



Varieties of grain crops 1996

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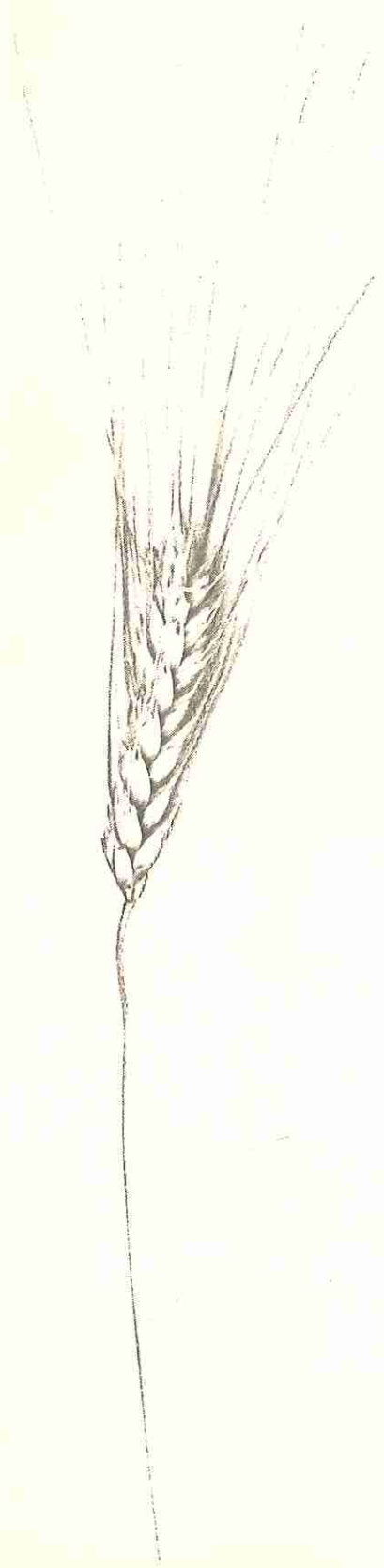
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Grain Crop Production Areas

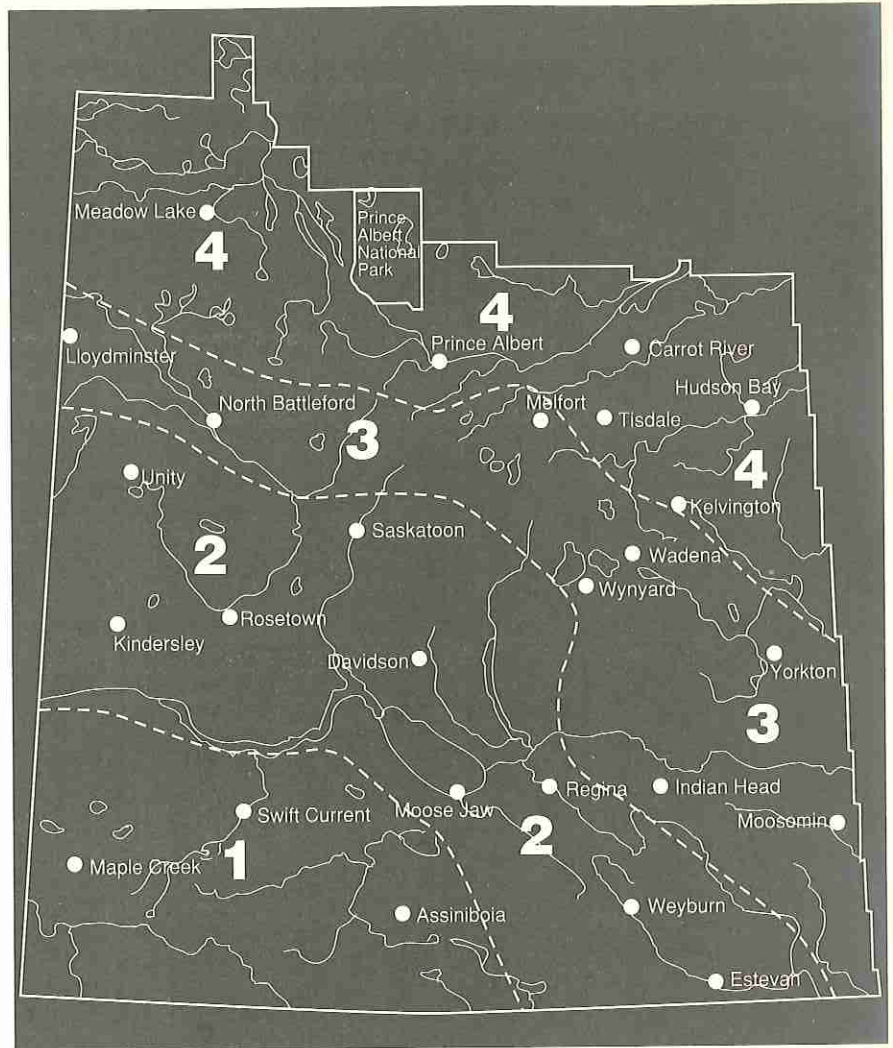
The cropland of Saskatchewan has been divided into four areas based roughly on climate, vegetation and soil type. The relative yields of crop varieties tend to vary from area to area. In choosing a variety a farmer will want to consider the yields in his area and special requirements such as early maturity,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



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

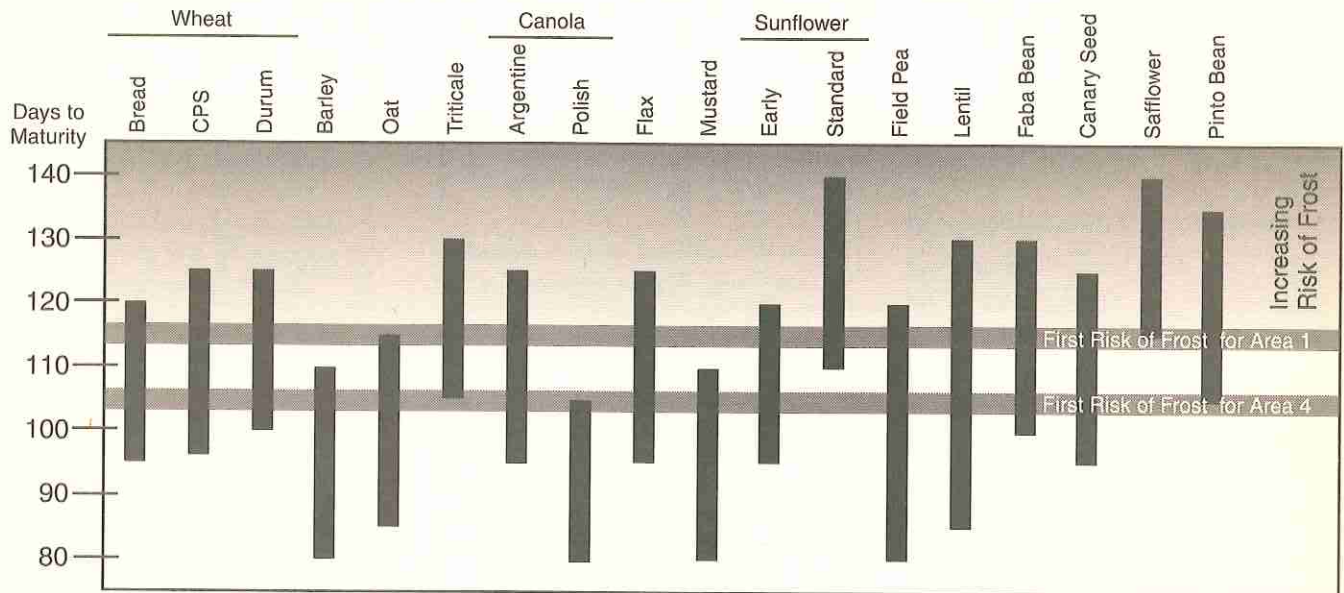
Relative maturity ratings are average number of days from seeding to swathing ripeness. The actual number of days to reach maturity depends on local climate and to some extent management practices. In this pamphlet some crop tables express the Relative maturity in days while other tables use a new five category scale: **VE, E, M, L, 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** - Virden, **L** - Manley, **M** - Harrington, **E** - Bonanza, **VE** - Jackson. Please read the section **Weather and Environment Affect Crop Production** for more details.

