

# Varieties of Grain Crops 2016

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## Symbols and Abbreviations Used:

- § Variety may not be described in 2017
- Insufficient test data to describe
- ☉ Plant Breeders' Rights (UPOV'78) at time of printing
- ✳ Applied for PBR protection at time of printing (UPOV'91)
- ☪ Plant Breeders' Rights (UPOV'91) at time of printing

**Relative maturity:** VE = Very Early, E = Early, M = Medium, L = Late, VL = Very Late

**Agronomic Rating:** VG = Very Good, G = Good, F = Fair, P = Poor, VP = Very Poor, n/a = not applicable

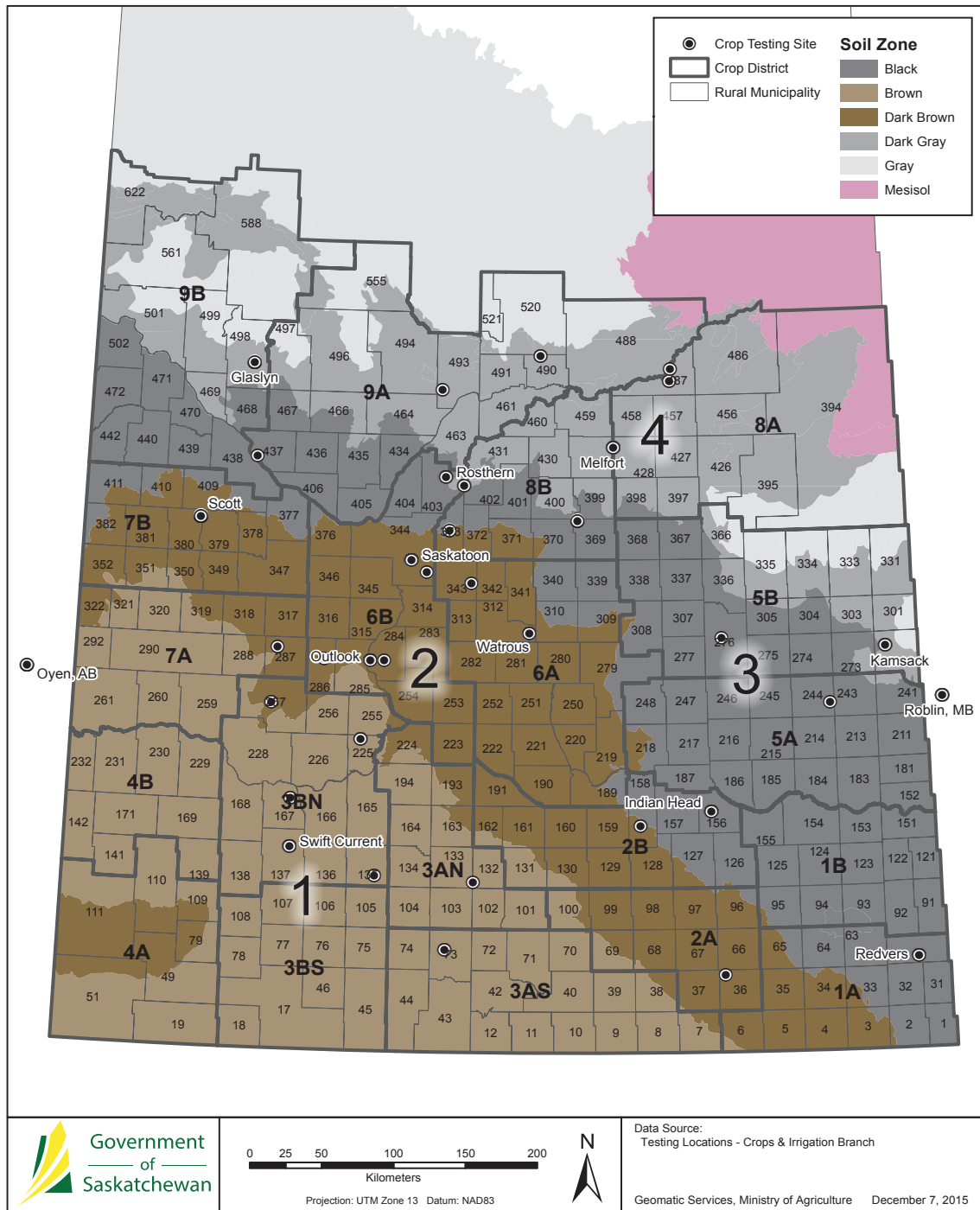
**Disease Resistance:** R = Resistant, MR = Moderately Resistant, I = Intermediate Resistance, MS = Moderately Susceptible, S = Susceptible

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## Legal Disclaimer

This guide is for informational purposes only. The information presented is based on aggregated data and observations, but significant individual variations may occur due to conditions such as farm management practices, climate, soil type and geographical location. While reasonable care was exercised in the preparation of the guide, no guarantees or warranties regarding the accuracy, reliability or completeness of the information are given. This guide may not reflect the newest information available and may not be regularly updated. It is the sole responsibility of the user to evaluate the accuracy and appropriateness of the information.

# Regional Variety Testing Locations



The cropland of Saskatchewan has been divided into four areas based roughly on agro-climatic conditions. Crop yields can vary from area to area. In choosing a variety, producers will want to consider the yield data in combination with marketing and agronomic factors.

**Area 1:** Drought is a definite hazard and high winds are common. Sawfly outbreaks often occur in this area. Cereal rust may be a problem in the southeastern section.

**Area 2:** Drought and sawfly may be problems in the western and central sections of the area. Cereal rust may be a problem in the southern section.

**Area 3:** Sawfly can also be a problem. Drought is not as likely to be a problem in this area, particularly in the east. Cereal rust may occur in the eastern portion. The frost-free period can be fairly short in the northern section.

**Area 4:** Rainfall is usually adequate for crop production. However, early fall frosts and wet harvest conditions are frequent problems.

**Note About Dividing Lines:**

The dividing lines do not represent distinct changes over a short distance. The change from one area to another is gradual.

# Regional Variety Testing in Saskatchewan relies on support from many organizations including:



**SaskFlax**



The Saskatchewan Advisory Council on Grain Crops (SACGC) and the Saskatchewan Variety Performance Group (SVPG) coordinate, supervise and review the collection, analysis and reporting of information in this booklet. Membership consists of representatives from:

- Saskatchewan Ministry of Agriculture
- Seed Companies
- Saskatchewan Seed Growers Association
- Producer Associations
- Agriculture and Agri-Food Canada
- Crop Development Centre
- University of Saskatchewan
- Saskatchewan Crop Insurance Corporation

SACGC and SVPG gratefully acknowledge the contributions of all individuals and organizations involved in the generation and publication of this information.

# Testing Varieties in Saskatchewan

By Saskatchewan Ministry of Agriculture

Regional testing of crop varieties is conducted to provide producers with information on the agronomic performance of varieties under different agro-climatic conditions. Saskatchewan producers will continue to have the opportunity to evaluate the newest grain crop varieties and their suitability for production in different regions of the province.

The Saskatchewan Ministry of Agriculture provides \$100,000 toward a testing program that is based on industry-government partnership. An entry fee system is used, in which variety owners or companies with the distribution rights to a particular variety pay a portion of the cost of having the variety tested. The Saskatchewan Seed Growers' Association, Saskatchewan Wheat Development Commission, Saskatchewan Barley Development Commission, Saskatchewan Oat Development Commission and SaskFlax collectively provide \$75,000 to the program.

Technical and in-kind support is also provided by Agriculture and Agri-Food Canada, Saskatchewan Crop Insurance Corporation and The Western Producer, publisher of the *2016 SaskSeed Guide*.

A long-term database is maintained to provide comparisons to a commonly grown check variety. The data include information on yield, various agronomic factors and certain market-related traits.

The Saskatchewan Variety Performance Group (SVPG) administers the program for spring cereals and flax. SVPG is composed of representatives from seed industry, producers, breeders and government.

SeCan Association administers the funds for SVPG. Crop coordinators manage the data and provide expertise for their respective crops.

The results of the testing are reviewed by the Saskatchewan Advisory Council on Grain Crops (SACGC), which also updates disease and other agronomic information, and approves the data prior to inclusion in this publication.

The Saskatchewan Ministry of Agriculture grant also provides some support to programs that test pulses, sunflower and canaryseed. The testing information from these crops is included in this publication.

## Relative yield of varieties

Trials are conducted using uniform protocols and standard check varieties. Data are col-

lected from as many sites as are available and statistically analyzed. Results in this publication are aggregated over a number of years and on an area basis for most crops.

Grain yield is a function of genetic and non-genetic factors. Variety trials are designed to measure the yield differences that are due to genetic causes. It is important to minimize variability due to non-genetic factors such as moisture, temperature, transpiration, weeds, diseases and other pests. Experimental design uses replication (repeated plantings of the varieties) and randomization (the position of the varieties within the test is assigned by chance) to estimate the precision with which the genetic factors can be measured.

Relative yield is the yield of one variety expressed as a percentage of the check variety. Yields obtained in these trials are not identical to those obtained in commercial production. However, the relative ranking of these varieties compared to the check variety, obtained over a number of years at several locations, would remain the same regardless of whether the grain yield was measured in

small plots or large-scale fields. Relative yield is the best estimate of expected yield advantage in the areas indicated.

## Testing Pulse Crops

In 2015, the Saskatchewan Pulse Growers and the pulse breeding program at the Crop Development Centre (CDC), University of Saskatchewan, continued a 5-year agreement, with a budget of \$160,000 per year, to conduct the pulse crop regional variety trials in Saskatchewan. The CDC collaborates with researchers at several locations, including Agriculture and Agri-Food Canada research stations, provincial Agri-ARM sites, and the Canada-Saskatchewan Irrigation Diversification Centre, in order to conduct the trials. The project collects data on varieties from the CDC program, as well as those arising from other public or private pulse breeding programs. Since 2006, field pea, lentil, chickpea, dry bean and faba bean variety trials were conducted at 3-15 locations per crop in their target areas of adaptation in Saskatchewan. (Source: CDC)

## Relative Maturity

### Ratings

Maturity is measured from seeding to swathing ripeness. The actual number of days to reach maturity depends on local climatic conditions and to some extent on management practices.

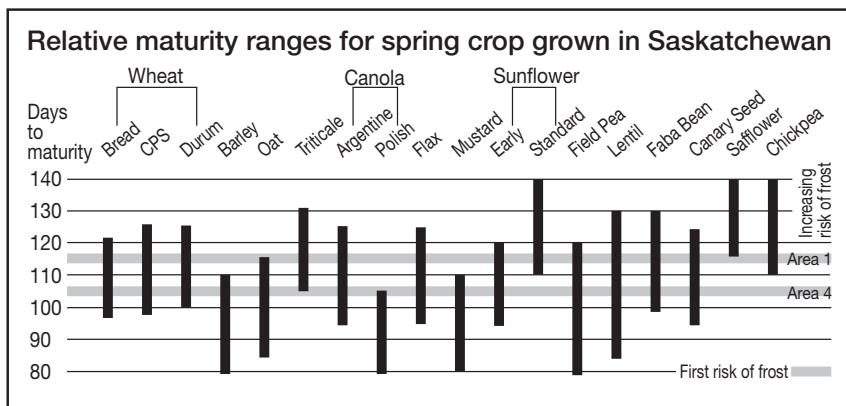
Some of the tables in this booklet express the relative maturity in days while others use a five-category scale: VE, E, M, L and VL (very early, early, medium, late, very late). The limits for each category can vary from crop to crop. In barley, for example, AC Metcalfe would be M, with L and E varieties plus or minus 1-2 days, and VL and VE varieties beyond this range.

### Comparisons

The relative maturity of varieties of different crops is important when making plans for seeding.

The table below compares the relative maturity ranges for crops grown in Saskatchewan. Within each crop there are early and late maturing varieties. Whether a crop matures before the first killing frost depends on seeding date, management practices and environmental factors. Not all crops have a wide area of adaptation.

It is noted that climatic conditions can cause a wide variability in crop maturity.



# Plant Disease Resistance

By Saskatchewan Ministry of Agriculture

Resistance to the most important diseases in Western Canada is assessed in most crops before the variety is registered. The methods used to assess resistance in each crop are different. In some cases, spores of the pathogen are applied to plants in the greenhouse or in the field. In other cases, assessment is based on naturally occurring infection in the field. Each variety is rated on a five-point scale of Resistant (R), Moderately Resistant (MR), Intermediate Resistance (I), Moderately Susceptible (MS) and Susceptible (S). New varieties are not tested side-by-side with all existing varieties.

Because of variation in disease levels from year to year, each new variety is assigned a rating relative to a few existing varieties that serve as disease level standards or checks. Varieties differ in resistance because of differences in their genetic make-up and/or differences in the genetic make-up of the pathogen that causes the disease. However, the genetic make-up of a pathogen can change over time and overcome the resistance in a variety. In such cases, a variety with good resistance can quickly display poor resistance to a particular disease. Unfortunately, be-

cause not all varieties are tested side-by-side every year, the ratings of older varieties may be less reliable.

Preserving the efficacy of disease resistance genes in current crop varieties is the most economical method of plant disease control. Disease resistance can be prolonged with good agronomic and integrated pest management practices. Crop type, variety and fungicide rotation is an important method of preserving the effectiveness of disease resistance genes and fungicides. Disease resistance genes usually become ineffective due to short rotations and the prolonged use of one crop variety on a large acreage.

A number of factors can affect the level of disease symptoms observed at a given location in a given year. Environmental conditions such as moisture and temperature, the genetic make-up of both the variety and the pathogen, and the amount of the pathogen present can all affect the level of disease. Although a variety with fair resistance can show disease symptoms under favourable conditions, a susceptible variety would have much more disease under the same conditions.

For example, ascochyta blight of chickpea is a very aggressive fungal disease. It can completely kill susceptible varieties within two weeks of symptoms first appearing. Chickpea varieties currently grown commercially in Saskatchewan have fair ascochyta blight ratings. This resistance weakens as plant development nears the flowering stage. Cool, moist environmental conditions favour the disease, and if these conditions persist early in the growing season, the disease symptoms can occur much earlier than the flowering stage. This is especially true on chickpea grown outside the Brown Soil Zone (the area of best adaptation) or on heavy textured soils such as clays and clay loams.

In the past, infected chickpea varieties lacking resistance to ascochyta blight could become defoliated, with girdled branches and dead plants. If conditions turn warm and dry, the diseased plants can re-grow from auxiliary nodes, often producing flowers and pods. However, these late pods and seeds will most likely be frozen in the first fall frost and have no commercial value.

## Fusarium Damaged Kernels

By Mitchell Japp, Saskatchewan Agriculture

Fusarium has recently become more common in Saskatchewan. Producers will get the level of fusarium damaged kernels and perhaps also DON (deoxynivalenol) on their grain from the elevator. However, fusarium infection levels are needed to determine seed quality.

Fusarium Damaged Kernels (FDK) does not provide the whole story regarding fusarium infection on the seed. FDK is a measure of grain quality, not seed quality. Seed can be infected by fusarium even when FDK are not present.

Fusarium can infect the plant at different stages of the kernel development. Early in-

fection may lead to an aborted floret, while later infection may leave spores on the kernel without showing visual symptoms. Tombstone kernels (FDK) are infected in between those extremes.

Because there is no correlation between FDK and fusarium infection of the seed, FDK cannot be used to predict fusarium infection on the seed. A disease test is needed to determine if seed has fusarium spores on it that could cause seedling blight or root rot.

Fusarium infection on the seed can sometimes be managed with a seed treatment. *Fusarium graminearum* is particularly aggressive, so seed with more than 5% *F. gra-*

*minearum* is not recommended for planting. Seed with 2-3% *F. graminearum* should be treated with an appropriate seed treatment. For total *Fusarium* species greater than 5%, a seed treatment should also be used.

If seed is tested early in winter, it should be retested again in the spring, especially if disease is present. Germination can decrease during storage.

Refer to the Saskatchewan Agriculture publication *Guideline for Seed-Borne Diseases of Cereal Crops*.

# Maximum Residue Limits: understanding what they mean and how they affect you as a producer

By Kaeley Kindrachuk and Clark Brenzil, Saskatchewan Agriculture

Maximum Residue Limits (MRLs) ensure that the food produced in Canada does not contain harmful levels of agricultural pesticides. MRLs for Canadian consumers are set by the Pest Management Regulatory Agency (PMRA) of Health Canada.

MRLs are set by determining the relative toxicity of a pesticide, not just acute toxicity but also chronic and sub-chronic toxicity from long-term exposure, which can include things like cancers, growth defects, skin sensitivities or any other abnormal response of the test organism (enlarged organs, general weight loss or gain, etc.) relative to test organisms not exposed to the compound. The level where there is no effect on the test animal, or the animals exposed to the compound are no different than those not exposed, is called the “No Observable Effect Level” or NOEL. Once the NOEL is established, the regulatory body (PMRA, United States Environmental Protection Agency or others) will establish a safety factor, which is usually one tenth or one one-hundredth of the NOEL, to base the MRL for a particular pesticide on. These safety factors are used to take into account the potential difference in the metabolic activity of the test animal versus humans, as well as members of the human population that may be more sensitive to the effects of the compound (i.e. children and the chronically ill).

In order to sell a pesticide in Canada, the manufacturer must first submit detailed information about the product to the PMRA. The PMRA regulates all pesticides imported, sold or used in Canada through the *Pest Control Products Act and Regulations* and evaluates any potential health risk of pesticide residues that may appear in food as a result of proper use of the pesticide. It also re-evaluates registered products on a regular basis and establishes updated MRLs based on new information provided by the registrant or from third-party research conducted on the pesticide. MRLs are also established for

Maximum Residue Limits (MRLs) are set for each pesticide registered in Canada to determine the allowable amount of a pesticide residue remaining in the harvested crop, including food imported into Canada. Exported agricultural (grain, fruit, meat) shipments may be tested by the buyer for excess of residues of registered products or unregistered uses. Each country establishes their own MRLs for pesticides used in that country, as well as food being imported from other countries such as Canada. Sometimes Canadian and foreign MRLs can be out of sync if the pesticide manufacturer has not sought registration in other countries.

pesticides not used in Canada, but used on crops not grown in Canada (eg. citrus fruits). If an MRL is not established for a pesticide, a very low default level is established.

If a commodity is tested and exceeds the MRL established for a particular pesticide, that commodity is deemed “adulterated” and may be rejected by the buyer. If the commodity is being shipped internationally, the seller must bear the cost of disposal of the “adulterated” commodity. With high volume commodities such as cereal grains, the entire shipment may be deemed adulterated by contamination from a single point source or one of the farm deliveries that made up that load. In some cases the entire load may be shipped back or accepted at a substantial price discount. Grain handlers do not want to have this happen and many have refused to accept crops treated with pesticides that do not have registrations in countries buying Canadian grain. This is why **it is important that producers check with their grain buyers before applying a newly registered product onto a crop that may be exported.**

Other countries also have their own regulatory systems that conduct similar reviews. In most cases, the MRL values align with Canadian MRLs, but sometimes they do not, creating barriers to exports. In some cases, other countries do not use default MRLs for unregistered pesticides and the detection of any amount of a pesticide without an established MRL in that country in a grain shipment will trigger a flag on the shipment.

Two recent pesticides that have resulted in grain buyers rejecting or flagging treated crops is the use of *Manipulator* (growth regulator containing chlormequat chloride) on spring wheat for lodging control and the use of *Clever* (herbicide containing quinclorac) in canola to control cleavers.

