

# Varieties of grain crops 1997



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 north-eastern sections.



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

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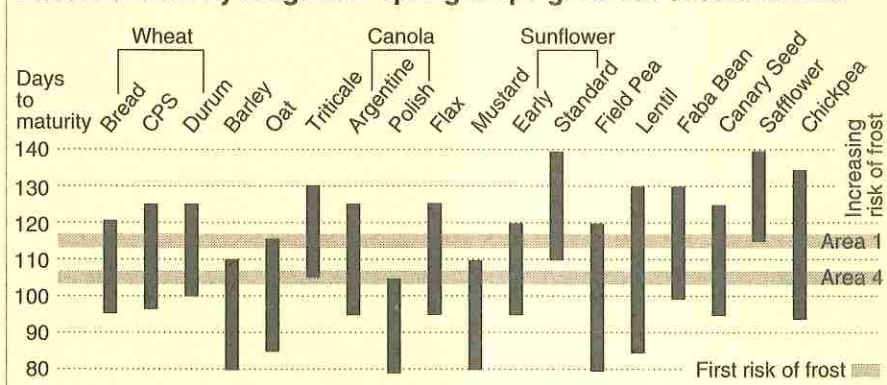
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## Relative Maturity Ratings

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 + or -, 1-2 days and VL and VE varieties beyond these, e.g. VL-Seebe, L-Manley, M-Harrington, E-B1602, VE-CDC Fleet.

Relative maturity ranges for spring crops grown in Saskatchewan



## Comparisons

The relative maturity of varieties of different crops is important when making plans for seeding. The above table compares the relative maturity ranges for crops grown in Saskatchewan.

Maturity is measured from seeding to

### 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.

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.



# Cereal Crops

## Wheat

Main characteristics of varieties

Type & Variety	Area 1	Area 2	Area 3	Area 4	Irr**	Average maturity in days	Protein	Resistance to*									
								Lodg-ing	Shat-tering	Sprout-ing	Stem rust	Leaf rust	Loose smut	Bunt	Leaf spot	Root rot	
<b>Bread Wheat</b>										Yield as % of Katepwa							
Katepwa	100	100	100	100	100	98	14.0	F	G	F	G	F	G	G	P	F	
AC Barrie <sup>△</sup>	103	108	112	113	114	100	14.5	G	G	G	G	G	G	G	F	F	
AC Cadillac <sup>△</sup>	104	110	106	106 <sup>+</sup>	116	99	14.2	F	G	F	G	G	VG	VG	F	F	
Columbus	99	101	102	96	103	103	14.2	F	F	VG	F	G	F	VG	P	F	
AC Cora	101	103	103	103	104	98	14.1	F	G	F	G	VG	G	G	P	F	
AC Domain	95	96	100	97	98	98	14.6	G	G	VG	G	VG	VG	F	VP	F	
AC Eatonia <sup>△</sup>	96	100	99	95	---	100	14.7	P	G	VG	G	F	F	G	P	F	
AC Elsa <sup>△</sup>	106	113	110	100 <sup>+</sup>	109	99	14.3	F	G	F	G	G	G	F	F	F	
Invader <sup>△</sup>	102	105	105	104	99	101	14.4	G	G	F	G	G	G	F	P	F	
Laura	103	107	106	105	93	101	14.2	F	G	F	G	G	F	P	P	G	
AC Majestic <sup>△</sup>	99	104	106	104 <sup>+</sup>	103	102	14.4	G	G	VG	G	G	F	VG	F	F	
CDC Makwa	101	103	100	101	100	99	14.0	F	G	F	G	F	G	F	P	F	
CDC Merlin <sup>++</sup>	96	102	104	107	97	100	14.0	F	G	F	G	G	G	G	P	F	
AC Michael	102	103	99	100	98	99	14.0	F	G	F	G	F	G	G	P	F	
AC Minto	99	102	101	100	94	101	14.2	F	G	F	G	G	VG	G	P	F	
Pasqua	101	102	100	100	92	100	14.0	F	G	G	G	G	F	F	P	F	
Roblin	92	93	97	95	99	97	14.5	G	G	P	G	G	G	P	P	G	
CDC Teal	100	101	106	103	103	98	14.5	G	G	P	G	G	G	F	P	F	
<b>Canada Prairie Spring Wheat</b>																	
<b>Red Seeded</b>																	
AC Crystal <sup>△</sup>	127	141	141	121 <sup>+</sup>	136	103		VG	VG	P	G	G	F	G	F	F	
Cutler <sup>++</sup>	93	100	101	96	---	99		G	F	VP	G	P	F	VP	---	F	
AC Foremost	124	134	134	126	123	102		G	G	F	G	G	F	G	P	F	
AC Taber	122	132	132	124	131	104		VG	VG	P	G	G	P	G	F	F	
<b>White Seeded</b>																	
Genesis	125	130	130	123	129	103		P	VG	VP	F	F	F	VP	F	F	
AC Karma <sup>△</sup>	122	135	134	132	126	102		G	G	P	G	G	F	G	P	F	
AC Vista <sup>△</sup>	123	139	137	124 <sup>+</sup>	143	101		G	G	F	G	G	G	G	P	F	
<b>Canada Western Extra Strong</b>																	
Bluesky <sup>++</sup>	96	93	95	99	---	99		F	G	P	G	F	VG	F	P	G	
Glenlea	95	105	108	110	---	102		F	G	P	G	G	VG	F	P	G	
Wildcat <sup>++</sup>	90	86	92	93	---	98		F	G	P	P	P	VG	VP	P	G	
Laser	104	117	121	120 <sup>+</sup>	---	99		F	G	P	P	P	VG	VP	P	G	
<b>Durum Wheat</b>																	
Yield as % of Kyle																	
Kyle	100	100	100	100	100	103	14.0	P	VG	F	VG	VG	P	VG	P	F	
Medora <sup>++</sup>	97	97	95	98	104	100	14.0	F	VG	P	VG	VG	F	VG	P	F	
AC Melita	96	93	99	---	109	101	13.8	F	VG	P	VG	VG	P	VG	VP	F	
Plenty	103	105	106	109	107	102	13.8	F	VG	P	VG	VG	P	VG	F	G	
Sceptre	98	97	98	103	110	100	13.3	G	VG	P	VG	VG	F	VG	P	G	

\* Resistance ratings: VG = very good; G = good; F = fair; P = poor; VP = very poor.

\*\* Relative yields under irrigation are based on limited data.

+ Relative yields based on less than three years of data in Area 4.

++ This variety might not be described in 1997.

— No data available.



AT TIME OF PRINTING:

Protected by Breeders' Rights: AC Barrie, AC Eatonia, Invader, AC Karma.

Applied for Protection: AC Cadillac, AC Elsa, AC Majestic, AC Crystal, AC Vista.

### Additional Information

AC Barrie, AC Cora, and Katepwa have better tolerance to fusarium head blight than other cultivars. Durum wheat varieties are more susceptible than CWRS cultivars and CPS cultivars are intermediate.

Seed of varieties rated poor and very poor for bunt and loose smut should be treated. Please refer to the Seed Treatment section of this pamphlet or to the

Crop Protection Guide 1997.

All 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

AC Cadillac is higher yielding and generally produces more protein than

Katepwa. It has an exceptionally heavy volume weight. Seed will not be available in 1997.

AC Elsa is similar to AC Barrie in many respects, but is earlier maturing. AC Elsa is higher yielding and generally produces more protein than Katepwa. Seed will not be available in 1997.

AC Majestic is higher yielding and generally produces more protein than



**Katepwa.** It has good pre-harvest sprouting resistance. **AC Majestic** is late maturing and should be seeded early. Limited seed will be available in 1997.

**AC Eatonia** is resistant to wheat stem sawfly and has good resistance to pre-harvest sprouting.

**Invader** and **Laura** are awned.

### Canada Prairie Spring Wheat

**AC Karma**, **AC Vista** and **Genesis** are white-seeded; **AC Crystal**, **AC Foremost**, **AC Taber**, **Cutler** are red-seeded. All current Canada Prairie Spring varieties are awned and susceptible to a new race of loose smut, except **AC Vista**. Most Canada Prairie Spring varieties are late maturing, except **Cutler**, and should be sown early.

**AC Vista** has improved pre-harvest sprouting resistance, higher protein content, and stronger gluten compared to **AC**

**Karma**. **AC Vista** has an interim registration to facilitate test-marketing. Seed will not be available in 1997.

**AC Crystal** is similar to **AC Taber** in most respects, has resistance to loose smut except the new race T9, and has improved quality. Seed will not be available in 1997.

