

# Varieties of Grain Crops 2007

## Crop Production Areas



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

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

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

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

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

### Note About Dividing Lines:

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

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## Symbols Used in 2007 Seed Guide:

- § Variety may not be described in 2008
- 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 Agriculture and Food

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 Agriculture and Food (SAF) provides \$100,000 towards a testing program that is based on industry-government partnership. An entry fee system is used in which variety owners or companies with the distribution rights to a particular variety pay a portion of the cost of having the variety tested. The Saskatchewan Seed Growers' Association also provides \$5000 to the program.

A long term database is developed providing comparisons to a commonly grown check variety. The data includes information on yield, various agronomic factors, and certain market related traits.

The Saskatchewan Variety Performance Group (SVPG) administers the program. SVPG is composed of representatives from individual organizations with an interest in providing variety testing information.

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

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

The SAF grant also provides some support to programs that test pulses, canola, winter wheat 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 medium with L and E varieties plus or minus 1-2 days, and VL and VE varieties beyond this range.

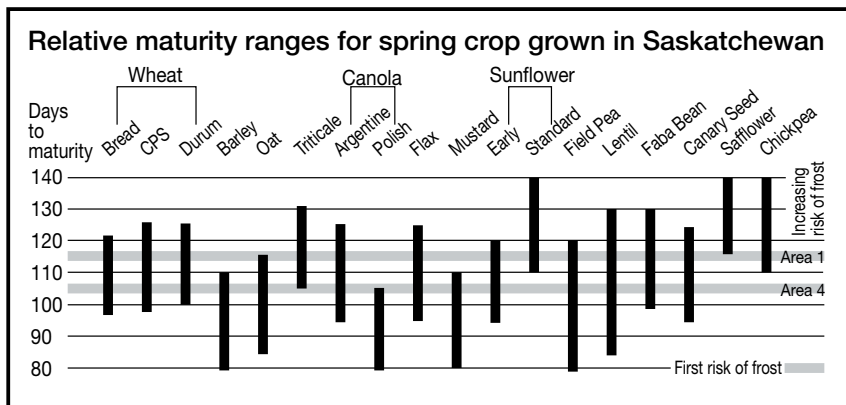
### Comparisons

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

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

Within each crop there are early and late maturing varieties. Whether a crop matures before the first killing frost depends on seeding date, management practices and environment factors. Not all crops have a wide area of adaptation.

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



# Plant Disease Resistance

Resistance to the most important diseases in Western Canada is assessed in most crops before the variety is registered. The methods used to assess resistance in each crop are different. In some cases, spores of the pathogen are applied to plants in the greenhouse or in the field. In other cases, assessment is based on naturally occurring infection in the field. Each variety is rated on a five-point scale of very poor (VP), poor (P), fair (F), good (G), very good (VG). New varieties are not tested side-by-side with all existing varieties.

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

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

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

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

In these conditions, varieties with ascochyta blight resistance ratings of very poor to poor do not show resistance to ascochyta and can be defoliated, with girdled branches and dead plants. If conditions turn warm and dry, the diseased plants can re-grow from auxiliary nodes, often producing flowers and pods. However, these late pods and seeds will most likely be frozen in the first fall frost and have no commercial value.

## What is Plant Breeders' Rights?

Plant Breeders' Rights provides a way to assure that companies and institutions that invest in plant breeding are able to keep reasonable control of their varieties and secure fair compensation for their efforts. This encourages additional investment in crop variety development for Canadian farmers.

Plant Breeders' Rights for crop variety developers are comparable in many ways to patent protection in other areas. When a plant breeder develops a new variety for use in Canada they may apply under the Plant Breeders' Rights Act to obtain certain controls over the multiplication and sale of the seed of that variety. Sale, trade or any other transfer of the seed for propagation purposes is prohibited by law without:

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

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

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

Further information on Plant Breeders' Rights can be obtained from the Plant Breeders' Rights Office, tel. (613) 221-7521, fax (613) 228-4552.



# Wheat

## Main Characteristics of Varieties

Variety	Years Tested	Area 1 & 2	Area 3 & 4	Irrigation	Protein	Resistance to:										Relative Maturity in days	Head Awned-ness	Seed Weight (mg)	Volume Weight** (Kg hL <sup>-1</sup> )	Height (cm)
						Lodging	Shattering	Sprouting	Stem Rust	Leaf Rust	Stripe Rust*	Loose Smut	Bunt	Leaf Spot	Fusarium Head Blight					
<b>Bread Wheat</b>	<b>Yield as % of AC Barrie</b>																<b>Relative to AC Barrie</b>			
AC Barrie ☼	11	100	100	100	14.7	G	G	G	G	P	P	G	G	P	F	100	N	36.0	79.9	93
AC Abbey ☼	8	95	95	98	-0.8	F	G	P	G	P	F	F	G	P	P	-1	Y	-1.9	-1.0	-5
CDC Alsask ☼	3	107	104	---	+0.2	F	G	F	G	VG	F	G	G	P	P	-1	N	-0.3	-1.3	-1
Alvena ☼	1	106	101	---	+0.3	G	G	P	G	F	---	G	F	---	P	-2	N	-1.1	0.0	0
CDC Bounty	5	104	106	---	-0.1	F	G	F	G	F	---	G	F	P	F	-1	N	-0.2	1.6	8
AC Cadillac ☼	7	102	102	98	-0.2	F	G	F	G	G	F	VG	VG	P	F	-1	N	1.3	1.7	7
AC Cora §	8	97	94	92	-0.3	F	G	F	G	VG	P	G	G	P	F	-2	N	-1.2	-0.1	5
AC Domain §	6	95	92	89	+0.1	VG	G	VG	G	F	F	VG	F	VP	P	-2	N	-1.0	0.9	-3
AC Eatonia	7	93	88	---	+0.2	P	G	VG	F	P	F	F	G	P	---	0	N	-2.5	0.0	4
AC Elsa ☼	7	104	104	97	-0.1	G	G	F	G	G	F	G	G	F	P	-1	N	-2.4	-0.5	-1
CDC Go	3	102	103	---	-0.1	G	G	P	G	F	---	P	G	VP	F	-1	Y	+3.6	-0.3	-6
Harvest ☼	5	100	105	---	-0.5	VG	G	VG	G	G	---	G	G	P	VP	-1	N	-0.4	+0.1	-6
CDC Imagine ☼	4	98	102	---	-0.2	G	G	F	F	F	F	G	G	P	VP	0	N	-1.7	-1.8	-3
Infinity ☼	4	106	107	---	-0.1	G	G	G	G	G	---	G	G	F	VP	-1	N	-2.8	-0.6	-1
AC Intrepid ☼	5	101	104	102	-0.3	G	G	P	G	G	G	F	G	P	P	-3	N	-0.2	-0.4	+2
Journey ☼	5	98	99	---	+0.4	VG	G	F	G	F	F	F	G	F	F	+2	N	-2.4	+0.4	-6
Kane ☼	1	105	103	---	-0.2	G	G	VG	G	G	---	P	F	F	F	1	Y	-0.5	1.4	-5
Katepwa	9	96	94	89	-0.5	F	G	F	G	P	P	G	G	P	F	-2	N	-1.8	-1.4	+3
Laura §	8	102	98	82	-0.4	F	G	F	G	G	---	F	P	P	P	+1	Y	-2.8	-1.4	-3
Lillian ☼	4	105	100	---	0.0	F	G	G	G	VG	G	F	G	P	VP	0	N	-0.3	-1.1	-1
Lovitt ☼	4	103	102	---	0.0	G	G	VG	G	G	P	G	F	P	P	-1	N	-3.3	-0.6	+1
McKenzie	5	106	102	109	-0.5	F	G	G	G	VG	P	VP	VG	P	F	-1	Y	-1.5	+0.1	+1
CDC Osler	3	101	105	---	-0.3	G	G	F	G	G	---	G	F	F	VP	-1	N	-3.7	-0.7	-2
Peace	2	99	103	---	-0.1	G	G	P	G	G	---	G	VG	P	VP	-1	N	-1.2	-0.5	0
Prodigy	5	103	104	---	+0.4	G	F	G	G	G	---	F	VG	P	VP	+1	Y	-3.2	1.7	5
Somerset ☼	4	105	101	---	+0.1	G	F	G	G	G	---	G	F	P	P	-1	N	+1.1	-2.4	+6
AC Splendor	9	91	94	89	+0.4	F	G	F	G	G	F	F	G	VP	P	-4	N	-0.2	+0.1	-1
Superb ☼	5	107	109	---	-0.4	G	G	F	G	P	P	F	G	VP	P	+3	Y	+2.6	-0.5	-7
CDC Teal	7	101	100	99	-0.1	G	G	P	G	G	F	G	F	P	VP	-2	N	-1.2	-0.3	0
5500HR	5	99	100	---	-0.5	F	G	F	F	G	P	P	G	P	F	+1	N	1.3	2.0	-2
5600HR	5	100	100	---	-0.5	G	G	F	F	VG	P	G	G	P	P	+2	N	-2.0	0.6	4
5601HR ☼	4	95	97	---	-0.1	G	G	F	G	G	F	P	G	P	F	+2	N	+0.7	-0.1	+1
5602HR ☼	4	103	100	---	+0.4	F	G	F	G	VG	F	G	G	P	G	+1	Y	0.0	+1.6	+1
<b>Canada Prairie Spring - Red Seeded ☼</b>																				
AC Crystal ☼	11	118	115	110	-1.2	VG	G	P	G	P	P	P	VG	F	VP	+3	Y	4.9	-0.1	-11
AC Foremost	5	121	118	109	---	VG	G	F	G	P	P	P	VG	P	VP	+2	Y	5.0	-1.1	-17
AC Taber	5	120	118	116	---	VG	G	P	G	F	P	P	VG	F	VP	+4	Y	4.5	-0.5	-11
5700PR ☼	5	115	120	115	-1.3	VG	G	P	G	F	P	P	VG	P	VP	+2	Y	6.8	1.1	-16
5701PR ☼	4	108	110	105	-0.6	G	G	P	G	VG	G	P	F	F	VP	+2	Y	+3.8	-2.4	-13
<b>Canada Prairie Spring - White Seeded ☼</b>																				
AC Vista ☼	9	122	122	113	-1.5	G	G	F	G	P	F	P	VG	P	VP	+1	Y	6.7	-2.1	-9
Snowwhite475 ☼	4	114	110	---	-1.3	VG	G	F	G	P	P	F	VG	P	VP	0	Y	6.8	-0.3	-11
Snowwhite476 ☼	4	118	111	---	-1.5	G	G	F	G	F	---	G	VG	P	VP	+3	Y	5.9	-1.2	-7
<b>Hard White Wheat</b>																				
Kanata ☼	5	91	93	---	0.0	VG	G	G	F	G	P	F	P	P	F	-2	N	-1.9	-0.1	-6
Snowbird ☼	5	99	102	---	-0.6	G	G	G	G	F	---	G	F	P	P	+2	N	-1.8	-0.4	+1
<b>Canada Western Extra Strong ☼</b>																				
Burnside	3	90	93	---	-0.3	F	G	P	G	G	---	VG	F	P	P	+2	N	3.6	-0.4	6
AC Corinne	5	101	104	---	-1.1	F	G	P	G	G	G	VG	F	P	P	+3	N	7.7	-0.7	10
AC Glenavon	5	102	104	---	-1.1	F	G	P	G	G	---	VG	F	P	P	+2	N	7.0	0.3	8
Glenlea §	8	104	109	---	-1.4	F	G	P	G	F	G	VG	F	P	P	+2	N	6.7	-0.5	10
CDC Rama	4	107	107	---	-0.2	F	G	P	G	G	G	VG	G	P	F	+2	Y	7.5	1.0	7
CDC Walrus	3	102	101	---	-0.3	F	G	F	G	G	---	VG	F	P	P	+2	N	5.3	-0.2	7
<b>Durum Wheat</b>																				
<b>Yield as % of AC Avonlea</b>																				
<b>Relative to AC Avonlea</b>																				
AC Avonlea ☼	9	100	100	100	14.2	F	VG	F	VG	VG	---	P	VG	F	VP	102	Y	43.4	79.6	93
Commander ☼	4	112	99	---	-0.5	G	VG	F	VG	VG	---	P	VG	P	VP	0	Y	+1.3	-0.3	-12
Kyle	9	95	94	97	-0.1	P	VG	F	VG	VG	G	P	VG	P	VP	+1	Y	-0.8	+0.2	+5
Napoleon ☼	7	99	102	---	-0.5	F	VG	F	VG	VG	---	P	VG	F	VP	0	Y	+1.1	-1.2	+3
AC Navigator ☼	8	100	91	---	-0.5	G	VG	F	VG	VG	G	VP	VG	VP	VP	+1	Y	+0.7	+0.3	-14
Strongfield ☼	5	107	105	---	+0.1	F	VG	F	VG	VG	G	VP	G	F	VP	+1	Y	-0.2	+0.4	-1

