



# Varieties of Grain Crops 2013

## 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.

## Table of Contents

<b>Cereal Crops</b>	
Wheat .....	4
Winter Wheat .....	6
Rye .....	6
Triticale .....	6
Malting Barley .....	7
Feed and Food Barley .....	9
Oat .....	10
<b>Other Crops</b>	
Buckwheat, Caraway, Coriander, Fenugreek, Safflower, Canaryseed .....	11
<b>General Seed Facts</b> .....	
<b>Pulse Crops</b>	
Lentil .....	13
Field Pea .....	14
Chickpea .....	15
Soybean .....	15
Dry Bean .....	16
Faba Bean .....	16
<b>Oilseed Crops</b>	
Flax .....	17
Sunflower .....	17
Mustard .....	18
Canola .....	19
<b>Clubroot</b> .....	
<b>Breeding Institutions and Seed Distributors</b> .....	
22	

## Symbols Used in 2013 Seed Guide:

- § Variety may not be described in 2014
- 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 \$5,000 to the program.

Technical support is also provided by The Western Producer, publisher of the *2013 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 (SVP) administers the program. SVP is composed of representatives from individual organizations with an interest in providing variety testing information.

SeCan Association administers the funds for SVP. 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, canaryseed and sunflower. 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 M with L and E varieties plus or minus 1-2 days, and VL and VE varieties beyond this range.

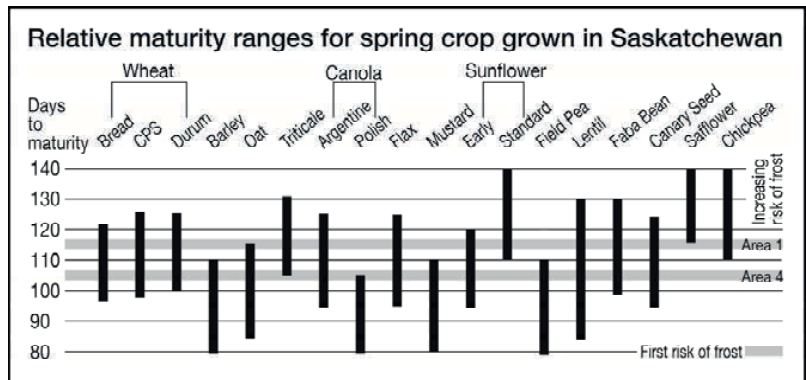
### Comparisons

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

The table below compares the relative maturity ranges for crops grown in Saskatchewan.

Within each crop there are early and late maturing varieties. Whether a crop matures before the first killing frost depends on seeding date, management practices and 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

by Saskatchewan Ministry of  
Agriculture

Resistance to the most important diseases in Western Canada is assessed in most crops before the variety is registered. The methods used to assess resistance in each crop are different. In some cases, spores of the pathogen are applied to plants in the greenhouse or in the field. In other cases, assessment is based on naturally occurring infection in the field. Each variety is rated on a five-point scale of 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, chickpea 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 (PBR) 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 can be obtained from the Plant Breeders' Rights Office, tel. (613) 773-7188, fax (613) 773-7261.



# Cereal Crops

## Wheat

### Main Characteristics of Varieties

Variety	Years Tested	Area 1 & 2	Area 3 & 4	Irrigation	Protein	Resistance to:										Relative Maturity (days)	Head Awedness	Seed Weight (mg)	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 - Yield as % of AC Barrie</b>						<b>Relative to AC Barrie</b>														
AC Barrie	11	100	100	100	14.9	G	G	G	P	VP	G	F	P	F	100	N	36.0	79.9	93	
CDC Abound	7	109	106	---	-0.3	G	F	VG	P	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	P	G	F	F	G	G	---	P	-2	N	-1.1	0.0	0	
AAC Bailey	2	103	101	---	0.0	G	G	VG	VG	---	P	G	F	F	-2	N	+0.3	-3.0	0	
Carberry	4	110	104	---	-0.1	VG	F	G	VG	G	G	VG	P	G	+3	Y	+1.2	+1.2	-12	
Cardale	3	102	108	---	+0.1	G	G	VG	VG	G	F	G	P	G	+1	Y	-3.3	0.0	-9	
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	9	111	110	---	-0.3	F	VG	G	VG	P	F	G	F	F	0	Y	-2.1	+0.7	+3	
Glenn	4	109	107	---	-0.4	VG	F	VG	VG	G	F	F	F	F	+3	Y	-1.7	+1.9	-4	
CDC Go	4	102	103	---	-0.1	G	P	VG	F	G	P	F	VP	P	-1	Y	+3.6	-0.3	-6	
Goodeve VB	9	111	111	---	0.0	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	G	VP	P	VP	-1	N	-0.4	+0.1	-6	
CDC Imagine	5	98	102	---	-0.1	G	F	F	F	F	G	G	P	VP	0	N	-1.7	-1.8	-3	
Infinity	8	107	107	---	-0.2	G	G	G	G	P	G	G	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	VG	VG	F	P	F	F	F	+1	Y	-0.5	+1.4	-5	
CDC Kernan	4	110	110	---	-0.1	G	F	G	G	F	VG	F	F	F	+1	Y	+1.3	-0.1	+3	
Lillian	7	102	99	---	+0.3	F	G	G	VG	VG	F	G	G	VP	0	N	-0.3	-1.1	-1	
McKenzie	6	107	103	109	-0.4	F	VG	VG	VG	P	VP	VG	P	F	-1	Y	-1.5	+0.1	+1	
CDC VR Morris	2	115	110	---	-0.1	G	P	G	VG	---	F	F	F	G	-1	N	-2.3	+0.7	-2	
Muchmore	4	116	102	---	-0.5	VG	G	VG	VG	G	G	VG	P	P	+3	Y	+1.3	0.0	-15	
CDC Osler	3	101	104	---	-0.3	G	F	VG	G	F	G	G	F	F	-1	N	-3.7	-0.7	-2	
CDC Plenifl	2	113	108	---	0.0	VG	F	VG	VG	G	VG	F	P	G	-1	N	-2.9	-0.3	-4	
AAC Redwater	1	105	99	---	0.0	G	G	VG	VG	G	P	F	P	F	-2	Y	-3.3	-3.1	-5	
Shaw VB	4	124	118	---	-0.7	G	G	VG	G	F	VP	G	P	P	+1	N	-0.4	-1.6	+5	
CDC Stanley	4	115	111	---	-0.2	G	G	VG	G	F	G	VP	F	P	0	N	-2.2	-1.1	-3	
Stettler	5	115	110	---	+0.2	G	G	G	P	G	VG	G	P	P	+1	Y	-0.6	0.0	-6	
Superb	7	109	108	---	-0.4	G	F	VG	VP	VP	F	G	VP	P	+3	Y	+2.6	-0.5	-7	
SY433	2	101	111	---	-0.2	G	G	VG	VG	---	F	VP	F	G	0	Y	+0.1	-1.7	+2	
CDC Teal	7	101	101	99	-0.1	G	P	G	G	G	G	F	P	VP	-2	N	-1.2	-0.3	0	
CDC Thrive	4	112	111	---	0.0	G	P	G	F	F	G	F	F	P	0	N	-0.5	0.0	+1	
Unity VB	9	117	119	---	-0.7	F	VG	G	VG	P	P	VG	F	F	0	Y	-0.6	+1.0	+1	
CDC Ulmost VB	4	121	116	---	-0.5	G	G	G	VG	F	P	VP	F	P	-1	N	-0.5	-0.1	-3	
Vesper VB	3	120	116	---	-0.9	F	F	G	VG	VP	F	VP	F	F	0	Y	+0.9	-1.2	-1	
Waskada	9	117	112	---	-0.3	F	VG	VG	F	P	G	VG	P	G	+1	Y	+0.3	+1.4	+4	
WR859 CL	5	112	104	---	-0.2	G	G	G	VG	F	VG	VG	P	G	0	Y	-2.2	0.0	-7	
5602HR	6	103	104	---	+0.1	F	F	VG	VG	F	VG	G	P	G	+1	Y	0.0	+1.6	+1	
5603HR	5	113	113	---	-0.7	G	VG	G	VG	P	P	F	G	F	+3	Y	-2.7	-2.0	+1	
5604HR CL	4	105	102	---	-0.5	G	G	VG	VG	---	P	F	P	F	-1	Y	-2.5	-0.3	-2	
<b>Canada Prairie Spring - Red Seeded</b>																				
Conquer VB	4	123	122	---	-1.6	F	P	VG	G	---	P	VG	F	P	+1	Y	+9.6	+1.8	-9	
AC Crystal	11	118	115	110	-1.3	VG	P	VG	P	VP	P	VG	F	VP	+3	Y	+4.9	-0.1	-11	
Enchant VB	2	116	115	---	-1.5	F	G	G	VG	---	G	VG	P	VP	+1	Y	+16.8	+1.5	-5	
SY985	3	113	110	---	-0.8	G	P	VG	VG	---	VG	G	F	F	+1	Y	+10.1	+0.4	-15	
5700PR	5	115	120	115	-1.2	VG	F	VG	F	P	P	VG	P	P	+2	Y	+6.8	+1.1	-16	
5702PR	6	126	124	---	-1.6	G	P	F	G	P	P	F	G	P	+1	Y	+8.5	0.0	-10	
<b>Canada Prairie Spring - White Seeded</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	P	G	P	P	F	0	N	-1.8	-0.4	+1	
Snowstar	4	105	107	---	-1.2	VG	G	VG	G	P	P	VP	P	P	-1	N	-5.2	+1.2	-9	
Whitehawk	2	102	97	---	-0.8	G	G	F	VG	---	F	P	P	P	-2	N	-4.1	+0.3	-5	
<b>Canada Western Soft White Spring</b>																				
AC Andrew	5	138	135	---	-3.6	G	P	G	P	F	VP	VP	F	F	+5	Y	+0.7	-1.8	-9	
Sadash	4	148	131	---	-4.3	VG	P	G	F	G	F	VP	F	VP	+5	Y	+0.7	+0.6	-6	
<b>Canada Western Extra Strong</b>																				
CDN Bison	5	117	115	---	-0.7	G	F	VG	G	---	VG	F	F	F	+3	Y	+6.6	-0.4	-6	
Burnside	6	98	100	---	-0.1	F	G	VG	VG	VG	VG	F	P	VP	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	
<b>Canada Western General Purpose</b>																				
Minnedosa	4	122	115	---	-1.8	G	G	G	VG	G	F	VG	P	P	+1	Y	+6.7	-2.1	-9	
CDC NRG003	4	129	123	---	-2.0	G	G	G	VG	P	---	P	VG	VP	0	Y	+6.4	-1.8	-10	
NRG010	4	130	128	---	-2.6	G	F	VG	VG	VG	P	VG	P	P	+2	Y	+3.3	-2.0	-7	
Pasteur	2	146	135	---	-2.7	VG	G	G	VG	G	G	P	VP	F	F	+8	N	+2.9	+0.9	-7
<b>Canada Western Amber Durum - Yield as % of Strongfield</b>						<b>Relative to 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	G	P	VG	F	VP	+1	Y	-0.6	-1.0	+2	
Brigade	5	109	112	110	-1.2	G	F	VG	VG	G	P	VG	F	P	+2	Y	+1.1	+0.3	+6	
Enterprise	4	103	101	107	-0.3	F	G	VG	VG	VG	P	G	F	P	0	Y	-3.2	+0.6	+2	
Eurostar	5	100	104	102	-0.5	F	F	VG	VG	VG	P	VG	F	P	+2	Y	+0.6	+0.8	+4	
AC Navigator	6	99	90	---	-0.7	G	G	VG	VG	VG	P	VG	VP	VP	+2	Y	+1.2	-0.1	-8	
Transcend	3	104	103	95	-0.3	F	G	VG	VG	VG	P	VG	F	P	+2	Y	-1.4	0.0	+8	
CDC Verona	5	102	104	103	-0.3	G	F	VG	VG	VG	P	VG	F	P	+2	Y	+0.1	-0.2	+1	
CDC Vivid	2	107	100	---	-0.3	G	---	VG	VG	---	F	VG	F	VP	0	Y	-0.6	-0.2	0	

