks, Lethbridge and Medicine Hat.

For additional information, including varieties not listed in this factsheet, please call Alberta Ag-Info Centre toll-free at 310-FARM (3276).

## **DRY BEAN – NARROW ROW**

Variaty	Tuno	Site Years	Overall	Days to	Days to	<b>TCW</b> <sup>2</sup> (a)	Plant Height	Lodging <sup>3</sup>	Growth
Variety	Type arieties tested in the	1997 - 2017	Yield	Bloom <sup>1</sup>	Maturity	TSW <sup>2</sup> (g)	(cm)	(1 - 5)	Habit <sup>₄</sup>
		2017 1103 (110	-		iny uncoury co		ie checks)		
AC Black Diamond (kg/ha)	Diack Ohimu	01	3239	57	100	050	07	0.0	
AC Black Diamond	Black Shiny	21	100	57	103	256	37	2.3	
AAC Black Diamond 2	Black Shiny	5	105	60	1	265	35	1.8	
CDC Blackstrap (A) (9)	Black Matte	1	107	52	-11	251	39	2.5	II
Island (kg/ha)			4439						
Island	Pinto	11	100	56	101	349	42	2.7	
AAC Burdett	Pinto	6	92	58	-4	381	42	1.3	
AAC Explorer	Pinto	2	78	50	-8	390	39	2.6	
AAC Tundra (kg/ha)			4685						
AAC Tundra	Great Northern	7	100	54	97	372	45	2.4	II
AAC Whitehorse	Great Northern	6	107	53	-2	394	44	2.4	
AAC Whitestar	Great Northern	3	96	48	-7	386	49	2	
	Previously tested	varieties (Yield a	-	ic data only d	lirectly comp	arable to the c	hecks)		
AC Black Diamond (kg/ha)			3174						
AC Black Diamond	Black Shiny	20	100	57	103	253	36	2.3	II
CDC Blackcomb	Black Matte	6	78	64	1	186	36	1.3	
Island (kg/ha)			4155						
Island	Pinto	10	100	56	102	344	42	2.7	Ш
CDC Marmot	Pinto	5	89	55	-6	419	34	2.2	II
CDC WM 2 💩	Pinto	8	80	56	3	350	41	2.4	II
Medicine Hat 💩	Pinto	8	99	62	4	342	44	2	ll
Winchester	Pinto	5	80	58	7	302	45	2.1	
AAC Tundra (kg/ha)			4559						
AAC Tundra	Great Northern	6	100	54	98	365	44	2.4	Ш
AC Polaris	Great Northern	14	76	58	5	329	35	3.4	Ш
AC Resolute	Great Northern	17	68	51	-2	353	40	2.2	
AC Redbond (kg/ha)			2658						
AC Redbond	Small Red	16	100	51	101	296	38	2.5	Ш
CDC Sol (kg/ha)			1887						
CDC Sol 💩	Yellow	6	100	59	111	385	33	1.6	I
Viva (kg/ha)			2380						
Viva	Pink	13	100	52	100	252	30	3.5	III

**REMARKS:** A = First year entries; '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. XX - Insufficient data to describe. (a) = Protected by Plant Breeder's Rights (PBR).

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Ingrenients oriendonazole, metalaxy (IM and S römers), rudioxoni, rutiametrioxam, seoaxale and sutroxator, Accelerom<sup>-</sup>, UEL+ECM<sup>-</sup>, UELALE and Design<sup>-</sup>, DickALE<sup>+</sup>, Jebnity<sup>+</sup>, JumpStart<sup>-</sup>, Monsanto Bildag and Design<sup>-</sup>, DickALE<sup>+</sup>, JumpStart<sup>-</sup>, Monsanto Bildag and Design<sup>-</sup>, DickALE<sup>+</sup>, and Design<sup>-</sup>, DickALE<sup>+</sup>, JumpStart<sup>-</sup>, Monsanto Bildag and Design<sup>-</sup>, DickALE<sup>+</sup>, and Design<sup>-</sup>, DickALE<sup>+</sup>, JumpStart<sup>-</sup>, Monsanto Bildag and Design<sup>-</sup>, DickALE<sup>+</sup>, JumpStart<sup>-</sup>, Monsanto Bildag And Design<sup>-</sup>, DickALE<sup>+</sup>, and Design<sup>-</sup>, DickALE<sup>+</sup>, JumpStart<sup>-</sup>, Monsanto Bildag And Design<sup>-</sup>, DickALE<sup>+</sup>, JumpStart<sup>-</sup>, Monsanto Bildag Metal<sup>+</sup>, Natura Martina Metal<sup>+</sup>, DickaL<sup>+</sup>, JumpStart<sup>+</sup>, Monsanto Technology LLC. Used under license. BlackHawk<sup>+</sup>, Conquer<sup>®</sup> and GoldWing<sup>+</sup> are registered trademarks of Natarn<sup>+</sup> Agriculture Inc. Valera<sup>+</sup> Natura<sup>+</sup> Natura<sup>+</sup>, Agriculture Inc. Valera<sup>+</sup> Natura<sup>+</sup>, Natura<sup>+</sup>, and Usivio<sup>®</sup> are trademarks of Syngenta group company. Duebot<sup>+</sup> and Lumivia<sup>®</sup> are trademarks of LC. Used under license. Proche<sup>®</sup> and VDIYO<sup>†</sup> are trademarks of Bayer. Used under license. Herculex<sup>+</sup> is a registered trademark for Sud Marsines. LLC. Used under license. Proche<sup>®</sup> and VDIYO<sup>†</sup> are trademarks of Bayer. Used under license. Proche<sup>®</sup> and VDIYO<sup>†</sup> are trademarks of Bayer. Used under license. Proche<sup>®</sup> and VDIYO<sup>†</sup> are trademarks of Bayer. Used under license. Proche<sup>®</sup> and VDIYO<sup>†</sup> are trademarks of Bayer. Used under license. Proche<sup>®</sup> and VDIYO<sup>†</sup> are trademarks of Bayer. Sed under license. Seche<sup>®</sup> and VDIYO<sup>†</sup> are trademarks of Bayer. Used under license. LLC used under license. Proche<sup>®</sup> and VDIYO<sup>†</sup> are trademarks of Bayer. Sed under license. LLC used under license. Seche<sup>®</sup> and VDIYO<sup>†</sup> are trademarks of Bayer. Sed under license. LLC used under license. Proche<sup>®</sup> and VDIYO<sup>†</sup> are trademarks of Bayer. Seche<sup>®</sup> and VDIYO<sup>†</sup> are trademarks of Bayer. Used under license. LLC used



Variety	Туре	Site Years 1997 - 2017	Overall Yield	Days to Bloom <sup>1</sup>	Days to Maturity	TSW² (g)	Plant Height (cm)	Lodging <sup>3</sup> (1 - 5)	Growth Habit⁴
variety	Varieties tested in t				,	,	. ,	(1-5)	Habit
AC Black Diamond (kg/ha			3139	ononno aata (	only anoony a				
AC Black Diamond	Black Shiny	42	100	57	102	265	38	2.2	Ш
AAC Black Diamond 2	Black Shiny	9	101	58	1	256	37	2.3	
Island (kg/ha)			3796						
Island	Pinto	23	100	56	99	369	41	3	Ш
AAC Burdett	Pinto	9	101	55	-6	354	44	2.2	
AAC Explorer	Pinto	4	90	52	-3	355	37	2.8	11
AAC Tundra (kg/ha)			3633						
AAC Tundra	Great Northern	15	100	52	96	348	42	2.9	П
AAC Whitehorse	Great Northern	12	98	51	0	369	43	2.8	
AAC Whitestar	Great Northern	6	97	54	-1	357	47	2.9	Ш
AC Resolute	Great Northern	12	96	51	1	348	43	2.5	11
CDC Sol (kg/ha)			2493						
CDC Sol 🕲	Yellow	16	100	55	102	407	33	1.5	1
AAC Y012	Yellow	4	108	52	-2	391	37	1.8	I
AAC Y015	Yellow	4	91	54	-1	384	34	2.3	
L12CB004 (kg/ha)			2531						
L12CB004 (A)	Cranberry	2	100	55	97	571	36	1.9	1
	Previously teste	d varieties (Yiel	d and agrono	mic data only	/ directly com	parable to th	e checks)		
AC Black Diamond (kg/ha	a)		3017						
AC Black Diamond	Black Shiny	40	100	57	103	265	38	2.2	П
CDC Blackcomb	Black Matte	11	79	62	0	178	35	1.8	II
lsland (kg/ha)			3758						
Island	Pinto	20	100	56	100	369	41	3	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
Winchester	Pinto	13	85	56	4	337	40	2.5	Ш
AAC Tundra (kg/ha)			3570						
AAC Tundra	<b>Great Northern</b>	13	100	52	97	349	42	2.9	П
AC Polaris	Great Northern	6	107	62	7	300	37	4.1	II
AC Redbond (kg/ha)			3149						
AC Redbond	Small Red	29	100	52	100	319	40	2.4	Ш
CDC Sol (kg/ha)			2350						
CDC Sol 🐵	Yellow	14	100	55	104	409	33	1.5	I.
Myasi	Yellow	9	89	63	6	350	34	2.1	I
Viva (kg/ha)			3137						
Viva	Pink	29	100	54	102	258	34	3.8	Ш