This publication does not have a complete list of varieties registered for production in Canada.

Maturity Comparisons

The relative maturity of varieties of different crops is important when making plans for seeding. Figure 1 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 date of seeding as well as environment factors. Not all crops have a wide area of adaptation. For example, safflower is somewhat adapted to the southernmost area of the province and must be seeded very early. More information on crops and varieties is found in the tables within this publication and in fact sheets available from Extension Agrologists. See the section called "Reading Material".

Figure 1
Relative Maturity Ranges for Spring Crops Grown in Saskatchewan



Testing Varieties in Saskatchewan

Information in the pamphlet "Varieties of Grain Crops" is based on the performance of varieties at a number of locations across the province. Data from these trials are summarized and interpreted by the Saskatchewan Advisory Council on Grain Crops.

These trials are conducted by researchers from the University of Saskatchewan and Agriculture and Agri-Food Canada. 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, whereas canola, mustard, field pea, lentil and minor crops are tested in those regions in which 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 (30 ft.² to 45 ft.²) of the various varieties are sown and harvested with miniature press-drills and combines.

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** presented in this pamphlet are the best estimates of expected yield advantage in the areas indicated. They are considerably 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. For example, Laura wheat is expected to outyield Katepwa by 6% in Area 2. A farmer in this area may find that Laura will yield anywhere in the range of about 7% less than Katepwa to about 16% more than Katepwa.

One out of three times, Laura may even yield outside this range. Similar variation in relative yields can be expected for most crops.

Cereal Crops

Wheat

Main Characteristics of Varieties

Variety	Yield as % of Katepwa				Irr**	Ave Maturity in Days	Protein ⁺	Resistance to*							
	Area 1	Area 2	Area 3	Area 4				Lodg- ing	Shat- tering	Stem Rust	Leaf Rust	Loose Smut	Bunt	Leaf Spot	Root Rot
Bread Wheat															
Katepwa	100	100	100	100	100	98	13.2	F	G	G	F	G	G	P	F
AC Barrie	103	108	112	114 ⁺⁺	114	99	13.9	G	G	G	G	G	VG	P	F
Columbus	99	101	102	96	103	102	13.5	F	F	F	VG	F	VG	—	F
AC Cora	100	103	102	102	104	98	13.4	F	G	G	VG	G	G	P	F
AC Domain	95	96	100	97	97	98	13.9	G	G	G	VG	G	F	VP	F
AC Eatonia	95	100	99	96	—	99	14.1	P	G	G	F	F	VG	P	F
Invader	101	105	105	102	99	100	13.8	G	G	G	G	G	F	P	F
Lancer ⁺⁺⁺	94	95	—	—	—	99	14.0	P	VG	G	G	G	G	—	F
Laura	103	106	105	104	91	100	13.6	F	G	G	G	G	F	P	G
AC Majestic	99	106	109	105 ⁺⁺	96	101	13.8	G	G	G	G	F	VG	P	F
CDC Makwa	101	103	100	100	100	98	13.2	F	G	G	F	G	F	P	F
CDC Merlin	96	102	104	107	97	99	13.1	F	G	G	VG	G	G	P	F
AC Michael	102	103	98	100	97	98	13.1	F	G	G	F	G	G	P	F
AC Minto	99	103	101	101	92	100	13.5	F	G	G	G	VG	G	P	F
Pasqua	102	102	100	100	91	99	13.2	F	G	G	VG	F	F	P	F
Roblin ⁺⁺⁺	92	93	96	95	99	97	13.9	G	G	G	VG	G	P	P	G
CDC Teal	100	100	106	103	100	98	13.8	G	G	G	G	G	F	P	F

Canada Prairie Spring Wheat

Biggar ⁺⁺⁺	123	122	123	121	120	102		F	G	G	G	VP	VP	—	F
Cutler	93	100	101	96	—	98		F	G	G	P	F	VP	—	F
AC Foremost	124	134	133	127	118	101		F	G	G	G	G	G	P	F
Genesis	125	130	130	123	129	102		P	VG	G	F	F	VP	F	F
AC Karma	122	136	134	134	120	101		F	VG	G	G	G	G	P	F
AC Taber	122	132	131	123	129	103		G	G	G	G	P	G	F	F

Canada Western Extra Strong

Bluesky ⁺⁺⁺	96	93	95	99	—	99		F	G	G	F	VG	F	P	G
Glenlea	95	105	108	110	—	101		F	G	G	G	VG	F	P	G
Wildcat ⁺⁺⁺	90	86	92	93	—	98		F	G	G	P	VG	VP	P	G

Yield as % of Kyle

Durum Wheat

Kyle	100	100	100	100	100	103	12.8	P	VG	VG	VG	P	VG	P	F
Medora ⁺⁺⁺	96	96	97	97	107	100	12.8	F	VG	VG	VG	F	VG	—	F
AC Melita	95	95	99	100 ⁺⁺	122	101	12.7	F	VG	VG	VG	P	VG	P	F
Plenty	102	106	107	108	112	102	12.6	F	VG	VG	VG	P	VG	F	G
Sceptre	97	97	99	100	112	100	12.1	G	VG	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.

+ Protein content based on **1994 and 1995 data only**.

++ 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 Eatonia, Invader.

Applied for Protection: AC Barrie, AC Karma, AC Majestic.

Refer to Section "What is Plant Breeders' Rights".

Additional Information:

Generally, for any variety as grain yield increases, protein content decreases. Some varieties, however, have both higher protein content and grain yield than other varieties.

In 1995, reaction of the varieties to leaf spots was collected at four locations: Swift Current (Area 1), Regina (Area 2), Cudworth (Area 3), and Shellbrook (Area 4). Leaf spots were caused mostly by tan spot, followed by septoria leaf blotch. Ratings are based on average values. Varieties may perform better or worse at individual locations or years.

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 the **Crop Protection Guide 1996** pamphlet.

During wet harvest weather grades drop more rapidly due to sprouting in swathed than in standing crops.

Canada Western Red Spring Wheat

AC Barrie is higher yielding and generally, produces higher protein than **Katepwa**. It has good disease resistance and has slightly shorter stronger straw than **Katepwa**. It has sprouting tolerance intermediate to **Katepwa** and **Columbus**. Limited seed will be available in 1996.

AC Cora is very similar to **Katepwa** and has improved leaf rust resistance. Limited seed will be available in 1996.

AC Domain has shorter, stronger straw than **Katepwa**. It has good resistance to sprouting and weathering. **AC Domain** is adapted to conditions in Manitoba.

AC Majestic is higher yielding and generally, produces higher protein than **Katepwa**. It has good disease resistance and has slightly shorter stronger straw than **Katepwa**. It is about a day earlier than **Columbus** and has good pre-harvest sprouting resistance. Seed will not be available in 1996.

AC Michael has height similar to **Katepwa**, but slightly lower test weight.

AC Eatonia is resistant to wheat stem sawfly and yields more than **Lancer**.

AC Eatonia has good resistance to pre-harvest sprouting and stronger straw than **Lancer**.

Columbus has good resistance to sprouting and weathering. **Columbus** is late maturing and must be sown early, particularly in Area 4.

Invader and **Laura** have an awned head.

Lancer is resistant to wheat stem sawfly and has good sprouting and weathering resistance.

CDC Merlin and **AC Minto** have slightly taller and weaker straw than **Katepwa**.

Pasqua has slightly shorter, stronger straw, and slightly later time to maturity than **Katepwa**. It has sprouting tolerance intermediate to **Katepwa** and **Columbus**.

Under drought stress grain yield of **Roblin** can be reduced more than other varieties. **Roblin** is early maturing and has strong straw making it best suited to northern areas.

Canada Prairie Spring Wheat

AC Karma and **Genesis** are white-seeded; **AC Foremost**, **AC Taber**, **Biggar**, and **Cutler** are red-seeded. All current Canada Prairie Spring varieties are awned. Most Canada Prairie Spring varieties are late maturing and should be sown early.

AC Karma has good disease resistance and does not require a seed treatment. It has shorter and stronger straw than **Genesis**. Even though it is earlier maturing than **Genesis** it should be sown early, particularly in Area 4. It is susceptible to sprouting under wet harvest conditions. Limited seed will be available in 1996.

