



# Varieties of Grain Crops 2011

## Crop Production Areas



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.

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## Symbols Used in 2011 Seed Guide:

- § Variety may not be described in 2012
- Insufficient test data to describe
- ⊕ Plant Breeders' Rights at time of printing
- ⊗ Applied for PBR protection at time of printing

### Abbreviations used:

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

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

**Seed size:** S = Small, M = Medium, L = Large

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# 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.

Saskatchewan Ministry of Agriculture provides \$100,000 towards 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 also provides \$5000 to the program.

Financial and technical support is also provided by *The Western Producer*, publisher of the 2011 SaskSeed Guide.

A long term database is developed providing 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. SVPG is composed of representatives from individual organizations with an interest in providing variety testing information.

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, sunflowers and canary seed. 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 collected 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.

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.

## 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 medium with L and E varieties plus or minus 1-2 days, and VL and VE varieties beyond this range.

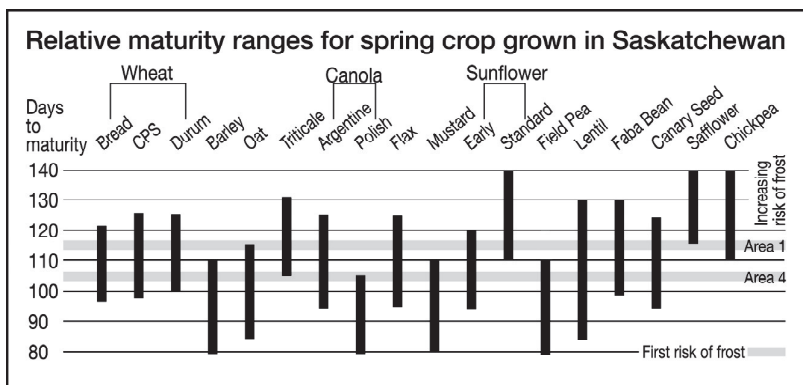
### Comparisons

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 environment 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

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 very poor (VP), poor (P), fair (F), good (G), very good (VG). 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, because not all varieties are tested side-by-side every year, the ratings of older varieties may be less reliable.

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 grown commercially in Saskatchewan to date have ascochyta blight ratings from very poor to fair. 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 these conditions, varieties with ascochyta blight resistance ratings of very poor to poor do not show resistance to ascochyta and can be 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.

## What is Plant Breeders' Rights?

Plant Breeders' Rights provides a way to assure 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. This encourages additional investment in crop variety development for Canadian farmers.

Plant Breeders' Rights for crop variety developers are comparable in many ways to patent protection in other areas. 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 propagation purposes is prohibited by law without:

- 1) the written permission of the breeder or their agent, and
- 2) payment of a royalty to the breeder or their agent.

Under PBR, farmers are allowed to save seed of the variety for their own use, on their own farms.

Varieties protected by Plant Breeders' Rights are identified with the above logo.

Further information on Plant Breeders' Rights can be obtained from the Plant Breeders' Rights Office, tel. (613) 773-7133, fax (613) 773-7261.



# Wheat

## Main Characteristics of Varieties

Variety	Years Tested	Area 1 & 2	Area 3 & 4	Irrigation	Protein	Resistance to:										Relative Maturity in days	Head Awedness	Seed Weight (g/1000)	Volume Weight** (Kg hL-1)	Height (cm)																																				
						Lodging	Sprouting	Stem Rust	Leaf Rust	Stripe Rust*	Loose Smut	Bunt	Leaf Spot	Fusarium Head Blight																																										
<b>Canada Western Red Spring</b>																			<b>Yield as % of AC Barrie</b>																			<b>Relative to AC Barrie</b>																		
AC Barrie	11	100	100	100	15.0	G	G	G	P	P	G	F	P	F	100	N	36.0	79.9	93																																					
CDC Abound	7	109	106	---	-0.3	G	F	VG	P	---	F	F	P	VP	2	Y	+2.4	-0.3	-10																																					
CDC Alsask	4	107	106	---	+0.2	F	G	VG	VG	F	G	G	P	P	-1	N	-0.3	-1.3	-1																																					
Alvena	4	105	104	---	+0.2	G	F	G	F	---	G	G	---	P	-2	N	-1.1	0.0	0																																					
CDC Bounty	5	104	106	---	-0.1	F	G	G	F	---	G	F	P	F	-1	N	-0.2	+1.6	+8																																					
Carberry	2	114	106	---	-0.3	VG	F	G	VG	---	G	VG	P	G	+3	Y	+1.2	+1.2	-12																																					
AC Elsa	7	103	104	97	-0.1	G	F	VG	G	F	G	F	F	P	-1	N	-2.4	-0.5	-1																																					
Fieldstar VB	7	110	110	---	-0.4	F	G	G	VG	---	F	G	---	F	0	Y	-2.1	+0.7	3																																					
Glenn	2	109	112	---	-0.5	VG	F	VG	VG	---	F	F	F	F	+3	Y	-1.7	+1.9	-4																																					
CDC Go	4	102	103	---	-0.1	G	P	VG	F	---	P	G	VP	P	-1	Y	+3.6	-0.3	-6																																					
Goodeve VB	7	111	112	---	-0.1	VG	G	G	G	F	G	P	F	VP	-2	N	+0.8	-0.9	-2																																					
Harvest	6	101	104	---	-0.4	VG	VG	VG	G	---	G	F	P	VP	-1	N	-0.4	+0.1	-6																																					
Helios	4	102	101	103	0.0	G	G	G	P	---	VG	G	P	F	-2	N	-0.7	-0.4	0																																					
CDC Imagine	5	98	102	---	-0.1	G	F	F	F	F	G	G	P	VP	0	N	-1.7	-1.8	-3																																					
Infinity	7	107	106	---	-0.2	G	G	G	G	---	G	F	G	VP	-1	N	-2.8	-0.6	-1																																					
AC Intrepid	5	101	104	102	-0.3	G	P	G	G	G	F	G	P	P	-3	N	-0.2	-0.4	-2																																					
KANE	5	104	104	---	-0.2	G	VG	G	VG	---	P	F	F	F	1	Y	-0.5	+1.4	-5																																					
CDC Kernen	2	111	111	---	-0.2	G	F	G	G	---	VG	F	F	F	+1	Y	1.3	-0.1	+3																																					
Lillian	6	103	100	---	0.3	F	G	G	VG	G	F	G	G	VP	0	N	-0.3	-1.1	-1																																					
McKenzie	6	107	103	109	-0.4	F	G	VG	VG	P	VP	VG	P	F	-1	Y	-1.5	+0.1	+1																																					
Muchmore	2	118	102	---	-0.6	VG	F	VG	VG	---	G	VG	P	P	+3	Y	+1.3	0	-15																																					
CDC Osler	3	101	105	---	-0.3	G	F	VG	G	---	G	G	F	VP	-1	N	-3.7	-0.7	-2																																					
ShawVB	2	120	124	---	-1.0	G	G	VG	G	---	P	G	P	P	+1	N	-0.4	-1.6	+5																																					
CDC Stanley	2	116	115	---	-0.3	G	VG	VG	G	---	G	VP	F	P	0	N	-2.2	-1.1	-3																																					
Stettler	3	115	111	---	+0.1	G	G	G	P	---	G	G	P	P	+1	Y	-0.6	0.0	-6																																					
Superb	6	109	109	---	-0.4	G	G	VG	P	P	F	G	VP	P	+3	Y	+2.6	-0.5	-7																																					
CDC Teal	7	101	101	99	-0.1	G	P	G	G	F	G	F	P	VP	-2	N	-1.2	-0.3	0																																					
CDC Thrive	2	113	115	---	0.0	G	P	G	F	---	G	F	F	P	0	N	-0.5	0.0	+1																																					
Unity VB	7	116	119	---	-0.8	F	G	VG	VG	---	P	VG	F	P	0	Y	-0.6	+1.0	+1																																					
CDC Utmost VB	2	121	116	---	-0.7	G	G	G	VG	---	P	VP	F	P	-1	N	-0.5	-0.1	-3																																					
Waskada	7	116	112	---	-0.4	F	G	VG	F	---	G	G	P	G	+1	Y	+0.3	+1.4	+4																																					
WR859CL	3	113	104	---	-0.3	G	G	G	VG	---	VG	VG	P	G	0	Y	-2.2	0.0	-7																																					
5602HR	6	103	104	---	+0.1	F	F	VG	VG	F	G	G	P	G	+1	Y	0.0	+1.6	+1																																					
5603HR	3	112	113	---	-0.8	G	VG	G	VG	---	P	F	G	F	+3	Y	-2.7	-2.0	+1																																					
<b>Canada Prairie Spring Red</b>																																																								
Conquer VB	2	118	120	---	-1.5	F	---	VG	G	---	P	VG	F	P	+1	Y	+9.2	+2.8	-4																																					
AC Crystal	11	118	115	110	-1.3	VG	P	VG	P	P	P	VG	F	VP	+3	Y	+4.9	-0.1	-11																																					
AC Taber	5	119	118	116	---	VG	P	G	F	P	P	VG	F	VP	+4	Y	+4.5	-0.5	-11																																					
5700PR	5	115	120	115	-1.2	VG	F	VG	F	P	P	G	P	VP	+2	Y	+6.8	+1.1	-16																																					
5701PR	4	108	110	105	-0.5	G	F	VG	VG	G	P	F	G	VP	+2	Y	+8.9	+0.9	-13																																					
5702PR	4	128	125	---	-1.7	G	F	F	G	P	P	F	G	P	+1	Y	+8.5	0.0	-10																																					
<b>Canada Prairie Spring White</b>																																																								
AC Vista	9	122	121	113	-1.4	G	F	VG	P	F	P	VG	P	VP	+1	Y	+6.7	-2.1	-9																																					
<b>Canada Western Hard White Spring</b>																																																								
Snowbird	5	99	102	---	-0.6	G	G	G	F	---	G	F	P	P	+2	N	-1.8	-0.4	+1																																					
Snowstar	3	105	108	---	-1.2	VG	G	VG	G	---	P	P	P	P	0	N	-3.4	+1.5	-10																																					
<b>Canada Western Soft White Spring</b>																																																								
AC Andrew	4	137	135	---	-3.6	G	P	G	P	---	P	P	F	F	+5	Y	+0.7	-1.8	-9																																					
Bhishaj	5	128	---	128	---	G	---	P	F	---	F	P	F	VP	+3	Y	-4.2	-2.0	-7																																					
Sadash	2	143	133	---	-4.4	VG	P	G	F	G	P	VP	F	P	+5	Y	+0.7	+0.6	-6																																					
<b>Canada Western Extra Strong</b>																																																								
CDN Bison	3	119	118	---	-0.8	G	F	VG	G	---	VG	F	F	F	+3	Y	+6.6	-0.4	-6																																					
Burnside	5	96	99	---	-0.1	F	G	VG	G	---	VG	F	P	P	0	N	+3.6	-0.4	+6																																					
Glencross VB	4	110	118	---	-0.6	F	F	VG	G	---	VG	F	P	VP	-1	N	+7.2	-2.5	+7																																					
CDC Rama	4	107	107	---	-0.2	F	G	G	G	G	VG	G	P	F	+2	Y	+7.5	+1.0	+7																																					
CDC Walrus	3	102	101	---	-0.3	F	G	G	G	---	VG	F	P	P	+2	N	+5.3	-0.2	+7																																					
<b>Canada Western General Purpose</b>																																																								
CDC NRG003	2	127	127	---	-2.0	G	---	VG	G	---	G	VG	VP	VP	0	Y	+6.4	-1.8	-10																																					
NRG010	2	126	129	---	-2.7	G	---	VG	VG	---	VG	VG	P	VP	+2	Y	+3.3	-2.0	-7																																					
Minnedosa	2	118	117	---	-1.9	G	G	VG	VG	---	F	VG	P	P	+1	Y	+6.7	-2.1	-9																																					
<b>Canada Western Amber Durum</b>																																																								
<b>Yield as % of Strongfield</b>																																																								
Strongfield	8	100	100	100	14.5	F	F	VG	VG	G	P	VG	F	VP	105	Y	42.1	79.2	89																																					
AC Avonlea	7	95	96	---	-0.2	F	F	VG	VG	---	P	VG	F	VP	+1	Y	-0.6	-1.0	+2																																					
Brigade	3	105	110	107	-0.9	G	F	VG	VG	---	P	VG	F	P	+2	Y	+1.1	+0.3	+6																																					
Commander	4	105	96	---	-0.6	G	F	VG	VG	---	P	VG	P	VP	+1	Y	+1.4	-1.0	-11																																					
Enterprise	2	103	97	---	-0.2	F	F	VG	VG	---	P	G	F	P	0	Y	-3.2	+0.6	+2																																					
Eurostar	3	98	101	102	-0.4	F	F	VG	VG	---	P	VG	F	P	+2	Y	+0.6	+0.8	+4																																					
Kyle	6	89	91	---	-0.3	P	F	VG	VG	G	P	VG	P	VP	+1	Y	-0.5	-0.6	+12																																					
AC Navigator	6	99	91	---	-0.7	G	F	VG	VG	G	P	VG	VP	VP	+2	Y	+1.2	-0.1	-8																																					
CDC Verona	3	101	104	103	-0.3	G	F	VG	VG	---	P	VG	F	P	+2	Y	+0.1	-0.2	+1																																					

♣ Includes direct and indirect comparisons with AC Barrie

\* stripe rust data are preliminary

\*\* multiply by 0.8 = lbs per bushel

\*\*\* VB varietal blend

## 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.

The Western Grains Research Foundation has co-ordinated the establishment of a web based tool to make comparisons among varieties on a prairie wide basis: <http://www.pvtrials.com>.