☼ Includes direct and indirect comparisons with AC Barrie

\* stripe rust data are preliminary

\*\* multiply by 0.8 = lbs per bushel

## Wheat (cont'd)

### Main Characteristics of Varieties

Variety	Years Tested	Area 1 & 2	Area 3 & 4	Irrigation	Resistance to:				Relative Maturity in days	Head Awned-ness	Seed Weight (mg)	Volume Weight** (Kg hL <sup>-1</sup> )	Height (cm)
					Lodging	Shattering	Loose Smut	Bunt					
<b>Soft White Spring Wheat</b>		<b>Yield as a % of AC Barrie</b>										<b>Relative to AC Barrie</b>	
AC Barrie ☺	7			100	G	G	G	G	100	N	36.9	79.0	92
AC Andrew	7	NA*	NA*	125	G	G	P	F	+3	Y	-0.2	-3.2	-9
AC Meena	7	NA	NA	119	G	G	P	P	+3	Y	-2.0	-3.7	-8
AC Nanda	8	NA	NA	109	G	G	P	F	+5	Y	-1.9	-0.3	-6
AC Phil	10	NA	NA	115	G	G	P	P	+2	Y	---	-2.7	-14
AC Reed	13	NA	NA	115	G	G	P	P	+2	Y	-1.9	-4.0	-14
Bhishaj	5	NA	NA	119	G	G	F	P	+3	Y	-0.6	-2.5	-7

\* NA = tests not grown at these locations

\*\* multiply by 0.8 = lbs per bushel

#### Additional Information

Stripe rust, seed weight, volume weight, and plant height are traits being reported for the first time. Grain yield, protein content, time to maturity, seed weight, volume weight, and plant height of all varieties of common wheat are compared to **AC Barrie**. The grain yield, protein content, time to maturity, seed weight, volume weight, and plant height of all durum varieties are rated relative to **AC Avonlea**.

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

Several new races of leaf rust capable of overcoming leaf rust resistance gene Lr16 have multiplied rapidly. If varieties rated poor or very poor for leaf rust are sown in

southeastern Saskatchewan, early seeding may minimize risk of crop losses.

Durum wheat varieties are generally more susceptible than CWRS varieties to Fusarium Head Blight and CPS varieties are intermediate.

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. Please refer to the *Seed Facts* section of this booklet or SAF publication, *Guide to Crop Protection*.

#### Canada Western Red Spring Wheat

Seed of the new varieties **Alvena**, **KANE**, and **Somerset** will not be available in 2007. Limited quantities of seed of the new varieties **CDC Alsask**, **CDC Go**, **Infinity**, **CDC Osler**, **Peace** and **5602HR** will be available in 2007.

**AC Abbey**, **AC Eatonia** and **Lillian** have a solid stem and some resistance to the wheat stem sawfly. **AC Abbey** has semidwarf stature. **CDC Imagine** is tolerant to the CLEARFIELD® herbicides Adrenalin and Altitude FX. **McKenzie** may express a purplish stem under some conditions.

#### Canada Prairie Spring Wheat

**AC Crystal**, **5700PR** and **5701PR** have improved quality compared to **AC Foremost** and **AC Taber**.

#### Canada Western Extra Strong

Seed of the new varieties **Burnside** and **CDC Walrus** will not be available in 2007.

#### Canada Western Amber Durum Wheat

All durum varieties are susceptible to two new races of loose smut. **Kyle** and **AC Morse** have lower pigment content in the grain than other varieties. **Commander** and **AC Navigator** have strong gluten properties. They may be grown only under contract with the Canadian Wheat Board and Saskatchewan Wheat Pool.

#### Soft White Spring Wheat

Soft white spring wheat may have potential demand as a feedstock in the production of ethanol. All soft white spring wheat varieties are eligible for both domestic and export markets. Soft white spring wheat varieties are susceptible to pre-harvest sprouting.

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

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	Years Tested	Yield as % of CDC Clair			Resistance to:				
		Area 1 & 2	Area 3 & 4	Irrigation	Lodging	Winter Damage	Stem Rust	Leaf Rust	Bunt
CDC Clair	16	100	100	100	G	VG	P	P	P
AC Bellatrix	8	99	97	---	G	P	VP	P	G
CDC Buteo	9	97	98	109	G	VG	G	G	P
CDC Falcon	12	98	95	116	VG	F	VG	G	P
CDC Harrier	13	102	99	109	G	G	G	P	P
CDC Kestrel	16	101	101	103	G	VG	P	P	P
McClintock	9	97	98	111	G	P	VG	VG	P
CDC Osprey	16	100	99	93	G	VG	P	P	P
Radiant	3	---	89	---	G	G	P	P	F
CDC Raptor	10	99	100	112	VG	VG	VG	G	P

## 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	17	100	100	M	VG	F	F
AC Rifle	17	98	89	M	VG	VG	VG
AC Remington	6	105	96	M	VG	VG	G
Hazlet	4	116	106	M	VG	VG	VG

### Additional Information:

**Gazelle** is the only registered variety of spring rye.

## Triticale

### Main Characteristics of Varieties

Variety	Years Tested	Yield as % of AC Certa		Test Weight Kg hL <sup>-1</sup>	Relative Maturity	Resistance to:				
		Area 1 & 2	Area 3			Lodging	Stem Rust	Leaf Rust	Bunt	Root Rot
AC Certa	15	100	100	74	M	G	VG	VG	VG	G
AC Alta	13	105	100	68	L	G	VG	VG	VG	F
AC Copia	13	100	97	72	M	G	VG	VG	VG	F
Pronghorn	14	99	102	68	E	G	VG	VG	VG	F
Sandro	10	105	102	73	E	G	VG	VG	VG	G
AC Ultima	11	104	102	70	E	G	VG	VG	VG	F

### Additional Information:

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

Winter triticale has winter hardiness equal to that of winter wheat. **Pika**, **Bobcat** and **Fridge** are the only available cultivars of winter triticale. **Bobcat** is awnleted with 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 cultivars available if environmental conditions are favourable.

# Malting Barley

## Main Characteristics of Varieties

Category* and Variety	Years Tested	2 or 6 Row	Rough or Smooth Awns	Yield as % of AC Metcalfe		Relative Maturity*	Straw ‡	Lodg- ing	Resistance to:							
				Area 1 & 2	Area 3 & 4				Net Blotch	Spot Blotch**	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	N	G	F	F	P	VG	F	F	G	F
CDC Copeland ☺	8	2	R	107	108	M	N	G	F	VP	P	P	F	F	G	F
Harrington	11	2	R	95	89	M	N	F	VP	VP	P	P	P	P	P	G
CDC Kendall ☺	11	2	R	101	102	M	N	G	F	VP	P	P	P	F	F	F
Newdale ☺	6	2	R	112	113	M	N	G	F	G	P	P	G	G	G	F
Excel	10	6	S	102	104	M	N	VG	F	G	P	F	F	G	G	VP
Lacey ☺	4	6	S	101	101	M	N	G	F	VG	P	F	G	G	G	VP
Legacy ☺	6	6	S	104	101	M	N	G	F	G	P	F	G	G	G	P
Robust	8	6	S	94	97	M	N	G	F	G	P	F	F	F	G	P
Tradition ☺	5	6	S	112	107	M	N	VG	F	G	P	F	G	F	G	VP
<b>Malting acceptance: Under Test</b>																
Calder ☺	6	2	R	104	108	M	N	F	G	F	P	VG	VG	F	G	G
CDC Clyde ☺	5	6	S	115	104	M	N	VG	F	--	P	P	F	G	G	VP
CDC Laurence ☺	4	6	S	121	108	M	N	G	F	--	P	P	G	F	G	P
CDC Springside ☺	4	6	S	112	103	M	N	F	F	VG	P	G	F	G	G	VP
CDC Tisdale ☺	6	6	S	106	101	M	N	G	G	--	P	P	G	F	G	P
<b>Other ***</b>																
AC Bountiful §	11	2	R	102	104	M	N	G	F	F	P	VG	G	F	G	F
Merit ☺	9	2	R	109	110	L	N	F	F	P	P	P	G	F	F	F
CDC Select ☺	7	2	R	103	104	M	N	G	F	P	P	F	G	F	F	VP
Stein §	11	2	R	101	101	M	N	F	F	--	P	P	G	P	G	F
CDC Stratus §	11	2	R	103	105	M	N	G	F	P	P	P	F	F	G	F
CDC Battleford ☺	6	6	S	108	108	M	N	G	G	VG	P	P	G	G	G	VP
CDC Sisler §	10	6	S	99	104	M	N	F	F	G	P	P	P	G	G	F
CDC Yorkton § ☺	8	6	S	100	107	M	N	G	F	G	P	P	G	G	G	P

\* 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)

\*\* Spot Blotch (*Cochliobolus sativus*) rating added for 2007 due to increasing prevalence of disease in province.