Because **Genesis** is late maturing and susceptible to pre-harvest sprouting, it is a high risk cultivar for Areas 3 and 4.

AC Foremost has good disease resistance and does not require a seed treatment. It is earlier maturing than **Biggar** and **AC Taber**. Limited seed will be available in 1996.

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.

AC Melita has higher protein content than **Sceptre**. It has strong straw and is similar to **Medora** in many respects. Limited seed will be available in 1996.

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

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

Sceptre is the shortest, strongest-strawed durum variety.

Soft White Spring Wheat

AC Reed has similar yield potential to **Fielder** and matures about 2 days earlier than **Fielder**. **AC Reed** is moderately resistant to shattering, powdery mildew, and common root rot, moderately susceptible to leaf and stem rust, and susceptible to common bunt.

Under wet harvest conditions soft-white spring wheats are susceptible to sprouting. Straight combining will provide some grade-protection.

Canada Western Extra Strong

The Canada Western Utility class has been replaced by the Canada Western Extra Strong Red Spring class. Tighter grade specifications, which came into effect 1 August 1993, are intended to enhance the market potential of this class of wheat which has extra strong gluten.

The varieties of wheat eligible for the Extra Strong class are the same ones which qualified for the former Canada Western Utility class, namely, **Glenlea**, **Bluesky**, and **Wildcat**. Both **Bluesky** and **Wildcat** perform poorly under droughty conditions.

There is growing interest in Extra Strong wheat because of its unique gluten properties. Demand for this class has risen significantly due to its ability to "carry" weaker wheats in a blend. Commercial experience has also shown that Canada Western Extra Strong red spring wheat performs exceptionally well in frozen dough products, a rapidly expanding segment of the baking industry.

Winter Wheat

Main Characteristics of Varieties

Variety	Grain Yield % Norstar		Height	Lodging Resistance	Winter Survival
	Dryland	Irrigation			
Norstar	100	100	Tall	Fair	Good
CDC Clair	108	140	Intermediate	Good	Good
CDC Kestrel	106	134	Intermediate	Good	Good
Norwin*	93	134	Short	Good	Fair
CDC Osprey	106	125	Intermediate	Good	Good
AC Readymade	85	—	Intermediate	Good	Good

*This variety will not be described in 1997.

Additional Information:

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

Norwin is a semi-dwarf cultivar with very short straw. Its winter hardiness is inferior to **Norstar**. **Norwin** is sensitive to drought stress and should only be grown under high moisture conditions where lodging and excessive straw production are problems.

AC Readymade is a medium tall cultivar with good straw strength and excellent grain protein concentration. It has performed best under favourable moisture conditions. 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, CDC Osprey and Norwin have better stem rust resistance than **Norstar**. **CDC Osprey and Norwin** are susceptible to leaf rust. Seed of **CDC Clair** and **CDC Osprey** will not be available in 1996.

Reading Material

Agriculture and Agri-Food Canada

Ergot of Grains and Grasses, Publ. 1438.

Growing Buckwheat, Publ. 1986-7E.

Heated Air Grain Driers, Publ. 1700.

Insects and Mites of Farm-Stored Grain, Publ. 1595

Canadian Grain Commission

Insect Control in Stored Grain, A Producers Guide.

Canola Council of Canada

Canola Production Manual.

Fertilizer Practices for Canola.

Ducks Unlimited

Winter Wheat Production Manual.

Flax Council

Growing Flax.

Saskatchewan Agriculture & Food

Aeration of Grain in Storage.

Blackleg: A Disease of Canola.

Bertha Armyworm.

Canaryseed Production in Saskatchewan.

Control of Canada Thistle.

Crop Protection Guide 1996.

Dry Pea Production in Saskatchewan.

Durum Production.

Fababean Production in Saskatchewan.

Forage Crop Recommendations.

Grasshopper Control.

Hulless Barley

Insect Control in Fields Crops.

Irrigation Handi-Facts; Sask. Water.

Legume Inoculation.

Lentil Production in Western Canada.

Malting Barley.

Milling & Race Horse Oat Production.

Mustard Growers Manual.

Natural Air Grain Drying.

Orange Wheat Blossom Midge.

Russian Wheat Aphid.

Safflower Production on the Cdn. Prairies.

Saskatchewan Fertilizer Practices. Septoria Leaf and Glume Blotch of Wheat.

Soft White Spring Wheat, Sask. Water. Tan Spot of Wheat.

To Spray or Not to Spray.

Weed Identification Series.

Weed Seedling Identification.

Saskatchewan Pulse Crop Development Board

Pulse Production Manual.

Saskatchewan Herb & Spice Association

The Grower's Guide to Herbs and Spices.

Saskatchewan Seed Grower's Assoc.

Seed Guide.

Environment Canada Weather Information (24 hours each day, seven days a week)

Recorded weather information

• Regina	780-5744
• Saskatoon	975-4266
• Prince Albert	929-2114
• Swift Current	773-5599
• Swift Current (Ag)	773-5166
• Yorkton	782-1511
• North Battleford	445-7000
• Hudson Bay	865-2721

• Lanigan	365-3011
• Broadview	696-2229
• Estevan	634-2833

Information

• Regina	780-5277
• Saskatoon	975-6979
• Prince Albert	953-8888

Weatheradio

- continuous up-to-the-minute forecasts and information
- broadcast on VHF radio band using frequencies: 162.400 MHz, 162.475 MHz and 162.550 MHz
- there are presently 12 Weatheradio Stations; call your nearest Environment Canada office for more details

Malting Barley

Main Characteristics of Varieties

Type & Variety	2 or 6 row	Rough or Smooth Awns	Yield as % of Harrington				Relative*** Maturity Ratings	Shat- Lodging	Shat- tering	Resistance to*					
			Area 1	Area 2	Area 3	Area 4				Leaf spots					
										Net Blotch	Scald	Loose Smut	Other Smuts	Root Rot	Stem Rust
Two Row															
Harrington	2	R	100	100	100	100	M(91 days)	F	VG	P	P	P	P	F	P
AC Oxbow	2	R	95	96	101	102	M	VG	VG	F	P	VG	G	P	G
B1215	2	R	103	105	108	110	L	G	G	P	P	P	P	P	P
Manley	2	R	103	110	110	111	L	G	VG	F	P	P	VG	F	G
Stein	2	R	103	107	107	108	M	F	VG	F	P	P	G	P	G
Six Row															
B1602	6	R	89	99	99	97	E	G	P	F	P	P	G	VG	G
Duel	6	R	95	99	100	96	M	G	VP	F	P	P	G	G	G
Tankard	6	S	101	106	107	103	M	G	VP	F	P	P	P	G	G

Interim Registered

Two Row

TR133**	2	R	95	107	112	110	M	G	G	F	P	P	P	F	G
TR232	2	R	102	108	109	110	M	G	G	F	P	VG	F	F	G
TR128	2	R	100	111	116	114	M	G	G	F	P	F	F	F	G
TR129**	2	R	88	101	96	88	VE	VG	G	F	G	F	F	F	G

Six Row

B2912	6	R	91	97	102	103	E	G	F	P	P	VP	G	G	G
AC Buffalo**	6	R	86	112	111	108	M	G	F	F	P	P	G	G	G
Robust**	6	R	74	91	98	106	M	G	F	F	P	P	F	G	G
Excel**	6	R	89	103	110	111	M	VG	F	F	P	P	G	G	G
BT941**	6	R	86	104	98	104	M	G	F	P	P	P	G	G	F

* 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.



AT TIME OF PRINTING:

Applied for Protection: AC Oxbow, AC Buffalo, TR133, TR232, BT941.

Refer to Section "What is Plant Breeders' Rights".

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 very cautious about moving into the use of new varieties.

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

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 1996 will be malted in January – February, 1997. It will be brewed in

May – June, 1997, aged and tasted in October – November, 1997. A crop grown in 1997 will be tasted in October – November, 1998. 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.