### Canada Western Amber Durum

All durum varieties are susceptible to two new races of loose smut. Seed can be treated to provide control.

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

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

### Soft White Spring Wheat

**AC Reed** and **AC Phil** have similar yield potential to **Fielder** and mature

about two 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**. Seed of **AC Phil** will not be available in 1997.

### Canada Western Extra Strong

**Laser** is similar to **Wildcat** in many respects but is higher yielding and about one day later maturing. **Laser** has an interim registration. Seed will not be available in 1997.

**Bluesky**, **Wildcat**, and **Laser** may not have as strong a gluten as **Glenlea**. All cultivars of this class perform poorly under droughty conditions.

## Winter Wheat

Main characteristics of varieties

Variety	Grain yield % Norstar				Straw strength	Winter survival
	Areas 1 & 2	Areas 3 & 4	Irrigation	Height		
Norstar	100	100	100	Tall	Fair	Good
AC Readymade	84	---	---	Intermediate	Good	Poor
CDC Kestrel	99	107	142	Intermediate	Good	Good
CDC Clair	102	109	145	Intermediate	Good	Good
CDC Osprey	102	110	132	Intermediate	Good	Good

### Additional Information

**Norstar** is adapted to regions that experience frequent early spring drought stress.

**AC Readymade** is a medium tall cultivar with good straw strength and excellent grain protein concentration. Poor winter hardiness and a high susceptibility

to rust have restricted production of this cultivar to southern Alberta.

**CDC Kestrel**, **CDC Clair** and **CDC Osprey** are tall semi-dwarf cultivars that are adapted to average moisture environments and irrigation. The grain protein concentration of **CDC Kestrel** is lower

than **CDC Clair** and **CDC Osprey**.

**CDC Kestrel**, **CDC Clair** and **CDC Osprey** have better stem rust resistance than **Norstar**. **CDC Osprey** is susceptible to leaf rust.

Seed of **CDC Clair** and **CDC Osprey** will not be available in 1997.

## Triticale

Main characteristics of varieties

Variety	Yield as % of Frank				Irr***	Maturity**	Lodging	Resistance to*:			
	Area 1	Area 2	Area 3	Area 4				Stem rust	Leaf rust	Bunt	Root rot
Frank	100	100	100	100	100	M (105 days)	G	VG	VG	VG	F
AC Alta	102	100	102	---	109	L	G	VG	VG	VG	G
Banjo	94	97	98	97	100	L	G	VG	VG	VG	G
AC Certa	100	95	101	---	101	M	G	VG	VG	VG	G
AC Copia	98	95	94	99	100	M	G	VG	VG	VG	G
Pronghorn	97	97	103	---	108	E	G	VG	VG	VG	G
Wapiti	97	102	97	90	106	L	G	VG	VG	VG	G

\* Resistance ratings: VG = very good; G = good; F = fair; P = poor; VP = very poor.

\*\* Relative maturity: VE = very early; E = early; M = medium; L = late; VL = very late.

\*\*\* Relative yields under irrigation are based on limited data.

### Additional Information

Triticale matures 2-3 days later than **AC Taber** wheat, therefore, should be seeded as early as possible. Triticale matures very

late in Area 4. Test weight of **AC Certa** is superior to other varieties. The seeding rate for triticale must be increased at least 30 percent to have the same number of

plants per square foot as CWRS wheat.

Seed supplies of **AC Alta** and **AC Certa** will be limited in 1997. Seed of **Pronghorn** will not be available in 1997.



## Malting Barley

Main characteristics of varieties

Type & variety	—Yield as % of Harrington—								Resistance to**							
	Rough or		Area 1	Area 2	Area 3	Area 4	Relative maturity rating*	Straw††	Lodging	Shattering	Leaf spots		Loose smut	Other smuts	Root rot	Stem rust
	2 or 6 row	smooth awns									Net blotch	Scald				
<b>Two Row</b>																
Harrington	2	R	100	100	100	100	M	N	F	VG	VP	P	P	P	F	P
AC Oxbow	2	R	95	97	101	104	M	N	VG	VG	F	P	VG	G	P	G
B1215	2	R	103	105	108	110	L	N	G	G	VP	P	P	P	P	P
Manley	2	R	105	111	110	112	L	N	G	VG	F	P	P	VG	F	G
Stein	2	R	103	107	107	108	M	N	F	VG	F	P	P	G	P	G
<b>Six Row</b>																
B1602	6	R	90	101	99	100	E	N	G	P	F	P	P	G	VG	G
Duel	6	R	95	99	100	96	M	N	G	VP	F	P	P	G	G	G
Tankard	6	S	101	106	107	103	M	N	G	VP	F	P	P	P	G	G
<b>Interim Registered</b>																
<b>Two Row</b>																
TR133△	2	R	97	109	111	113	M	N	G	G	F	P	P	P	F	G
TR232△	2	R	100	108	108	113	M	N	G	G	F	P	VG	F	F	G
TR128	2	R	101	112	114	114	M	N	G	G	F	P	F	F	F	G
TR129†	2	R	88	101	96	88	VE	SD	VG	G	F	G	F	F	F	G
TR139†△	2	R	104	112	112	127	M	N	G	G	G	VP	P	P	G	G
<b>Six Row</b>																
Robust†	6	S	82	100	100	112	M	N	G	F	F	P	P	F	G	G
Excel†	6	S	95	110	110	121	M	N	VG	F	F	P	P	G	G	G
BT941†△	6	R	91	105	100	106	M	N	G	F	P	P	P	G	G	G
BT433†△	6	S	100	107	113	127	M	N	F	P	P	P	P	P	F	G
BT435†△	6	S	99	99	110	116	M	N	G	P	F	P	P	P	F	G
Stander†△	6	S	95	118	108	135	M	N	VG	F	F	P	P	P	G	G

\* Relative maturity: The relative maturity of the check, Harrington is M (on average, 91 days from seeding to swathing ripeness). VE = very early; E = early; M = medium; L = late; VL = very late

\*\* Resistance ratings: VG = very good; G = good; F = fair; P = poor; VP = very poor.

† Limited data

†† N = Normal; SD = Semidwarf



AT TIME OF PRINTING:

Applied for Protection: TR133, TR232, TR139, BT941, BT433, BT435, Stander

### Lines under Interim Registration for 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 1997 will be

malted in January-February, 1998. It will be brewed in May-June, 1998, aged and tasted in October-November 1998. A crop grown in 1998 will be tasted in October-November, 1999.

To facilitate this testing, "Interim Registration" has been established as a special category. This registration is granted for up to three years. It allows seed increase and marketing in a normal manner but automatically expires if performance of the line is not satisfactory. If performance is satisfactory then a full registration is granted. Production of the

carload lots for evaluation is done by contract through the Canadian Wheat Board.

### 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.

## Rye

Main characteristics of varieties

Variety	—Yield as % of Musketeer—				Maturity**	Resistance to*			
	Area 1	Area 2	Area 3	Area 4		Winter killing	Shattering	Lodging	Stem rust
Musketeer	100	100	100	100	M	VG	F	G	G
Prima	107	108	105	108	M	VG	F	F	G
AC Rifle	131	103	96	---	M	VG	VG	VG	G

\* Resistance ratings: VG = very good; G = good; F = fair; P = poor; VP = very poor.

\*\* Relative maturity ratings: VE = very early; E = early; M = medium; L = late; VL = very late.

### Additional Information

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 conservation tillage.