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

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 **AC Barrie** and **Strongfield**, respectively.

Most varieties have been rated for their relative resistance to pre-harvest sprouting. Under wet post-maturity conditions varieties rated poor would have reduced ability to retain 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 continue to evolve, so leaf rust resistance in varieties change year to year. The seed guide contains the most up-to-date information on leaf rust resistance in current varieties. Early seeding may minimize risk of crop losses for varieties sown in southeastern Saskatchewan that are rated poor or very poor to leaf rust.

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

Seed of varieties rated poor and very poor 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, 2011*.

### CANADA WESTERN RED SPRING WHEAT

**Fieldstar VB, Goodeve VB, Shaw VB, Unity VB, and CDC Utmost VB** are CWRS wheat midge tolerant varieties. They contain the same "Sm1" gene for tolerance. To manage against the build-up of midge resistance to the gene, an interspersed refuge will be 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: <http://www.midgetolerantwheat.ca/farmers/faq.aspx>

Seed of the new varieties **Carberry, CDC Kernen, Muchmore, Shaw VB, CDC Stanley, CDC Thrive, CDC Utmost VB** will not be available in 2011. Limited quantities of seed of the new varieties **Fieldstar VB, Stettler, 5603HR, and WR859CL** will be available in 2011.

**Lillian** has solid stem and some resistance to the wheat stem sawfly. **CDC Abound, CDC Imagine, CDC Thrive, and WR859CL** are tolerant to the CLEARFIELD® herbicides Adrenalin SC and Altitude FX.

### CANADA PRAIRIE SPRING WHEAT

**Conquer VB** is the only CPS-red midge tolerance variety using the *Sm1* gene and will be marketed with an

interspersed refuge (see above). Seed of **Conquer VB** will not be available in 2011.

### CANADA WESTERN EXTRA STRONG

**Glencross VB** is the only CWES wheat midge tolerant variety based on the "Sm1" gene and will be marketed with an interspersed refuge (see above). Limited quantities of seed of the new varieties **CDN Bison** and **Glencross VB** will be available in 2011.

### SOFT WHITE SPRING WHEAT

Soft white spring wheat may have potential demand as a feedstock in the production of ethanol. All soft white spring wheat varieties are eligible for both domestic and export markets. 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 would be similar. Limited quantities of seed of **Sadash** will be available in 2011.

### GENERAL PURPOSE

Seed of **Minnedosa, CDC NRG003, and NRG010** will not be available in 2011.

### CANADA WESTERN AMBER DURUM

Seed of the new variety **Enterprise** will not be available in 2011. Limited quantities of seed of the new varieties **Brigade**, and **Eurostar** will be available in 2011. 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.

**Brigade, Commander, Eurostar** and **AC Navigator** have strong gluten properties. They may be grown only under contract with the Canadian Wheat Board.

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
- Sask. Seed Growers' Association
- Producer Associations
- Agriculture and Agri-Food Canada
- Crop Development Centre
- Canada-Saskatchewan Irrigation Diversification Centre

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

## Winter Wheat

Main Characteristics of Varieties

Site-Years Tested	Yield as % of CDC Buteo Across Western Canada					Resistance to:					
	Low Moisture Potential	High Moisture Potential	Lodging	Winter Damage	Stem Rust	Leaf Rust	Bunt	Fusarium Head Blight			
<b>Canada Western Red Winter</b>											
CDC Buteo (bu/acre)	40	60	80	100	G	VG	G	G	VP	G	
AC Bellatrix	89	105	102	100	99	G	F	VP	VP	F	---
CDC Clair	87	108	103	102	102	G	VG	P	P	VP	---
CDC Falcon	212	105	103	102	102	VG	F	G	G	VP	P
CDC Harrier	149	108	105	104	102	G	G	G	P	VP	P
CDC Kestrel	113	108	105	105	104	G	VG	P	P	VP	---
McClintock ☼	150	105	100	99	97	G	F	VG	G	VP	P
Moats	19	105	105	104	103	G	VG	VG	VG	P	---
CDC Osprey	102	102	102	100	100	G	VG	P	P	VP	---
Radiant ☼	76	102	102	102	102	VG	VG	VP	VP	P	P
CDC Raptor	143	108	103	101	100	VG	G	VG	G	VP	P
<b>Canada Western General Purpose</b>											
Accipiter ☼	55	120	112	106	104	VG	G	VG	G	VP	---
Broadview ☼	19	108	103	101	101	VG	G	VG	VG	VP	---
CDC Ptarmigan	45	123	117	113	111	F	G	P	P	VP	---
Peregrine ☼	52	118	112	109	107	G	VG	VG	VG	VP	---
Sunrise	21	127	115	109	105	G	G	G	G	VP	---

**Yield:** For a more in-depth yield analyses go to [http://www.usask.ca/agriculture/plantsci/winter\\_cereals/select.php](http://www.usask.ca/agriculture/plantsci/winter_cereals/select.php)

**Winter damage:** For more detailed information go to [http://www.wheatworkers.ca/FowlerSite/winter\\_cereals/WWMModel.php](http://www.wheatworkers.ca/FowlerSite/winter_cereals/WWMModel.php)

### Classes and Marketing:

**AC Bellatrix, CDC Buteo, CDC Osprey, McClintock, and Radiant** are eligible for the CWB's 2010-2011 Canada Western Red Winter Select wheat contracting program.

Effective August 1, 2013, the Canadian Grain Commission advises that the varieties **CDC Clair, CDC Falcon, CDC Harrier, CDC Kestrel, and CDC Raptor** will be moved from the Canada Western Red Winter class to the Canada Western General Purpose class.

## Rye

### Main Characteristics of Varieties

Variety	Years Tested	Yield as % of Prima			Relative Maturity	Resistance to:		
		Area 1 & 2	Area 3	Winter Damage		Shattering	Lodging	
Prima	20	100	100	M	VG	F	F	
AC Rifle	20	98	89	M	VG	VG	VG	
AC Remington	8	102	95	M	VG	VG	G	
Hazlet	7	116	104	M	VG	VG	VG	

### Additional Information

Medium maturity of rye means that the variety will mature about July 31 in an early year, August 4 in a medium year and August 8 in a late year. An early variety matures about July 27 in an early year, July 31 in a medium year and August 4 in a late year. Late varieties would mature about August 4 in an early year, August 8 in a medium year and August 12 in a late year. Wet and cool conditions during maturation can prolong maturity far beyond these dates.

## Triticale

### Main Characteristics of Varieties

Variety	Years Tested	Area 1 & 2	Area 3	Test Weight Kg hL <sup>-1</sup>	Relative Maturity	Resistance to:					
						Lodging	Stem Rust	Leaf Rust	Bunt	Root Rot	
<b>Spring Habit</b>											
Yield as % of AC Certa											
AC Certa	18	100	100	73	M	G	VG	VG	VG	G	
Bumper ☼	3	100	115	71	E	G	VG	VG	VG	---	
Bunker ☼	4	99	97	73	E	G	VG	VG	VG	---	
Pronghorn	19	100	102	68	E	G	VG	VG	VG	F	
Tyndal ☼	4	106	102	73	E	G	VG	VG	VG	---	
AC Ultima	15	103	102	70	E	G	VG	VG	VG	F	
<b>Winter Habit</b>											
Yield as % of Pika											
Pika	6	100	100	68	E	F	---	---	---	---	
Bobcat ☼	6	86	86	66	M	G	---	---	---	---	
Luoma ☼	5	100	96	67	L	F	---	---	---	---	
Metzger ☼	5	96	101	67	E	G	---	---	---	---	

### Additional Information:

Triticale matures 1-2 days later than **AC Crystal** CPS wheat, therefore it should be planted as early as possible. The seeding rate for triticale should be at least 30 percent more than that of CWRS wheat to obtain the same number of plants per square foot. Susceptibility to fusarium head blight is at least as great in triticale as in wheat. **AC Ultima** has improved Hagberg Falling Number.

Winter triticale has winter hardiness equal to that of winter wheat. **Tyndal** and **Bunker** (spring triticales) and **Bobcat, Louma** and **Metzger** (winter triticales) have reduced awns.

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.

# Malting Barley

## Main Characteristics of Varieties

Category* and Variety	Years Tested	2 or 6 Row	Rough or Smooth Awns	Yield as % of AC Metcalfe		Relative Maturity*	Lodg- ing	Net-Form Net Blotch**	Spot-Form Net Blotch	Resistance to:							Fusarium Head Blight
				Area 1 & 2	Area 3 & 4					Spot Blotch	Scald	Loose Smut	Other Smuts	Root Rot	Stem Rust		
<b>Malting acceptance: Recommended</b>																	
AC Metcalfe ☺	11	2	R	100	100	M	G	VP	F	F	P	VG	F	F	G	F	
CDC Copeland ☺	8	2	R	107	108	M	G	F	F	VP	P	P	F	F	G	F	
CDC Kendall ☺	11	2	R	101	102	M	G	F	G	VP	P	P	P	G	P	F	
Newdale ☺	6	2	R	112	113	M	G	F	G	F	P	VP	G	G	G	F	
Legacy ☺	6	6	S	104	101	M	G	VP	G	G	P	F	G	G	G	P	
Stellar-ND ☺	3	6	R	110	107	M	VG	VP	F	G	VP	G	VG	P	F	F	
Tradition ☺	5	6	S	112	107	M	VG	VP	F	G	P	VP	G	G	G	VP	
<b>Malting acceptance: Under Test</b>																	
Bentley ☺	5	2	R	114	114	L	G	P	VG	F	P	P	G	F	G	P	
Cerveza ☼	4	2	R	110	117	M	G	P	G	VG	VP	VG	VG	F	F	F	
CDC Kindersley ☼	3	2	R	102	104	E	G	P	G	F	VP	VP	VG	F	F	F	
CDC Landis ☺§	5	2	R	110	110	M	G	F	VG	F	P	VP	G	P	G	F	
Major ☼	4	2	R	112	117	M	G	F	G	G	VP	VG	G	P	G	F	
CDC Meredith ☺	5	2	R	115	112	L	G	P	VG	P	P	VG	G	F	G	F	
Merit 57 ☺	5	2	R	110	108	L	G	P	VG	P	F	VP	F	G	F	P	
Norman ☼	5	2	R	104	105	M	G	P	VG	VP	VP	VP	VP	P	VP	G	
CDC Reserve ☺	5	2	R	111	109	M	G	VP	VG	F	P	VP	P	F	G	F	
Celebration ☺	3	6	S	108	105	M	VG	VP	G	G	VP	VG	VG	P	F	P	
CDC Clyde ☺	8	6	S	110	106	M	VG	F	G	VG	P	F	VG	G	G	VP	
CDC Kamsack ☺	5	6	R	103	108	M	G	VP	F	G	P	F	VG	P	G	VP	
CDC Mayfair ☺	5	6	R	105	109	M	G	P	G	F	P	VP	VG	P	G	P	
<b>Other ***</b>																	
Harrington	11	2	R	95	89	M	F	VP	P	VP	P	P	P	F	P	G	
CDC Battleford ☺	6	6	S	108	108	M	G	P	VG	VG	P	P	G	G	G	VP	
Lacey ☺§	4	6	S	101	101	M	G	VP	F	G	P	F	G	G	G	VP	
CDC Laurence ☺§	6	6	S	117	110	M	G	P	G	G	P	P	G	P	P	VP	
Robust §	8	6	S	94	97	M	G	VP	P	G	P	F	F	F	G	VP	

\* These categories are established annually by the Canadian Malting Barley Technical Centre (Call 204-984-4399 for more information)

\* Relative maturity: The relative maturity of the check, **AC Metcalfe**, is M (on average, 91 days from seeding to swathing ripeness)

\*\* There are two forms of net blotch, the net-form (*Pyrenophora teres f. teres*) and spot-form (*Pyrenophora teres f. maculata*). Generally, in Saskatchewan the net-form is more prevalent.