**REMARKS:** A = First year entries; '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. XX - Insufficient data to describe. B = Protected by Plant Breeder's Rights (PBR).





## **CHICKPEA**

		Overall Sta-		Agro	nomic Charac	cteristics:	
Variety	Туре	tion Years of Testing	Overall Yield <sup>1</sup>	TSW <sup>2</sup> (g)	Maturity Rating <sup>3</sup>	Plant Height (cm)	Tolerance to Ascochyta⁴
Varieties teste	d in the 2017	trials (Yield and	agronomic	data only d	irectly compa	rable to CDC Fr	ontier)
CDC Frontier (kg ha <sup>-1</sup> )			4324				
CDC Frontier <sup>1</sup>	Kabuli	38	100	329	L	42	F
CDC Consul	Desi	11	94	207	Μ	38	F
CDC Corinne	Desi	21	106	212	Μ	43	F
CDC Cory	Desi	21	100	232	Μ	44	F
CDC Alma	Kabuli	25	90	326	ML	38	VP
CDC Leader	Kabuli	21	97	332	ML	40	F
CDC Orion	Kabuli	25	96	387	ML	41	Р
CDC Palmer (9)	Kabuli	11	97	285	Μ	37	F
Previously	tested varieti	es (Yield and ag	ronomic da	ta only direc	tly comparab	le to CDC Fronti	er)
Amit 💩	Kabuli	25	92	269	L	44	F

CDC Luna Kabuli 88 378 ML 37 19 Ρ CDC Vanguard 16 92 230 ML 42 Desi F

**REMARKS:** All four trials: Bow Island, Brooks, Lethbridge and Medicine Hat were grown in Area 1. (a) = Protected by the 1991 Act of the UPOV Convention.  $\mathfrak{B}$  = Protected by the 1978 Act of the UPOV Convention. 'Yields are reported relative to CDC Frontier. 'TSW: Thousand Seed Weight. <sup>3</sup>Maturity Ratings: E = Early, M = Medium, ML = Medium to Late, L = Late. <sup>4</sup>Tolerance to Ascochyta: VP = Very Poor, P = Poor, F = Fair.

## FABABEAN

Variety	Tuno	Overall Yield	Overall Station Years of Testing	Relative Maturity <sup>1</sup>	Plant Height	Thousand Seed Weight	Flower Colour <sup>2</sup>
•	Type		nd agronomic data o		(cm)	(g) Snowhird)	COIOUI
CDC Snowbird (kg/ha) ම		5821	ina agronomio aata o	iny anoony c		,nowbird)	
CDC Snowbird @	Zero Tannin	100	44	E	91	474	W
Athena 🔺 NR *	Tannin	117+	9	М	94	546	С
Fabelle	Tannin	121+	9	Μ	98	511	С
Malik NR *	Tannin	96-	32	М	85	623	С
Rodeo 🔺 NR *	Tannin	118+	9	Μ	92	601	С
Vertigo NR	Tannin	120+	9	Μ	100	555	С
Previously tes	ted varieties: 201	3 - 2015 (Yie	ld and agronomic da	ta only direct	tly comparable	to Snowbird)	
Snowdrop	Zero Tannin	88-	23	E	87	351	W
Tabasco 🕸	Zero Tannin	85-	15	М	86	374	W

**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 a minimum three years are considered fully tested. B = Protected by the 1978 Act of the UPOV Convention;  $\blacktriangle$  = Applied for PBR protection. NR = Variety not registered with CFIA. \* Contract Varieties. Varieties removed from the table: Ben and Earlibird. 'Maturity: E = early, M = medium, ML = medium late, L = late; 'Flower Colour: W = white flower, zero tannin; C = coloured flower, tannin.

		_		
FABA BEANS	s	F	R	C
CDC SNOWDROP 💩				
BI: CDC, Dist: University of Saskatchewan				
Kittle, James W. & Andrew / Viking / AB / (780) 336-2583			R	
Penwest Seeds / Three Hills / AB / (403) 443-2577			R	
Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617	S	F*	R	С*
CDC SSNS-1				
BI: CDC, Dist: University of Saskatchewan				
Plett, Donald H. / Gem / AB / (403) 641-2494				С
FABELLE				
BI: DL Seeds inc., Dist: Stamp Seeds				
Stamp Seeds / Enchant / AB / (403) 739-2233	S	F		
SNOWBIRD 💩				
BI: Innoseeds, Dist: Limagrain Cereals Research Canada				
Cyre, Clifford & Greg / Barrhead / AB / (780) 307-4332	S*	F*	R*	C*
Galloway Seeds Ltd. / Fort Saskatchewan / AB / (780) 998-3036				С
Harbin, Clifford T. & Bruce C. / Rivercourse / AB / (780) 745-2268			R	С
Lindholm Seed Farm / New Norway / AB / (780) 352-3240	S*	F*	R	С
Stamp Seeds / Enchant / AB / (403) 739-2233				С
Weigum, Garry & Sarah / Three Hills / AB / (403) 443-9599				С
VERTIGO				
BI: DL Seeds Inc., Dist: N/A				
Stamp Seeds / Enchant / AB / (403) 739-2233	S			

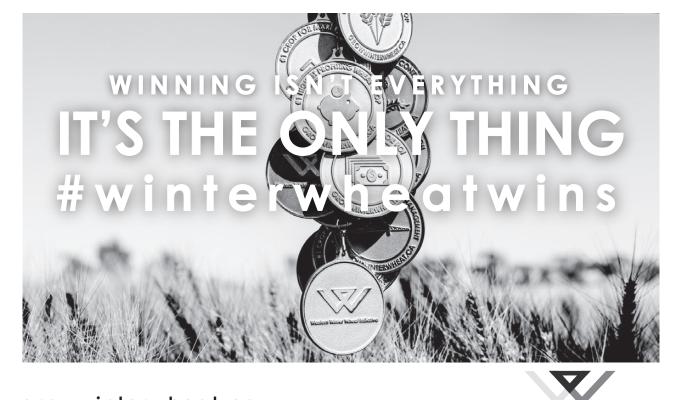
HEMP	s	F	R	1
FINOLA 💩				
BI: N/A, Dist: Hemp Oil Canada				
Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736				1
Witdouck, Dale / Iron Springs / AB / (403) 738-4395				(
KATANI 👳				
BI: Hemp Genetics International, Dist: SeedNet				
Vandenberg, Albert Dr. / Saskatoon / SK / (306) 242-4099				
Witdouck, Dale / Iron Springs / AB / (403) 738-4395				(
PICOLO (9)				
BI: Hemp Genetics International, Dist: SeedNet				
Oosterhuis, Gerard / Bow Island / AB / (403) 952-1228				(
Pepneck, David / Vauxhall / AB / (403) 424-0096			R	
Reynolds, Gordon / Bow Island / AB / (403) 545-6122			R	
SILESIA				
BI: N/A, Dist: Alberta Innovates – Technology Futures				
Huvenaars, Carl & Crooyman, John / Hays / AB / (403) 725-2213		F		
Slaski, Jan / Vegreville / AB / (780) 632-8436		F		