*Manipulator* is a generic version of *Cycoceel*, developed originally by BASF. *Manipulator* is manufactured by Taminco USA Inc. and sold in Canada by Engage Agro. The only registered use of chlormequat chloride in the United States is on ornamental crops. As a result, the United States does not have an MRL established on cereals. BASF still sells *Cycoceel* in Europe, where it is used for lodging control in cereals, like *Manipulator* is in Canada.

*Clever* is a generic version of *Accord*, also developed originally by BASF. *Clever* is manufactured by a Panamanian company called Productierra and sold in Canada by Great Northern Growers. Japan has not yet approved the use of this product on canola and, as a result, no MRL has been established there. BASF is actively pursuing this approval in Japan for *Accord* or a new liquid formulation called *Facet*. In addition to *Clever*, a new generic product from Univar called *Masterline Quinclorac* is also registered; the same cautions apply to it that apply to *Clever* when used in canola.

For more information:  
[www.keepingitclean.ca](http://www.keepingitclean.ca)

# What Is Plant Breeders' Rights

By Mitchell Japp, Saskatchewan Agriculture

The goal of Plant Breeders' Rights (PBR) legislation is to encourage investment and development in the crops sector. There are many ways to accomplish this, but UPOV-based PBR balances the interests of the farmer and the breeder so that the farmer has fair access to the use of purchased seed and the breeder can expect a royalty from every new farmer buying seed of the breeder's variety.

The royalty and protections under PBR assures that companies and institutions that invest in plant breeding are able to keep reasonable control of their varieties and secure fair compensation for their efforts. Some of the benefits of PBR include:

- Access to new and improved plant varieties, improving the bottom line for producers. Enhanced protection under the revised PBR will encourage the release of new varieties from other countries (once registered in Canada), as well as stimulate increased investments in variety development here in Canada.
- Farmers are allowed to save seed for their own use, on their own farms, if the original seed was obtained legitimately.
- No negative impacts for those who legitimately purchase seed.

When a plant breeder develops a new variety for use in Canada they may apply under the Plant Breeders' Rights Act to obtain certain controls over the multiplication and sale of the seed of that variety. Sale, trade or any other transfer of the seed for propa-

UPOV is the International Union for the Protection of New Varieties of Plants. In order to be a member, a country must have legislation that aligns with a UPOV convention that has been ratified by UPOV. There are 74 member countries to UPOV, 55 of which have ratified UPOV'91 compliant legislation.

gation purposes is prohibited by law without the written permission of the breeder or their agent.

Varieties protected by PBR are identified with one of two logos. Varieties protected prior to February 27, 2015 are identified by:



and those protected after February 27, 2015 are identified by:



Progress Through Research  
Le progrès grâce à la recherche

Varieties previously protected by PBR remain under the same rules as before. Varieties protected since February 27, 2015 are protected under the new PBR Act.

The new PBR Act extends the right of the breeder to give them further opportunity to protect their variety and be sure that those who are benefitting from the technology are paying for it.

It has always been illegal to sell seed without consent of the breeder. Now, it will also be illegal to purchase seed, meaning both the seller and purchaser can be liable if the seed sale is not approved. To be sure, the best way to know if the seed being purchased is an approved sale is to purchase certified seed. Producers should look for the blue certified seed tag and keep it in their records as long as they grow grain derived from that original seed purchase.

The first 10 years of Canada's PBR Act brought improved access to varieties, new investment in varieties and new and improved genetics for farmers. With the new PBR, producers will benefit from greater access to new varieties for the crops they grow, and breeders will be able to better protect the investment made in the development of new varieties so they can continue to develop new varieties.

For more information visit [www.pbrfacts.ca](http://www.pbrfacts.ca) or contact the PBR Office at 613-773-7188.

# CEREAL CROPS

## Wheat

### Main Characteristics of Varieties

Category and Variety	Years Tested	Yield (%)			Protein	Resistance To <sup>2</sup>										Rel. Maturity (days)	Head Awedness	Seed Weight (mg)	Volume Wt. <sup>3</sup> (kg/hL)	Ht. (cm)
		Area 1 & 2	Area 3 & 4	Irrigation		Lodging	Sprouting	Stem Rust	Leaf Rust	Stripe Rust	Loose Smut	Bunt	Leaf Spot	FHB						
<b>CWRS<sup>1</sup></b>	--- Relative to Carberry ---																			
Carberry 🌾	6	100	100	100	14.7	VG	F	MR	R	MR	MR	R	MS	MR	105	Y	36.0	80.3	84	
AAC Bailey 🌾	5	98	100	---	+0.1	G	G	R	R	---	MS	MR	I	I	-3	N	+0.1	-1.7	+11	
AC Barrie §	6	94	99	98	+0.1	G	G	MR	MS	S	MR	I	MS	I	-2	N	-1.3	-1.1	+12	
CDC Bradwell 🌾	2	99	103	---	-0.1	G	F	MR	R	MS	MR	R	MS	I	-2	Y	-0.6	-1.7	+7	
AAC Brandon 🌾	4	107	105	---	-0.5	G	P	R	R	MR	MR	S	I	MR	0	Y	-0.1	-0.2	-1	
AAC Cameron VB 🌾	2	108	117	---	-0.6	G	F	MR	MR	S	S	R	I	I	-3	Y	+1.0	-1.2	+17	
Cardale 🌾	5	99	101	---	-0.2	G	G	R	R	S	I	MR	MS	MR	-1	Y	-2.8	-1.2	+3	
Coleman	3	96	96	---	-0.1	P	P	MR	R	MR	S	S	MS	MR	-3	Y	-1.1	-0.5	+15	
AAC Connery 🌾	2	93	101	---	+0.5	VG	G	R	MR	R	MR	I	I	MR	-4	N	-0.7	-1.5	+2	
AAC Elie 🌾	4	106	104	---	-0.3	G	F	R	R	MR	I	I	I	I	0	Y	+0.1	0	-2	
Glenn 🌾	6	101	102	102	-0.4	VG	F	R	R	MR	I	I	I	I	-1	Y	-1.2	+3.3	+8	
CDC Go	5	95	102	---	0.0	G	P	R	I	MR	MS	I	S	MS	-3	Y	+2.3	-1.4	+7	
Go Early	2	94	100	---	+0.4	F	---	MR	MR	I	MS	MR	S	I	-4	Y	+3.3	-1.8	+15	
Goodeve VB 🌾	6	101	107	---	0.0	VG	G	MR	MR	I	MR	S	MS	S	-4	N	-0.6	-2.0	+9	
Harvest <sup>4</sup> 🌾	6	94	103	---	-0.3	VG	VG	R	MR	MR	MR	S	MS	S	-3	N	-2.8	-1.6	+10	
Infinity 🌾	6	100	106	---	-0.1	G	G	MR	MR	MS	MR	MR	MS	S	-3	N	-4.0	-1.7	+12	
AC Intrepid 🌾 §	6	96	105	---	-0.2	G	P	MR	MR	MR	I	MR	MS	MS	-5	N	+3.2	-1.8	+11	
AAC Jatharia VB 🌾	2	110	115	---	0.0	G	G	I	R	I	S	MS	I	I	-2	Y	+0.5	+0.3	+16	
CDC Kernen 🌾	6	101	106	101	0.0	G	P	MR	MR	I	R	I	MS	I	-1	Y	+0.1	-1.3	+15	
Lillian <sup>4</sup> 🌾	6	94	97	---	+1.1	F	G	MR	R	R	I	MR	MR	S	-2	N	0.0	-2.7	+12	
CDC VR Morris 🌾	5	108	106	---	-0.2	G	P	MR	R	---	I	I	I	MR	-3	N	-2.8	-0.5	+10	
Muchmore 🌾	6	102	98	102	-0.4	VG	G	R	R	MR	MR	R	MS	MS	0	Y	+0.1	-1.1	-3	
CDC Plentiful 🌾	5	105	104	---	-0.2	VG	P	R	R	MR	R	I	I	MR	-3	N	-2.4	-1.5	+8	
AAC Prevail VB 🌾	3	112	108	---	-0.6	G	VG	MR	R	R	S	S	MS	I	-1	N	-1.9	-0.9	+20	
AAC Redwater 🌾	4	102	101	---	+0.1	F	VG	R	R	MR	MS	I	MS	I	-5	Y	-2.8	-1.7	+7	
Shaw VB 🌾	6	112	114	103	-0.7	G	G	R	MR	I	S	MR	MS	MS	-3	N	+0.1	-0.2	+17	
CDC Stanley 🌾	6	103	107	100	-0.1	G	G	R	MR	I	MR	S	I	MS	-2	N	-3.4	-2.3	+10	
Stettler 🌾	6	105	107	100	+0.2	G	G	MR	MS	MR	R	MR	MS	MS	-1	Y	-1.4	-1.1	+7	
SY433	5	96	101	---	-0.3	G	VG	R	R	---	I	S	I	MR	-2	Y	+0.6	-0.3	+14	
Thorsby 🌾	2	102	101	---	+0.2	G	F	MR	R	R	I	S	MS	I	-4	N	+1.0	-0.3	+10	
CDC Thrive 🌾	6	102	102	103	-0.1	G	F	MR	I	I	MR	I	I	MS	-3	N	-1.8	-1.1	+13	
CDC Titanium VB 🌾	3	106	111	---	+0.7	F	F	I	R	R	MS	I	MS	MR	-3	Y	+1.0	-1.1	+11	
Unity VB <sup>4</sup> 🌾	6	111	115	---	-0.6	F	VG	MR	R	MS	MS	R	I	I	-2	Y	-1.7	+0.4	+14	
CDC Utmost VB 🌾	6	108	112	107	-0.4	G	G	MR	R	I	MS	S	I	MS	-3	N	-1.7	-1.3	+10	
Vesper VB 🌾	6	108	113	---	-0.7	F	F	MR	R	S	I	S	I	I	-3	Y	+1.5	0.0	+11	
AAC W1876 🌾	2	96	98	---	+0.1	G	F	MR	R	I	I	I	MS	I	-1	Y	0.0	-0.3	+1	
Waskada 🌾	6	108	107	108	-0.2	F	VG	R	I	MS	MR	R	MS	MR	-1	Y	-1.0	+0.3	+16	
WR859CL 🌾	6	101	101	102	-0.1	G	G	MR	R	I	R	R	MS	MR	-2	Y	-2.6	-1.1	+7	
5604HR CL 🌾	6	95	99	107	-0.4	G	G	R	R	---	MS	I	MS	I	-4	Y	-3.7	-1.5	+10	
5605HR CL 🌾	3	103	105	---	+0.2	G	---	MS	R	MR	R	MR	MS	MR	-1	Y	-1.6	+0.5	+11	
<b>CWHWS<sup>1</sup></b>																				
AAC Iceberg 🌾	4	99	97	---	-0.5	G	P	R	R	I	MS	MR	MS	I	-2	Y	+1.2	-0.4	+4	
AAC Whitefox 🌾	3	103	105	---	-0.9	VG	F	MR	MR	MS	MS	MS	MS	I	-3	N	-2.5	-0.7	+19	
Whitehawk 🌾	5	99	95	---	-0.9	G	G	I	R	MS	I	MS	MS	MS	-4	N	-5.4	-0.8	+12	
CDC Whitewood 🌾	4	95	94	---	-0.4	G	G	MR	MR	I	S	S	MS	I	-2	Y	-2.1	-1.2	+6	
<b>CWIW<sup>1</sup></b>																				
Elgin ND 🌾	1	115	128	---	-0.9	G	---	I	---	---	---	---	---	---	-2	Y	-1.3	-0.2	+6	



# Wheat (cont'd)

Category and Variety	Years Tested	Yield (%)			Protein	Resistance To <sup>2</sup>										Rel. Maturity (days)	Head Awkwardness	Seed Weight (mg)	Volume Wt. <sup>3</sup> (kg/hL)	Ht. (cm)
		Area 1 & 2	Area 3 & 4	Irrigation		Lodging	Sprouting	Stem Rust	Leaf Rust	Stripe Rust	Loose Smut	Bunt	Leaf Spot	FHB						
<b>CWSWS<sup>1</sup></b>		--- Relative to Carberry ---													----- Relative to Carberry -----					
AC Andrew	5	129	134	---	---	VG	P	MR	MS	I	S	S	I	I	+2	Y	-1.4	-5.0	+3	
AAC Chiffon ☺	4	136	141	---	-3.7	F	VP	S	I	MR	S	S	---	S	+2	Y	+4.3	-4.0	+13	
AAC Indus ☼	1	118	130	---	-3.9	VG	P	S	I	R	S	MS	MS	MS	+5	Y	+3.9	-2.1	+9	
Sadash ☺	5	136	136	---	---	VG	P	MR	I	R	I	S	I	S	+3	Y	0.0	-3.0	+6	
<b>CPSR<sup>1</sup></b>		--- Relative to Carberry ---													----- Relative to Carberry -----					
Conquer VB <sup>4</sup> ☺	5	116	124	---	---	F	P	R	MR	MR	MS	R	I	MS	-1	Y	+8.3	+1.9	+8	
AAC Crusader ☺	4	106	117	---	-1.3	G	VP	R	R	MR	MR	I	MS	I	-3	Y	+8.6	-2.9	+2	
AC Crystal ☺	6	111	119	100	---	VG	P	R	MS	S	MS	R	I	S	+1	Y	+5.6	-1.3	+1	
Enchant VB ☺	5	109	117	---	-1.5	F	VG	MR	R	S	MR	R	MS	S	-2	Y	+15.5	+0.4	+11	
AAC Foray VB ☼	3	117	123	---	-1.7	G	P	MR	R	I	MS	I	MS	I	-1	Y	+13.3	-1.2	+8	
AAC Penhold ☺	3	108	114	---	-0.9	VG	VG	MR	R	MR	I	R	I	MR	-2	Y	+13.3	+1.7	-9	
AAC Ryley ☺	4	104	114	---	-1.1	G	G	R	R	S	I	R	MS	MS	-2	Y	+11.0	-2.3	+5	
SY985 ☺	5	107	111	---	-1.4	G	P	R	R	---	R	MR	I	I	-3	Y	+8.8	-0.7	+3	
SY995 ☺	3	112	119	---	-1.9	G	P	MR	R	MR	S	MR	MS	MS	-2	Y	+7.0	-2.9	+2	
AAC Tenacious VB ☼	3	99	109	---	-1.7	F	VG	MR	R	R	R	MR	MS	R	-2	Y	+5.7	-1.9	+25	
5700PR ☺	5	107	118	106	---	VG	F	R	I	MS	MS	R	MS	MS	-1	Y	+5.5	0.0	-4	
5702PR ☺ §	6	117	122	---	---	G	P	I	MR	MS	MS	I	MR	MS	-2	Y	+7.2	-1.1	+2	
<b>CWGP<sup>1</sup></b>		--- Relative to Carberry ---													----- Relative to Carberry -----					
AAC Innova ☼	5	128	132	---	-3.3	G	VP	MR	R	R	S	S	I	S	+3	Y	-0.6	-4.1	+5	
CDC NRG003 ☺	5	119	123	---	---	G	G	R	MS	---	MS	R	S	MS	-1	Y	+3.4	-4.1	+2	
NRG010 ☺	5	120	127	---	---	G	F	R	R	R	MS	R	MS	I	+2	Y	+0.3	-4.3	+5	
AAC NRG097 ☺	3	114	124	---	-2.7	G	F	MR	R	S	I	R	I	I	+3	Y	+3.4	-1.8	+2	
Pasteur	5	126	132	---	-2.2	VG	G	MR	R	MR	MS	S	I	I	+6	N	-0.1	-1.4	+5	
AAC Proclaim ☺	4	116	127	---	-2.6	F	G	MR	R	MS	MR	S	I	MR	+2	Y	-2.2	-2.0	+22	
SY087 ☺	3	111	126	---	-1.2	G	F	MR	MR	MR	MS	MR	I	MR	+1	Y	-3.4	-1.0	+6	
WFT603	2	104	116	---	-2.1	G	F	I	I	MR	I	R	I	MR	+4	Y	+5.1	-3.4	+8	
Varieties that have been registered with class to be determined by the Canadian Grain Commission <sup>1</sup>																				
AAC Tradition	1	108	110	---	-0.5	G	VG	R	MR	S	MS	MR	I	I	0	Y	+2.8	+1.0	+5	
<b>CWAD</b>		--- Relative to Strongfield ---													----- Relative to Strongfield -----					
Strongfield ☺	6	100	100	100	14.4	F	F	R	R	MR	S	MR	I	S	105	Y	42.1	79.2	89	
CDC Alloy ☼	1	111	113	---	-0.6	G	---	MR	R	R	I	R	MS	MS	+1	Y	-0.5	+1.2	+4	
Brigade ☺	5	107	114	110	-1.2	G	F	R	R	MR	S	R	I	MS	+2	Y	+1.1	+0.3	+6	
AAC Cabri ☼	2	107	103	---	-0.4	G	P	MR	R	R	MR	R	I	MS	+1	Y	-0.1	+0.8	+3	
CDC Carbide VB ☼	2	108	110	---	-0.3	F	P	R	R	R	MS	R	MS	MS	0	Y	-1.2	+0.2	+1	
AAC Congress ☼	1	109	105	---	-0.5	G	---	MR	R	R	MR	R	MS	MS	+1	Y	-1.1	+0.4	+3	
AAC Current ☺	4	102	96	93	0.0	F	P	R	R	MR	MS	MR	I	MS	0	Y	-0.8	+1.0	+4	
CDC Desire ☺	4	101	103	105	-0.2	F	G	R	R	MR	MS	R	I	S	-2	Y	-3.0	-0.1	0	
AAC Durafield ☼	3	102	104	---	-0.1	F	F	R	R	---	S	R	I	S	0	Y	-0.5	+0.2	0	
CDC Dynamic ☼	1	111	107	---	+0.1	G	---	MR	R	MR	I	R	I	MS	0	Y	-0.2	+1.0	+2	
Enterprise ☺	5	102	103	106	-0.2	F	G	R	R	R	MS	MR	I	MS	0	Y	-3.2	+0.6	+2	
Eurostar ☺	5	99	104	102	-0.5	F	F	R	R	R	S	R	I	MS	+2	Y	+0.6	+0.8	+4	
CDC Fortitude ☼	3	104	105	---	-0.3	G	F	MR	R	R	MS	R	MS	MS	+1	Y	-2.0	+0.1	-1	
AAC Marchwell VB ☺	3	99	103	---	-0.1	F	P	R	R	R	MR	R	MS	MS	0	Y	-2.7	-0.6	0	
AC Navigator ☺	6	98	90	---	-0.7	G	G	R	R	R	MS	R	S	S	+2	Y	+1.2	-0.1	-8	
CDC Precision ☼	1	113	118	---	-0.6	G	---	MR	R	R	MS	R	MS	MS	0	Y	-0.2	+1.2	+4	
AAC Raymore ☺	4	96	100	94	+0.2	F	F	R	R	MR	MS	MR	I	S	-1	Y	+1.8	-0.1	0	
AAC Spitfire ☼	2	110	114	---	-0.6	G	P	R	R	R	MS	R	MS	S	0	Y	+0.8	-0.4	-2	
Transcend ☺	5	102	105	93	-0.3	F	G	R	R	R	S	R	I	MS	+2	Y	-1.4	0.0	+5	
CDC Verona ☺	5	101	106	103	-0.3	G	F	R	R	R	MS	R	MS	MS	+2	Y	+0.1	-0.2	+1	
CDC Vivid ☺	4	104	102	108	-0.3	G	F	R	R	MR	I	R	I	S	0	Y	-0.6	-0.2	0	

<sup>1</sup> Includes direct and indirect comparisons with **Carberry**.