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

‡ N = normal, SD = semi-dwarf

### Lines Under Evaluation 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 subsequently brewed. The beer is then given the ultimate test – a taste panel. This process will normally take a minimum of three years. A crop grown in 2007 will be malted in January-February, 2008. It will be brewed in May-June, 2008, aged and tasted in October-November, 2008.

### 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 susceptible to sprouting.



## Recommended Malting Barley Varieties 2007-08

These recommendations are based on the varieties expected to be selected by grain and malting companies for both domestic and export markets from the 2007 harvest. Seeding decisions should be based on agronomic considerations and feedback from your grain company representative, local elevator operators and malting companies. This list is published on behalf of the members of the CMBTC, and other companies that have provided their input. Varieties not listed are not recommended. The varieties are listed in descending order to the amount selected in 2006-07.

### Recommended Two-Row Barley Varieties

VARIETY	DOMESTIC	EXPORT	MARKET DEMAND
AC Metcalfe <sub>4</sub>	Established	Established	Stable, High Demand
CDC Copeland <sub>4</sub>	Growing	Growing	Increasing Demand
CDC Kendall <sub>1,5</sub>	Established	Growing	Stable Demand
Harrington	Established	Established	Decreasing Demand
Newdale	Limited	Limited	Low Demand

Calder (TR262) is not yet being grown for the commercial market. Production is limited to quantities required for testing and market development.

### Recommended Six-Row Barley Varieties

VARIETY	DOMESTIC	EXPORT	MARKET DEMAND
Legacy <sub>1,2,3,5</sub>	Growing	Growing	Increasing Demand
Tradition <sub>1,2,3</sub>	Limited	Growing	Increasing Demand
Excel	Limited	Limited	Declining Demand
Robust	Limited	Limited	Declining Demand
Lacey	Limited	Limited	Stable Demand

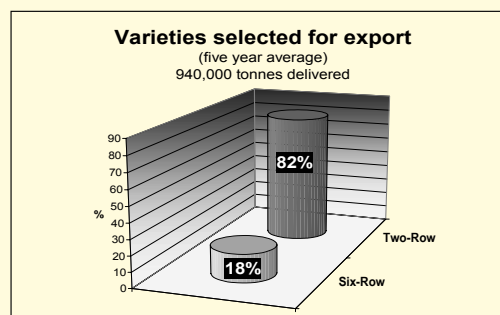
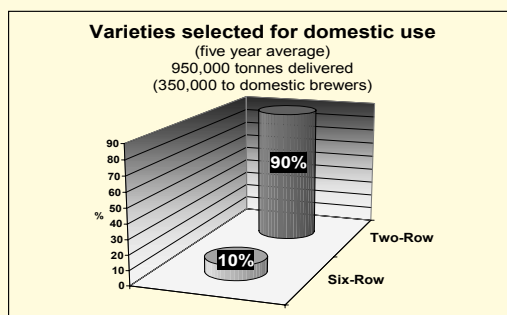
CDC Tisdale (BT462), CDC Springside (BT478), CDC Clyde (BT490) and CDC Laurence (BT494) are not yet being grown for the commercial market. Production is limited to quantities required for testing and market development.

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

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

1-(Agricore United); 2- (BARI-Canada); 3 - (FPS); 4 - (SeCan); 5 - (SWP).



**CMBTC Members** Alfred C. Toepfer (Canada) Ltd., Agricore United, Busch Agricultural Resources-Canada, Canadian Wheat Board, Canadian Grain Commission, Canadian International Grains Institute, Cargill AgHorizons, FarmPure Seeds Inc., James Richardson International, Parrish and Heimbecker, the Public Plant Breeders, Rahr Malting Canada, Saskatchewan Wheat Pool Inc., SeCan.

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

## Feed and Food Barley

### Main Characteristics of Varieties

Category and Variety	Years Tested	2 or 6 Row	Rough or Smooth Awns	Yield as % of AC Metcalfe		Relative Maturity*	Straw ‡	Lodging	Resistance to:							
				Area 1 & 2	Area 3 & 4				Net Blotch	Spot Blotch**	Scald	Loose Smut	Other Smuts	Root Rot	Stem Rust	Fusarium Head Blight
<b>Feed</b>																
CDC Bold	7	2	R	111	112	L	SD	G	P	VP	F	P	G	G	G	VP
CDC Coalition ☼	2	2	R	117	116	M	N	VG	F	F	P	VG	G	G	G	F
CDC Cowboy ☼	2	2	R	101	109	L	N	F	G	F	P	P	G	G	G	G
CDC Dolly	11	2	R	103	103	E	N	G	P	VP	G	F	F	F	P	F
CDC Helgason ☼	7	2	R	105	106	M	N	G	G	F	P	VG	G	F	G	P
McLeod ☼	4	2	R	110	115	M	N	G	P	VP	P	F	F	F	P	VP
Niobe ☼	6	2	R	100	105	M	N	F	F	--	P	P	G	P	G	P
Ponoka ☼	5	2	R	109	121	L	N	G	F	--	G	VG	VG	F	P	F
CDC Trey ☼	5	2	R	104	110	M	N	VG	VG	P	P	P	VG	F	G	F
Xena ☼	7	2	R	112	115	M	N	G	P	VP	P	P	F	P	P	G
CDC Earl §	10	6	R	100	100	L	SD	VG	F	F	F	P	G	F	G	VP
AC Harper § ☼	11	6	S	104	104	M	N	G	F	F	G	P	F	F	F	P
AC Lacombe ☼	11	6	S	106	108	M	N	G	F	F	F	P	G	P	G	VP
Manny ☼	5	6	S	113	109	M	N	F	F	--	VG	P	VG	P	P	VP
Niska	6	6	S	105	110	L	SD	F	P	--	P	P	G	P	G	VP
AC Rosser ☼	11	6	S	115	115	M	N	G	F	G	VP	P	G	G	G	VP
Sundre ☼	3	6	S	124	115	L	N	G	P	--	VG	P	VG	P	F	VP
Trochu ☼	6	6	S	105	110	M	N	F	P	--	F	P	G	G	G	P
Vivar ☼	6	6	R	106	107	L	SD	G	G	F	P	F	VG	G	G	VP
<b>Hulless</b>																
CDC Freedom	9	2	R	88	89	M	N	G	G	P	P	P	G	F	G	G
CDC Gainer §	10	2	R	86	88	M	N	F	F	VP	F	P	P	F	G	F
HB 805 §	5	2	R	96	96	L	N	F	F	--	P	F	G	F	F	F
CDC McGwire ☼	8	2	R	98	99	M	N	G	VG	F	F	P	G	G	F	G
AC Bacon	9	6	R	93	96	M	N	G	P	F	F	P	F	F	G	G
Peregrine	7	6	R	69	75	M	SD	VG	F	--	F	P	P	G	G	VP

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

\*\* Spot Blotch (*Cochliobolus sativus*) rating added for 2007 due to increasing prevalence of disease in province

‡ : N = normal, SD = semi-dwarf

### Forage Barley

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

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

### Hulless

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

### Hulless Waxy

**CDC Alamo, CDC Candle, CDC Fibar, Merlin, and CDC Rattan** are waxy starch varieties for specialty markets. For further information contact Agricore United.

### Irrigation

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

## Feed and Food Barley (cont'd)

### General Comments

Of the current two-row varieties, **CDC Trey** and **CDC McGwire** have good field resistance to all races of net blotch. Growers who must plant barley on barley stubble should select varieties with the best leaf disease resistance.

Most available varieties are susceptible to one or more types of smut. Therefore, seed 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 seeding 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 % of Calibre --		Test Weight (g/0.5L)	% Hull	% Plump	Relative Maturity*	Lodging	----- Resistance to: -----		
		Area 1 & 2	Area 3 & 4						Stem Rust	Leaf Rust	Smut
Calibre	13	100	100	250	22.9	44	M	G	VP	VP	P
AC Assiniboia § ☞	11	97	95	240	22.9	74	M	VG	F	F	VG
SW Betania ☞	4	107	108	250	21.4	76	L	G	VP	F	VG
CDC Boyer	11	102	100	236	22.6	81	E	G	F	F	P
CDC Dancer ☞	7	101	101	257	19.2	80	M	G	F	F	VG
Derby	13	101	103	251	22.2	74	M	G	VP	VP	P
Furlong ☞	6	102	107	250	20.4	87	L	G	F	F	VG
HiFi ☞	3	101	97	257	21.7	63	M	G	F	VG	P
Jordan ☼	4	113	122	243	21.7	87	VL	G	F	F	VG
Leggett ☞	5	106	107	261	21.4	81	L	G	F	VG	VG
Lu	4	102	107	252	24.4	54	VE	G	VP	VP	G
AC Morgan	10	107	110	242	24.2	63	L	VG	VP	VP	F
CDC Orrin ☞	6	107	111	257	22.5	81	L	G	VP	VP	VG
Pinnacle ☞	8	114	110	245	23.1	80	VL	G	F	F	VG
Ronald ☞	7	97	100	253	21.8	62	L	VG	F	F	VG
CDC Sol-Fi ☼	4	94	94	241	23.0	52	M	F	VP	VP	G
Triple Crown § ☞	10	102	107	238	24.7	67	L	VG	VP	P	G
CDC Weaver ☼	5	106	113	249	18.6	82	L	G	F	F	VG

\* Maturity Rating M = 96 days

### Additional Information

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

**AC Assiniboia** and **Furlong** have brown hulls.

### Forage Oat

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

### Hulless Oat

**Boudrias**, **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 should be stored at less than 12% moisture.

# Malting Barley

Producers who sow malting barley varieties are generally hoping to capture the malt premium. In addition to the many quality factors that determine suitability for malt, such as high germination, seed vigour, plump kernels, etc., low to moderate protein levels are also desired. The desired protein range is generally between 10.5% and 13%. Protein levels outside this range can cause problems in the malting and brewing process. High protein levels, for example, will reduce the amount of fermentable material (malt extract), and can cause brewing issues such as cloudiness in the beer. In general, low protein is better than high protein, and marketers are willing to pay for it.