\*\*\* Although not on the CMBTC list, a malting barley market may exist for these varieties.

### Lines Under Test 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.

### 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.



## Recommended Malting Barley Varieties 2011-12

These recommendations are based on the varieties expected to be selected by grain and malting companies for both domestic and export markets from the 2011 harvest. Seeding decisions should be based on agronomic considerations and feedback from your grain company representative, local elevator operators and malting companies. This list is published on behalf of the members of the CMBTC, and other companies that have provided their input. Varieties not listed are not recommended. The varieties are listed in descending order to the amount selected in 2010.

### Recommended Two-Row Barley Varieties

VARIETY	DOMESTIC	EXPORT	MARKET DEMAND
AC Metcalfe <sub>4</sub>	Established	Established	Stable Demand
CDC Copeland <sub>4</sub>	Established	Established	Stable Demand
Newdale <sub>3</sub>	Limited	Limited	Stable Demand
CDC Kendall <sub>1</sub>	Established	Established	Declining Demand
CDC Polarstar <sub>5</sub> **	Limited	Limited	Increasing Demand

Bentley, CDC Landis, Major, Merit 57, Norman, Cerveza and CDC Reserve are not yet being grown for the commercial market. Production is limited to quantities required for testing and market development. CDC Meredith reached capacity for plant scale testing in 2010. \*\* CDC Polarstar is available only through a closed loop Identity Preserved program offered by Prairie Malt Limited/Sapporo Breweries and their agents.

### Recommended Six-Row Barley Varieties

VARIETY	DOMESTIC	EXPORT	MARKET DEMAND
Legacy <sub>1,2,3</sub>	Established	Established	Declining Demand
Tradition <sub>1,2,3</sub>	Established	Established	Declining Demand
Stellar-ND <sub>5</sub>	Limited	Limited	Increasing Demand

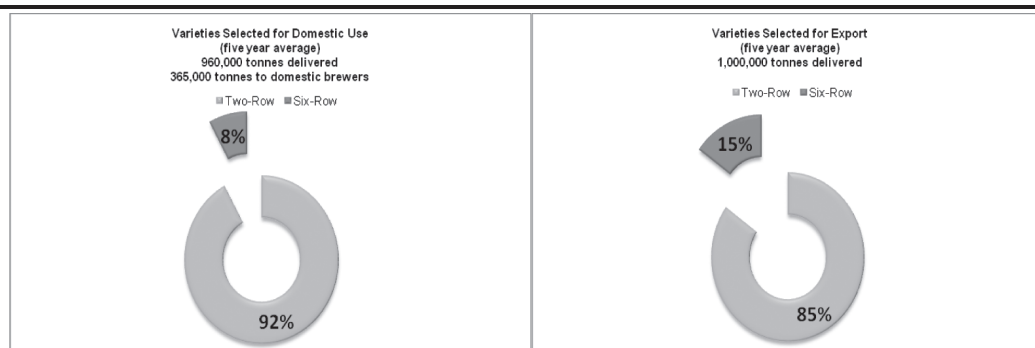
Celebration, CDC Clyde, CDC Kamsack, and CDC Mayfair are not yet being grown for the commercial market. Production is limited to quantities required for testing and market development. **Please talk to local malting company selector in regards to demand for CDC Battleford, Lacey and Robust.**

**The CMBTC recommends the use of Certified seed to ensure varietal purity and to increase opportunity for selection.**

The following companies have pedigreed seed distribution rights for those varieties that are footnoted:

1-Viterra; 2-BARI-Canada; 3-FP Genetics; 4-SeCan; 5-Canterra Seeds

"Domestic" as used in this publication, means barley selected for domestic processing into malt to supply domestic brewers as well as for malt destined for export. "Export" is that malting barley designated for markets outside of Canada including the U.S., shipped as unmalted grain.



**CMBTC Members:** Alfred C. Toepfer (Canada) Ltd., Canadian Wheat Board, Canadian Grain Commission, Cargill AgHorizons, SABMiller, Richardson International, Parrish and Heimbecker, Prairie Malt Limited, the Public Barley Breeders, Rahr Malting Canada, SeCan, Manitoba Liquor Control Commission, Alberta Ag, Saskatchewan Ag, Manitoba Ag, Prairie West Terminal, FP Genetics and Viterra.

**Other organizations providing input to this list:** BMBRI

Questions? Call your selector, seed company, grain handling company or the Canadian Wheat Board, 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	Yield as % of AC Metcalfe		Relative Maturity*	Lodging	Net-Form Net Blotch**	Spot-Form Net Blotch	Resistance to:							
				Area 1 & 2	Area 3 & 4					Scald	Loose Smut	Other Smuts	Root Rot	Stem Rust	Fusarium Head Blight		
<b>Feed</b>																	
CDC Austenson ☼	5	2	R	117	120	M	G	P	VG	G	VP	VP	VG	F	F	F	F
CDC Bold	7	2	R	111	112	L	G	VP	F	VP	P	P	G	G	G	VP	VP
Busby ☼	4	2	R	103	108	E	G	P	G	P	F	VP	VG	VP	F	F	F
Champion ☼	8	2	R	117	117	M	G	VP	F	P	VP	VP	VG	G	F	F	F
CDC Coalition ☼	7	2	R	111	114	M	VG	VP	G	F	P	VG	G	F	G	F	F
CDC Cowboy ☼	6	2	R	99	105	L	F	F	G	F	P	P	G	F	G	G	G
CDC Dolly	11	2	R	103	103	E	G	VP	P	P	F	VP	F	F	F	F	G
Gadsby ☼	3	2	R	111	114	M	F	P	G	P	VG	VG	VG	F	F	F	F
CDC Helgason ☼	7	2	R	105	106	M	G	G	G	F	P	VG	G	F	F	P	P
McLeod ☼	6	2	R	108	114	M	G	VP	F	VP	P	VP	VG	F	P	F	F
CDC Mindon ☼	7	2	R	104	103	M	G	VP	G	F	VP	VG	VG	F	F	G	F
CDC Trey ☼	5	2	R	104	110	M	G	F	VG	F	P	P	VG	G	G	F	F
Xena ☼	7	2	R	112	115	M	G	VP	F	VP	P	P	P	G	G	G	G
Chigwell ☼	5	6	S	109	114	M	G	F	G	G	G	P	VG	VP	VP	VP	VP
AC Rosser ☼	11	6	S	115	115	M	G	F	G	G	VP	P	G	G	G	VP	VP
Sundre ☼	5	6	S	120	116	L	G	P	F	F	VG	P	VG	P	F	F	VP
<b>Hulless</b>																	
CDC Carter ☼	4	2	R	93	101	M	G	F	G	F	P	VG	VG	VP	F	F	F
CDC ExPlus ☼	4	2	R	89	100	M	VG	F	F	F	VP	P	P	VP	F	F	G
HB705 ☼	4	2	R	84	93	M	VG	P	G	F	VP	VG	F	P	G	G	G
CDC McGwire ☼	8	2	R	98	99	M	G	F	G	F	F	P	G	G	F	F	G

\* Relative maturity: The relative maturity of the check, **AC Metcalfe**, is M (on average, 91 days from seeding to swathing ripeness)

\*\* There are two forms of net blotch, the net-form (*Pyrenophora teres f. teres*) and spot-form (*Pyrenophora teres f. maculata*). Generally, in Saskatchewan the net-form is more prevalent.

### Forage Barley

**Binscarth**, **Desperado**, and **AC Ranger** are six-row forage varieties.

**CDC Cowboy** and **Stockford** are two-row forage varieties.

### Hulless

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

**CDC Lophy-I** is a low phytate hulless two-row feed variety.

### Hulless Food

**CDC Alamo**, **CDC Candle**, **CDC Fibar**, and **CDC Rattan** are high beta-glucan waxy starch varieties for specialty markets.

**CDC McGwire** and **Millhouse** 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 and should consider semi-dwarf varieties.

### General Comments

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 percent 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.

# Oat

## Main Characteristics of Varieties

Variety	Years Tested	-- Yield as % of CDC Dancer --		Test Weight (g/0.5L)	% Hull	% Plump	Relative Maturity*	Resistance to:			
		Area 1 & 2	Area 3 & 4					Lodging	Stem Rust	Leaf Rust	Smut
CDC Dancer ☺	8	100	100	253	19.8	70	M	G	F	F	VG
SW Betania ☺	7	105	105	245	22.0	67	M	G	VP	P	G
CDC Boyer §	8	99	100	232	23.3	71	M	G	F	F	P
Bradley ☼	2	100	101	---	---	---	---	---	P	P	VG
Derby	8	98	102	247	22.9	65	M	G	VP	VP	P
Furlong ☺ §	6	102	104	245	21.6	76	L	G	F	P	VG
HiFi ☺	6	99	97	253	22.4	55	M	G	F	VG	P
Jordan ☺	7	110	118	238	22.4	76	VL	G	F	F	VG
Leggett ☺	7	103	104	256	22.0	71	L	G	F	VG	VG
Lu §	6	102	103	248	25.2	47	E	G	VP	VP	G
CDC Minstrel ☺	6	107	107	245	21.0	75	L	VG	F	P	VG
AC Morgan	8	104	108	236	25.1	54	L	VG	VP	VP	F
CDC Orrin ☺	6	108	109	253	23.2	74	L	G	P	VP	VG
Pinnacle ☺	8	113	109	244	23.6	70	VL	F	F	P	VG
CDC Pro-Fi §	5	98	92	245	19.8	72	M	G	F	P	P
Ronald ☺	7	96	99	249	22.4	55	L	VG	F	P	VG
CDC Seabiscuit ☼	4	111	105	240	20.3	73	L	G	F	P	F
CDC Sol-Fi	6	93	94	246	22.2	50	M	F	P	VP	G
Souris ☺	4	102	103	253	21.5	58	M	VG	F	VG	VG
Stainless ☺	5	95	95	243	22.4	64	M	G	G	VG	VG
Summit ☺	5	102	101	256	21.6	67	M	G	F	VG	VG
Triactor ☺	6	113	117	240	22.8	66	L	G	VP	G	VG
CDC Weaver ☺	7	108	111	245	19.2	71	L	F	F	P	VG

\* Maturity Rating M = 96 days

### Additional Information

Although disease pressure is lower in eastern Saskatchewan than in Manitoba, leaf rust races capable of attacking most varieties, except **HiFi**, **Leggett**, **Souris**, **Stainless**, **Summit**, and **Triactor** are increasing in southeast Saskatchewan. Early seeding will reduce the likelihood of severe infection.