<sup>2</sup> Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate Resistance; MS = Moderately Susceptible; S = Susceptible.

<sup>3</sup> multiply by 0.8 = lbs per bushel.

<sup>4</sup> Effective August 1, 2018, the Canadian Grain Commission will move these varieties to another class.

VB = varietal blend.

## **WHEAT ADDITIONAL INFORMATION**

Producers are strongly encouraged to use a combination of the Canadian Food Inspection Agency's List of Registered Varieties ([www.inspection.gc.ca](http://www.inspection.gc.ca)) and the Canadian Grains Commission's Variety Designation Lists ([www.grainscanada.gc.ca](http://www.grainscanada.gc.ca)) to determine the registration and grade eligibility status of varieties.

Grain yield, protein content, time to maturity, seed weight, volume weight and plant height of all varieties of common wheat and durum wheat are compared to **Carberry** and **Strongfield**, respectively. In 2015, spring wheat varieties supported for registration since 2010 were grown in replicated trials at 11 locations and compared to **Carberry**. Spring wheat varieties registered prior to 2010 have been compared indirectly to **Carberry** using a long-term comparison to **AC Barrie** and **Katepwa**.

Most varieties have been rated for their relative resistance to pre-harvest sprouting. Under wet post-maturity conditions, varieties rated poor have a reduced ability to retain high Hagberg Falling Number values relative to those rated good or very good. Varieties with high test weight retain grade better under adverse harvest weather than those with low test weight. During wet harvest weather, grades drop more rapidly due to sprouting in swathed than in standing crops.

New races of leaf rust and stripe rust continue to evolve. Therefore, the rust resistance in varieties may change from year to year. The seed guide contains the most up-to-date information on rust resistance in current varieties. Early seeding may minimize risk of crop losses for varieties sown in southeastern Saskatchewan that are rated moderately susceptible (MS) or susceptible (S) to leaf rust. Field scouting throughout the growing season is encouraged so that timely corrective action can be undertaken if required.

All varieties are at least moderately resistant to shattering. All varieties have moderate resistance to common root rot.

Seed of varieties rated moderately susceptible (MS) and susceptible (S) for bunt and loose smut should be treated with a recommended fungicide. Please refer to the Seed Facts section of this booklet or *Guide to Crop Protection*.

All wheat and durum varieties exhibit similar susceptibility to ergot infestation.

**Canada Western Red Spring (CWRS)**  
**AAC Cameron VB, Goodeve VB, AAC Jath-**

**aria VB, AAC Prevail VB, Shaw VB, CDC Titanium VB, Unity VB, CDC Utmost VB, and Vesper VB** are CWRS midge tolerant varieties. They contain the same "*Sm1*" gene for tolerance. To manage against the build-up of midge resistance to the *Sm1* gene, an interspersed refuge is used commercially. These varieties are not immune to wheat midge and can suffer some midge damage when high midge infestation levels occur. More information on midge tolerant wheat cultivars and interspersed refuge can be found at [www.midgetolerantwheat.ca](http://www.midgetolerantwheat.ca).

Seed of new varieties **CDC Bradwell** and **AAC Jatharia VB** will be available in fall 2016. Limited quantities of seeds of **AAC Cameron VB, AAC Connery** and **Go Early** will be available in fall 2016.

**Lillian** has solid stem and is the only spring wheat variety listed with some resistance to the wheat stem sawfly.

**AAC W1876** may only be grown under contract in the Warburtons Identity Preserved Program managed by Paterson Grain and Richardson Pioneer.

**CDC Abound, CDC Imagine, CDC Thrive, WR859CL, 5604HR CL and 5605HR CL** are tolerant to the CLEARFIELD® herbicides Adrenalin SC and Altitude FX.

**Canada Western Hard White Spring (CWHWS)**

Varieties in the Hard White market class are intended for whole wheat bread and Yellow Alkaline Noodle markets.

**Canada Prairie Spring Red (CPSR)**

**Conquer VB, Enchant VB, AAC Tenacious VB and AAC Foray VB** are CPSR midge tolerance varieties using the same *Sm1* gene as in the CWRS varieties and will be marketed with an interspersed refuge (see above).

Seed of new varieties **AAC Crusader, AAC Foray VB** and **AAC Penhold** will be available in 2016.

**Canada Western Soft White Spring (CWSWS)**

Soft white spring wheat may be used as a feedstock in the production of ethanol. Soft white spring wheat varieties are susceptible to pre-harvest sprouting. The leaf spot pathogens that affect other wheat classes also affect soft white cultivars and therefore recommendations for leaf spot control are similar.

Seed of **AAC Indus** will be available fall 2017.

**Canada Western General Purpose Spring (CWGP)**

Varieties in the General Purpose market class are intended for ethanol and livestock feed purposes.

Effective August 1, 2016, the General Purpose market class will be eliminated.

**Canada Western Interim Wheat**

Canadian Grain Commission's Wheat Class Modernization is ongoing. Some varieties that have received interim registration have been designated to an interim class pending review.

Effective August 1, 2016, the Canada Western Interim Wheat class will be eliminated.

Seed of new variety **Elgin ND** will be available in 2016.

**Class to be Determined by the Canadian Grain Commission**

Some varieties have received registration but have not yet been placed into a wheat class by the Canadian Grain Commission.

Limited quantities of seed of **AAC Tradition** will be available in 2016.

**AAC Tradition** was developed for organic cropping systems.

**Canada Western Amber Durum (CWAD)**

**AAC Cabri, CDC Fortitude** and **AAC Raymore** have solid stem with resistance to the wheat stem sawfly.

**CDC Carbide VB** and **AAC Marchwell VB** are CWAD varieties with tolerance to orange wheat blossom midge based on the *Sm1* gene and will be marketed with an interspersed refuge (see above).

Seed of new varieties **CDC Alloy, AAC Congress, CDC Dynamic** and **CDC Precision** will not be available in 2016. Limited quantities of seeds of varieties **AAC Spitfire** and **CDC Carbide VB** will be available in fall 2016. Seed of **AAC Cabri** will be available in 2017.

Durum wheat varieties are generally more susceptible than CWRS varieties to fusarium head blight. All durum varieties are susceptible to two new races of loose smut.

# Changes to Wheat Classes are Coming

By Mitchell Japp, Saskatchewan Agriculture

The Canadian Grain Commission (CGC) has initiated a Canadian Wheat Class Modernization consultation which will use new quality standards (established in May 2015) to review the suitability of all western Canadian wheat varieties for their current market classification. The review was in part due to some concerns about declining gluten strength in Canadian wheat shipments.

The observed weaker gluten strength was due to a number of factors, including the predominance of some varieties that were on the lower end of the range of gluten strength for CWRS. Customers require higher gluten strength from CWRS for their products to perform consistently. CGC reviewed the quality standards expected for CWRS (Canada Western Red Spring) and CPSR (Canada Prairie Spring Red) wheat classes so the performance of those classes are more consistent with customer expectations.

The wheat class review was comprehensive; the CGC has proposed moving 29 varieties out of CWRS and CPSR into a more appropriate class. Remaining varieties in CWRS and CPSR where gluten strength data is limited will be further evaluated. CGC also proposes to eliminate the Canada Western General Purpose (CWGP) class, the Canada Western Interim Wheat (CWIW) class and the Canada Western Feed class.

Producers are strongly encouraged to use the Canadian Grain Commission's Variety Designation Lists ([www.grainscanada.gc.ca](http://www.grainscanada.gc.ca)) that indicate the varieties belonging to each class of wheat in Canada, and the complete list of varieties being designated to another class effective August 1, 2018. For complete and up-to-date information on the Canadian Wheat Class Modernization initiative, visit CGC's website at [www.grainscanada.gc.ca](http://www.grainscanada.gc.ca). It is also recommended for producers to use the Canadian Food Inspection Agency's List of Registered Varieties ([www.inspection.gc.ca](http://www.inspection.gc.ca)) to determine registration status of varieties.

The CGC proposes to create a Canada Western Special Purpose (CWSP) class. This class would include varieties currently in the General Purpose class and future varieties suited to the feed and fuel market, while creating opportunity for future development of varieties suitable for niche markets. An example of a niche variety would be **CDC PrimePurple**, a purple-seeded wheat currently in the CWGP class. The CWSP class would have no required quality parameters to be met for registration, similar to the current General Purpose class.

CGC also proposes a new milling class that will accommodate varieties with lower gluten strength than either CWRS or CPSR, but have demonstrated milling and baking performance. The current proposed name is Canada Northern Hard Red (CNHR). This class would have limited quality requirements for registration. Varieties currently in the CWIW class would move to the new CNHR; CNHR would also become the designated class for the 29 varieties proposed

to be moved out of CWRS and CPSR.

The proposal indicates that the CWGP, CWIW and Canada Western Feed classes would be eliminated on August 1, 2016, coinciding with the creation of CWSP and CNHR classes. In 2016, a review of varieties where data is lacking on gluten strength will be initiated. Up to two years of data will be collected; producers will be notified of any class designation changes. The 29 varieties will be moved out of CWRS and CPSR, likely to CNHR August 1, 2018.

The 29 varieties includes 25 CWRS and four CPSR varieties, however only four appear in the 2016 Varieties of Grain Crops – **Harvest**, **Lillian** and **Unity VB** in CWRS and **Conquer VB** in CPSR.

For farmers growing one of the 29 varieties that will be moved to a new class, these varieties can continue to be grown, but after August 1, 2018 they will not be eligible for the CWRS or CPSR classes.

# Winter Wheat

## Main Characteristics of Varieties

Category and Variety	Years Tested	Yield (%)		Protein (%)	Winter Survival	Resistance To <sup>2</sup>						Relative Maturity	Head Awed-ness	Seed Weight (mg)	Volume Wt. <sup>3</sup> (kg/hL)	Height (cm)
		Area 1 & 2	Area 3 & 4			Lodg-ing	Stem Rust	Leaf Rust	Stripe Rust	Bunt	FHB					
<b>CWRW<sup>1</sup></b>		-- Relative to CDC Buteo --										----- Relative to CDC Buteo -----				
CDC Buteo	15	100	100	12.3	VG	F	I	I	S	S	MR	M	Y	32.8	81.0	91
CDC Chase	4	105	110	+0.3	F	F	R	R	MR	S	MS	M	Y	-0.5	-0.2	+3
AAC Elevate ☼	5	110	104	0.0	G	VG	MR	I	MS	MR	I	M	Y	+4.3	-2.2	-8
Emerson ☼	4	100	---	+0.4	G	G	R	I	MR	S	R	M	Y	-4.1	-0.8	-5
Flourish ☼	7	98	101	+0.3	F	VG	I	I	I	MR	S	E	Y	+2.3	-1.7	-11
AAC Gateway ☼	5	97	101	+0.5	F	VG	MR	I	MR	S	I	M	Y	-0.1	-1.5	-14
Moats ☼	8	105	101	+0.4	G	F	R	R	MR	MS	S	M	Y	-0.3	-0.4	+1
CDC Osprey §	14	97	101	-0.2	VG	G	MS	MS	S	S	MS	M	Y	-2.6	-2.3	+2
Radiant ☼	15	101	101	-0.3	VG	VG	S	S	MS	S	S	L	Y	+1.7	-1.9	-2
AAC Wildfire ☼	4	115	117	0.0	VG	G	S	I	R	MR	MR	VL	Y	+2.6	-1.2	-6
<b>CWGP<sup>1</sup></b>																
Accipiter ☼	7	110	106	-0.9	G	VG	R	I	S	S	MS	M	Y	-1.1	-0.9	-7
Broadview ☼	5	96	100	-0.8	G	G	R	R	S	S	S	E	Y	-1.6	-1.6	-10
CDC Falcon	15	102	98	-0.8	F	VG	MR	MR	S	S	S	E	Y	-3.3	-1.9	-16
Peregrine ☼	7	114	110	-1.0	VG	F	I	MR	MR	S	I	M	Y	+0.6	-1.0	+6
Pintail ☼	4	105	---	-1.7	VG	G	MS	MS	MR	S	S	M	N	-4.2	-4.2	-3
CDC Ptarmigan	10	113	113	-2.0	G	F	S	S	S	S	I	M	N	0.0	-4.6	+2
Sunrise	5	111	119	-1.2	G	G	MR	MR	MR	S	---	M	Y	-1.5	-4.5	-2
Swainson	5	114	116	-0.5	F	F	R	R	MR	S	---	M	Y	+3.4	-2.6	+5

<sup>1</sup> Includes direct and indirect comparisons with **CDC Buteo**

<sup>2</sup> Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate Resistance; MS = Moderately Susceptible; S = Susceptible.

<sup>3</sup> Multiply by 0.8 = lbs per bushel

### ADDITIONAL INFORMATION

Winter wheat can be grown successfully in most areas if seeded into standing stubble within the optimal seeding date period (generally before September 15) and if there is adequate snowfall.

Winter wheat will often escape fusarium head blight and wheat midge damage if recommended seeding dates are followed.

**Radiant** and **AAC Elevate** have tolerance to the wheat curl mite vector that transmits

Wheat Streak Mosaic Virus. To preserve the effectiveness of this wheat curl mite tolerance gene, agronomic practices that eliminate the “green bridge” of plant material that serves as a reservoir for mites should be followed whenever possible.

**AAC Wildfire** expresses tolerance to Bio-type 1 of the Russian wheat aphid.

**Radiant** and **AAC Wildfire** have bronze chaff at maturity. **CDC Ptarmigan** has a soft

white kernel. **Sunrise** has a soft red kernel.

The awnless head of **CDC Ptarmigan** and **Pintail** may improve palatability when harvested for forage or silage.

Seed of the new variety **CDC Chase** is expected to be available in fall 2016. Seed of the new varieties **AAC Elevate** and **AAC Wildfire** will not be available in 2016.

# Triticale

## Main Characteristics of Varieties

Variety	Years Tested	Yield (%)		Test Weight (kg/hL)	Height (cm)	Relative Maturity	Resistance To <sup>1</sup>						
		Area 1 & 2	Area 3				Lodging	Stem Rust	Leaf Rust	Bunt	Root Rot	Ergot	FHB
<b>Spring Habit</b>		----- Relative to AC Ultima -----											
AC Ultima	20	100	100	68.6	101	E	G	R	R	R	I	MS	I
Brevis	9	110	109	+3.6	-7	E	VG	R	R	R	---	MR	I
Bumper ☼	3	104	112	+1.4	-4	E	G	R	R	R	---	---	MS
Bunker ☼	4	92	---	+3.0	+5	E	G	R	R	R	---	---	---
AC Certa §	14	97	98	+3.5	+6	M	G	R	R	R	MR	---	---
Pronghorn	20	98	100	-0.3	+7	E	G	MR	R	R	I	I	MR
Sunray	6	105	100	-2.3	-1	E	G	R	R	R	---	MR	MS
Taza ☼	4	108	---	-0.6	+6	E	G	R	R	R	---	I	S
Tyndal ☼	4	99	---	+3.0	-6	E	G	R	R	R	---	---	MS
<b>Winter Habit</b>		----- Relative to Pika -----											
Pika	6	100	100	68.0	125	E	F	---	---	---	---	---	---
Bobcat §	6	86	86	-2.0	-25	M	G	---	---	---	---	---	---
Luoma ☼	5	100	96	-1.0	+1	L	F	---	---	---	---	---	---
Metzger ☼	5	96	101	-1.0	-14	E	G	---	---	---	---	---	---

<sup>1</sup> Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate Resistance; MS = Moderately Susceptible; S = Susceptible.

### ADDITIONAL INFORMATION

Spring triticale matures 1-2 days later than **AC Andrew** CWSWS wheat, similar to **Pas-teur** wheat; therefore, it should be planted as early as possible. Triticale should be seeded for a target of 310 plants per square metre using verified thousand kernel weight and germination.

Susceptibility to fusarium head blight is at least as great in triticale as in wheat. **AC**

**Ultima** has an improved Hagberg Falling Number. **Brevis** is shorter and stronger straw. **Tyndal** and **Bunker** are spring forage types and, along with **Taza** have reduced awns.

Winter triticale has winter hardiness equal to that of winter wheat. **Bobcat**, **Luoma** and **Metzger** have reduced awns. **Bobcat** and **Metzger** are shorter and stronger straw.

All triticale cultivars are susceptible to ergot infection and similar in reaction. Severe infestation of ergot can occur in any of the available cultivars if environmental conditions are favourable. Even improved varieties like **Sunray** and produce 10-20 times more sclerotia than spring wheats.

# Rye

## Main Characteristics of Varieties

Variety	Years Tested	Yield (%)		Protein (%)	Resistance To <sup>1</sup>				Heading Date (days) <sup>2</sup>	Maturity (days) <sup>3</sup>	Seed Weight (mg)	Volume Weight (kg/hL) <sup>4</sup>	Height (cm)	Falling Number (seconds)
		Area 1 & 2	Area 3 & 4		Winter Survival	Lodging	Shattering	Ergot						
		----- Relative to Hazlet -----												
Hazlet	12	100	100	10.6	VG	G	VG	MS	June 11	August 6	36.9	73.4	104	167.0
Bono <sup>5,6</sup>	3	129	122	-1.3	VG	VG	---	MS	1	0	-5.3	-1.8	-12	+115.5
Brasetto <sup>5</sup>	4	119	121	-1.0	VG	VG	---	MS	0	0	-3.6	-1.7	-11	+103.8
Guttino <sup>5</sup>	4	115	125	-0.9	VG	VG	---	MS	1	0	-4.4	-1.0	-13	+143.4
Prima	12	93	97	+0.6	VG	F	F	MS	-1	-3	-4.3	-1.3	13	+46.4

<sup>1</sup> Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate Resistance; MS = Moderately Susceptible; S = Susceptible.

<sup>2</sup> Average heading date for each variety across the province relative to Hazlet. Flowering typically occurs 7-14 days after heading, depending on weather conditions.

<sup>3</sup> Average maturity date for each variety across the province relative to Hazlet. Wet and cool conditions can prolong maturity beyond these dates.

<sup>4</sup> Multiply by 0.8 = lbs per bushel.

<sup>5</sup> Hybrid variety.

<sup>6</sup> Limited dataset for this variety due to low number of testing locations.

### ADDITIONAL INFORMATION

Fall rye is much more cold tolerant than winter wheat or winter triticale, with field survival being approximately 30-100% better than winter wheat for current fall rye varieties.

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.

Very little recent information on shattering in rye has been obtained as it has not been observed in field trials recently, thus no information is available for recently released varieties.