For the 2006-07 crop year, producers can receive protein related price premiums for designated two-row malting barley (see table below). Producers should be aware that not all grain handling companies are participating in the program. Please contact your local elevator, malting company or the Canadian Wheat Board (1-800-275-4292, [www.cwb.ca](http://www.cwb.ca)) for more details. The protein premium will be based on a protein test of the delivered sample, subject to third party verification, and payment will be made within 30 days of delivery.

**Protein Payment Schedule on Two-Row Malting Barley for 2006-07**

Protein Level (%)	Price adjustment (\$/tonne)
12.6	0
12.5	1.00
12.4	1.20
12.3	1.40
12.2	1.60
12.1	1.80
12.0	2.00
11.9	2.30
11.8	2.60
11.7	2.90
11.6	3.20
11.5	3.50
11.4	3.80
11.3	4.10
11.2	4.40
11.1	4.70
11.0 and below	5.00

## General Recommendations for Malting Barley Production

### Fertility

A well balanced fertility program is important for producing good yields and acceptable quality. Provided other factors are not limiting, protein and yield are

mostly determined by the amount of precipitation and available nitrogen. Given the same amount of available nitrogen, high levels of precipitation will lower protein, while drier conditions will result in higher protein.

The dilemma for producers is to balance the nitrogen requirement that will maximize yield, while maintaining low protein levels. Protein content and yield will increase with increased rates of nitrogen; however, protein increases at a slower rate. In determining target yield, producers should rely on soil test recommendations that take into consideration soil moisture levels and average growing season precipitation for their region.

### Timing of Seeding

Another consideration that can affect protein is the timing of seeding. Early seeding is generally recommended for a number of reasons. Early seeded crops tend to mature before soil moisture levels become depleted. This will assist the plant to develop plump and uniform kernels. The other advantage of early seeding is that the harvest can generally occur during dry conditions, avoiding cool wet falls that increase the likelihood of weathering and pre-harvest sprouting.

### Variety Selection

Selecting a variety for its agronomic performance and marketing potential is the first step in producing a marketable malt barley crop. The Canadian Malting Barley Technical Centre provides a list of recommended malting barley varieties (see VR8). Additionally, producers should contact grain and malting companies to explore market potential for the various varieties.

### Seed

The seed lot should be true to variety, have high germination with strong vigour, and be free of disease and weed seeds. Using Certified Seed, and possibly treating the seed if sowing into cool soils, will get the crop off to a good start.

### Field Selection

Select relatively uniform fields to obtain even maturity. If patchiness does occur, these areas should be harvested separately. Use proper crop rotations to lessen disease pressures and avoid volunteer seed issues.

### Seeding Rate and Depth

Depending on the region, the target plant density should be 20 to 25 plants per sq. foot (215 – 270 plants per sq. metre). Producers must account for the rate of germination and seedling mortality. Since

malting barley generally has a high test weight with plump kernels, the seeder should be calibrated accordingly. The seeding rate calculator on the Alberta Agriculture, Food and Rural Development website provides an easy method to determine your seeding rate. ([www.agric.gov.ab.ca/loadSeedRateCalc](http://www.agric.gov.ab.ca/loadSeedRateCalc))

Seeding depth should be approximately 1.5 – 1.75 inches (3.8 – 4.5 cm). Although having the seed in contact with moist soil is important, placing the seed below 2 inches (5 cm) is not recommended. Deep seeding can result in weak plants, reduced emergence and vulnerability to root and seedling diseases.

### Disease Control

Fields should be monitored for leaf diseases. If economically warranted, registered fungicides will help minimize yield loss and maintain kernel plumpness. The timing of fungicide application is critical – follow the label carefully.

### Harvesting and Handling

Both straight combining and swathing can be used to produce marketable malting barley. Swathing should be delayed until the moisture content is below 30%. At this stage, the barley kernel is difficult to dent with your thumbnail. Six-row barley is more susceptible to shattering than two-row varieties. Most malting varieties, especially two-row varieties, are susceptible to sprouting.

Combining can begin at 16% moisture if aeration is available. Producers should not use heat when aerating malting barley, as it can cause the loss of germination. If the moisture content falls below 13.5%, peeling during combining and handling is more likely. Therefore, producers should adjust the combine (cylinder/rotor speed and concave clearance) and handling equipment so that peeling and breakage is minimized. Maltsters prefer kernels with a small piece of the awn intact. Storage conditions should maintain low moisture levels until delivery. Handling should be minimized to reduce peeling and broken kernels.

With a little luck from the weather, these recommendations will help produce high quality malting barley.

## 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 SAF publication, *Caraway in Saskatchewan*.

### Coriander

Coriander is an annual spice crop. Seedlings are small, slow to develop, and compete poorly with weeds. The large seeded type is earlier maturing than the small seeded type.

**CDC Major** is a large-seeded coriander variety and **CDC Minor** is a small-seeded variety. The crop is usually straight-cut to avoid wind damage in swaths. For more information, consult the SAF publication, *Coriander in Saskatchewan*.

### Fenugreek

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

### Safflower

Safflower is an annual oilseed or birdseed crop which can be grown successfully in the Brown soil zone. Safflower must be sown early (late April).

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

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

## Canary Seed

### Main Characteristics of Varieties

Variety	Type	No. of Trials	Yield as % of CDC Maria*	Days to Heading	Days to Maturity	Height (cm)	Test Weight (lb/bu)	Weight per 1000 seeds (g)
CDC Maria	glabrous	44	100	55	97	96	54	7.3
CDC Togo *	glabrous	44	113	+2	+2	+2	-1	+ 0.8
Keet	hairy	34	111	-1	0	+2	-6	- 0.3
Cantate**	hairy	4	114	+2	+5	-2	-8	+ 0.9

\* Yield data not collected by Area

\*\* 2004-2005 data only

### Additional Information:

The seed of annual canarygrass, more commonly called canary seed, is used as food for caged and wild birds. **Elias**, **Keet** and **Cantate** are similar in yield, but **Keet** and **Cantate** are earlier maturing and more resistant to lodging. **Elias** pedigreed seed has not been produced in recent years. Seeds and plants of **CDC Maria** and **CDC Togo** do not have the small sharp hairs that cause irritation when canary seed is threshed and handled and are called glabrous. **CDC Maria** and **CDC Togo** have higher test weights compared to hairy cultivars.

**CDC Togo** is higher yielding than **CDC Maria** and has heavier seed. Canary seed plants have a dense, shallow root system and growing the crop on sandy soils is not recommended. Canary seed may be grown successfully on stubble, providing adequate moisture is available for rapid germination and emergence. The recommended seeding rate is 34 kg/ha (30 lb/ac) (germination greater than 85 per cent). Plant the seed 3.5 to 5 cm deep into a firm seedbed.

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

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

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

# GENERAL SEED FACTS

## Pedigreed Seed

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

## Reuse of Hybrid Variety Seed

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

## Seed Cleaning

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

## Seed Treatment

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

Use of seed from cereal crops infected with *Fusarium* may result in poor emergence. Such seed should be treated with a registered fungicide before planting. Use of infected seed may introduce *Fusarium* diseases into unaffected areas.

Smuts that attack wheat, barley, oat and rye can be controlled by seed treatment. If seed from a crop in which bunt or smut was observed must be used for seed, seed should be tested and seed treatment should be considered. If the presence of smut is uncertain, varieties rated VERY POOR should be treated every year, those rated POOR every second year and those rated FAIR every third year.

Only systemic fungicides will control true loose smut of barley and wheat, and stem smut of rye. Pathogens causing the other types of smut (covered, false loose, oat smut and bunt) are carried on the outside of the seed and can be controlled by non-

systemic seed treatments.

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

Wireworms, which attack all grain crops, and flea beetles, which 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 SAF publication, *Guide to Crop Protection*. Carryover stocks of treated seed should be tested for germination before planting. Treated seed **must not** be delivered to an elevator or used for feed.

## Seed-borne diseases of pulses

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

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

## Crop Rotation

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

## Ergot

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

## Seed Inoculation

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

## Damp and Frozen Seed

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

## Wheat Midge

All wheat classes, including durum and triticale, are susceptible to wheat midge. Farmers in infested areas should be prepared to spray fields with recommended insecticides if necessary. Refer to the SAF publication, *Wheat Midge*.

# Pulse Crops

## 2006 Regional Variety Trials

In 2006, the Saskatchewan Pulse Growers and the pulse breeding program at the Crop Development Center (CDC), University of Saskatchewan initiated a 5-year agreement with a budget of \$100,000 per year to conduct the pulse crop regional variety trials in Saskatchewan. The CDC collaborates with researchers at several locations, including Agriculture and Agri-Food Canada research stations, provincial Agri-ARM sites, and the Canada-Saskatchewan Irrigation Diversification Centre, in order to conduct the trials. The project collects data on varieties from the CDC program, as well as those arising from other public or private pulse breeding programs.

In 2006, field pea, lentil, chickpea, and dry bean variety trials were conducted at 8-14 locations per crop in their target areas of adaptation in Saskatchewan. The number of entries per trial was 26 for pea, 24 for lentil, 24 for chickpea, and 16 for dry bean.

## Lentil

### Main Characteristics of Varieties

Market class	Variety	Years Tested*	-- Yield % of Laird --		Height (cm)	Days to Flower	Maturity Rating	----- Resistance to: -----		Cotyledon Colour	Seed Weight (g/1000)
			Area 1 & 2	Area 3 & 4				Ascochyta Blight	Anthracnose Race 1		
Large green	Laird	12	100	100	41	53	VL	VP	VP	yellow	67
	CDC Glamis	11	110	108	39	54	VL	G	VP	yellow	60
	CDC Grandora	10	106	108	40	53	VL	G	VP	yellow	69
	CDC Greenland	5	123	125	38	52	ML	G	VP	yellow	64
	CDC Improve CL	2	109	112	39	51	M	F	VP	yellow	67
	CDC Plato	8	121	123	38	52	ML	G	P	yellow	62
	CDC Sedley	9	107	111	39	51	M	F	VP	yellow	68
	CDC Sovereign	10	118	113	40	52	L	G	P	yellow	66
Medium green	CDC Meteor	6	139	130	34	50	M	G	VP	yellow	51
	CDC Richlea	11	131	118	35	50	M	VP	VP	yellow	51
	CDC Vantage	11	128	120	33	49	M	G	VP	yellow	52
Small green	CDC Milestone	12	131	127	31	49	E	G	VP	yellow	37
	CDC Viceroy	7	137	148	34	49	E	G	G	yellow	33
	Eston	11	114	115	30	48	E	VP	VP	yellow	33
French green	CDC LeMay	6	122	115	35	48	E	F	VP	yellow	32
Small red	CDC Blaze	8	110	107	30	47	E	G	P	red	34
	CDC Impact CL	3	107	108	30	47	E	G	P	red	34
	CDC Redberry	6	128	136	34	50	EM	G	G	red	42
	CDC Rouleau	6	132	139	33	52	M	G	G	red	37
	Crimson	7	112	112	29	49	E	VP	VP	red	35
Extra small red	CDC Robin	9	118	119	30	49	E	G	G	red	30
	CDC Rosetown	6	128	132	31	52	E	G	G	red	31
	CDC Imperial CL	3	119	116	30	49	E	G	G	red	30

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

CL indicates Clearfield variety

### Additional Information

**Indianhead** lentil is a black-seeded variety for green manure use. **CDC Matador** is a brown-seeded variety with yellow cotyledons. **Redchief** is a large red lentil with green seed coat. Seed supplies are limited for **CDC Meteor**, **CDC Rosetown**, and the Clearfield lentil varieties **CDC Impact CL** and **CDC Imperial CL**. Seed supplies are very limited for **CDC Greenland** and for the Clearfield variety **CDC Improve CL**.