## Feed and Food Barley

Main characteristics of varieties

Type & variety	— Yield as % of Harrington —							— Resistance to* —								
	2 or 6 row	Rough or smooth awns	Area 1	Area 2	Area 3	Area 4	Relative maturity rating***	Straw††	Lodging	Shattering	—Leaf spots—		Loose smut	Other smuts	Root rot	Stem rust
<b>Feed</b>																
Brier	6	S	112	114	116	116	M	N	F	F	G	F	P	VG	VP	G
Bronco	6	R	92	106	112	117	L	N	G	F	F	P	P	G	F	G
CDC Dolly	2	R	112	116	114	110	M	N	G	G	P	G	P	G	F	G
CDC Fleet**	2	R	89	101	89	99	VE	N	VG	G	F	VG	P	VP	P	G
CDC Guardian	2	R	99	106	107	113	L	N	F	G	F	VG	P	VG	P	G
AC Harper△**	6	S	107	104	114	130	M	N	G	F	F	G	P	F	F	G
AC Lacombe△	6	S	102	108	112	111	M	N	G	F	F	F	P	VG	F	G
Prospect	2	R	103	108	109	110	L	N	F	G	VP	P	P	F	F	P
AC Rosser**	6	S	109	116	123	142	L	N	G	P	F	VP	P	VG	G	G
Seebe	2	R	98	105	108	114	VL	N	G	G	P	VG	P	VG	P	P
<b>Hulless</b>																
CDC Buck	6	R	82	89	86	85	E	N	G	G	F	F	P	P	F	G
Condor	2	R	85	83	82	79	M	N	G	G	P	P	P	F	F	G
CDC Dawn	2	R	105	113	104	105	M	N	F	G	F	VG	P	F	F	G
Falcon△	6	S	68	92	86	86	M	SD	VG	P	F	VG	P	F	F	G
AC Hawkeye**△	6	S	90	97	104	120	M	N	F	F	F	VG	P	P	F	G
Phoenix△	2	R	82	94	94	94	M	N	G	G	P	P	P	F	G	P
CDC Richard	2	R	84	94	93	90	E	N	P	F	P	VG	P	F	G	G
CDC Silky	6	S	85	100	98	105	M	SD	VG	F	F	VG	P	F	G	G
<b>Intensive Management</b>																
Duke	6	R	92	97	97	95	L	SD	VG	F	F	VG	P	VG	G	G
CDC Earl	6	R	99	114	112	118	L	SD	VG	F	G	VG	P	G	G	G
Tukwa	6	S	94	113	120	120	E	SD	G	F	G	G	P	VG	F	G
Kasota△	6	S	93	110	94	111	E	SD	G	F	F	G	P	G	P	G

\* Resistance ratings: VG = very good; G = good; F = fair; P = poor; VP = very poor.

\*\* Limited data.

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

VE = very early; E = early; M = medium; L = late; VL = very late

†† N = Normal; SD = Semidwarf



AT TIME OF PRINTING:

**Protected by Breeders' Rights:** AC Lacombe, Falcon, Phoenix, Kasota.

**Applied for Protection:** AC Harper, AC Hawkeye.

### Additional Information

#### 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.

#### Waxy

**CAD Candle, HB803 and Merlin** are waxy starch varieties for specialty markets. These varieties have interim registration to permit market evaluation. 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.

## Seed Facts

### 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 37°C for batchdriers, or 43°C 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.

*(See more Seed Facts on page v.r. 11.)*



## Oat

### Main characteristics of varieties

Variety	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	100	100	100	100	50.0	22.9	44	M	G	VP	VP	P
CDC Boyer	100	102	98	99	47.2	22.6	81	E	G	VG	P	P
Derby	100	100	101	102	50.1	22.2	74	M	G	VP	VP	P
Dumont	96	98	96	95	48.8	23.5	64	M	F	VG	F	G
ELVY <sup>‡</sup>	101	106	107	107	48.1	25.0	56	M	G	VP	VP	P
AC Juniper <sup>‡</sup>	103	105	98	104	48.7	23.9	60	E	G	VP	VP	P
AC Marie	98	102	99	97	45.5	20.7	35	L	F	VG	F	G
AC Mustang <sup>‡</sup>	99	107	109	109	49.5	29.0	70	L	G	VP	VP	P
CDC Pacer (†)	103	109	104	98	48.9	23.7	71	M	G	VP	VP	F
AC Preakness <sup>‡</sup>	97	105	101	98	48.8	22.6	66	L	G	VG	F	G
Waldern	95	100	105	104	45.7	25.0	74	VL	G	VP	VP	P
#AC Belmont <sup>‡</sup>	72	77	76	76	52.0	n/a	n/a	M	G	VG	F	G

\* Relative maturity: The relative maturity of the check, Calibre is M (on average, 96 days from seeding to swathing ripeness).  
VE = very early; E = early; M = medium; L = late; VL = very late.

\*\* Resistance ratings: VG = very good; G = good; F = fair; P = poor; VP = very poor.

(†) Less than three years of data for Area 4.

# Hulless variety

Use of capital letters in variety names is as they are registered.



Progress through Research

#### AT TIME OF PRINTING:

Applied for Protection: ELVY, AC Juniper, AC Mustang, AC Belmont, AC Preakness.

### Additional Information

**CDC Pacer** is a new variety. Seed will not be readily available until 1998.

**Calibre, Derby, ELVY, AC Juniper, AC Mustang, CDC Pacer** and **Waldern** are susceptible to oat rusts and may be at

risk if grown in the oat-rust area of south-east Saskatchewan. While not as resistant to oat leaf rust as **AC Preakness, CDC Boyer** may be considered for the oat rust area of Saskatchewan, but should be planted early to avoid late disease infection.

**Hulless Oat: AC Belmont.** The hull is part of normal oat yield, thus hulless types yield less. They can be 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. Two registered varieties are available. **Elias** and **Keet** are similar in yield, but **Keet** is earlier maturing and more resistant to lodging. The maturity requirements are equal to wheat. Canary seed plants have a dense shallow root system and thus growing the crop on sandy soils is not recommended. Summerfallow is generally used, but canary seed may be grown successfully on stubble, proving adequate moisture is available for rapid germination and emergence.

Sow early in May at 34 kg/ha (30 lb/a) (germination greater than 85 percent). Plant the seed 3.5 to 5 cm deep into a firm seedbed. A grain drill is recommended.

Fertilizer recommendations are similar to those for cereal crops.

Canary seed is subject to colonization 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. An application of Malathion or Cygon is recommended if aphid densities exceed 20-30 aphids per stem or head. 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 so 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 very sensitive to diclofop methyl and trifluralin. It 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.

### 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/A). **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. Certified seed of **AC Stirling** and **AC Sunset** may be limited.



# Oilseed Crops

## Argentine Canola

Main characteristics of varieties

Variety	Yield as a % of Legend			Average % Oil	Average maturity in days	Resistance to*	
	Area 2	Area 3	Area 4			Lodging	Blackleg**
Legend	100	100	100	44.1	100	F	F
46A05	111	119	113	45.4	101	F	F
46A65	125	121	122	45.9	100	F	VG
Alliance	102	106	106	45.8	102	VG	F
B2416	102	106	108	44.4	101	G	F
Bounty	111	107	101	44.2	99	P	P
BRIGADE	111	116	***	45.2	100	VG	G
BULLET	109	100	105	44.8	98	F	G
CHALLENGER	123	116	119	44.0	101	G	G
CLAVET	112	114	***	44.8	100	F	G
CORONET	111	120	***	45.4	100	G	G
Crusher	104	99	107	46.2	103	VG	F
Cyclone	115	111	116	44.3	100	G	G
DEFENDER	111	107	110	44.6	99	G	G
Delta	109	105	111	43.6	101	G	F
EAGLE	123	116	119	44.9	99	G	G
Ebony	107	108	112	46.0	102	VG	G
AC Elect	103	98	113	45.8	100	F	P
AC Excel	102	97	99	45.2	100	F	F
Frontier	99	101	96	45.0	99	G	F
Garrison	116	111	124	44.6	101	VG	G
AC-H102	114	116	130	45.4	102	VG	G
Hudson	122	117	125	44.9	98	G	G
Hyola 401	112	112	98	43.7	101	G	P
Impact	104	102	115	44.7	101	G	F
IMPULSE	120	116	119	44.5	102	VG	VG
Jewel	***	110	***	45.0	***†	***†	G
Legacy	106	107	118	45.1	100	G	F
LG3260	113	109	***	46.9	98	F	P
LG3310	108	114	115	45.4	101	VG	VG
LG3650	108	125	120	46.2	99	F	G
Magnum	***	124	***	45.5	98	F	G
Mari	96	85	84	45.6	101	F	G
NORSEMAN	100	103	104	45.0	101	VG	F
OAC Springfield	103	108	102	45.7	97	VP	P
PEARL	104	97	103	43.4	102	G	G
Polo	95	93	86	48.3	102	F	F
PRINCETON	104	105	107	44.8	101	G	F
Quantum	110	121	116	44.2	100	VG	VG
Sentry	105	104	***	43.8	100	G	VG
SETTLER	106	107	117	44.5	101	VG	F
Seville	112	102	109	44.4	102	G	F
Sprint	102	98	106	44.1	95	G	G
TRAILBLAZER	117	114	***	45.7	101	G	G
Trojan	108	102	115	44.5	101	VG	F
Vanguard	99	94	99	44.6	100	F	F
46A72 (HT)	114	106	112	45.1	101	G	F
45A71 (HT)	114	111	110	44.4	100	F	F
AC Tristar (HT)	69	76	68	43.3	99	P	VP
Independence (HT)	110	103	109	45.0	98	P	F
Innovator (HT)	105	99	102	44.5	99	F	F
Quest (HT)	115	111	***	45.5	100	F	F
Stallion (HT)	70	80	72	42.2	101	F	F

HT Herbicide tolerant \*\*\* Limited data † See Additional Information section for more details. Jewel will be tested again in 1997.

