

Varieties of grain crops

2001



Saskatchewan
Agriculture
and Food

Crop Production Areas



The cropland of Saskatchewan has been divided into four areas based roughly on climate, vegetation and soil type. The relative yields of crop varieties tend to vary from area to area. In choosing a variety, farmers will want to consider the yields in their area and special requirements such as early maturity, disease resistance or sawfly resistance.

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 sawflies may be problems in the western and central sections of the area. Cereal rust may be a problem in the southeastern section.

Area 3: 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 northwestern and northeastern sections.

Area 4: Rainfall is usually adequate for crop production. However, early fall frosts and wet harvest weather 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 2001 Seed Guide:

- ^ Variety may not be described in 2002
- 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

The performance of crop varieties is tested regularly at a number of locations across Saskatchewan. Data from these trials are summarized and interpreted by the Saskatchewan Advisory Council on Grain Crops every year.

The trials are conducted by researchers from plant breeding institutions. The most recently registered varieties and promising experimental lines that might become registered are compared to standard varieties.

Wheat, oat, barley and flax varieties are grown at all locations, while canola, mustard, field pea, lentil, bean and chickpea are tested in those regions where they are best adapted. Information on sunflower production is received from trials conducted under the auspices of the Saskatchewan Sunflower Committee.

The reaction of varieties to diseases and seed treatment recommendations are updated and forwarded to the Grain Crops Council by pathologists who meet as members of the

Plant Disease Sub-council of the Council on Crop Protection.

Variety trials are grown both on farmers' fields and research stations. Multiple small plots of the various varieties are sown and harvested with small-scale press-drills and combines.

Relative yield of varieties

Grain yield results from the interplay of genetic factors and non-genetic factors. Variety trials are designed to measure the differences among varieties that are due to genetic causes. It is important to minimize variability due to non-genetic factors such as soil type, nutrients, moisture, weeds, diseases, and other pests.

Experimental designs using replication (repeated plantings of the varieties) and randomization (the position of the varieties within the test are assigned by chance) are then used to estimate the precision with which the genetic factors can be measured. Yield potential of a variety is estimated by measuring the weight of grain produced per unit area.

Comparisons among varieties for yield potential involves an evaluation of both their absolute amounts of grain and their relative yield. Relative yield is the yield of one variety expressed as a percentage of a second variety.

Yields obtained in these trials are not identical to those obtained under commercial production conditions. However, the average yield for these varieties, obtained over a number of years at several locations, would remain in relatively the same ratio regardless of whether the grain yields were measured in small plots or large-scale fields.

Relative yields are the best estimates of expected yield advantage in the areas indicated. They are more reliable than estimates based on data from a single test or from a single location. Farmers should be aware, however, that actual yields within an area, or in a particular year, may vary substantially from the average figures reported because of natural variability.

Relative Maturity

Ratings

Relative maturity ratings are average number of days from seeding to swathing ripeness. The actual number of days to reach maturity depends on local climate and to some extent on management practices.

Some of the following tables 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). Medium applies to the most widely grown check variety which appears at the top of each table. The limits for each category vary from crop to crop. In barley, for example, Harrington would be medium with L and E varieties

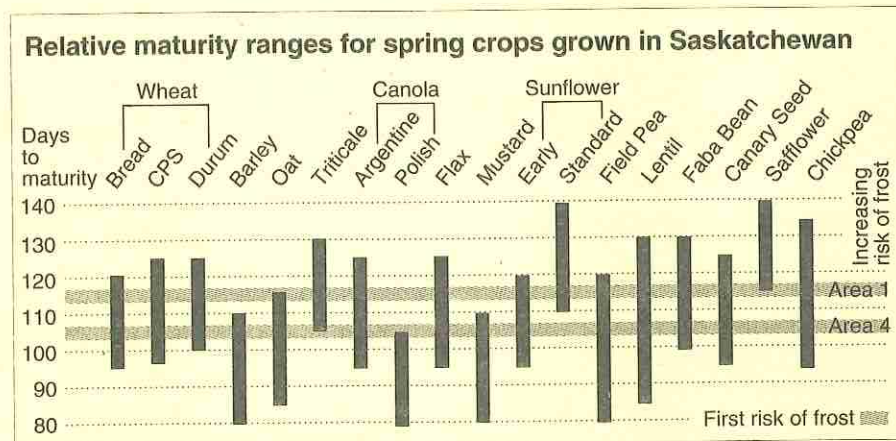
plus or minus 1-2 days, and VL and VE varieties beyond these.

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.

Maturity is measured from seeding to swathing ripeness. 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.



Plant Disease Resistance

Resistance to the most important diseases in western Canada is generally assessed in each crop 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 good 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. Current commercial chickpea varieties such as Sanford and Dwelley have some resistance to the disease. 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 such as Sanford and Dwelley do not show good 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

Plants 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 improved crop varieties for Canadian farmers.



Plants 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, he 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 his agent and; 2) payment of a royalty to the breeder or his 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 PBR logo above.

Further information on Plant Breeders' Rights can be obtained from the Plant Breeders' Rights Office, tel. (613) 225-2342, fax (613)228-6629.

Cereal Crops

Wheat

Main characteristics of varieties

Type & Variety	Years tested	Yield as % of Barrie					Relative maturity in days	Protein	Lodging	Shattering	Sprouting	Resistance to					
		Area 1	Area 2	Area 3	Area 4	Irrigation						Stem rust	Leaf rust	Loose smut	Bunt	Leaf spot	FHB
Bread Wheat																	
AC Barrie Δ	9	100	100	100	100	100	100	14.7	G	G	G	G	P	G	G	P	F
AC Abbey Δ	7	100	94	95	95	98	-1	-0.8	F	G	P	G	P	F	G	P	P
Alikat	4	---	87	92	---	---	0	0.0	F	G	--	G	P	G	F	--	--
CDC Bounty	5	104	104	106	106	---	-1	0.0	F	G	F	G	F	G	F	P	F
AC Cadillac Δ	7	100	103	102	101	98	-1	-0.2	F	G	F	G	G	VG	VG	P	F
Columbus	5	---	94	93	---	84	+3	-0.2	F	F	VG	F	P	F	VG	P	P
AC Cora	8	99	97	94	95	92	-2	-0.3	F	G	F	G	VG	G	G	P	F
AC Domain \wedge	6	96	94	94	86	89	-2	+0.1	G	G	VG	G	G	VG	F	VP	P
AC Eatonia	7	92	94	90	84	---	0	+0.2	P	G	VG	F	P	F	G	P	--
AC Elsa Δ	7	102	104	105	98	97	-1	-0.1	F	G	F	G	G	G	G	F	P
AC Intrepid Δ	7	100	101	106	102	102	-3	-0.3	G	G	P	G	G	F	G	P	P
Katepwa	9	97	94	92	93	89	-2	-0.5	F	G	F	G	VP	G	G	P	F
Laura \wedge	8	100	103	98	95	82	+1	-0.4	F	G	F	G	G	F	P	P	P
AC Majestic	8	93	97	97	96	86	+2	-0.2	G	F	VG	G	P	F	VG	F	F
McKenzie	7	107	105	101	96	109	-2	-0.5	F	G	G	G	VG	VP	VG	P	F
Prodigy	6	101	105	106	101	---	+1	+0.4	G	F	F	G	G	F	VG	P	P
AC Splendor	8	91	91	94	92	89	-4	+0.4	F	G	F	G	VG	F	G	VP	P
CDC Teal	7	98	100	103	96	96	-2	-0.1	G	G	P	G	G	G	F	P	VP
5600HR Δ	5	98	99	97	99	---	+2	-0.5	G	G	G	F	VG	VG	VG	P	P
Canada Prairie Spring Wheat*																	
Red Seeded																	
AC Crystal Δ	8	119	123	118	118	113	+3		VG	VG	P	G	P	F	G	F	VP
AC Foremost	8	119	122	118	116	109	+2		G	G	F	G	P	F	G	P	VP
AC Taber	8	117	123	118	114	116	+4		VG	VG	P	G	G	P	G	F	VP
White Seeded																	
AC Karma Δ \wedge	9	117	123	119	121	110	+2		G	G	P	G	F	F	G	P	P
AC Vista Δ	8	120	126	125	119	116	+1		G	G	F	G	P	G	G	P	VP
AC 2000 ∇	4	111	112	105	106	103	+3		G	G	F	F	P	F	G	P	P
Canada Western Extra Strong*																	
Amazon ∇	5	102	105	109	113	---	+2		F	G	P	G	G	VG	F	F	P
AC Corinne	5	99	101	101	109	---	+3		F	G	G	G	G	VG	F	P	P
AC Glenavon ∇	4	99	105	108	114	---	+2		F	G	--	G	G	VG	F	P	P
Laser \wedge	1	97	103	104	101	92	-1		F	G	P	P	P	VG	VP	P	F
Glenlea	7	102	105	108	106	---	+2		F	G	P	G	G	VG	F	P	P
Durum																	
Yield as % of Kyle																	
Kyle	12	100	100	100	100	100	+3	13.6	P	VG	F	VG	VG	P	VG	P	VP
AC Avonlea Δ	7	105	106	111	--	--	+2	0.1	F	VG	F	VG	VG	P	VG	P	VP
AC Melita	7	95	96	101	--	110	+1	-0.2	F	VG	F	VG	VG	P	VG	VP	VP
AC Morse ∇	8	103	102	109	--	111	+3	-0.1	G	VG	F	VG	VG	VP	VG	VP	VP
AC Navigator Δ	5	104	101	97	--	--	+3	-0.3	G	VG	F	VG	VG	VP	VG	VP	VP
Plenty \wedge	12	101	106	107	--	109	+2	-0.1	F	VG	F	VG	VG	P	VG	F	VP
Sceptre	11	96	97	99	103	112	0	-0.6	G	VG	P	VG	VG	P	VG	P	VP

* Includes direct and indirect comparisons with AC Barrie
Regional Trials are funded by Sask Agr. Food, AAFC, Sask Water, and SWP.

Wheat (Cont'd)

Additional Information

All varieties of common wheat are compared to **AC Barrie**.

Several new races of leaf rust capable of overcoming leaf rust resistance gene Lr 16 have multiplied rapidly. If varieties rated poor or very poor for leaf rust are sown in south eastern Saskatchewan, risk of crop losses may be minimized by early seeding. Durum wheat varieties are 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 pamphlet or *Guide to Crop Protection 2001*.

Most of the varieties have been rated for their relative resistance to pre-harvest sprouting. During wet harvest weather, grades drop more rapidly due to sprouting in swathed than in standing crops.

Canada Western Red Spring Wheat

Seed of the new varieties **CDC Bounty**, and **Alikat**, will not be available in 2001.

AC Abbey is resistant to the wheat stem sawfly, has semidwarf stature and an awned head.

Alikat has improved tolerance to aluminum toxicity caused by acid soil conditions.

AC Cadillac and **CDC Bounty** have a large seed size and an exceptionally heavy test weight.

AC Eatonia is resistant to wheat stem sawfly.

McKenzie has an awned head and may also be identified by a purplish stem.

Prodigy has awns and an exceptionally heavy test weight.