**Furlong** has brown hulls.

### Forage Oat

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

### Hulless Oat

**Boudrias**, **AC Gwen**, and **Lee Williams** are hulless varieties available for production in Saskatchewan. The hull is part of normal oat yield, thus hulless types yield less. They are difficult to handle and should be stored at less than 12% moisture.

## 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 in Saskatchewan*.

### 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 in Saskatchewan*.

### 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 Saskatchewan Agriculture publication, *Fenugreek in Saskatchewan*.

### Safflower

Safflower is an annual oilseed or birdseed crop which 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.

## Canary Seed

### Main Characteristics of Varieties

Variety	Type	No. of Trials	Yield as % of CDC Maria*	Days to Heading	Days to Maturity	Height (cm)	Test Weight (kg/hL)***	Seed Weight (g/1000)
CDC Maria	glabrous	79	100	59	104	104	71	7.3
CDC Togo ☺	glabrous	72	111	+1	+1	+1	-1	+0.7
CDC Bastia	glabrous	67	113	+1	+1	+2	0	0.0
Keet	hairy	79	120	+2	+2	+4	-6	-0.3
Cantate**	hairy	22	125	+1	+2	0	-6	+0.3

\* Yield data not collected by Area

\*\* 2004-2010 data only

\*\*\* multiply by 0.8 = lb per bushel

Limited seed of **CDC Bastia** will be available in 2011

### Additional Information:

The seed of annual canarygrass, more commonly called canary seed, is used as food for caged and wild birds. In head to head testing **Elias**, **Keet** and **Cantate** are similar in yield. **Elias** pedigreed seed has not been produced in recent years. Seeds and plants of **CDC Maria**, **CDC Togo** and **CDC Bastia** do not have the small sharp hairs that cause irritation when canary seed is threshed and handled, and are called glabrous.

Canary seed plants have a dense, shallow root system and growing the crop on sandy soils is not recommended. Canary seed may be grown successfully on stubble, providing adequate moisture is available for rapid germination and emergence. The recommended seeding rate is 34 kg/ha (30 lb/ac) (germination greater than 85 per cent). Reduced emergence might be expected if canaryseed is seeded below 5 cm.

Canary seed is subject to damage by English grain aphid and bird cherry oat aphid. Aphid populations build up rapidly on 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 canary seed plant. Damage may occur at populations below these levels.

Canary seed leaf mottle is a foliar disease that can cause yield losses. Leaf mottle is caused by a fungus, *Septoria triseti*, that only affects canary seed. 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.

Canary seed is resistant to shattering. It may be straight-combined or swathed when fully mature. For more information on canary seed, consult the Saskatchewan Agriculture publication, *Canary Seed in Saskatchewan*.

# 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.

## Reuse of Hybrid Variety Seed

Seed grown from a hybrid variety (regardless of crop or variety) should not be reused since a 20 to 25% 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* 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.

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 VERY POOR should be treated every year, those rated POOR every second year and those rated FAIR 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% seed infection is acceptable in the Brown and Dark Brown Soil Zones, but 0% 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%. In pea, up to 10% seed infection with ascochyta is acceptable. In chickpea, 0% 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% ergot is considered poisonous and should not be used for food. Refer to Saskatchewan Agriculture publication, *Ergot of Cereals and Grasses*.

## Seed Inoculation

Legume crops obtain much of their nitrogen (N) 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 which is stored damp or tough may be low in germination and may lack adequate vigour. Grain which 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. Consider the use of midge-tolerant varieties. Refer to the Saskatchewan Agriculture publication, *Wheat Midge*.

# Pulse Crops

## 2010 Regional Variety Trials

In 2010 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 \$100,000 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.

In 2010, field pea, lentil, chickpea, and dry bean variety trials were conducted at 5-16 locations per crop in their target areas of adaptation in Saskatchewan. The number of entries per trial was 29 for pea, 36 for lentil, 24 for chickpea, and 18 for dry bean.

## Lentil

Main Characteristics of Varieties

Market class	Variety	Years Tested*	Yield % CDC Milestone		Height (cm)	Days to Flower	Maturity Rating	Resistance to:		Cotyledon Colour	Seed Coat Colour/Pattern	Seed Weight (g/1000)
			Area 1 & 2	Area 3 & 4				Ascochyta Blight	Anthracnose Race 1			
Small green	CDC Milestone	15	100	100	31	49	E	G	VP	yellow	green	37
	CDC Invincible CL	5	108	98	33	49	E	G	G	yellow	green	34
	CDC Viceroy	8	103	111	34	49	E	G	G	yellow	green	33
	Eston	14	88	90	30	48	E	VP	VP	yellow	green	33
Medium green	CDC Impress CL	4	100	83	34	50	M	G	P	yellow	green	52
	CDC Imigreen CL	4	86	82	44	50	M	G	VP	yellow	green	57
	CDC Meteor	9	111	102	34	50	M	G	VP	yellow	green	51
	CDC Richlea	13	102	92	35	50	M	VP	VP	yellow	green	51
Large green	Laird‡	15	78	72	41	53	VL	VP	VP	yellow	green	67
	CDC Glamis	11	84	83	39	54	VL	G	VP	yellow	green	60
	CDC Grandora	10	78	84	40	53	VL	G	VP	yellow	green	69
	CDC Greenland	9	104	87	38	52	ML	G	VP	yellow	green	64
	CDC Impower CL	4	98	80	41	52	ML	G	VP	yellow	green	64
	CDC Improve CL	5	86	88	39	51	M	F	VP	yellow	green	67
	CDC Plato	11	99	89	38	52	ML	G	P	yellow	green	62
	CDC Sedley	9	81	85	39	51	M	F	VP	yellow	green	68
	CDC Sovereign	10	90	89	40	52	L	G	P	yellow	green	66
French green	CDC LeMay	6	91	92	35	48	E	F	VP	yellow	marbled	33
	CDC Peridot CL	5	96	98	37	48	E	F	P	yellow	marbled	38
Extra small red	CDC Impala CL	5	103	100	30	51	E	G	G	red	grey	31
	CDC Imperial CL	6	95	91	30	49	E	G	G	red	grey	30
	CDC Redbow	4	111	113	30	49	E	G	G	red	grey	32
	CDC Robin‡	11	86	91	30	49	E	G	G	red	grey-brown	29
	CDC Rosebud	5	108	114	30	50	E	G	G	red	tan	31
	CDC Rosetown	7	107	109	31	52	E	G	G	red	grey	31
	CDC Ruby	4	104	102	30	48	E	G	G	red	grey	29
Small red	CDC Blaze‡	9	84	82	30	47	E	G	P	red	grey	34
	CDC Cherie	3	124	na	32	51	EM	G	F	red	grey	39
	CDC Dazil CL	3	121	na	33	53	EM	G	F	red	grey	35
	CDC Imax CL	4	108	102	35	51	EM	G	F	red	grey	45
	CDC Impact CL	5	88	87	30	47	E	G	P	red	grey	34
	CDC Maxim CL	4	111	119	34	51	EM	G	G	red	grey	40
	CDC Redberry	8	105	111	34	50	EM	G	G	red	grey	42
	CDC Redcliff	4	121	123	35	51	EM	G	F	red	grey	38
	CDC Redcoat	4	117	106	33	50	EM	G	G	red	grey	39
	CDC Red Rider	6	103	98	34	52	EM	G	F	red	grey	45
	CDC Rouleau	6	104	107	33	52	M	G	G	red	grey	37
Large red	CDC KR-1	4	117	102	37	52	M	G	G	red	grey	56
Green cot	CDC QG-1	4	88	75	36	50	M	G	P	green	green	52

\* Co-op and Regional Trials in Saskatchewan since 1995. Comparisons to CDC Milestone.

CL indicates Clearfield variety.

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. ‡ Flagged for removal from seed guide in 2012.

## Additional Information

Seed supplies may be limited for **CDC Imigreen CL, CDC Impower CL, CDC Peridot CL, CDC Redbow, CDC Rosebud, CDC Imax CL, CDC Redcoat, CDC Ruby, CDC Dazil CL and CDC Cherie**. **Indianhead** lentil is a black-seeded variety for green manure use. Weight, diameter and thickness of lentil seeds will vary depending on environmental conditions and agronomic factors.

# Field Pea

## Main Characteristics of Varieties

Variety	Years Tested*	Yield as % Cutlass			Leaf Type▼	Relative Maturity	Vine Length (cm)	Resistance to:					Seed Coat Dimpling*	Green Seed Coat*	Seed Weight g/1000	
		1.2 & South 3	North 3 & 4	Irrigation				Mycosphaerella Blight	Powdery Mildew	Fusarium Wilt	Seed Coat Breakage	Lodging				Bleaching
<b>Yellow</b>																
Cutlass	11	100	100	100	SL	M	75	F	VG	F	F	G	n/a	F	G	220
Agassiz ☼	6	111	112	116	SL	M	85	F	VG	F	G	G	n/a	F	G	230
Argus ☼	3	109	111	---	SL	M	80	F	VG	F	F	G	n/a	F	G	230
Canstar ☼	5	96	101	98	SL	M	85	P	VG	G	F	G	n/a	G	G	240
CDC Bronco	8	109	104	102	SL	M	75	F	VG	F	G	G	n/a	G	G	230
CDC Centennial	5	106	112	117	SL	E	70	F	VG	F	G	F	n/a	G	F	270
CDC Golden	8	106	101	107	SL	M	85	F	VG	F	G	G	n/a	G	G	230
CDC Handel	5	103	93	110	SL	L	75	P	VG	F	G	F	n/a	G	F	220
CDC Hornet	5	103	104	110	SL	M	85	F	VG	F	F	G	n/a	G	G	220
CDC Mozart	7	104	101	108	SL	M	70	F	VG	F	G	F	n/a	G	F	220
CDC Meadow	8	106	109	110	SL	E	85	F	VG	F	G	G	n/a	G	G	220
CDC Minuet	5	100	101	---	SL	M	70	F	VG	F	F	F	n/a	G	F	190
CDC Prosper	6	99	103	91	SL	E	80	F	VG	G	G	G	n/a	F	G	150
CDC Treasure	6	100	107	109	SL	E	80	F	VG	F	F	G	n/a	F	G	210
Delta	4	93	92	---	SL	E	70	P	P	---	G	F	n/a	---	---	250
DS Admiral ☼	6	93	103	95	SL	E	80	F	VG	F	G	G	n/a	G	G	240
Eclipse ☼	11	98	98	101	SL	M	80	F	VG	P	G	G	n/a	F	G	250
Hugo ☼	3	112	110	---	SL	M	75	F	VG	G	G	G	n/a	F	G	220
Polstead ☼	7	102	105	105	SL	M	75	P	VG	P	F	G	n/a	G	F	280
Reward ☼	5	98	107	108	SL	M	90	F	VG	F	G	G	n/a	G	F	240
Sorento ☼	5	99	97	108	SL	M	80	F	VG	F	G	F	n/a	F	G	260
SW Capri ☼	4	94	101	---	SL	E	75	F	P	F	F	G	n/a	F	G	210
SW Midas ☼	5	96	91	105	SL	E	80	F	VG	F	G	G	n/a	G	G	220
Thunderbird ☼	6	106	106	108	SL	M	85	F	VG	F	G	G	n/a	G	F	220
<b>Green</b>																
Camry ☼	5	96	90	94	SL	M	65	F	VG	P	F	G	F	G	n/a	260
CDC Montero	6	91	89	90	SL	M	80	F	VG	F	G	F	F	F	n/a	230
CDC Patrick	6	100	102	98	SL	M	80	F	VG	G	G	G	G	G	n/a	190
CDC Pluto	3	109	102	---	SL	M	80	F	VG	F	G	G	G	G	n/a	160
CDC Sage	5	80	84	86	SL	M	80	F	VG	G	G	G	G	F	n/a	220
CDC Striker	11	93	100	101	SL	M	80	F	P	G	VG	G	G	G	n/a	230
CDC Tetris	4	104	106	102	SL	L	85	F	VG	G	G	G	G	G	n/a	210
Cooper ☼	9	103	97	102	SL	L	80	F	VG	F	F	G	G	G	n/a	270
Nitouche	7	86	91	95	SL	M	75	F	P	F	G	G	G	F	n/a	250
Stratus ☼	7	105	99	104	SL	M	70	F	VG	P	G	F	F	G	n/a	270
SW Sergeant	5	88	87	90	SL	M	80	F	VG	F	G	G	G	G	n/a	200
Tamora	5	92	87	87	SL	M	80	F	VG	P	F	G	F	G	n/a	290
Venture	4	89	82	---	SL	E	75	P	P	P	G	F	F	F	n/a	220
<b>Maple</b>																
CDC Acer	3	100	94	---	SL	L	60	F	VG	---	G	F	n/a	VG	n/a	170
CDC Rocket	3	93	104	100	SL	M	75	F	VG	---	G	F	n/a	VG	n/a	210
Courier	4	90	86	78	SL	M	75	F	P	---	F	P	n/a	VG	n/a	210
<b>Silage</b>																
CDC Sonata	4	102	94	---	N	L	85	F	VG	---	G	F	n/a	F	F	220
CDC Leroy	3	98	96	89	SL	M	95	F	VG	---	G	G	n/a	G	G	150
CDC Tucker	3	99	99	88	SL	M	100	F	VG	---	G	G	n/a	G	F	170
Trapper	7	68	68	---	N	L	115	P	P	---	G	P	n/a	---	---	130
40-10	3	80	84	56	N	L	120	P	P	---	G	P	n/a	G	---	140