\* Resistance ratings: VG = very good; G = good; F = fair; P = poor; VP = very poor.

\*\* A minimum of 3 years between canola crops (4 year rotation) is essential to reduce the incidence of blackleg. Use of capital letters in variety names is as they were registered.

### AT TIME OF PRINTING:

**Protected by Breeders' Rights:** 46A65, 46A05, Alliance, B2416, BULLET, Crusher, Cyclone, DEFENDER, Ebony, Garrison, Impact, Legacy, NORSEMAN, OAC Springfield, PEARL, PRINCETON, Quantum, SETTLER, Seville, Trojan, 45A71, Innovator

**Applied for Protection:** BATALLION, BRIGADE, CHALLENGER, CLAVET, CORONET, EAGLE, Frontier, Hudson, IMPULSE, Jewel, LG3260, LG3310, LG3650, Magnum, Sprint, TRAILBLAZER, 46A72, Independence, Quest.





## Polish Canola

Main characteristics of varieties

Variety	Grain yield % Tobin			Average % Oil	Average maturity in days	Resistance to*	
	Area 2	Area 3	Area 4			Lodging	White rust
Tobin	100	100	100	42.2	85		
41P95 $\Delta$	103	103	***	44.0	85	F	G
AC Boreal	103	101	***	45.3	85	F	VG
Cash $\Delta$	93	103	109	43.7	86	F	VG
CHINOOK $\Delta$	93	101	115	43.2	86	F	F
Eclipse	92	94	94	43.5	87	G	F
Eldorado	97	102	99	42.9	86	G	F
FAIRVIEW	109	110	***	44.5	86	G	P
Goldrush $\Delta$	91	97	88	42.3	89	F	G
Horizon	101	102	102	43.0	87	VG	G
Hysyn 100	105	104	115	43.2	86	G	VP
Hysyn 110	105	105	110	43.0	86	F	F
Hysyn 111	105	111	***	43.0	88	F	F
Klondike $\Delta$	90	104	111	43.1	89	G	G
MAVERICK $\Delta$	94	100	106	44.4	86	G	VP
NORWESTER	110	113	***	43.4	87	G	F
AC Parkland	97	100	103	44.0	86	F	G
Reward	98	103	102	44.2	86	F	VG
AC Sunbeam	101	105	95	43.5	84	F	VG
AC Sunshine	96	100	102	44.0	86	G	VG
WESTWIN	102	106	114	44.4	86	F	VG

\* Resistance ratings: VG = very good; G = good; F = fair; P = poor; VP = very poor. Use of capital letters in variety names is as they were registered.



AT TIME OF PRINTING:

Protected by Breeders' Rights: CHINOOK, Goldrush, Klondike, MAVERICK Applied for Protection: 41P95, Cash, WESTWIN.

### Additional Information

#### Argentine Canola

Argentine varieties yield, on average, 15 to 20 percent more than Polish varieties. Since Argentine varieties mature 10 to 14 days later than Polish varieties, they are better suited to the longer season growing areas of Saskatchewan. Argentine varieties are black seeded and have very good resistance to white rust (staghead). Blackleg disease, which is now widespread in Saskatchewan, can cause severe yield losses in varieties that have poor resistance. Argentine varieties are susceptible to seed shattering when left standing at full maturity. It should also be noted that late and very late maturing varieties tend to produce higher levels of green seed under wet and cool conditions at harvest. This can cause substantial grade reductions. Late maturing varieties should be planted early to reduce green seed counts. Argentine varieties are susceptible to Sclerotinia stem rot.

New Argentine varieties included in the table: **CHALLENGER**, **CLAVET**, **EAGLE**, **Hudson**, **IMPULSE**, **Sprint**, **TRAILBLAZER**, **Sentry**, and **46A65**. Jewel will be retested in 1997 owing to insufficient data for yield, days to mature and lodging. Manitoba and Alberta regional trial data indicated that Jewel is

3 days later than Legend and has a G lodging resistance rating. Pedigreed seed of **Legend** will not be available in 1997.

#### Polish Canola

Polish varieties are yellow-brown seeded and mature approximately two weeks earlier than Argentine varieties. Under conditions of drought or early fall frost the yield of Polish varieties can be equal to or greater than Argentine varieties. Polish varieties are more shatter resistant than Argentine varieties and therefore better suited to straight combining. Polish varieties are less likely to produce green seed than Argentine varieties. Polish varieties are susceptible to Sclerotinia stem rot and have poor resistance to 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. New Polish varieties included in the table: **AC Boreal**, **FAIRVIEW**, **NORWESTER**, **AC Sunbeam**, **Hysyn 111**, and **41P95**. **Tobin** will be deregistered in 1997.

#### Herbicide Tolerant (HT) Canola

All HT canola varieties to date are of the Argentine type. **Quest** is a new Roundup Ready variety, **Innovator** and the newly registered variety **Independence** are tolerant to Liberty, and **45A71** and **46A72** are tolerant to Pursuit. The triazine tolerant varieties **AC Tristar** and

**Stallion** are lower yielding than standard Argentine varieties and should only be considered for production in fields where severe infestations of stinkweed and/or wild mustard are expected.

#### Specialty Oil Rapeseed and Canola

High erucic acid oil is needed for special industrial oil markets. Argentine type, high erucic acid varieties have been developed for these markets. These varieties are typically lower yielding than standard canola varieties but have very good blackleg and lodging resistance. Low linolenic acid Argentine type canola varieties have been developed, and the oil is used as a premium vegetable oil for human consumption. Varieties of this type tend to be lower yielding and are susceptible to blackleg. Information on the contract production of these specialty oil rapeseed and canola varieties should be obtained from companies which contract such production.

#### Irrigation

Argentine varieties respond well to irrigation. Only varieties which are highly resistant to lodging and blackleg should be used since irrigation may increase the incidence of this disease and cause weakly strawed varieties to lodge. Irrigation may also delay maturity by one week or more under cooler conditions at harvest.



## Sunflower (Oilseed)

### Main characteristics of varieties

Type and Variety	Yield as % of IS 7111	Average maturity in days	Oil %
IS 7111	100	121	47.5
IS 7000	101	120	47.6
IS 6111	114	122	46.0
SF 128	107	128	44.1
SF 187	111	126	41.6
SF 270	114	123	46.8
6230	105	125	45.2
6300	104	128	49.3
Cadet	97	123	49.5
Capri	91	126	49.2
Comet-C	95	128	49.5
Trisum 846*	100	130	45.9
Hysun 311	98	121	51.4

Yield as % of Sunwheat 103

EMSS			
Sunwheat 103	100	117	47.5
P6150	100	117	44.9

\* high oleic

### Additional Information

Sunflower requires 125-130 days to mature, depending on the cultivar and the growing season. Oilseed sunflower has traditionally been grown in the Dark Brown and Black soil zones in southeastern Saskatchewan. Early maturing, short stature cultivars (EMSS) such as Sunwheat 103 and P6150 are adapted to production in all areas of Saskatchewan.

## Additional Information

Mustard is grown in the drier regions of Saskatchewan because of the better seed quality obtained under these conditions. Oriental and Brown mustards are usually swathed, but straight combining is also possible. Yellow mustard should be straight combined because of possible losses due to wind damage to the fluffy swath. 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 while **Forge** and commercial Brown are highly susceptible. **Forge** has superior seed quality.

Yellow mustard varieties are large seeded, and the seed is light yellow in color. The yield of yellow mustard is, on

## Mustard

### Main characteristics of varieties

Type & Variety	Yield as % of Cutlass	Average maturity in days
<b>Oriental</b>		
Cutlass	100	94
Forge	101	95
Lethbridge 22A	88	94
AC Vulcan	104	97
<b>Brown commercial</b>	89	95

Yield as % of Ochre

### Yellow

Ochre	100	94
Gisilba	97	94
AC Pennant	108	97
Tilney	99	95
Viscount <sup>®</sup>	99	98

average, 30 percent less than that of Oriental mustard. Differences in yield between the different types of mustard is normally compensated for by price.