# Field Pea

## Main Characteristics of Varieties

Variety	Years Tested*	Yield as % Cutlass -----			Leaf Type▼	Relative Maturity	Vine Length (cm)	Mycosphae-rella Blight	Powdery Mildew	Fusarium Wilt	Resistance to: -----			Seed Coat Dimpling▲	Green Seed Coat◆	Seed Weight g/1000
		1.2 & South 3	North 3 & 4	Irrig-ation							Seed Coat Breakage	Lodging	Bleaching			
<b>Yellow</b>																
Cutlass	7	100	100	100	SL	M	75	F	VG	F	F	G	n/a	F	G	220
Alfetta ☼	7	92	94	99	SL	M	60	P	P	F	F	F	n/a	F	G	290
Canstar ☼	3	92	---	98	SL	M	85	P	VG	G	F	G	n/a	G	G	240
Carneval ☼	7	81	79	105	SL	M	75	F	P	P	F	G	n/a			230
CDC Bronco	6	108	104	106	SL	M	75	F	VG	F	G	G	n/a	G	G	230
CDC Golden	6	107	102	110	SL	M	85	F	VG	F	G	G	n/a	G	G	230
CDC Handel	5	103	93	110	SL	L	75	P	VG	F	G	F	n/a	G	F	220
CDC Mozart	7	104	101	108	SL	M	70	F	VG	F	G	F	n/a	G	F	220
CDC Minuet	5	100	101	---	SL	M	70	F	VG	F	F	F	n/a	G	F	190
DS Admiral ☼	5	93	103	95	SL	E	80	F	VG	F	G	G	n/a	G	G	240
Eclipse ☼	7	99	99	103	SL	M	80	F	VG	P	G	G	n/a	F	G	250
Fusion ⚡	3	101	---	100	SL	M	75	F	VG	P	F	G	n/a	F	G	260
Miser ☼	5	99	106	90	SL	M	80	F	VG	F	G	F	n/a	G	G	190
Polstead ☼	3	106	---	107	SL	M	75	P	VG	P	F	G	n/a	G	F	280
Reward ☼	3	96	---	105	SL	M	90	F	VG	F	G	G	n/a	G	F	240
SW Benefit ⚡	3	77	---	76	SL	E	80	F	VG	F	F	F	n/a	G	F	200
SW Carousel ⚡	5	94	106	106	SL	E	85	F	VG	F	F	G	n/a	G	G	250
SW Cartier ☼	3	100	---	99	SL	E	75	F	VG	G	F	F	n/a	F	F	220
SW Circus ⚡	4	95	108	106	SL	E	75	F	P	F	F	G	n/a	F	G	220
SW Capri ☼	4	94	101	---	SL	E	75	F	P	F	F	G	n/a	F	G	210
SW Marquee ⚡	4	95	94	106	SL	M	80	F	VG	F	G	G	n/a	G	G	220
SW Midas ☼	5	96	91	105	SL	E	80	F	VG	F	G	G	n/a	G	G	220
SW Prize	4	92	91	---	SL	E	80	F	P	F	G	G	n/a	G	G	240
SW Salute ☼	5	102	102	84	SL	E	75	P	VG	F	F	F	n/a	F	F	220
Topeka ☼	6	103	96	87	SL	E	65	F	VG	P	G	F	n/a	G	G	260
Tudor ☼	5	94	94	107	SL	M	80	P	VG	F	F	G	n/a	G	F	270
<b>Green</b>																
Bluebird ☼	4	86	88	86	SL	E	65	F	VG	P	G	F	F	F	n/a	250
Camry ☼	5	96	90	94	SL	M	65	F	VG	P	F	G	F	G	n/a	260
CDC Montero	6	91	89	90	SL	M	80	F	VG	F	G	F	F	F	n/a	230
CDC Sage	5	80	84	86	SL	M	80	F	VG	G	G	G	G	F	n/a	220
CDC Striker	7	90	99	100	SL	M	80	F	P	G	VG	G	G	G	n/a	230
Cooper ☼	5	103	99	107	SL	L	80	F	VG	F	F	G	G	G	n/a	270
Cruiser	4	83	81	---	SL	M	75	F	P	F	VG	F	G	G	n/a	200
Majoret ☼	5	72	70	94	SL	M	60	P	P		G	G	F		n/a	250
Nitouche ☼	7	86	91	95	SL	M	75	F	P	F	G	G	G	F	n/a	250
Stratus ☼	7	105	99	104	SL	M	70	F	VG	P	G	F	F	G	n/a	270
SW Parade ☼	5	91	85	101	SL	M	70	F	VG	G	G	F	F	G	n/a	220
SW Sargeant ⚡	4	89	83	95	SL	M	80	F	VG	F	G	G	G	G	n/a	200
Tamora ☼	3	94	---	91	SL	M	80	F	VG	P	F	G	F	G	n/a	290
Toledo	4	80	89	---	SL	M	70	P	P	P	G	G	F	F	n/a	280
Venture	4	89	82	---	SL	E	75	P	P	P	G	F	F	F	n/a	220
Vortex	5	94	99	97	SL	E	75	P	P	F	F	F	G	F	n/a	190
<b>Maple</b>																
CDC Acer	3	100	94	---	SL	L	60	F	VG		G	F	n/a	VG	F	170
Courier	4	90	86	78	SL	M	75	F	P		F	P	n/a	VG	F	210
Whero	3	55	54	---	N	L	110	P	P		G	P	n/a		n/a	210
<b>Silage</b>																
CDC Sonata	4	102	94	---	N	L	85	F	VG		F	F	n/a	F	F	220
Trapper	7	68	68	---	N	L	95	P	P		F	P	n/a			140
Victoria	7	74	72	---	N	M	85	P	P		F	P	n/a			190
40-10	2	83	94	---	N	L	100	P	P		F	P	n/a	G		170

\* Co-op and regional trials in Saskatchewan

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

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

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

Relative ratings for disease, seed coat breakage, lodging, bleaching (for green seed varieties), seed coat dimpling, and green seed coats (for yellow seed varieties): VG = very good; G = good; F = fair; P = poor; VP = very poor

## Field Pea (cont'd)

### Additional Information

For detailed production information consult the *Pulse Production Manual* published by Saskatchewan Pulse Growers. This year a column has been added to the pea variety table for Fusarium wilt ratings. These data were collected in the Field Pea Co-operative Test disease nursery during the years in which the variety was in these trials. In general, Fusarium wilt is not a major problem in pea production in Saskatchewan. However, when inoculum is present and conditions are warm and wet, the disease can cause yellowing and wilting of plants and premature death, typically in patches in a field.

## Chickpea

Characteristics of Kabuli and Desi Chickpea Varieties

KABULI Variety	Years Tested	----- Yield (% Amit) -----		Leaf Type**	Ascochyta Blight	Height (cm)	Days to Flower	Maturity	Seed Weight (g/1000)
		Area 1*	Area 2*						
Amit (B-90) ☼	9	100	100	F	F	49	57	L	260
Sanford	9	69	68	U	VP	50	57	VL	415
CDC ChiChi	5	76	84	F	P	45	53	L	385
CDC Chico	7	95	101	F	P	45	51	M	265
CDC Diva	4	69	71	U	VP	45	52	L	490
CDC Frontier	6	104	106	F	F	43	57	L	364
CDC Xena	9	75	81	U	VP	44	54	L	464
CDC Yuma	7	78	79	F	P	50	53	VL	410
Dwellely §	3	56	52	U	VP	45	57	VL	490
Evans §	4	59	58	U	VP	50	53	VL	430

DESI Variety	Years Tested	----- Yield (% Myles) -----		Leaf Type**	Ascochyta Blight	Height (cm)	Days to Flower	Maturity	Seed Weight (g/1000)	Seed Shape ♦	Seed Coat Color ▼
		Area 1*	Area 2*								
Myles	10	100	100	F	F	40	52	M	196	A	T
CDC Anna	8	108	113	F	F	40	52	L	210	P	T
CDC Cabri	8	111	113	F	F	45	50	M	292	P	T
CDC Desiray	7	97	108	F	F	35	49	M	210	P	LT
CDC Nika	6	97	104	F	F	40	50	L	320	P	T

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

\*\* Leaf type: F = fern; U = unifoliate

♦ Seed shape: P = plump; A = angular

▼ Seed coat color: T = tan; LT = light tan

### Additional Information

Certified Seed of **CDC Frontier**, **CDC Yuma**, **CDC Xena**, **CDC Chico**, **CDC Diva**, **CDC Desiray**, **CDC Anna**, **CDC Nika** and **CDC Cabri** will be available in 2007. For more details on production consult the *Pulse Production Manual* published by the Saskatchewan Pulse Growers (website: [www.saskpulse.com](http://www.saskpulse.com)).