# Malting Barley

## Main Characteristics of Varieties

Category <sup>1</sup> and Variety	Years Tested	2 or 6 Row	Rough or Smooth Awns	Yield (% AC Metcalfe)		Relative Maturity <sup>2</sup>	Resistance To <sup>3</sup>									
				Area 1 & 2	Area 3 & 4		Lodg- ing	Netted Net Blotch <sup>4</sup>	Spotted Net Blotch <sup>4</sup>	Spot Blotch	Scald	Loose Smut	Other Smuts	Root Rot	Stem Rust	FHB
<b>Malting Acceptance: Recommended</b>																
AC Metcalfe 🌾	11	2	R	100	100	M	G	S	I	I	MS	R	I	I	MR	I
Bentley 🌾	7	2	R	113	112	L	G	MS	R	I	MS	MS	MR	I	MR	MS
CDC Copeland 🌾	8	2	R	107	108	M	G	I	I	S	MS	MS	I	I	MR	I
CDC Kindersley 🌾	7	2	R	105	107	E	G	MS	MR	I	S	S	R	I	MR	I
CDC Meredith 🌾	7	2	R	114	112	L	G	MS	R	MS	MS	R	MR	I	MR	I
Merit 57 🌾	7	2	R	109	107	L	G	MS	R	MS	I	S	I	MR	I	MS
Newdale 🌾	6	2	R	112	113	M	G	I	MR	I	MS	S	MR	MR	MR	I
CDC PolarStar <sup>6</sup> 🌾	7	2	R	104	99	M	F	S	MR	MS	S	S	R	MS	S	MR
AAC Synergy 🌾	6	2	R	120	117	M	G	MR	R	R	S	S	I	I	MR	MS
Celebration 🌾	7	6	S	109	107	M	VG	S	MR	MR	S	R	R	MS	I	MS
Legacy	6	6	S	104	101	M	G	S	MR	MR	MS	I	MR	MR	MR	MS
Tradition	5	6	S	112	107	M	VG	S	I	MR	MS	S	MR	MR	MR	S
<b>Other<sup>5</sup></b>																
CDC Bow 🌾	4	2	R	118	110	M	VG	S	MR	I	MS	S	I	MS	MR	MS
Cerveza 🌾	6	2	R	113	115	M	G	MS	MR	R	S	R	R	I	MR	I
Harrington	11	2	R	95	89	M	F	S	MS	S	MS	MS	MS	I	MS	MR
CDC Kendall 🌾 §	11	2	R	101	102	M	G	I	MR	S	MS	MS	MS	MR	MS	I
CDC Landis 🌾	7	2	R	109	109	M	G	I	R	I	S	S	MR	MS	MR	MR
Major 🌾	7	2	R	112	115	M	G	I	MR	MR	S	R	MR	MS	MR	I
CDC PlatinumStar <sup>6</sup> 🌾	4	2	R	104	105	M	F	I	MR	S	S	S	R	S	I	MR
CDC Anderson 🌾	7	6	R	107	108	M	G	MS	MR	R	MS	MR	R	I	I	I
CDC Battleford 🌾	6	6	S	108	108	M	G	MS	R	R	MS	MS	MR	MR	MR	S
Lacey	4	6	S	101	101	M	G	S	I	MR	MS	I	MR	MR	MR	S
CDC Mayfair §	7	6	R	105	109	M	G	MS	MR	I	MS	S	R	MS	MR	MS

<sup>1</sup> These categories are established annually by the Canadian Malting Barley Technical Centre (Call 204-984-4399 for more information).

<sup>2</sup> Relative maturity: The relative maturity of the check, **AC Metcalfe**, is M (on average, 91 days from seeding to swathing ripeness).

<sup>3</sup> Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate; MS = Moderately Susceptible; S = Susceptible.

<sup>4</sup> There are two forms of net blotch, netted (*Pyrenophora teres f. teres*) and spotted (*Pyrenophora teres f. maculata*). Generally, in Saskatchewan the netted form is more prevalent.

<sup>5</sup> Although not on the CMBTC list, a malting barley market may exist for these varieties.

<sup>6</sup> CDC PolarStar and CDC PlatinumStar are available only through a closed loop Identity Preserved program offered by Prairie Malt Limited/Sapporo Breweries and their agents.

### ADDITIONAL INFORMATION

Growers are reminded that the malting and brewing industry is cautious about using new varieties. Growers are cautioned that most malting varieties, especially two-row barley, are more susceptible to sprouting.

#### Lines Tested for Malting and Brewing Quality

Small scale tests are a good measure of malting potential, but are not sufficient to determine the commercial acceptability of malting varieties. Final acceptance is given only after two years of successful plant scale evaluation. Several carload lots of barley

are malted and brewed. The beer is then given the ultimate test – a taste panel. This process normally takes a minimum of three years, since a crop grown in one year will be malted in January-February, brewed in May-June, and aged and tasted in October-November of the following year.

## 2016-17 Recommended Malting Barley Varieties

The following varieties of two-row and six-row malting barley are registered with the Canadian Food Inspection Agency based on good agronomic properties and malting quality evaluations. Since registration these varieties have been pilot scale tested by the CMBTC and exhibit good malting and brewing characteristics for particular markets. Visit the CMBTC's website at [www.cmbtc.com](http://www.cmbtc.com) for detailed pilot malting and brewing data. In addition to market opportunities, seeding decisions should be based on agronomic considerations and feedback from your grain company representative, local elevator operators or malting companies.

*The CMBTC and its members recommend that you talk with your local malting barley buyer about opportunities in your area to grow and market two-row and six-row malting barley varieties.*

### Two-Row Varieties

VARIETY	MARKET COMMENTS
CDC Copeland <sub>1</sub>	Established Demand
AC Metcalfe <sub>1</sub>	Established Demand
Bentley <sub>2</sub>	Limited Demand
CDC Meredith <sub>1</sub>	Limited Demand
CDC PolarStar <sub>2</sub>	Limited Demand
Newdale <sub>4</sub>	Limited Demand
Merit 57 <sub>2</sub>	Limited Demand
CDC Kindersley <sub>1</sub>	Under Commercial Market Development – Growing Demand
AAC Synergy <sub>5</sub>	Under Commercial Market Development – Growing Demand

Some two-row varieties are exclusively handled by one or a limited number of companies. As a result it is recommended that producers consult with their grain company representative, local elevator operators or malting companies regarding commercial opportunities for specific varieties. **For Bentley contracting opportunities contact Canada Malting Company. For CDC PolarStar contracting opportunities contact Prairie Malt-Cargill. For Newdale contracting opportunities contact Canada Malting Company or North American Food Ingredients. For Merit 57 contracting opportunities contact BARI-Canada.**

### Six-Row Varieties

VARIETY	MARKET COMMENTS
Legacy <sub>3,4</sub>	Limited Demand
Tradition <sub>4</sub>	Limited Demand
Celebration <sub>2</sub>	Limited Demand

Demand for six-row malting barley has been declining and it is recommended that producers consult with their grain company representative, local elevator operators or malting companies regarding commercial opportunities for specific varieties.

**The following companies have pedigreed seed distribution rights for those varieties that are footnoted:  
1 - SeCan; 2 - CANTERRA SEEDS; 3 - Crop Production Services; 4 - FP Genetics; 5 - Syngenta**

**CMBTC and its members strongly recommend use of certified seed to ensure varietal purity and increase opportunity for selection.**

**CMBTC Members:** Canadian Grain Commission, Prairie Malt-Cargill, Public Barley Breeders, Richardson International, Viterra, ADM-Benson Quinn, G3 Canada Limited, Manitoba Liquor & Lotteries, Molson Coors, SeCan, Syngenta, Tsingtao Brewery, Alberta Agriculture & Rural Development, Alberta Barley, CANTERRA SEEDS, Farmery Estate Brewery, FP Genetics, Hailar MDL Beer Materials, Integrated Grain, Manitoba Agriculture, Food & Rural Development, New Glarus Brewing, North American Food Ingredients, Saskatchewan Ministry of Agriculture, Saskatchewan Barley Development Commission.

**Other organizations providing input to this list:** The Brewing & Malting Barley Research Institute and BARI-Canada.

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

# Feed and Food Barley

## Main Characteristics of Varieties

Category and Variety	Years Tested	2 or 6 Row	Rough or Smooth Awns <sup>1</sup>	Yield (% AC Metcalfe)		Relative Maturity <sup>2</sup>	Resistance To <sup>3</sup>										
				Area 1 & 2	Area 3 & 4		Lodging	Netted Net Blotch <sup>4</sup>	Spotted Net Blotch <sup>4</sup>	Spot Blotch	Scald	Loose Smut	Other Smuts	Root Rot	Stem Rust	FHB	
<b>Hulled</b>																	
CDC Austenson ☪	7	2	R	118	121	M	G	MS	R	MR	S	S	R	I	I	I	
Brahma ☪	7	2	R	114	115	M	G	S	I	S	MS	MS	R	MR	MS	I	
Canmore ☪	5	2	R	114	119	L	G	MS	MR	I	MR	R	R	I	MS	I	
Champion ☪	8	2	R	117	117	M	G	S	I	MS	S	S	R	MR	I	I	
CDC Coalition ☪	7	2	R	111	114	M	VG	S	MR	I	MS	R	MR	I	MR	I	
CDC Cowboy ☪	6	2	R	99	105	L	F	I	MR	I	MS	MS	MR	I	MR	MR	
CDC Dolly	11	2	R	103	103	E	G	S	MS	MS	I	S	I	I	MS	MR	
Gadsby ☪	7	2	R	110	110	M	F	MS	MR	S	R	R	R	I	MR	I	
CDC Helgason ☪	7	2	R	105	106	M	G	MR	MR	I	MS	R	MR	I	I	MS	
CDC Maverick ☪	6	2	S	98	98	M	F	I	MR	I	MS	S	R	I	MR	MR	
McLeod ☪	6	2	R	108	114	M	G	S	I	S	MS	S	R	I	MS	I	
CDC Trey ☪	5	2	R	104	110	M	G	I	R	I	MS	MS	R	MR	MR	I	
Xena	7	2	R	112	115	M	G	S	I	S	MS	MS	MS	MR	MR	MR	
Amisk ☪	5	6	SS	114	116	M	G	I	MR	MR	I	S	MS	MS	MR	S	
Chigwell ☪	7	6	S	107	111	M	G	I	MR	MR	MR	MS	R	S	S	S	
Muskwa ☪	5	6	S	111	108	M	G	MS	MR	I	MR	MS	R	MS	MR	S	
AC Rosser ☪	11	6	S	115	115	M	G	I	MR	MR	S	MS	MR	MR	MR	S	
Sundre ☪	5	6	S	120	116	L	G	MS	I	I	R	MS	R	MS	I	S	
<b>Hulless</b>																	
CDC Carter ☪	7	2	R	94	99	M	G	I	MR	I	MS	R	R	S	I	I	
CDC Clear ☪	7	2	R	96	103	L	G	MS	R	I	MS	R	R	I	MR	MR	
CDC McGwire ☪	8	2	R	98	99	M	G	I	MR	I	I	MS	MR	MR	I	MR	
Taylor ☪	7	2	R	82	87	M	VG	MS	MR	I	S	R	I	MS	MR	MR	

<sup>1</sup> R = Rough, S = Smooth, SS = Semi-Smooth

<sup>2</sup> Relative maturity: The relative maturity of the check, **AC Metcalfe**, is M (on average, 91 days from seeding to swathing ripeness).

<sup>3</sup> Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate; MS = Moderately Susceptible; S = Susceptible.

<sup>4</sup> There are two forms of net blotch: netted (*Pyrenophora teres f. teres*) and spotted (*Pyrenophora teres f. maculata*). Generally, in Saskatchewan the netted form is more prevalent.

### ADDITIONAL INFORMATION

Most available varieties are susceptible to one or more types of smut. Therefore, seed of susceptible varieties should be treated with a registered fungicide on a regular basis.

Harvesting grain over 16 per cent moisture and then using aeration bins for drying can lead to sprouting and embryo death. Seed with reduced germination is undesirable for seed or malting.

Two-row barley varieties are generally more resistant to shattering than six-row varieties.

#### Forage Barley

**Desperado** and **AC Ranger** are six-row forage varieties. **CDC Cowboy** and **CDC Maverick** are two-row forage varieties.

#### Hulless

In hulless varieties the hull is left in the field, therefore, comparable yields are 9-12 per cent lower. Hulless seed is more susceptible to damage than hulled seed, so handling should be minimized.

#### Hulless Food

**CDC Fibar** and **CDC Rattan** are high beta-

glucan, waxy starch varieties. **CDC Hilose** is a high beta-glucan, high amylose starch variety. All are available for specialty markets. **CDC Carter**, **CDC McGwire** and **Roseland** are two-row, normal starch, hulless barleys suitable for food use.

#### Irrigation

Disease resistance, straw strength and maturity are more critical when barley is grown under irrigation. Growers should select early, strong-strawed, disease-resistant varieties.



# Oat

## Main Characteristics of Varieties

Variety	Years Tested	Yield (% CDC Dancer)		Test Weight (g/0.5L)	% Hull	Hull Colour	% Plump	Relative Maturity <sup>1</sup>	Height (cm)	Resistance To <sup>2</sup>			
		Area 1 & 2	Area 3 & 4							Lodging	Stem Rust	Crown Rust	Smut
CDC Dancer ☼	8	100	100	253	19.8	White	86	M	103	G	I	I	R
SW Betania ☼	7	105	105	245	22.0	White	82	M	97	G	S	MS	MR
Bia ☼	2	106	107	238	22.3	White	---	M	102	G	---	S	---
CDC Big Brown ☼	7	106	106	256	20.4	Tan	88	L	101	G	MS	R	R
CDC Boyer	8	99	100	232	23.3	White	85	M	105	G	I	I	MS
Bradley ☼	5	105	102	240	21.7	White	81	L	103	VG	MS	MS	R
CS Camden ☼	5	113	115	242	24.3	White	82	L	94	VG	S	MS	I
Derby	8	98	102	247	22.9	White	79	M	107	G	S	S	MS
CDC Haymaker ☼	3	88	94	225	24.9	White	87	VL	111	G	S	S	MR
AAC Justice ☼	5	111	107	255	22.4	White	75	L	101	G	I	I	R
Leggett ☼	7	103	104	256	22.0	White	82	L	96	G	I	R	R
Lu	6	102	103	248	25.2	Yellow	58	E	99	G	S	S	MR
CDC Minstrel ☼	7	106	107	245	21.0	White	92	L	98	VG	I	MS	R
AC Morgan	8	104	108	236	25.1	White	82	L	101	VG	S	S	I
CDC Morrison ☼	3	100	95	248	24.4	Yellow	83	L	95	VG	I	MS	R
CDC Nasser	7	109	107	233	21.8	White	79	VL	106	G	MS	S	R
Nice	2	106	104	246	22.0	White	---	M	103	G	---	MS	---
CDC Norseman ☼	4	112	107	241	20.0	White	81	M	102	G	S	MR	MS
CDC Orrin ☼	6	108	109	253	23.2	White	91	L	103	G	MS	S	R
Pinnacle ☼	8	113	109	244	23.6	White	89	VL	101	F	I	S	R
Ronald ☼	7	96	99	249	22.4	White	74	L	97	VG	I	S	R
CDC Ruffian ☼	6	114	111	247	20.4	White	88	L	95	G	S	I	R
CDC Seabiscuit ☼	7	110	106	240	20.3	White	89	L	100	G	I	S	MR
Souris ☼	7	108	103	253	21.5	White	72	M	98	VG	MR	S	R
Stride ☼	7	110	107	255	22.9	White	80	L	103	G	I	R	R
Summit ☼	6	103	103	256	21.6	White	81	M	94	G	I	I	R
Triactor ☼	7	114	118	240	22.8	White	80	L	99	G	S	MR	I
CDC Weaver ☼ §	7	108	111	245	19.2	White	88	L	104	F	I	MS	R

<sup>1</sup> Maturity Rating M = 96 days.

<sup>2</sup> Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate Resistance; MS = Moderately Susceptible; S = Susceptible.

### ADDITIONAL INFORMATION

Although disease pressure is lower in eastern Saskatchewan than in Manitoba, crown rust races capable of attacking most varieties, except **CDC Big Brown**, **Leggett**, **CDC Norseman**, **Stride** and **Triactor**, are increasing in southeast Saskatchewan. Recent changes in the crown rust population have resulted in the *Pc91* resistance gene no longer being effective. As such, the crown rust ratings for **AAC Justice**, **CDC Morrison** and **Souris** have been redefined. In addition, the resistance genes present in **Summit** are also losing their effectiveness and therefore the crown rust rating for this variety has also been redefined. Early seeding will reduce the likelihood of severe infection.

Producers growing oats for the milling market are advised to check the “approved” varieties list available from the various oat millers.

#### Feed Oat

**CDC SO-I** and **CDC Nasser** are specialty feed oat varieties with higher digestible energy for cattle.

#### Forage Oat

**CDC Baler**, **CDC Haymaker** and **Murphy** are forage oat varieties available for annual forage production in Saskatchewan.

#### Hulless Oat

**Bullion** and **AC Gwen** are hulless varieties available for production in Saskatchewan.

The hull is part of normal oat yield, thus hull-less types yield less. They are difficult to handle and store and should be stored at less than 12 per cent moisture.

#### False Oats or Fatuoids

False wild oats, or fatuoids, are off-types within common oat fields that have an appearance similar to wild oat, most noticeably, a prominent, dark awn and increased hairiness at the base of each floret. They are thought to result from the infrequent cross-pollination between common oat (*Avena sativa*) and true wild oat (*Avena fatua*). As such, their presence will likely be observed more often in fields planted from farm-saved seed. They have been reported within fields of common oat at rates up to 1 per cent and occur within all oat varieties.

# General Seed Facts

## **PEDIGREED SEED**

Use certified seed regularly. This assures that the seed has high genetic purity, high germination and is relatively free from weeds and other crop seeds.

## **RE-USE OF HYBRID SEED**

Seed grown from a hybrid variety (regardless of crop or variety) should not be re-used, since a 20 to 25 per cent yield reduction can occur in the next generation. This reduction is due to loss of hybrid vigour and possible occurrence of male-sterile plants. Lack of uniformity for maturity and quality traits can also occur.

## **SEED CLEANING**

Seed should be cleaned carefully to remove weed seeds, trash, small or broken kernels, ergot and sclerotia. Not all seed-cleaning plants are equipped to clean grain to acceptable seed standards.

## **SEED TREATMENT**

Various fungicides have been registered for the control of seedling diseases caused by soil- and seed-borne pathogens.

Use of seed from cereal crops infected with *Fusarium species* may result in poor emergence. Such seed should be treated with a registered fungicide before planting. Use of infected seed may introduce fusarium diseases into unaffected areas. Tolerance for fusarium vary with species. Refer to the Saskatchewan Agriculture publication *Guidelines for Seed-Borne Diseases of Cereal Crops* for more information.

Smuts that attack wheat, barley, oat and rye can be controlled by seed treatment. If seed from a crop in which bunt or smut was observed must be used for seed, seed should be tested and seed treatment should be considered. If the presence of smut is uncertain, varieties rated susceptible (S) should be treated every year, those rated moderately susceptible (MS) every second year and those rated intermediate resistance (I) every third year.

Only systemic fungicides will control true loose smut of barley and wheat, and stem smut of rye. Pathogens causing the other types of smut (covered, false loose, oat smut and bunt)

are carried on the outside of the seed and can be controlled by non-systemic seed treatments.

The virulent form of blackleg of canola is widespread in Saskatchewan. Seed treatment with a recommended fungicide can reduce the level of disease. Use of canola seed commercially coated with an appropriate seed treatment is a convenient alternative to on-farm seed treatment.

Wireworms that attack all grain crops, and flea beetles that attack canola and mustard, can be controlled by seed treatment with insecticides.

Read the label carefully before using any seed treatment or insecticide. Information on their use and recommended rates is found in the Saskatchewan Agriculture publication *Guide to Crop Protection*. Carryover stocks of treated seed should be tested for germination before planting. Treated seed must not be delivered to an elevator or used for feed.

## **SEED-BORNE DISEASES OF PULSES**

Pulse growers should use seed that has been tested for seed-borne diseases such as ascochyta, anthracnose and botrytis. Tolerances for seed infection vary with the pulse crop, the disease, weather conditions of the region and the availability of a seed treatment. If infection of the crop from sources other than seed is likely, using seed with low infection levels becomes less important.