AT TIME OF PRINTING:

Applied for Protection: Viscount

## Flax

### Main characteristics of varieties

Type & Variety	Yield as % of NorLin					Irr	Maturity <sup>1</sup>	Seed <sup>3</sup> size	Resistance to <sup>2</sup> :		
	Area 1	Area 2	Area 3	Area 4					Rust	Wilt	Lodging
NorLin	100	100	100	100	100	100	M	M	VG	G	G
AC Emerson	100	97	100	94	97	97	M	L	VG	VG	F-G
Flanders	102	102	101	99	100	100	L	S	VG	G	VG
AC Linora	91	94	99	94	104	104	L	M	VG	G	VG
AC McDuff <sup>△</sup>	99	100	104	100	107	107	VL	M	VG	G	VG
CDC Normandy*	100	101	109	107	106	106	M	M	VG	G	F-G
Somme	101	102	104	100	103	103	M	M	VG	G	F-G
CDC Triffid**	83	103	97	---	94	94	M	M	VG	G	G
Vimy	110	104	103	101	93	93	M	L	VG	G	F
<b>Solin varieties</b>											
Linola <sup>TM</sup> 947 <sup>△</sup>	93	100	103	97	99	99	VL	S	VG	G	VG
Linola <sup>TM</sup> 989* <sup>△</sup>	99	94	101	100	93	93	L	M	VG	G	VG

1 Relative maturity: The relative maturity of the check, NorLin, is M (on average 101 days from seeding to swathing ripeness) VE = very early; E = early; M = medium; L = late; VL = very late.

2 Resistance ratings: VG = very good; G = good; F = fair; P = poor; VP = very poor.

3 S = small, M = medium, L = large.

\* Less than three years of data for area 4 and irrigation.

\*\* Limited data.



AT TIME OF PRINTING:

Protected by Breeders' Rights: Linola<sup>TM</sup>947, Linola<sup>TM</sup>989.

Applied for Protection: AC McDuff.

### Additional Information

**CDC Triffid** is a new variety genetically engineered to tolerate soil residues of sulfonylurea herbicides. The major advantage of **CDC Triffid** is the ability to be incorporated in a rotation where long residual sulfonylurea herbicides have

been used to control weeds in cereal crops. Seed of **CDC Triffid** will not be available in 1997.

**Solin** is defined as a type of flax with less than five percent linolenic acid in its oil and having a yellow seed coat. Solin varieties produce a food quality oil

and, as such, cannot be sold in traditional flax markets. **Linola<sup>TM</sup>** varieties 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	Yield as % of Laird	Height (cm)	Days to first flower	Relative maturity rating*	—Resistance to**—		Seed size	Seeding rates*** kg/ha (lb/a)
					Ascochyta blight	Anthrax-nose		
Laird	100	41	53	VL	P	VP	L	90-100 (80-90)
Eston	117	30	48	E	VP	VP	S	45-50 (40-45)
CDC Richlea	117	35	50	M	VP	VP	M	60-70 (53-62)
CDC Redwing†	105	30	48	E	VG	VP	S	45-50 (40-45)

\* Relative maturity ratings: VE = very early; E = early; M = medium; L = late; VL = very late.

\*\* Resistance ratings: VG = very good; G = good; F = fair; P = poor; VP = very poor.

\*\*\* Equivalent to 12 seeds/foot<sup>2</sup> (132 seeds/m<sup>2</sup>)

† Red cotyledons, other varieties have yellow cotyledons. CDC Redwing is an exclusive release and only limited amounts of seed will be available in 1977.

### Additional Information

**Indianhead** lentil is a black-seeded variety released for green manure use.

**CDC Matador** and **CDC Gold** are two

niche market types of lentil and no seed will be available for 1997.

Detailed agronomic information may be found in the *Pulse Production Man-*

*ual* available from the Saskatchewan Pulse Crop Development Board.

## Dry Bean

### Main characteristics of varieties

Variety	Type	Yield as % of Othello				Days to flower	Days to maturity	Pod clearance %	Seed weight (g/1000)	Growth habit**
		Irrigation	Area 2	South Area 3	North Area 3					
Othello	pinto	100	100	100	100	54	99	51	304	III
Fargo	pinto	98	95	100	109	52	97	53	324	III
Earliray	pinto	73*	90*	86*	94*	51	96	69	351	I
92121	pinto	84*	89*	83*	98*	55	102	83	309	I
HR61-1608	pinto	88*	106*	104*	115*	55	96	62	301	II
US 1140	great northern	101*	106*	103*	120*	55	103	57	266	III
92070	great northern	72*	85*	86*	110*	55	103	60	319	I
UI906	black	81	97	82	77	62	105	76	133	II
CDC Espresso	black	58	82	81	94	49	98	87	176	I
CDC Nighthawk	black	66	69	74	76	61	103	77	161	II
Aspen <sup>Δ</sup>	navy	78*	86*	78*	84*	60	112	87	158	II
GTS 523	navy	70*	75*	81*	95*	54	97	75	150	I
OAC Seaforth	navy	62	77	78	76	58	104	73	177	I
AC Skipper	navy	61	72	78	76	57	105	77	199	I
CDC Whistler	small white	66	85	79	68	62	111	81	138	II

\* Limited data

\*\* Growth habit: I = determinate bush, II = indeterminate bush, III = indeterminate vine

### Additional Information

Dry bean can be grown under irrigation in Saskatchewan in regions with a warm, long growing season (110 days from seeding after May 20). Yields are generally lower but maturity is slightly earlier on dryland. Varieties with higher ratings for pod clearance (percentage of pods completely clearing an assumed cutterbar height of 1½ inches at harvest) are easier to swath or direct harvest. Navy beans are more susceptible to cold soil injury in spring. All beans are purchased on the basis of appearance, damage, and in many cases, cooking quality. Seed of **HR61-1608**, **92121**, **92070** will not be

available in spring of 1997. Seed supplies of **AC Skipper**, **CDC Nighthawk** and **CDC Espresso** will be limited. **OAC Seaforth** is an older early navy variety used as a check.

The crop does not tolerate frost, flooding or salt-affected soils. Seed in late May when soil temperatures at seeding depth at 15°C or more at rates of 80-100 kg/ha (70-100 lb/a) pintos and 25 percent less for blacks and navies. Plant seed six centimeters deep in a firm, moist seedbed. Minimize seed damage by using a hoe or press drill with a metering mechanism suitable for large seeds.

The plants are short and pods may hang

to ground level, especially for pintos. The field should be smooth, level and rock-free to facilitate swathing or direct harvesting with a flex header equipped with an air reel. Field rolling must be done within four days of seeding. Row crop production (22 or 30 inch spacing) requires an undercutter and a windrower for harvest. Seed should be free of bacterial diseases such as halo and common blight. For more details on production consult the Pulse Production Manual published by the Saskatchewan Pulse Crop Development Board.



## Faba Bean

Main characteristics of varieties

Variety	Yield as % of Outlook		Maturity in days	Average seed size
	(Northeast) Dryland	(South-central) Irrigated		
Outlook	100	100	109	Small
Aladin	106	103	112	Large
Orion	70	91*	102	Small
Pegasus	101	98	111	Small

## Seed Facts

### Pedigreed Seed

Use certified seed regularly, and 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

Smuts that attack wheat, barley, oat and rye can be controlled by chemical seed treatments. 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 (i.e. those containing carbathiin) will control true loose smut of barley, and wheat and stem smut of rye because the pathogens are present within the 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 formaldehyde. However, use of formaldehyde may reduce seed germination.

The virulent form of blackleg is now widespread on canola in Saskatchewan. Treatment of seed with a recommended fungicide can reduce the risk of disease and the risk of introducing the disease into unaffected areas. 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.

### Seed-borne diseases of pulses

Lentil and chickpea growers should only plant seed that has been tested for seed-borne ascochyta disease and avoid planting next to the previous year's pulse residue. Consult the *Pulse Production Manual* (Saskatchewan Pulse Crop Development Board) for details of seed infection tolerances and seed treatment.

**Read the label carefully before using any seed treatment or insecticide. Information on their use and recommended rates are found in the provincial publication *Crop Protection Guide 1997*. Treated seed must not be delivered to an elevator or used for feed.**

### 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

## 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 that portion of the Black Soil Zone with the longest growing season.