\* Co-op and regional trials in Saskatchewan

▼ N=normal leaf type; SL = semi-leafless

☼ Seed coat dimpling: VG = 0-5%; G = 6-20%; F = 21-50%

♦ Green seed coats: Good = 0-10%; Fair = 11-25%

The following varieties have purple flower colour and tannin containing seed coats: **CDC Acer**, **CDC Rocket**, **Courier**, and **40-10**; all other varieties have white flower colour and non-pigmented seed coats.

### Additional Information

For detailed production information consult the *Pulse Production Manual* published by Saskatchewan Pulse Growers.

The relative maturity of the check variety **Cutlass** is M (Medium), which is on average 90 days from seeding to swathing ripeness.

## Chickpea

### Characteristics of Kabuli and Desi Chickpea Varieties

KABULI Variety	Years Tested	Yield (% Amit) -----		Ascochyta Blight**	Height (cm)	Days to Flower	Maturity	Seed Weight (g/1000)
		Area 1*	Area 2*					
Amit (B-90) ☼	12	100	100	4.6	46	56	L	258
CDC Frontier	9	106	104	4.4	44	56	L	347
CDC Luna	8	100	100	5.4	38	54	ML	366
CDC Orion	4	110	106	5	42	53	ML	434
CDC Alma	2	108	98	5.8	39	55	L	353

DESI Variety	Years Tested	Yield (% CDC Vanguard) --		Ascochyta Blight**	Height (cm)	Days to Flower	Maturity	Seed Weight (g/1000)	Seed Shape ♦	Seed Coat Colour ♥
		Area 1*	Area 2*							
CDC Vanguard	8	100	100	5.1	41	53	ML	219	P	T
CDC Cabri	8	92	96	4.6	47	51	M	304	P	T
CDC Corinne	8	108	103	4.2	43	55	M	243	A/P	T
CDC Cory	2	111	102	4.2	44	56	M	254	A/P	T

\* Area 1: brown soil zone; Area 2: dark brown soil zone

\*\* Ascochyta Blight at pod filling period: 0-9 scale; 0 = no symptom; 9 = plants are completely blighted.

♦ Seed shape: P = plump; A = angular

♥ Seed coat colour: T = tan; LT = light tan

Note: all varieties have fern leaf type

### Additional Information

Please refer to SaskSeed 2011 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)).

## Soybean

### Main Characteristics of Varieties

Variety <sup>1</sup>	Years Tested	Site Years Tested	Yield (% of RR Rosco)	Corn Heat Units	Days to <sup>2</sup> Maturity	Lodging	Relative Seed Size <sup>3</sup> (# seeds per lb)	Hilum <sup>4</sup> Colour
RR Rosco	2	19	100	2450	125	G	2800	IY
NSC Warren RR	2	19	100	2350	123	VG	3062	BR
Isis RR	2	19	102	2400	127	VG	2830	BR
NSC Argyle RR	2	19	102	2475	128	G	2300	BR
LS 0028RR	2	19	104	2400	128	VG	3600	BR
LS 0036RR	2	19	104	2425	129	VG	3600	BR

<sup>1</sup> All varieties in this table are Roundup Ready type. Other varieties are commercially available. For complete list of commercial varieties see Seed Manitoba 2011 ([www.seedmb.ca](http://www.seedmb.ca)).

<sup>2</sup> Average from 2009 and 2010. Moist growing seasons result in delayed maturity.

<sup>3</sup> Number of seeds/lb as entered in the trial, data supplied by individual companies.

<sup>4</sup> Hilum is the point where seed attaches to the pod. BR-Brown, IY-Imperfect Yellow, BL-Black, BU-Buffer

### Additional Information

Data are derived from the western Canada soybean trial co-ordinated by Manitoba Agriculture Food and Rural Initiatives.

Saskatchewan test sites were Saskatoon, Outlook (dry land and irrigated). Alberta test sites were Bow Island (dry land and irrigated).

Manitoba test sites were Hamiota, Boissevain, Roblin, Wawanesa, Melita.

Two year (2009-2010) mean yield of the check variety **RR Rosco** was 48 bushels/acre. Typical on-farm yields are 25-30 bushels/acre.

Corn Heat Unit ratings are assigned by individual companies to assist growers select varieties suitable for their area; growers should not rely on only one source for judging maturity.

For effective nodulation and nitrogen fixation, soybean must be inoculated with a *Bradyrhizobium japonicum* bacterial inoculant.

## Dry Bean

### Main Characteristics of Varieties

Variety	Type	Years Tested*	--- Yield % of CDC Pintium ---			Days to Flower	Maturity Rating	% Pod Clearance▲	Seed Weight (g/1000)	Growth Habit‡
			Irrigation	Area 2	Area 3					
CDC Pintium	pinto	12	100	100	100	50	E	80	350	I
CDC WM-1	pinto	5	102	100	91	50	E	78	345	I
CDC WM-2	pinto	4	106	101	98	50	E	74	365	II
Island	pinto	4	101	111	88	55	M	74	350	II
Winchester**	pinto	2	123	150	125	52	M	74	352	II
Envoy	navy	7	84	85	86	53	M	73	184	I
Cruiser	navy	6	73	85	97	54	L	69	164	II
AC Polaris	great northern	7	97	102	95	52	L	70	310	III
AC Redbond	small red	8	96	103	99	51	M	65	290	II
AC Black Diamond	black	7	102	95	94	54	M	70	250	II
CDC Espresso	black	11	65	78	74	47	M	87	191	I
CDC Jet	black	8	87	94	95	58	L	80	175	II
CDC Blackcomb	black	3	100	91	85	56	L	74	167	II

\* Co-op and regional trials grown in narrow rows. Direct comparisons to CDC Pintium since 1996

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

▲ Pod clearance: percentage of pods that completely clear the cutterbar at time of swathing

‡ Growth habit: I = determinate bush; II = indeterminate bush; III = indeterminate vine

\*\*Limited data (2009 and 2010 only)

## Faba Bean

### Main Characteristics of Varieties

Variety	Years Tested*	Yield % CDC Fatima	Maturity Rating	Seed Weight (g/1000)
<b>Coloured Flower</b>				
CDC Fatima	12	100	105	520
Taboar ☉	3	97	107	480
CDC Blitz	6	101	109	410
Orion	6	92	103	350
Florent	4	112	107	660
<b>White Flower</b>				
Snowbird ☉	4	104	104	495
Imposa ☉	4	110	107	695

### Additional Information

Faba bean regional trials were started again beginning in 2006 to accommodate growing interest in this crop as a nitrogen-fixing high protein feed grain in moist areas where producers experience problems with pea diseases. 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 and weather conditions.



# Oilseed Crops

## Flax

### Main Characteristics of Varieties

Variety	Years Tested	Yield as % of CDC Bethune*			Relative Maturity♣	Seed Size	Resistance to		
		Area 1 & 2	Area 3 & 4	Irrigation			Lodging	Powdery Mildew	Fusarium Wilt
CDC Bethune ☼	10	100	100	100	L	M	G	F	F
CDC Arras	10	95	92	92	M	L	F	P	F
Hanley ☼	4	90	90	93	M	M	G	F	G
Lightning ☼	6	92	92	93	L	M	G	F	G
Prairie Blue ☼	4	99	92	97	L	S	VG	F	F
Prairie Grande ☼	7	92	94	92	M	M	VG	F	F
Prairie Thunder ☼	8	95	95	98	M	M	VG	F	G
CDC Sorrel ☼	8	100	101	92	L	L	G	F	F
Taurus ☼	6	94	99	94	M	M	G	F	F
Vimy	10	94	90	85	M	L	P	P	F
AC Watson	6	88	93	92	M	M	G	F	F

\* Data from Regional and Co-op trials

♣ Relative maturity: The relative maturity of the check, **CDC Bethune**, is L (on average 101 days from seeding to swathing ripeness)

The Flax Council of Canada's Trifid Stewardship Program recommends the testing of all flax seed intended for planting, and only flax seed which tests negative for the presence of Trifid should be planted. For the latest recommendations, please visit [www.flaxcouncil.ca](http://www.flaxcouncil.ca).

### Additional Information:

All varieties are resistant 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.

## Sunflower (Oilseed)

### Main Characteristics of Varieties

Variety	Years Tested	Grain Yield (kg/ha)	Average Maturity (days)	Harvest Moisture %
63A21	1	3616	120	10.7
803 DMR NS	1	2884	123	10.2
306 DMR,NS	1	3489	127	14.9
3080 DMR,NS	1	2967	130	21.3
IS 29-30	1	3257	123	11.9
IS 3433	1	2595	129	17.9
IS 3480CI	1	3282	130	17.4
IS 7120 HO/DM	1	2872	129	15.5
8N 270CL DM	1	3524	125	17.8
Defender plus	1	3518	123	13.9

1 year data based on 3 locations

## Sunflower (Oilseed) EMSS

### Main Characteristics of Varieties

Variety	Years Tested	Yield (kg/ha) (10 yr avg.)	Average Maturity	Oil %*
63A21	11	2486	114	46.5
AC Sierra	2	1695	109	48.3

### 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. The earlier maturing, short stature (EMSS) varieties are adapted to production in most areas of Saskatchewan. **AC Sierra** is open pollinated and not a hybrid.

For more information about the Saskatchewan Sunflower Committee trials contact Elaine Moats, Saskatchewan Ministry of Agriculture ([elaine.moats@gov.sk.ca](mailto:elaine.moats@gov.sk.ca)) or phone 306-848-2856.

## Mustard

### Main Characteristics of Varieties\*

Type and Variety	Yield % of AC Pennant	Plant Height (cm)	Mucilage† cS*m/g seed	Protein % Seed	Fixed Oil % Seed	Seed Weight (g/1000)
<b>Yellow</b>						
AC Pennant	100	101	42.7	34.6	29.4	5.7
AC Base	100	98	38.8	34.6	29.3	5.9
Ace	99	100	47.8	35.2	29.1	5.5
Andante	101	95	52.8	35.5	28.3	6.1
	Yield % of Duchess	Plant Height (cm)	Volatile oil‡ mg/g seed	Protein % Seed	Fixed Oil % Seed	Seed Weight (g/1000)
<b>Brown</b>						
Duchess	100	112	9.4	28.8	38.1	2.8
Centennial Brown	100	116	10.3	30.2	36.5	3.0
Amigo**	95	109	14.0	31	33.8	2.5
	Yield % of Cutlass					
<b>Oriental</b>						
Cutlass	100	113	11.5	29.3	41.0	2.7
Forge	97	124	12.2	29.8	38.8	2.5
AC Vulcan	98	115	12.4	29.7	40.6	2.8

\* Data from 1999-2009 Co-operative Test. Yield % of check: 103 locations for yellow mustard, and 97 locations for brown and oriental mustard.