Feed and Food Barley

Main Characteristics of Varieties

Type & Variety	2 or 6 row	Rough or Smooth Awns	Yield as % of Harrington				Relative*** Maturity Ratings	Lodging	Shat- tering	Resistance to*					
			Area 1	Area 2	Area 3	Area 4				Leaf spots					
										Net Blotch	Scald	Loose Smut	Other Smuts	Root Rot	Stem Rust
Feed															
Brier	6	S	112	114	116	116	M (90 days)	F	F	G	F	P	VG	VP	G
Bronco	6	R	92	106	112	117	L	G	F	F	P	P	G	F	G
CDC Dolly**	2	R	112	116	114	110	E	G	G	P	F	P	G	F	F
CDC Guardian	2	R	99	106	107	113	L	F	G	F	VG	P	VG	P	G
AC Lacombe	6	S	102	108	112	111	M	G	F	F	P	P	VG	F	G
Prospect	2	R	103	108	109	110	L	F	G	P	P	P	F	F	G
Seebe	2	R	98	105	108	114	VL	G	G	P	VG	P	VG	P	P
Hulless															
CDC Buck	6	R	82	89	86	85	E	G	F	F	P	P	F	G	G
Condor	2	R	85	83	82	79	M	G	G	P	P	P	F	F	F
Falcon	6	S	68	92	86	86	M	VG	P	F	VG	P	F	F	F
Phoenix	2	R	82	94	94	94	M	G	G	P	P	P	F	G	P
CDC Richard	2	R	84	94	93	90	E	F	F	P	VG	P	F	G	G
CDC Silky**	6	S	84	98	101	100	M	VG	F	F	VG	P	F	G	G
CDC Dawn**	2	R	105	113	104	105	M	G	G	F	VG	P	F	F	G
Intensive Management															
Duke	6	R	92	97	97	95	L	VG	F	F	VG	P	VG	G	G
CDC Earl	6	R	99	116	115	113	L	VG	F	G	VG	P	G	G	G
Tukwa**	6	S	94	113	120	120	E	VG	F	G	G	P	VG	F	G
Kasota**	6	R	96	113	105	107	E	G	G	F	G	P	G	P	F

* 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.



AT TIME OF PRINTING:

Protected by Breeders' Rights: Falcon, Phoenix.

Applied for Protection: Kasota, AC Lacombe.

Refer to Section "What is Plant Breeders' Rights".

Additional Information:

Hulless

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

Waxy

CDC 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.

Semi-dwarf varieties like **Duke, CDC Earl, Tukwa, Falcon** and **CDC Silky** should be grown under high moisture, high fertility conditions which would cause severe lodging of conventional varieties. High productivity tests in Saskatchewan have shown **CDC Earl** to outyield other available varieties under lodging conditions.

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. See the Seed Facts section for details.

Harvesting grain over 16% 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.

Rye

Main Characteristics of Varieties

Variety	Yield as % Musketeer				Relative** Maturity Rating	Resistance to*			
	Area 1	Area 2	Area 3	Area 4		Winter Killing	Shat- tering	Lodging	Stem Smut
Musketeer	100	100	100	100	M	VG	F	G	G
Prima	109	108	105	108	M	VG	F	F	G
AC Rifle	134	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 direct seeding technology that leaves the stubble standing.

AC Rifle is a semi-dwarf. Seed supplies of **AC Rifle** will be limited in 1996.

Triticale

Main Characteristics of Varieties

Variety	Yield as % of Frank					Relative** Maturity Ratings	Resistance to*				
	Area 1	Area 2	Area 3	Area 4	Irr		Lodging	Stem Rust	Leaf Rust	Bunt	Root Rot
Frank	100	100	100	100	100	M (105 days)	G	VG	VG	VG	F
AC Alta	100	100	101	—	109	L	G	VG	VG	VG	G
Banjo	92	96	98	97	100	L	G	VG	VG	VG	G
AC Certa	98	96	101	—	101	M	G	VG	VG	VG	G
AC Copia	99	97	92	99	100	M	G	VG	VG	VG	G
Wapiti	96	103	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 ratings: VE – very early; E – early; M – medium; L – late; VL – very late

Additional Information:

Triticale matures 3-5 days later than **Biggar** 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% to have the same number of plants per square foot as with CWRS wheat. Seed supplies of **AC Alta** and **AC Certa** will not be available in 1996.

Pika is a winter triticale. It has winter hardiness similar to **Norstar** winter wheat.

Use of Variety Names

The Canada Seeds Act and Regulations state that when seed is advertised or sold by variety name, the variety must be registered (licensed) and the seed must be from a field which has received a certificate of pedigree from the Canadian Seed Growers' Association.

Farmers may phone Agriculture and Agri-Food Canada for further information:

Saskatoon 306-975-4240

Oat

Main Characteristics of Varieties

Variety	Yield as % of Calibre				Test wt. (kg/hl)	% Hull	% Plump	Mat. 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 (96 days)	G	VP	VP	P
CDC Boyer	101	102	97	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	VG	G
ELVY (†)	103	106	107	105	48.1	25.0	56	M	G	VP	VP	P
AC Juniper (†)	102	104	97	102	48.7	23.9	60	E	G	VP	VP	P
AC Marie	98	101	98	97	45.5	20.7	35	L	F	VG	G	G
AC Mustang	99	106	111	109	49.5	29.0	70	M	G	VP	VP	P
AC Preakness	98	104	100	98	48.8	22.6	66	L	G	VG	VG	G
Waldern	96	99	105	105	45.7	25.0	74	VL	G	VP	VP	P
#AC Belmont (†)	72	77	77	75	52.0	N/A	N/A	M	G	VG	G	G

* Maturity ratings: 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

Hullless variety



AT TIME OF PRINTING:

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

Refer to section "What is Plant Breeders' Rights".

Additional Information:

ELVY and AC Juniper are new varieties listed for the first time. Seed will not be available until 1997. Seed supplies of CDC Boyer will also be limited for 1996.

Calibre, Derby, ELVY, AC Juniper,

AC Mustang 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.

Hullless Oat: AC Belmont has improved yield and disease resistance compared to Terra. Since the hull is part of normal oat yield, hullless oat are expected to yield less. Hullless oat can be difficult to handle and store and should be stored at a moisture content less than 12%.

What is Plant Breeders' Rights

The *Plant Breeders' Rights (PBR) Act* allows the developers of new varieties control over the multiplication and sale of reproductive material of a new variety. The holder of the right may pursue legal action to claim damages for infringement of the right. Should someone fail to meet the conditions set out by the protected party, they are liable under the *Plant Breeders' Rights Act*. According to the *Act*, the court may restrict the perpetrator from using the propagating material, dispose of any offending material, and order compensation for the plant breeder or his agent.

A new variety must be approved by the federal Plant Breeders' Rights Office to receive protection. The variety must also have the appropriate registration under the federal Seeds

Act and Regulations to ensure it meets Canadian standards for quality and performance. Farmers may save some production for seeding the following year on their own farm, but sales of the crop as seed for propagation purposes are not allowed.

PBR Logo

"Progress Through Research", symbolizes a plant variety protected by Plant Breeders' Rights (PBR). PBR provides the developers of plant varieties with an opportunity to recover investment in research. The rights include the ability to charge a royalty and to control the sale of propagating material. Users who do



Progress through Research

not remit royalties or sell a protected variety for propagating purposes may be prosecuted by the holder of the right or their agent.

Varieties protected under Plant Breeders' Rights will be identified with the above logo, within each crop table; in a list below each crop table and within the Breeding Institutions and Seed Distributors list.