Canada Prairie Spring Wheat

AC Karma, **AC Vista**, **AC Crystal**, and **AC Foremost** have resistance to loose smut, except the new race T9. In order to prevent the spread of this new race, all Canada Prairie Spring seed produced in northeastern Saskatchewan should be treated with a systemic fungicide. Please refer to the Seed Facts section or to the *Guide to Crop Protection 2001*.

AC Vista and **AC2000** have higher protein content, and stronger gluten than **AC Karma**. Limited quantities of seed of **AC2000** will be available in 2001.

AC Crystal has improved quality compared to **AC Foremost** and **AC Taber**.

Canada Western Extra Strong

Certified seed of **Amazon**, **AC Corinne**, and **AC Glenavon** will not be available in 2001.

Laser has weaker gluten strength than **Glenlea**. **Laser** is proposed for deregistration in 2004.

Canada Western Amber Durum

All durum varieties are susceptible to two new races of loose smut. Seed can be treated to provide control. See the Seed Facts section for details.

Kyle receives better grades than other varieties even under adverse harvesting conditions.

AC Avonlea has shorter stronger straw than **Kyle**. **AC Avonlea** has higher pigment content in the grain than other varieties.

AC Morse has short, strong straw like **Sceptre**, and has lower test weight than **Kyle**.

Under some conditions, the stems of **Plenty** break off near ground level.

AC Navigator has extra strong gluten properties and semidwarf stature. It may be grown only under contract with the Canadian Wheat Board and Saskatchewan Wheat Pool.

Soft White Spring Wheat

AC Reed and **AC Phil** have similar yield potential to **Fielder** and mature about 2 days earlier. **AC Reed** and **AC Phil** are moderately resistant to shattering, powdery mildew and common root rot, moderately susceptible to leaf and stem rust, and susceptible to common bunt. **AC Phil**, generally, has less black point than **AC Reed** and **Fielder**. **AC Nanda** has improved resistance to common bunt, powdery mildew, and black point. It yields about the same as **Fielder** and is two days later maturing. Seed of **AC Nanda** will not be available in 2001. Soft-white spring wheats are susceptible to pre-harvest sprouting.

Winter Wheat

Main characteristics of varieties

Variety	Years tested	—Grain yield as % of CDC Kestrel—				Protein	Lodging	Resistance to			
		Areas 1 & 2	Areas 3 & 4	Irrigation	Winter Damage			Stem Rust	Leaf Rust	Bunt	
CDC Kestrel	15	100	100	100	10.8	G	G	P	P	P	
CDC Clair	10	102	101	94	11.7	G	G	P	P	P	
CDC Osprey	10	100	99	90	11.8	G	G	P	P	P	
CDC Harrier	7	103	102	107	11.1	G	G	G	P	P	
CDC Falcon	6	101	97	116	11.9	VG	G	G	G	P	
CDC Raptor	5	102	99	110	11.8	VG	G	G	G	P	
CDC Ptarmigan	5	116	108	--	9.8	G	F	P	P	P	

CDC Ptarmigan is a soft white winter wheat. All other cultivars belong to the hard red winter wheat class.

Rye

Main characteristics of varieties

Variety	Years tested	Yield as % of Prima				Maturity	Winter Killing	Resistance to		
		Area 1	Area 2	Area 3	Area 4			Shattering	Lodging	Stem Smut
Prima	20	100	100	100	100	M	VG	F	F	G
AC Rifle	11	115	95	94	---	M	VG	VG	VG	G
Dakota	4	112	115	99	---	L	VG	---	G	---
AC Remington	3	---	100	---	---	M	VG	VG	G	---

Comments:

Gazelle is the only registered variety of spring rye. **Danko** and **Kodiak** are very susceptible to winter killing in Saskatchewan and therefore should only be considered for production using some form of tillage conservation.

Triticale

Main characteristics of varieties

Variety	Years tested	Yield as % of AC Certa					Test wt. (kg/hl)	Maturity	Lodging	Resistance to			
		Area 1	Area 2	Area 3	Area 4	Irr*				Stem rust	Leaf rust	Bunt	Root rot
AC Certa	9	100	100	100	---	100	74	M	G	VG	VG	VG	G
AC Alta	9	103	103	98	---	109	68	L	G	VG	VG	VG	F
AC Copia	11	99	98	94	---	99	72	M	G	VG	VG	VG	F
Pronghorn	9	99	101	102	---	107	69	E	G	VG	VG	VG	F
Sandro	6	103	101	94	---	---	73	E	G	VG	VG	VG	G
AC Ultima	5	105	106	103	---	---	70	E	G	VG	VG	VG	F

* Relative yield under irrigation is based on limited data.

Additional Information

Triticale matures 2-3 days later than **AC Taber** CPS wheat, therefore it should be planted as early as possible. Some cultivars of triticale will mature very late in Area 4. 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** is a new cultivar of spring triticale. It has improved Hagberg Falling Number. Seed supplies of **AC Ultima** will not be available in 2001.

Winter triticale has winter hardiness equal to that of winter wheat. **Pika** is the only cultivar of winter triticale with seed available. **Bobcat** is a new cultivar of winter triticale. It is awnleted with shorter and stronger straw than **Pika**. Seed of **Bobcat** will not be available in 2001.

Wheat Stem Sawfly

Area of Infestation: Sawfly (*Cephus cinctus* Nort.) damage to wheat occurs in south central to south western Saskatchewan and southern Alberta (page v.r.1). The wheat appears to be lodged. On close examination, the stems are cut at ground level or detach easily when tugged. A stem split lengthwise reveals an abundance of frass, powdery waste from the sawfly. The subcrown internode contains the sawfly larva in its cocoon.

Life Cycle: To survive the winter, the larva spins its cocoon below the soil surface. Mid June to mid-July the following year, the sawfly emerge as a wasp-like insect. It finds a tender elongating portion of a wheat stem, saws a tiny hole, and lays an egg inside the wall. The egg hatches and the larva feeds on the

Sawfly Control

Resistant Varieties:

CWRS: Two solid stem varieties are available, **AC Eatonia** and **AC Abbey**.

Sawfly feed easily throughout the length of regular hollow stem varieties. Sawfly resistant varieties have solid stems that are filled with pith, especially in the lower part. The pith slows the movement of the sawfly larvae, many dying before they reach the sub-crown internode. As a result, there is far less cutting in sawfly resistant varieties. The reduction in cutting also depends on the growing season. The formation of pith is depressed when the conditions during stem growth are cloudy. Under those conditions a 'solid stem' variety may have more cutting than desirable.

Alternate varieties A sawfly resistant variety may be grown on a field until the sawfly level is reduced. Then grow a hollow stem variety until an increase in cutting is observed.

Border Planting of Resistant Variety Sawfly inhabit the native grasses in uncultivated areas around a field. If the source of sawfly is adjacent uncultivated land or an adjacent wheat field, a border of a sawfly resistant variety may be planted around a field containing a non-resistant variety.

The border should be from the same wheat class. The sawfly is a weak flyer so most will lay their eggs in this border strip which reduces the damage to the non-resistant variety.

Mixtures of resistant and non-resistant wheat varieties may be tried.

Durum: Another consideration may be to grow durum wheat which is generally cut less by the sawfly than hollow stemmed wheats.

Agronomic Practices:

Sawfly damage can be reduced by:

- delayed planting
- swathing before the stems are cut
- fall cultivation brings the plugs to the surface where they are dried out, and buries others too deep for the sawfly to emerge.
- using pick-up reels
- tillage
- summerfallow
- burning
- crop rotations with non-host crops such as lentils, peas, canola, mustard, oats, barley and rye. Barley and rye can be slightly infected.

Insecticide: Insecticides are not effective in controlling sawfly.

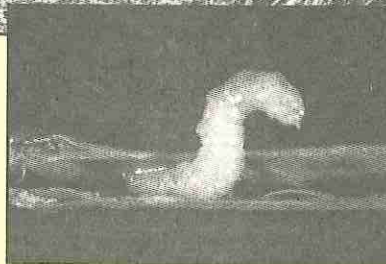
Parasite: The natural parasite, *Bracon cephi*, eats the larvae. A build up of the parasite reduces sawfly damage and plugs available for the next growing season. The problem is that the parasite takes a couple of seasons to build up, and the sawfly damage is already taking its toll.

Websites:

<http://www.gov.mb.ca/agriculture/crops/insects/fad20s00.html>
<http://itsd-s3.agric.gov.ab.ca/pests/insects/62010240.html>



Above: A crop with sawfly damage
Right: Sawfly larva with characteristic 'S' shape.



inside wall of the stem. At maturity, the larva girdles the stem above the sub-crown internode. The larva makes a plug in the stem just below the cut on the stem and encloses itself in a cocoon.

Damage: Girdling weakens the stem so it easily falls over, making it difficult to harvest which results in a yield loss. Another source of yield loss is from the sawfly feeding on the inside of the stem which reduces the number of seeds per head and seed plumpness.

Considerations for Use of Resistant Varieties Sawfly resistant varieties are lower yielding than hollow stem varieties. The farmer must weigh potential income loss from sawfly damage of hollow stem cultivars against the financial loss from growing a lower yielding sawfly resistant variety.

Malting Barley

Main characteristics of varieties

Category† and variety	Years tested	2 or 6 row	Rough or smooth awns	—Yield as % of Harrington—				Relative maturity rating*	Straw††	Lodging	Resistance to						
				Area 1	Area 2	Area 3	Area 4				Net blotch	Scald	Loose smut	Other smuts	Root rot	Stem rust	Fusarium Head Blight
Malting acceptance: Recommended																	
Harrington	19	2	R	100	100	100	100	M	N	F	VP	P	P	P	F	P	F
AC Metcalfe Δ	8	2	R	102	111	113	116	M	N	G	F	P	VG	F	F	G	F
CDC Kendall	8	2	R	100	113	116	117	M	N	G	F	P	P	P	F	G	F
CDC Stratus	8	2	R	101	115	120	119	M	N	G	F	P	F	F	F	G	F
Merit Δ	6	2	R	107	128	130	125	L	N	F	F	P	P	G	F	G	P
Stein	13	2	R	105	107	113	115	M	N	F	F	P	P	G	P	G	--
B1602	10	6	R	89	107	107	116	M	N	G	F	P	P	G	VG	G	P
Excel	6	6	S	100	115	122	119	M	N	VG	F	P	P	G	G	G	P
Robust	5	6	S	88	105	111	108	M	N	G	F	P	P	F	G	G	P
Malting acceptance: Limited																	
Manley	14	2	R	107	111	115	118	L	N	G	F	P	P	VG	F	G	P
CDC Sisler Δ	6	6	S	98	116	124	117	M	N	F	P	P	P	P	F	G	F
Malting acceptance: Not Recommended																	
AC Oxbow \wedge	10	2	R	99	103	107	111	M	N	VG	F	P	VG	G	P	G	F
Malting acceptance: Under Test																	
AC Bountiful	7	2	R	105	117	125	120	M	N	G	G	P	VG	VG	F	G	F
CDC Copeland \blacktriangleright	4	2	R	110	124	128	125	M	N	G	F	P	P	F	F	F	--
CDC Select \blacktriangleright	3	2	R	105	122	120	--	M	N	G	F	P	F	F	F	F	--
CDC Yorkton \blacktriangleright	4	6	S	94	116	128	134	M	N	G	G	P	P	G	F	G	--

† These categories are established annually by the Malting Barley Industry Group (call 1-800-275-4292 for more information).