\*\* Data from 2007-2009 Co-operative Mustard Test.

† Mucilage in yellow mustard is a measurement of viscosity of aqueous extracts from seed.

‡ Volatile oil = allyl glucosinolate

### 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 90 to 92 days.

The four yellow mustard varieties have similar yield and range in height from 95 cm to 101 cm. A unique feature of yellow mustard is high mucilage content. Mucilage is valued by the mustard industry as a stabilizer in prepared food products. **Andante** has the highest mucilage content. High protein content is of importance for yellow mustard flour as an ingredient in meat products. The protein contents of **Andante** and **Ace** are significantly higher than **AC Pennant** and **AC Base**, with corresponding lower fixed oil content. **Andante** and **AC Base** have significantly higher seed weight than **AC Pennant**, with **Ace** having smaller seed.

Brown mustard is grown primarily for the Dijon mustard market. **Centennial Brown** has significantly higher allyl glucosinolate and protein content, as well as lower fixed oil. It is also larger seeded than **Duchess**. **Centennial Brown** and **Duchess** are highly susceptible to white rust disease (staghead). **Amigo** has good yield and plant height is similar to **Duchess**. **Amigo** is the first brown mustard variety highly resistant to white rust race 2a, but susceptible to race 2v. **Amigo** has very high allyl glucosinolate content, much higher than **Centennial Brown** and **Duchess**. It also has greater protein and much reduced fixed oil content. Its seed weight is somewhat lower than that of the other brown mustard varieties.

Three varieties of oriental mustard (yellow-seeded) are available for production. **Cutlass** is the highest yielding variety. **Forge** is the tallest variety. **AC Vulcan** and **Forge** have high allyl glucosinolate content and greater protein content than **Cutlass**. **Forge** has significantly lower fixed oil and smaller seed.

## Canola Variety Information

The Prairie Canola Variety Testing (PCVT) program was not conducted in 2010 as it undergoes review and reorganization.

The varietal information provided is sourced from the Western Canada Canola/Rapeseed Recommending Committee.

Please refer to the Canola Council of Canada website for alternative sources of canola variety information at: <http://www.canola-council.org/>, Under the heading *Canola News, select Selecting a new variety*

## Western Canada Canola/Rapeseed Recommending Committee (WCC/RRC) Recommendation Information

The purpose of the public trials is to evaluate the agronomic, quality, and disease resistance attributes of canola cultivars. The collected data is combined with data derived from the previous year(s) private trials. Data packages are prepared on the basis of yield, oil, protein, and blackleg resistance (as well as other criteria).

A summary package is prepared according to guidelines developed by the WCC/RRC and is used to evaluate candidate cultivars for variety registration.

Trials are conducted by seed companies, government researchers and independent contractors in three growing zones across the prairies: short-, mid- and long-season zones.

The table is provided solely as a record and summary of the agronomic and blackleg disease resistance information for canola cultivars that were both recommended and registered in the 2005 to 2009 time period.

Contact Raymond Gadoua of the Canola Council of Canada at [gadouar@canolacouncil.org](mailto:gadouar@canolacouncil.org) or 306-683-2403 for the complete 1998 to 2009 summary.

## Interpreting the table

The table summarizes the small plot agronomic information of each of the cultivars recommended and registered since 2005. Only those varieties with a distributor are listed.

Each line is a summary of the information presented to the committee when evaluating a cultivar. The one line is derived from the 1st year private and 2nd year public data. Rarely, would any of these cultivars have been tested in the exact same set of trials.

The intent of the table is documentation of testing and variety name reference. Please refer to the Canadian Food Inspection Agency website for regular updates on registered varieties.

Typically these varieties would have been tested at 25 or more locations in Western Canada over 2 years. A positive value for **yield** of 110 would mean 10% higher than the indicated checks. Values for **maturity** show the difference compared to the checks in days. Values for **height** show the difference

compared to the checks in cm. A positive value for **lodging** indicates that the variety is better than the checks and '0' indicates no difference. This file is for information purposes only and no guarantee of actual field performance is implied.

## 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 (S). 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 practice such as proper crop and herbicide rotation.

## Brassica rapa (Polish Canola)

Polish varieties mature approximately two weeks earlier than Argentine varieties and are therefore less likely to produce green seed. Polish varieties are more heat and drought tolerant than Argentine varieties. They are also more shatter resistant than Argentine varieties and are therefore well suited to straight combining.

## Brassica juncea Canola

*Brassica juncea* canola is a new class of canola that is especially well adapted to areas where hot, dry conditions are often encountered. It has very good resistance to blackleg and exhibits better heat and drought tolerance than other canola. Juncea canola shattering resistance similar to Polish canola and is therefore well suited to straight-cut combining. All production is contracted.

Available from Viterra in 2011, XCEED Oasis CL yields 107% of XCEED 8571, and matures 2-3 days earlier. XCEED 8571 yields similar to other open-pollinated canola varieties in the market. XCEED canola is compatible with the Clearfield Production System. (Source: Viterra)

## The Canola POD

The Canola POD, or Performance On-line Database ( <http://81.137.139.227/pod5/index.aspx> ) was developed by the Canola Council of Canada to allow farmers to explore canola performance trial results from a broad range of sources in their own area. In addition to the Prairie Canola Variety Trial results, POD provides access to private seed company performance trial information which often includes more detailed information, such as notes on site management.

*Report and table provided by the Canola Council of Canada*

2005 to 2009 WCC/RRC Registered Canola Varieties with Marketer List

variety	type	Yield-Avg-All Zones	Yield-Short Season	Yield-Mid Season	Yield-Long Season	Yield-Irrigated Sites	Maturity	BLACKLEG RATING	HEIGHT	LODGING	Marketer
<b>Yield as % 46A65, Q2</b>											
<b><u>Clearfield Resistant</u></b>											
5525CL	H	126	--	123	128	--	1	R	11	0	BrettYoung
5535CL	H	127	148	120	116	--	-2	R	4	0	BrettYoung
1651 H	H	120	118	121	118	--	0	R	6	0	Canterra Seeds Inc.
NX4-205 CL **	OP	108	112	108	101	--	0	R	7	1	Dow AgroSciences
45H73	H	122	121	122	125	119	-2	R	2	0	Pioneer Hi-Bred
45H74	H	126	126	126	127	--	-1	R	1	1	Pioneer Hi-Bred
45P70	H	119	117	120	122	108	-1	R	5	0	Viterra Inc.
<b><u>Liberty Link</u></b>											
1141 **	H	120	114	122	119	--	-2	MR	3	0	Bayer CropScience
1143 **	H	120	122	121	118	--	2	R	1	0	Bayer CropScience
1144 **	H	130	125	128	136	--	-1	MR	3	0	Bayer CropScience
5440	H	135	139	136	133	124	0	R	7	1	Bayer CropScience
5770	H	135	131	137	139	--	3	R	7	1	Bayer CropScience
8440	H	132	122	139	130	123	-1	R	0	0	Bayer CropScience
L130	H	136	134	134	140	--	0	R	4	1	Bayer CropScience
L150	H	143	141	140	146	--	1	R	9	1	Bayer CropScience
3303 LL	Syn	115	--	115	116	--	-1	MR	-2	0	BrettYoung
1145 **	H	133	127	133	139	--	1	R	9	1	Cargill Inc.
<b><u>Roundup Ready</u></b>											
4362RR	H	111	110	112	110	--	-2	MR	2	0	BrettYoung
4414RR	H	113	110	115	117	--	0	R	3	0	BrettYoung
4424 RR	H	112	116	106	114	--	1	MR	11	0	BrettYoung
4434 RR	H	111	106	113	113	--	0	MR	4	0	BrettYoung
6020 RR	H	119	--	120	117	--	1	MR	0	0	BrettYoung
6040 RR	H	121	--	119	123	--	0	R	9	1	BrettYoung
6060 RR	H	134	124	133	138	--	2	R	10	1	BrettYoung
1918	OP	115	114	116	114	--	0	MR	1	0	Canterra Seeds Inc.
1950	H	123	--	124	122	--	0	MR	5	0	Canterra Seeds Inc.
1956	Syn	119	--	119	119	--	0	R	4	1	Canterra Seeds Inc.
1960*	H	121	122	119	126	--	2	R	--	--	Canterra Seeds Inc.
1970	H	128	--	129	126	--	2	R	7	1	Canterra Seeds Inc.
1852H	H	108	104	112	105	109	-1	R	4	0	Canterra Seeds Inc.
1855H	H	110	105	115	108	106	-1	R	0	0	Canterra Seeds Inc.
v1037 **	H	114	111	117	113	--	-1	R	8	0	Cargill - VICTORY Hybrid Canola
V1040 **	H	123	125	122	120	--	1	R	4	1	Cargill - VICTORY Hybrid Canola
v2035 **	H	118	121	119	115	--	-1	R	2	0	Cargill - VICTORY Hybrid Canola
72-65 RR	H	117	115	114	121	--	1	R	0	0	DEKALB
73-35 RR	H	122	135	116	121	--	-2	R	-6	0	DEKALB
73-45 RR	H	126	137	121	126	--	-3	R	-5	0	DEKALB
73-55 RR	H	129	139	124	129	--	-1	R	-2	0	DEKALB
73-65 RR	H	126	138	121	124	--	-1	R	1	0	DEKALB
73-67 RR*	H	113	115	114	110	--	-1	R	--	--	DEKALB

2005 to 2009 WCC/RRC Registered Canola Varieties with Marketer List

variety	type	Yield-Avg-All Zones	Yield-Short Season	Yield-Mid Season	Yield-Long Season	Yield-Irrigated Sites	Maturity	BLACKLEG RATING	HEIGHT	LODGING	Marketer
73-77 RR*	H	114	116	115	113	--	0	R	--	--	DEKALB
NX4-105 RR **	OP	110	--	109	110	--	2	R	3	0	Dow AgroSciences
NX4-106 RR **	OP	106	105	107	106	--	1	R	6	0	Dow AgroSciences
D3150	H	117	120	115	117	--	0	MR	9	0	DuPont
D3151	H	118	120	115	120	--	-1	MR	6	0	DuPont
D3152	H	126	133	120	128	--	-2	R	4	0	DuPont
83S01 RR	Syn	117	117	119	114	--	-2	MR	6	0	FP Genetics
93H01 RR	H	118	126	121	112	--	0	MR	7	0	FP Genetics
45H26	H	119	120	120	117	116	-2	R	0	0	Pioneer Hi-Bred
45H28	H	122	123	123	120	--	-1	R	2	0	Pioneer Hi-Bred
45H29	H	132	134	130	132	--	-1	R	10	0	Pioneer Hi-Bred
45S51	H	115	108	114	122	--	0	R	0	0	Pioneer Hi-Bred
45S52	H	119	126	119	110	--	-1	MR	5	0	Pioneer Hi-Bred
Café	OP	104	106	103	--	--	-5	R	-5	0	SECAN
RUGBY	OP	106	98	109	110	--	0	R	1	0	SECAN
9553	H	121	121	120	123	--	-1	R	3	0	Viterra Inc.
46P50	H	119	117	123	116	112	1	R	3	0	Viterra Inc.
9557S	H	125	133	122	121	--	-2	R	5	0	Viterra Inc.
9558C	H	124	133	123	117	--	-1	R	9	0	Viterra Inc.
SP 621 RR	H	112	--	116	101	--	-2	MR	3	0	Viterra Inc.
VT 500	H	117	122	117	111	--	0	R	4	1	Viterra Inc.
VT Barrier	OP	111	--	110	113	--	-1	R	1	0	Viterra Inc.
VT Remarkable	Syn	120	--	118	121	--	1	R	9	0	Viterra Inc.
<b>Yield as % 44A04, 43A56 (early B. napus checks)</b>											
9350	H	119	119	--	--	--	1	MR	-5	0	Viterra Inc.
43E01	H	116	116	--	--	--	0	MR	-8	0	Pioneer Hi-Bred
<b>Yield as % of AC Parkland, AC Sunbeam</b>											
<b>Conventional B. rapa</b>											
Early One	Syn	123	123	--	--	--	0	--	4	0	Mastin Seeds, Sundre, AB

Data notes:

A positive value for **yield** of 110 would mean 10% higher than the indicated checks

Values for **height** show the difference compared the checks in cm

Values for **maturity** show the difference compared to the checks in days.