In regions with frequent rainfall and high humidity, tolerances will be lower. Thus, for ascochyta blight of lentil, use of seed with up to 5 per cent seed infection is acceptable in the Brown and Dark Brown Soil Zones, but 0 per cent is desirable in the Black Soil Zone. A seed treatment for ascochyta-infected lentil seed is available and is recommended if seed infection levels approach 5 per cent. In pea, up to 10 per cent seed infection with ascochyta is acceptable. In chickpea, 0 per cent ascochyta seed infection is recommended because of the high rate of transmission of the disease from the seed to the emerging seedlings and its highly destructive nature. Refer to Saskatchewan Agriculture publication *Guidelines for Seed-Borne Diseases of Pulse Crops*.

## **CROP ROTATION**

Seeding into stubble of the same crop kind will increase disease risk, particularly in higher rainfall areas. Residue of infected crops may harbour disease pathogens. Maintain a diverse crop rotation.

## **ERGOT**

Ergot attacks all varieties of rye, triticale, wheat and barley, as well as most common grass species. Oat is rarely attacked and all broadleaf species are immune. Grain containing 0.1 per cent ergot is considered poisonous and should not be used for food. Refer to the Saskatchewan Agriculture publication *Ergot of Cereals and Grasses*.

## **SEED INOCULATION**

Legume crops obtain much of their nitrogen requirement by forming a symbiotic association with soil bacteria called *Rhizobium*. These bacteria colonize the roots to form structures called nodules, where they fix nitrogen for the legume plant. To enhance nitrogen fixation, the legume crop seed should be inoculated. **Use the proper strain of bacteria specific to that crop.** For further details, consult the *Pulse Production Manual* (Saskatchewan Pulse Growers).

## **DAMP AND FROZEN SEED**

Seed that is stored damp or tough may be low in germination and may lack adequate vigour. Grain that will be used for seed should be dried, if necessary, soon after harvest. The drying temperature should be below 37°C for batch driers and 43°C for recirculating and continuous driers. Frozen grain should always be tested for germination by a seed-testing laboratory before planting. Such grain will frequently produce a high percentage of abnormal seedlings.

## **WHEAT MIDGE**

All wheat classes, including durum and triticale, are susceptible to wheat midge. Farmers in infested areas should be prepared to spray fields with recommended insecticides if necessary unless varieties are midge-tolerant. Consider the use of midge-tolerant varieties. Refer to the Saskatchewan Agriculture publication *Wheat Midge*.

# Seed quality and seeding rates are crucial to a good plant stand

By Saskatchewan Ministry of Agriculture

Seed quality and seeding rates are important for establishing good plant stands and—unlike the weather—are two factors over which we have control. Determining the quality of the seed starts with a seed test prior to buying seed or seeding the crop. Sending a seed sample to a qualified lab can provide information on germination, vigour, diseases present, purity and thousand kernel weight (TKW). All of these factors help to inform growers whether the seed is suitable for planting. Germination tells us how many seeds are expected to germinate and the vigour gives an indication of how well the seedlings will thrive under stressful conditions. Disease tests identify the level of seed-borne diseases in the sample and help determine whether a seed treatment is recommended. Seed with good germination and a high disease level may still be suitable for planting as long as a seed treatment that controls the disease is used.

TKW and germination are needed when calculating the seeding rate, using the following formula:

$$\text{Seeding rate (kg/ha)} = (\text{target plant population/m}^2) \times (\text{TKW in grams}) \div (\text{expected seedling survival in per cent})$$

Target plant populations for various crops are shown in the adjacent table. Expected seedling survival is typically five to 20 per cent less than the germination rate with pulses and cereals—more under ideal conditions and less under adverse conditions. For canola, expected survival rates range from 40 to 60 per cent. Factors to take into account when determining the expected seedling survival are seeding date, soil temperature, moisture and texture as well as possible soil borne diseases and insect pressures. The amount of seed-placed fertilizer and the seeding depth are factors that can also affect seedling survival.

Crop	Target Plant Population (per m <sup>2</sup> )	TKW (grams)
Wheat – hard red spring	250	31 – 38
Wheat – CPS	250	39 – 50
Durum	210 – 250	41 – 45
Wheat – SWS	210 – 250	34 – 36
Barley – 2 row	210 – 250	40 – 50
Barley – 6 row	210 – 250	30 – 45
Oat	215 – 320	30 – 45
Triticale – spring	310	42 – 48
Mustard & Polish Canola	70 - 100	2 – 3
Yellow Mustard	70 - 100	5 – 6.5
Argentine Canola	70 - 100	2.5 – 7.5
Flax	300 – 400	5 – 6.5
Pea	85	125-300
Fababean	45	350-425
Lentil	105 - 147	30 – 80
Chickpea	44	220 - 450

# OTHER CROPS

## **BUCKWHEAT**

Buckwheat is sensitive to high temperatures and dry weather conditions in the blossom stage, which can reduce seed set and yields. New self-pollinated varieties are being released. Buckwheat is very susceptible to frost at all stages of growth. Delayed seeding is advisable to avoid spring frost.

## **CARAWAY**

Caraway is a biennial spice crop, producing seed in the second year and sometimes in the third year. Seedlings are small, slow in developing and compete poorly with weeds. The crop is usually swathed because of its indeterminate growth habit and seed shattering. For more information, consult the Saskatchewan Agriculture publication *Caraway*.

## **CORIANDER**

Coriander is an annual spice crop. Seedlings are small, slow to develop and compete poorly with weeds. The large seeded type is earlier maturing than the small seeded type. **CDC Major** is a large-seeded coriander variety and **CDC Minor** is a small-seeded variety. The crop is usually straight-cut to avoid wind damage in swaths. For more information, consult the Saskatchewan Agriculture publication *Coriander*.

## **FENUGREEK**

Fenugreek is a leguminous spice crop adapted to dryland conditions in the Dark Brown and Brown Soil Zones. The crop should be seeded early to avoid yield and quality loss from fall frost. Contract production is advisable, as markets are limited. For more information, consult the Saskatch-

ewan Agriculture publication *Fenugreek in Saskatchewan*.

## **SAFFLOWER**

Safflower is an annual oilseed or birdseed crop that can be grown successfully in the Brown Soil Zone. Safflower must be sown early (late April).

**Saffire** matures in about 120 days. Seed should be planted shallow but into a firm, moist seedbed at about 30 kg/ha (27 lbs/ac). **Saffire** has moderate resistance to sclerotinia head rot and alternaria leaf spot. Contract production is advised.

**AC Sunset** has the earliness of **Saffire** combined with higher oil content and resistance to sclerotinia head rot.

# Canaryseed

## Main Characteristics of Varieties

Variety	Type	Site Years Tested	Yield <sup>1</sup> (%)	Days to Heading	Days to Maturity	Height (cm)	Test Weight (kg/hL) <sup>3</sup>	Seed Weight (g/1000)
CDC Bastia	glabrous	42	100	58	98	98	70.8	7.9
CDC Calvi <sup>2</sup> ☼	glabrous	28	109	+2	+3	+5	+0.6	+0.4
Cantate	hairy	42	115	+1	+2	-2	-6.2	-0.1
Keet	hairy	42	125	+4	+3	+4	-6.2	-0.3
CDC Maria §	glabrous	37	84	0	0	-2	-0.4	0.0
CDC Togo ☼	glabrous	42	95	+1	0	-2	-1.3	+0.5

<sup>1</sup> Yield data not collected by Area

<sup>2</sup> 2011-2015 yield data; other varieties 2007 -2015; except CDC Maria (not tested in 2015)

<sup>3</sup> multiply by 0.8 = lb per bushel

## **ADDITIONAL INFORMATION**

The seed of annual canarygrass, more commonly called canaryseed, is used as food for caged and wild birds.

Seed hulls of **CDC Bastia**, **CDC Calvi**, **CDC Maria** and **CDC Togo** do not have the small sharp hairs that cause irritation when canaryseed is threshed and handled and are called glabrous. **CDC Calvi**, a new, higher-yielding glabrous variety, was registered in 2013. Seed of **CDC Calvi** will be available in 2016.

Canaryseed plants have a dense, shallow root system and growing the crop on sandy soils is not recommended. Canaryseed may be grown successfully on stubble, providing adequate moisture is available for rapid germination and emergence. The recom-

mended seeding rate is 34 kg/ha (30 lb/ac) with germination greater than 85 per cent. Reduced emergence might be expected if canaryseed is seeded below 5 cm.

Canaryseed is subject to damage by English grain aphid and bird cherry oat aphid. Aphid populations build up rapidly on the leaves, stems and head of the plant in July and August and may require an insecticide application to prevent yield loss. Information from the United States indicates that infestations of 10 to 20 aphids on 50 per cent of the stems prior to soft dough stage may cause enough damage to warrant insecticide application. The aphids often hide in the dense head of the canaryseed plant. Damage may occur at populations below these levels.

Canaryseed leaf mottle is a foliar disease that can cause yield losses. Leaf mottle is caused by a fungus, *Septoria triseti*, that only affects canaryseed. The disease is inconspicuous at early stages because there is little visual contrast between healthy and diseased leaf area. Stubble borne inoculum is the source of infection, thus crop rotation is key in limiting the severity of leaf mottle.

Canaryseed is resistant to shattering. It may be straight-combined or swathed when fully mature. For more information on canaryseed, consult the Saskatchewan Agriculture publication *Canaryseed*.

# PULSE CROPS

## Lentil

### Main Characteristics of Varieties

Market Class	Variety	Herbi- cide Toler- ance <sup>1</sup>	Years Tested <sup>2</sup>	Yield (% CDC Maxim)		Height (cm)	Days to Flower	Maturity Rating <sup>3</sup>	Resistance To <sup>4</sup>		Seed Coat Colour	Coty- ledon Colour	Seed Weight (g/1000)
				Area 1 & 2	Area 3 & 4				Asco- chyta Blight	Anthrax- nose Race 1			
Small Red	CDC Maxim	CL	9	100	100	34	51	E/M	MR	MR	gray	red	40
	CDC Cherie		5	109	106	32	51	E/M	MR	I	gray	red	39
	CDC Dazil	CL	8	104	98	33	53	E/M	MR	I	gray	red	35
	CDC Imax	CL	9	96	82	35	51	E/M	MR	I	gray	red	45
	CDC Impact	CL	6	80	76	30	47	E	MR	MS	gray	red	34
	CDC Impulse *	CL	6	108	95	37	52	E/M	MR	MR	gray	red	44
	CDC Proclaim *	CL	5	105	101	34	51	E/M	MR	MR	gray	red	40
	CDC Red Rider		6	95	85	34	52	E/M	MR	I	gray	red	45
	CDC Redberry		6	97	99	34	50	E/M	MR	MR	gray	red	42
	CDC Redcliff		7	107	103	35	51	E/M	MR	I	gray	red	38
	CDC Redcoat		6	105	93	33	50	E/M	MR	MR	gray	red	39
	CDC Redmoon *		5	115	102	33	52	E/M	MR	MR	gray	red	41
	CDC Rouleau §		6	96	93	33	52	M	MR	MR	gray	red	37
	CDC Scarlet		7	105	103	35	53	E/M	MR	I	gray	red	36
Extra Small Red	CDC Impala	CL	7	94	91	30	51	E	MR	MR	gray	red	31
	CDC Imperial	CL	6	84	79	30	49	E	MR	MR	gray	red	30
	CDC Redbow		6	102	99	30	49	E	MR	MR	gray	red	32
	CDC Rosebud		6	100	99	30	50	E	MR	MR	tan	red	31
	CDC Rosie		7	92	90	33	52	E/M	MR	MR	gray	red	30
	CDC Roxy *		5	103	102	34	53	E/M	MR	MR	gray	red	32
	CDC Ruby §		7	90	91	30	48	E	MR	MR	gray	red	29
Large Red	CDC KR-1		9	110	92	37	52	M	MR	MR	gray	red	56
	CDC KR-2	CL	5	105	85	37	52	M	MR	MR	gray	red	55
Small Green	CDC Invincible	CL	9	96	83	33	49	E	MR	MR	green	yellow	34
	CDC Kermit *		6	106	102	36	49	E/M	MR	MR	green	yellow	34
	CDC Milestone §		6	91	84	31	49	E	MR	S	green	yellow	37
	CDC Viceroy		6	97	98	34	49	E	MR	MR	green	yellow	33
Extra Small Green	CDC Asterix		8	99	101	30	48	E	MR	I	green	yellow	26
Medium Green	CDC Imigreen	CL	7	78	71	44	50	M	MR	S	green	yellow	57
	CDC Impress	CL	6	87	71	34	50	M	MR	MS	green	yellow	52
	CDC Meteor §		6	102	89	34	50	M	MR	S	green	yellow	51
	CDC Richlea		6	93	80	35	50	M	S	S	green	yellow	51
Large Green	CDC Greenland		7	89	70	38	52	M/L	MR	S	green	yellow	64
	CDC Greenstar		7	101	78	40	52	M/L	MR	I	green	yellow	73
	CDC Impower	CL	8	85	68	41	52	M/L	MR	S	green	yellow	64
	CDC Improve §	CL	6	87	76	39	51	M	I	S	green	yellow	67
	CDC Plato §		6	87	77	38	52	M/L	MR	MS	green	yellow	62
	CDC Sovereign		6	83	77	40	52	L	MR	MS	green	yellow	66
French Green	CDC LeMay §		6	84	80	35	48	E	I	S	green marble	yellow	33
	CDC Marble		7	107	103	36	49	E	MR	I	green marble	yellow	34
	CDC Peridot	CL	6	84	94	37	48	E	I	MS	green marble	yellow	38
Green Cotyledon	CDC QG-1		5	80	65	42	51	M	I	I	green	green	49
	CDC QG-2		6	91	94	40	48	E	I	I	green marble	green	32
	CDC QG-3 *	CL	5	73	---	38	53	E/M	I	MR	green	green	46
Spanish Brown	CDC SB-3	CL	5	89	90	35	51	E	I	MR	gray dotted	yellow	38

<sup>1</sup> CL indicates Clearfield® tolerant variety.

<sup>2</sup> Co-op and Regional Trials in Saskatchewan since 2006. Comparisons to the check variety, small red lentil **CDC Maxim**.

<sup>3</sup> Maturity ratings: Normal maturity range in days based on May 1 seeding is E = 100, VL = 110 but maturity can be much earlier in dry years, much later in cool wet years. See Page 2 for more information on maturity range in lentil.

<sup>4</sup> Resistance ratings: R = Resistant; MR = Moderately Resistant; I = Intermediate Resistance; MS = Moderately Susceptible; S = Susceptible.

### ADDITIONAL INFORMATION

Seed supplies may be limited for **CDC Greenstar**, **CDC Marble**, **CDC Scarlet** and **CDC Asterix**. Seed supplies will be limited for **CDC Impulse**, **CDC Roxy**, **CDC Proclaim**, **CDC Redmoon**, **CDC Kermit** and **CDC SB-3**.

# Field Pea

## Main Characteristics of Varieties

Variety	Years Tested <sup>1</sup>	Yield (% CDC Golden)			Leaf Type <sup>2</sup>	Relative Maturity	Lodging <sup>3</sup> (1-9)	Vine Length (cm)	Resistance To							Seed Weight (g/1000)
		1, 2 & South 3	North 3 & 4	Irrigation					Mycosphaerella Blight <sup>4</sup>	Powdery Mildew	Fusarium Wilt	Seed Coat Breakage	Bleaching	Seed Coat Dimpling <sup>5</sup>	Greenness <sup>6</sup>	
<b>Yellow</b>																
CDC Golden	13	100	100	100	SL	M	4.5	75	5.0	R	I	G	n/a	G	G	230
Abarth ☹	5	103	115	---	SL	M	3.5	75	5.0	R	I	F	n/a	G	G	280
DS Admiral ☹	6	86	100	89	SL	E	4.5	80	5.0	R	I	G	n/a	G	G	240
Agassiz ☹	11	107	116	112	SL	M	4.5	85	5.0	R	I	G	n/a	F	G	230
CDC Amarillo	7	110	125	112	SL	M	3.5	85	4.5	R	MR	F	n/a	F	G	230
AAC Ardill	5	113	120	97	SL	M	3.5	85	4.5	R	MR	G	n/a	G	G	230
Argus ☹ §	5	100	109	107	SL	M	4.0	80	5.5	R	I	F	n/a	F	G	230
CDC Bronco	8	101	101	96	SL	M	4.5	75	4.5	R	I	G	n/a	G	G	230
CDC Centennial	5	99	110	110	SL	E	5.5	70	5.0	R	I	G	n/a	G	F	270
Cutlass §	11	94	99	93	SL	M	5.0	75	5.0	R	I	F	n/a	F	G	220
Delta	4	86	89	---	SL	E	5.5	70	5.5	S	---	G	n/a	---	---	250
Earlstar ☹	5	101	114	---	SL	E	5.0	80	5.0	R	I	F	n/a	G	G	210
Eclipse ☹	11	90	96	95	SL	M	4.0	80	5.0	R	MS	G	n/a	F	G	250
CDC Hornet	8	100	105	101	SL	M	4.0	85	4.5	R	I	F	n/a	G	G	220
CDC Inca	5	117	125	---	SL	M	4.0	85	4.5	R	I	G	n/a	G	F	230
AAC Lacombe	4	111	127	---	SL	M	3.5	85	5.0	R	I	F	n/a	F	F	250
CDC Meadow	13	100	110	101	SL	E	4.0	85	5.0	R	I	G	n/a	G	G	220
CDC Mozart	7	96	99	101	SL	M	5.5	70	4.5	R	I	G	n/a	G	F	220
Polstead ☹ §	8	94	103	101	SL	M	5.0	75	5.0	R	MS	F	n/a	G	F	280
CDC Prosper	8	92	99	82	SL	E	4.5	80	5.0	R	MR	G	n/a	F	G	150
Reward ☹ §	5	90	105	101	SL	M	4.0	90	5.0	R	I	G	n/a	G	F	240
CDC Saffron	8	106	114	101	SL	M	4.0	80	4.5	R	I	G	n/a	F	G	250
Thunderbird ☹	6	98	104	101	SL	M	4.0	85	5.0	R	I	G	n/a	G	F	220
CDC Treasure	9	97	109	104	SL	E	4.0	80	5.0	R	I	F	n/a	F	G	210
<b>Green</b>																
Cooper ☹	11	99	100	95	SL	L	4.0	80	5.0	R	I	F	F	G	n/a	270
CDC Greenwater	6	110	114	96	SL	L	3.5	90	4.0	R	MR	G	G	F	n/a	230
CDC Limerick	7	105	110	101	SL	L	3.5	85	4.0	R	I	VG	G	G	n/a	210
CDC Patrick	11	96	105	97	SL	M	4.5	80	4.5	R	MR	G	G	G	n/a	190
CDC Pluto	6	102	102	102	SL	M	5.5	80	4.5	R	I	G	G	G	n/a	160
AAC Radius	4	83	94	---	SL	M	5.0	85	4.5	R	I	VG	G	G	n/a	230
CDC Raezer	8	91	103	105	SL	M	3.5	85	5.0	R	MR	G	G	G	n/a	220
AAC Royce	3	98	106	---	SL	M	5.0	70	5.0	R	I	F	G	n/a	260	
CDC Sage	5	81	88	82	SL	M	4.0	80	5.0	R	MR	G	G	F	n/a	220
SW Sergeant §	5	81	85	85	SL	M	4.0	80	5.0	R	I	G	G	G	n/a	200
CDC Striker	13	89	101	94	SL	M	3.5	80	4.5	S	MR	VG	G	G	n/a	240
CDC Tetris	9	99	113	99	SL	L	4.0	85	4.5	R	MR	G	F	G	n/a	210
<b>Red</b>																
Redbat 8	3	106	103	---	SL	M	5.0	85	5.0	R	---	---	n/a	G	n/a	190
<b>Maple</b>																
CDC Acer	3	93	92	---	SL	L	6.5	60	5.0	R	---	G	n/a	VG	n/a	170
CDC Mosaic	4	90	92	65	SL	L	4.0	85	4.5	R	---	G	n/a	VG	n/a	180
CDC Rocket §	3	86	101	94	SL	M	6.0	75	5.0	R	---	G	n/a	VG	n/a	210
<b>Dun</b>																
CDC Dakota	6	116	125	106	SL	M	3.5	85	4.5	R	---	G	n/a	VG	n/a	205
<b>Forage</b>																
CDC Horizon	4	97	98	70	SL	M	4.5	90	4.5	R	---	G	n/a	G	G	170
CDC Leroy	3	91	93	84	SL	M	5.0	95	4.5	R	---	G	n/a	G	G	150
CDC Tucker	3	91	97	83	SL	M	4.0	100	4.5	R	---	G	n/a	G	F	170
40-10	3	75	82	52	N	L	8.5	120	4.5	S	---	G	n/a	G	---	140

<sup>1</sup> Co-op and regional trials in Saskatchewan

<sup>2</sup> N = normal leaf type; SL = semi-leafless

<sup>3</sup> Lodging score (1-9) where 1 = completely upright, 9 = completely lodged

<sup>4</sup> Mycosphaerella blight score (1-9) where 1 = no disease, 9 = completely blighted

<sup>5</sup> Seed Coat Dimpling: VG = 0-5%; G = 6-20%; F = 21-50%

<sup>6</sup> Greenness: Good = 0-15%; Fair = 16-40%

## FIELD PEA ADDITIONAL INFORMATION

**CDC Acer, CDC Mosaic, CDC Rocket, CDC Dakota** and **40-10** have purple flower colour and pigmented seed coats. **CDC Acer, CDC Mosaic,** and **CDC Rocket** have a maple patterned seed coat, **40-10** has a speckled seed coat, while **CDC Dakota** has a solid dun (tan) coloured seed coat. All other varieties have white flower colour and non-pigmented seed coats. For detailed production information, consult the *Pulse Production Manual* published by Saskatchewan Pulse Growers. The relative maturity of the check variety **CDC Golden** is M (Medium), which is on average 90 days from seeding to swathing ripeness. Please add 3-4 days for each rating beyond Medium. As harvest proceeds into the fall, these ranges expand.