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

†† N = normal, SD = semidwarf

Lines Under Evaluation of 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 2001 will be malted in January-February, 2002. It will be brewed in May-June 2002, aged and tasted in October-November 2002.

Additional Information:

Six-rowed white aleurone malting varieties cannot be distinguished from feed varieties. Therefore, they should be grown under contract to ensure purity and eligibility for malting consideration.

Growers are reminded that the industry is cautious about using new varieties.

Growers are cautioned that malting varieties, especially two rows, are very susceptible to sprouting.

RECOMMENDED MALTING BARLEY VARIETIES

from the Malting Barley Industry Group 2001-02

Recommendations from the Malting Barley Industry Group are based on anticipated markets in the 2001-02 crop year. These recommendations are one source of information used to decide whether to grow a variety of malting barley. Other important considerations are disease resistance and the suitability of a variety's agronomic characteristics in a farming area. Consult your provincial agriculture representative and talk to your elevator manager about local market demand for particular varieties.

TWO-ROW VARIETIES

Variety	Industry Recommendation			Comments
	Recommended	Limited Increasing Demand	Not Recommended Declining Demand	
Harrington	✓			widely accepted domestically and for export
Stein	✓			established export markets (UGG)
AC Metcalfe	✓			established domestic markets; potential export markets
CDC Kendall	✓			expanding domestic markets; potential export markets (Agricore & SWP)
CDC Stratus	✓			expanding domestic markets; potential export markets
Merit	✓			limited domestic markets; expanding export markets (Agricore, SWP & BARI)
Manley			✓	
AC Oxbow			✓	
B1215			✓	

There is a small domestic market for B1202. The varieties AC Bountiful (TR243) and CDC Copeland (TR150) are not being grown for the commercial market. Limited quantities are being grown for market development and testing purposes.

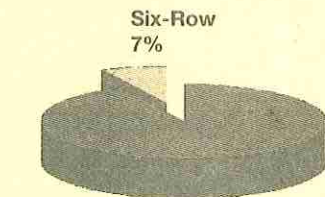
SIX-ROW VARIETIES

Variety	Industry Recommendation			Comments
	Recommended	Limited Increasing Demand	Not Recommended Declining Demand	
Excel	✓			established demand
Robust	✓			established demand
B1602	✓			established demand (Agricore, SWP and BARI)
CDC Sisler		✓		growing market demand (UGG)
Foster			✓	

The varieties BT435 and CDC Yorkton (BT459) are not being grown for the commercial market. Limited quantities are being grown for market development and testing purposes.

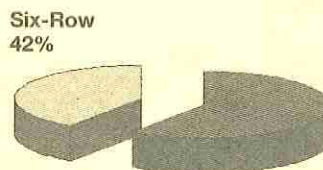
Recommended	Limited	Not Recommended
Varieties that have proven commercial market demand. Demand for some varieties may be finite.	Increasing Demand Newer varieties that are undergoing market development and commercial testing. <i>In both LIMITED cases, some acreage is required. Growers should only grow these varieties if they receive a commitment from a local elevator, a company with propriety rights to those varieties or a maltster that is selecting this variety.</i>	Decreasing Demand Older varieties that have reduced commercial demand. Declining Demand Varieties that have no known commercial market demand for malting and brewing.

Varieties selected for Domestic use, 1999-2000 (1,197,000 tonnes delivered)



Two-Row 93%

Varieties selected for Export, 1999-2000 (1,348,000 tonnes delivered)



Two-Row 58%

Malting Barley Industry Group

- Agricore, Brewing and Malting Barley Research Institute, Busch
- Agricultural Resources Inc., Canadian Grain
- Commission, Canada Malting Co. Limited, Canadian Wheat
- Board, Cargill Limited, ConAgra Grain, Dominion Malting Limited,
- James Richardson International, Louis Dreyfus Canada Limited,
- N.M. Paterson & Sons Limited, North East Terminal, Parrish &
- Heimbecker, Pioneer Grain Company Limited, Prairie Mill
- Limited, Saskatchewan Wheat Pool, South West Terminal, United
- Grain Growers Limited, Westcan Malting Limited, Western Barley
- Growers Association, XCAN Grain Pool Limited.

QUESTIONS?

- Call your selector or handling company.
- Or call the CWB at: 1-800-ASK-4-CWB (1-800-275-4292)

Feed and Food Barley

Main characteristics of varieties

Category and variety	Years tested	2 or 6 row	Rough or smooth awns	Yield as % of Harrington—				Relative maturity rating*	Straw††	Lodging	Resistance to						
				Area 1	Area 2	Area 3	Area 4				Net blotch	Scald	Loose smut	Other smuts	Root rot	Stem rust	Fusarium Head Blight
Feed																	
CDC Dolly	7	2	R	107	115	119	118	M	N	G	P	G	P	G	F	G	P
CDC Fleet	8	2	R	89	98	103	103	E	N	VG	F	G	P	VP	P	G	P
CDC Helgason ⚡	3	2	R	106	126	128	--	M	N	G	G	P	VG	G	F	F	--
Xena ⚡	4	2	R	110	127	141	130	M	N	G	F	P	P	VG	F	G	--
AC Harper ⚡	8	6	S	102	119	124	116	M	N	G	F	G	P	F	F	G	P
AC Lacombe ⚡	10	6	S	101	117	120	121	M	N	G	F	F	P	VG	F	G	VP
AC Rosser ⚡	8	6	S	108	130	135	134	M	N	G	F	VP	P	VG	G	G	VP
Brier	10	6	S	102	119	122	129	M	N	F	G	F	P	VG	VP	G	--
Stander ⚡	8	6	S	94	116	124	128	M	N	VG	F	P	P	P	G	G	VP
Trochu ⚡	3	6	S	84	119	124	--	M	N	F	P	F	P	G	G	G	F
Hulless																	
CDC Dawn	8	2	R	96	106	124	103	M	N	F	F	G	P	F	F	G	F
CDC Freedom	6	2	R	89	104	107	104	M	N	G	F	P	--	G	P	G	F
CDC Gainer	7	2	R	86	100	103	102	M	N	F	F	G	P	F	F	G	F
CDC McGwire ⚡	5	2	R	96	115	114	115	M	N	G	G	G	P	G	G	F	--
CDC Speedy	2	2	R	73	91	103	93	E	N	G	F	G	P	P	F	G	--
Condor ^	9	2	R	85	88	80	89	M	N	G	P	P	P	F	F	G	F
HB 805	2	2	R	92	112	117	104	L	N	F	F	P	F	G	F	F	--
Phoenix ⚡	8	2	R	82	93	88	94	M	N	G	P	P	P	F	G	P	F
Tercel ⚡	7	2	R	91	98	100	98	M	N	F	P	P	P	F	F	G	P
AC Bacon	6	6	--	84	111	115	111	M	N	G	P	G	P	F	F	G	P
AC Hawkeye ⚡	8	6	S	85	108	107	111	M	N	F	F	G	P	P	F	G	F
CDC Silky	8	6	--	84	102	101	105	M	SD	VG	F	G	P	F	G	G	F
Falcon ⚡	8	6	S	70	90	88	95	M	SD	VG	F	G	P	F	F	G	P
Jaeger ⚡ ^	5	6	R	73	99	104	98	L	N	VG	P	F	F	P	F	F	P
Peregrine ⚡	4	6	R	70	86	89	92	M	SD	VG	F	F	P	P	G	G	P
Intensive Management																	
CDC Bold	3	2	R	113	134	137	136	L	SD	G	P	G	P	VG	G	G	--
CDC Thompson	8	2	R	87	99	99	100	VE	SD	VG	F	G	F	F	F	G	--
CDC Earl	8	6	R	97	111	110	120	L	SD	VG	G	G	P	G	G	G	P
Kasota ⚡	6	6	S	97	106	109	108	E	SD	G	F	G	P	G	P	G	VP
Mahigan ⚡	6	6	S	104	116	115	117	E	SD	VG	F	G	P	G	P	G	VP
Niska ⚡	4	6	S	98	125	130	--	L	SD	F	P	P	P	G	P	G	--
Stetson ^	7	6	S	102	113	125	115	L	SD	VG	F	G	P	G	F	--	--
Vivar ⚡	3	6	R	--	128	134	--	L	SD	G	F	P	F	G	F	G	VP

- Limited supply of seed available in 2001.

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

†† : N = normal, SD = semidwarf.

Feed and Food Barley (Cont'd)

Hulless: In hulless varieties, the hull is left in the field, therefore, comparable yields are 10-15 percent lower. Hulless seed is more susceptible to damage than hulled seed, so handling should be minimized.

Hulless Waxy: CDC Candle, HB803 and Merlin are waxy starch varieties for specialty markets. For further information contact the Prairie Pools.

Irrigation: Under irrigation, disease resistance, straw strength and maturity are more critical. Growers should select early, strong-strawed, disease resistant varieties and should consider semi-dwarf varieties.

General Comments: A race of stem rust which attacks all of our previously resistant varieties has appeared in the eastern prairies and the northern great plains. It is not clear how persistent this race will be over time. Early sowing is the only practical measure which can be taken at this time.

None of the current two-rowed varieties have good field resistance to all races of net blotch. Therefore, growers who must plant barley on barley stubble should select six-rowed varieties which are more tolerant.

Most of the available varieties are susceptible to one or more types of smut. Therefore, seed should be treated 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 purposes.

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

Oat

Main characteristics of varieties

Variety	Years tested	— Yield as % of Calibre —				Test wt. (kg/hl)	% Hull	% Plump	Maturity rating*	— Resistance to —			
		Area 1	Area 2	Area 3	Area 4					Lodging	Stem rust	Leaf rust	Smut
Calibre	19	100	100	100	100	50.0	22.9	44	M	G	VP	VP	P
AC Antoine •	4	96	106	101	93	48.6	23.2	25	E	P	VP	VP	F
AC Assiniboia ▲	9	94	100	97	94	47.9	22.9	74	M	VG	VG	VG	VG
CDC Boyer	10	100	104	100	100	47.2	22.6	81	E	G	VG	F	P
Derby	13	100	101	103	103	50.1	22.2	74	M	G	VP	VP	P
SW Exactor †	4	102	114	110	108	48.2	25.0	44	L	VG	VP	VP	F
AC Juniper ▲	10	103	106	104	104	48.7	23.9	60	E	G	VP	VP	P
AC Medallion ▲	8	100	105	102	98	48.2	24.1	71	L	P	VG	VG	VG
AC Morgan	4	102	116	112	117	47.9	24.7	72	M	VG	VP	VP	F
AC Mustang	9	102	109	113	110	49.5	29.0	70	L	G	VP	VP	P
CDC Pacer	7	102	110	108	102	48.9	23.7	71	M	G	VP	VP	F
AC Preakness ▲	10	98	104	103	102	48.8	22.6	66	L	G	VG	F	VG
AC Rebel †	6	100	106	103	100	48.8	23.1	67	L	G	VG	VP	VG
Triple Crown ▲	7	97	107	111	110	47.6	24.7	67	L	VG	VP	VG	P
AC Pinnacle †	4	111	120	112	108	48.5	23.7	91	VL	G	G	VG	VG
AC Kaufmann	3	--	99	96	--	47.3	24.3	86	L	P	VG	VG	VG
#AC Belmont ▲	8	74	79	81	79	52.0	n/a	n/a	M	G	VG	F	VG

• Interim registered.