## 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	10	100	100	100	50	E	80	350	I
CDC Camino	pinto	6	97	86	76	52	L	81	323	I
CDC Minto	pinto	8	90	100	100	51	M	62	410	III
CDC Pinnacle	pinto	6	102	103	98	53	L	67	352	III
Othello	pinto	6	96	96	89	52	L	51	323	III
Envoy	navy	6	73	76	92	53	M	73	184	I
CDC Whitecap	navy	6	88	88	87	56	M	75	194	II
Cruiser	navy	5	71	83	108	54	L	69	164	II
AC Polaris	great northern	6	93	83	97	52	L	70	310	III
CDC Polar Bear	great northern	5	95	87	77	52	L	65	339	III
US 1140	great northern	7	88	87	81	51	L	53	289	III
Viva	pink	4	94	102	80	51	L	50	242	III
AC Redbond	small red	7	95	102	97	51	M	65	290	II
AC Black Diamond	black	6	102	95	94	54	M	70	250	II
CDC Espresso	black	10	65	78	74	47	M	87	191	I
CDC Jet	black	7	70	97	107	58	L	80	175	II
CDC Nighthawk	black	5	62	61	67	58	L	77	165	II

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

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

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

## Faba Bean

### Main Characteristics of Varieties

Variety	Years Tested	-- Yield % of Outlook --		Maturity in days	Seed Weight (g/1000)
		(Northeast Dryland)	(South-Central Irrigated)		
Outlook	15	100	100	109	360
Aladin	15	104	110	112	400
CDC Blitz	6	101	105	109	410
CDC Fatima	8	100	104	105	520
Cresta	3	92	101	105	630
Orion	6	95	94	103	350
Scirocco	3	96	110	107	550

### Additional Information

Faba bean regional trials were started again beginning in 2006 to accommodate growing interest in this crop as a nitrogen-fixing feed grain in moist areas where producers experience problems with pea diseases. White-flowered types are the only varieties that are zero tannin. **Snowbird** is the only zero tannin variety with wide seed availability for spring of 2007. All coloured flower types have seed coats that contain tannins and are considered suitable for export food markets if seed size and quality match customer demand.

# Oilseed Crops

## Flax

### Main Characteristics of Varieties

Variety	Years Tested	Yield as % of CDC Bethune*			Relative Maturity♣	Seed Size	Resistance to Lodging
		Area 1 & 2	Area 3 & 4	Irrigation			
CDC Bethune ☼	10	100	100	100	L	M	G
CDC Arras	10	95	92	92	M	L	F
Hanley ☼	4	90	90	93	M	M	G
Lightning ☼	6	92	92	93	L	M	G
Macbeth ☼	4	91	93	94	L	M	G
CDC Mons	4	99	96	93	L	S	G
CDC Normandy	6	91	93	89	M	M	F
Prairie Blue ☼	4	99	92	97	L	S	VG
Prairie Thunder ☼	5	96	97	106	M	M	VG
CDC Sorrel ☼	5	100	109	87	L	L	G
Taurus ☼	6	94	99	94	M	M	G
Vimy	10	94	90	85	M	L	P
AC Watson ☼	6	88	93	92	M	M	G
<b>Solin</b>							
CDC Gold	4	78	79	76	E	L	G
2090 ☼	5	90	100	91	M	L	G
2149 ☼	5	86	100	86	M	M	G

\* Data from Regional and Co-op trials

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

### Additional Information:

All varieties are resistant to rust and moderately resistant to Fusarium wilt.

No seed of **CDC Sorrel**, **Prairie Thunder** and **2149** will be available in 2007.

**Solin** is defined as a type of flax with less than 5% linolenic acid in its oil and having a yellow seed coat. Solin varieties produce food quality oil and, as such, cannot be sold in traditional flax markets. They are available only for contract production.

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.

## Mustard

### Main Characteristics of Varieties\*

Type and Variety	Yield % of AC Pennant	Plant Height (cm)	Mucilage‡ cS ml/g seed	Protein % Seed	Fixed Oil % Seed	Seed Weight (g/1000)
<b>Yellow</b>						
AC Pennant	100	95	32.8	35.1	29.8	5.82
AC Base	101	99	31.3	35.1	29.6	6.05
Ace	98	100	38.1	35.8	29.4	5.68
Andante	100	100	41.2	36.0	28.6	6.29

Type and Variety	Yield % of Cutlass	Plant Height (cm)	Volatile Oil♣ mg/g seed	Protein % Seed	Fixed Oil % Seed	Seed Weight (g/1000)
<b>Oriental</b>						
Cutlass	100	113	10.62	29.2	42.0	2.73
Forge	96	124	11.41	29.8	39.5	2.49
AC Vulcan	97	114	11.68	29.7	41.5	2.77

Type and Variety	Yield as a % of Commercial Brown	Plant Height (cm)	Volatile Oil♣ mg/g seed	Protein % Seed	Fixed Oil % Seed	Seed Weight (g/1000)
<b>Brown</b>						
Commercial Brown	100	111	8.72	28.6	38.9	2.57
Centennial Brown	103	116	9.25	29.7	37.4	2.92
Duchess*	102	112	8.83	28.6	39.0	2.66

\* All varieties are tested at all locations from Areas 1, 2 and 3 (1999 - 2006 Co-operative Mustard Test)

Yellow Mustard: yield AC Pennant 1970 kg/ha based on 47 station-years (s/y). Fixed Oil and Protein 38 s/y, Mucilage and Seed Weight 30s/y

Brown and Oriental Mustard: yield Cutlass 2490 kg/ha, Commercial Brown 2270 kg/ha based on 46 s/y. Fixed Oil and Protein 37 s/y, Volatile Oil and Seed Weight 32 s/y

‡ Mucilage in centi Stoke per 1g seed (a measure of viscosity)

♣ Volatile Oil as allyl isothiocyanate

## Sunflower (Oilseed)

### Main Characteristics of Varieties

Variety	Years Tested	Yield % of 63A70	Average Maturity	Oil %*
63A70	8	100	124	48.7
63M02**	5	96	122	49.4

\* Dry Basis

\*\*Mid oleic NuSun

## Sunflower (Oilseed) EMSS

### Main Characteristics of Varieties

Variety	Years Tested	Yield (kg/ha) (9 yr avg.)	Average Maturity	Oil %*
63A21	9	2255	115	46.9

\* Dry Basis

## Sunflower

Sunflower requires 105-125 days to mature, depending on the cultivar and the growing season. Oilseed sunflower has been grown in the Dark Brown and Black soil zones in southeastern Saskatchewan. The earlier maturing, short stature (EMSS) varieties are adapted to production in most areas of Saskatchewan.

The Saskatchewan Sunflower Committee has been conducting trials in Saskatchewan for the purpose of registration and demonstration since 1983. Varieties that have been tested in official Saskatchewan Sunflower Committee trials for three years, continue to be tested and are registered for production in Canada are placed on the list.

The Committee has been testing NuSun, a sunflower with a fatty acid profile desired by major frying companies. There will be additional acres of oilseed sunflower required to address the increased birdseed market.

## Additional Information

### Mustard

Three types of mustard are grown in western Canada: Yellow (*Sinapis alba*) 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. Mustard varieties mature in 88-90 days. All mustard varieties have good resistance to blackleg disease.

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

Three varieties of Oriental mustard are available for production. **AC Vulcan** and **Forge** have similar yield. **Forge** is the tallest variety. **AC Vulcan** has the highest volatile oil content. All three varieties have similar protein content with **Forge** having significantly lower fixed oil content and smaller seed. **Cutlass** and **AC Vulcan** are resistant to white rust disease (race 2a) while **Forge** is susceptible.

Brown mustard is grown primarily for use in the Dijon mustard market. The new variety **Centennial Brown** is the highest yielding variety, is slightly taller with significantly higher volatile oil, and protein content, lower fixed oil content and larger seed. **Duchess** is slightly higher yielding than **Commercial Brown**, otherwise having similar performance. All brown mustard varieties are highly susceptible to white rust disease (races 2a and 2v).

# Canola

## Main Characteristics of Varieties

Current Name	Organization	Varietal Kind	Herbicide	Low Lin	Early	----- Maturity -----			----- Yield -----				Maturity all zones +/- days	Height all zones +/- inches	Lodging all zones Rating += "better"	Blackleg Rating	
						Short season +/- days	Mid season +/- days	Long season +/- days	Short season 8 ST.YR**	Mid season 13 ST.YR**	Long season 11 ST.YR**	Overall Average					
<b>B. napus as compared to 46A65</b>																	
46A65 ☹	CHECK1	O CO				0	0	0	100	100	100	100	0	0	0	R	
Roper	Seed Industry Partnership (SIP)	O CO										89	89	0	3	0	R
292 CL ☹	Agricore United	O CL				1	0	1	106	100	107	104	1	-1	0	R	
45P70	Agricore United	H CL				-1	-1	1	120	122	121	121	0	2	0	R	
71-20 CL	DEKALB/Monsanto Canada Inc.	H CL				-2	-2		104	106		105	-2	0	0	R	
Nex 828 CL	Dow AgroScience	O CL	•				2	5		96	91	94	3	4	0	R	
Manor ☹	FarmPure Seeds Inc.	O CL				2	1	3	105	101	100	102	2	0	0	MS	
45H72	Pioneer Hi-Bred Production Ltd.	H CL				-1	-2	1	112	114	119	115	-1	3	0	R	
45H73	Pioneer Hi-Bred Production Ltd.	H CL				-2	-2	0	118	124	125	123	-1	2	0	R	
SP Force CL	Saskatchewan Wheat Pool Inc.	O CL				1	-1	3	92	99	102	98	1	1	0	R	
5020	Bayer CropScience	H LL				-1	-4	0	124	127	131	127	-2	0	0	R	
5030	Bayer CropScience	H LL				-2	-1	3	126	131	130	129	0	5	0	R	
5070	Bayer CropScience	H LL				-1	-1	4	128	131	125	128	0	5	0	R	
9590	Bayer CropScience	H LL				-2	-2	1	124	127	128	127	-1	2	0	R	
74P00 LL	FarmPure Seeds Inc.	O LL				1	0	2	104	98	108	103	1	-1	0	MS	
BCS301L*	FarmPure Seeds Inc.	O LL				-2	-1	1	105	107	111	108	-1	1	0	MR	
46P50	Agricore United	H RR				1	1	3	127	128	121	125	2	3	0	R	
9551 ☹	Agricore United	O RR				0	-1	1	107	107	100	105	0	1	0	MR	
997 RR	Brett Young Seeds	O RR				0	-1	1	105	109	103	106	0	0	0	R	
1759 S	CANTERRA SEEDS	S RR				-1	-3	0	105	107	110	108	-1	0	0	MR	
1818 ☹	CANTERRA SEEDS	O RR				1	0	2	110	105	108	107	1	-3	0	R	
1839 V ☹	CANTERRA SEEDS	O RR				-2			99			99	-2	-4	0	MR	
1841	CANTERRA SEEDS	H RR					0	4		117	112	115	2	3	0	R	
1851 H	CANTERRA SEEDS	H RR					-1			110		110	-1	0	0	MR	
1852 H	CANTERRA SEEDS	H RR				-1	-3	0	114	114	110	113	-1	2	0	R	
1878 V ☹	CANTERRA SEEDS	O RR					0	3		104	105	104	1	1	0	MR	
1896	CANTERRA SEEDS	H RR				-1	-3		102	107		105	-2	0	0	R	
IMC209RR	Cargill Specialty Canola Oil	O RR	•					5			92	92	5	2	0	MR	
v1030	Cargill Specialty Canola Oil	H RR	•			-1	-2	0	108	118	107	112	-1	2	0	MR	
v1031	Cargill Specialty Canola Oil	H RR	•			-1	-1	2	110	120	108	114	0	3	0	MR	
v1035	Cargill Specialty Canola Oil	H RR	•			-1	-1	1	122	128	120	124	0	0	0	R	
45H21	CHECK2	H RR				-2	-3	0	117	121	121	120	-2	0	0	R	
32-75 ☹	DEKALB/Monsanto Canada Inc.	O RR				-1			106			106	-1	-4	0	R	
34-65 ☹	DEKALB/Monsanto Canada Inc.	O RR					-2	0		107	107	107	-1	1	0	R	
71-45 RR	DEKALB/Monsanto Canada Inc.	H RR				-2	-4	0	119	122	117	120	-2	0	0	MR	
Reaper ☹	FarmPure Seeds Inc.	O RR				2	1	3	97	91	95	94	2	0	0	R	
43A56 ☹	Pioneer Hi-Bred Production Ltd.	O RR	•			-5	-6		104	100		102	-6	-1	0	MR	
45H24	Pioneer Hi-Bred Production Ltd.	H RR				-2	-2	0	121	120	120	120	-2	3	0	R	
45H25	Pioneer Hi-Bred Production Ltd.	H RR				-2	-3	-1	114	121	116	118	-2	3	0	R	
45H26	Pioneer Hi-Bred Production Ltd.	H RR				-3	-2	0	125	126	125	126	-2	1	0	R	
SP Banner ☹	Saskatchewan Wheat Pool Inc.	O RR				0	-1	1	104	105	98	102	0	0	0	R	
SP Desirable	Saskatchewan Wheat Pool Inc.	S RR				-2	-3	-1	112	114	112	113	-2	1	0	R	
SW-PF 02-3902*	Saskatchewan Wheat Pool Inc.	S RR				-2	-2	2	112	110	112	111	-1	2	0	R	
SP 621 RR	Saskatchewan Wheat Pool Inc.	H RR				-1	-3		112	114		113	-2	0	0	MR	
SP Favourable RR	Saskatchewan Wheat Pool Inc.	S RR				1	0	3	113	117	117	116	1	2	0	MR	
Café ☹	SeCan	O RR				-3	-5		101	96		98	-4	-2	0	R	
Fortune RR	SeCan	O RR				-1	-2		99	96		97	-1	1	0	R	
SW H5263 RR* ☹	SW Seed Ltd.	O RR				1	0	4	108	103	98	103	1	-1	0	R	
SW H5269 RR*	SW Seed Ltd.	H RR				-1	-1	1	112	115	111	113	0	2	0	R	
SW H5289 RR*	SW Seed Ltd.	H RR				-1	-3	1	109	106	108	107	-1	0	0	R	