## LENTIL

			Overall		Agron	omic Charac	teristics:		Disease	Tolerance:6
Market Class	Variety	Overall Yield	Station Years of Testing	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	Anthracnose
	Varieties te	sted in the 20	)17 trials (Yie	eld and ag	gronomic data or	nly directly co	omparable to	CDC Maxim)		
	CDC Maxim (kg ha <sup>-1</sup> )	2904								
Small Red	CDC Maxim CL <sup>1</sup>	100	29	40	34	E/M	R	GR	G	G
Extra Small Red	CDC Rosie	97	19	30	35	E/M	R	GR	G	G
	CDC Roxy 🔺	99	9	27	34	E/M	R	GR	G	G
Small Red	CDC Dazil CL	94	25	34	35	E/M	R	GR	G	F
	CDC Impulse CL (9)	97	9	46	37	E/M	R	GR	G	G
	CDC Proclaim CL A 🖲	106	6	39	37	E/M	R	GR	G	G
	CDC Scarlet	102	19	38	35	E/M	R	GR	G	F
Large Red	CDC KR-1	104	23	52	39	М	R	GR	G	G
Small Green	CDC Invincible CL	96	28	33	35	E	Y	G	G	G
Large Green	CDC Greenstar	92	9	63	37	M/L	Y	G	G	F
	CDC Impower CL	81	23	67	41	M/L	Y	G	G	VP
	CDC Improve CL	84	23	71	38	Μ	Y	G	F	VP
	Previous	sly tested var	ieties (Yield	and agror	nomic data only (	directly comp	parable to CDC	; Maxim)		
Extra Small Red	CDC Impala CL	93-	20	31	35	Е	R	GR	G	G
	CDC Imperial CL	82-	17	30	35	E	R	GR	G	G
Small Red	CDC Imax CL	100	19	46	37	E/M	R	GR	G	F
	CDC Redberry	96	17	44	37	E	R	GR	G	G
	CDC Redcliff	110+	14	39	36	E/M	R	GR	G	F
Medium Green	CDC Imigreen CL	79-	14	61	43	Μ	Y	G	G	VP
	CDC Impress CL	85-	14	52	38	Μ	Y	G	G	Р
Large Green	CDC Greenland	88-	14	67	39	M/L	Y	G	G	VP

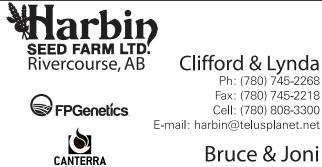
**REMARKS:** Weight, diameter and thickness of lentil seeds were dependent upon environmental conditions and agronomic factors. All five trials: Bow Island, Brooks, Lethbridge, Medicine Hat and Oyen were grown in Area 1. A = First year entries (2017). CL= Clearfield variety.  $\blacktriangle$  = Applied for PBR protection. = Protected by the 1991 Act of the UPOV Convention. <sup>1</sup>Yields are reported relative to CDC Maxim. CDC Maxim belongs to Small Red Market Class. <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. <sup>6</sup>Disease tolerance: VP = Very Poor, P = Poor, F = Fair, G = Good.



growwinterwheat.ca

Western Winter Wheat Initiative

	LENTILS	s	F	R	C
	CDC GREENSTAR				
	BI: CDC, Dist: N/A				
	Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900			R	С
	Sounding Creek Seeds / Oyen / AB / (403) 664-9617				С
	Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434			R	С
	CDC IMAX				
	BI: CDC, Dist: N/A				
)	Kiffiak, Nathan J. & Anderson, Tim / Foremost / AB / (403) 867-2338			R	
	CDC IMPULSE				
	BI: CDC, Dist: N/A				
	Brummelhuis, Mitchell & Mack / Vauxhall / AB / (403) 654-7515			R	С
	Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900				С
	Huvenaars, Carl / Hays / AB / (403) 725-2213			R	
	Kiffiak, Nathan J. & Anderson, Tim / Foremost / AB / (403) 867-2338			R	
	Logan, Glenn C., Marie & Douglas / Lomond / AB / (403) 792-3696				С
	Metzger, Don / Carbon / AB / (403) 572-3284				С



SEEDS

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Cereals, Canola, Peas, Forage, Grass

Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228 Sounding Creek Seeds / Oyen / AB / (403) 664-9617 Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 Witdouck, Dale / Iron Springs / AB / (403) 738-4395 CDC MAXIM			R R R R	C C
BI: CDC, Dist: N/A				0
Catherwood, James / Calgary / AB / (403) 836-9699 Richard, Gerald / Spirit River / AB / (780) 864-2339				C C
CDC PROCLAIM (9)				0
BI: CDC, Dist: N/A				
Nieboer, Nathan / Bow Island / AB / (403) 545-2222			R	С
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434			R	
MUSTARD		_	_	
	S	F	R	C
AC VULCAN				
BI: AAFC, Dist: N/A				
BI: AAFC, Dist: N/A Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736	C*			
BI: AAFC, Dist: N/A Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 ANDANTE	C*			
BI: AAFC, Dist: N/A Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 ANDANTE BI: N/A, Dist: AAFC (Saskatoon)	C*	F		C
BI: AAFC, Dist: N/A Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 ANDANTE	C*	F		С
BI: AAFC, Dist: N/A Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 ANDANTE BI: N/A, Dist: AAFC (Saskatoon) Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736	C*	F		С
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BI: AAFC, Dist: N/A Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 ANDANTE BI: N/A, Dist: AAFC (Saskatoon) Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 CENTERNNIAL BI: N/A, Dist: AAFC (Saskatoon) Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 CUTLASS		F		С
BI: AAFC, Dist: N/A Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 ANDANTE BI: N/A, Dist: AAFC (Saskatoon) Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 CENTERNNIAL BI: N/A, Dist: AAFC (Saskatoon) Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 CUTLASS BI: N/A, Dist: AAFC				С
BI: AAFC, Dist: N/A Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 ANDANTE BI: N/A, Dist: AAFC (Saskatoon) Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 CENTERNNIAL BI: N/A, Dist: AAFC (Saskatoon) Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 CUTLASS BI: N/A, Dist: AAFC Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434		F		С
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BI: AAFC, Dist: N/A Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 ANDANTE BI: N/A, Dist: AAFC (Saskatoon) Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 CENTERNNIAL BI: N/A, Dist: AAFC (Saskatoon) Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 CUTLASS BI: N/A, Dist: AAFC Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 FORGE BI: N/A, Dist: Monsanto Canada Inc.		F		С
BI: AAFC, Dist: N/A Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 ANDANTE BI: N/A, Dist: AAFC (Saskatoon) Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 CENTERNNIAL BI: N/A, Dist: AAFC (Saskatoon) Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 CUTLASS BI: N/A, Dist: AAFC Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 FORGE BI: N/A, Dist: Monsanto Canada Inc. Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434				С
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BI: AAFC, Dist: N/A Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 ANDANTE BI: N/A, Dist: AAFC (Saskatoon) Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 CENTERNNIAL BI: N/A, Dist: AAFC (Saskatoon) Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736 CUTLASS BI: N/A, Dist: AAFC Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 FORGE BI: N/A, Dist: Monsanto Canada Inc. Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 GISILBA		F		0