**CDC Fatima** and **CDC Blitz** are newly registered varieties. Seed supplies are still limited.

Faba bean is a legume and thus is able to use nitrogen from the air provided the seed is inoculated with the proper bacteria prior to planting. Faba bean requires a special strain of inoculum which is different from other pulse crops.

considered poisonous and should not be used as food. Details of this disease are found in *Ergot of Grains and Grasses*, 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. In order for the nitrogen fixing process to occur, the legume crop seed must be inoculated immediately before seeding with the proper strain of bacteria specific to that crop. The use of a sticker such as a syrup or powdered milk solution will ensure the inoculant is properly adhered to the seed. Some inoculants are produced with self adhesives.

It is common to observe lower levels of nodule formation in fields with no previous history of inoculation of the same crop. Soil and weather conditions can also affect the level of successful colonization. Cool, dry soils are detrimental to the process. **Check expiry date and follow inoculant label directions.**

High soil nitrogen levels (over 60 kg N/ha) inhibit N fixation since the legume plant will preferentially use the soil nitrogen rather than fix nitrogen. If the specific legume (pea or lentil for example) has never been grown in a field before, and the soil test N level is less than 20 kg N/ha, the producer should apply 30 kg N/ha prior to seeding as a precaution against poor inoculation and low nitrogen fixation.

Rhizobium bacteria can live in the soil for a number of years. However, the most efficient nitrogen fixing bacteria may not be among those that survive. For this reason, experienced legume producers inoculate every year. Refer to the *Inoculation of Pulse Crops* publication.



## Field Pea

Main characteristics of varieties

Type & Variety	Yield as % of GRANDE			Relative maturity*	Vine length (cm)	Resistance to**				Seed weight (g/1000)
	Areas 1, 2 & South 3	Areas 4 & North 3	Irrigation			Ascochyta blight	Powdery mildew	Seed coat breakage	Lodging	
<b>Food Type Yellow-Seeded</b>										
GRANDE	100	100	100	M	90	P	P	G	F	260
AC Tarnor	81	64	75*	L	57	P	G	G	P	280
Alfetta (SL)	106*	108*	105*	M	72	P	P	P	F	290
Anno (SL)	73	85	115	E	63	P	P	P	F	250
Baroness (SL)	89	90	101	E	71	P	P	F	F	290
Bohatyr	85	80	85	M	73	F	P	P	F	270
Carneval (SL)	91	92	119	E	72	F	P	P	G	250
Carrera (SL)	103*	107*	114*	E	55	VP	VP	P	P	270
Celeste	80*	71*	103	E	65	P	P	P	P	270
Choque (SL)	79	79	108	M	60	P	P	F	F	260
CPB CONCORDE	99*	99*	115*	E	57	P	P	P	P	280
CPB SPITFIRE	84*	88*	124*	M	62	P	P	P	P	230
CDC Winfield	99	97	90	M	62	VP	VP	P	F	260
DISCOVERY	NR	NR	107	M	63	P	P	P	F	320
Eiffel (SL)	99	112*	106*	E	67	VP	VP	P	F	290
ENDEAVOR	NR	NR	109	M	73	P	P	P	F	260
Express	92	90	91	M	62	P	P	P	P	240
FLUO (SL)	83	87	90*	VE	85	P	P	F	F	320
Highlight (SL)	90	92	104	E	66	P	G	P	F	210
Impala (SL)	88	83	101	M	72	P	P	P	F	270
LG110 (SL)	100*	108*	102*	E	51	VP	VP	P	F	260
Mandy (SL)	101*	91*	105*	M	57	VP	VP	P	F	270
MARCO (SL)	85*	85*	124*	E	62	VP	VP	P	F	260
MIKO(SL)	96	82	110	M	75	P	P	P	F	260
Montana (SL)	89	95	103	E	55	P	P	G	P	300
MUSTANG(SL)	94	86	105	E	60	P	P	F	P	210
NARVA (SL)	101*	105*	111*	E	65	VP	VP	P	F	260
PROFI(SL)	96	94	102	E	72	P	P	P	F	270
Richmond	91	91	89	M	67	F	P	P	P	210
Scorpio	83	75	94	E	56	P	P	P	P	280
Spring D	86	85	90*	E	62	P	P	F	F	240
Stehgolt	61	75	NA	E	45	P	P	P	P	290
Tara	82	82	87	L	96	F	G	F	F	210
Tenor (SL)	100*	107*	100*	E	72	VP	VP	P	F	260
Titan	76	70	80	L	109	P	P	P	P	250
Topper	82	74	NA	M	102	P	P	P	P	290
Trapper	79	80	NA	L	95	P	P	P	P	140
Victoria	86	85	NA	M	84	P	P	P	P	190
VOYAGEUR(SL)	NR	NR	109	M	62	P	P	P	F	190
YORKTON	98	97	97	M	72	P	P	P	F	270
<b>Food Type Green-Seeded</b>										
Ascona (SL)	81	71	124	M	50	P	P	P	F	300
CPBFANTOM(SL)	94	78	101	M	48	P	P	P	F	310
Clipper	96	82	100	M	59	P	P	P	F	300
Danto (SL)	73	56	100	M	52	P	P	F	F	290
Emerald	80	84	97	M	75	P	P	F	F	250
Keoma (SL)	90	86	100	M	53	P	P	P	F	240
MAJORET (SL)	84	82	109	M	54	P	P	F	G	250
Obelisque (SL)	100	98*	102*	E	62	VP	VP	P	F	310
Olivin	98*	98*	96*	M	64	VP	VP	F	P	270
ORB (SL)	72	76	102	M	55	P	P	P	F	240
Princess	77	60	91	E	58	P	P	G	P	200
Radley (SL)	77	75	91	M	57	F	P	F	F	210
Ricardo	81	74	127*	M	52	F	P	F	P	280
TOTEM	94	84	93	M	47	P	P	P	F	240
Trump	71	64	NA	L	63	P	P	F	P	250
<b>Maple/Colored flower types</b>										
CDC April (SL)	88*	77*	78*	L	53	F	P	G	F	140
CDC Vienna (SL)	94*	87*	99*	L	61	F	P	G	F	170
Sirius	76	75	NA	M	96	P	P	G	P	240
Whero	64	63	NA	L	110	P	P	G	P	210

NA Not available

SL Semi-leafless variety

NR Not recommended on dryland in Saskatchewan \*Limited data

Relative maturing ratings compared to GRANDE: VE = very early; E = early; M= medium; L = late

Resistance ratings: VG = very good; G = good; F = fair; P = poor; VP = very poor.

Use of capital letters in variety names is as they were registered.





**AT TIME OF PRINTING:**

**Protected by Breeders' Rights:** GRANDE, Alfetta, Baroness, Carneval, Carrera, Celeste, FLUO, Highlight, Montana, Richmond, Topper, Emerald, MAJORET, ORB, Trump.

**Applied for Protection:** Choque, CPB CONCORDE, CPB SPITFIRE, DISCOVERY, Eiffel, ENDEAVOR, Impala, LG110, Mandy, MARCO, MUSTANG, NARVA, PROFI, Scorpio, Spring D, Tenor, VOYAGEUR, CPB PHANTOM, Clipper, Danto, Olivin, TOTEM.

**Additional Information**

Field pea is best adapted to the Black and Gray soil zones. Production in the Dark Brown soil zones is possible if moisture is not limiting and the crop is seeded early. Early seeding will usually result in late August maturity and increase the likelihood of harvesting high quality seed. Seed splitting may be reduced by harvesting tough and drying in an aeration bin. The recommended seeding rate for **Trapper** is 135 kg/ha (120 lb/ac). Other varieties should be sown at higher rates in proportion to seed weight. Choose varieties based on expectations for food markets or feed markets.

Under dry conditions, short vine types (<80 cm) and semi-leafless varieties may provide poor weed competition and may be difficult to harvest. On the other hand, the semi-leafless characteristic may facilitate harvest, as vines do not lay as flat on the ground if a good stand is achieved. Lodging in field pea can be caused by thin stands, early development of foliar and stem diseases such as ascochyta blight in the lower canopy, and strong winds and pounding rain prior to harvest. Long vine varieties are prone to early lodging.

Green-seeded varieties are generally

lower-yielding than yellow-seeded varieties. Many green varieties will bleach if moist conditions before harvest are followed by warm sunny weather. Varieties differ in resistance to seed coat damage during threshing and cleaning. Damaged and uncleaned seed of all varieties is considered low quality and is only suitable for the feed market. If the target market is feed, select varieties with small seed size and high yield potential. If the target market is food, marketability will be affected by seed size, seed shape and seed color. These qualities can be discussed in more detail with food pea marketers prior to seeding.