A positive value for **lodging** indicates that the variety is better than the checks and '0' indicates no difference.

All varieties are B.napus with the exception of Early One (B. rapa)

\* Interim registration based on 1 year of company data

\*\* Specialty Canola Oil

Type: H-Hybrid, OP-Open Polinated, Syn-Synthetic

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

Crop Kind, Class & Variety	Breeding Institution	Distributor	Crop Kind, Class & Variety	Breeding Institution	Distributor
<b>WHEAT</b>			<b>Canada Western Amber Durum (cont'd)</b>		
<b>Canada Western Red Spring</b>			Kyle	AAFC (Swift Current)	SeCan Members
CDC Abound 🍷	U of S - CDC	Viterra Inc.	AC Navigator 🍷	AAFC (Swift Current)	Viterra Inc.
CDC Alsask 🍷	U of S - CDC	Viterra Inc.	Strongfield 🍷	AAFC (Swift Current)	SeCan Members
Alvena 🍷	AAFC (Swift Current)	SeCan Members	CDC Verona 🍷	U of S - CDC	Alliance Seed Corp.
AC Barrie 🍷	AAFC (Swift Current)	SeCan Members			
CDC Bounty	U of S - CDC	CANTERRA SEEDS	<b>Winter Wheat</b>		
Carberry 🍷	AAFC (Swift Current)	SeCan Members	Accipiter 🍷	U of S - CDC	SeCan Members
AC Elsa 🍷	AAFC (Swift Current)	SeCan Members	AC Bellatrix	AAFC (Lethbridge)	FP Genetics
Fieldstar VB 🍷	AAFC (Winnipeg)	SeCan Members	Broadview 🍷	AAFC (Lethbridge)	CANTERRA SEEDS
Glenn 🍷	NDSU	CANTERRA SEEDS	CDC Buteo	U of S - CDC	SeCan Members
CDC Go	U of S - CDC	Public release U of S - CDC	CDC Clair	U of S - CDC	SeCan Members
Goodeve VB 🍷	AAFC (Swift Current)	Alliance Seed Corp.	CDC Falcon	U of S - CDC	SeCan Members
Harvest 🍷	AAFC (Winnipeg)	FP Genetics	CDC Harrier	U of S - CDC	SeCan Members
Helios 🍷	AAFC (Swift Current)	Friendly Acres Seed Farm Inc.	CDC Kestrel	U of S - CDC	SeCan Members
CDC Imagine 🍷	U of S - CDC	Viterra Inc.	McClintock 🍷	U of M (Winnipeg)	CANTERRA SEEDS
Infinity 🍷	AAFC (Swift Current)	CANTERRA SEEDS	Moats	U of S - CDC	SeCan Members
AC Intrepid 🍷	AAFC (Swift Current)	CANTERRA SEEDS	CDC Osprey	U of S - CDC	CANTERRA SEEDS
KANE 🍷	AAFC (Winnipeg)	SeCan Members	Peregrine 🍷	U of S - CDC	SeCan Members
CDC Kernen 🍷	U of S - CDC	CANTERRA SEEDS	CDC Ptarmigan	U of S - CDC	Western Ag
Lillian 🍷	AAFC (Swift Current)	SeCan Members	Radiant	AAFC (Lethbridge)	CANTERRA SEEDS
McKenzie	Viterra Inc.	Viterra Inc.	CDC Raptor	U of S - CDC	SeCan Members
Muchmore 🍷	AAFC (Swift Current)	FP Genetics	Sunrise	U of S	Western Ag
CDC Osler	U of S - CDC	Public release U of S - CDC			
Shaw VB 🍷	AAFC (Winnipeg)	SeCan Members	<b>WINTER RYE</b>		
CDC Stanley 🍷	U of S - CDC	Viterra Inc.	Hazlet	AAFC (Swift Current)	SeCan Members
Stettler 🍷	AAFC (Swift Current)	SeCan Members	Prima	AAFC (Swift Current)	SeCan Members
Superb 🍷	AAFC (Winnipeg)	SeCan Members	AC Remington	AAFC (Swift Current)	CANTERRA SEEDS
CDC Teal	U of S - CDC	FP Genetics	AC Rifle	AAFC (Swift Current)	SeCan Members
CDC Thrive 🍷	U of S - CDC	SeCan Members / Cargill			
Unity VB 🍷	AAFC (Winnipeg)	SeCan Members	<b>TRITICALE</b>		
CDC Utmost VB 🍷	U of S - CDC	FP Genetics	Bobcat 🍷	AARD (Lacombe)	Progressive Seeds
Waskada	AAFC (Winnipeg)	SeCan Members	Bumper 🍷	CIMMYT, International Mexico	SeCan Members
WR859CL 🍷	Syngenta Seeds Canada Inc.	Richardson Intl	Bunker 🍷	AARD (Lacombe)	FP Genetics
5602HR 🍷	Syngenta Seeds Canada Inc.	Viterra Inc.	AC Certa	AAFC (Swift Current)	Progressive Seeds
5603HR 🍷	Syngenta Seeds Canada Inc.	Viterra Inc.	Luoma 🍷	AARD (Lacombe)	Corns Brothers Farms
			Metzger 🍷	AARD (Lacombe)	Haney Farm Ltd.
			Pika	AARD (Lacombe)	Progressive Seeds
			Pronghorn	AARD (Lacombe)	Progressive Seeds
			Tyndal 🍷	AARD (Lacombe)	SeCan Members
			AC Ultima	AAFC (Swift Current)	FP Genetics
<b>Canada Prairie Spring Red</b>			<b>MALTING BARLEY</b>		
Conquer VB 🍷	AAFC (Winnipeg)	CANTERRA SEEDS	<b>Two-Row</b>		
AC Crystal 🍷	AAFC (Swift Current)	SeCan Members	Bentley 🍷	AARD (Lacombe)	CANTERRA SEEDS
AC Taber	AAFC (Swift Current)	SeCan Members	Cerveza 🍷	AAFC (Brandon)	Mastin Seeds Ltd.
5700PR 🍷	Syngenta Seeds Canada Inc.	Viterra Inc.	CDC Copeland 🍷	U of S - CDC	SeCan Members
5701PR 🍷	Syngenta Seeds Canada Inc.	Viterra Inc.	Harrington	U of S - CDC	SeCan Members
5702PR 🍷	Syngenta Seeds Canada Inc.	Viterra Inc.	CDC Kendall 🍷	U of S - CDC	Viterra Inc.
			CDC Kindersley 🍷	U of S - CDC	SeCan Members
			CDC Landis 🍷	U of S - CDC	TBA
<b>Canada Prairie Spring White</b>			Major 🍷	AAFC (Brandon)	Viterra Inc.
AC Vista 🍷	AAFC (Swift Current)	FP Genetics	CDC Meredith 🍷	U of S - CDC	SeCan Members
			Merit 57 🍷	Bush Ag Res. Inc.	CANTERRA SEEDS
<b>Canada Western Hard White Spring</b>			AC Metcalfe 🍷	AAFC (Brandon)	SeCan Members
Snowbird 🍷	AAFC (Winnipeg)	FP Genetics	Newdale 🍷	AAFC (Brandon)	FP Genetics
Snowstar 🍷	AAFC (Winnipeg)	SeCan Members	Norman 🍷	AAFC (Brandon)/U of S - CDC	FP Genetics
			CDC Reserve 🍷	U of S - CDC	SeCan Members
<b>Canada Western Extra Strong</b>			<b>Six-Row</b>		
CDN Bison	AAFC (Winnipeg)	David W. Faurstou - MB	CDC Battleford 🍷	U of S - CDC	SeCan Members
Burnside	AAFC (Winnipeg)	David W. Faurstou - MB	Celebration 🍷	Bush Ag Res. Inc.	CANTERRA SEEDS
Glencross VB	AAFC (Winnipeg)	David W. Faurstou - MB	CDC Clyde 🍷	U of S - CDC	Viterra Inc.
CDC Rama	U of S - CDC	FP Genetics	CDC Kamsack 🍷	U of S - CDC	CANTERRA SEEDS
CDC Walrus	U of S - CDC	Public Release U of S - CDC	CDC Laurence 🍷	U of S - CDC	TBA
			Lacey 🍷	U of Minnesota	Alliance Seed Corp.
			Legacy 🍷	Bush Ag Res. Inc.	Viterra Inc./FP Genetics
			CDC Mayfair 🍷	U of S - CDC	CANTERRA SEEDS
			Robust	U of Minnesota	Cargill Seed, Others
			Stellar-ND 🍷	NDSU	CANTERRA SEEDS
			Tradition 🍷	Bush Ag Res. Inc.	Viterra Inc./FP Genetics
<b>Canada Western Soft White Spring</b>					
AC Andrew	AAFC (Lethbridge)	SeCan Members			
Bhishaj	AAFC (Lethbridge)	Tony Crooymans			
Sadash 🍷	AAFC (Lethbridge)	SeCan Members			
<b>Canada Western General Purpose</b>					
CDC NRG003 🍷	U of S - CDC	CANTERRA SEEDS			
NRG010 🍷	AAFC (Swift Current)	CANTERRA SEEDS			
Minnedosa 🍷	AAFC (Winnipeg)	SeCan Members			
<b>Canada Western Amber Durum</b>					
AC Avonlea 🍷	AAFC (Swift Current)	FP Genetics			
Brigade 🍷	AAFC (Swift Current)	Viterra Inc.			
Commander 🍷	AAFC (Swift Current)	Viterra Inc.			
Enterprise 🍷	AAFC (Swift Current)	CANTERRA SEEDS			
Eurostar 🍷	AAFC (Swift Current)	SeCan Members			

Crop Kind,	Breeding Institution	Distributor
<b>FEED BARLEY</b>		
<b>Feed</b>		
CDC Austenson ☞	U of S - CDC	SeCan Members
CDC Bold	U of S - CDC	CANTERRA SEEDS
Busby ☼	AARD (Lacombe)	Mastin Seeds
Champion ☞	Westbred, LLC	Viterra Inc.
Chigwell ☼	AARD (Lacombe)	SeCan Members
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 ☼	AARD (Lacombe)	SeCan Members
CDC Helgason ☞	U of S - CDC	SeCan Members
McLeod ☞	Westbred, LLC	Viterra Inc.
CDC Mindon ☞	U of S - CDC	SeCan Members
AC Rosser ☞	AAFC (Brandon)	SeCan Members
Sundre ☞	AARD (Lacombe)	Mastin Seeds
CDC Trey ☞	U of S - CDC	FP Genetics
Xena ☞	Viterra Inc./W. Plant Breeders	Viterra Inc.
<b>Hulless</b>		
CDC Carter ☞	U of S - CDC	SeCan Members
CDC ExPlus ☼	U of S - CDC	TBA
HB705 ☼	AAFC (Brandon)	Alliance Seed Corp.
CDC Lophy-I	U of S - CDC	Public release U of S - CDC
CDC McGwire ☞	U of S - CDC	SeCan Members
<b>Forage</b>		
Binscarth	AAFC (Brandon)	Wagon Wheel Seeds
CDC Cowboy ☞	U of S - CDC	SeCan Members
Desperado ☞	AAFC (Brandon)	Alliance Seed Corp.
AC Ranger	AAFC (Brandon)	FP Genetics
Stockford ☞	W. Plant Breeders	Viterra Inc.
<b>Food Barley</b>		
CDC Alamo	U of S - CDC	Public release U of S - CDC
CDC Candle	U of S - CDC	Public release U of S - CDC
CDC Fibar ☞	U of S - CDC	CANTERRA SEEDS
CDC McGwire ☞	U of S - CDC	SeCan Members
CDC Rattan ☞	U of S - CDC	CANTERRA SEEDS
Millhouse	AAFC (Brandon)	TBA
<b>OAT</b>		
CDC Baler	U of S - CDC	FP Genetics
SW Betania ☞	SW Seed Ltd.	Viterra Inc.
CDC Boyer	U of S - CDC	SeCan Members
Boudrias	AAFC (Lacombe)	FP Genetics
Bradley ☼	AAFC - ECORC	SeCan Members
CDC Dancer ☞	U of S - CDC	FP Genetics / Cargill
Derby	U of S - CDC	Viterra Inc. / Mastin Seeds
Furlong ☞	AAFC (Winnipeg)	CANTERRA SEEDS / Cargill
AC Gwen	AAFC (Winnipeg)	SeCan Members
HiFi ☞	NDSU	Seed Depot
Jordan ☞	AAFC (Winnipeg)	SeCan Members
Lee Williams	AAFC (Lacombe)	CANTERRA SEEDS
Leggett ☞	AAFC (Winnipeg)	FP Genetics
Lu	AAFC (Lacombe)	SeCan Members
CDC Minstrel ☞	U of S - CDC	FP Genetics
AC Morgan	AAFC (Lacombe)	SeCan Members
Murphy ☞	AAFC (Lacombe)	SeCan Members
CDC Orrin ☞	U of S - CDC	FP Genetics / Cargill
Pinnacle ☞	AAFC (Winnipeg)	FP Genetics
CDC Pro-Fi	U of S - CDC	Public release U of S - CDC
Ronald ☞	AAFC (Winnipeg)	SeCan Members
CDC Seabiscuit ☼	U of S - CDC	CANTERRA SEEDS
CDC Sol-Fi	U of S - CDC	Public release U of S - CDC
Souris ☞	NDSU	Seed Depot
Stainless ☞	AAFC (Winnipeg)	TBA
Summit ☞	AAFC (Winnipeg)	FP Genetics
Triactor ☞	SW Seed Ltd.	CANTERRA SEEDS
CDC Weaver ☞	U of S - CDC	FP Genetics / Cargill
<b>CANARY SEED</b>		
CDC Bastia	U of S - CDC	
Cantate		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