\* not yet registered

\*\* ST.YR = Station Year

▲ Varietal Kind: H = Hybrid, S = Synthetic, O = Open Pollinated

♣ Herbicide: CO = Conventional, CF = Clearfield, LL = Liberty Link, RR = Roundup Ready

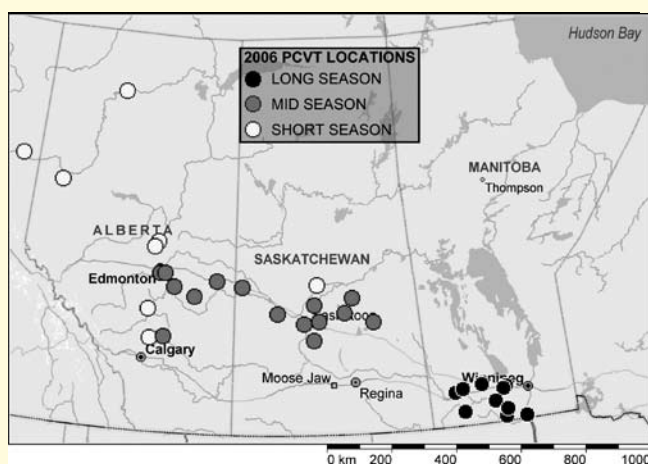
## Additional Information

The Prairie Canola Variety Testing (PCVT) program entered its fourth year in 2006. The testing system unites the provincial variety testing programs to standardize protocol and improve trial consistency and quality. Now growers can look to a single source of information on how a canola variety performed in three different zones across western Canada. The canola seed industry, WCC/RRC, Alberta Agriculture, Food and Rural Development, Saskatchewan Agriculture and Food, Manitoba Agriculture Food and Rural Initiatives, Agriculture and Agri-Food Canada and the Canola Council of Canada contributed to the development and operation of the PCVT.

Trials were conducted by seed companies, government researchers and independent contractors in three growing zones across the prairies: short-, mid- and long-season zones (see map). Varietal characteristics appear in the table. **It is important to note that this table represents data collected in one year only (2006).**

### Interpreting PCVT information:

1. Use the map to identify your zone of adaptation. For site-specific data please refer to the Canola Digest or the Canola Council of Canada website. Don't limit your search to the areas closest to you. Comparing local results to other locations with similar growing conditions can also be valuable.
2. The table shows variety yield as a percent relative to the check variety. Although variety trials are carefully conducted, small percentage differences (e.g. <5%) in yield are usually insignificant.
3. The table includes information on maturity, resistance to lodging, blackleg resistance, varietal type (open-pollinated, hybrid, synthetic) and herbicide tolerance. Use this information in addition to yield to choose a variety.



## Argentine Canola

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

## Polish Canola

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

In 2005, three varieties were tested in the PCVT. **AC Sunbeam** is available through SeCan members. **ACS-C7** is available through the Seidle Seed Farm or authorized seed dealers. **ACS-C7** is a synthetic variety with fair resistance to blackleg. **AC Sunbeam** is an open-pollinated variety. **SW SPIRIT RIVER** is an open-pollinated variety available through Peace Pedigreed Seed.

## Brassica juncea Canola

*Brassica juncea* canola is a new class of canola that is adapted to the brown and dark brown soil zones. It has very good resistance to blackleg and exhibits better heat and drought tolerance than other canolas. Juncea canola has shattering resistance similar to Polish canola, and is therefore well suited to straight combining. All production is contracted. The first two varieties, **Arid** and **Amulet**, yield approximately 112% of **AC Excel** (Argentine) in their zone of adaptation. The variety **Dahinda** yields about 103% of **Arid** and **Amulet**. A new variety, **Estlin**, has excellent lodging resistance and yields 105% of **Arid** and **Amulet**. Limited seed will be available in 2007.

## The Canola POD

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



Crop Kind, Class & Variety	Breeding Institution	Distributor
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**FEED BARLEY**

<b>Feed</b>		
CDC Bold	U of S - CDC	CANTERRA SEEDS
CDC Coalition	U of S - CDC	CANTERRA SEEDS
CDC Cowboy ☼	U of S - CDC	SeCan Members
CDC Dolly	U of S - CDC	SeCan Members
CDC Earl	U of S - CDC	SeCan Members
AC Harper ☼	AAFC (Lethbridge)	SeCan Members
CDC Heldason ☼	U of S - CDC	SeCan Members
AC Lacombe ☼	AAFC (Lacombe)	SeCan Members
Mannv ☼	AAFRD (Lacombe)	SeCan Members
McLeod ☼	Westbred, LLC	Agricore United
Niobe ☼	AAFRD (Lacombe)	Sask. Wheat Pool Inc.
Niska	AAFRD (Lacombe)	SeCan Members
Ponoka ☼	AAFRD (Lacombe)	CANTERRA SEEDS
AC Rosser ☼	AAFC (Brandon)	SeCan Members
Sundre	Alberta Agriculture	SeCan Members
CDC Trey	U of S - CDC	Mastin Seeds
Trochu ☼	AAFRD (Lacombe)	FarmPure Seeds Inc.
Vivar ☼	AAFRD (Lacombe)	SeCan Members
Xena ☼	AAFRD (Lacombe)	SeCan Members
	Agricore / W. Plant Breeders	Agricore United
		Sask. Wheat Pool Inc.

**Hullless**

AC Bacon	AAFC (Brandon)	SeCan Members
CDC Freedom	U of S - CDC	SeCan Members
CDC Gainer	U of S - CDC	FarmPure Seeds Inc.
HB 805	W. Plant Breeders	Agricore United
CDC McGwire ☼	U of S - CDC	SeCan Members
Peregrine	AAFRD (Lacombe)	Progressive Seeds Ltd.

**Forage**

Binscarth	AAFC (Brandon)	
CDC Cowboy	U of S - CDC	SeCan Members
Dillon ☼	W. Plant Breeders	Agricore United
AC Ranger	AAFC (Brandon)	FarmPure Seeds Inc.
Stockford ☼	W. Plant Breeders	Agricore United
Westford	W. Plant Breeders	Agricore United
		Sask. Wheat Pool Inc.

**Food Barley**

CDC Alamo	U of S - CDC	Agricore United
CDC Candle	U of S - CDC	Agricore United
CDC Fibar	U of S - CDC	Agricore United
Merlin ☼	W. Plant Breeders	Agricore United
CDC Rattan	U of S - CDC	Agricore United

**OAT**

AC Assiniboia ☼	AAFC (Winnipeg)	Proven Seed
CDC Baler	U of S - CDC	FarmPure Seeds Inc.
CDC Bell	U of S - CDC	Sask. Wheat Pool Inc.
SW Betania ☼	SW Seed Ltd.	Agricore United
CDC Boyer	U of S - CDC	SeCan Members
Boudrias ☼	AAFC (Lacombe)	FarmPure Seeds Inc.
Bullion	SW Seed Ltd.	Agricore United
Calibre	U of S - CDC	SeCan Members
CDC Dancer ☼	U of S - CDC	FarmPure Seeds Inc. / Cargill
Derby	U of S - CDC	Proven Seed
Furlong ☼	AAFC (Winnipeg)	CANTERRA SEEDS / Cargill
AC Gwen	AAFC (Winnipeg)	SeCan Members
HiFi ☼	North Dakota State University	Seed Depot
Jordan	AAFC (Winnipeg)	SeCan Members
Lee Williams	AAFC (Lacombe)	CANTERRA SEEDS
Leggett ☼	AAFC (Winnipeg)	FarmPure Seeds Inc.
Lu	AAFC (Lacombe)	SeCan Members
AC Morqan	AAFC (Lacombe)	SeCan Members
Murphy ☼	AAFC (Lacombe)	SeCan Members
CDC Orrin ☼	U of S - CDC	FarmPure Seeds Inc.
Pinnacle ☼	AAFC (Winnipeg)	FarmPure Seeds Inc.
Ronald ☼	AAFC (Winnipeg)	SeCan Members
CDC Sol-Fi	U of S - CDC	Agricore United
Triple Crown ☼	SW Seed Ltd.	FarmPure Seeds Inc.
CDC Weaver	U of S - CDC	FarmPure Seeds Inc.