## FIELD PEA – GREEN

				Area:										ronomic C	haracteris	stics:
		Overall	1	1		2	;	3	4	ļ		5				
Variety	Overall Yield	Station Years of Testing	Yield (%)	Site Years	Yield (%)	Site Years	Yield (%)	Site Years	Yield (%)	Site Years	Yield (%)	Site Years	Maturity Rating <sup>1</sup>	Vine Length (cm)	TSW <sup>2</sup> (g)	Stand- ability³ (1 - 9)
		Varietie	es tested	in the 20	017 trials	(Yield a	ind agror	iomic da	ta only d	irectly (	comparab	le to CDC	Limerick)			
CDC Limerick (kg/ha)	4764		3355		4497		6246		4672		6931					
CDC Limerick	100	89	100	15	100	28	100	14	100	26	100	6	М	77	210	3.2
AAC Comfort A 🔺	99-	13	104	3	99	4	97	2	100	3	86	1	M - L	77	244	3.7
AAC Royce	96-	40	106	8	94	9	92	6	98	14	79	3	М	67	247	4.1
CDC Forest A 🔺	111 +	13	130	3	107	4	108	2	102	3	102	1	М	81	228	2.6
CDC Spruce A 🖲	104	13	103	3	106	4	110	2	95	3	115	1	М	82	243	2.8
LRP1424 NR A	107	13	124	3	108	4	101	2	97	3	94	1	М	81	209	3.1
		Prev	viously t	ested var	ieties (Y	ield and	agronom	ic data d	only dire	ctly com	parable t	o CDC Liı	nerick)			
AAC Radius	92-	44	94	8	90-	11	88-	6	94-	16	87	3	М	76	217	3.6
CDC Greenwater	106 +	42	106	8	109	11	105	6	106 +	14	97	3	L	74	230	2.8
		Fully te	ested var	ieties: 20	0 <b>13 - 20</b> 1	4 (Yield	and agro	onomic d	lata only	directly	/ compara	ble to CD	C Patrick)			
CDC Patrick (kg/ha)	4732		5083		4031		6242		4305		6049					
CDC Patrick	100	109	100	16	100	34	100	16	100	32	100	10	М	79	186	4.4
CDC Pluto	96-	52	101	8	96	17	85-	8	100	16	92	3	М	82	170	6
CDC Raezer	105	52	91	8	110	17	98	8	107	16	116	2	М	89	227	4.2
CDC Tetris	106	52	102	8	109+	17	93	8	110+	16	115+	3	L	91	215	4.4
		Fully	tested v	arieties:	2004 - 2	012 (Yie	eld and a	gronomi	c data or	ly direc	tly compa	arable to	Cooper)			
Cooper (kg/ha)	4724		4947		3672		5977		4835		4962					
Cooper 💩	100	121	100	18	100	38	100	18	100	36	100	11	L	76	270	3.6
CDC Sage	82-	31	79	3	81-	8	82-	7	84-	13	XX	XX	М	75	197	3.3
CDC Striker	96-	39	92	3	109	10	104	5	89-	21	XX	XX	М	72	255	3
Mendel	91-	38	75-	3	95	12	89-	6	91-	15	95	2	М	78	205	3.9

**REMARKS:** CDC Tetris is an Espace type with blocky seed shape. All the green pea varieties listed in the table are Powdery Mildew resistant except CDC Striker that is succeptible. A = First year entries (2017). XX = Insufficient data to describe;  $\blacktriangle$  = Applied for PBR protection. B = Protected by the 1978 Act of the UPOV Convention. D = Protected by the 1991 Act of the UPOV Convention. D = Protected

## FIELD PEA – GREEN — CONT.

	Disease Tolerance:4 Mvco- Fusar-													
Variety	Myco- sphaerella Blight	Fusar- ium Wilt	Bleaching	Seed Coat Breakage	Seed Coat Dimpling⁵									
Varieties tested in th				ata only direc	tly compara-									
	ble t	to CDC Li	merick)											
CDC Limerick (kg/ha)														
CDC Limerick	F	F	G	VG	G									
AAC Comfort A 🔺	F	F	G	XX	F									
AAC Royce	F	F	G	F	F									
CDC Forest A 🔺	F	F	G	G	G									
CDC Spruce A	F	F	G	G	F									
LRP1424 NR A	F	F	G	G	G									
Previously tested va	rieties (Yield a	nd agron	omic data on	lv directly co	mparable to									
		DC Lime		, ,										
AAC Radius	F	F	G	G	G									
CDC Greenwater	F	G	G	F	F									
Fully tested vari	eties: 2013 - 20	014 (Yiel	l and agrono	mic data only	directly									
	compar	able to C	DC Patrick)											
CDC Patrick (kg/ha)														
CDC Patrick	F	G	G	G	G									
CDC Pluto	F	F	G	G	G									
CDC Raezer	F	G	G	G	G									
CDC Tetris	F	G	G	G	G									
Fully tested vari	eties: 2004 - 20	012 (Yiel	d and agrono	mic data only	directly									
	comp	arable to	Cooper)											
Cooper (kg/ha)														
Cooper @	F	F	G	F	G									
CDC Sage	F	G	G	VG	G									
CDC Striker	F	G	G	G	G									
		F	G	F										

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## FIELD PEA – YELLOW

								'ea:					Agronomic Characteristics:							
		Overall		1		2	;	3		1		5								
Variety	Overall Yield	Station Years of Testing	Yield (%)	Site Years	Yield (%)	Site Years	Yield (%)	Site Years	Yield (%)	Site Years	Yield (%)	Site Years	Maturity Rating <sup>1</sup>	Vine Length (cm)	TSW <sup>2</sup> (g)	Standabil- ity³ (1 - 9)				
		Varietie	s tested	in the 20	17 trials	s (Yield a	nd agron	omic dat	a only di	rectly co	mparable	to CDC /	Amarillo)							
CDC Amarillo (kg/ha)	5166		3606		4650		6864		5265		7431									
CDC Amarillo	100	91	100	16	100	30	100	14	100	25	100	6	М	80	226	2.6				
AAC Barrhead 💩	98	28	95	5	98	8	98	5	102	8	94	2	E	84	232	3				
AAC Carver 🛞	106+	28	106	5	105	8	105	5	106+	8	107	2	E	86	240	3.4				
AAC Chrome A NR 🔺	107+	14	114+	3	110	5	104	2	104	3	94	1	M - L	71	234	3.9				
AAC Lacombe 🕲	104+	61	106+	11	100	21	110	8	105	17	98	4	М	75	256	2.4				
CDC Athabasca 🛛 A 🕲	93-	14	96	3	91-	5	102	2	90	3	86	1	М	79	282	2.6				
CDC Canary A NR 🔺	100	14	108	3	103	5	97	2	92	3	95	1	Е	80	239	3.4				
CDC Meadow	96-	77	97	13	100	25	89-	12	96-	22	91-	5	М	81	203	3.9				
CDC Spectrum A 🖲	101	14	106	3	101	5	108	2	94	3	100	1	М	78	238	2.5				
LGPN4903 A NR	101	14	104	3	106	5	96	2	99	3	86	1	М	83	235	3.2				
		Prev	iously te	ested var	ieties (Y	ield and	agronom	ic data o	nly direc	tly comp	arable to	CDC Ama	arillo)							
AAC Peace River	92-	49	89-	8	93-	16	93	6	97	16	73	3	VE	68	217	3.8				
Abarth 👳	98-	49	101	8	106	17	88-	7	94	14	89	3	М	77	249	3.6				
CDC Inca 🖲	104	28	101	5	98	7	112+	5	104	9	109	2	М	85	232	2.2				
LN4228 (9)	93-	45	90-	8	95	13	89	7	95	14	93	3	М	69	254	2.1				
		Fully te	sted var	ieties: 20	12 - 20 <sup>-</sup>	14 (Yield	and agro	nomic da	ita only (	directly c	ompared	to CDC N	leadow)							
CDC Meadow (kg/ha)	4982	,	3943		4277	(	6160		5316	, .	6689		,							
CDC Meadow	100		100		100		100		100		100		М	81	207	3.6				
CDC Saffron	103	47	110	8	103	16	99	7	101	13	101	3	М	84	236	4.3				
Hugo 💩	93-	47	104	7	87-	15	91	8	96	14	80-	3	М	73	210	5.2				
Stella 💩 NR F	80-	45	75-	7	80-	15	84-	8	80-	12	78-	3	М	95	213	3.9				
		Fully	tested v	arieties:	2003 - 2	2011 (Yie	ld and aç	ronomic	data onl	y directly	y compar	able to C	utlass)							
Cutlass (kg/ha)	4485		3388		3503		5654		4816		3932									
Cutlass †	100		100		100		100		100		100		М	71	228	4.1				
Agassiz 💩	103	43	99	5	103	10	102	8	104	19	XX	XX	Μ	77	237	2.9				
CDC Hornet	107+	43	99	6	111+	14	111+	8	102	13	128	2	Μ	89	215	3.7				
CDC Prosper	97-	44	90	4	97	12	97	9	99	18	94	1	E	73	150	3.9				
CDC Treasure	100	44	96	4	103	12	99	9	100	18	116	1	E	80	217	3.4				
Thunderbird	97	37	88	5	99	10	99	9	98	13	XX	XX	М	76	229	2.1				
		Fully	tested v	arieties:	2000 - 2	005 (Yie	ld and ag	ronomic	data only	y directly	compara	able to Ca	arrera)							
Carrera (kg/ha)	4126		2913		2779 5248				4681 40											
Carrera	100		100		100		100		100		100		E	54	257	4.7				
CDC Golden	105	36	99	5	109	12	99	7	105	11	XX	XX	Μ	70	223	3.5				