Crop Kind,	Breeding Institution	Distributor
<b>LENTIL</b>		
CDC Blaze	U of S - CDC	Sask. Pulse Growers
CDC Cherie	U of S - CDC	Sask. Pulse Growers
CDC Dazil CL	U of S - CDC	Sask. Pulse Growers
Eston	U of S - CDC	SeCan Members
CDC Glamis	U of S - CDC	Sask. Pulse Growers
CDC Grandora	U of S - CDC	Sask. Pulse Growers
CDC Greenland	U of S - CDC	Sask. Pulse Growers
CDC Imax CL	U of S - CDC	Sask. Pulse Growers
CDC Imigreen CL	U of S - CDC	Sask. Pulse Growers
CDC Impact CL	U of S - CDC	Sask. Pulse Growers
CDC Impala CL	U of S - CDC	Sask. Pulse Growers
CDC Imperial CL	U of S - CDC	Sask. Pulse Growers
CDC Impower CL	U of S - CDC	Sask. Pulse Growers
CDC Impress CL	U of S - CDC	Sask. Pulse Growers
CDC Improve CL	U of S - CDC	Sask. Pulse Growers
CDC Invincible CL	U of S - CDC	Sask. Pulse Growers
CDC KR-1	U of S - CDC	SaskCan Pulse Trading
Laird	U of S - CDC	SeCan Members
CDC LeMay	U of S - CDC	Sask. Pulse Growers
CDC Maxim CL	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 CL	U of S - CDC	Sask. Pulse Growers
CDC Plato	U of S - CDC	Sask. Pulse Growers
CDC QG-1	U of S - CDC	SaskCan Pulse Trading
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 Red Rider	U of S - CDC	Sask. Pulse Growers
CDC Richlea	U of S - CDC	SeCan Members
CDC Robin	U of S - CDC	Sask. Pulse Growers
CDC Rosebud	U of S - CDC	Sask. Pulse Growers
CDC Rosetown	U of S - CDC	Sask. Pulse Growers
CDC Rouleau	U of S - CDC	Sask. Pulse Growers
CDC Ruby	U of S - CDC	Sask. Pulse Growers
CDC Sedley	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
<b>Dry Bean</b>		
AC Black Diamond	AAFC (Lethbridge)	Viterra Inc.
CDC Blackcomb	U of S - CDC	Sask. Pulse Growers
Cruiser	AAFC (Harrow)	
Envoy	GenTec Seeds	
CDC Expresso	U of S - CDC	CANTERRA SEEDS
Island	AAFC (Lethbridge)	Viterra Inc.
CDC Jet	U of S - CDC	B&J Martens Seeds
CDC Pintium	U of S - CDC	Sask. Pulse Growers
AC Polaris	AAFC (Lethbridge)	Viterra Inc.
AC Redbond	AAFC (Lethbridge)	Viterra Inc.
Winchester	Rogers Brothers	ADM Edible Bean Specialities
CDC WM - 1	U of S - CDC	Walker Seeds Ltd.
CDC WM - 2	U of S - CDC	Walker Seeds Ltd.
<b>Faba Bean</b>		
CDC Blitz	U of S - CDC	
CDC Fatima	U of S - CDC	R.Legumex / Walker S.
Florent	NPZ	DL Seeds
Imposa ☼	Limagrains Nederland	Cyre Seed Farms
Orion	AAFC (Lacombe)	Roger Lee, Lyster Farm
Snowbird ☞	Limagrains Nederland	Bob Park - Lacombe, AB
Taboar ☞	Globe Seeds - Netherland	Terramax Holding Corp.
<b>Chickpea</b>		
<b>Desi</b>		
CDC Cabri	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 Vanguard	U of S - CDC	Sask. Pulse Growers
<b>Kabuli</b>		
CDC Alma	U of S - CDC	Sask. Pulse Growers
Amit (B-90) ☞		Viterra Inc.
CDC Frontier	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

Crop Kind,	Breeding Institution	Distributor	Crop Kind,	Breeding Institution	Distributor
<b>Flax</b>			<b>FIELD PEA</b>		
CDC Arras	U of S - CDC	FP Genetics	40-10	SWS, Germany	FP Genetics
CDC Bethune ☺	U of S - CDC	SeCan Members	CDC Acer	U of S - CDC	Sask. Pulse Growers
Hanley ☺	AAFC (Morden)	SeCan Members	DS Admiral ☺	Danisco Seeds	FP Genetics
Lightning ☺	AAFC (Morden)	CANTERRA SEEDS	Agassiz ☺	AAFC	CANTERRA SEEDS
Prairie Blue ☺	AAFC (Morden)	SeCan Members	Argus ☺	AAFC (Lacombe)	SeCan Members
Prairie Grande ☺	AAFC (Morden)	SeCan Members	CDC Bronco	U of S - CDC	Sask. Pulse Growers
Prairie Thunder ☺	AAFC (Morden)	CANTERRA SEEDS	Camry ☺	Limagrain Nederland	FP Genetics
CDC Sorrel ☺	U of S - CDC	SeCan Members	Canstar ☺	AAFC	Canseed
Taurus ☺	Limagrain Nederland	FP Genetics	SW Capri ☺	SW Seed Ltd.	CANTERRA SEEDS
Vimy ☺	U of S - CDC	SeCan Members	CDC Centennial	U of S - CDC	Sask. Pulse Growers
AC Watson	AAFC (Morden)	Viterra Inc.	Cooper ☺	Limagrain Nederland	CANTERRA SEEDS
			Courier	NZ Crop & Food	CANTERRA SEEDS
<b>Mustard</b>			Cutlass	AAFRD / CDC	Sask. Pulse Growers
<b>Brown</b>			Delta	Limagrain Nederland	FP Genetics
Amigo	AAFC (Saskatoon)	Canadian Mustard Assoc.	Eclipse ☺	Limagrain Nederland	FP Genetics
Centennial Brown	AAFC (Saskatoon)	Canadian Mustard Assoc.	CDC Golden	U of S - CDC	Sask. Pulse Growers
Duchess	Colman's of Norwich	Viterra Inc.	CDC Handel	U of S - CDC	Sask. Pulse Growers
<b>Oriental</b>			CDC Hornet	U of S - CDC	Sask. Pulse Growers
Cutlass	AAFC (Saskatoon)	Canadian Mustard Assoc.	Hugo ☺	AAFC	Alliance Seed Corp.
Forge	Colman's of Norwich	Viterra Inc.	CDC Leroy	U of S - CDC	Sask. Pulse Growers
AC Vulcan	AAFC (Saskatoon)	Canadian Mustard Assoc.	CDC Meadow	U of S - CDC	Sask. Pulse Growers
<b>Yellow</b>			SW Midas ☺	Lantmannen SW Seed	FP Genetics
Ace	Colman's of Norwich	Viterra Inc.	CDC Minuet	U of S - CDC	Sask. Pulse Growers
Andante	AAFC (Saskatoon)	Canadian Mustard Assoc.	CDC Montero	U of S - CDC	Sask. Pulse Growers
AC Base	AAFC (Saskatoon)	Canadian Mustard Assoc.	CDC Mozart	U of S - CDC	Sask. Pulse Growers
AC Pennant	AAFC (Saskatoon)	Canadian Mustard Assoc.	Nitouche	Limagrain Nederland	FP Genetics
			CDC Patrick	U of S - CDC	Sask. Pulse Growers
<b>Sunflower</b>			CDC Pluto	U of S - CDC	Sask. Pulse Growers
63A21	Pioneer Hi-Bred	Pioneer Hi-Bred	Polstead ☺	Limagrain Nederland	FP Genetics
803 DMR NS	CROPLAN Genetics	CROPLAN Genetics	CDC Prosper	U of S - CDC	Sask. Pulse Growers
306 DMR NS	CROPLAN Genetics	CROPLAN Genetics	Reward ☺	AAFC (Lacombe)	SeCan Members
3080 DMR NS	CROPLAN Genetics	CROPLAN Genetics	CDC Rocket	U of S - CDC	Sask. Pulse Growers
IS 29-30	Syngenta	Syngenta	CDC Sage	U of S - CDC	Sask. Pulse Growers
IS 3433	Syngenta	Syngenta	SW Sergeant	Lantmannen SW Seed	FP Genetics
IS 3480CI	Syngenta	Syngenta	CDC Sonata	U of S - CDC	Sask. Pulse Growers
IS 7120 HO/DM	Syngenta	Syngenta	Sorento ☺	Limagrain Nederland	FP Genetics
8N 270CL DM	Dow AgroSciences	Dow AgroSciences	Stratus ☺	Limagrain Nederland	CANTERRA SEEDS
Defender plus	Seeds 2000	Seeds 2000	CDC Striker	U of S - CDC	Sask. Pulse Growers
AC Sierra			Tamora	Limagrain Nederland	FP Genetics
<b>SAFFLOWER</b>			CDC Tetris	U of S - CDC	Sask. Pulse Growers
Saffire	AAFC (Lethbridge)	Jerry Kubic (AB)	Thunderbird ☺	AAFC	CANTERRA SEEDS
AC Sunset	AAFC (Lethbridge)	Viterra Inc.	Trapper	AAFC (Morden)	Public
			CDC Treasure	U of S - CDC	Sask. Pulse Growers
<b>Soybean</b>			CDC Tucker	U of S - CDC	Sask. Pulse Growers
Isis RR		Brett Young	Venture	Axel Toft	Johnson Seeds (MB)
LS 0028RR		Delmar Commodities			
LS 0036RR		Delmar Commodities	<b>Canola</b> - see Canola table VR19		
NSC Argyle RR		NorthStar Genetics Manitoba			
NSC Warren RR		NorthStar Genetics Manitoba			
RR Rosco		Hyland Seeds			

Abbreviations used in this list	
AC	Prefix to variety names Agriculture Canada (Agriculture and Agri-Food Canada)
AAFC	Agriculture and Agri-Food Canada
CDC	Crop Development Centre
AARD	Alberta Agriculture and Rural Development, Lacombe, AB
U	University
U of S	University of Saskatchewan
USDA	United States Department of Agriculture
NSDU	North Dakota State University

**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.