* Maturity rating: M = 96 days

Hulless variety

Additional information:

AC Assiniboia has brown hulls.

Hulless oat: 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 percent moisture.

Other Crops

Canary Seed

The seed of annual canarygrass, more commonly called canary seed, is used as food for caged and wild birds. Three registered varieties are available. **Elias** and **Keet** are similar in yield, but **Keet** is earlier maturing and more resistant to lodging. Seeds and plants of **CDC Maria** do not have the small sharp hairs that cause irritation when canary seed is threshed and handled. Canary seed plants have a dense shallow root system and thus 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 maturity requirements are equal to wheat.

Sow at the same optimum date as spring wheat at 34 kg/ha (30 lb/ac) (germination greater than 85 percent). Early seeding may lower yields in some cases. Plant the seed 3.5 to 5 cm deep into a firm seedbed.

Fertilizer requirements are similar to those for cereal crops.

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 August and may require an insecticide application to prevent yield loss. Information from the United States indicates that infestations of 10-20 aphids per stem may cause enough damage to warrant insecticide application. The aphids often hide in the dense head of canary seed. Damage may occur at populations below these levels; data

do not exist to support the suggested action threshold.

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 should not be seeded on land that was treated with trifluralin or ethalfluralin the previous year.

Canary seed is resistant to shattering. It may be straight-combined or swathed when fully matured.

For more information on canary seed, consult the SAF publication, *Canary Seed 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 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 advisable.

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

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 some 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*.

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.

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. The crop is usually straight-cut to avoid wind damage to swaths. For more information consult the SAF publication, *Coriander in Saskatchewan*.

Oilseed Crops

Argentine Canola

Main characteristics of varieties

Variety	Yield as a % of AC Excel (years in test)			Average % Oil*	Average maturity in days	Resistance to	
	Area 2	Area 3	Area 4			Lodging	Blackleg**
AC Excel	100	100	100	45.8	98	G	F
220	118 (3)	117 (3)	--	45.9	99	VG	G
45A51△ (RR)	110 (3)	109 (3)	115 (3)	45.9	102	G	F
45A54△ (RR)	114 (3)	102 (3)	--	46.2	97	G	VG
45A71△ (SM)	113 (3)	107 (3)	108 (3)	45.4	98	F	F
46A52△ (RR)	125 (3)	116 (3)	--	45.6	99	G	G
46A65△	112 (4)	116 (5)	122 (4)	46.6	98	F	VG
46A73△ (SM)	101 (3)	115 (3)	--	45.2	101	G	G
46A76 △(SM)	134 (3)	128 (3)	--	45.5	100	VG	VG
AC Tristar (TT)	75 (4)	79 (4)	67 (4)	43.8	97	P	VP
Agassiz	103 (4)	108 (4)	107 (3)	44.1	102	G	F
Armor BX ⚡	106 (4)	100 (4)	108 (3)	45.0	98	G	G
Ascent	99 (4)	108 (4)	--	46.9	98	G	F
CLAVET	106 (4)	107 (4)	--	45.5	98	F	G
CNR028 RR	--	102 (3)	--	45.5	97	F	G
1492 CA	120 (3)	128 (4)	123 (3)	45.9	99	VG	G
Canterra 1867 (RR)	--	104 (3)	--	46.8	97	G	F
Conquest (RR)	103 (3)	106 (3)	--	46.9	100	VG	VG
Cyclone △	107 (5)	115 (4)	121 (5)	44.5	98	G	G
DEFENDER	102 (5)	102 (4)	--	44.6	98	VG	G
DS-Roughrider ⚡(RR)	100 (3)	101 (3)	--	49.4	97	G	F
EAGLE △	--	114 (3)	--	45.7	97	G	G
Foremost △	131 (4)	117 (3)	--	46.0	101	VG	VG
LiBred-279	--	109 (3)	--	48.6	99	G	G
Hi-Q ⚡	114 (3)	111 (3)	--	46.8	99	VG	VG
Hudson ⚡	117 (3)	116 (3)	--	45.6	96	G	G
HyCore 601	119 (3)	--	--	47.0	99	VG	G
HYLITE 225(RR)	--	103 (3)	--	48.2	97	G	G
Hyola 401	102 (3)	121 (3)	107 (3)	44.1	98	G	P
Hyola 428	--	113 (3)	--	46.9	97	G	G
Hy-PerStar 100	113 (5)	119 (6)	121 (3)	45.9	100	VG	G
IMPULSE	108 (3)	121 (4)	112 (3)	45.4	100	G	VG
InVigor 2153 △ (LL)	107 (3)	116 (3)	--	44.8	96	F	F
InVigor 2273 (LL)	114 (4)	120 (3)	124 (3)	46.0	98	G	G
InVigor 2463 (LL)	128 (3)	122 (3)	--	46.7	99	VG	F
InVigor 2573 (LL)	128 (3)	123 (3)	--	45.5	99	VG	G
InVigor 2663 (LL)	127 (3)	135 (3)	--	44.5	97	VG	VG
LG Dawn ⚡(RR)	111 (3)	101 (3)	--	45.2	99	F	F
LG3235 ⚡(RR)	105 (4)	100 (4)	--	45.9	96	G	G
LG3345 ⚡(RR)	108 (3)	99 (3)	--	45.6	98	G	G
LG3455 (RR)	--	108 (3)	--	47.9	99	VG	G
Legacy △	103 (4)	108 (5)	110 (3)	45.1	98	G	F
Magellan	114 (4)	112 (4)	--	45.2	99	G	F
OAC Dynamite △	118 (3)	115 (4)	118 (3)	45.6	97	G	VG
Option 500	109 (3)	112 (3)	--	46.8	99	F	G
Option 501	--	102 (3)	--	48.4	99	G	VG
Q2 △	109 (3)	122 (3)	109 (3)	45.0	101	G	VG

Argentine Canola (Cont'd)

Variety	Yield (Area)	Yield (Area)	Yield (Area)	Average % Oil*	Average maturity in days	Resistance to Lodging	Resistance to White rust
Quantum Δ	107 (3)	124 (3)	111 (3)	44.3	98	G	VG
Quest Δ (RR)	111 (4)	106 (4)	--	46.3	98	G	F
Skyhawk Δ	--	122 (3)	--	45.0	97	G	VG
SW 5001	115 (3)	122 (3)	--	46.1	100	VG	VG
SW ARROW Δ (RR)	105 (3)	108 (4)	--	44.3	97	F	F
SW RideR (RR)	--	--	112 (3)	46.0	99	G	F
Sentry	97 (5)	101 (5)	--	44.5	98	G	VG
Thunder	--	105 (3)	--	46.4	99	G	G
Trailblazer Δ	109 (3)	111 (3)	--	46.5	100	G	G
WILDCAT	--	119 (3)	115 (3)	45.7	97	VG	**

* Dry basis.

** A minimum of 3 years between canola crops (4 year rotation) is essential to reduce the incidence of blackleg.

Herbicide tolerance: RR = Roundup Ready, LL = Liberty Link, SM = Smart Canola, TT = triazine, BX = Bromoxynil

Note: In most instances, only new varieties are tested each year. Therefore, comparisons should only be made between the check variety (AC Excel) and the variety of interest.

Polish Canola

Main characteristics of varieties

Variety	Yield as a % of AC Parkland (years in test)			Average % Oil*	Average maturity in days	Resistance to	
	Area 2	Area 3	Area 4			Lodging	White rust
AC Parkland	100	100	100	44.2	84	G	VG
1007 Δ	104 (3)	106 (3)	--	44.5	85	VG	G
1000 SP	102 (3)	98 (4)	--	44.4	84	F	G
41P55	105 (5)	109 (5)	109 (4)	42.9	84	F	F
41P95	102 (3)	101 (3)	--	44.1	84	G	VG
AC Boreal	100 (7)	101 (6)	100 (5)	45.1	84	F	VG
AC Sunbeam	105 (7)	103 (7)	105 (6)	43.5	83	G	VG
Cash	97 (3)	109 (3)	110 (3)	43.9	84	G	F
CHINOOK	99 (4)	103 (4)	108 (3)	43.4	84	G	F
Eclipse	100 (7)	93 (6)	89 (5)	43.9	84	G	F
Eldorado	117 (3)	102 (3)	99 (3)	44.0	84	F	P
FAIRVIEW	104 (3)	107 (3)	--	44.3	85	G	G
Foothills Δ	105 (3)	100 (3)	--	43.5	84	G	VG
Hysyn 100	107 (3)	108 (3)	111 (3)	43.6	85	G	F
Hysyn 110	109 (6)	110 (6)	120 (6)	42.9	84	G	F
Hysyn 111	105 (4)	107 (5)	116 (3)	42.8	86	G	G
Hysyn 120 CS	98 (3)	103 (4)	--	44.0	85	G	G
MAVERICK	101 (4)	105 (5)	107 (4)	44.8	84	G	F
NORWESTER	105 (4)	109 (4)	109 (3)	43.3	85	G	G
Reward	104 (9)	103 (10)	102 (8)	44.4	84	F	VG
WESTWIN	105 (3)	109 (3)	106 (3)	44.6	84	G	G

* Dry basis.

Note: In most instances, only new varieties are tested each year. Therefore, comparisons should only be made between the check variety (AC Parkland) and the variety of interest.

Additional Information Argentine Canola

Argentine varieties yield about 20-30 percent more than Polish varieties. Argentine varieties mature 10 to 14 days later than Polish varieties and are therefore better suited to the longer-season growing areas of Saskatchewan. Blackleg disease, which is now wide spread in Saskatchewan, can cause severe yield losses in varieties that have poor (P) resistance. 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. Late maturing varieties should therefore be planted early to reduce green seed counts. All Argentine varieties are susceptible to Sclerotinia stem rot. Herbicide tolerant varieties should be considered when severe weed infestations are expected. Please note that only new varieties are tested each year. Therefore most varieties have not been tested in the same year. Varietal comparisons should therefore ONLY be made between the check variety (**AC Excel**) and the variety of interest.

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. All Polish varieties are susceptible to Sclerotinia stem rot and blackleg. 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. Please note that only new varieties are tested each year. Therefore most varieties have not been tested in the same year. Varietal comparisons should therefore ONLY be made between the check variety (**AC Parkland**) and the variety of interest.

Specialty Oil Rapeseed and Canola

High erucic acid is needed for special industrial oil markets. Argentine type, high erucic acid varieties have been developed for these markets. These varieties can be lower yielding than conventional open-pollinated canola varieties but have very good blackleg resistance. Low linolenic acid Argentine type canola varieties have been developed. The oil is used as a premium vegetable oil for human consumption. Information on the contract production of these specialty oil rapeseed and canola varieties should be obtained from companies that contract such production.