♣ Includes direct and indirect comparisons with AC Barrie

\*\* 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.

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 postmaturity 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 and stripe rust continue to evolve, so the rust resistance in varieties changes from year to year. The seed guide contains the most up-to-date information on rust resistance in current varieties. Early seeding may minimize risk of crop losses for varieties sown in southeastern Saskatchewan that are rated 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 on page VR12 or *Guide to Crop Protection - 2013*.

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

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

Seed of the new varieties **AAC Bailey, Cardale, CDC VR Morris, CDC Plentiful, AAC Redwater, and SY433**, will not be available in 2013. Limited quantities of seed of the new variety **Vesper VB** will be available in 2013.

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

**CDC Abound, CDC Imagine, CDC Thrive, WR859 CL, and 5604HR CL** are tolerant to the CLEARFIELD® herbicides Adrenalin SC and Altitude FX.

**CANADA PRAIRIE SPRING**  
**Conquer VB and Enchant VB** are the only CPS-red midge tolerance varieties using the same *Sm1* gene as in the CWRS varieties and will be marketed with an interspersed refuge (see above).

Seed of **Enchant VB** and **SY985** will not be available in 2013.

### **CANADA WESTERN EXTRA STRONG SPRING**

**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).

### **SOFT WHITE SPRING**

Soft white spring wheat may have 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.

### **GENERAL PURPOSE**

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

### **CANADA WESTERN AMBER DURUM**

Seed of the new variety **CDC Vivid** will not be available in 2013. Limited quantities of seed of the new variety **Transcend** will be available in 2013.

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, Eurostar** and **AC Navigator** have strong gluten properties.

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

Variety	Site-Years Tested	Yield Test Category (% CDC Buteo)			Agronomic Characteristics				Disease Resistance						
		Low Moisture Potential	High Moisture Potential		Winter Survival	Maturity Class	Protein Content (%)	Plant Height (cm)	Resistance to Lodging	Stem Rust	Leaf Rust	Stripe Rust	Bunt	FHB	
<b>Canada Western Red Winter</b>															
CDC Buteo (bu/ac)		40	60	80	100	VG	M	12.4	88	F	G	G	VP	VP	G
AC Bellatrix	160	108	102	99	97	F	L	+0.1	0	G	VP	VP	VP	F	F
Emerson	26	105	100	98	96	G	M	+0.3	-5	VG	VG	G	G	VP	VG
Flourish	60	103	102	100	99	F	E	+0.3	-10	VG	F	F	F	F	VP
AAC Gateway	29	113	107	104	102	F	M	+0.5	-13	VG	G	F	G	VP	F
McClintock	219	100	98	98	98	F	L	-0.2	+3	VG	VG	G	G	VP	VP
Moats	74	98	102	104	104	G	M	+0.2	+1	G	VG	VG	G	P	VP
CDC Osprey	178	105	102	100	99	VG	M	-0.2	+2	G	P	P	VP	VP	P
Radiant	145	105	103	101	100	VG	L	-0.3	-1	VG	VP	VP	P	VP	VP
<b>Canada Western General Purpose</b>															
Accipiter	144	110	107	105	105	G	M	-0.4	-7	VG	VG	G	---	VP	VP
Broadview	71	113	107	103	101	G	E	-0.9	-9	G	VG	VG	VP	VP	VP
CDC Clair*	116	108	103	103	101	VG	M	-0.6	0	F	P	P	---	VP	---
CDC Falcon**	369	103	102	102	102	F	E	-0.6	-15	VG	G	G	VP	VP	VP
CDC Harrier*	235	108	103	103	101	G	M	-1.2	+5	G	G	P	VP	VP	P
CDC Kestrel*	116	110	105	104	102	VG	M	-1.6	+5	G	P	P	---	VP	---
Pintail	35	103	105	106	107	VG	M	-1.4	-3	G	P	P	G	VP	VP
Peregrine	114	115	110	108	105	VG	M	-0.4	+6	F	VG	VG	G	VP	P
CDC Ptarmigan	104	115	112	109	108	G	M	-2.1	+2	F	P	P	VP	VP	---
CDC Raptor*	200	103	102	100	100	G	M	-0.6	-7	VG	VG	G	---	VP	---
Sunrise	66	115	110	108	106	G	M	-0.9	-1	G	G	G	G	VP	---

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

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

CDC Ptarmigan has an awnless head and soft white kernels. Sunrise has soft red kernels.

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

\*\* Effective August 1, 2014, **CDC Falcon** will be moved from Canada Western Red Winter class to 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	22	100	100	M	VG	F	F
Hazlet	9	116	100	M	VG	VG	VG
AC Remington	10	95	93	M	VG	VG	G
AC Rifle	22	96	87	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 would mature 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	Yield as % of AC Ultima		Test Weight kg hL <sup>-1</sup>	Relative Maturity	Resistance to:				
		Area 1 & 2	Area 3			Lodging	Stem Rust	Leaf Rust	Bunt	Root Rot
<b>Spring Habit</b>										
AC Ultima	17	100	100	69	E	G	VG	VG	VG	F
Brevis	6	111	108	72	E	VG	VG	VG	VG	---
Bumper	3	104	112	71	E	G	VG	VG	VG	---
Bunker	4	92	97	73	E	G	VG	VG	VG	---
AC Certa	14	97	98	74	M	G	VG	VG	VG	G
Pronghorn	17	98	101	68	E	G	G	VG	VG	F
Sunray	6	105	100	68	E	G	VG	VG	VG	---
Taza	4	108	101	69	E	G	VG	VG	VG	---
Tyndal	4	99	102	73	E	G	VG	VG	VG	---
<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

Spring triticale matures 1-2 days later than **AC Crystal** CPS wheat, therefore it should be planted as early as possible. The seeding rate for spring 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 an improved Hagberg Falling Number. **Brevis** is shorter and stronger straw. **Tyndal** and **Bunker** are spring forage types, and along with **Taza** have reduced awns.

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

All triticale cultivars are susceptible to ergot infection and similar in reaction. Severe infestation of ergot can occur in any of the available cultivars if environmental conditions are favourable. **Sunray** represents an improvement in ergot resistance.

# 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	Netted Net Blotch**	Spotted Net Blotch	Spot Blotch	Resistance to:					
				Area 1 & 2	Area 3 & 4						Scald	Loose Smut	Other Smuts	Root Rot	Stem Rust	Fusarium Head Blight
<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
Major ☺	6	2	R	112	116	M	G	F	G	G	VP	VG	G	P	G	F
CDC Meredith ☺	7	2	R	114	112	L	G	P	VG	P	P	VG	G	F	G	F
Merit 57 ☺	7	2	R	109	107	L	G	P	VG	P	F	VP	F	G	F	P
Newdale ☺	6	2	R	112	113	M	G	F	G	F	P	VP	G	G	G	F
CDC PolarStar* ☺	4	2	R	103	99	M	F	VP	G	P	VP	VP	VG	P	VP	G
Celebration ☺	5	6	S	107	105	M	VG	VP	G	G	VP	VG	VG	P	F	P
Legacy ☺	6	6	S	104	101	M	G	VP	G	G	P	F	G	G	G	P
Stellar-ND ☺	5	6	R	107	105	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 ☺	7	2	R	113	112	L	G	P	VG	F	P	P	G	F	G	P
Cerveza ☺	5	2	R	114	116	M	G	P	G	VG	VP	VG	VG	F	F	F
CDC Kindersley ☺	5	2	R	103	105	E	G	P	G	F	VP	VP	VG	F	G	F
CDC Landis ☺	7	2	R	109	109	M	G	F	VG	F	VP	VP	G	P	G	F
Norman ☺§	6	2	R	105	105	M	G	P	VG	VP	VP	VP	P	VP	G	G
AAC Synergy ☺	3	2	R	119	114	M	G	G	VG	VG	VP	VP	F	F	G	P
CDC Anderson ☺	5	6	R	105	107	M	G	P	G	VG	P	G	VG	F	G	F
Innovation ☺	3	6	R	107	107	M	VG	VP	G	G	P	P	G	F	G	F
CDC Mayfair ☺	7	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 Kendall ☺	11	2	R	101	102	M	G	F	G	VP	P	P	P	G	P	F
CDC Battleford ☺	6	6	S	108	108	M	G	P	VG	VG	P	P	G	G	G	VP
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
Lacey ☺§	4	6	S	101	101	M	G	VP	F	G	P	F	G	G	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, netted (*Pyrenophora teres f. teres*) and spotted (*Pyrenophora teres f. maculata*). Generally, in Saskatchewan the netted form is more prevalent.