Certified seed of **Alfetta**, **Eiffel**, **LG110**, **CDC Winfield**, **CPB CONCORDE**, and some other recently registered varieties will not be available in large quantities for 1997 planting. **Pro-mar**, a green-seeded marrowfat variety sold in specialty food pea markets, and **Whero**, a late-maturing long vine yellow-seeded maple type (marbled seedcoat) sold in birdfeed markets, both yield about 60 percent of **GRANDE**.

Provided that adequate moisture is available, the field pea, like other legumes, offers considerable benefit when grown in rotation with other crops. Proper seed inoculation results in symbiotic

nitrogen fixation which reduces input costs by supplying most of the nitrogen required by a productive pea crop. In addition, succeeding crops require less nitrogen fertilizer to attain high yields. Detailed agronomic information can be found in the Pulse Production Manual available from the Saskatchewan Pulse Crop Development Board.

Replicated Bleaching Data were recorded for green-seeded varieties from 12 dryland sites in 1996. Tolerance to bleaching from best to worst was **Keoma>Clipper=Oblelisque=Olivin**. Replicated Green Seedcoat Data were recorded for yellow-seeded varieties from 12 dryland sites in 1996. Ratings from most green to least green were **Mandy>CDC Winfield>CPB CONCORDE>Profi=NARVA>Tenor>LG110>Eiffel>GRANDE>Alfetta>Carrera**. Replicated data for Percent Seed Dimpling were recorded in 1996. For yellows, dimpling percentage was low (0-5 percent) for **GRANDE**, **Alfetta**, **Carrera**, **CPB CONCORDE**, **Eiffel**, **Mandy**, **NARVA**, and **CDC Winfield**; and intermediate (6-20 percent) **Profi** and **LG110**. For greens, dimpling percentage was low (0-5 percent) for all entries.

**Chickpea**

Main characteristics of varieties

Variety	Type	Yield as % Sanford		Ascochyta blight resistance	Height (cm)	Days to flower	Days to maturity	Seed weight (g/1000)
		Brown soil zone	Dark brown soil zone					
Sanford	kabuli	100	100	yes	51	54	114	411
Dwelley	kabuli	88	79	yes	47	55	117	478
B-90	kabuli	107	108	yes	47	54	112	254
Myles	desi	112	110	yes	43	48	109	196

**Additional Information**

Chickpea is best adapted to stubble production in the Brown and Dark Brown soil zones. **Ascochyta blight can completely destroy the crop.** **Sanford** and **Dwelley** are ascochyta resistant kabuli (large-seeded) varieties but are late-maturing in Saskatchewan. **B-90** is an ascochyta resistant small-seeded kabuli with round seed shape. **Myles** is an ascochyta resistant small-seeded desi (brown seedcoat) variety. **CDC Marengo**,

**UC 27**, and **Cheston** are highly susceptible to ascochyta blight. Seed of all chickpea varieties is in limited supply for spring of 1997.

Chickpea will tolerate light frosts in the spring. Desi types can be seeded in late April or early May. Kabuli types should be seeded between May 10 and May 20 into a warm seedbed, preferably 10°C or more. This means that kabuli types are often late maturing. Plant six centimeters deep. The large kabuli types

are highly susceptible to seed damage and should be handled gently at all times. Seeding rates are 90-110 kg/ha (80-100 lb/a) for desi and 160 kg/ha (140 lb/a) for kabuli.

The crop stands well and can be swathed or straight cut at maturity. Thresh kabuli types gently to avoid splitting damage. For more details on production consult the Pulse Production Manual published by the Saskatchewan Pulse Crop Development Board.



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

Crop kind, Class & Variety	Breeding Institution	Distributor	Crop kind, Class & Variety	Breeding Institution	Distributor
<b>Wheat</b>			<b>Manley</b>		
<b>Bread Wheat</b>			AC Oxbow	U of S - CDC	SeCan Members
AC Barrie	AAFC (Swift Current)	SeCan Members	Robust	AAFC (Winnipeg, Brandon)	SeCan Members
AC Cadillac	AAFC (Swift Current)	Value Added Seeds	Stander	U of Minnesota	Cargill Seed, Others
Columbus	AAFC (Winnipeg)	SeCan Members	Stein	U of S - CDC	Sask. Wheat Pool
AC Cora	AAFC (Winnipeg)	SeCan Members	Tankard	U of S - CDC	Proven Seed
AC Domain	AAFC (Winnipeg)	SeCan Members	TR232	AAFC (Brandon)	SeCan Members
AC Eatonia	AAFC (Swift Current)	Proven Seed	TR 128	U of S - CDC	SeCan Members
AC Elsa	AAFC (Swift Current)	SeCan Members	TR 129	U of S - CDC	Performance Seeds
Invader	Agripro Seeds Inc. & UGG	Proven Seed	TR 133	U of S - CDC	Value Added Seeds
Katepwa	AAFC (Winnipeg)	SeCan Members	TR 139	U of S - CDC	Sask. Wheat Pool
Laura	AAFC (Swift Current)	SeCan Members	BT 941	U of S - CDC	SeCan Members
AC Majestic	AAFC (Winnipeg)	SeCan Members	BT 433	Busch Ag. Res. Inc.	Sask. Wheat Pool
CDC Makwa	U of S - CDC	Cargill Seed	BT 435	U of S - CDC	Proven Seed
CDC Merlin	U of S - CDC	SeCan Members		U of S - CDC	Proven Seed
AC Michael	AAFC (Lacombe)	SeCan Members	<b>Feed</b>		
AC Minto	AAFC (Winnipeg)	SeCan Members	Brier	U of S - CDC	SeCan Members
Pasqua	AAFC (Winnipeg)	SeCan Members	Bronco	W.G. Thompson & Sons Ltd.	Value Added Seeds
Roblin	AAFC (Winnipeg)	SeCan Members	CDC Dolly	U of S - CDC	SeCan Members
CDC Teal	U of S - CDC	Value Added Seeds	CDC Fleet	U of S - CDC	Value Added Seeds
<b>Canada Prairie Spring Wheat</b>			CDC Guardian	U of S - CDC	SeCan Members
AC Crystal	AAFC (Swift Current)	SeCan Members	AC Harper	AAFC (Lethbridge)	SeCan Members
Cutler	University of Alberta	Proven Seed	AC Lacombe	AAFC (Lacombe)	SeCan Members
AC Foremost	AAFC (Lethbridge, Swift Current, Winnipeg)	SeCan Members	Prospect	W.G. Thompson & Sons Ltd.	Value Added Seeds
Genesis	AAFC (Swift Current)	SeCan Members	AC Rosser	AAFC (Brandon)	SeCan Members
AC Karma	AAFC (Swift Current)	SeCan Members	Seebe	FCDC (Lacombe)	SeCan Members
AC Taber	AAFC (Swift Current)	SeCan Members	<b>Hullless</b>		
AC Vista	AAFC (Swift Current)	Value Added Seeds	CDC Buck	U of S - CDC	Proven Seed
<b>Canada Western Extra Strong</b>			CDC Candle	U of S - CDC	Sask. Wheat Pool
Bluesky	AAFC (Beaverlodge)	SeCan Members	Condor	FCDC (Lacombe)	SeCan Members
Glenlea	University of Manitoba	Public	CDC Dawn	U of S - CDC	SeCan Members
Laser	U of AB	Canterra Seeds	Falcon	FCDC (Lacombe)	Progressive Seeds
Wildcat	AAFC (Beaverlodge)	SeCan Members	AC Hawkeye	AAFC (Brandon)	Sask. Wheat Pool
<b>Durum</b>			Phoenix	FCDC (Lacombe)	Progressive Seeds
Kyle	AAFC (Swift Current)	SeCan Members	CDC Richard	U of S - CDC	Proven Seed
Medora	AAFC (Winnipeg)	SeCan Members	CDC Silky	U of S - CDC	Value Added Seeds
AC Melita	AAFC (Winnipeg)	SeCan Members	<b>Intensive Management</b>		
Plenty	U of S - CDC	SeCan Members	Duke	U of S - CDC	SeCan Members
Sceptre	U of S - CDC	SeCan Members	CDC Earl	U of S - CDC	SeCan Members
<b>Soft White Spring Wheat</b>			Kasota	FCDC (Lacombe)	SeCan Members
Fielder	University of Idaho & USDA;	Public	Tukwa	FCDC (Lacombe)	SeCan Members
AC Phil	AAFC (Lethbridge)	Proven Seed	<b>Oat</b>		
AC Reed	AAFC (Lethbridge)	SeCan Members	AC Belmont	AAFC (Winnipeg)	Proven Seed
<b>Winter Wheat</b>			CDC Boyer	U of S - CDC	SeCan Members
CDC Clair	U of S - CDC	SeCan Members	Calibre	U of S - CDC	SeCan Members
CDC Kestrel	U of S - CDC	SeCan Members	Derby	U of S - CDC	Proven Seed
Norstar	AAFC (Lethbridge)	Public	Dumont	AAFC (Winnipeg)	SeCan Members
CDC Osprey	U of S - CDC	Proven Seed	EIVY	Svalöf Weibull AB	Proven Seed
AC Readymade	AAFC (Lethbridge)	SeCan Members	AC Juniper	AAFC (Lacombe)	Sask. Wheat Pool
<b>Winter Rye</b>			AC Marie	AAFC (Winnipeg)	SeCan Members
Danko		AB Wheat Pool	AC Mustang	AAFC (Lacombe)	Sask. Wheat Pool
Musketeer	AAFC (Swift Current)	SeCan Members	CDC Pacer	U of S - CDC	Value Added Seeds
Prima	AAFC (Swift Current)	SeCan Members	AC Preakness	AAFC (Winnipeg)	Proven Seed
AC Rifle	AAFC (Swift Current)	Proven Seed	Waldern	AAFC (Lacombe)	SeCan Members
<b>Spring Rye</b>			<b>Canola</b>		
Gazelle	U of S	Public	<b>Argentine</b>		
<b>Triticale</b>			46A05	Pioneer Hi-Bred	Proven Seed
AC Alta	AAFC (Swift Current)	Progressive Seeds	46A65	Pioneer Hi-Bred	Proven Seed
Banjo	University of Manitoba	Value Added Seeds	Alliance	Albert Wheat Pool	Sask. Wheat Pool
AC Certa	AAFC (Swift Current)	Progressive Seeds	B2416	Svalöf Weibull AB	Brett-Young Seeds
AC Copia	AAFC (Swift Current)	Value Added Seeds	Bounty	Svalöf Weibull AB	Proven Seed
Frank	AAFC (Swift Current)	SeCan Members	BRIGADE	Svalöf Weibull AB	Sask. Wheat Pool
Pronghorn	FCDC (AltaAg)		BULLET	Svalöf Weibull AB	Proven Seed
Wapiti	CIMMYT; Alta Ag	SeCan Members	CHALLENGER	Svalöf Weibull AB	Newfield Seeds
<b>Barley</b>			AC - as a prefix to variety names Agriculture Canada (Agriculture and Agri-Food Canada) AAFC - Agriculture and Agri-Food Canada CDC - Crop Development Centre FCDC - Field Crop Development Centre, Lacombe, Alta. U - University U of S - University of Saskatchewan, Saskatoon USDA - United States Department of Agriculture		
<b>Malting</b>					
B1215	Busch Ag. Res. Inc.	Sask. Wheat Pool			
B1602	Busch Ag. Res. Inc.	Sask. Wheat Pool			
Duel	Busch Ag. Res. Inc.	Sask. Wheat Pool			
Excel	U of Minnesota	Proven Seed, Others			
Harrington	U of S - CDC	SeCan Members			