**REMARKS:** Stella is a silage type pea. All the yellow pea varieties listed in the table are Powdery Mildew resistant except Carrera that is suceptible.  $\blacktriangle$  = Applied for PBR protection. A = First year entries (2017). NR = Variety not registered with CFIA. F = Forage type. XX = Insufficient data to describe.  $\dagger$  = Flagged for removal.  $\circledast$  = Protected by the

1978 Act of the UPOV Convention.  $^{(h)}$  = Protected by the 1991 Act of the UPOV Convention.

<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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## FIELD PEA – YELLOW — CONT.

Mycosphaerella BlightFusarium WittSeed Coat BreakageSeed Coat Dimpling5Seed Coat CoatVarieties tested in the 2017 trials (Yield and agronomic data only directly comparable to CDC AmarilloCDC Amarillo (kg/ha)FGFGAAC Barrhead @FFGGAAC Carver @FFGAAC Chrome A NR AFFGChrome A NR AFFFGConspan="4">Conspan="4"Con													
Variety					Green Seed Coat⁵								
Varietie		•	•	only directly									
CDC Amarillo (kg/ha)	Compara	ADIE IO CDC AII	idilliu)										
	F	G	F	F	G								
	F	F	G	G	XX								
AAC Carver (9)	F	F	G	G	XX								
AAC Chrome A NR 🔺	F	Р	G	G	XX								
AAC Lacombe 🐵	F	Р	G	F	G								
CDC Athabasca A (9)	F	F	F	F	G								
CDC Canary A NR	F	F	G	F	G								
CDC Meadow	F	F	G	G	G								
CDC Spectrum A 🖲	F	F	G	G	F								
LGPN4903 A NR	F	G	XX	XX	XX								
Previously tested va	arieties (Yield and agr	onomic data on	ly directly comp	arable to CDC A	marillo)								
AAC Peace River	F	F	F	G	G								
Abarth (9)	F	F	F	G	G								
CDC Inca 🖲	F	F	G	G	F								
LN4228 (9)	F	F	F	F	G								
Fully tested varieties:	2012 - 2014 (Yield and	l agronomic da	ta only directly	compared to CDC	C Meadow)								
CDC Meadow (kg/ha)													
CDC Meadow	F	F	G	G	G								
CDC Saffron	F	F	G	F	G								
Hugo 🐵	F	F	G	F	F								
Stella 💩 NR F	F	F	G	G	F								
Fully tested varieties	s: 2003 - 2011 (Yield a	ind agronomic	data only direct	ly comparable to	Cutlass)								
Cutlass (kg/ha)													
Cutlass †	F	F	F	F	G								
Agassiz 🕲	F	F	G	VG	G								
CDC Hornet	F	F	F	F	G								
CDC Prosper	F	G	G	F	G								
CDC Treasure	F	F	G	F	F								
Thunderbird	F	F	G	VG	XX Commonia								
	s: 2000 - 2005 (Yield a	nu agronomic (	uata only directl	y comparable to	carrera)								
Carrera (kg/ha)	P	-	-	0	VV								
Carrera CDC Golden	P F	F	F	G	XX G								
CDC GOIGEII	F	Г	G	G	G								



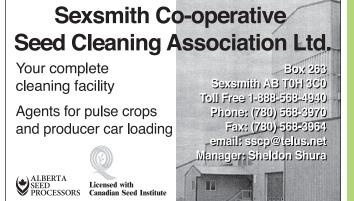


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PEAS	s	F	R	C
AAC ARDILL				
BI: N/A, Dist: AAFC Penwest Seeds / Three Hills / AB / (403) 443-2577			R	
Sand, Ron W. & David R. / McLaughlin / AB / (780) 745-2251			R	
AAC BARRHEAD 💩				
BI: AAFC (Lacombe), Dist; N/A				
Hadland, Edward / Baldonnel / BC / (250) 793-9746			R	
Jackson, Thomas / Killam / AB / (780) 385-2332			R	
Meinczinger, Matthew Jr. / Busby / AB / (780) 349-2456 Mueller, Richard J., R.R. & Rosemary / Barrhead / AB / (780) 674-6713	c	F	R R	
AAC CARVER (9)	3	1	n	
BI: AAFC, Dist: Canterra Seeds				
Berge, James Garnet / Dawson Creek / BC / (250) 759-4773				(
Haney Farms Ltd. / Picture Butte / AB / (403) 738-4517				(
Harbin, Clifford T. & Bruce C. / Rivercourse / AB / (780) 745-2268			R	(
Jonk, Nicholas / Westlock / AB / (780) 349-5458				(
King Seed Farm (Webb, David G.) / Three Hills / AB / (403) 443-7330	0		R*	1
Penwest Seeds / Three Hills / AB / (403) 443-2577 Plante, Jacques / St. Paul / AB / (780) 645-4604	S		R	(
Richards, Cliff & Dan / Sexsmith / AB / (780) 766-2266			R	(
Sekulic, Nick / Rycroft / AB / (780) 814-2849			R	
True Seeds / Redwater / AB / (780) 777-5885				(
Unrau, George / La Crete / AB / (780) 928-0096			R	
Wuthrich, David / Cecil Lake / BC / (250) 781-3527			R	
AAC CHROME				
BI: AAFC (Lacombe), Dist; FP Genetics	0			
Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900 Geldreich, Dave / Bow Island / AB / (403) 545-2222	S			
Sim, Darwin & Derek / Ponoka / AB / (403) 343-2222	S S			
Stamp Seeds / Enchant / AB / (403) 739-2233	S			
AAC COMFORT @ Pending	0			
BI: AAFC, Dist: Canterra Seeds				
Lindholm Seed Farm / New Norway / AB / (780) 352-3240	S	F		