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

\*CDC PolarStar is available only through a closed loop Identity Preserved program offered by Prairie Malt Limited/Sapporo Breweries and their agents.

### 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 2013-14

These recommendations are based on the varieties expected to be selected by grain and malting companies for both domestic and export markets from the 2013 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 expected to be selected next crop year.

### 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
CDC Meredith <sub>4</sub>	Established	Limited	Increasing Demand
Newdale <sub>3</sub>	Established	Limited	Stable Demand
CDC Polarstar <sub>5</sub> **	Limited	Limited	Stable Demand
Merit 57 <sub>5</sub>	Limited	Limited	Limited Demand
Major <sub>1</sub>	Limited	Limited	Limited Demand

Bentley, Norman, Cerveza, CDC Kindersley, CDC Landis, CDC Reserve, Voyager and AAC Synergy are not yet being grown for the commercial market. Production is limited to quantities required for testing and market development. **\*\*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	Stable Demand
Stellar-ND <sub>5</sub>	Established	Established	Declining Demand
Tradition <sub>1,2,3</sub>	Established	Established	Declining Demand
Celebration <sub>5</sub>	Limited	Limited	Limited Demand

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

**“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.**

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

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

**CMBTC Members:** Alfred C. Toepfer (Canada) Ltd., CWB, 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 Agriculture, Saskatchewan Agriculture, Manitoba Agriculture, Molson Coors, Alberta Barley Commission, Fedoruk Seeds, FP Genetics and Viterra.

**Other organizations providing input to this list:** BARI-Canada, BMBRI and CANTERRA SEEDS

**Questions? Call your selector, seed company, grain handling company,**

**or contact the CMBTC at 204-984-4399 ([cmbtc@cmbtc.com](mailto:cmbtc@cmbtc.com)).**





## Feed and Food Barley

### Main Characteristics of Varieties

Category and Variety	Years Tested	2 or 6 Row	Rough or Smooth Awns	Yield as % of AC Metcalfe		Resistance to:										
				Area 1 & 2	Area 3 & 4	Relative Maturity*	Lodging	Netted Net Blotch**	Spotted Net Blotch	Spot Blotch	Scald	Loose Smut	Other Smuts	Root Rot	Stem Rust	Fusarium Head Blight
<b>Hulled</b>																
CDC Austenson ☼	7	2	R	118	121	M	G	P	VG	G	VP	VP	VG	F	F	F
CDC Bold	7	2	R	111	112	L	G	VP	F	VP	P	P	G	G	G	VP
Busby ☼	5	2	R	104	106	E	G	P	G	P	F	VP	VG	VP	F	F
Champion ☼	8	2	R	117	117	M	G	VP	F	P	VP	VP	VG	G	F	F
CDC Coalition ☼	7	2	R	111	114	M	VG	VP	G	F	P	VG	G	F	G	F
CDC Cowboy ☼	6	2	R	99	105	L	F	F	G	F	P	P	G	F	G	G
CDC Dolly	11	2	R	103	103	E	G	VP	P	VP	F	VP	F	F	P	G
Gadsby ☼	5	2	R	111	113	M	F	P	G	VP	VG	VG	VG	F	G	F
CDC Helgason ☼	7	2	R	105	106	M	G	G	G	F	P	VG	G	F	F	P
CDC Maverick ☼	3	2	S	99	94	M	F	F	G	F	P	VP	VG	F	G	G
McLeod ☼	6	2	R	108	114	M	G	VP	F	VP	P	VP	VG	F	P	F
CDC Mindon ☼	7	2	R	104	103	M	G	VP	G	F	VP	VG	VG	F	F	G
TR07728 ☼	6	2	R	114	114	M	G	VP	F	VP	P	P	VG	G	P	F
CDC Trey ☼	5	2	R	104	110	M	G	F	VG	F	P	P	VG	G	G	F
Xena	7	2	R	112	115	M	G	VP	F	VP	P	P	P	G	G	G
Breton ☼	3	6	S	112	118	M	F	F	G	G	G	P	G	F	G	VP
Chigwell ☼	7	6	S	107	111	M	G	F	G	G	G	P	VG	VP	VP	VP
Muskwa ☼	4	6	S	111	108	M	G	P	G	G	G	P	VG	P	G	VP
AC Rosser ☼	11	6	S	115	115	M	G	F	G	G	VP	P	G	G	G	VP
Sundre ☼	5	6	S	120	116	L	G	P	F	F	VG	P	VG	P	F	VP
<b>Hulless</b>																
CDC Carter ☼	6	2	R	94	98	M	G	F	G	F	P	VG	VG	VP	F	F
CDC Clear ☼	4	2	R	97	102	L	G	P	VG	F	P	VG	VG	F	G	G
CDC ExPlus ☼	6	2	R	86	96	M	VG	F	F	F	VP	P	P	VP	F	G
CDC McGwire ☼	8	2	R	98	99	M	G	F	G	F	F	P	G	G	F	G
Taylor ☼	5	2	R	81	88	M	VG	P	G	F	VP	VG	F	P	G	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: netted (*Pyrenophora teres f. teres*) and spotted (*Pyrenophora teres f. maculata*). Generally, in Saskatchewan the netted form is more prevalent.

### Forage Barley

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

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

### Hulless

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

**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. **CDC Hilose** is a high beta-glucan, high amylose starch variety. All are available for specialty markets.

**CDC Carter, CDC McGwire, Millhouse, and Roseland** are two-row normal starch hulless barleys suitable for food use.

### Irrigation

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

### 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	Crown 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 Big Brown ☼	5	107	107	256	20.4	71	L	G	P	G	VG
CDC Boyer	8	99	100	232	23.3	71	M	G	F	F	P
Bradley ☼	4	106	102	---	---	---	---	---	P	P	VG
Derby	8	98	102	247	22.9	65	M	G	VP	VP	P
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 ☺	7	106	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 Morrison ☺	3	100	95	248	24.4	67	L	VG	F	VG	VG
CDC Nasser	5	112	109	233	21.8	64	VL	G	P	VP	VG
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
Ronald ☺	7	96	99	249	22.4	55	L	VG	F	P	VG
CDC Seabiscuit ☺	6	111	106	240	20.3	73	L	G	F	P	F
Souris ☺	6	109	105	253	21.5	58	M	VG	G	VG	VG
Stride ☼	4	110	111	255	22.9	65	L	G	F	VG	VG
Summit ☺	6	101	102	256	21.6	67	M	G	F	VG	VG
Triactor ☺	7	114	118	240	22.8	66	L	G	VP	G	F
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, crown rust races capable of attacking most varieties, except **CDC Big Brown, HiFi, Leggett, CDC Morrison, Souris, Stride, Summit, and Triactor** are increasing in southeast Saskatchewan. Early seeding will reduce the likelihood of severe infection.

### Feed Oat

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

### Forage Oat

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

### Hulless Oat

**Bullion, 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 store and should be stored at less than 12 per cent moisture.

### False Wild Oats or Fatuoids

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

## Other Crops

### Buckwheat

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

### Caraway

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

### Coriander

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

### Fenugreek

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

the 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.

## Canaryseed

### Main Characteristics of Varieties

Variety	Type	Site Years	Yield as % of CDC Maria*	Days to Heading	Days to Maturity	Height (cm)	Test Weight (kg/hL)***	Seed Weight (g/1000)
CDC Maria	glabrous	88	100	58	104	103	71	7.3
CDC Bastia	glabrous	76	113	+1	0	+2	0	0.0
Cantate**	hairy	31	129	+1	+2	0	-6	+0.2
Keet	hairy	88	121	+2	+2	+5	-6	-0.2
CDC Togo ☺	glabrous	81	111	+1	+1	+1	-1	+0.8

\* Yield data not collected by Area

\*\* 2004-2012 data only

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

### Additional Information

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

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

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

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

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

# General Seed Facts

## Pedigreed Seed

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

## Re-Use of Hybrid Seed

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

## Seed Cleaning

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

## Seed Treatment

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

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

## Crop Rotation

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

## Ergot

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

## Seed Inoculation

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

## Damp and Frozen Seed

Seed 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

## 2012 Regional Variety Trials

In 2012 the Saskatchewan Pulse Growers and the pulse breeding program at the Crop Development Centre (CDC), University of Saskatchewan continued a 5-year agreement with a budget of \$160,000 per year to conduct the pulse crop regional variety trials in Saskatchewan. The CDC collaborates with researchers at several locations, including Agriculture and Agri-Food Canada research stations, provincial Agri-ARM sites, and the Canada-Saskatchewan Irrigation Diversification Centre, in order to conduct the trials. The project collects data on varieties from the CDC program, as well as those arising from other public or private pulse breeding programs.

Since 2006, field pea, lentil, chickpea, dry bean and faba bean variety trials were conducted at 3-15 locations per crop in their target areas of adaptation in Saskatchewan. In 2012, the number of entries per trial was 30 for pea, 36 for lentil, 24 for chickpea, 18 for dry bean and 33 for faba bean.