Crop Kind, Class & Variety	Breeding Institution	Distributor
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**CANARY SEED**

Cantate		Hansen Seeds
Elias	U of Minnesota; U of S - CDC	Public
Keet	U of Minnesota; U of S - CDC	Public
CDC Maria	U of S - CDC	C. Special Crops
CDC Togo	U of S - CDC	CANTERRA SEEDS

**SAFFLOWER**

Saffire	AAFC (Lethbridge)	Jerry Kubic (AB)
AC Sunset	AAFC (Lethbridge)	Proven Seed

**LENTIL**

CDC Blaze	U of S - CDC	Sask. Pulse Growers
Crimson	USDA / Washington State U	Public
Eston	U of S - CDC	SeCan Members
CDC Glamis	U of S - CDC	Sask. Pulse Growers
CDC Grandora	U of S - CDC	Sask. Pulse Growers
CDC Greenland	U of S - CDC	Sask. Pulse Growers
CDC Impact CL	U of S - CDC	Sask. Pulse Growers
CDC Imperial CL	U of S - CDC	Sask. Pulse Growers
CDC Improve CL	U of S - CDC	Sask. Pulse Growers
Indian Head		
Laird	U of S - CDC	SeCan Members
CDC LeMav	U of S - CDC	Sask. Pulse Growers
CDC Matador	U of S - CDC	
CDC Meteor	U of S - CDC	Sask. Pulse Growers
CDC Milestone	U of S - CDC	Sask. Pulse Growers
CDC Plato	U of S - CDC	Sask. Pulse Growers
CDC Redberry	U of S - CDC	Sask. Pulse Growers
Red Chief		
CDC Richlea	U of S - CDC	SeCan Members
CDC Robin	U of S - CDC	Sask. Pulse Growers
CDC Rosetown	U of S - CDC	Sask. Pulse Growers
CDC Rouleau	U of S - CDC	Sask. Pulse Growers
CDC Sedley	U of S - CDC	Sask. Pulse Growers
CDC Sovereign	U of S - CDC	Sask. Pulse Growers
CDC Vantage	U of S - CDC	Sask. Pulse Growers
CDC Viceroy	U of S - CDC	Sask. Pulse Growers

**FIELD PEA**

40-10	SWS, Germany	FarmPure Seeds Inc.
CDC Acer	U of S - CDC	Sask. Pulse Growers
DS Admiral ☼	Danisco Seeds	FarmPure Seeds Inc.
Alfetta ☼	Cebeco Zaden	FarmPure Seeds Inc.
SW Benefit	Svalof Weibull, Sweden	Nordicks Norsask
Bluebird ☼	Cebeco Zaden	Bob Park - Lacombe, AB
CDC Bronco	U of S - CDC	Sask. Pulse Growers
Camry ☼	Cebeco Zaden	FarmPure Seeds Inc.
Canstar ☼	AAFC	Canseed
SW Capri ☼	SW Seed Ltd.	CANTERRA SEEDS
Carneval ☼	SW Seed Ltd.	Sask. Wheat Pool Inc.
SW Carousel	SW Seed Ltd.	SW Seed Ltd.
SW Cartier	Svalof Weibull, Sweden	CANTERRA SEEDS
SW Circus ☼	SW Seed Ltd.	SeCan Members
Cooper ☼	Cebeco Zaden	CANTERRA SEEDS
Courier	NZ Crop & Food	CANTERRA SEEDS
Cutlass	AAFRD / CDC	Sask. Pulse Growers
Eclipse ☼	Cebeco Zaden	FarmPure Seeds Inc.
Fusion	Innoseeds, Netherlands	CANTERRA SEEDS
CDC Golden	U of S - CDC	Sask. Pulse Growers
CDC Handel	U of S - CDC	Sask. Pulse Growers
MAJORET ☼	SW Seed Ltd.	SW Seed Ltd.
SW Marquee	SW Seed Ltd.	Sask. Wheat Pool Inc.
SW Midas ☼	SW Seed Ltd.	FarmPure Seeds Inc.
Miser ☼	AAFC	FarmPure Seeds Inc.
CDC Minuet	U of S - CDC	Sask. Pulse Growers
CDC Montero	U of S - CDC	Sask. Pulse Growers
CDC Mozart	U of S - CDC	Sask. Pulse Growers
NITOUICHE ☼	DLF Trifolium (Denmark)	FarmPure Seeds Inc.
SW Parade ☼	SW Seed Ltd.	Sask. Wheat Pool Inc.
Polstead ☼	Innoseeds, Netherlands	FarmPure Seeds Inc.
SW Prize	SW Seed Ltd.	Nodricks Norsask Ltd.
Reward ☼	AAFC (Lacombe)	SeCan members
CDC Sage	U of S - CDC	Sask. Pulse Growers
SW Salute ☼	SW Seed Ltd.	FarmPure Seeds Inc.
SW Sargeant	Svalof Weibull, Sweden	FarmPure Seeds Inc.
CDC Sonata	U of S - CDC	Sask. Pulse Growers
Stratus ☼	Cebeco Zaden	CANTERRA SEEDS
CDC Striker	U of S - CDC	Sask. Pulse Growers
Tamora ☼	Innoseeds, Netherlands	FarmPure Seeds Inc.
TOLEDO	Cebeco Zaden	CANTERRA SEEDS
Topeka ☼	Cebeco Zaden	CANTERRA SEEDS

Crop Kind, Class & Variety	Breeding Institution	Distributor
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#### Field Pea (cont'd)

Trapper	AAFC (Morden)	Public
Tudor ☼	Cebeco Zaden	FarmPure Seeds Inc.
Venture	Axel Toft	Johnson Seeds (MB)
Victoria	SW Seed Ltd.	FarmPure Seeds Inc.
Vortex	Globe Seeds (Netherlands)	Terramax
Whero	Challenge Seeds	FarmPure Seeds Inc.

#### Chickpea

Desi		
CDC Anna	U of S - CDC	Sask. Pulse Growers
CDC Cabri	U of S - CDC	Sask. Pulse Growers
CDC Desiray	U of S - CDC	Sask. Pulse Growers
Myles	USDA / Washington State U	Public
CDC Nika	U of S - CDC	Sask. Pulse Growers

#### Kabuli

Amit (B-90) ☼		Proven Seed
CDC Chico	U of S - CDC	Sask. Pulse Growers
CDC ChiChi	U of S - CDC	Sask. Pulse Growers
CDC Diva	U of S - CDC	Sask. Pulse Growers
Dwellely	USDA / Washington State U	Public
Evans	USDA / Washington State U	Public
CDC Frontier	U of S - CDC	Sask. Pulse Growers
Sanford	USDA / Washington State U	Public
CDC Xena	U of S - CDC	Sask. Pulse Growers
CDC Yuma	U of S - CDC	Sask. Pulse Growers

#### Dry Bean

AC Black Diamond		
CDC Camino	U of S - CDC	Sask. Pulse Growers
Cruiser		
Envoy		
Othello	USDA / ARS (Prosser, WA)	Public
US 1140	USDA	Public
CDC Espresso	U of S - CDC	CANTERRA SEEDS
CDC Jet	U of S - CDC	B&J Martens Seeds
CDC Minto	U of S - CDC	CANTERRA SEEDS
CDC Nighthawk	U of S - CDC	FarmPure Seeds Inc.
CDC Pinnacle	U of S - CDC	Sask. Pulse Growers
CDC Pintium	U of S - CDC	Sask. Pulse Growers
CDC Polar Bear	U of S - CDC	CANTERRA SEEDS
AC Polaris		
AC Redbond		
Viva		Public
CDC Whitecap	U of S - CDC	CANTERRA SEEDS

#### Faba Bean

Aladin	University of Manitoba	Public
CDC Blitz	U of S - CDC	
Cresta	Saatbau Linz	CANTERRA SEEDS
CDC Fatima	U of S - CDC	Agriprogress Inc.
Orion	AAFC (Lacombe)	R.Legumex / Walker S.
Outlook	U of S - CDC	Roger Lee, Lyster Farm
Scirocco	NPZ-Lembke	SeCan Members
Snowbird	Innoseeds BV	Agriprogress Inc.
		Bob Park - Lacombe, AB

#### Flax

CDC Arras	U of S - CDC	FarmPure Seeds Inc.
CDC Bethune ☼	U of S - CDC	SeCan Members
CDC Gold	U of S - CDC	Sask. Wheat Pool Inc.
Hanley ☼	AAFC (Morden)	SeCan Members
Lightning ☼	AAFC (Morden)	CANTERRA SEEDS
Macbeth ☼	AAFC (Morden)	Proven Seed
CDC Mons	U of S - CDC	FarmPure Seeds Inc.
CDC Normandy	U of S - CDC	SeCan Members
Prairie Blue ☼	AAFC (Morden)	SeCan Members
Prairie Thunder	AAFC (Morden)	CANTERRA SEEDS
CDC Sorrel	U of S - CDC	SeCan Members
Taurus ☼	Cebeco Zaden	FarmPure Seeds Inc.
Vimy	U of S - CDC	SeCan Members
AC Watson ☼	AAFC (Morden)	Sask. Wheat Pool Inc.
2090 ☼	CSIRO / UGG	Proven Seed
2149	CSIRO / UGG	Proven Seed

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

Brown		
Commercial Brown		Trade
Centennial Brown	AAFC (Saskatoon)	Members of the Canadian Mustard Association
Duchess	Proven Seed	Proven Seed

#### Oriental

Cutlass	AAFC (Saskatoon)	Trade
Forge	Colman's of Norwich	Sask. Wheat Pool Inc.
AC Vulcan	AAFC (Saskatoon)	Trade

#### Yellow

Ace	John S. Hemingway	Proven Seed
Andante	AAFC (Saskatoon)	Members of the Canadian Mustard Association
AC Base	AAFC (Saskatoon)	Trade
AC Pennant	AAFC (Saskatoon)	Trade

#### Sunflower

63A21	Pioneer Hi-Bred	Pioneer Hi-Bred
63A70	Pioneer Hi-Bred	Pioneer Hi-Bred
63M02	Pioneer Hi-Bred	Pioneer Hi-Bred

**Canola** - see Canola table VR20

#### Abbreviations used in this list

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