BI: AAFC, Dist: SeedNet			
Benci, Dennis / Carmangay / AB / (403) 643-2294			R
Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900			
Crooymans, John, Joseph & Andrew / Bow Island / AB / (403) 545-6333			
Dewindt, Harry & Hoyme, Renee / Thorhild / AB / (780) 398-2377			
Dyck, Ernie / La Crete / AB / (780) 821-9445			
Ellis, Brian / Olds / AB / (403) 556-2890			
Forward Seed Farm / County Of Barrhead / AB / (780) 674-3822			
Hadway, W. Tom & Carol / Didsbury / AB / (403) 335-4929			
Hallett's Hay and Seed / Carstairs / AB / (403) 337-3072			
Huvenaars, Carl / Hays / AB / (403) 725-2213			
Jonk, Nicholas / Westlock / AB / (780) 349-5458			
Kiffiak, Nathan J. & Anderson, Tim / Foremost / AB / (403) 867-2338			
Kittle, James W. & Andrew / Viking / AB / (780) 336-2583			
Koester, Gordon & Munro, Daniel / Rockyford / AB / (403) 533-2248	0	-	
Logan, Glenn C., Marie & Douglas / Lomond / AB / (403) 792-3696	S	F	R
Macyk, Tim / Radway / AB / (780) 699-4073	0	-	D
Markert Seeds Ltd. / Vulcan / AB / (403) 485-6708	S	F	R
Mercer, Lloyd, C., Ryan & Bolstad, Leslie / Lethbridge / AB / (403) 327-9736		F	
Mueller, Richard J., R.R. & Rosemary / Barrhead / AB / (780) 674-6713			D
Oatway's Seed Farm / Clive / AB / (403) 784-3001			R
Sanocki, Gary / Eaglesham / AB / (780) 359-2042			
Sich, Louis J., Ivan & Martin / Trochu / AB / (403) 442-2112			
Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228			
Sounding Creek Seeds / Oyen / AB / (403) 664-9617	S		R
Stamp Seeds / Enchant / AB / (403) 739-2233	-		R
Thompson, M. Ellwood & Kelly / Red Deer County / AB / (403) 728-353	2		
True Seeds / Redwater / AB / (780) 777-5885			
Van Roessel, William & Jean / Bow Island / AB / (403) 545-6018 Victoor, Rene & Jamie / Sturgeon County / AB / (780) 459-3253			
Weigum, Garry & Sarah / Three Hills / AB / (403) 443-9599			
	S	F	
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434 Witdouck, Dale / Iron Springs / AB / (403) 738-4395	3	Г	R
Widduck, Dale / Iron Spirings / AB / (403) 736-4395 Wood, Robert, Patricia & Marshall / Bowden / AB / (403) 588-3548			R



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AAC LISCARD					Howard, Fred / Wanham / AB / (780) 694-2427				С
BI: AAFC, Dist: Wagon Wheel Seed Corporation					King Seed Farm (Webb, David G.) / Three Hills / AB / (403) 443-7330			R'	
Stamp Seeds / Enchant / AB / (403) 739-2233			R		Lindholm Seed Farm / New Norway / AB / (780) 352-3240				C C
AAC PEACE RIVER BI: AAFC, Dist: FP Genetics					McDonald, Gerald / Co. Of Grande Prairie #1 / AB / (780) 538-3868 Sendziak, Don P. & Stephen / Edmonton / AB / (780) 434-1322				C
Hadland, Edward / Baldonnel / BC / (250) 793-9746				(	C Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617	S*	F*		C*
Lawrence, Cody / Wainwright / AB / (780) 842-0285					C CDC MEADOW	-	-		
Mastin, Robert B. / Sundre / AB / (403) 556-2609				(	C BI: CDC, Dist: N/A				
Richard, Gerald / Spirit River / AB / (780) 864-2339			R		Airth, Jock & Linda / Brooks / AB / (403) 362-4372				С
AAC ROYCE					Benci, Dennis / Carmangay / AB / (403) 643-2294				С
BI: AAFC, Dist: N/A					Chin Ridge Seeds Ltd. / Taber / AB / (403) 223-3900				С
Klempnauer, Joerg / Vauxhall / AB / (403) 655-2420			R		Davidson, E. Daryl & Dean / Kitscoty / AB / (780) 846-2456			-	С
ABARTH (9)					Dyck, Ernie / La Crete / AB / (780) 821-9445			R	
BI: Limagrain, Dist: FP Genetics	c				Felstad, Colin / Dapp / AB / (780) 349-9505				C
Geldreich, Dave / Bow Island / AB / (403) 545-2222 Nieboer, Nathan / Bow Island / AB / (403) 545-2222	S				Foster's Seed & Feed Limited / Beaverlodge / AB / (780) 354-2107 C Hadland, Edward / Baldonnel / BC / (250) 793-9746				C C
CDC AMARILLO					Hadway, W. Tom & Carol / Didsbury / AB / (403) 335-4929				C
BI: CDC, Dist: Saskatchewan Pulse Growers					Hartzler, Leonard / Carstairs / AB / (403) 337-2416				C
Bell, D. Leslie / Drumheller / AB / (403) 823-9462				(	C Kapitski, Lawrence / Andrew / AB / (780) 365-2134				C
Davidson, E. Daryl & Dean / Kitscoty / AB / (780) 846-2456			R					R	C*
Dewindt, Harry & Hoyme, Renee / Thorhild / AB / (780) 398-2377				(	C Kittle, James W. & Andrew / Viking / AB / (780) 336-2583				С
Galloway Seeds Ltd. / Fort Saskatchewan / AB / (780) 998-3036				(	C Klassen, Merle / Linden / AB / (403) 546-2420				С
Harbin, Clifford T. & Bruce C. / Rivercourse / AB / (780) 745-2268			R	(	C Mans, John / Nobleford / AB / (403) 824-3585				С
Harris, William P., Linda, Thomas & A. / Beaverlodge / AB / (780) 354-2823			R	(	C Massey, Derwin & Kirby / Stettler / AB / (403) 883-2503			R	С
Hill, Gordon P. & Blair / Taylor / BC / (250) 789-3469	S	F	R		Nemetz, Charlie, Jerritt & Lewis / Stettler / AB / (403) 742-0436			R	
Hoff, Peter Edward / Gleichen / AB / (403) 734-2140			R	(	<b>3 1 1 1 1 1 1 1 1 1 1</b>			_	С
Hoffman, Curtis / Oyen / AB / (403) 664-9617					C* Pare, Raymond A. / Wainwright / AB / (780) 842-2073			R	
Kapitski, Lawrence / Andrew / AB / (780) 365-2134			D		C Penwest Seeds / Three Hills / AB / (403) 443-2577		-		С
Konieczny, Scott / Mannville / AB / (780) 763-3029		F	К	(			F	R	
Limoges, Richard / McLennan / AB / (780) 324-2335 Lindholm Seed Farm / New Norway / AB / (780) 352-3240		F	R*		C Richard, Gerald / Spirit River / AB / (780) 864-2339 C Richards, Cliff & Dan / Sexsmith / AB / (780) 766-2266			K	C
Massey, Derwin & Kirby / Stettler / AB / (403) 883-2503			ĸ		C Sich, Louis J., Ivan & Martin / Trochu / AB / (700) 700-2200			D	C C
Massey, Defwin & Knyy / Steffer / Ab / (403) 600-2005 McDonald, Gerald / Co. Of Grande Prairie #1 / AB / (780) 538-3868					C Sich, Louis John / Trochu / AB / (403) 442-2112			n	C
Pare, Raymond A. / Wainwright / AB / (780) 842-2073	S	F		Ì	Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617	S*	F*		0
Penwest Seeds / Three Hills / AB / (403) 443-2577	S			(	C CDC RAEZER	0	'		
Sand, Ron W. & David R. / McLaughlin / AB / (780) 745-2251	Ŭ				C BI: CDC, Dist: N/A				
Sayer, Roger / Carstairs / AB / (403) 337-5847					C Baier, Bill & Dean / Clyde / AB / (780) 348-5791			R	С
Sendziak, Don P. & Stephen / Edmonton / AB / (780) 434-1322				(	C Hill, Gordon P. & Blair / Taylor / BC / (250) 789-3469	S	F	R	
Solick Seeds Ltd. / Halkirk / AB / (403) 884-2358		F		(	C Kapitski, Lawrence / Andrew / AB / (780) 365-2134				С
Sounding Creek Seeds / Oyen / AB / (403) 664-9617					C Krywko, Ronald / Sturgeon County / AB / (780) 939-1719			R	
Strathmore Seed Cleaning Plant / Strathmore / AB / (403) 934-3421					C Plante, Jacques / St. Paul / AB / (780) 645-4604				С
True Seeds / Redwater / AB / (780) 777-5885					C CDC SAFFRON				
Van Roessel, William & Jean / Bow Island / AB / (403) 545-6018		-			C BI: CDC, Dist: N/A				
Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617		F*	R		C* Airth, Jock & Linda / Brooks / AB / (403) 362-4372				C
Weigum, Garry & Sarah / Three Hills / AB / (403) 443-9599			R		Galloway Seeds Ltd. / Fort Saskatchewan / AB / (780) 998-3036				C C
CDC GREENWATER BI: CDC, Dist: Saskatchewan Pulse Growers					Klassen, Ethan / Coaldale / AB / (403) 345-3770 Kopjar, Gerald M. / Rowley / AB / (403) 368-2409		F		C
Archer, Nathan / Didsbury / AB / (403) 335-8678					C Lefsrud, Kevin J. & Edmund J. / Viking / AB / (780) 336-2500		,	R	C
Galloway Seeds Ltd. / Fort Saskatchewan / AB / (780) 998-3036					C Mans, John / Nobleford / AB / (403) 824-3585				C
Hoff, Peter Edward / Gleichen / AB / (403) 734-2140					C Shultz, Shawn / Didsbury / AB / (403) 335-3694			R	C
Shultz, Shawn / Didsbury / AB / (403) 335-3694			R		Solick Seeds Ltd. / Halkirk / AB / (403) 884-2358				C
Solick Seeds Ltd. / Halkirk / AB / (403) 884-2358					C Stamp Seeds / Enchant / AB / (403) 739-2233				C*
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434	S	F	R		Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617	S*	F*		
CDC HORIZON					Zwack, Bryan / Daysland / AB / (780) 608-9426				С
BI: CDC, Dist: Mastin Seeds					Zwack, Thomas / Daysland / AB / (780) 374-2450				С
Foster's Seed & Feed Limited / Beaverlodge / AB / (780) 354-2107					C GARDE				
Hadland, Edward / Baldonnel / BC / (250) 793-9746		<b>F</b> *		(			-		
Warkentin, Harold K. & Errol / Beaver County / AB / (780) 662-2617		F*	R*	^ (			F		
CDC INCA (9) Pending					LN4228 <sup>(b)</sup> Pending				
BI: CDC, Dist: N/A Eliason, Bruce W. / Wrentham / AB / (403) 222-2258		F			<b>BI: Limagrain, Dist: Lindholm Seed Farm</b> Lindholm Seed Farm / New Norway / AB / (780) 352-3240				С
Hadway, W. Tom & Carol / Didsbury / AB / (403) 222-2236		F			Solick Seeds Ltd. / Halkirk / AB / (403) 884-2358				C
Jackson, Thomas / Killam / AB / (780) 385-2332		F			JUNCK JEEUS LU. / HAINIK / AD / (403) 004-2330				U
Jacula, Dean S. & Shawn D. / Vermilion / AB / (780) 581-9011	S	F							
Kiffiak, Nathan & Mercer, Ryan / Foremost / AB / (403) 867-2338	S								
Kiffiak, Nathan J. & Anderson, Tim / Foremost / AB / (403) 867-2338	-	F							
Markert Seeds Ltd. / Vulcan / AB / (403) 485-6708	S	F	R						
Sayer, Roger / Carstairs / AB / (403) 337-5847			R						
Sim, Darwin & Derek / Ponoka / AB / (780) 372-2111		F							
Sleepy Hollow Seeds Ltd. / Milk River / AB / (403) 647-2228	S	F							
Solick Seeds Ltd. / Halkirk / AB / (403) 884-2358		F							
Sounding Creek Seeds / Oyen / AB / (403) 664-9617			R						
Van Roessel, William & Jean / Bow Island / AB / (403) 545-6018	0	_	R						
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434	S	F							
CDC LIMERICK RI: CDC, Dist: Saskatabawan Pulsa Grawars									
BI: CDC, Dist: Saskatchewan Pulse Growers Dallas, Bradley C. / Bowden / AB / (403) 224-2162				1	C				
Dahas, Diauley 0. / DUWUEH / AD / (403) 224-2102				ľ	U C				