## Lentil

Main Characteristics of Varieties

Market class	Variety	Years Tested*	Yield % CDC Maxim CL		Height (cm)	Days to Flower	Maturity Rating	Resistance to:		Seed Coat Colour	Cotyledon Colour	Seed Weight (g/1000)	
			Area 1 & 2	Area 3 & 4				Ascochyta Blight	Anthracnose Race 1				
Small red	CDC Maxim CL	6	100	100	34	51	EM	G	G	gray	red	40	
	CDC Cherie	5	109	106	32	51	EM	G	F	gray	red	39	
	CDC Dazil CL	5	104	101	33	53	EM	G	F	gray	red	35	
	CDC Imax CL	6	97	88	35	51	EM	G	F	gray	red	45	
	CDC Impact CL	6	80	76	30	47	E	G	P	gray	red	34	
	CDC Red Rider	6	95	85	34	52	EM	G	F	gray	red	45	
	CDC Redberry	6	97	99	34	50	EM	G	G	gray	red	42	
	CDC Redcliff	6	108	109	35	51	EM	G	F	gray	red	38	
	CDC Redcoat	6	105	93	33	50	EM	G	G	gray	red	39	
	CDC Rouleau	6	96	93	33	52	M	G	G	gray	red	37	
Extra small red	CDC Scarlet	4	106	---	35	53	EM	G	F	gray	red	36	
	CDC Impala CL	6	94	91	30	51	E	G	G	gray	red	31	
	CDC Imperial CL	6	84	79	30	49	E	G	G	gray	red	30	
	CDC Redbow	6	102	99	30	49	E	G	G	gray	red	32	
	CDC Rosebud	6	100	99	30	50	E	G	G	tan	red	31	
	CDC Rosie	4	96	---	33	52	EM	G	G	gray	red	30	
	CDC Ruby	6	95	89	30	48	E	G	G	gray	red	29	
	CDC KR-1	6	111	94	37	52	M	G	G	gray	red	56	
	Large red	CDC Invincible CL	6	99	87	33	49	E	G	G	green	yellow	34
		CDC Milestone	6	91	84	31	49	E	G	VP	green	yellow	37
Small green	CDC Invincible CL	6	99	87	33	49	E	G	G	green	yellow	34	
	CDC Viceroy	6	97	98	34	49	E	G	G	green	yellow	33	
Extra small green	CDC Asterix	5	98	---	30	48	E	G	F	green	yellow	26	
Medium green	CDC Impress CL	6	87	71	34	50	M	G	P	green	yellow	52	
	CDC Imigreen CL	6	79	71	44	50	M	G	VP	green	yellow	57	
	CDC Meteor	6	102	89	34	50	M	G	VP	green	yellow	51	
Large green	CDC Richlea	6	93	80	35	50	M	VP	VP	green	yellow	51	
	CDC Greenland	6	90	76	38	52	ML	G	VP	green	yellow	64	
	CDC Impower CL	6	86	78	41	52	ML	G	VP	green	yellow	64	
	CDC Improve CL	6	87	76	39	51	M	F	VP	green	yellow	67	
	CDC Plato	6	87	77	38	52	ML	G	P	green	yellow	62	
French green	CDC Sovereign	6	83	77	40	52	L	G	P	green	yellow	66	
	CDC LeMay	6	84	80	35	48	E	F	VP	green marble	yellow	33	
Green cotyledon	CDC Peridot CL	6	84	94	37	48	E	F	P	green marble	yellow	38	
	CDC QG-1	5	80	66	42	51	M	F	F	green	green	49	
Spanish brown	CDC SB-1	4	76	81	35	48	E	F	F	gray dotted	yellow	37	
	CDC SB-2	4	97	94	37	49	E	G	G	gray dotted	yellow	37	

\* Co-op and Regional Trials in Saskatchewan since 2006. Comparisons to CDC Maxim CL.

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.

## Additional Information

Seed supplies may be limited for CDC Peridot CL, CDC Redbow, CDC Rosebud, CDC Redcoat, CDC Ruby, CDC Dazil CL, CDC Cherie, and CDC SB-2. Seed supplies will be limited for CDC Asterix, CDC Greenstar, CDC Emerald, CDC Rosie, and CDC Scarlet.

Indianhead lentil is a black-seeded variety for green manure use and specialty markets.

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	Lodging (1-9)**	Vine Length (cm)	Resistance to:							Seed Weight g/1000
		1, 2 & South 3	North 3 & 4	Irrigation					Mycosphaerella Blight	Powdery Mildew	Fusarium Wilt	Seed Coat Breakage	Bleaching	Seed Coat Dimpling‡	Greenness †	
<b>Yellow</b>																
Cutlass	13	100	100	100	SL	M	5.0	75	F	VG	F	F	n/a	F	G	220
DS Admiral ☉	6	93	103	95	SL	E	4.5	80	F	VG	F	G	n/a	G	G	240
Agassiz ☉	8	114	118	120	SL	M	4.5	85	F	VG	F	G	n/a	F	G	230
CDC Amarillo	4	119	131	---	SL	M	3.5	85	F	VG	G	F	n/a	F	G	230
Argus ☉	5	107	112	113	SL	M	4.0	80	F	VG	F	F	n/a	F	G	230
CDC Bronco	8	109	104	102	SL	M	4.5	75	F	VG	F	G	n/a	G	G	230
CDC Centennial	5	106	112	117	SL	E	5.5	70	F	VG	F	G	n/a	G	F	270
Delta	4	93	92	---	SL	E	5.5	70	P	P	---	G	n/a	---	---	250
Eclipse ☉	11	98	98	101	SL	M	4.0	80	F	VG	P	G	n/a	F	G	250
CDC Golden	10	108	103	107	SL	M	4.5	75	F	VG	F	G	n/a	G	G	230
CDC Hornet	7	107	107	106	SL	M	4.0	85	F	VG	F	F	n/a	G	G	220
Hugo ☉	5	110	117	116	SL	M	5.5	75	F	VG	G	G	n/a	F	G	220
CDC Meadow	10	107	110	108	SL	E	4.0	85	F	VG	F	G	n/a	G	G	220
SW Midas ☉	5	96	91	105	SL	E	4.0	80	F	VG	F	G	n/a	G	G	220
CDC Minuet	5	100	101	---	SL	M	5.5	70	F	VG	F	F	n/a	G	F	190
CDC Mozart	7	104	101	108	SL	M	5.5	70	F	VG	F	G	n/a	G	F	220
Polstead ☉	8	102	105	107	SL	M	5.0	75	P	VG	P	F	n/a	G	F	280
CDC Prosper	8	100	101	87	SL	E	4.5	80	F	VG	G	G	n/a	F	G	150
Reward ☉	5	98	107	108	SL	M	4.0	90	F	VG	F	G	n/a	G	F	240
CDC Saffron	5	115	115	110	SL	M	4.0	80	F	VG	F	G	n/a	F	G	250
Sorento ☉	7	100	104	113	SL	M	5.5	80	F	VG	F	G	n/a	F	G	260
Thunderbird ☉	6	106	106	108	SL	M	4.0	85	F	VG	F	G	n/a	G	F	220
CDC Treasure	8	105	110	111	SL	E	4.0	80	F	VG	F	F	n/a	F	G	210
<b>Green</b>																
Cooper ☉	11	105	102	103	SL	L	4.0	80	F	VG	F	F	G	G	n/a	270
CDC Limerick	4	108	114	---	SL	L	3.5	85	F	VG	F	VG	G	G	n/a	210
Mendel ☉	4	89	81	---	SL	M	4.0	80	F	VG	F	VG	G	G	n/a	220
CDC Patrick	8	101	106	102	SL	M	4.5	80	F	VG	G	G	G	G	n/a	190
CDC Pluto	5	110	105	107	SL	M	5.5	80	F	VG	F	G	G	G	n/a	160
CDC Raezer	5	102	108	125	SL	M	3.5	85	F	VG	G	G	G	G	n/a	220
CDC Sage	5	80	84	86	SL	M	4.0	80	F	VG	G	G	G	F	n/a	220
SW Sergeant	5	88	87	90	SL	M	4.0	80	F	VG	F	G	G	G	n/a	200
CDC Striker	13	96	102	101	SL	M	3.5	80	F	P	G	VG	G	G	n/a	230
CDC Tetris	6	107	114	103	SL	L	4.0	85	F	VG	G	G	G	G	n/a	210
<b>Maple</b>																
CDC Acer	3	100	94	---	SL	L	6.5	60	F	VG	---	G	n/a	VG	n/a	170
CDC Mosaic	3	90	93	---	SL	L	4.0	85	F	VG	---	G	n/a	VG	n/a	180
CDC Rocket	3	93	104	100	SL	M	6.0	75	F	VG	---	G	n/a	VG	n/a	210
<b>Dun</b>																
CDC Dakota	3	126	130	---	SL	M	3.5	85	F	VG	---	G	n/a	VG	n/a	205
<b>Forage</b>																
40-10	3	80	84	56	N	L	8.5	120	P	P	---	G	n/a	G	---	140
CDC Horizon	3	103	101	---	SL	M	4.5	90	F	VG	---	G	n/a	G	G	170
CDC Leroy	3	98	96	89	SL	M	5.0	95	F	VG	---	G	n/a	G	G	150
Stella ☉	3	91	92	---	SL	M	4.0	90	F	VG	---	G	n/a	G	G	210
Trapper	7	68	68	---	N	L	8.5	115	P	P	---	G	n/a	---	---	130
CDC Tucker	3	99	99	88	SL	M	4.0	100	F	VG	---	G	n/a	G	F	170

\* Co-op and regional trials in Saskatchewan

\*\* Lodging Score (1-9) where 1 = completely upright, 9 = completely lodged

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

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

♦ Greenness: Good = 0-15%; Fair = 16-40%

The following varieties have purple flower colour and pigmented seed coats: **CDC Acer, CDC Mosaic, CDC Rocket, CDC Dakota, and 40-10**. **CDC Acer, CDC Mosaic, and CDC Rocket** have a maple patterned seed coat, while **CDC Dakota** has a solid dun (tan) coloured seed coat. All other varieties have white flower colour and non-pigmented seed coats.