# Soybean

## Main Characteristics of Varieties

Variety <sup>1</sup>	Distributor	Company Maturity Grouping <sup>2</sup>	Type <sup>1</sup>	Hilium Colour <sup>3</sup>	Years Tested	Yield (% 23-10RY) <sup>4</sup>		Days to Maturity
						South	North	
23-10RY	DEKALB	00.1	RR2	BL	4	100	100	123
P001T34R ☼	DuPont Pioneer	000	RR1	BR	3	83	87	118
P002T04R ☼	DuPont Pioneer	00.2	RR1	TN	2	94	95	119
NSC Moosomin RR2Y	NorthStar Genetics Manitoba	000.9	RR2	BR	3	89	95	121
22-60RY	DEKALB	000.8	RR2	BL	2	101	102	121
NSC Reston RR2Y	NorthStar Genetics Manitoba	00.1	RR2	BL	4	104	98	123
Notus R2	Brett Young / Elite	00.1	RR2	BL	2	103	102	124
LS NorthWester	Delmar Commodities	00.2	RR2	BL	2	103	93	124
Bishop R2	SeCan Members	00.2	RR2	IY	4	99	96	124
S007-Y4	Syngenta Canada	00.5	RR2	IY	2	114	106	124
TH 33003R2Y	Quarry Seed Ltd.	00.3	RR2	BR	4	105	101	125
NSC Tilston RR2Y	NorthStar Genetics Manitoba	00.4	RR2	BL	4	105	103	125
NSC Anola RR2Y	NorthStar Genetics Manitoba	00.2	RR2	BL	3	107	99	125
TH 35002R2Y	Quarry Seed Ltd.	00.2	RR2	BL	2	100	98	125
23-11RY	DEKALB	000.9	RR2	BL	2	105	98	125
McLeod R2	SeCan Members	00.3	RR2	BL	4	108	104	125
LS 002R24N	Delmar Commodities	00.2	RR2	BL	3	107	104	126
Pekko R2	Brett Young / Elite	00.1	RR2	BL	4	103	96	126
PS 0035 NR2	Pride Seeds	00.3	RR2	BL	3	104	98	126
Mahony R2	SeCan Members	00.3	RR2	BL	2	112	106	126
TH 32004R2Y	Quarry Seed Ltd.	00.4	RR2	BL	4	115	101	126
NSC Gladstone RR2Y	NorthStar Genetics Manitoba	00.3	RR2	BL	3	109	98	126
23-60RY	DEKALB	00.3	RR2	BL	3	107	98	126
Hero R2	SeCan Members	00.4	RR2	BL	2	113	99	127
Vito R2	NorthStar Genetics Manitoba	00.2	RR2	GR	4	99	94	127
Akras R2	Brett Young / Elite	00.3	RR2	IB	2	111	105	127
LS 003R24N	Delmar Commodities	00.3	RR2	BL	2	104	97	127
900Y61 ☼	DuPont Pioneer	00.6	RR1	BR	4	101	91	128
Lono R2	Brett Young / Elite	00.5	RR2	Y	2	108	101	128
TH 33005R2Y	Quarry Seed Ltd.	00.5	RR2	BL	3	108	98	128
HS 006RYS24	Dow Seeds	00.6	RR2	BL	3	103	91	128

<sup>1</sup> All varieties in this table are either Roundup Ready 1 or Genuity Roundup Ready 2 Yield™

<sup>2</sup> In North America, soybean varieties are classified into maturity groupings from 9 in southern USA to 1 or 0 in southern Ontario. 00 refers to shorter season varieties than 0 types, while 000 refers to shorter season varieties than 00 types. The decimal point notation refers to differences within a class, for example, 00.1 should be a shorter season variety than 00.2.

<sup>3</sup> Hilium is the point where the seed attaches to the pod. BR = Brown, Y = Yellow, IY = Imperfect Yellow, BL = Black, GR = Grey, TN = Tan.

<sup>4</sup> South: Boissevain, Melita, Hamiota, Redvers, Halbrite, Swift Current, and Indian Head; North: Dauphin, Roblin, Outlook (irrigated and dryland), Saskatoon, Floral, Kamsack, Rosthern, Melfort, and Scott.

## ADDITIONAL INFORMATION

The soybean variety trial is coordinated by Manitoba Agriculture Food and Rural Development. Mean yield of the check variety 23-10RY was 45 bushels/acre in the south and 42 bushels/acre in the north. Typical on-farm yields are 25-30 bushels/acre. Soybean is not native to the Canadian Prairies and so must be inoculated with soybean inoculant that contains *Bradyrhizobium japonicum* bacteria.

# Chickpea

## Main Characteristics of Varieties

Market Class	Variety	Years Tested	Yield (% Amit (B-90))		Ascochyta Blight <sup>2</sup>	Height (cm)	Days to Flower	Maturity	Seed Weight (g/1000)	Seed Shape <sup>3</sup>	Seed or Seed Coat Colour <sup>4</sup>
			Area 1 <sup>1</sup>	Area 2 <sup>1</sup>							
<b>Kabuli</b>	Amit (B-90) ☼	14	100	100	4.3	46	57	L	260	Ro	B
	CDC Alma	7	91	92	6.1	41	54	L	372	RH	B
	CDC Frontier	14	108	104	4.4	45	56	L	352	RH	B
	CDC Leader	10	109	108	4.4	41	55	M	394	RH	B
	CDC Luna	13	98	100	5.7	39	54	M/L	373	RH	B
	CDC Orion	9	108	106	4.9	44	51	L	441	RH	B
	CDC Palmer ☼	5	108	105	4.7	42	53	M/L	426	RH	B
<b>Desi</b>	CDC Consul	8	111	111	3.9	45	53	M	307	P	LT
	CDC Corinne	13	114	111	4.1	40	56	M	247	A/P	T
	CDC Cory	7	113	106	4.1	47	57	M	274	A/P	T
	CDC Vanguard	13	107	107	4.7	38	53	M/L	224	P	T

<sup>1</sup> Area 1: Brown soil zone; Area 2: Dark Brown soil zone

<sup>2</sup> Ascochyta Blight at pod filling period: 0-9 scale; 0 = no symptom; 9 = plants are completely blighted. Scores 4-6 are considered intermediate resistance (I).

<sup>3</sup> Seed shape: Ro = Round; RH = Ram-head; P = plump; A = angular

<sup>4</sup> Seed or seed coat colour: B = beige; LT = light tan; T = tan.

### ADDITIONAL INFORMATION

Please refer to *2016 SaskSeed Guide* for pedigreed seed availability. For more details on production, consult the *Pulse Production Manual* published by the Saskatchewan Pulse Growers ([www.saskpulse.com](http://www.saskpulse.com)).

# Dry Bean

## Main Characteristics of Varieties

Type	Variety	Years Tested <sup>1</sup>	Yield --- (% CDC Pintium) ---		Days to Flower	Maturity Rating <sup>2</sup>	% Pod Clearance <sup>3</sup>	Seed Weight (g/1000)	Growth Habit <sup>4</sup>
			Irrigation	Dryland					
<b>Pinto</b>	CDC Pintium	14	100	100	50	E	85	350	I
	Island	8	122	109	55	M	79	355	II
	Mariah ☼	5	114	103	55	L	82	293	II
	CDC Marmot	6	115	112	50	E	80	367	I
	Winchester	5	116	110	52	M	82	352	II
	CDC WM-2 ☼	9	118	106	52	E	79	365	II
	<b>Navy</b>	Envoy	14	84	84	53	M	77	184
Lightning		7	109	92	60	L	85	175	II
Skyline ☼		5	74	91	57	L	80	163	I
OAC Spark		6	88	101	55	L	81	163	I
Portage		3	97	94	52	M	85	175	II
<b>Great Northern</b>	AC Polaris	7	97	98	52	L	70	310	III
<b>Small Red</b>	AC Redbond	8	98	100	51	M	65	290	II
<b>Black</b>	CDC Blackcomb	7	115	95	56	M	85	167	II
	CDC Blackstrap ☼	5	116	115	53	M	85	195	II
	Carman Black	5	125	113	59	M	88	180	II
	CDC Jet	14	96	95	58	L	85	170	II
	CDC Superjet	4	128	107	58	L	85	170	II
<b>Shiny Black</b>	AC Black Diamond	7	102	94	54	M	70	250	II
<b>Yellow</b>	CDC Sol ☼	8	103	93	55	L	78	399	I

<sup>1</sup> Co-op and regional trials grown in narrow rows. Direct comparisons to **CDC Pintium** since 2002.

<sup>2</sup> Maturity ratings based on E = 100 days; L = 110 days for May 20 planting to swathing maturity. See page 2 for more information.

<sup>3</sup> Pod clearance: percentage of pods that completely clear the cutterbar at time of swathing (~4 cm).

<sup>4</sup> Growth habit: I = Determinate bush; II = Indeterminate bush; III = Indeterminate vine.



# Faba Bean

## Main Characteristics of Varieties

Variety	Years Tested	Yield (% CDC Fatima)	Height (cm)	Lodging <sup>1</sup> (1-9)	Maturity (days)	Seed Weight (g/1000)
<b>Coloured Flower (normal tannin)</b>						
CDC Fatima	10	100	106	3.8	105	520
CDC Blitz §	6	101	101	3.7	109	410
Fabelle <sup>2</sup>	3	108	104	2.4	105	533
Florent	4	112	102	2.3	107	660
FB9-4	8	96	95	3.7	104	680
CDC SSNS-1	10	91	109	3.4	105	335
Taboar ☉	5	96	110	3.7	107	480
Vetigo	3	111	107	3.0	106	571
186S-11 ✱	5	107	105	3.1	106	749
247-13 ✱	4	107	103	3.4	106	620
<b>White Flower (zero tannin)</b>						
Imposa ☉	4	110	99	2.4	107	695
Snowbird ☉	10	104	96	2.6	104	495
CDC Snowdrop	7	91	98	2.6	104	335
Tabasco ☉	5	101	96	2.3	106	530

<sup>1</sup> Lodging score (1-9) where 1 = completely upright, 9 = completely lodged.

<sup>2</sup> Low vicine.

### ADDITIONAL INFORMATION

Faba bean regional trials began in 2006 to accommodate growing interest in this crop as a nitrogen-fixing high protein food and feed grain in moist areas. White-flowered types are zero tannin. 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. Maturity ratings are based on days until swathing maturity but will vary depending on seeding date.

## Stored Grain Management

By Scott Hartley, Saskatchewan Agriculture

Management of stored grain is always an important aspect in production systems. Efficient management and regular monitoring procedures are especially critical to avoid issues related to grain heating, mould and insect infestations in order to maintain optimum value of the commodity.

The Canadian Grain Commission has noted that insect infestations are commonly associated with residual grain particles or dust in or around storage facilities. Remove vegetation or spilled grain around storage facilities that are attractive to insect or rodent pests. Start with clean grain handling equipment such as augers and trucks as well as bins. Sweep or vacuum to remove any residues present before any commodity is put into storage. If cereal grains are to be stored, the bin, including cracks and crevices, can be treated with an

insecticide such as malathion. However, it is important to note that canola should not be stored in facilities treated with malathion for at least six months. Oilseeds will absorb sufficient quantity of the insecticide to exceed maximum residue limits (MRLs) allowed for export to some countries.

Preferably grain should be dry before putting into storage, but it may be necessary to cool and dry the grain once it is in the bin. For long term storage grain should be cooled to below 15°C as soon as possible. Below 15°C insect reproduction and development is inhibited. Drying and cooling the grain will prevent heating and fungal growth. Cool temperatures also prevent insect development and reproduction. Certain insects (fungus feeders) do not feed on the grain itself but on fungal growth on the seed. Although not considered primary insect

pests in stored grain, the presence of these insects will affect marketing of the commodity.

For more information:  
Agriculture Knowledge Centre  
Toll Free 1-866-457-2377

For more detailed information please refer to the Saskatchewan Agriculture fact sheet *Insects and Mould In Stored Grain* at [www.agriculture.gov.sk.ca](http://www.agriculture.gov.sk.ca).

Guide to Crop Protection *Insect Control in Stored Grain* at [www.agriculture.gov.sk.ca](http://www.agriculture.gov.sk.ca).

Canadian Grain Commission – Maintaining quality and managing insect infestations at [www.grainscanada.gc.ca](http://www.grainscanada.gc.ca).

# OILSEED CROPS

## Flax

### Main Characteristics of Varieties

Variety	Years Tested	Yield <sup>1</sup> (% CDC Bethune)			Relative Maturity <sup>2</sup>	Seed Size <sup>3</sup>	Resistance To		
		Area 1 & 2	Area 3 & 4	Irrigation			Lodging	Powdery Mildew <sup>4</sup>	Fusarium Wilt <sup>4</sup>
CDC Bethune ☼	10	100	100	100	L	M	G	MR	MR
AAC Bravo ☼	3	99	102	99	L	L	G	MR	MR
CDC Glas ☼	5	104	109	93	L	M	VG	MR	MR
Hanley ☼	4	90	90	93	M	M	G	MR	R
Lightning ☼	6	92	92	93	L	M	G	MR	R
CDC Neela ☼	6	104	107	95	L	M	G	MR	MR
Prairie Blue ☼	4	99	92	97	L	S	VG	MR	MR
Prairie Grande ☼	6	92	94	92	M	M	VG	MR	MR
Prairie Sapphire ☼	4	99	101	100	L	M	G	MR	MR
Prairie Thunder ☼	8	95	95	98	M	M	VG	MR	R
CDC Sanctuary ☼	7	103	101	96	L	M	F	MR	MR
CDC Sorrel ☼	8	100	101	92	L	L	G	MR	MR
Taurus ☼	6	94	99	94	M	M	G	R	MR
Vimy §	10	94	90	85	M	L	P	MS	MR
Westlin 70	3	93	103	95	L	M	G	MR	MR
Westlin 71 ☼	3	92	102	95	L	M	VG	MS	MR

<sup>1</sup> Data from Regional and Coop yield trials.

<sup>2</sup> Relative maturity: The relative maturity of the check, **CDC Bethune**, is L (on average 101 days from seeding to swathing ripeness).

<sup>3</sup> Seed size: S = Small, M = Medium, L = Large.

<sup>4</sup> Disease Resistance Scale: MS = Moderately Susceptible, MR = Moderately Resistant, R = Resistant.

### ADDITIONAL INFORMATION

Flax was last tested in 2015. All current variety descriptions other than yield are based on data from the Flax Cooperative Trials in the Prairie Provinces.

All current varieties are immune to rust.

Frozen flax should be analyzed by a feed testing laboratory to determine that it is free of prussic acid before using it as a livestock feed.

The Canadian Grain Commission (CGC) advises that the following oilseed flax varieties **CDC Arras**, **Flanders** and **Somme** will be deregistered effective August 1, 2017.

## Camelina

Camelina, sometimes known as false flax, is a short-season crucifer oilseed that can be grown on a wide range of soil types. It is well adapted to dryland conditions and does not tolerate excessive soil moisture. Camelina seed is very small (1.0 g/1000 seed) and requires shallow seeding. Reduced emergence may be expected when camelina is seeded deeper than 1.5 cm (0.5 inch). Camelina plants are resistant to blackleg disease and flea beetles

and possess good shatter resistance. Camelina may be straight-combined at full maturity or swathed when pods have turned colour from green to yellow. Camelina is grown almost exclusively under contract; both camelina oil and meal are marketed for food, feed and industrial applications. For more information on camelina, consult the Saskatchewan Agriculture publication *Camelina*.

**Midas** is a spring-type camelina cultivar with high seed yield and high oil content. **Midas** grows to medium heights (65 – 85 cm), flowers, depending on the weather conditions, after about 45 days and reaches maturity 85 – 100 days after emergence. **Midas** possesses quantitative resistance to downy mildew. Certified seed of **Midas** will be available to producers in 2016.

# Mustard

## Main Characteristics of Varieties

Type and Variety	Yield <sup>1</sup>	Plant Height (cm)	Hydroxybenzyl Glucosinolate (μmol/g seed)	Allyl Glucosinolate (μmol/g seed)	Mucilage <sup>2</sup> (cS*ml/g seed)	Resistance to White Rust <sup>3</sup>		Fixed Oil (% seed)	Protein (% Seed)	Seed Weight (g/1000)	Maturity (days)
						2a	2v				
<b>Yellow (% AC Pennant)</b>											
AC Pennant <sup>4</sup>	100	96	148	n/a	44.7	n/a		29.5	34.3	5.7	92
AAC Adagio <sup>5</sup> ✱	103	103	139	n/a	96.8	n/a		30.1	33.0	5.1	94
Andante <sup>4</sup>	101	102	145	n/a	55.7	n/a		28.4	35.1	6.0	93
<b>Brown (% Duchess)</b>											
Duchess <sup>4</sup>	100	113	n/a	9.4	n/a	S	S	38.1	28.7	2.7	92
Amigo <sup>6</sup>	94	109	n/a	13.9	n/a	R	S	34.2	30.7	2.7	98
AAC Brown 100 <sup>7</sup>	116	113	n/a	12.7	n/a	R	R	34.8	30.8	3.6	94
Centennial Brown <sup>4</sup>	101	117	n/a	10.4	n/a	S	S	36.3	30.1	3.1	92
<b>Oriental (% Cutlass)</b>											
Cutlass <sup>4</sup>	100	115	n/a	11.6	n/a	R	S	41.0	29.1	2.8	91
Forge <sup>4</sup>	97	125	n/a	12.2	n/a	S	S	38.9	29.6	2.6	92
AAC Oriental 200 <sup>7</sup>	107	123	n/a	11.7	n/a	R	S	37.0	30.1	2.9	95
AC Vulcan <sup>4</sup>	98	116	n/a	12.4	n/a	R	S	40.6	29.5	2.9	91

<sup>1</sup> Field data not collected by area.