Oilseed Crops

Argentine Canola

Main Characteristics of Varieties

Variety	Yield as % of Legend (See comments below.)			Average % Oil	Average Maturity in Days	Resistance to*	
	Area 2	Area 3	Area 4			Lodging	Blackleg**
Legend	100	100	100	43.4	101	F	F
Alliance	102	106	106	45.2	103	VG	F
B2416	102	106	108	43.8	103	G	F
BATTALION	110	116	122	43.0	103	VG	F
Bounty	111	107	101	43.6	100	P	P
BRIGADE	111	116	***	44.7	102	VG	G
BULLET	109	100	105	44.2	99	F	G
Celebra	95	95	100	44.3	104	G	F
CORONET	111	119	***	44.5	102	G	G
Crusher	104	99	107	45.6	104	VG	F
Cyclone	113	114	117	44.2	101	G	G
DEFENDER	111	107	110	44.0	100	G	G
Delta	108	103	110	43.0	102	G	F
Ebony	***	113	***	***	105	VG	G
AC Elect	103	98	113	45.1	101	F	P
AC Excel	101	97	100	44.7	101	F	F
Frontier	99	101	96	44.4	100	G	F
Garrison	117	111	124	44.0	103	VG	G
AC-H102	115	116	130	44.8	103	VG	G
Hyola 401	112	112	98	43.1	103	G	P
Hyola 417	105	108	113	43.6	102	G	F
Impact	104	102	115	44.1	102	G	F
Jewel	***	110	***	***	97	VP	G
Legacy	106	107	118	44.4	101	G	F
LG3650	108	125	120	44.7	101	F	G
LG3310	109	116	***	45.1	102	VG	VG
Magnum	***	124	***	***	99	F	G
Mari	96	85	84	44.9	103	F	G
NORSEMAN	100	103	104	44.4	102	VG	F
OAC Springfield	103	108	102	44.6	98	VP	P
PEARL	104	97	103	42.8	103	G	G
Polo	95	93	86	47.7	103	F	F
PRINCETON	104	105	107	44.2	102	G	F
Quantum	110	122	116	43.3	102	VG	VG
SETTLER	106	107	116	43.9	102	VG	F
Seville	112	102	109	43.8	103	G	F
Trojan	108	102	115	43.9	102	VG	F
Vanguard	99	94	99	44.0	101	F	F
46A05	111	119	102	44.4	102	F	F
Stallion (HT)	70	80	72	41.6	102	F	F
AC Tristar (HT)	69	76	68	42.7	100	F	VP
Innovator (HT)	105	99	***	43.9	101	F	F
45A71 (HT)	111	113	***	43.8	101	F	F

HT Herbicide tolerant

* 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.

*** Less than 4 station years of data

AT TIME OF PRINTING:

Protected by Plant Breeders' Rights: B2416, BULLET, Cyclone, Crusher, DEFENDER, Ebony, Garrison, Impact, Innovator, Jewel, Legacy, NORSEMAN, OAC Springfield, PEARL, PRINCETON, Quantum, SETTLER, Seville, Trojan.

Applied for Protection: Alliance, BATTALION, BRIGADE, CORONET, Frontier, Magnum, LG3310, 46A05, 45A71.

Refer to Section "What is Plant Breeders' Rights".



Progress Through Research

Polish Canola

Main Characteristics of Varieties

Variety	Yield as % of Tobin				Average Maturity in Days	Resistance to*	
	Area 2	Area 3	Area 4	Average % Oil		Lodging	White Rust
Tobin	100	100	100	42.0	86	F	G
Cash	93	103	109	43.4	87	F	F
CHINOOK	93	101	115	43.1	87	F	F
Colt	100	99	100	42.7	87	F	VP
Eclipse	92	94	94	43.3	87	G	F
Eldorado	97	102	99	42.6	87	F	P
Goldrush	91	97	88	42.0	89	VG	G
Horizon	101	102	102	42.7	87	G	VP
Hysyn 100	105	104	115	42.9	87	F	F
Hysyn 110	105	100	110	42.8	86	F	F
Klondike	90	104	111	42.8	90	G	VP
MAVERICK	94	100	106	44.1	86	F	F
AC Parkland	95	100	104	43.6	87	F	VG
Reward	96	102	103	43.7	87	F	VG
AC Sunshine	96	100	102	43.6	87	F	VG
WESTWIN	102	106	114	44.1	86	F	G

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



AT TIME OF PRINTING:

Protected by Plant Breeders' Rights: CHINOOK, Goldrush, Klondike.

Applied for Protection: Cash, MAVERICK, WESTWIN.

Refer to Section "What is Plant Breeders' Rights".

Additional Information:

Argentine varieties yield, on average 15 to 20% more seed than Polish varieties and mature in 98 to 104 days. These varieties are best suited to the longer season growing areas of central Saskatchewan. Polish varieties mature 10 to 14 days earlier than Argentine varieties, and are therefore well adapted to the short season growing areas of northern Saskatchewan. Under conditions of drought or early fall frost, which shorten the growing period, the yield of Polish varieties can be equal to or even greater than that of Argentine varieties. Polish varieties are more shatter resistant than Argentine varieties allowing straight combining of the crop. Polish varieties are also less likely to produce green seed than Argentine varieties.

Argentine Canola

Argentine varieties are black seeded. They are susceptible to Sclerotinia stem rot but have very good white rust resistance. Blackleg, which is now widespread in Saskatchewan, can cause severe yield losses in Argentine varieties that have poor resistance

when grown in blackleg prone areas. Argentine varieties are susceptible to seed shattering when left standing for straight combining at full maturity.

It should be noted that late and very late maturing Argentine varieties tend to produce higher levels of green seed under wet and cool conditions at harvest, which can cause substantial grade reductions. Late maturing Argentine varieties should be planted early to reduce green seed counts.

There are 11 new Argentine canola varieties available to canola producers that were registered in 1995. They are BATTALION, BRIGADE, CORONET, Ebony, Jewel, LG 3650, LG 3310, Magnum, OAC Springfield, Quantum and 46A05.

Irrigation

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

Herbicide Tolerant (HT) Canola

The triazine tolerant varieties Stallion and AC Tristar are substantially lower yielding than other Argentine varieties, and should only be considered for production on fields where severe infestations of stinkweed and/or wild mustard are expected.

45A71 is a new Pursuit herbicide tolerant variety, and Innovator is tolerant to the non-selective herbicide Liberty. There are limited seed stocks available for Innovator.

Polish Canola

Polish varieties are yellow-brown seeded. They are all susceptible to Sclerotinia stem rot and have poor blackleg resistance. Blackleg is less of a threat in Polish canola because of its early maturity which tends to reduce the impact of blackleg on reducing yields. WESTWIN is a new high yielding variety registered in 1995.

Specialty Oil Rapeseed and Canola

A 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, they are usually high oil content varieties.

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 are lower yielding and have low oil content, they are also 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.

Sunflower (Oilseed)

Main Characteristics of Varieties

Variety	Yield as %		Average	Oil %
	IS 7111	of	Maturity	
			in days	
IS 7111	100	100	121	47.4
IS 7000	101	101	120	47.5
IS 6111	115	115	122	45.9
SF 128	103	103	129	43.6
SF 187	111	111	126	41.2
SF 270	113	113	123	46.5
DO 707	116	116	123	45.7
DO 827	114	114	126	45.6
6230	107	107	125	44.9
6322	112	112	123	47.2
Hysun 311	95	95	121	51.2
Cadet	94	94	123	49.8

Additional Information:

Sunflower requires 120-125 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 south-eastern Saskatchewan. Early maturing, short stature cultivars such as **Sunwheat 101** and **Sunwheat 103** are adapted to production in all areas of Saskatchewan.

Mustard

Main Characteristics of Varieties

Type and Variety	Yield as % Of Cutlass	Average Maturity In Days
Oriental		
Cutlass	100	94
Forge	98	96
Lethbridge 22A	87	95
AC Vulcan	105	95
Brown		
commercial	88	96
Yellow		
	<u>Yield as % Of Ochre</u>	
Ochre	100	95
Gisilba	98	95
AC Pennant	110	95
Tilney	100	96
Viscount	100	96

Additional Information:

Mustard is grown in the drier regions of the province 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 are highly resistant to blackleg.

Oriental mustard varieties are yellow seeded. **AC Vulcan** and **Cutlass** are resistant to white rust while **Forge** and commercial Brown are highly susceptible. **Forge** has superior seed quality. **Lethbridge 22A**, an older variety, is needed for specific markets.

Yellow mustard varieties are large seeded, and the seed is light yellow in colour. Yield of yellow mustard is, on average, 30% less seed than that of Oriental mustard.

Differences in yield between the different types of mustard is normally compensated for by price.



Progress Through Research

AT TIME OF PRINTING:

Applied for Protection: Viscount.

Refer to Section "What is Plant Breeders' Rights".