### 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. Please add 3-4 days for each rating beyond Medium. As harvest proceeds into the fall, these ranges expand.

# Chickpea

## Characteristics of Kabuli and Desi Chickpea Varieties

Market Class	Variety	Years Tested	Yield (% Amit)		Ascochyta Blight**	Height (cm)	Days to Flower	Maturity	Seed Weight (g/1000)	Seed Shape †	Seed or Seed Coat Colour ‡
			Area 1*	Area 2*							
Kabuli	Amit (B-90) ☼	11	100	100	4.4	46	56	L	259	Ro	B
	CDC Alma	4	94	93	6.1	41	54	L	368	RH	B
	CDC Frontier	11	106	104	4.3	45	56	L	350	RH	B
	CDC Leader	7	111	107	4.5	41	55	M	389	RH	B
	CDC Luna	10	99	99	5.7	39	53	ML	369	RH	B
	CDC Orion	6	108	106	4.8	45	51	L	438	RH	B
Desi	CDC Cabri	10	103	102	4.7	48	51	M	304	P	T
	CDC Corinne	10	114	111	4.1	44	55	M	245	A/P	T
	CDC Cory	4	112	105	4.3	48	57	M	273	A/P	T
	CDC Vanguard	10	108	109	4.7	42	53	ML	221	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. Scores 4 - 6 are considered fair.

† Seed shape: Ro = Round; RH = Ram-head; P = plump; A = angular.

‡ Seed or seed coat colour: B = beige; T = tan.

### Additional Information

Please refer to *SaskSeed 2013* guide for pedigreed seed availability. For more details on production consult the Pulse Production Manual published by the Saskatchewan Pulse Growers ([www.saskpulse.com](http://www.saskpulse.com)).

# Soybean

## Main Characteristics of Varieties

Variety <sup>1</sup>	Type	Years Tested	Yield (% of 23-10RY)	Corn Heat Units	Days to <sup>2</sup> Maturity	Seed Size <sup>3</sup> (# seeds/lb)	Hilum <sup>4</sup> Colour
23-10RY	RR2	2	100	2325	119	2600	BL
HS 006RYS24	RR2	2	99	2450	122	2900	BL
Pekko R2	RR2	2	103	2325	119	2580	BL
Sampsa R2	RR2	2	104	2425	122	2467	IB
TH 32004R2Y	RR2	2	108	2425	122	3200	BL
004R21	RR2	2	102	2425	124	3070	BL
24-10RY	RR2	2	102	2425	123	3016	IB
900Y61 ☼	RR1	2	97	2425	122	2800	BR
900Y71 ☼	RR1	2	99	2450	122	2750	IY

<sup>1</sup> Varieties in this table are either Roundup Ready 1 or Genuity Roundup Ready 2 Yield TM. For complete list of commercial varieties see Seed Manitoba 2013 ([www.seedmb.ca](http://www.seedmb.ca)).

<sup>2</sup> Average from 2011 and 2012. Cold 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 the seed attaches to the pod. BR = Brown, IY = Imperfect Yellow, BL = Black, IB = Imperfect Black.

### Additional Information

Data are derived from the western Canada soybean trial co-ordinated by Manitoba Agriculture, Food and Rural Initiatives. Test sites include Saskatoon, Sutherland, Yorkton, Redvers, and Outlook (dry land and irrigated) in SK; Bow Island (dry land and irrigated) in AB; Hamiota, Boissevain, Roblin, Carberry, and Melita in MB; and Thunder Bay in ON.

Two year mean yield of the check variety 23-10RY was 42 bushels/acre. Typical on-farm yields are 25-30 bu/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 since this bacteria is not native to western Canadian soils.

## 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	11	100	100	100	50	E	85	350	I
Island	pinto	5	108	110	96	55	M	79	355	II
Mariah ☼	pinto	3	---	---	88	55	L	82	293	II
Winchester	pinto	4	124	111	103	52	M	82	352	II
Winmor	pinto	5	118	104	100	55	M	72	350	II
CDC WM-1 §	pinto	5	102	100	91	50	E	78	345	I
CDC WM-2 ☼	pinto	6	115	106	104	52	E	79	365	II
Envoy	navy	11	83	88	85	53	M	77	184	I
Lightning	navy	4	---	96	89	60	L	85	175	II
Skyline ☼	navy	4	---	92	94	57	L	80	163	I
OAC Spark	navy	4	82	101	101	55	L	81	163	I
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
CDC Blackcomb	black	5	108	97	92	56	M	85	167	II
Carman Black	black	4	128	117	119	59	M	88	180	II
CDC Jet	black	10	90	96	93	58	L	85	170	II
AC Black Diamond	shiny black	7	102	95	94	54	M	70	250	II
CDC Sol ☼	yellow	5	---	96	77	55	L	78	399	I

\* Co-op and regional trials grown in narrow rows. Direct comparisons to **CDC Pintium** since 2002.

\*\* 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 (~4 cm).

‡ Growth habit: I = Determinate bush; II = Indeterminate bush; III = Indeterminate vine.

## Faba Bean

### Main Characteristics of Varieties

Variety	Years Tested	Yield % CDC Fatima	Maturity Rating	Seed Weight (g/1000)
<b>Coloured Flower</b>				
CDC Fatima	6	100	105	520
CDC Blitz	6	101	109	410
FB9-4	4	96	104	680
FB18-20	4	103	105	750
Florent	4	112	107	660
Orion	6	92	103	350
Taboar ☼	4	96	107	480
<b>White Flower</b>				
Imposa ☼	4	110	107	695
Snowbird ☼	5	104	104	495
Tobasco ☼	5	101	106	530

### 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 food and feed grain in moist areas. White-flowered types are zero tannin. All coloured flower types have seed coats that contain tannins and may be suitable for export food markets if seed size and quality match customer demand.

Maturity ratings are based on days until swathing maturity but will vary depending on seeding date and weather conditions.



# Oilseed Crops

## Flax

### Main Characteristics of Varieties

Variety	Years Tested	Yield as % of CDC Bethune*			Relative Maturity <sup>‡</sup>	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	G	F
Vimy	10	94	90	85	M	L	P	P	F
AC Watson	6	88	93	92	M	M	G	F	F

\* Yield data from regional and co-op trials. Variety descriptions other than yield are based on data from the Flax Co-operative Trials in the Prairie Provinces.

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

All Flax producers should be aware that the Crop Development Centre and SeCan have cooperated in the effort to re-constitute Flax Breeder seed which is free of genetic modification (ie: Triffid). Certified seed, produced from re-constituted breeder seed, will be ready for sale to customers in the fall of 2013 for planting in the 2014 season. Re-constituted supplies of CDC Bethune, CDC Sorrel and new products CDC Sanctuary and CDC Glas will be available. To differentiate the new seed lots from past seed supplies, a "14" designation will be added to the previously released varieties (i.e. CDC Bethune-14 and CDC Sorrel-14). This designation will not be necessary for CDC Sanctuary or CDC Glas since this will be the first commercial sales of these varieties.

The flax industry is encouraging all flax producers to replace their existing seed stocks for the 2014 season so that all traces of Triffid can be removed from the grain supply. During the 2014 season, flax producers are encouraged to deliver all previous seed stocks and grain inventory to the elevator system to minimize the chance of cross contamination of new flax supplies with old inventory.

### Additional Information

Flax was last tested in 2012. All varieties are immune to rust.

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

The Canadian Grain Commission (CGC) advises that the following oilseed flax varieties **CDC Mons**, **CDC Normandy** and Solin varieties **CDC Gold**, **2047**, **1084**, **2126**, **2090**, and **2149** will be deregistered effective August 1, 2013.

New varieties **AAC Bravo**, **CDC Glas** (seed available in 2014), **CDC Sanctuary** (seed available in 2014) and **Prairie Sapphire** (seed available in 2013) are undergoing testing but have insufficient data to be described.

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

## Sunflower (Oilseed)

### Main Characteristics of Varieties

Variety	Years Tested	Yield as % of 63A21	Average Maturity (days)	Harvest Moisture %
63A21	3	100	115	19.3
2930	3	87	119	23.6
8N 270 CL/DM*	3	89	119	28.9

3 year data based on 12 locations in total

\* CL indicates Clearfield variety.

## Sunflower (Oilseed) EMSS (Early Maturing, Short Stature)

### Main Characteristics of Varieties

Variety	Years Tested	Yield as % of 63A21 (10 yr. avg.)	Average Maturity (days)	Harvest Moisture %
63A21	13	100	115	19.3
AC Sierra	4	59	108	17.7

### Additional Information

Sunflower requires 105-125 days to mature, depending on the cultivar and the growing season. Oilseed sunflower has been grown in the Dark Brown and Black Soil Zones in southeastern Saskatchewan. Harvest moisture is a good indication of how quickly these hybrids will be ready to combine in the field. The EMSS varieties are adapted to production in most areas of Saskatchewan. **AC Sierra** is open pollinated and not a hybrid.

The Saskatchewan Sunflower Committee has been conducting trials in Saskatchewan for the purpose of registration and demonstration since 1983. Sunflowers no longer require three years of yield testing to be sold in Saskatchewan. Saskatchewan Sunflower Committee will publish results from each year. For the complete data set please email Shannon Friesen with Saskatchewan Agriculture ([shannon.friesen@gov.sk.ca](mailto:shannon.friesen@gov.sk.ca)) or call (306) 848-2856.