<sup>2</sup> Mucilage in yellow mustard is a measurement of viscosity of aqueous extracts from seed.

<sup>3</sup> Varieties are rated S (Susceptible) or R (Resistant) to White Rust strains.

<sup>4</sup> Data from 1999-2012 Co-operative Mustard Test. Yield % of check: 124 station years for yellow mustard, and 117 station years for brown and oriental mustard.

<sup>5</sup> Data from 2008-2010 Co-operative Mustard Test (29 station years).

<sup>6</sup> Data from 2009-2012 Co-operative Mustard Test (21 station years).

<sup>7</sup> Data from 2012 yield test and 2013-2014 Co-operative Mustard Test (16 station years).

### ADDITIONAL INFORMATION

Three types of mustard are grown in western Canada: yellow (*Sinapis alba*), and brown and oriental (*Brassica juncea*). Mustard is typically grown under contract, where the contractor specifies the variety to be grown to meet industry specifications for product quality. All mustard varieties have good resistance to blackleg disease and mature, on average, in 91 to 98 days.

**AAC Adagio** is a new yellow mustard variety registered in 2014. Breeder seed of **AAC Adagio** was produced in 2013.

The three yellow mustard varieties have similar yield. A unique feature of yellow mustard is high mucilage content. Mucilage is valued by the mustard industry as a stabilizer in prepared food products. **AAC Adagio** has significantly higher mucilage content, but smaller seed size and lower protein content than **AC Pennant** and **Andante**.

Brown mustard is grown primarily for the Dijon mustard market. **AAC Brown 100** is a new brown mustard variety registered in September 2015. It has significantly higher (16%) yield

than the check variety **Duchess**. Both **AAC Brown 100** and **Centennial Brown** have significantly higher allyl glucosinolate and protein contents, as well as significantly larger seed size than **Duchess**.

**AAC Oriental 200**, registered in October 2015, has a higher (7%) yield and significantly lower oil content than **Cutlass**. **AC Vulcan** and **Forge** have higher allyl glucosinolate content than **Cutlass** and **AAC Oriental 200**.

# Canola (Small Scale Trials)

## Main Characteristics of Varieties

Variety (B. napus)	Distributor	LONG Season Zone (8 trials)				MID Season Zone (15 trials)				SHORT Season Zone (6 trials)				Disease Tolerance <sup>1</sup>
		Yield % 5440	Maturity (days)	Lodging (1-5)	Height (inches)	Yield % 5440	Maturity (days)	Lodging (1-5)	Height (inches)	Yield % 5440	Maturity (days)	Lodging (1-5)	Height (inches)	
CHECK MEAN 5440 (bu/ac)		58				64				68				
<b>Clearfield</b>														
5525 CL	BrettYoung	98	92	2.3	50	91	96	2.1	48	93	103	2.0	44	BL
CS2200CL	CANTERRA SEEDS	94	93	2.5	50	93	97	2.4	47	94	103	2.4	45	BL
LSD (%) <sup>2</sup>		13				14				13				
<b>Liberty Link</b>														
5440	Bayer CropScience	100	93	1.8	51	100	96	1.3	49	100	103	1.6	44	BL
L252	Bayer CropScience	117	93	2.3	49	107	97	2.3	48	111	103	2.0	43	BL
L261	Bayer CropScience	108	94	2.5	54	104	98	1.8	52	106	104	1.5	46	BL
L140P	Bayer CropScience	107	92	3.5	49	99	95	2.9	48	97	101	2.6	43	BL
LSD (%) <sup>2</sup>		10				10				10				
<b>Roundup Ready</b>														
1990	CANTERRA SEEDS	100	92	3.0	46	95	96	3.0	46	89	103	3.4	42	BL
6056CR	BrettYoung	97	95	2.4	49	93	98	2.2	47	90	104	2.1	41	BL/CR
6074RR	BrettYoung	105	95	2.7	49	102	98	2.1	47	99	105	2.1	44	BL
6080RR	BrettYoung	98	93	2.4	48	97	97	1.9	48	94	103	2.3	43	BL
CS2000	CANTERRA SEEDS	102	94	2.4	52	100	97	2.5	50	101	103	3.5	45	BL/CR
CS2100	CANTERRA SEEDS	102	94	2.5	48	---	---	---	---	---	---	---	---	BL
SY4157	Syngenta	105	94	2.3	52	102	98	2.3	49	96	104	2.6	41	BL
SY4166	Syngenta	101	92	3.0	51	98	96	2.9	48	89	104	3.3	41	BL
V12-1 <sup>3</sup>	Cargill - VICTORY	100	93	2.3	50	94	96	2.8	47	91	103	3.5	41	BL
V12-3 <sup>3</sup>	Cargill - VICTORY	102	93	2.7	50	99	97	2.9	47	97	103	3.3	40	BL/CR
14H1176	Syngenta	108	96	2.4	53	102	99	2.0	50	99	105	2.3	44	BL/CR
LSD (%) <sup>2</sup>		8				11				11				

<sup>1</sup> Indicates genetic resistance with an "R" or resistant rating to specific disease affecting canola, BL = Blackleg, CR = Clubroot.

<sup>2</sup> LSD = least significant difference (5% level) within herbicide system.

<sup>3</sup> Indicates varieties with Specialty oil profiles and premiums associated with pricing. Visit [www.canolaperformancetrials.ca](http://www.canolaperformancetrials.ca) for more details.

### Least Significant Difference

When comparing average zone yields for varieties in the small plot data, the least significant difference (LSD) is about 8 to 14 bu/ac. If variety A yielded 52 bu/ac. and variety B yielded 45 bu/ac., they would be considered statistically the same. This is based on a confidence level that significant differences would occur by chance less than 5% of the time. In the small plot design used, varieties were grouped by herbicide system, which means that the LSD shown strictly applies to comparisons between varieties of the same herbicide system.

**More importantly, comparisons between varieties within the same herbicide system reveal only genetic differences, whereas variety comparisons between herbicide systems compare the net effect of both genetic and herbicide effects (weed control and crop tolerance).**

### Where can you get the Canola Performance Trial results?

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

## CANOLA ADDITIONAL INFORMATION

### *Brassica napus* (Argentine Canola)

Argentine varieties mature two weeks later than Polish varieties and are therefore better suited to the mid- and long-season growing areas of Saskatchewan. Blackleg disease, which is now widespread in Saskatchewan, can cause severe yield losses in varieties that are susceptible. Argentine varieties are susceptible to seed shattering when left standing at full maturity. Later maturing varieties tend to produce higher levels of green seed under wet and cool conditions at harvest, which can cause substantial grade reductions. The control of herbicide tolerant canola volunteers requires good agronomic practices, such as proper crop and herbicide rotations.

### *Brassica rapa* (Polish Canola)

Polish varieties mature approximately two weeks earlier than Argentine varieties and are less likely to produce green seed. Polish varieties are more heat and drought tolerant than the Argentine type. They are also more shatter resistant than Argentine varieties and are therefore well suited to straight combining. All current Polish varieties have poor resistance to blackleg, but blackleg is less of a threat in Polish canola because of its early maturity, which tends to reduce the impact of the disease on seed yields. Three synthetic Polish varieties are **Early One**, **ACS-C29** and **Synergy**. All three varieties yield significantly more than their open-pollinated counterparts like **AC Sunbeam**. **Early One** and **ACS-C29** are available through Mastin Seeds, while **Synergy** and **AC Sunbeam** are available through SeCan. (Source: AAFC, Saskatoon)

### *Brassica juncea* Canola

Canola quality *Brassica juncea* is a class of canola that is especially well adapted to areas where hot, dry conditions are common. It has very good resistance to blackleg and exhibits better heat and drought tolerance than other *Brassica napus* canola. All production is contracted.

**XCEED** Canola, available from Proven Seed, Crop Production Services in 2016, is suited to the Brown and Dark Brown growing season zones. It is compatible with the Clearfield Production System (Source: CPS).

## Sunflower

### Main Characteristics of Varieties

Variety	Herbicide Tolerance	Years Tested	Yield (% 63A21)	Average Maturity (days)	Harvest Moisture (%)
<b>Oilseed</b>					
63A21		6	100	110	18.7
8N 270	Clearfield ®	6	90	115	26.4
Talon	ExpressSun ®	2	92	113	30.1
Cobalt II	Clearfield ®	3	76	115	30.4
<b>Oilseed EMSS (Early Maturing, Short Stature)</b>					
63A21		6	100	110	18.7
AC Sierra		6	72	106	16.2

### ADDITIONAL INFORMATION

Sunflower requires 105-125 days to mature, depending on the cultivar and the growing season. Oilseed sunflower has been grown in the Dark Brown and Black soil zones in southeastern Saskatchewan. Harvest moisture is a good indication of how quickly these hybrids will be ready to combine in the field. The EMSS varieties

are adapted to production in most areas of Saskatchewan. **AC Sierra** is open pollinated and not a hybrid.

The Saskatchewan Sunflower Committee has been conducting trials in Saskatchewan for the purpose of registration and demonstration since 1983. Sunflowers no

longer require three years of yield testing to be sold in Saskatchewan. Saskatchewan Sunflower Committee will publish results from each year. For the complete data set, please email or call Sherri Roberts with Saskatchewan Agriculture at sherri.roberts@gov.sk.ca or 306-848-2856.

# Breeding Institutions and Seed Distributors of Varieties Listed in this Publication

Crop Kind, Class & Variety	Breeding Institution	Distributor
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## WHEAT

### Canada Western Red Spring

AAC Bailey ☺	AAFC (Swift Current)	CANTERRA SEEDS
AC Barrie	AAFC (Swift Current)	SeCan Members
CDC Bradwell ☼	U of S - CDC	SeCan Members
AAC Brandon ☺	AAFC (Swift Current)	SeCan Members
AAC Cameron VB ☼	AAFC (Brandon)	CANTERRA SEEDS
Carberry ☺	AAFC (Swift Current)	SeCan Members
Cardale ☺	AAFC (Winnipeg)	Seed Depot
Coleman	U of Alberta	Letsrud Seed
AAC Connery ☼	AAFC (Swift Current)	CANTERRA SEEDS
AAC Elie ☺	AAFC (Swift Current)	Alliance Seed
Glenn ☺	NDSU	CANTERRA SEEDS
CDC Go	U of S - CDC	Public release U of S - CDC
Go Early	U of Alberta	Mastin Seeds
Goodeve VB ☺	AAFC (Swift Current)	Alliance Seed
Harvest ☺	AAFC (Winnipeg)	FP Genetics
Infinity ☺	AAFC (Swift Current)	CANTERRA SEEDS
AC Intrepid ☺	AAFC (Swift Current)	CANTERRA SEEDS
AAC Jatharia VB ☼	AAFC (Brandon)	SeCan Members
CDC Kernen ☺	U of S - CDC	CANTERRA SEEDS
Lillian ☺	AAFC (Swift Current)	SeCan Members
CDC VR Morris ☺	U of S - CDC	Proven Seed/CPS Canada
Muchmore ☺	AAFC (Swift Current)	FP Genetics
CDC Plentiful ☺	U of S - CDC	FP Genetics
AAC Prevail VB ☼	AAFC (Winnipeg)	Alliance Seed
AAC Redwater ☺	AAFC (Winnipeg)	SeCan Members
Shaw VB ☺	AAFC (Winnipeg)	SeCan Members
CDC Stanley ☺	U of S - CDC	Proven Seed/CPS Canada
Stettler ☺	AAFC (Swift Current)	SeCan Members
SY433	Syngenta Seeds Canada Inc.	Syngenta Canada
CDC Thrive ☺	U of S - CDC	Proven Seed/CPS Canada
Thorsby ☼	U of Alberta	CANTERRA SEEDS
CDC Titanium VB ☼	U of S - CDC	Proven Seed/CPS Canada
Unity VB ☺	AAFC (Winnipeg)	SeCan Members
CDC Utmost VB ☺	U of S - CDC	FP Genetics
Vesper VB ☺	AAFC (Winnipeg)	SeCan Members
AAC W1876 ☼	AAFC (Swift Current)	Warburtons / CANTERRA
Waskada ☺	AAFC (Winnipeg)	SeCan Members
WR859CL ☺	Syngenta Seeds Canada Inc.	Richardson Intl
5604HR CL ☺	Syngenta Seeds Canada Inc.	Proven Seed/CPS Canada
5605HR CL ☺	Syngenta Seeds Canada Inc.	Proven Seed/CPS Canada

### Canada Prairie Spring Red

Conquer VB ☺	AAFC (Winnipeg)	CANTERRA SEEDS
AAC Crusader ☺	AAFC (Winnipeg)	CANTERRA SEEDS
AC Crystal ☺	AAFC (Swift Current)	SeCan Members
Enchant VB ☺	AAFC (Winnipeg)	FP Genetics
AAC Foray VB ☼	AAFC (Winnipeg)	SeCan Members
AAC Penhold ☺	AAFC (Swift Current)	SeCan Members
AAC Ryley ☺	AAFC (Swift Current)	SeCan Members
AAC Tenacious VB ☼	AAFC (Winnipeg)	Alliance Seed
SY985 ☺	Syngenta Seeds Canada Inc.	Proven Seed / Richardson Intl
SY995 ☺	Syngenta Seeds Canada Inc.	
5700PR ☺	Syngenta Seeds Canada Inc.	Proven Seed/CPS Canada
5702PR ☺	Syngenta Seeds Canada Inc.	Proven Seed/CPS Canada

### Canada Western Interim Wheat

Elgin ND ☼	NDSU	FP Genetics
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### Canada Western Hard White Spring

AAC Iceberg ☺	AAFC (Winnipeg)	Alliance Seed
AAC Whitefox ☼	AAFC (Winnipeg)	SeCan Members
Whitehawk ☺	AAFC (Winnipeg)	SeCan Members
CDC Whitewood ☼	U of S - CDC	SeCan Members

### Canada Western Soft White Spring

AC Andrew	AAFC (Lethbridge)	SeCan Members
AAC Chiffon ☺	AAFC (Lethbridge)	SeedNet Inc.
AAC Indus ☼	AAFC (Lethbridge)	SeCan Members
Sadash ☺	AAFC (Lethbridge)	SeCan Members

### Canada Western General Purpose

AAC Innova ☼	AAFC (Lethbridge)	Alliance Seed
CDC NRG003 ☺	U of S - CDC	CANTERRA SEEDS
NRG010 ☺	AAFC (Swift Current)	CANTERRA SEEDS
AAC NRG097 ☺	AAFC (Swift Current)	CANTERRA SEEDS
Pasteur	Wiersum Plant Breeding	SeCan Members
AAC Proclaim ☺	AAFC (Lethbridge)	FP Genetics
SY087 ☺	Syngenta Seeds Canada Inc.	
WFT603	Western Feed Grains Co-op	Western Feed Grains Co-op

Crop Kind, Class & Variety	Breeding Institution	Distributor
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## Varieties that have been registered with class to be determined by the Canadian Grain Commission

AAC Tradition	AAFC (Winnipeg)	SeCan Members
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### Canada Western Amber Durum

CDC Alloy ☼	U of S - CDC	FP Genetics
Brigade ☺	AAFC (Swift Current)	Proven Seed/CPS Canada
AAC Cabri ☼	AAFC (Swift Current)	SeCan Members
CDC Carbide VB ☼	U of S - CDC	Proven Seed/CPS Canada
AAC Congress ☼	AAFC (Swift Current)	CANTERRA SEEDS
AAC Current ☺	AAFC (Swift Current)	Alliance Seed
CDC Desire ☺	U of S - CDC	Syngenta Canada
AAC Durafield ☼	AAFC (Swift Current)	SeCan Members
CDC Dynamic ☼	U of S - CDC	Proven Seed/CPS Canada
Enterprise ☺	AAFC (Swift Current)	CANTERRA SEEDS
Eurostar ☺	AAFC (Swift Current)	SeCan Members
CDC Fortitude ☼	U of S - CDC	Proven Seed/CPS Canada
AAC Marchwell VB ☺	AAFC (Swift Current)	SeCan Members
AC Navigator ☺	AAFC (Swift Current)	Proven Seed/CPS Canada
CDC Precision ☼	U of S - CDC	Alliance Seed
AAC Raymore ☺	AAFC (Swift Current)	SeCan Members
AAC Spitfire ☼	AAFC (Swift Current)	SeCan Members
Strongfield ☺	AAFC (Swift Current)	SeCan Members
Transcend ☺	AAFC (Swift Current)	FP Genetics
CDC Verona ☺	U of S - CDC	Alliance Seed
CDC Vivid ☺	U of S - CDC	Proven Seed/CPS Canada

## WINTER WHEAT

### Canada Western Red Winter

CDC Buteo	U of S - CDC	SeCan Members
CDC Chase	U of S - CDC	CANTERRA SEEDS
AAC Elevate ☼	AAFC (Lethbridge)	SeCan Members
Emerson ☺	AAFC (Lethbridge)	CANTERRA SEEDS
Flourish ☺	AAFC (Lethbridge)	SeCan Members
AAC Gateway ☺	AAFC (Lethbridge)	Seed Depot
Moats ☺	U of S - CDC	SeCan Members
CDC Osprey	U of S - CDC	
Radiant ☺	AAFC (Lethbridge)	CANTERRA SEEDS
AAC Wildfire ☼	AAFC (Lethbridge)	SeCan Members

### Canada Western General Purpose

Accipiter ☺	U of S - CDC	SeCan Members
Broadview ☺	AAFC (Lethbridge)	CANTERRA SEEDS
CDC Falcon	U of S - CDC	SeCan Members
Peregrine ☺	U of S - CDC	SeCan Members
Pintail ☺	FCDC (Lacombe)	Mastin Seeds
CDC Ptarmigan	U of S - CDC	Western Ag
Sunrise	U of S - CDC	Western Ag
Swainson	U of S - CDC	Public Release, U of S - CDC

## TRITICALE

### Spring Habit

Brevis	AAFC (Swift Current)	Wagon Wheel Seed Corp
Bumper ☺	AAFC (Swift Current)	SeCan Members
Bunker ☺	FCDC (Lacombe)	FP Genetics
AC Certa	AAFC (Swift Current)	Progressive Seeds
Pronghorn	FCDC (Lacombe)	Progressive Seeds
Sunray	AAFC (Lethbridge)	SeedNet Inc.
Taza ☺	FCDC (Lacombe)	Solick Seeds
Tyndal ☺	FCDC (Lacombe)	SeCan Members
AC Ultima	AAFC (Swift Current)	FP Genetics

### Winter Habit

Bobcat	FCDC (Lacombe)	Progressive Seeds
Luoma ☺	FCDC (Lacombe)	Corns Brothers Farms
Metzger ☺	FCDC (Lacombe)	Haney Farm Ltd.
Pika	FCDC (Lacombe)	Progressive Seeds