Flax

Main Characteristics of Varieties

Variety	Yield as a % of NorLin					Irr.	Maturity ²	Seed Size	Resistance to ¹		
	Area 1	Area 2	Area 3	Area 4	Rust				Wilt	Lodging	
NorLin	100	100	100	100	100	M (101 days)	Medium	VG	G	G	
Andro	99	92	94	90	95	E	Medium	VG	F	G	
AC Emerson	102*	99*	100*	91*	96*	M	Large	VG	VG	F-G	
Flanders	101	103	100	100	106	L	Small	VG	G	VG	
AC Linora	91	93	98	94	103	L	Medium	VG	G	VG	
AC McDuff	99	100	104	100	107	VL	Medium	VG	G	VG	
CDC Normandy	101**	104**	106**	111**	103**	M	Medium	VG	G	F-G	
Somme	100	102	104	100	103	M	Medium	VG	G	F-G	
Vimy	111	105	103	101	75	M	Large	VG	G	F	

Solin

Linola™ 947	93	102	103	95	98	VL	Small	VG	G	VG
Linola™ 989	103**	99**	116**	99**	105**	L	Medium	VG	G	VG

* Less than three years of data.

** Limited data.

¹ Resistance ratings: VG – very good; G – good; F – fair; P – poor; VP – very poor

² 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



AT TIME OF PRINTING:

Protected by Plant Breeders' Rights: Linola™ 947, Linola™ 989

Applied for Protection: AC McDuff

Refer to section "What is Plant Breeders' Rights".

Additional Information:

CDC Normandy and Linola™ 989 are newly registered varieties and no seed will be available in 1996.

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 a food quality oil and, as such, can not be sold in traditional flax markets. Linola™ varieties are only available 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	Cotyledon Colour	Yield as % of Laird	Height (cm)	Days to Flower	Relative Maturity Rating	Resistance to		Seed Weight (g/1000)	Seeding Rate kg/ha (lb/a)
						Ascochyta Blight	Anthracnose		
Laird	yellow	100	41	53	VL	P	VP	70	90-100 (80-90)
CDC Richlea	yellow	117	35	50	M	VP	VP	50	60-70 (53-62)
Eston	yellow	117	30	48	E	VP	VP	35	45-50 (40-45)
CDC Matador*	yellow	118	33	50	M	G	F	30	40-45 (35-40)
CDC Redwing*	red	98	30	48	E	VG	VP	35	45-50 (40-45)

*One years data only.

Relative maturity ratings: E – early; M – medium; VL – very late.

Disease resistance ratings: VG – very good; G – good; F – fair; P – poor; VP – very poor.

Additional Information:

Lentil is best adapted to the Brown, Dark Brown, and southernmost areas of the Black soil zones. It has about the same growing season requirement as durum wheat. However, lentil has an indeterminate growth habit and some stress is required during flowering to stimulate heavy pod set. A nitrogen stress can be induced by seeding early on cereal stubble. A drought stress occurs naturally during most years in the Brown and Dark Brown soil zones or can be induced by early seeding on light soils in the Black soil zone.

Young lentil plants can tolerate a light frost; a heavier frost will kill the tops, but regrowth will occur from axillary buds at or below the soil surface. Thus lentil can and should be seeded early, even earlier than wheat and as soon as the soil temperature at seeding depth exceeds 5°C. Early seeding is also important from the standpoint of reducing the hazard from early fall

frosts which severely damage immature seeds. Lentil will not tolerate flooding or salt-affected soils.

Lentil plants are short (30-45 cm) and must be swathed close to the ground using a pick-up reel. Alternatively, lentils may be desiccated and direct combined using a flex header. Thus, they should be seeded on a smooth rock-free seedbed or rolled before the 6-node stage to facilitate swathing or direct combining.

CDC Gold is a zero tannin variety and the seed coat does not discolour. However, it is extremely susceptible to seed rot and ascochyta blight and is very late maturing. **CDC Matador** is a specialized market class known as Spanish brown type. **CDC Gold**, **CDC Matador** and **CDC Redwing** are exclusive releases and no seed will be available for general distribution in 1996.

Indianhead, a black seeded lentil, is very late maturing and was developed as a green manure lentil. It has small

seed which reduces the cost of establishment. The seeding rate is 39-44 kg/ha (35-40 lbs/A). **Indianhead** will produce an average seed yield if planted early and subjected to a drought stress in July and August.

Lentil producers should plant lentil seed that has been tested for seedborne ascochyta and avoid planting next to fields with lentil residues from the previous year. Growers in northern areas and pedigreed seed producers should use only disease-free seed (none-detected). In the drier areas up to 4% seed-borne ascochyta does not normally cause a problem.

Lentil is a legume and is capable of nitrogen fixation when the seed is treated with the proper inoculum. See Seed Inoculation section under Seed Facts.

For more information on lentil production, consult the Pulse Production Manual.

Chickpea

Main Characteristics of Varieties

Variety	Type	Yield as % of CDC Marengo			Plant Height (cm)	Days to Flower	Days to Maturity	Seed Weight (g/1000)
		Brown Soil Zone	Dark Brown Soil Zone	Ascochyta Resistance				
CDC Marengo	desi	100	100	no	39	48	111	288
Cheston	desi	100	98	no	35	49	109	173
Green	desi	69	83	no	29	49	109	173
Myles	desi	74	91	yes	43	48	112	192
UC 27	kabuli	67	91	no	41	48	111	477
Sanford	kabuli	63	79	yes	51	56	118	407
Dwelley	kabuli	75	72	yes	48	56	119	472

Note: All data in this table are based on one years results only.

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. Both are late maturing in Saskatchewan. **UC 27** kabuli is earlier maturing but it is susceptible to ascochyta. **Myles** is an ascochyta resistant small-seeded desi

(brown seedcoat) variety. **CDC Marengo**, **Cheston** and **Green** are susceptible to ascochyta. Seed of all chickpea varieties is limited for 1996.

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 later maturing. Plant 6 cm deep. Seed of the kabuli types should be treated with a fungicide

to reduce seed rot. 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.

Field Pea

Characteristics of Varieties

Variety	Yield as % of Express in Areas			Maturity	Vine Length (cm)	Resistance to					Seed Weight (g/1000)
	1, 2 and South 3	4 and North 3	Irrigation			AB	PM	SCB	LDG	BL	
Yellow-Seeded											
Express	100	100	100	M	62	P	VP	P	P		240
AC Tamor	90	70	89*	L	57	VP	VG	G	VP		280
Anno (SL)	80	94	115	E	63	P	P	F	F		250
Baroness (SL)	97	100	111	E	71	P	P	F	F		290
Bohatyr	93	89	93	M	73	F	VP	G	F		270
Carneval (SL)	95	102	126	E	72	F	P	F	G		250
Celeste	87*	79*	113	E	65	P	VP	F	P		270
Century	83	74	91	E	106	P	P	P	P		230
Choque (SL)	86	88	119	M	60	P	P	F	F		260
CPB CONCORDE	80*	101*	109*	E	57	P	VP	P	P		280
DISCOVERY	NR	NR	118	M	63	P	P	P	F		320
ENDEAVOR	NR	NR	120	M	73	P	P	P	F		260
FLUO (SL)	90	97	99*	VE	85	P	P	F	F		320
GRANDE	109	111	110	M	90	P	VP	P	F		260
Highlight (SL)	98	102	114	E	66	P	VG	G	F		210
Impala (SL)	96	90	111	M	72	P	P	F	F		270
MIKO (SL)	94	91	121	M	75	P	P	F	F		260
Miranda	76	76	111	M	44	P	VP	P	VP		350
Montana (SL)	97	103	113	E	55	P	VP	F	F		300
MUSTANG (SL)	103	96	117	E	60	P	P	F	F		210
Patriot (SL)	91	86	108	E	67	F	VP	F	F		200
PROFI (SL)	99	99	115	E	72	P	P	P	F		270
Richmond	99	101	98	M	67	F	VP	F	P		210
Scorpio	91	83	103	E	56	P	VP	P	P		280
Spring D	94	94	99*	E	62	P	P	F	F		240
Stehgolt	66*	83	NA	E	45	P	P	P	P		290
Tara	89	91	87	L	96	F	VG	F	F		210
Titan	83	78	88	L	109	P	P	G	P		250
Topper	89	82	NA	M	102	VP	P	F	P		290
Trapper	86	89	NA	L	95	P	P	F	P		140
Victoria	94	94	NA	M	84	P	VP	F	P		190
VOYAGEUR (SL)	NR	NR	109	M	62	P	P	F	F		190
YORKTON	107	108	107	M	72	P	P	P	F		270
Green-Seeded											
Radley (SL)	85	83	105	M	57	F	VP	F	F	G	210
Ascona (SL)	88	79	141	M	50	P	VP	P	F	P	300
CPB PHANTOM (SL)	101	84	143	M	48	P	VP	P	F	P	310
Clipper	92*	81*	119	M	59	P	VP	P	F	F	300
Danto (SL)	81	62	110	M	52	P	P	F	F	F	290
Emerald	87	93	107	M	75	P	P	F	F	F	250
Keoma (SL)	94	90	117	M	53	P	P	P	F	G	240
MAJORET (SL)	92	91	120	M	59	P	VP	F	G	F	250
ORB (SL)	79	84	118	M	55	P	VP	P	F	P	240
Princess	84	67	100	E	58	P	P	G	P	G	200
Ricardo	88	82	140*	M	52	F	VP	F	P	F	280
TOTEM	103	93	102	M	47	P	VP	P	F	F	240
Trump	77	71	NA	L	63	P	VP	F	P	F	250
Maple/Coloured Flower Types											
CDC April (SL)	90*	82*	100*	L	53	F	P	G	F		140
CDC Vienna (SL)	102*	83*	124*	L	61	F	P	G	F		170
Sirius	83	83	NA	M	96	P	P	G	P		240