Irrigation

Argentine varieties respond well to irrigation. Only varieties that are highly resistant to lodging and blackleg should be grown under these conditions. Irrigation may delay maturity by one week or more under certain conditions.

Mustard

Main characteristics of varieties

Type & Variety	Yield as % of Cutlass	Average maturity in days
Oriental		
Cutlass	100	93
Forge	99	94
Lethbridge 22A	91	94
AC Vulcan	102	93
Brown		
commercial	92	94
	Yield as % of Ochre	Average maturity in days
Yellow		
Ochre	100	94
AC Base	104	92
AC Pennant	106	93
Gisilba	97	93
Tilney	99	94
Viscount	96	95

Additional Information Mustard

Mustard is grown in the drier regions of Saskatchewan because of the better seed quality obtained under these conditions. Mustard is normally grown under contract production.

Yellow mustard varieties are large seeded and the seed is light yellow in colour. The yield of yellow mustard is approximately 30 percent less than that of Oriental mustard. Differences in seed yield between these two species is normally compensated for by price. Yellow mustard should be straight combined because of possible losses due to wind damage in the swath.

Oriental and Brown mustards are usually swathed, but straight combining is also possible. Any mixtures of rapeseed or canola in mustard, due to volunteer plants in the field, or to improper handling on the farm, cause substantial losses through grade reductions. All mustard varieties have very good resistance to blackleg. **AC Vulcan** and **Cutlass** are resistant to white rust (staghead), while **Forge** and commercial Brown are highly susceptible.

Sunflower (Oilseed)

Main characteristics of varieties

Variety	Years tested	Yield	Average	Oil %*
		as % of IS 6111	maturity in days	
IS 6111	10	100	122	46.5
SF 270	10	106	122	47.6
SF 187	9	100	126	43.2
63A81	5	101	124	47.1

Sunflower (Oilseed) EMSS

Main characteristics of varieties

Variety	Years tested	Yield	Average	Oil %*
		as % of P6150	maturity in days	
P6150	8	100	113	46.4
63A21	3	112	113	47.0
IS 7211	3	88	106	47.6

* Dry basis

Additional Information

Sunflower requires 105 - 125 days to mature, depending on the cultivar and the growing season. Oilseed sunflower has been grown in the Dark Brown and Black soil zones in southeastern Saskatchewan.

The earlier maturing, short stature (EMSS) varieties are adapted to production in most areas of Saskatchewan.

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 and are registered for production in Canada are placed on this list.

The committee has been testing **NuSun**, a sunflower with a fatty acid profile desired by major frying companies. The potential of **NuSun** and the growing birdseed market could increase production in Saskatchewan.

Flax

Main characteristics of varieties

Variety	Years tested	Yield as % of Vimy				Irr	Maturity**	Seed size	Resistance to Lodging
		Area 1	Area 2	Area 3	Area 4				
Vimy	15	100	100	100	100	100	M	L	P
CDC Arras	6*	103	109	105	104	106	M	L	F
CDC Bethune ↗	6*	111	117	117	115	117	L	M	G
AC Carnduff ↗	5*	79	93	102	---	114	M	M	G
AC Emerson	7	98	97	96	93	98	M	L	F
Flanders	10	93	97	96	97	109	L	S	G
AC Lightning	4*	---	103	106	---	115	L	M	G
AC Linora	8	84	91	95	93	102	L	M	G
AC McDuff △	7	93	95	97	94	102	VL	M	VG
NorLin	17	91	96	96	99	105	M	M	G
CDC Normandy	6	96	100	102	104	106	M	M	F
Somme	10	94	97	98	97	109	M	M	F
Taurus △	4*	---	105	107	---	122	M	M	G
CDC Valour △	4	94	100	94	91	92	E	M	G
AC Watson ↗	4	95	97	104	104	105	M	M	G
Solin									
Linola™ 989 △	6	95	93	98	103	97	L	M	G
Linola™ 1084 ↗	4*	94	99	96	---	102	M	M	G

* Data from Regional and Coop Yield Trials.

** The relative maturity of the check, Vimy, is M (on average 103 days from seeding to swathing ripeness).

Additional Information:

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

AC Lightning is a newly registered variety and limited quantities of seed will be available in 2001.

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. **Linola™ 989** and **Linola™ 1084** 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.

Pulse Crops

Lentil

Main characteristics of varieties

Variety	Years tested*	—Yield % of Laird—		Height (cm)	Days to flower	Maturity rating	—Resistance to—		Cotyledon color	Seed weight (g/1000)
		Areas 1-2	Areas 3-4				Ascochyta blight	Anthraco-nose		
Laird	6	100	100	41	53	VL	VP	VP	yellow	67
CDC Glamis	5	109	104	39	54	VL	G	VP	yellow	60
CDC Grandora	4	108	112	40	53	VL	G	VP	yellow	69
CDC Sovereign	4	108	111	40	52	L	G	P	yellow	66
CDC Richlea	5	126	109	35	50	M	VP	VP	yellow	51
CDC Vantage	5	131	124	33	49	M	G	VP	yellow	52
Eston	5	110	109	30	48	E	VP	VP	yellow	33
CDC Milestone	6	135	126	31	49	E	G	VP	yellow	37
Crimson	3	117	116	29	49	E	VP	VP	red	35
CDC Redcap	4	126	122	30	49	E	G	F	red	35
CDC Redwing	5	121	112	30	50	E	G	VP	red	38
CDC Robin	3	135	127	30	49	E	G	G	red	30

* Coop and Regional Trials in Saskatchewan since 1995. Direct yield comparisons to Laird.

Additional Information: Indianhead lentil is a black-seeded variety released for green manure use. CDC Matador is a brown-seeded variety with yellow cotyledons. Seed supplies are limited for CDC Grandora, CDC Sovereign, CDC Vantage, CDC Robin and CDC Redcap. Detailed agronomic information may be found in the *Pulse Production Manual*, available from the Saskatchewan Pulse Growers.

Dry Bean

Main characteristics of varieties

Variety	Type	Years tested	—Yield as % of Othello—			Days to flower	Maturity rating	Pod clearance (%)	Seed weight (g/1000)	Growth habit**
			Irrigation	Area 2	Area 3					
Othello	pinto	7	100	100	100	52	L	51	323	III
CDC Pinnacle	pinto	6	97	102	106	53	L	67	352	III
CDC Altiro	pinto	5	86	83	85	47	E	64	357	III
AC Burrito	pinto	5	95	103	99	53	M	64	307	II
CDC Camino	pinto	7	86	87	91	52	L	81	323	I
CDC Pintium	pinto	4	83	101	112	50	E	80	350	I
Earliray	pinto	5	73	90	90	50	E	65	349	I
Fargo	pinto	5	98	95	105	50	M	53	341	III
CDC Crocus	great northern	4	89	96	90	47	E	59	355	III
CDC Bianca	great northern	6	97	82	80	52	L	69	365	I
CDC Nordic	great northern	6	73	84	84	52	L	62	319	I
US 1140	great northern	6	98	93	93	51	L	53	289	III
CDC Rosalee	pink	4	104	97	105	50	L	65	247	III
Viva	pink	4	96	105	97	51	L	50	242	III
CDC Espresso	black	6	59	79	81	47	M	87	191	I
CDC Nighthawk	black	5	64	68	65	58	L	77	165	II
UI906	black	5	81	97	79	60	L	76	148	II
AC Skipper	navy	6	68	68	73	54	L	77	206	I
GTS 523	navy	5	71	90	87	51	M	75	147	I

* Coop and regional trials

** Growth habit: I - determinate bush; II - indeterminate bush; III - indeterminate vine.

Additional Information: In short season regions, only the earliest maturing varieties should be grown.

Detailed agronomic information may be found in the *Pulse Production Manual*, available from the Saskatchewan Pulse Growers.

Field Pea

Main characteristics of varieties

Variety	Years tested	Yield as % of Alfetta—			Leaf type*	Relative maturity	Vine Length (cm)	Ascochyta blight	Powdery mildew	Seed coat breakage	Resistance to			Seed coat dimpling**	Green seed coats***	Seed weight (g/1000)
		1,2 & South 3	North 3 and 4	Irrigation							Lodging	Bleaching				
Food Type Yellow-Seed																
Alfetta ▲	7	100	100	100	SL	M	72	P	P	F	F	n/a	F	G	290	
AC Melfort ♣	4	98	86	--	SL	M	70	F	VG	F	F	n/a	G	F	240	
Baccara ▲	3	105	105	--	SL	E	65	P	P	F	F	n/a	F	F	280	
Badminton	3	104	100	--	SL	E	65	P	P	G	F	n/a	F	G	250	
Carneval ▲	7	89	85	107	SL	M	75	F	P	F	G	n/a	--	--	230	
Carrera	6	99	98	107	SL	E	55	P	P	G	F	n/a	--	--	270	
CDC Winfield	5	94	89	--	N	M	62	VP	P	F	F	n/a	--	--	260	
CDC HANDEL	4	107	94	--	SL	L	75	P	VG	G	F	n/a	G	F	220	
CDC MOZART	4	107	98	104	SL	M	70	F	VG	G	F	n/a	G	F	230	
CDC Minuet	3	99	91	--	SL	M	70	F	VG	F	F	n/a	G	F	190	
COBRA	4	99	94	--	SL	M	75	P	P	G	F	n/a	F	F	240	
Cresta	3	106	106	--	SL	E	70	P	P	F	F	n/a	--	--	270	
CROMA ▲	4	102	103	--	SL	E	70	P	P	G	F	n/a	G	G	300	
Delta ▲	4	101	98	--	SL	E	72	P	P	G	F	n/a	--	--	250	
DS Admiral ♣	3	95	104	--	SL	E	80	F	VG	G	G	n/a	G	G	240	
DS Stalwarth	3	92	88	--	SL	M	80	P	VG	G	F	n/a	G	G	240	
Eclipse ♣	3	102	99	--	SL	M	80	F	VG	G	G	n/a	F	G	250	
Eiffel ▲	5	93	101	--	SL	E	67	VP	P	F	F	n/a	--	--	290	
GRANDE ▲	7	93	91	93	N	L	90	F	P	G	F	n/a	G	F	260	
Highlight ▲	5	84	84	97	SL	E	66	P	VG	F	F	n/a	--	--	210	
INTEGRA ▲	4	85	100	--	SL	E	75	F	P	G	G	n/a	F	F	280	
Mandy	4	88	94	96	SL	M	57	VP	P	F	F	n/a	--	--	270	
Miami ♣	5	102	102	--	SL	E	80	P	P	F	G	n/a	G	F	240	
Nicole ♣	4	106	105	--	SL	M	65	P	P	F	F	n/a	G	G	260	
PASSAT	4	103	100	--	SL	M	65	F	P	G	F	n/a	F	G	260	
PROFI ▲	5	90	85	95	SL	E	72	P	P	F	F	n/a	--	--	270	
SW Bravo ♣	4	88	95	--	SL	E	75	F	P	G	G	n/a	G	G	260	
SWING ▲	4	94	100	--	SL	E	75	F	P	VG	G	n/a	G	G	250	
Trapper	7	74	73	--	N	L	95	P	P	F	P	n/a	--	--	140	
Victoria	7	80	77	--	N	M	84	P	P	F	P	n/a	--	--	190	
Food Type Green Seed																
AC Advantage	4	79	68	--	SL	L	60	F	VG	G	P	F	F	n/a	270	
Atomic	3	90	94	--	SL	M	70	P	P	G	F	F	F	n/a	280	
Cascade	3	89	83	--	SL	M	75	F	P	VG	F	G	G	n/a	200	
CDC Montero	3	97	90	--	SL	M	80	F	VG	G	F	F	F	n/a	230	
CDC VERDI	4	91	74	--	SL	L	75	F	P	G	F	G	F	n/a	200	
DS Dominator ♣	3	86	67	--	SL	L	65	F	VG	G	G	F	F	n/a	230	
Espace ▲	4	96	101	--	SL	M	75	P	P	F	G	F	F	n/a	230	
Keoma	7	85	80	96	SL	M	53	P	P	G	P	G	G	n/a	220	
Logan	3	86	87	--	SL	E	75	P	P	F	G	G	F	n/a	180	
MAJORET ▲	5	79	75	102	SL	M	59	P	P	G	G	F	--	n/a	250	
Millenium ▲	5	103	97	--	SL	E	65	P	P	F	F	F	F	n/a	260	
NITOUCHE ▲	4	93	93	--	SL	M	75	F	P	G	G	G	F	n/a	250	
Olivin ▲	4	87	92	89	N	M	64	VP	P	G	P	F	--	n/a	270	
SW Parade ♣	4	97	88	--	SL	M	70	F	VG	G	F	F	G	n/a	220	