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## **SOYBEANS**

Variety	Irrigation:		Agronomic Characteristics:					
	Yield (%) Check <sup>1</sup>	Site Years Tested	Days to Flowering	Pod Clearance <sup>2</sup> (cm)	Plant Height (cm)	Relative Days to Maturity <sup>3</sup>	TSW⁴ (g)	Seeds pe Pound
	Varietie	es tested in the 201	7 trials (Yield an	d agronomic data onl	y directly compa	arable to McLeod)		
McLeod (kg ha <sup>-1</sup> )	3483							
McLeod	100	19	54	7	63	120	157	2889
22-60	102	12	52	5	51	1	147	3086
Akras	113+	19	57	10	62	2	145	3128
CFS17.1.03 A	92	4	52	7	51	-6	168	2700
CFS17.1.04 A	104	4	53	7	42	3	166	2732
DKB0008-39 A	87-	4	50	6	49	1	150	3024
DKB003-29 A	107	4	52	6	47	4	174	2607
Dario A	95	4	50	5	47	-1	138	3287
Dylano A	89-	4	53	6	42	4	147	3086
Lono A	106	4	54	7	51	4	149	3044
Marduk A	95	4	52	5	49	5	182	2492
NSC Belmont A	91	4	53	6	51	3	162	2800
NSC Leroy A	86-	4	54	5	50	-8	151	3004
NSC Star City A	95	4	50	6	42	-5	134	3385
NSC Watson	96	8	52	4	52	-8	156	2908
S0009 - D6 A	95	4	52	5	45	-6	135	3360
S0009 - M2	102	12	50	5	57	-8	152	2984
S001	103	8	52	6	61	0	164	2766
S003	108+	8	51	6	56	-6	175	2592
S006	114+	8	50	5	54	-5	136	3335
S007	108+	12	51	5	56	0	149	3044
S008 A	110+	4	51	7	53	3	164	2766
TH37004	100	8	51	5	59	2	142	3194
TH87003 A	102	4	51	5	48	3	155	2926
TH88005 A	98	4	53	6	49	5	152	2984
Torro	92-	8	51	6	64	-3	150	3024
	Pre	viously tested varie	eties (Yield and a	gronomic data only di	irectly comparat	ole to McLeod)		
900Y61 💩	90-	11	54	7	56	1	150	3024
NSC Moosomin	78-	11	53	6	49	-4	138	3287
NSC Reston	103	11	54	8	61	-2	128	3544
NSC Vito	89-	11	53	7	71	0	132	3436
P001T34 👳	65-	11	53	5	46	-9	136	3335
Pekko	102	11	57	9	65	0	130	3489

**REMARKS:** Straight combining is commonly used method of harvest. Swathing soybean can result in excessive field losses (up to 25%) due to shattering. Approximately four beans or one to two pods per square foot represent a yield loss of one bushel per acre. Varieties removed from the table: 23-11, 23-60, Notus, Podaga, CFS 16.3.02. All four trials: Bow Island, Brooks, Lethbridge and Medicine Hat were grown under irrigation. A = first year entries (2017). B = Protected by the 1978 Act of the UPOV Convention. D = Protected by the 1991 Act of the UPOV Convention. D = Protected relative to McLeod, yields that are statistically higher (+) or lower (-) than the check are indicated. D bistance from the ground level to lowest pod tip. M and Medicine Hat trials. M relative to McLeod - averaged across the Brooks, Bow Island and Medicine Hat trials. M Thousand Seed Weight.

	_	_	_	_
SOYBEANS	S	F	R	C
AAC EDWARD				
BI: AAFC (Ottawa), Dist: SeCan Members				
Willms Seeds Ltd. / Grassy Lake / AB / (403) 655-2434			R	
BARRON R2X				
BI: AAFC (Ottawa), Dist: SeCan Members				
Weigum, Garry & Sarah / Three Hills / AB / (403) 443-9599				С
DARIO R2X				
BI: Semences Prograin, Dist: Quarry Seed Ltd.				
Richard, Gerald / Spirit River / AB / (780) 864-2339			R	

BI: Monsanto Canada, Dist: CPS (Canada) Inc. Proven Seed/CPS (Canada) Inc. / High River / (403) 603-6011 PV 11s001 RR2	S			
	S			
2V 11s001 RR2			R	1
BI: Syngenta Canada, Dist: CPS (Canada) Inc.				
Proven Seed/CPS (Canada) Inc. / High River / (403) 603-6011	S	F	R	
PV 12s007 RX2				
BI: N/A, Dist: CPS (Canada) Inc.				
Proven Seed/CPS (Canada) Inc. / High River / (403) 603-6011	S		R	

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#### SECURE

Protect the integrity of your seed with a SmoothWall bin that's completely self cleaning with no obstructions or hang ups.