# Mustard

## Main Characteristics of Varieties\*

Type and Variety	Yield % of AC Pennant	Plant Height (cm)	Glucosinolate (µmol/g seed)	Mucilage† (cS*ml/g seed)	Fixed Oil % Seed	Protein % Seed	Seed Weight (g/1000)	Maturity (days)
<b>Yellow</b>								
AC Pennant	100	96	148	44.4	29.6	34.2	5.7	92
Ace §	99	101	150	50.0	29.3	34.8	5.5	93
Andante	101	101	145	54.9	28.5	35.1	6.1	93
AC Base §	100	99	147	40.5	29.5	34.2	5.9	92
	Yield % of Duchess	Plant Height (cm)	Volatile oil‡ (mg/g seed)	Mucilage† (cS*ml/g seed)	Fixed Oil % Seed	Protein % Seed	Seed Weight (g/1000)	Maturity** (days)
<b>Brown</b>								
Duchess	100	113	9.4	n/a	38.2	28.7	2.7	97
Amigo**	94	109	13.9	n/a	34.2	30.7	2.7	98
Centennial Brown	101	117	10.3	n/a	36.4	30.1	3.1	96
	Yield % of Cutlass							
<b>Oriental</b>								
Cutlass	100	114	11.5	n/a	41.2	29.1	2.8	96
Forge	98	124	12.1	n/a	38.4	29.6	2.6	97
AC Vulcan	97	116	12.4	n/a	40.7	29.5	2.8	96

\* Data from 1999-2011 Co-operative Test. Yield % of check: 117 locations for yellow mustard, and 109 locations for brown and oriental mustard.

\*\* Data from 2008-2010 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 92 to 98 days.

The four yellow mustard varieties have similar yield and range in height from 96 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 significantly 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 higher allyl glucosinolate content and greater protein content than **Cutlass**. **Forge** has significantly lower fixed oil and smaller seed.

## Canola (Small Scale Trials)

### Main Characteristics of Varieties

Variety	Distributor	Yield (bu/ac)				Maturity (days)			Height (inches)			Blackleg Rating
		Long (4)*	Mid (13)*	Short (6)*	Average	Long	Mid	Short	Long	Mid	Short	
<b>Clearfield</b>												
5525 CL	BrettYoung	41	47	53	48	92	96	99	46	43	45	R
5535 CL	BrettYoung	40	43	52	45	88	93	95	45	40	43	R
VR 9560 CL	Viterra	44	51	53	50	92	97	100	47	45	46	R
LSD		6	7	8								
<b>Liberty Link</b>												
5440	Bayer CropScience	42	53	55	52	91	95	98	46	43	46	R
L120	Bayer CropScience	38	47	54	47	90	95	96	44	41	44	R
L130	Bayer CropScience	43	51	52	50	89	93	97	44	42	44	R
L150	Bayer CropScience	41	52	56	51	90	96	98	46	42	46	R
L154	Bayer CropScience	44	54	57	53	91	96	98	46	44	46	R
L159	Bayer CropScience	43	53	52	51	92	96	98	49	45	49	R
LSD		6	5	5								
<b>Roundup Ready</b>												
1970	CANTERRA SEEDS	36	50	---	X	93	97	---	48	44	---	R
1990	CANTERRA SEEDS	38	51	55	50	90	96	100	45	41	42	R
1999	CANTERRA SEEDS	45	52	---	X	90	95	---	45	42	---	R
6050 RR	BrettYoung	39	47	54	47	88	94	97	43	40	39	R
6060 RR	BrettYoung	38	50	52	48	93	97	102	47	43	45	R
72-65 RR	DEKALB	38	48	55	48	90	96	99	42	41	41	R
73-15 RR	DEKALB	---	---	51	X	---	---	95	---	---	40	R
73-45 RR	DEKALB	43	48	52	48	88	93	96	41	39	38	R
73-75 RR	DEKALB	45	52	54	51	89	95	97	44	41	42	R
74-44 BL	DEKALB	40	50	55	50	90	94	97	43	41	40	R
74-47 CR	DEKALB	---	52	55	X	---	96	98	---	42	43	R
94H04	FP Genetics	39	46	51	46	89	94	96	46	40	41	R
V12-1**	Cargill	40	52	52	50	91	97	99	45	43	44	R
VR 9559 G	Viterra	43	50	55	50	91	97	100	47	44	46	R
LSD		5	6	7								

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

\*\* specialty oil profile.

X = not tested in all zones.

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

## Canola (Large Scale Strip Trials)

### Main Characteristics of Varieties

Variety	% Yield of 73-75 RR			
	Long*	Mid*	Short*	Average
<b>Check</b>				
73-75 RR (yield in bu/ac)	42	41	46	42
<b>Liberty Link</b>				
5440	97 (12)	107 (16)	103 (6)	103 (34)
L120	X(1)	91 (6)	92 (4)	90 (11)
L130	97 (17)	106 (20)	105 (7)	103 (44)
L150	91 (18)	100 (26)	100 (11)	97 (55)
L154	98 (12)	99 (15)	98 (6)	98 (33)
L159	94 (12)	99 (14)	101 (6)	97 (32)
<b>Roundup Ready</b>				
1970	98 (2)	100 (4)	---	99 (6)
1990	94 (12)	101 (22)	102 (4)	99 (38)
1999	X (1)	102 (6)	---	102 (7)
6060 RR	94 (11)	99 (16)	96 (5)	97 (32)
72-65 RR	94 (9)	101 (18)	94 (3)	98 (30)
73-15 RR	---	108 (9)	96 (8)	102 (17)
73-45 RR	98 (9)	103 (21)	97 (10)	100 (40)
74-44 BL	93 (16)	106 (22)	101 (9)	101 (47)
74-47 CR	99 (4)	101 (13)	100 (3)	100 (20)

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

X = single site data in zone and therefore no average or t test.

## Canola Variety Information

### ***Brassica napus* (Argentine Canola)**

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

### **Canola Performance Trials**

The Prairie Canola Variety Testing (PCVT) program that was conducted until 2009 was replaced with Canola Performance Trials (CPT) in 2011. The CPT trials represent the next generation in variety evaluation for Western Canadian canola growers. The trials were designed to provide:

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

The CPT trials in 2012 were conducted under the guidance of a governance committee that approves participating varieties, protocol design, data collection, analysis, reporting and financial management. The Canola Council of Canada delivered the program on the committee's behalf.

The CPT summaries provided in this publication are based on valid trials that did not show confounding factors during field

inspections. There were 23 successful small plot trials and 81 field scale trials in 2012.

The CPT program included 26 small plot trials and 111 field scale trials in 2011. The trial sites were distributed based on seeded acres in Saskatchewan, Manitoba and Alberta.

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

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

Field scale comparisons added extra perspective for assessing consistency in variety performance. A common check variety **73-75 RR** was included in all large scale trials in 2012.

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

### **Where can you get the CPT results?**

Results are available through an online interactive tool at [www.canolaperformancetrials.ca](http://www.canolaperformancetrials.ca). The interactive tool allows growers to explore many agronomic factors and to search for trial

data in specific geographic areas near their farming operations. Details on management, operations and environmental data for each individual site are reported online. The online tool has an economic calculator that includes the costs associated with growing the selected variety to assist growers in determining potential profitability.

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

### ***Brassica rapa* (Polish Canola)**

Polish varieties mature approximately two weeks earlier than Argentine varieties and are less likely to produce green seed. Polish varieties are more heat and drought tolerant than the Argentine type. They are also more shatter resistant than Argentine varieties and are therefore well suited to straight combining. **ACS-C7** has fair resistance to blackleg; all other Polish varieties have poor resistance. Blackleg is less of a threat in Polish canola because of its early maturity, which tends to reduce the impact of the disease on seed yields. Three new synthetic Polish varieties are **Early One**, **ACS-C29** and **Synergy**. All three varieties yield significantly more than their open-pollinated counterparts like **AC Sunbeam**. **Early One** and **ACS-C29** are available through Mastin Seeds, while **Synergy** is available through SeCan. (Source: AAFC, Saskatoon)

### ***Brassica juncea* Canola**

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

XCEED Canola, available from Viterra in 2013, is suited to the Brown and Dark Brown season growing zones. It is compatible with the Clearfield Production System (Source: Viterra).

### **Least Significant Difference**

When comparing average zone yields for varieties in the small plot data, the least significant difference (LSD) is about 5 to 8 bu/ac. If variety A yielded 50 bu/ac. and variety B yielded 45 bu/ac., they would be considered statistically the same. This is based on a confidence level that significant differences would occur by chance less than 5% of the time. In the small plot design used, varieties were grouped by herbicide system, which means that the LSD shown strictly applies to comparisons between varieties of the same herbicide system. **More importantly, comparisons between varieties within the same herbicide system reveal only genetic differences, whereas variety comparisons between herbicide systems compare the net effect of both genetic and herbicide effects (weed control + crop tolerance).**

# Clubroot

by Saskatchewan Ministry of Agriculture

Clubroot is a soil-borne disease caused by a microbe, *Plasmodiophora brassicae*. Clubroot has become a significant problem for canola growers in some areas of Alberta and the pathogen has been detected in isolated cases in Saskatchewan and Manitoba as well. Clubroot is a regulated pest in Saskatchewan under *The Pest Control Act*.

Clubroot is of particular concern because the disease can cause devastating yield losses with limited control options. In areas where it has not yet occurred, clubroot is also of concern because the disease can spread through movement of soil contaminated with resting spores, which are released into the soil when infected roots disintegrate.

Resting spore numbers will decline over time in the absence of a susceptible host, but a small proportion can survive in soil for up to 20 years.

Soil containing spores can be transported as earth tag on agricultural or industrial field equipment, vehicles, tires, animals and shoes, or transported by wind and water erosion, or through contaminated inputs such as manure.