Field Pea (Cont'd)

Main characteristics of varieties

Variety	Years tested	— Yield as % of Alfetta —			Leaf type*	Relative maturity	Vine		Powdery mildew	Seed coat breakage	Resistance to		Seed coat dimpling**	Green seed coats***	Seed weight (g/1000)
		1,2 & South 3	North 3 and 4	Irrigation			Length (cm)	Ascochyta blight			Lodging	Bleaching			
Pekisko ♣	4	83	83	--	SL	VE	75	VP	P	G	F	F	G	n/a	210
Princess	5	72	55	85	N	E	58	P	P	VG	P	G	--	n/a	200
Radley	6	72	68	85	SL	M	57	F	P	VG	F	G	--	n/a	210
Scuba ♣	4	82	87	--	SL	E	80	P	P	F	F	F	F	n/a	230
TOLEDO ♣	4	87	95	--	SL	M	70	P	P	G	G	F	F	n/a	280
Venture ♣	3	97	87	--	SL	E	75	P	P	G	F	F	F	n/a	220

Coloured Flower Varieties

CDC April	4	82	70	--	SL	L	53	F	P	G	F	--	--	n/a	140
CDC Vienna	5	86	81	--	SL	L	61	F	P	G	F	--	--	n/a	170
Whero	3	60	57	--	N	L	110	P	P	G	P	--	--	n/a	210

* N = Normal leaf type, SL = Semi-leafless

** Seed coat dimpling: Good = 0-5%; Fair = 6-20%.

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

Additional Information

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

Chickpea - Kabuli

Main characteristics of varieties

Variety	Years tested	— Yield as % Sanford —		Resistance to Ascochyta Post-flower*	Height (cm)	Days to flower	Maturity	Seed weight (g/1000)	Leaf type
		Area 1	Area 2						
Sanford	5	100	100	P	49	56	L	425	unifoliolate
Dwellely	3	86	88	P	45	57	VL	490	unifoliolate
CDC Yuma	5	115	122	F	45	53	M	410	fern
CDC Xena	4	116	141	P	44	52	M	470	unifoliolate
CDC Diva	2	106	—	P	43	52	M	490	unifoliolate
Evans	2	87	—	P	50	53	M	430	unifoliolate
B-90	3	118	121	F	46	55	M	265	fern
CDC Chico	5	133	148	F	44	51	E	265	fern

Chickpea - Desi

Main characteristics of varieties

Variety	Years tested	Yield as % Myles		Resistance to Ascochyta post-flower*	Height (cm)	Days to flower	Maturity	Seed weight (g/1000)	Leaf type
		Area 1	Area 2						
Myles	5	100	100	F	41	50	E	200	fern
CDC Desiray	4	98	103	F	40	49	E	200	fern
CDC Anna	3	111	109	F	42	50	E	220	fern
CDC Nika	3	100	99	F	39	50	E	330	fern

Area 1: Brown soil zone.

Area 2: Dark Brown soil zone.

*All varieties have good resistance prior to flowering.

Maturity will be delayed in areas with a cool moist summer, especially on clay soils.

Chickpea (Cont'd)

Additional Information

Kabuli chickpea is best adapted to stubble production in the Brown soil zone. Desi chickpea is best adapted to stubble production in the Brown and Dark Brown soil zones. Chickpea is a deep-rooted crop, which is efficient in water uptake. Planting on clay soils, regardless of soil zone, increases the risk of prolonged vegetative growth and failure to mature on time. This risk is reduced by planting on sandier, drought prone soils. Chickpea will tolerate light frosts in the spring. Desi varieties can be seeded in late April or early May. Kabuli varieties should be planted early- to mid-May into a warm seedbed, preferably at least 10C average soil temperature at depth of seeding. This means that kabuli varieties are often later maturing.

Ascochyta blight can COMPLETELY DESTROY a chickpea crop. All varieties listed in the attached table have resistance to

ascochyta blight until the early flowering stage. However, at flowering, varieties differ in their resistance as noted in the table. Fungicide application(s) may be necessary to protect crops from flowering onwards. Disease risk is greater under wet conditions and for varieties rated "poor" for post-flowering ascochyta resistance.

The foliar fungicide Bravo 500 (chlorothalonil) is registered for control of ascochyta blight in chickpea. Ascochyta blight is seed-borne and stubble-borne. Therefore, growers should use seed with ascochyta blight levels as close to 0% as possible.

Chickpea requires planting equipment with a seed-feeding mechanism capable of handling large seeds. They are highly susceptible to seed damage and should be handled gently at all times. Seed treatment with Apron FL (metalaxyl) for seed rot diseases is strongly recommended for kabuli varieties and may be required for desi varieties if conditions favour seed rot-

ting diseases. Plant chickpea seeds six cm deep. Seeding rates are 90-110 kg/ha (80-100 lb/acre) for desi and 160 kg/ha (140 lb/acre) for kabuli. Desi varieties are generally earlier maturing and higher yielding compared to the currently available kabuli varieties.

Limited quantities of Certified Seed of **CDC Yuma**, **CDC Xena**, **CDC Chico**, and **CDC Desiray** will be available in spring 2001. Certified Seed of **CDC Diva**, **CDC Anna**, and **CDC Nika** will not be available until 2002.

The chickpea crop has stiff stems and can be swathed or straight cut at maturity. Thresh kabuli varieties gently to avoid seed splitting. For more details on production consult the *Pulse Production Manual* published by the Saskatchewan Pulse Growers.

Faba Bean

Main characteristics of varieties

Variety	Years tested	Yield as % 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 should be seeded early (late April to early May). It is best adapted to irrigated areas in the Dark Brown Soil Zone and the portion of the Black Soil Zone with the longest growing season.

Seed supplies of **CDC Blitz**, **Scirocco** and **Cresta** are limited.

Faba bean is a legume and thus is able to fix nitrogen from the air, provided the seed is inoculated with the proper bacteria prior to planting. Faba bean requires a specific strain of inoculum.

Seed Facts

Pedigreed Seed

Use certified seed regularly, especially when changing to a different variety. This assures that the seed has high genetic purity, high germination and is relatively free from weeds and other crop seeds. Some pedigreed seed may be paid for by an over-quota delivery of commercial grain. Ask your elevator agent or seed dealer for details.

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 percent 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 will also occur.

Seed Cleaning

Seed should be carefully cleaned to remove weed seeds, trash, small or broken kernels, ergot and sclerotia. **Country grain elevators are not equipped to clean grain to seed standards and the risk of mixing varieties and types of grain is very high.**

Seed Treatment

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 also introduce the diseases of the *Fusarium* complex into unaffected areas.

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

Only systemic fungicides will control true loose smut of barley and wheat, and stem smut of rye because the pathogens are present within the infected seed. The other types of smut (covered, false loose, oat, and bunt) are carried on the outside of the seed and may be treated with non-systemic seed treatments containing maneb or thiram.

The virulent form of blackleg is widespread on canola in Saskatchewan.

Treatment of seed with a recommended fungicide can reduce the level of disease. Growers with carryover stocks of treated seed should have these tested for germination.

Coating of canola with the appropriate seed dressing is a convenient alternative to on-farm seed treatment.

Various fungicides have been registered for the control of seedling disease. Flax, canola, rye and winter wheat seed should be treated to promote good seedling growth.

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 provincial publication *Guide to Crop Protection 2001*. Treated seed must not be delivered to an elevator or used for feed.

Seed-borne diseases of pulses

Pulse growers should plant 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 aggressiveness of the disease, weather conditions in the region and the availability of a seed treatment.

If alternative sources of infection in the crop are 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. In pea, up to 10% seed infection with ascochyta is acceptable. In chickpea, 0% ascochyta seed infection is recommended because of the highly destructive nature of this disease.

Use of botrytis-infected seed will lead to seedling blight in the crop. Thus, acceptable tolerances for seed infection are determined by the percentage of seedlings a grower is willing to lose. Consult the *Pulse Production Manual* (Saskatchewan Pulse Growers) for details of seed infection tolerances and seed treatment.

Other management practices for disease control in pulse crops include: (1) never plant on pulse residue from the previous year, and, if practical,

avoid planting next to stubble of the same pulse crop; (2) use a rotation with at least three years between the same pulse crop and; (3) start scouting fields for the presence of disease at the seedling or early growth stages and if fungicide control is to be used, apply the fungicide before diseases become well established.

Ergot

Ergot attacks all varieties of rye, triticale, wheat and barley, as well as most common species of grass. Oat is rarely attacked and all broadleaved species are immune. Grain containing 0.1% ergot is considered poisonous and should not be used as food. Details of this disease are found in *Ergot of Grains and Grasses*, AAFC Publ. 1438.

Seed Inoculation

Legume crops obtain much of their nitrogen (N) requirement from the atmosphere 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 immediately prior to seeding with the proper strain of bacteria specific to that crop. For further details, please refer to the *Pulse Production Manual* (Saskatchewan Pulse Growers).

Damp and Frozen Seed

Seed which is stored damp or tough may be low in germination. Grain which is being saved for seed should be dried if necessary, soon after harvest. Drying temperature should be kept below 37C for batchdriers, or 43C for recirculating and continuous driers. Frozen grain should never be sown without a laboratory germination test. Such grain will frequently produce a high percentage of abnormal seedlings.

Production Notes

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 *Orange Wheat Blossom Midge* publication.