## PROVEN

Meridian has over 50 years of experience building SmoothWall bins, and stands behind them with a 10 Year Structural Warranty and a 5 Year Coatings Warranty.

## FAST

Move up to 12,000 BPH while protecting the integrity of your seed with the high capacity crescent belt conveyor.

## **EFFICIENT**

The No Step Hopper Design ensures a smooth transition from the intake area to the incline tube.

## CONTAINED

The low tension "S" belt drive system allows the belt to hug the contours of the conveyor to practically eliminate leakage.

## **HEAVY DUTY**

Hardened sprockets, HD roller bearings, square tubing undercarriage construction, and HD gear boxes make the Meridian auger robust and built to last.

## EASY TO USE

Meridian's auger movers are designed to be extremely easy to maneuver, even for the inexperienced operator.

## QUIETER

With high quality components, continuous Super Edge<sup>™</sup> auger flighting, and precision manufacturing, the Meridian auger is the smoothest and quietest on the market. The reduced operating stress ensure durability and longevity.

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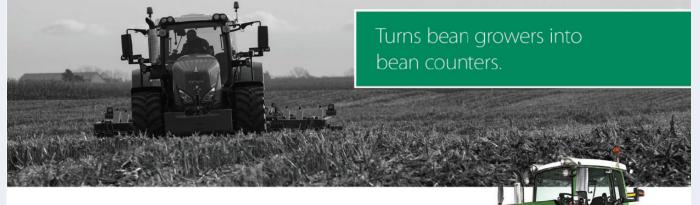
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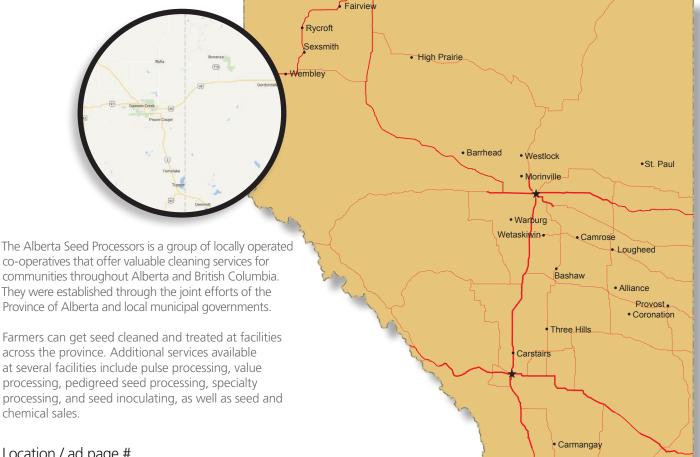
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Taber

#### **Millet Genome Sequenced**



A study coordinated by an international consortium of French, Indian and Chinese researchers has enabled the genome sequence for millet to be obtained for the first time.

This discovery improves the understanding of the organization and evolution of the genome of this cereal, which provide food security throughout the world. It also provides new prospects for selecting or improving varieties of millet that may be better equipped to cope with climate change.

This research enabled the team to trace the origin of millet domestication, found to have taken place almost 4,500 years ago at the border between Mali and Niger. It highlighted genes that slow down the loss of water from the leaves (thus conserving hydration), as well as other genes related to withstanding dry conditions.

#### Shining a Light on Plant Growth and Development

Plants don't have eyes, but they do "see" their surroundings using light.

That's made possible by proteins called photoreceptors that absorb light and convert it into a signal that turns genes on or off. Until now, scientists haven't fully understood the molecular mechanism underlying that process,



which allows plants to recognize when they're in the shade and grow toward the sun, and to sense what season it is so they can bloom in spring.

Researchers at the University of California, Riverside have identified the portion of a plant photoreceptor responsible for light-dependent changes in gene expression. Associate professor of cell biology Meng Chen and his colleagues have been studying a group of photoreceptors called phytochromes that are sensitive to red and far-red light, and are conserved in plants, fungi and bacteria. The research was done in Arabidopsis thaliana, a small flowering plant that is widely used by biologists as a model species because it is easy to grow and study.

Phytochromes control plant growth and development by changing the amount or stability of another group of proteins

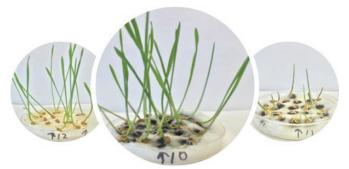
called transcription factors whose job is to turn genes on and off. To find out how the photoreceptor regulates the amount of transcription factors, Chen's team turned their attention to the structure of the phytochrome, which has two functional areas called domains.

While it is known that one domain (called the N-terminal module) senses light, the function of the other domain (called the C-terminal module) had remained unknown. Chen's group showed that the C-terminal module does in fact regulate gene expression, though it uses a very different method to bacteria.

Chen said the findings have implications in agriculture, where farmers are increasingly looking to grow more food on less land. For example, when crops are planted at high density, they compete for light, often growing taller at the expense of yield.

"Now that we understand how light is causing changes in growth and development, we can engineer plants to be blind to their neighbours, so we can plant them more densely without seeing a decrease in yield," Chen said. "We can take crops that grow well in one part of the world and engineer them to grow in other latitudes and climates."

#### Wheat Gets Boost From Purified Nanotubes



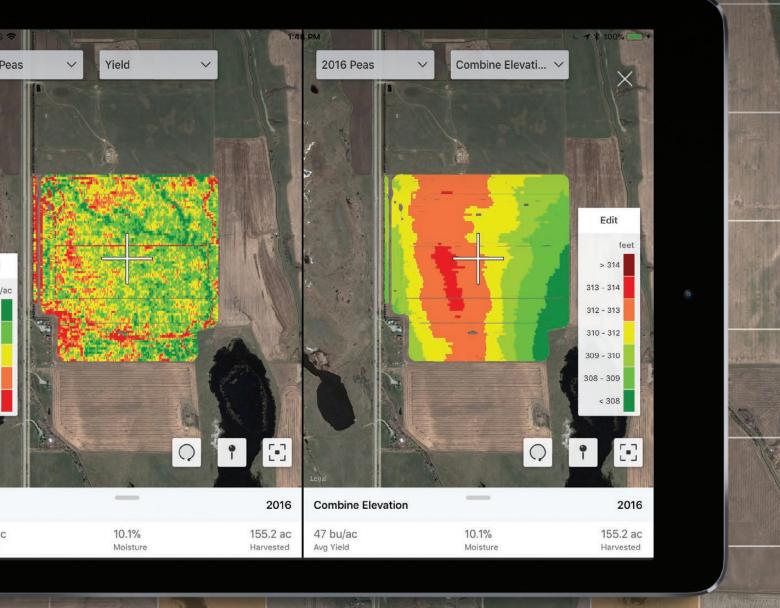
The introduction of purified carbon nanotubes appears to have a beneficial effect on the early growth of wheatgrass, according to Rice University scientists. But in the presence of contaminants, those same nanotubes could do great harm.

The Rice lab of chemist Andrew Barron grew wheatgrass in a hydroponic garden to test the potential toxicity of nanoparticles on the plant. To their surprise, they found one type of particle dispersed in water helped the plant grow bigger and faster.

They suspect the results spring from nanotubes' natural hydrophobic (water-avoiding) nature that in one experiment apparently facilitated the plants' enhanced uptake of water.

The lab mounted the small-scale study with the knowledge that the industrial production of nanotubes will inevitably lead to their wider dispersal in the environment. The study cited rapid growth in the market for nanoparticles in drugs, cosmetic, fabrics, water filters and military weapons, with thousands of tons produced annually.

## Bigger Picture





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