## FABA BEAN

CDC Blitz	U of S - CDC	Redview Farms
CDC Fatima	U of S - CDC	Scoular
Fabelle	DL Seeds Inc.	
FB9-4	U of S - CDC	AGT Foods Canada
Florent	NPZ	DL Seeds
Imposa ☺	Limagrain Nederland	Cyre Seed Farms
Snowbird ☺	Limagrain Nederland	Bob Park - Lacombe, AB
CDC Snowdrop	U of S - CDC	Sask. Pulse Growers
CDC SSNS-1	U of S - CDC	Meier Brothers
Tabasco ☺	DL Seeds Inc.	Ridell Seed Co.
Taboar ☺	Globe Seeds - Netherland	Terramax
Vetigo	DL Seeds Inc.	
186S-11	U of S - CDC	AGT Foods Canada
247-13	U of S - CDC	AGT Foods Canada

**BARLEY**

**Malting Two-Row**

Bentley	FCDC (Lacombe)	CANTERRA SEEDS
CDC Bow	U of S - CDC	SeCan Members
Cerveza	AAFC (Brandon)	Mastin Seeds
CDC Copeland	U of S - CDC	SeCan Members
Harrington	U of S - CDC	SeCan Members
CDC Kendall	U of S - CDC	Proven Seed/CPS Canada
CDC Kindersley	U of S - CDC	SeCan Members
CDC Landis	U of S - CDC	Fedoruk Seeds Ltd.
Major	AAFC (Brandon)	Alliance Seed
CDC Meredith	U of S - CDC	SeCan Members
Merit 57	Busch Ag Res. Inc.	CANTERRA SEEDS
AC Metcalfe	AAFC (Brandon)	SeCan Members
Newdale	AAFC (Brandon)	FP Genetics
CDC PolarStar	U of S - CDC/Sapporo/PML	CANTERRA SEEDS
CDC PlatinumStar	U of S - CDC/Sapporo/PML	CANTERRA SEEDS
AAC Synergy	AAFC (Brandon)	Syngenta Canada

**Malting Six-Row**

CDC Anderson	U of S - CDC	SeCan Members
CDC Battleford	U of S - CDC	SeCan Members
Celebration	Busch Ag Res. Inc.	CANTERRA SEEDS
Lacey	U of Minnesota	Alliance Seed
Legacy	Busch Ag Res. Inc.	Proven Seed/FP Genetics
CDC Mayfair	U of S - CDC	CANTERRA SEEDS
Tradition	Busch Ag Res. Inc.	Proven Seed/FP Genetics

**Hulled - Feed Two-Row**

CDC Austenson	U of S - CDC	SeCan Members
Brahma	Westbred, LLC.	Proven Seed/CPS Canada
Canmore	FCDC (Lacombe)	CANTERRA SEEDS
Champion	Westbred, LLC.	Proven Seed/CPS Canada
CDC Coalition	U of S - CDC	CANTERRA SEEDS
CDC Cowboy	U of S - CDC	SeCan Members
CDC Dolly	U of S - CDC	SeCan Members
Gadsby	FCDC (Lacombe)	SeCan Members
CDC Helgason	U of S - CDC	SeCan Members
CDC Maverick	U of S - CDC	SeCan Members
McLeod	Westbred, LLC.	Proven Seed/CPS Canada
CDC Trey	U of S - CDC	FP Genetics
Xena	Western Plant Breeders Inc.	Proven Seed/CPS Canada

**Hulled Feed Six-Row**

Amisk	FCDC (Lacombe)	SeCan Members
Chigwell	FCDC (Lacombe)	SeCan Members
Muskwa	FCDC (Lacombe)	SeedNet Inc.
AC Rosser	AAFC (Brandon)	SeCan Members
Sundre	FCDC (Lacombe)	Mastin Seeds

**Hullless - Food, Malting, Feed**

CDC Carter	U of S - CDC	SeCan Members
CDC Clear	U of S - CDC	SeCan Members
CDC Fibar	U of S - CDC	
CDC Hilose	U of S - CDC	
CDC McGwire	U of S - CDC	SeCan Members
CDC Rattan	U of S - CDC	
Roseland	AAFC (Brandon)	Wayfinder Farms
Taylor	AAFC (Brandon)	Alliance Seed

**Forage**

CDC Cowboy	U of S - CDC	SeCan Members
Desperado	AAFC (Brandon)	Alliance Seed
CDC Maverick	U of S - CDC	SeCan Members
AC Ranger	AAFC (Brandon)	FP Genetics

**CANARYSEED**

CDC Bastia	U of S - CDC	Public release U of S - CDC
CDC Calvi	U of S - CDC	CANTERRA SEEDS
Cantate	J. Jordans Zaadhandel BV	Hansen Seeds
Keet	U of Minnesota; U of S - CDC	Public release U of S - CDC
CDC Maria	U of S - CDC	C. Special Crops
CDC Togo	U of S - CDC	CANTERRA SEEDS

**RYE**

Bono	KWS Lochow GMBH	FP Genetics
Brasetto	KWS Lochow GMBH	FP Genetics
Guttino	KWS Lochow GMBH	SeedNet Inc.
Hazlet	AAFC (Swift Current)	SeCan Members
Prima	AAFC (Swift Current)	SeCan Members

**OAT**

**Hulled**

SW Betania	Lantmännen SW Seed	Proven Seed/CPS Canada
Bia	Lantmännen SW Seed	La Coop Fédérée
CDC Big Brown	U of S - CDC	SeCan Members
CDC Boyer	U of S - CDC	SeCan Members
Bradley	AAFC - ECORC	SeCan Members
CS Camden	Lantmännen SW Seed	CANTERRA SEEDS
CDC Dancer	U of S - CDC	FP Genetics/Cargill
Derby	U of S - CDC	Proven Seed/Mastin Seeds
AAC Justice	AAFC (Winnipeg)	FP Genetics
Leggett	AAFC (Winnipeg)	FP Genetics
Lu	AAFC (Lacombe)	SeCan Members
CDC Minstrel	U of S - CDC	FP Genetics
AC Morgan	AAFC (Lacombe)	SeCan Members
CDC Morrison	U of S - CDC	CANTERRA SEEDS
CDC Nasser	U of S - CDC	T & L Seeds
Nice	McGill University	La Coop Fédérée
CDC Norseman	U of S - CDC	SeCan Members
CDC Orrin	U of S - CDC	FP Genetics/Cargill
Pinnacle	AAFC (Winnipeg)	FP Genetics
Ronald	AAFC (Winnipeg)	SeCan Members
CDC Ruffian	U of S - CDC	FP Genetics
CDC Seabiscuit	U of S - CDC	CANTERRA SEEDS
CDC So-I	U of S - CDC	T&L Seeds
Souris	NDSU	Seed Depot
Stride	AAFC (Winnipeg)	SeCan Members
Summit	AAFC (Winnipeg)	FP Genetics
Triactor	Lantmännen SW Seed	CANTERRA SEEDS
CDC Weaver	U of S - CDC	FP Genetics/Cargill

**Hullless**

Bullion	Lantmännen SW Seed	Proven Seed/CPS Canada
AC Gwen	AAFC (Winnipeg)	SeCan Members

**Forage**

CDC Baler	U of S - CDC	FP Genetics
CDC Haymaker	U of S - CDC	SeCan Members
Murphy	AAFC (Lacombe)	SeCan Members

**LENTIL**

CDC Asterix	U of S - CDC	Sask. Pulse Growers
CDC Cherie	U of S - CDC	Sask. Pulse Growers
CDC Dazil	U of S - CDC	Sask. Pulse Growers
CDC Greenland	U of S - CDC	Sask. Pulse Growers
CDC Greenstar	U of S - CDC	Sask. Pulse Growers
CDC Imax	U of S - CDC	Sask. Pulse Growers
CDC Imigreen	U of S - CDC	Sask. Pulse Growers
CDC Impact	U of S - CDC	Sask. Pulse Growers
CDC Impala	U of S - CDC	Sask. Pulse Growers
CDC Imperial	U of S - CDC	Sask. Pulse Growers
CDC Impower	U of S - CDC	Sask. Pulse Growers
CDC Impress	U of S - CDC	Sask. Pulse Growers
CDC Improve	U of S - CDC	Sask. Pulse Growers
CDC Impulse	U of S - CDC	Sask. Pulse Growers
CDC Invincible	U of S - CDC	Sask. Pulse Growers
CDC Kermit	U of S - CDC	Sask. Pulse Growers
CDC KR-1	U of S - CDC	AGT Foods Canada
CDC KR-2	U of S - CDC	AGT Foods Canada
CDC LeMay	U of S - CDC	Sask. Pulse Growers
CDC Marble	U of S - CDC	Sask. Pulse Growers
CDC Maxim	U of S - CDC	Sask. Pulse Growers
CDC Meteor	U of S - CDC	Sask. Pulse Growers
CDC Milestone	U of S - CDC	Sask. Pulse Growers
CDC Peridot	U of S - CDC	Sask. Pulse Growers
CDC Plato	U of S - CDC	Sask. Pulse Growers
CDC Proclaim	U of S - CDC	Sask. Pulse Growers
CDC QG-1	U of S - CDC	AGT Foods Canada
CDC QG-2	U of S - CDC	AGT Foods Canada
CDC QG-3	U of S - CDC	AGT Foods Canada
CDC Red Rider	U of S - CDC	Sask. Pulse Growers
CDC Redberry	U of S - CDC	Sask. Pulse Growers
CDC Redbow	U of S - CDC	Sask. Pulse Growers
CDC Redcliff	U of S - CDC	Sask. Pulse Growers
CDC Redcoat	U of S - CDC	Sask. Pulse Growers
CDC Redmoon	U of S - CDC	Sask. Pulse Growers
CDC Richlea	U of S - CDC	SeCan Members
CDC Rosebud	U of S - CDC	Sask. Pulse Growers
CDC Rosie	U of S - CDC	Sask. Pulse Growers
CDC Rouleau	U of S - CDC	Sask. Pulse Growers
CDC Roxy	U of S - CDC	Sask. Pulse Growers
CDC Ruby	U of S - CDC	Sask. Pulse Growers
CDC SB-3	U of S - CDC	Simpson Seeds
CDC Scarlet	U of S - CDC	Sask. Pulse Growers
CDC Sovereign	U of S - CDC	Sask. Pulse Growers
CDC Viceroy	U of S - CDC	Sask. Pulse Growers

Crop Kind, Class & Variety	Breeding Institution	Distributor
<b>FLAX</b>		
CDC Bethune ☺	U of S - CDC	SeCan Members
AAC Bravo ☺	AAFC (Morden)	FP Genetics
CDC Glas ☺	U of S - CDC	SeCan Members
Hanley ☺	AAFC (Morden)	SeCan Members
Lightning ☺	AAFC (Morden)	CANTERRA SEEDS
CDC Neela ☺	U of S - CDC	CANTERRA SEEDS
Prairie Blue ☺	AAFC (Morden)	SeCan Members
Prairie Grande ☺	AAFC (Morden)	SeCan Members
Prairie Sapphire ☺	AAFC (Morden)	Alliance Seed
Prairie Thunder ☺	AAFC (Morden)	CANTERRA SEEDS
CDC Sanctuary ☺	U of S - CDC	SeCan Members
CDC Sorrel ☺	U of S - CDC	SeCan Members
Taurus ☺	Limagrain Nederland	FP Genetics
Vimy §	U of S - CDC	SeCan Members
Westlin 70	CPS Canada Inc.	Proven Seed/CPS Canada
Westlin 71 ☺	CPS Canada Inc.	Proven Seed/CPS Canada

<b>MUSTARD</b>		
<b>Brown</b>		
AAC Brown 100	AAFC (Saskatoon)	Mustard 21 Canada Inc.
Amigo	AAFC (Saskatoon)	Canadian Mustard Assoc.
Centennial Brown	AAFC (Saskatoon)	Canadian Mustard Assoc.
Duchess	Colman's of Norwich	Proven Seed/CPS Canada
<b>Oriental</b>		
AAC Oriental 200	AAFC (Saskatoon)	Mustard 21 Canada Inc.
Cutlass	AAFC (Saskatoon)	Canadian Mustard Assoc.
Forge	Colman's of Norwich	Proven Seed/CPS Canada
AC Vulcan	AAFC (Saskatoon)	Canadian Mustard Assoc.
<b>Yellow</b>		
AC Pennant	AAFC (Saskatoon)	Canadian Mustard Assoc.
Andante	AAFC (Saskatoon)	Canadian Mustard Assoc.
AAC Adagio ☼	AAFC (Saskatoon)	Mustard 21 Canada Inc.

<b>SUNFLOWER</b>		
AC Sierra	AAFC (Saskatoon)	AAFC (Indian Head)
63A21	Pioneer Hi-Bred	Pioneer Hi-Bred
Talon	Nuseed Americas	Nuseed Americas
Cobalt II	Nuseed Americas	Nuseed Americas
8N 270CL DM	Mycogen Seeds	Hyland Seeds

<b>SAFFLOWER</b>		
Saffire	AAFC (Lethbridge)	Jerry Kubic (AB)
AC Sunset	AAFC (Lethbridge)	Proven Seed/CPS Canada

<b>DRY BEAN</b>		
AC Black Diamond	AAFC (Lethbridge)	Viterra Inc.
CDC Blackcomb	U of S - CDC	Scouler
CDC Blackstrap ☼	U of S - CDC	Scouler
Carman Black	AAFC (Morden)	
Envoy	GenTec Seeds	Hensell District Co-op
Island	AAFC (Lethbridge)	Viterra Inc.
CDC Jet	U of S - CDC	B&J Martens Seeds
Lightning	U of Guelph	Hensell District Co-op
Mariah ☺	Seminis Vegetable Seeds	CANTERRA SEEDS
CDC Marmot	U of S - CDC	Sask. Pulse Growers
CDC Pintium	U of S - CDC	Sask. Pulse Growers
AC Polaris	AAFC (Lethbridge)	Viterra Inc.
Portage	AAFC (Morden)	CANTERRA SEEDS
AC Redbond	AAFC (Lethbridge)	Viterra Inc.
Skyline ☺	Globe Seeds - Netherland	Terramax
CDC Sol ☺	U of S - CDC	Scouler
OAC Spark	U of Guelph	U of Guelph
CDC Superjet	U of S - CDC	B+J Martens Seeds
Winchester	Rogers Brothers	ADM Edible Bean Specialties
CDC WM - 2 ☺	U of S - CDC	Scouler

Crop Kind, Class & Variety	Breeding Institution	Distributor
<b>FIELD PEA</b>		
Abarth	Limagrain, Netherlands	FP Genetics
CDC Acer	U of S - CDC	Sask. Pulse Growers
DS Admiral ☺	DL Seeds Inc.	FP Genetics
Agassiz ☺	AAFC (Lacombe)	CANTERRA SEEDS
CDC Amarillo	U of S - CDC	Sask. Pulse Growers
AAC Ardill	AAFC	Wagon Wheel Seed Corp.
Argus ☺	AAFC (Lacombe)	SeCan Members
CDC Bronco	U of S - CDC	Sask. Pulse Growers
CDC Centennial	U of S - CDC	Sask. Pulse Growers
Cooper ☺	Limagrain Nederland	CANTERRA SEEDS
Cutlass	FCDC / CDC	Sask. Pulse Growers
CDC Dakota	U of S - CDC	Sask. Pulse Growers
Delta	Limagrain Nederland	FP Genetics
Earlystar ☺	AAFC (Lacombe)	CANTERRA SEEDS
Eclipse ☺	Limagrain Nederland	FP Genetics
CDC Golden	U of S - CDC	Sask. Pulse Growers
CDC Greenwater	U of S - CDC	Sask. Pulse Growers
CDC Horizon	U of S - CDC	Sask. Pulse Growers
CDC Hornet	U of S - CDC	Sask. Pulse Growers
CDC Inca	U of S - CDC	Sask. Pulse Growers
AAC Lacombe	AAFC	SeedNet Inc.
CDC Leroy	U of S - CDC	Sask. Pulse Growers
CDC Limerick	U of S - CDC	Sask. Pulse Growers
CDC Meadow	U of S - CDC	Sask. Pulse Growers
CDC Mosaic	U of S - CDC	Sask. Pulse Growers
CDC Mozart	U of S - CDC	Sask. Pulse Growers
CDC Patrick	U of S - CDC	Sask. Pulse Growers
CDC Pluto	U of S - CDC	Sask. Pulse Growers
Polstead ☺	Limagrain Nederland	FP Genetics
CDC Prosper	U of S - CDC	Sask. Pulse Growers
AAC Radius	AAFC	Columbia Seeds
CDC Raezer	U of S - CDC	Sask. Pulse Growers
Redbat 8	U of S - CDC	ILTA Grain Inc
AAC Royce	AAFC	Columbia Seeds
Reward ☺	AAFC (Lacombe)	SeCan Members
CDC Rocket	U of S - CDC	Sask. Pulse Growers
CDC Saffron	U of S - CDC	Sask. Pulse Growers
CDC Sage	U of S - CDC	Sask. Pulse Growers
SW Sergeant	Lantmännen SW Seed	FP Genetics
CDC Striker	U of S - CDC	Sask. Pulse Growers
CDC Tetris	U of S - CDC	Sask. Pulse Growers
Thunderbird ☺	AAFC (Lacombe)	CANTERRA SEEDS
CDC Treasure	U of S - CDC	Sask. Pulse Growers
CDC Tucker	U of S - CDC	Sask. Pulse Growers
40-10	DL Seeds Inc.	FP Genetics

<b>CHICKPEA</b>		
CDC Alma	U of S - CDC	Sask. Pulse Growers
Amit (B-90) ☺	ARO Volcani Centre	AGT Foods Canada
CDC Consul	U of S - CDC	Sask. Pulse Growers
CDC Corinne	U of S - CDC	Sask. Pulse Growers
CDC Cory	U of S - CDC	Sask. Pulse Growers
CDC Frontier	U of S - CDC	Sask. Pulse Growers
CDC Leader	U of S - CDC	Sask. Pulse Growers
CDC Luna	U of S - CDC	Sask. Pulse Growers
CDC Orion	U of S - CDC	Sask. Pulse Growers
CDC Palmer ☼	U of S - CDC	Sask. Pulse Growers
CDC Vanguard	U of S - CDC	Sask. Pulse Growers

<b>CAMELINA</b>		
Midas	AAFC (Saskatoon)	Smart Earth Seeds

<b>CANOLA</b>		
see table on page VR28		

<b>SOYBEAN</b>		
see table on page VR23		

### Abbreviations Used in this List

AC	Prefix to variety names Agriculture Canada (Agriculture and Agri-Food Canada)
AAC	Prefix to variety names Agriculture Canada (Agriculture and Agri-Food Canada)
AAFC	Agriculture and Agri-Food Canada
CDC	Crop Development Centre
CPS	Crop Production Services
FCDC	Field Crop Development Centre
U	University
U of S	University of Saskatchewan
USDA	United States Department of Agriculture

### Accessing Public Release Varieties

Breeder seed of public release varieties is available to anyone (including farmers and seed growers) for multiplication, increase and marketing. There are no royalties or seed marketing agency fees attached to use or sale of seed produced from Breeder seed of public release varieties. While subsequent seed production may be Pedigreed, this is the buyer's choice and the buyer may increase and sell the seed of public release varieties in any way he/she wishes. To purchase Breeder seed of public release varieties, contact the breeding institution listed above.