Residue of infected crops may harbor disease agents. Seeding into stubble of the same crop kind will increase disease risk, particularly in the higher rainfall areas.

Breeding Institutions and Seed Distributors of Varieties Listed in this Publication

Crop kind, Class & Variety	Breeding Institution	Distributor	Crop kind, Class & Variety	Breeding Institution	Distributor
Wheat					
Bread Wheat					
5600 HR	Agripro/UGG	Proven Seed	Pika	AAFRD (Lacombe)	Progressive Seeds
AC Abbey	AAFC (Swift Current)	Canterra Seeds	Pronghorn	AAFRD (Lacombe)	Progressive Seeds
Alikat	University of Alberta	Canterra Seeds,	Sandro	Swiss Fed Ag Res	Newfield Seeds
AC Barrie	AAFC (Swift Current)	SeCan Members	Barley		
CDC Bounty	U of S - CDC	Canterra Seeds	Malting		
AC Cadillac	AAFC (Swift Current)	QAS	B1602	Busch Ag. Res. Inc.	Sask Wheat Pool
Columbus	AAFC (Winnipeg)	SeCan Members	CDC Copeland	U of S - CDC	SeCan Members
AC Cora	AAFC (Winnipeg)	SeCan Members	Excel	U of Minnesota	Proven Seed, Others
AC Domain	AAFC (Winnipeg)	SeCan Members	CDC Kendall	U of S - CDC	Sask. Wheat Pool
AC Eatonia	AAFC (Swift Current)	SeCan Members	Harrington	U of S - CDC	SeCan Members
AC Elsa	AAFC (Swift Current)	Proven Seed	AC Metcalfe	AAFC (Brandon)	SeCan Members
AC Intrepid	AAFC (Swift Current)	SeCan Members	Manley	U of S - CDC	SeCan Members
Katepwa	AAFC (Winnipeg)	Canterra Seeds	Merit	Busch Ag. Res. Inc.	Agricore/SWP
Laura	AAFC (Swift Current)	SeCan Members	AC Oxbow	AAFC (Winnipeg, Brandon)	SeCan Members
AC Majestic	AAFC (Winnipeg)	SeCan Members	Robust	U of Minnesota	Cargill Seed, Others
McKenzie	Sask. Wheat Pool	Sask. Wheat Pool	CDC Select	U of S - CDC	
Prodigy	Sask. Wheat Pool	Sask. Wheat Pool	CDC Sisler	U of S - CDC	Proven Seed
AC Splendor	AAFC (Winnipeg)	Sask Wheat Pool	Stein	U of S - CDC	Proven Seed
CDC Teal	U of S - CDC	SeCan Members	CDC Stratus	U of S - CDC	QAS
		QAS	CDC Yorkton	U of S - CDC	Proven Seed
			AC Bountiful	AAFC (Brandon)	QAS
Canada Prairie Spring Wheat			Feed		
AC 2000	AAFC (Swift Current)	SeCan Members	Brier	U of S - CDC	SeCan Members
AC Crystal	AAFC (Swift Current)	SeCan Members	CDC Dolly	U of S - CDC	SeCan Members
AC Foremost	AAFC (Swift Current)	SeCan Members	CDC Fleet	U of S - CDC	QAS
AC Karma	AAFC (Swift Current)	SeCan Members	AC Harper	AAFC (Lethbridge)	SeCan Members
AC Taber	AAFC (Swift Current)	SeCan Members	CDC Helgason	U of S - CDC	SeCan Members
AC Vista	AAFC (Swift Current)	QAS	AC Lacombe	AAFC (Lacombe)	SeCan Members
			AC Rosser	AAFC (Brandon)	SeCan Members
Canada Western Extra Strong					
Amazon	University of Manitoba	Canterra Seeds	Stander	U of Minnesota	Sask. Wheat Pool
AC Corinne	AAFC (Winnipeg)	QAS	Trochu	AAFRD (Lacombe)	SeCan Members
AC Glenavon	AAFC (Winnipeg)	SeCan Members	Xena	Agricore/W. Plant Breeders	Agricore/SWP
Glenlea	University of Manitoba	Public	Hulless		
Laser	University of Alberta	Canterra Seeds	AC Bacon	AAFC (Brandon)	SeCan Members
			Condor	AAFRD (Lacombe)	SeCan Members
			CDC Dawn	U of S - CDC	SeCan Members
			Falcon	AAFRD (Lacombe)	Progressive Seeds
			CDC Freedom	U of S - CDC	SeCan Members
			CDC Gainer	U of S - CDC	Value Added Seeds
			HB805	W. Plant Breeders	Agricore
			AC Hawkeye	AAFC (Brandon)	Sask. Wheat Pool
			Jaeger	AAFRD (Lacombe)	Progressive Seeds
			CDC McGwire	U of S - CDC	SeCan Members
			Peregrine	AAFRD (Lacombe)	Progressive Seeds
			Phoenix	AAFRD (Lacombe)	Progressive Seeds
			CDC Silky	U of S - CDC	QAS
			CDC Speedy	U of S - CDC	Canterra/QAS
			Tercel	AAFRD (Lacombe)	Progressive Seeds
			Intensive Management		
			CDC Bold	U of S - CDC	Canterra Seeds
			CDC Earl	U of S - CDC	SeCan Members
			Kasota	AAFRD (Lacombe)	SeCan Members
			Mahigan	AAFRD (Lacombe)	SeCan Members
			Niska	AAFRD (Lacombe)	Canterra Seeds
			Stetson	W. Plant Breeders	Sask. Wheat Pool
			CDC Thompson	U of S - CDC	QAS
			Vivar	AAFRD (Lacombe)	SeCan Members
			Oat		
			AC Antione	AAFC (Ottawa)	Cargill Seed
			AC Assiniboia	AAFC (Winnipeg)	Canterra Seeds,
			<div style="border: 1px solid black; padding: 5px;"> <p>AC - as a prefix to variety names Agriculture Canada (Agriculture and Agri-Food Canada)</p> <p>AAFC - Agriculture and Agri-Food Canada</p> <p>CDC - Crop Development Centre</p> <p>AAFRD - Alberta Agriculture Food and Rural Development, Lacombe, Alta.</p> <p>U - University</p> <p>U of S - University of Saskatchewan, Saskatoon</p> <p>USDA - United States Department of Agriculture</p> <p>QAS - Quality Assured Seeds</p> <p>LCSI - Limagrain Canada Seeds Inc.</p> </div>		