Crop kind, Class & Variety	Breeding Institution	Distributor	Crop kind, Class & Variety	Breeding Institution	Distributor
MIKO	PBAI, Poland	Wheat City Seeds	<b>Faba Bean</b>		
Montana <sup>▲</sup>	Cebeco	Sask. Wheat Pool	Aladin	University of Manitoba	Public
MUSTANG <sup>▲</sup>	Danisco Seeds	Canseed (AB)	CDC Blitz	U of S - CDC	Proven Seed
NARVA <sup>▲</sup>	Danisco Seeds	Brett-Young Seeds	Cresta	Saatban Linz	Agriprogress Inc.
Obelisque	Prodena Seeds	Sask. Wheat Pool	CDC Fatima	U of S - CDC	Euro-Can. Seeds Ltd.,
Olivin <sup>▲</sup>	Danisco Seeds	Agriprogress Inc.			Walker Seeds (SK)
ORB <sup>▲</sup>	Slovisivo H.S.	Terramax	Orion	AAFC (Lacombe)	Roger Lee (AB)
Princess	Sharps International	Proven Seed			Lyster Farms Ltd. (AB)
PROFI <sup>▲</sup>	Wilbur Ellis Co.	Walker Seeds	Outlook	U of S - CDC	SeCan Members
Promar	Danisco Seeds	SeCan Members	Pegasus	U of Manitoba	Roy Legumex (MB)
Radley	Danisco Seeds	Agriprogress Inc.	Scirocco	NPZ-Lembke	Agriprogress Inc.
Ricardo	Sharps-Columbia Seeds	Columbia Seeds (AB)			
Richmond <sup>▲</sup>	Cebeco	Brett-Young Seeds	<b>Dry Bean</b>		
Scorpio <sup>▲</sup>	Svalöf Weibull AB	Wheat City Seeds	Aspen <sup>▲</sup>	Idaho Seed Bean Co.	R.T. Stow
Sirius	Cebeco	Brett-Young Seeds	Fargo	Rogers Brothers Seed Co.	
Spring D <sup>▲</sup>	Inst. P.P.P., Czech Republic	Terramax	Othello	USDA/ARS (Prosser, WA)	WA & ID seed dealers
Stehgolt	Danisco Seeds	Brett-Young Seeds	Earliray	Gen-Tec	
AC Tamor <sup>▲</sup>	M.V.L. The Netherlands	Terramax	92121	U of S - CDC	
	AAFC (Morden)	Euro-Can Seeds Ltd.	HR61-1608	AAFC (Harrow)	
		Walker Seeds (SK)	US 1140	USDA	public
Tara	AAFC (Morden)	SeCan Members	92070	U of S - CDC	
Tenor <sup>▲</sup>	Danisco Seeds	Canterra Seeds	CDC Espresso	U of S - CDC	Specialty Seeds
Titan	AAFC (Morden)	SeCan Members	CDC Nighthawk	U of S - CDC	Value Added Seeds
Topper <sup>▲</sup>	AAFC (Morden)	SeCan Members	CDC Whistler	U of S - CDC	Western Grower Seed Corp.
TOTEM <sup>▲</sup>	Svalöf Weibull AB	Newfield Seeds			
Trapper	AAFC (Morden)	Public	GTS523		
Trump <sup>▲</sup>	AAFC (Morden)	SeCan Members	OAC Seaforth	U of Guelph	Trade
Victoria	Svalöf Weibull AB	Newfield Seeds	AC Skipper	AAFC (Lethbridge)	Klemnauer
CDC Vienna	U of S - CDC	Western Grower Seed Corp,			
		Walker Seed	<b>Chickpea</b>		
		Proven Seed	<b>Desi</b>		
VOYAGEUR <sup>▲</sup>	Svalöf Weibull AB	Newfield Seeds	CDC Marango	U of S - CDC	Cdn. Select Grain
Whero	Challenge Seeds	SeCan Members	Myles	USDA/Washington State U	Public
CDC Winfield	U of S - CDC	Value Added Seeds	<b>Kabuli</b>		
YORKTON	Svalöf Weibull AB		B-90		Terramax
			UC 27	U of California	Public
			Sanford	USDA/Washington State U	Public
			Dwellely	USDA/Washington State U	Public
<b>Lentil</b>					
Eston	U of S - CDC	SeCan Members	<b>Canary Seed</b>		
CDC Gold	U of S - CDC	Sask. Wheat Pool	Ellias	U of Minnesota; U of S - CDC	Public
Indianhead	U of S - CDC	SeCan Members	Keet	U of Minnesota; U of S - CDC	Public
Laird	U of S - CDC	SeCan Members			
CDC Matador	U of S - CDC	Simpson Seeds	<b>Safflower</b>		
CDC Redwing	U of S - CDC	Sask. Wheat Pool	Saffire	AAFC (Lethbridge)	Jerry Kubic (AB)
CDC Richlea	U of S - CDC	SeCan Members	AC Stirling	AAFC (Lethbridge)	SeCan Members
			AC Sunset	AAFC (Lethbridge)	Alberta Wheat Pool

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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### Contributing Agencies



**Saskatchewan  
Agriculture  
and Food**



**Agriculture and  
Agri-Food Canada**