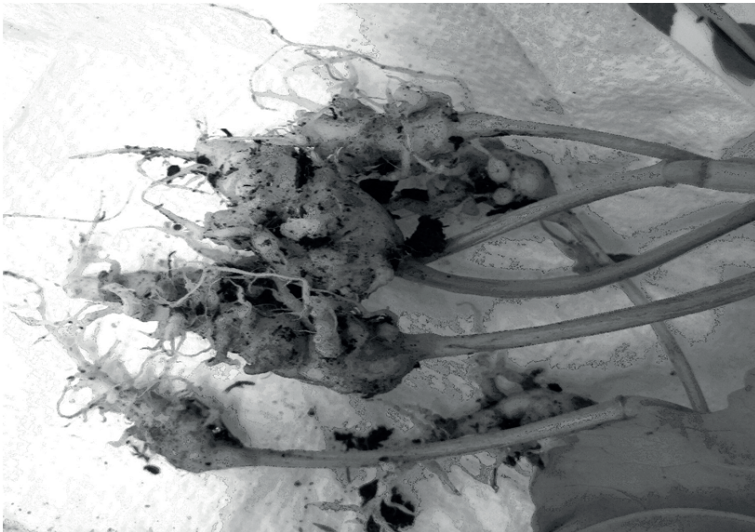


Photo courtesy Saskatchewan Ministry of Agriculture.

Clubroot is primarily a soil-borne disease; it does not infect seed but may be found in soil attached to seed. In fact, research has shown that clubroot DNA can be detected on canola, pea, and wheat seeds as well as potato tubers harvested from clubroot-infested fields. But, practices such as commercial seed cleaning may be sufficient to mitigate the risk.

Warm soils, high soil moisture and low soil pH favour spore germination, infection and disease development; however, the disease can still occur under conditions outside of the optimum parameters. In addition to canola, clubroot can affect the roots of other cruciferous

field crops such as mustard and camelina, as well as cruciferous vegetables (e.g. radish, turnip, cabbage, broccoli, cauliflower) and weeds (e.g. stinkweed, shepherd's purse, wild mustard). This disease is more likely to become an issue with repeated cropping of a susceptible host. It does not affect cereals, pulses, soybeans, or flax.

For more information on clubroot, visit:  
[www.clubroot.ca](http://www.clubroot.ca)  
[www.agriculture.gov.sk.ca/clubroot-canola](http://www.agriculture.gov.sk.ca/clubroot-canola)  
[www.agriculture.gov.sk.ca/clubroot-management-plan](http://www.agriculture.gov.sk.ca/clubroot-management-plan)

**While earth tag on farm machinery and equipment is considered the primary source of disease transmission, seed-borne dissemination could potentially lead to establishment of localized minor infections under the right conditions. Therefore, avoid seed with earth tag from infested areas to prevent introduction to clean fields.**