Crop kind, Class & Variety	Breeding Institution	Distributor	Crop kind, Class & Variety	Breeding Institution	Distributor
AC Belmont [Ⓜ]	AAFC (Winnipeg)	Proven Seed	Cash	Svalöf Weibull AB	Newfield Seeds
CDC Boyer	U of S - CDC	SeCan Members	CHINOOK	Svalöf Weibull AB	Limagrain Canada
Calibre	U of S - CDC	SeCan Members	Eclipse	University of Alberta	Agricore
Derby	U of S - CDC	Proven Seed	Eldorado		
AC Kaufmann	AAFC (Lacombe)	SeCan Members	FAIRVIEW	Svalöf Weibull AB	Sask. Wheat Pool
AC Juniper [Ⓜ]	AAFC (Lacombe)	Sask. Wheat Pool	Foothills	Svalöf Weibull AB	Sask. Wheat Pool
AC Medallion [Ⓜ]	AAFC (Winnipeg)	Cargill Seed	Hysyn 100	Advanta Seeds	Advanta Seeds
AC Morgan	AAFC (Lacombe)	SeCan Members	Hysyn 110	Advanta Seeds	Advanta Seeds
AC Mustang	AAFC (Lacombe)	Sask Wheat Pool	Hysyn 111	Advanta Seeds	Advanta Seeds
CDC Pacer	U of S - CDC	QAS	Hysyn 120 CS	Advanta Seeds	Cargill Seed
AC Pinnacle	AAFC (Winnipeg)	QAS	MAVERICK	Svalöf Weibull AB	SWP/Agricore
AC Preakness [Ⓜ]	AAFC (Winnipeg)	Proven Seed	NORWESTER	Svalöf Weibull AB	Northstar Seed
AC Rebel	AAFC (Winnipeg)	Canterra Seeds	AC Parkland	AAFC (Saskatoon)	SeCan Members
SW Exactor	Svalöf Weibull AB	QAS	Reward	U of Manitoba	SeCan Members
Triple Crown [Ⓜ]	Svalöf Weibull AB	Newfield Seeds	AC Sunbeam	AAFC (Beaverlodge)	SeCan Members
Canola			WESTWIN	Svalöf Weibull AB	Brett-Young Seeds-
Argentine			Flax		
1492 CA	NPZ-LEMBKE	Canterra Seeds	CDC Arras	U of S - CDC	QAS
220	NPZ-Svalöf Weibull AB	Cargill Seed	CDC Bethune	U of S - CDC	SeCan Members
45A54 [Ⓜ] (RR)	Pioneer Hi-Bred	Proven Seed	AC Carnduff	AAFC (Morden)	SeCan Members
45A51 [Ⓜ] (RR)	Pioneer Hi-Bred	Proven Seed	AC Emerson	AAFC (Morden)	SeCan Members
45A71 [Ⓜ] (SM)	Pioneer Hi-Bred	Proven Seed	Flanders	U of S - CDC	SeCan Members
46A52 [Ⓜ] (RR)	Pioneer Hi-Bred	Proven Seed	AC Lightning	AAFC (Morden)	Canterra Seeds
46A65 [Ⓜ]	Pioneer Hi-Bred	Proven Seed	Linola™989 [Ⓜ]	CSIRO/UGG	Proven Seed
46A73 [Ⓜ] (SM)	Pioneer Hi-Bred	Proven Seed	Linola™ 1084	CSIRO/UGG	Proven Seed
46A76 [Ⓜ] (SM)	Pioneer Hi-Bred	Proven Seed	AC Linora	AAFC (Morden)	SeCan Members
Agassiz	DSV	Brett Young Seeds	AC McDuff [Ⓜ]	AAFC (Morden)	Proven Seed
Armor BX	University of Manitoba	Sask Wheat Pool	NorLin	AAFC (Morden)	SeCan Members
Ascent	DSV	Brett-Young Seeds	CDC Normandy	U of S - CDC	SeCan Members
Canterra1867(RR)		Canterra Seeds	Somme	U of S - CDC	SeCan Members
CLAVET	Svalöf Weibull AB	Cargill Seed	Taurus [Ⓜ]	Cebeco Zaden	QAS
Conquest (RR)	U of Alberta	Sask Wheat Pool	CDC Valour [Ⓜ]	U of S - CDC	SeCan Members
CNRO28 RR			Vimy	U of S - CDC	SeCan Members
Cyclone [Ⓜ]	DLF-Trifolium	LCSI	AC Watson	AAFC (Morden)	Sask. Wheat Pool
DEFENDER			Mustard		
DS-Roughrider(RR)	Danisco Seeds	SeCan Members	Brown		
OAC DYNAMITE [Ⓜ]	U of Guelph	Newfield Seeds	commercial		Trade
EAGLE	Svalöf Weibull AB	SeCan Members	Oriental		
AC Excel	AAFC (Saskatoon)	SeCan Members	Cutlass	AAFC (Saskatoon)	Trade
Foremost [Ⓜ]	DLF-Trifolium A/S	Seed Link Inc.	Forge	Colman's of Norwich	Sask. Wheat Pool
Hi-Q	University of Alberta	Sask Wheat Pool	Lethbridge 22A	AAFC (Saskatoon)	Trade
Hudson	Danisco Seeds	QAS	AC Vulcan	AAFC (Saskatoon)	Sask. Wheat Pool
HyCore 601	NPZ/LEMBKE	Agricore	Yellow		
HYLITE 225 RR	LCSI	Advanta Seeds	AC Base	AAFC (Saskatoon)	
Hyola 401	Advanta Seeds	Advanta Seeds	Gisilba	Kurt Behm GMBH	Northern Sales/ Klempnauer Seeds
Hyola 428	Advanta Seeds	Advanta Seeds			Trade
HyPerStar 100	NPZ/LEMBKE	QAS	Ochre	AAFC (Saskatoon)	Sask. Wheat Pool
IMPULSE	Svalöf Weibull AB	Newfield Seeds	AC Pennant	AAFC (Saskatoon)	Proven Seed
Invigor 2573 (LL)	Aventis	Aventis	Tilney	Colman's of Norwich	Proven Seed
Invigor 2663 (LL)	Aventis	Aventis	Viscount	Colman's of Norwich/UGG	Proven Seed
InVigor 2463 (LL)	Aventis	Aventis	Sunflower		
InVigor 2153 [Ⓜ] (LL)	Aventis	Aventis	63A21		
InVigor 2273 (LL)	Aventis	Aventis	63A81		
Legacy [Ⓜ]	Svalöf Weibull AB	Sask. Wheat Pool	IS 6111	Interstate Seeds	
LG3235 (RR)	LCSI	LCSI	IS 7211		
LG3345 (RR)	LCSI	Cargill Seed	P6150	Pioneer Hi-Bred	Pioneer Hi-Bred
LG3455 (RR)	LCSI	LCSI	SF 187		
LG Dawn (RR)	LCSI	Agricore	SF 270	Cargill Seed	Cargill Seed
LiBred - 279	DSV		Field Pea		
Magellan	IMC Cargill	Cargill Seed	DS Admiral	Danisco Seeds	QAS
Option 500	Danisco Seed	Advanta Seeds	AC Advantage	(AAFC Morden)	Secan Members
Option 501	Advanta Seeds	Advanta Seeds	Alfetta [Ⓜ]	Cebeco Zaden	QAS
Q2 [Ⓜ]	U. of Alberta	Sask. Wheat Pool	Atomic	DLF Trifolium	
Quantum [Ⓜ]	U of Alberta	Sask. Wheat Pool	CDC April	U of S - CDC	QAS
Quest [Ⓜ] (RR)	Alberta Wheat Pool	Sask. Wheat Pool	Baccara [Ⓜ]	Florimond Desprez	St. Denis Seeds (AB)
Sentry	U of Manitoba	QAS	Badminton	Florimond Desprez	
Skyhawk			SW Bravo	Svalöf Weibull AB	Agricore
SW 5001	Svalöf Weibull AB	Sask. Wheat Pool	Carneval [Ⓜ]	Svalöf Weibull AB	Sask. Wheat Pool
SW ARROW (RR)	Svalöf Weibull AB	SWP/Agricore	Carrera	Cebeco Zaden	Canseed Ltd.
SW RideR (RR)	Svalöf Weibull AB	SWP/Agricore	Cascade		Canterra Seeds
Thunder			COBRA	Danisco Seeds	Canterra Seeds
Trailblazer [Ⓜ]	LCSI	Northstar Seed	Cresta	Sharpes Int. Seed Ltd.	
		Prairie Seeds	CROMA [Ⓜ]	Cebeco Zaden	Canterra Seeds
AC Tristar (TT)	AAFC (Saskatoon)	Brett-Young Seeds	Delta [Ⓜ]	Cebeco Zaden	QAS
WILDCAT	Svalöf Weibull AB		DS Dominator	Danisco Seeds	QAS
Polish			Eclipse	Cebeco Zaden	QAS
41P55	Pioneer Hi-Bred	Proven Seed	Eiffel [Ⓜ]	Danisco Seeds	SeCan Members
41P95	Pioneer Hi-Bred	Proven Seed	Espace [Ⓜ]	Cebeco Zaden	St. Denis Seeds AB
1000 SP	Advanta Seeds	Canterra Seeds	GRANDE [Ⓜ]	Svalöf Weibull AB	Sask. Wheat Pool
1007	Svalöf Weibull AB	Canterra Seeds	CDC HANDEL	U of S - CDC	Sask. Pulse Growers
AC Boreal	AAFC (Saskatoon)	SeCan Members			

Crop kind, Class & Variety	Breeding Institution	Distributor	Crop kind, Class & Variety	Breeding Institution	Distributor
Highlight [▲]	Svalöf Weibull AB	Newfield Seeds	Outlook	U of S - CDC	SeCan Members
INTEGRA [▲]	Cebeco Zaden	St. Denis Seeds AB	Scirocco	NPZ-Lembke	Agriprogress Inc.
Keoma	Anttila P.B. Farm	Sask. Wheat Pool	Dry Bean		
Logan	Agricore	Agricore	AC Burrito	AAFC (Harrow)	
Mandy	Mansholt	Terramax	CDC Camino	U of S - CDC	Sask. Pulse Growers
MAJORET [▲]	Svalöf Weibull AB	Newfield Seeds	CDC Crocus	U of S - CDC	Klempnauer
AC Melfort	AAFC (Morden)	Canterra Seeds	Fargo		Rogers Brothers
Miami	Sharpes Intl. Seeds Ltd.	QAS	Othello	USDA/ARS (Prosser, WA)	Public
Millenium [▲]	Mansholt	Terramax	Earliray	Gen-Tec	Gen-Tec
CDC Minuet	U of S - CDC	Sask. Pulse Growers	US 1140	USDA	Public
CDC Montero	U of S - CDC	Sask. Pulse Growers	CDC Espresso	U of S - CDC	Canterra Seeds
CDC MOZART	U of S - CDC	Sask. Pulse Growers	CDC Nighthawk	U of S - CDC	QAS
Nicole	Advanta Seeds	QAS	CDC Nordic	U of S - CDC	Sask. Pulse Growers
NITOUCHÉ [▲]	DLF Trifolium (Denmark)	QAS	CDC Pintium	U of S - CDC	Sask. Pulse Growers
Olivin [▲]	Slovosivo H.S.	Terramax	GTS 523	Gen-Tec	Gen-Tec
PASSAT	Cebeco Zaden		CDC Rosalee	U of S - CDC	QAS
Pekisko [▲]	Agricore	Agricore	AC Skipper	AAFC (Lethbridge)	Klempnauer/QAS
Princess	Wilbur Ellis Co.	Walker Seeds	UI 906	University of Idaho	Public
PROFI [▲]	Danisco Seeds	SeCan Members	Viva		Public
SW Parade	Svalöf Weibull AB	Sask. Wheat Pool	CDC Pinnacle	U of S - CDC	Sask. Pulse Growers
Radley	Sharps-Columbia Seeds	Columbia Seeds (AB)	CDC Altiro	U of S - CDC	Sask. Pulse Growers
Scuba	Advanta Seeds	QAS	CDC Bianca	U of S - CDC	QAS
DS Stalwarth	Danisco Seeds	Secan Members	Chickpea		
SWING [▲]	Cebeco Zaden	QAS	Desi		
TOLEDO [▲]	Cebeco Zaden	Canterra Seeds	CDC Anna	U of S - CDC	Sask. Pulse Growers
Trapper	AAFC (Morden)	Public	CDC Desiray	U of S - CDC	Sask. Pulse Growers
Venture	Axel Toft	Johnson Seeds (MB)	Myles	USDA/Washington State U	Public
CDC VERDI	U of S - CDC	Sask. Pulse Growers	CDC Nika	U of S - CDC	Sask. Pulse Growers
Victoria	Svalöf Weibull AB	Newfield Seeds	Kabuli		
CDC Vienna	U of S - CDC	Walker Seed	B-90		Agricore
Whero	Challenge Seeds	Newfield Seeds	CDC Chico	U of S - CDC	Sask. Pulse Growers
CDC Winfield	U of S - CDC	SeCan members	CDC Diva	U of S - CDC	Sask. Pulse Growers
Lentil			Dwellely	USDA/Washington State U	Public
Crimson		Public	Evans	USDA/Washington State U	Public
Eston	U of S - CDC	SeCan Members	Sanford	USDA/Washington State U	Public
CDC Glamis	U of S - CDC	Sask. Pulse Growers	CDC Xena	U of S - CDC	Sask. Pulse Growers
CDC Grandora	U of S - CDC	Sask. Pulse Growers	CDC Yuma	U of S - CDC	Sask. Pulse Growers
CDC Milestone	U of S - CDC	Sask. Pulse Growers	Canary Seed		
Laird	U of S - CDC	SeCan Members	Elias	U of Minnesota; U of S - CDC	Public
CDC Redcap	U of S - CDC	Sask. Pulse Growers	Keet	U of Minnesota; U of S - CDC	Public
CDC Redwing	U of S - CDC	Sask. Wheat Pool	CDC Maria	U of S - CDC	C. Special Crops
CDC Richlea	U of S - CDC	SeCan Members	Safflower		
CDC Robin	U of S - CDC	Sask. Pulse Growers	Saffire	AAFC (Lethbridge)	Jerry Kubic (AB)
CDC Sovereign	U of S - CDC	Sask. Pulse Growers	AC Stirling	AAFC (Lethbridge)	SeCan Members
CDC Vantage	U of S - CDC	Sask. Pulse Growers	AC Sunset	AAFC (Lethbridge)	Alberta Wheat Pool
Faba Bean					
Aladin	University of Manitoba	Public			
CDC Blitz	U of S - CDC				
Cresta	Saatbau Linz	Canterra Seeds/ Agriprogress Inc.			
CDC Fatima	U of S - CDC	R.Legumex/Walker S.			
Orion	AAFC (Lacombe)	Roger Lee, Lyster Farm			

The **Advisory Council on Grain Crops**, a committee of the Saskatchewan Agricultural Services Co-ordinating Committee (SASCC), supervises, co-ordinates and reviews the collection, analysis and reporting of information in this pamphlet.

Membership of the Advisory Council on Grain Crops consists of representatives from:

- Agriculture and Agri-Food Canada
- Saskatchewan Agriculture and Food
- University of Saskatchewan
- Crop Development Centre
- Saskatchewan Wheat Pool
- Canadian Seed Trade Association
- Saskatchewan Seed Growers' Association
- Saskatchewan Association of Rural Municipalities
- Farmers
- Saskatchewan Irrigation Development Centre
- Representatives from Saskatchewan Seed Distributing Companies

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**Saskatchewan
Agriculture
and Food**



Saskatchewan Wheat Pool



**Agriculture and
Agri-Food Canada**