NA No available data

(SL) Indicates semi-leafless variety

Relative maturity ratings compared to Express: VE – very early; E – early; M – medium; L – late

Resistance ratings: AB – ascochyta blight; PM – powdery mildew; SCB – seed coat breakage; LDG – lodging; BL – bleaching (for green-seeded types); VG – very good; G – good; F – fair; P – poor; VP – very poor

NR Not recommended on dryland in Saskatchewan

* Limited data



Progress Through Research

AT TIME OF PRINTING:

Protected by Plant Breeders' Rights: MAJORET, ORB, Trump, AC Tamor, Baroness, Carneval, FLUO, GRANDE, Highlight, Montana, Patriot, Richmond, Topper.

Applied for Protection: CPB CONCORDE, Danto, DISCOVERY, Emerald, Celeste, Choque, Clipper, ENDEAVOR, Impala, MUSTANG, PROFI, Scorpio, Spring D, TOTEM, VOYAGEUR.

Refer to section "What is Plant Breeders' Rights".

Additional Information

Field pea is best adapted to the more northerly 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. In the table lodging resistance is rated relative to Radley for semi-leafless varieties and relative to Express for all other varieties.

Green-seeded varieties are generally lower-yielding than yellow-seeded varieties. Many green varieties will bleach if exposed to cycles of wetting (dew, showers) and drying (warm sunny days) near harvest.

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 colour. These qualities can be discussed in more detail with food pea marketers.

Certified seed of **TOTEM, CPB PHANTOM, MUSTANG, YORKTON, Clipper, CDC Vienna, CDC April**, and some other recently registered varieties will not be available in large quantities for 1996 planting. Regional yield trial results for **Promar**, a green-seeded marrowfat variety sold in specialty food pea markets, indicate that this variety will yield about 70% of Express on dryland. **Whero** is a late maturing, long vine, yellow-seeded maple type (brown marbled seedcoat) sold in birdfeed markets. It yields about 70% of Express.

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. See seed inoculation section.

The seed coats of yellow-seeded peas intended for the food market may have high levels of green colour which may affect marketability. GREEN SEED-COAT DATA were recorded for 7 yellow-seeded varieties from 12 dryland sites in 1995. Ratings from most green to least green were Express = GRANDE = Choque = Impala = YORKTON > PROFI = MUSTANG.

Smoothness and roundness of both green-seeded and yellow-seeded peas can be important quality factors in some food markets. Some varieties develop a dimpled texture (similar to a golf ball) during late seed fill. Data for PERCENT SEED DIMPLING were recorded in 1995. For yellows, dimpling percentage was low (0-5%) for GRANDE, YORKTON, intermediate (6-20%) for Express, Impala and MUSTANG and high (over 20%) for Choque and PROFI. For greens, dimpling percentage was low (0-5%) for MAJORET and TOTEM, intermediate (6-20%) for Clipper and Keoma, and high (over 20%) for Radley, CPB PHANTOM and Ascona.

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

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 to 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.

Dry Bean

Main Characteristics of Varieties

Variety	Type	Yield as % of Othello			Days to Flower	Days to Maturity	Pod Clearance %	Seed Weight (g/1000)	
		Irri- gation	Area 2	South Area 3					North Area 3
Othello	pinto	100	100	100	100	53	102	49	348
Fargo	pinto	100	84	90	107	51	101	47	365
UI 906	black	65	105	70	54	59	108	76	152
CDC Espresso	black	51	84	76	78	48	100	86	195
CDC Nighthawk	black	57	68	72	52	58	106	75	166
CDC Whistler	small white	51	84	83	56	60	112	80	156
Seaforth	navy	49	60	73	51	58	108	68	187
AC Skipper	navy	48	73	81	43	56	108	71	202

Note: All data in this table are based on one years results only.

Additional Information:

Dry bean can be grown under irrigation in Saskatchewan in regions that have a warm, long growing season (110 days from seeding, which is usually after May 20). Yields are generally lower but maturity slightly earlier on dryland in the moist Dark Brown and Thin Black soil zones. Both black and navy beans have better pod clearance ratings (% of pods completely clearing the cutterbar at harvest) and therefore may be more suitable for direct harvest systems. 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 supplies for **AC Skipper**, **CDC Whistler**, **CDC Nighthawk** and **CD Espresso** are very limited for 1996. **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 are at 15°C or more at rates of 80-100 kg/ha (70-100 lb/A) for pintos and 25% less for blacks and navies. Plant seed 6 cm 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 4 days of seeding. Row crop production, 20 plus inches (48 cm), requires an undercutter and a windrower for harvest. Seed should be free of bacterial diseases such as common blight and halo blight. For more details on production consult the Pulse Production Manual.

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 well-prepared 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.

Borage

Borage seed contains about 30% oil which consists of about 22% gamma linolenic acid (GLA). Delayed seeding (June 1 to 15) and swathing immediately after the first fall frost results in a high GLA concentration and an average seed yield, usually about 80 kg/ha (75 lb/ac). It has an indeterminate growth habit and honey bees are required for pollination. Contract production is advised. Seed shatters very badly.

Buckwheat

Buckwheat is sensitive to high temperatures and dry weather conditions in the blossom stage which can reduce seed set and yields. Pollination is required to maximize yield. 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.

Coriander

Coriander is a spice crop commonly grown for its seed. Coriander seedlings are harvested as a herb crop called cilantro. Seedlings are slow to develop and noncompetitive. The large-seeded type is early maturing and low yielding. The small seeded type is late maturing and higher yielding (if it matures). The late maturing type should be seeded before May 1 in order to increase the probability of ripe seed. The crop is usually swathed, because of its indeterminate growth habit and seed shattering.

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 extremely limited.

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** is in limited supply for 1996.

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.

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 it should be treated. Seed of susceptible varieties known to be free of smut or resistant cultivars should not require treatment. **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. containing carbathiin) will control true loose smut of barley and wheat and stem smut of rye because the pathogens are harbored within the seed. The other types of smut (covered, false loose, oat, and bunt) may be controlled by non-systemic seed treatments because the pathogen is borne on the outside of the seed. Examples of active ingredients of non-systemic seed treatments are maneb and formaldehyde. Formaldehyde may result in reduced seed germination. **Read the provincial publication "Crop Protection Guide 1996" for detailed instructions and recommended rates.**

The virulent form of blackleg is now widespread on canola in Saskatchewan. Treatment of seed with a recommended fungicide can be beneficial to 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. Read the label carefully and follow all directions.

Treated seed must not be allowed to contaminate grain delivered to an elevator or used for feed.

Ergot

Ergo 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. For details on the disease obtain a copy of "Ergot of Grains and Grasses", Publ. 1438.