Crop Kind,	Breeding Institution	Distributor	Crop Kind,	Breeding Institution	Distributor
<b>HULLED - FEED BARLEY</b>			<b>LENTIL</b>		
<b>Two-Row</b>					
CDC Austenson 🌾	U of S - CDC	SeCan Members	CDC Asterix	U of S - CDC	Sask. Pulse Growers
CDC Bold	U of S - CDC	CANTERRA SEEDS	CDC Cherie	U of S - CDC	Sask. Pulse Growers
Busby 🌾	AARD (Lacombe)	Mastin Seeds Ltd.	CDC Dazil CL	U of S - CDC	Sask. Pulse Growers
Champion 🌾	Westbred, LLC.	Viterra Inc.	CDC Greenland	U of S - CDC	Sask. Pulse Growers
CDC Coalition 🌾	U of S - CDC	CANTERRA SEEDS	CDC Imax CL	U of S - CDC	Sask. Pulse Growers
CDC Cowboy 🌾	U of S - CDC	SeCan Members	CDC Imigreen CL	U of S - CDC	Sask. Pulse Growers
CDC Dolly	U of S - CDC	SeCan Members	CDC Impact CL	U of S - CDC	Sask. Pulse Growers
Gadsby 🌾	AARD (Lacombe)	SeCan Members	CDC Impala CL	U of S - CDC	Sask. Pulse Growers
CDC Helgason 🌾	U of S - CDC	SeCan Members	CDC Imperial CL	U of S - CDC	Sask. Pulse Growers
McLeod 🌾	Westbred, LLC.	Viterra Inc.	CDC Impower CL	U of S - CDC	Sask. Pulse Growers
CDC Mindon 🌾	U of S - CDC	SeCan Members	CDC Impress CL	U of S - CDC	Sask. Pulse Growers
TR07728 🌾	Westbred, LLC.	Viterra Inc.	CDC Improve CL	U of S - CDC	Sask. Pulse Growers
CDC Trey 🌾	U of S - CDC	FP Genetics	CDC Invincible CL	U of S - CDC	Sask. Pulse Growers
Xena	Viterra/Westbred, LLC.	Viterra Inc.	CDC KR-1	U of S - CDC	SaskCan Pulse Trading
<b>Six-Row</b>			CDC LeMay	U of S - CDC	Sask. Pulse Growers
Breton 🌾	AARD (Lacombe)	CANTERRA SEEDS	CDC Maxim CL	U of S - CDC	Sask. Pulse Growers
Chigwell 🌾	AARD (Lacombe)	SeCan Members	CDC Meteor	U of S - CDC	Sask. Pulse Growers
Muskwa 🌾	AARD (Lacombe)	SeedNet Inc.	CDC Milestone	U of S - CDC	Sask. Pulse Growers
AC Rosser 🌾	AAFC (Brandon)	SeCan Members	CDC Peridot CL	U of S - CDC	Sask. Pulse Growers
Sundre 🌾	AARD (Lacombe)	Mastin Seeds Ltd.	CDC Plato	U of S - CDC	Sask. Pulse Growers
<b>HULLESS - FOOD, MALTING, FEED BARLEY</b>			CDC QG-1	U of S - CDC	SaskCan Pulse Trading
CDC Alamo	U of S - CDC	Public release, U of S - CDC	CDC Red Rider	U of S - CDC	Sask. Pulse Growers
CDC Candle	U of S - CDC	Public release, U of S - CDC	CDC Redberry	U of S - CDC	Sask. Pulse Growers
CDC Carter 🌾	U of S - CDC	SeCan Members	CDC Redbow	U of S - CDC	Sask. Pulse Growers
CDC Clear 🌾	U of S - CDC	TBA	CDC Redcliff	U of S - CDC	Sask. Pulse Growers
CDC ExPlus 🌾	U of S - CDC	TBA	CDC Redcoat	U of S - CDC	Sask. Pulse Growers
CDC Fibar 🌾	U of S - CDC	Canterra Seeds Ltd. Ltd.	CDC Richlea	U of S - CDC	SeCan Members
CDC Hilose 🌾	U of S - CDC	Canterra Seeds Ltd. Ltd.	CDC Rosebud	U of S - CDC	Sask. Pulse Growers
CDC Lophy-l	U of S - CDC	Public release, CDC, U. of S.	CDC Rosie	U of S - CDC	Sask. Pulse Growers
CDC McGwire 🌾	U of S - CDC	SeCan Members	CDC Rouleau	U of S - CDC	Sask. Pulse Growers
Millhouse	AAFC (Brandon)	TBA	CDC Ruby	U of S - CDC	Sask. Pulse Growers
CDC Rattan 🌾	U of S - CDC	Canterra Seeds Ltd. Ltd.	CDC SB-1	U of S - CDC	Simpson Seeds
Roseland	AAFC (Brandon)	AAFC	CDC SB-2	U of S - CDC	Simpson Seeds
Taylor 🌾	AAFC (Brandon)	Alliance Seed Corporation	CDC Scarlet	U of S - CDC	Sask. Pulse Growers
<b>FORAGE BARLEY</b>			CDC Sovereign	U of S - CDC	Sask. Pulse Growers
Binscarth	AAFC (Brandon)	Wagon Wheel Seeds	CDC Viceroy	U of S - CDC	Sask. Pulse Growers
CDC Cowboy 🌾	U of S - CDC	SeCan Members	<b>DRY BEAN</b>		
Desperado 🌾	AAFC (Brandon)	Alliance Seed Corporation	AC Black Diamond	AAFC (Lethbridge)	Viterra Inc.
Dillon	Western Plant Breeders Inc.	Viterra Inc.	CDC Blackcomb	U of S - CDC	Sask. Pulse Growers
CDC Maverick 🌾	U of S - CDC	SeCan Members	Carman Black	AAFC (Morden)	CANTERRA SEEDS
AC Ranger	AAFC (Brandon)	FP Genetics	Envoy	GenTec Seeds	Hensell District Co-op
Stockford 🌾	Westbred, LLC.	Viterra Inc.	Island	AAFC (Lethbridge)	Viterra Inc.
<b>OAT</b>			CDC Jet	U of S - CDC	B&J Martens Seeds
<b>Hulled Varieties</b>			Lightning	U of Guelph	Hensell District Co-op
SW Betania 🌾	Lantmannen SW Seed	Viterra Inc.	Mariah 🌾	Seminis Vegetable Seeds	CANTERRA SEEDS
CDC Big Brown 🌾	U of S - CDC	SeCan Members	CDC Pintium	U of S - CDC	Sask. Pulse Growers
CDC Boyer	U of S - CDC	SeCan Members	AC Polaris	AAFC (Lethbridge)	Viterra Inc.
Bradley 🌾	AAFC - ECORC	SeCan Members	AC Redbond	AAFC (Lethbridge)	Viterra Inc.
CDC Dancer 🌾	U of S - CDC	FP Genetics / Cargill	CDC Sol 🌾	U of S - CDC	Walker Seeds Ltd.
Derby	U of S - CDC	Viterra Inc. / Mastin Seeds	Skyline 🌾		Terramax Seeds
HiFi 🌾	NDSU	Seed Depot	OAC Spark	U. of Guelph	U. of Guelph
Jordan 🌾	AAFC (Winnipeg)	SeCan Members	Winchester	Rogers Brothers	ADM Edible Bean Specialties
Leggett 🌾	AAFC (Winnipeg)	FP Genetics	Winmor	AAFC (Morden)	Viterra Inc.
Lu	AAFC (Lacombe)	SeCan Members	CDC WM - 1	U of S - CDC	Walker Seeds Ltd.
CDC Minstrel 🌾	U of S - CDC	FP Genetics	CDC WM - 2 🌾	U of S - CDC	Walker Seeds Ltd.
AC Morgan	AAFC (Lacombe)	SeCan Members	<b>FABA BEAN</b>		
CDC Morrison 🌾	U of S - CDC	CANTERRA SEEDS	CDC Blitz	U of S - CDC	Redview Farms
CDC Nasser	U of S - CDC	T & L Seeds	CDC Fatima	U of S - CDC	R.Legumex / Walker S.
CDC Orrin 🌾	U of S - CDC	FP Genetics / Cargill	FB9-4	U of S - CDC	SaskCan Pulse Trading
Pinnacle 🌾	AAFC (Winnipeg)	FP Genetics	FB18-20	U of S - CDC	SaskCan Pulse Trading
Ronald 🌾	AAFC (Winnipeg)	SeCan Members	Florent	NPZ	DL Seeds
CDC Seabiscuit 🌾	U of S - CDC	CANTERRA SEEDS	Imposa 🌾	Limagrain Nederland	Cyre Seed Farms
Souris 🌾	NDSU	Seed Depot	Orion	AAFC (Lacombe)	Roger Lee, Lyster Farm
Stride 🌾	AAFC (Winnipeg)	SeCan Members	Snowbird 🌾	Limagrain Nederland	Bob Park - Lacombe, AB
Summit 🌾	AAFC (Winnipeg)	FP Genetics	Taboar 🌾	Globe Seeds - Netherland	Terramax Holding Corp.
Triactor 🌾	Lantmannen SW Seed	CANTERRA SEEDS	Tobasco 🌾	DL Seeds Inc.	Ridell Seed Co.
CDC Weaver 🌾	U of S - CDC	FP Genetics / Cargill	<b>CHICKPEA</b>		
<b>Hulless Varieties</b>			CDC Alma	U of S - CDC	Sask. Pulse Growers
Bullion	Svalof Weibull AB	Viterra Inc.	Amit (B-90) 🌾	ARO Volcani Centre	SaskCan Pulse Trading
AC Gwen	AAFC (Winnipeg)	SeCan Members	CDC Cabri	U of S - CDC	Sask. Pulse Growers
Lee Williams	AAFC (Lacombe)	La Coop fédérée	CDC Corinne	U of S - CDC	Sask. Pulse Growers
<b>Annual Forage Varieties</b>			CDC Cory	U of S - CDC	Sask. Pulse Growers
CDC Baler	U of S - CDC	FP Genetics	CDC Frontier	U of S - CDC	Sask. Pulse Growers
CDC Haymaker 🌾	U of S - CDC	SeCan Members	CDC Leader	U of S - CDC	Sask. Pulse Growers
Murphy 🌾	AAFC (Lacombe)	SeCan Members	CDC Luna	U of S - CDC	Sask. Pulse Growers
			CDC Orion	U of S - CDC	Sask. Pulse Growers
			CDC Vanguard	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	CDC Acer	U of S – CDC	Sask. Pulse Growers
CDC Bethune ☺	U of S - CDC	SeCan Members	DS Admiral ☺	Danisco Seeds	FP Genetics
AAC Bravo 🌱	AAFC (Morden)	FP Genetics	Agassiz ☺	AAFC	CANTERRA SEEDS
CDC Glas 🌱	U of S - CDC	SeCan Members	CDC Amarillo	U of S – CDC	Sask. Pulse Growers
Hanley ☺	AAFC (Morden)	SeCan Members	Argus ☺	AAFC (Lacombe)	SeCan Members
Lightning ☺	AAFC (Morden)	CANTERRA SEEDS	CDC Bronco	U of S – CDC	Sask. Pulse Growers
Prairie Blue ☺	AAFC (Morden)	SeCan Members	CDC Centennial	U of S - CDC	Sask. Pulse Growers
Prairie Grande ☺	AAFC (Morden)	SeCan Members	Cooper ☺	Limagrain Nederland	CANTERRA SEEDS
Prairie Sapphire ☺	AAFC (Morden)	Alliance Seed Corp.	Cutlass	AAFRD / CDC	Sask. Pulse Growers
Prairie Thunder ☺	AAFC (Morden)	CANTERRA SEEDS	CDC Dakota	U of S - CDC	Sask. Pulse Growers
CDC Sanctuary ☺	U of S - CDC	SeCan Members	Delta	Limagrain Nederland	FP Genetics
CDC Sorrel ☺	U of S - CDC	SeCan Members	Eclipse ☺	Limagrain Nederland	FP Genetics
Taurus ☺	Limagrain Nederland	FP Genetics	CDC Golden	U of S – CDC	Sask. Pulse Growers
Vimy	U of S - CDC	SeCan Members	CDC Horizon	U of S - CDC	Sask. Pulse Growers
AC Watson	AAFC (Morden)	Viterra Inc.	CDC Hornet	U of S - CDC	Sask. Pulse Growers
			Hugo ☺	AAFC	Alliance Seed Corp.
<b>MUSTARD</b>			CDC Leroy	U of S - CDC	Sask. Pulse Growers
<b>Brown</b>			CDC Limerick	U of S – CDC	Sask. Pulse Growers
Amigo	AAFC (Saskatoon)	Canadian Mustard Assoc.	CDC Meadow	U of S - CDC	Sask. Pulse Growers
Centennial Brown	AAFC (Saskatoon)	Canadian Mustard Assoc.	Mendel ☺	AAFC (Lacombe)	Alliance Sed Corp.
Duchess	Colman's of Norwich	Viterra Inc.	SW Midas ☺	Lantmannen SW Seed	FP Genetics
			CDC Minuet	U of S - CDC	Sask. Pulse Growers
<b>Oriental</b>			CDC Mosaic	U of S - CDC	Sask. Pulse Growers
Cutlass	AAFC (Saskatoon)	Canadian Mustard Assoc.	CDC Mozart	U of S - CDC	Sask. Pulse Growers
Forge	Colman's of Norwich	Viterra Inc.	CDC Patrick	U of S - CDC	Sask. Pulse Growers
AC Vulcan	AAFC (Saskatoon)	Canadian Mustard Assoc.	CDC Pluto	U of S - CDC	Sask. Pulse Growers
			Polstead ☺	Limagrain Nederland	FP Genetics
<b>Yellow</b>			CDC Prosper	U of S - CDC	Sask. Pulse Growers
Ace	Colman's of Norwich	Viterra Inc.	CDC Raezer	U of S - CDC	Sask. Pulse Growers
Andante	AAFC (Saskatoon)	Canadian Mustard Assoc.	Reward ☺	AAFC (Lacombe)	SeCan Members
AC Base	AAFC (Saskatoon)	Canadian Mustard Assoc.	CDC Rocket	U of S - CDC	Sask. Pulse Growers
AC Pennant	AAFC (Saskatoon)	Canadian Mustard Assoc.	CDC Saffron	U of S - CDC	Sask. Pulse Growers
			CDC Sage	U of S - CDC	Sask. Pulse Growers
<b>SUNFLOWER</b>			SW Sergeant	Lantmannen SW Seed	FP Genetics
AC Sierra	AAFC (Saskatoon)	AAFC (Indian Head)	Stella ☺	AAFC	Alliance Seed Corp.
63A21	Pioneer Hi-Bred	Pioneer Hi-Bred	Sorento ☺	Limagrain Nederland	FP Genetics
2930	Syngenta	Syngenta	CDC Striker	U of S – CDC	Sask. Pulse Growers
8N 270CL DM	Mycogen Seeds	Mycogen Seeds	CDC Tetris	U of S - CDC	Sask. Pulse Growers
			Thunderbird ☺	AAFC	CANTERRA SEEDS
<b>SAFFLOWER</b>			Trapper	AAFC (Morden)	Public
Saffire	AAFC (Lethbridge)	Jerry Kubic (AB)	CDC Treasure	U of S - CDC	Sask. Pulse Growers
AC Sunset	AAFC (Lethbridge)	Viterra Inc.	CDC Tucker	U of S - CDC	Sask. Pulse Growers
			40-10	SWS, Germany	FP Genetics
<b>SOYBEAN</b>			<b>CANARYSEED</b>		
HS 006RYS24		Hyland Seeds	CDC Bastia	U of S - CDC	Public release U of S - CDC
Pekko R2		Brett-Young Seeds Ltd.	Cantate	J. Joordans Zaadhandel BV	Hansen Seeds
Sampsa R2		Brett-Young Seeds Ltd.	Keet	U of Minnesota; U of S - CDC	Public release U of S - CDC
TH 32004R2Y		Quarry Seeds Ltd.	CDC Maria	U of S - CDC	C. Special Crops
004R21		Delmar Commodities	CDC Togo ☺	U of S - CDC	CANTERRA SEEDS
23-10RY	Monsanto	DEKALB			
24-10RY	Monsanto	DEKALB			
900Y61 🌱	DuPont Pioneer	DuPont Pioneer			
900Y71 🌱	DuPont Pioneer	DuPont Pioneer			

#### Abbreviations used in this list

AC	Prefix to variety names Agriculture Canada (Agriculture and Agri-Food Canada)
AAC	Prefix to variety names Agriculture Canada (Agriculture and Agri-Food Canada)
AAFC	Agriculture and Agri-Food Canada
CDC	Crop Development Centre
AARD	Alberta Agriculture and Rural Development, Lacombe, AB
U	University
U of S	University of Saskatchewan
USDA	United States Department of Agriculture

### Accessing Public Release Varieties

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