Seed Inoculation

Legume crops are able to take much of their nitrogen (N) requirement from the atmosphere by forming a symbiotic association with soil bacteria called **Rhizobium**. These rhizobia colonize the legume plant roots and live in structures called nodules and 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 colonaization. Cool, dry soils are detrimental to the process. **Read 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 30 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 **Legume Inoculation** publication.

Seed-borne diseases of Lentil

Lentil producers should plant lentil seed that has been tested for seed-borne ascochyta and avoid planting next to the previous year's lentil residue. See lentil section for suggested tolerances.

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 batch-driers, or 43°C for recirculating and continuous driers. Frozen grain should never be sown without a laboratory germination test. There is frequently a high percentage of abnormal seedlings which may be unnoticed by an inexperienced observer.

Production Notes

All classes of wheat including durum and triticale are susceptible to wheat midge. Farmers in the infested areas should be prepared to spray these fields with recommended insecticides if necessary. Refer to **Orange Wheat Blossom Midge** Publication.

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

Inspect fields weekly for the presence of Russian wheat aphid. Infested plants will show white or purple longitudinal stripes. Biology and control of this aphid are described in the leaflet "Russian Wheat Aphid".

Breeding Institutions and Seed Distributors of Varieties Listed in this Publication

Crop Kind, Class & Variety	Breeding Institution	Distributor
Wheat		
Bread Wheat		
AC Barrie	AAFC (Swift Current)	SeCan Members
Columbus	AAFC (Winnipeg)	SeCan Members
AC Cora	AAFC (Winnipeg)	SeCan Members
AC Domain	AAFC (Winnipeg)	SeCan Members
AC Eatonia	AAFC (Swift Current)	Proven Seed
Invader	Agripro Seeds Inc. & UGG	Proven Seed
Katepwa	AAFC (Winnipeg)	SeCan Members
Lancer	AAFC (Swift Current)	SeCan Members
Laura	AAFC (Swift Current)	SeCan Members
AC Majestic	AAFC (Winnipeg)	Cargill Seed
CDC Makwa	U of S - CDC	SeCan Members
CDC Merlin	U of S - CDC	SeCan Members
AC Michael	AAFC (Lacombe)	SeCan Members
AC Minto	AAFC (Winnipeg)	SeCan Members
Pasqua	AAFC (Winnipeg)	SeCan Members
Roblin	AAFC (Winnipeg)	SeCan Members
CDC Teal	U of S - CDC	Value Added Seeds

Canada Prairie Spring Wheat

Biggar	AAFC (Swift Current)	SeCan Members
Cutler	University of Alberta	Proven Seed
AC Foremost	AAFC (Lethbridge, Swift Current, Winnipeg)	SeCan Members
Genesis	AAFC (Swift Current)	SeCan Members
AC Karma	AAFC (Swift Current)	SeCan Members
AC Taber	AAFC (Swift Current)	SeCan Members

Canada Western Extra Strong

Bluesky	AAFC (Beaverlodge)	SeCan Members
Glenlea	University of Manitoba	Public
Wildcat	AAFC (Beaverlodge)	SeCan Members

Durum

Kyle	AAFC (Swift Current)	SeCan Members
Medora	AAFC (Winnipeg)	SeCan Members
AC Melita	AAFC (Winnipeg)	SeCan Members
Plenty	U of S - CDC	SeCan Members
Sceptre	U of S - CDC	SeCan Members

Soft White Spring Wheat

Fielder	University of Idaho & USDA;	
	AAFC (Lethbridge)	Public
AC Reed	AAFC (Lethbridge)	SeCan Members

Winter Wheat

CDC Clair	U of S - CDC	SeCan Members
CDC Kestrel	U of S - CDC	SeCan Members
Norstar	AAFC (Lethbridge)	Public
Norwin	Montana Ag Exp. Station & USDA (Aberdeen); U of S - CDC	Public
CDC Osprey	U of S - CDC	Proven Seed
AC Readymade	AAFC (Lethbridge)	SeCan Members

Winter Rye

Danko		AB Wheat Pool
Musketeer	AAFC (Swift Current)	SeCan Members
Prima	AAFC (Swift Current)	SeCan Members
AC Rifle	AAFC (Swift Current)	Proven Seed

Spring Rye

Gazelle	U of S	Public
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Triticale

AC Alta	AAFC (Swift Current)	Progressive Seeds
Banjo	University of Manitoba	Value Added Seeds
AC Certa	AAFC (Swift Current)	Progressive Seeds
AC Copia	AAFC (Swift Current)	Value Added Seeds
Frank	AAFC (Swift Current)	SeCan Members
Wapiti	CIMMYT; Alta Ag	SeCan Members
Pika	FCDC (AltaAg)	Proven Seed

Crop Kind, Class & Variety	Breeding Institution	Distributor
Barley		
Malting		
B1215	Busch Ag. Res. Inc.	Sask Wheat Pool
B1602	Busch Ag. Res. Inc.	Sask Wheat Pool
B2912	Busch Ag. Res. Inc.	Sask Wheat Pool
AC Buffalo	AAFC (Brandon)	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
Manley	U of S - CDC	SeCan Members
AC Oxbow	AAFC (Winnipeg, Brandon)	SeCan Members
Robust	U of Minnesota	Cargill Seed, Others
Stein	U of S - CDC	Proven Seed
Tankard	U of S - CDC	SeCan Members
TR232	AAFC (Brandon)	SeCan Members
TR 128	U of S - CDC	Performance Seeds
TR 129	U of S - CDC	Value Added Seeds
TR 133	U of S - CDC	Sask. Wheat Pool
BT 941	Busch Ag. Res. Inc.	Alberta Wheat Pool

Feed

Brier	U of S - CDC	SeCan Members
Bronco	W.G. Thompson & Sons Ltd.	Value Added Seeds
CDC Dolly	U of S - CDC	SeCan Members
CDC Guardian	U of S - CDC	SeCan Members
AC Lacombe	AAFC (Lacombe)	SeCan Members
Prospect	W.G. Thompson & Sons Ltd.	Value Added Seeds
Seebe	FCDC (Lacombe)	SeCan Members

Hullless

CDC Buck	U of S - CDC	Proven Seed
CDC Candle	U of S - CDC	Sask. Wheat Pool
Condor	FCDC (Lacombe)	SeCan Members
CDC Dawn	U of S - CDC	SeCan Members
Falcon	FCDC (Lacombe)	Progressive Seeds
Phoenix	FCDC (Lacombe)	SeCan Members
CDC Richard	U of S - CDC	Proven Seed
CDC Silky	U of S - CDC	Value Added Seeds

Intensive Management

Duke	U of S - CDC	SeCan Members
CDC Earl	U of S - CDC	SeCan Members
Kasota	FCDC (Lacombe)	SeCan Members
Tukwa	FCDC (Lacombe)	SeCan Members

Oat

AC Belmont	AAFC (Winnipeg)	Proven Seed
CDC Boyer	U of S - CDC	SeCan Members
Calibre	U of S - CDC	SeCan Members
Derby	U of S - CDC	Proven Seed
Dumont	AAFC (Winnipeg)	SeCan Members
ELVY	Svalöf Weibull AB/Proven Seed	Proven Seed
AC Juniper	AAFC (Lacombe)	Alberta Wheat Pool
AC Marie	AAFC (Winnipeg)	SeCan Members
AC Mustang	AAFC (Lacombe)	Sask Wheat Pool
AC Preakness	AAFC (Winnipeg)	Proven Seed
Waldern	AAFC (Lacombe)	SeCan Members

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, Alberta

U - University

U of S - University of Saskatchewan, Saskatoon

USDA - United States Department of Agriculture

Breeding Institutions and Seed Distributors of Varieties Listed in this Publication

Crop Kind, Class & Variety	Breeding Institution	Distributor
Canola		
Argentine		
Alliance	Albert Wheat Pool	Sask. Wheat Pool
B2416	Svalöf Weibull AB	Brett-Young Seeds
BATTALION	Svalöf Weibull AB	Proven Seed
Bounty	Svalöf Weibull AB	Proven Seed
BRIGADE	Svalöf Weibull AB	Sask. Wheat Pool
BULLET	Svalöf Weibull AB	Proven Seed
Celebra	Svalöf Weibull AB	Newfield Seeds, Cdn. Seed Coaters
CORONET	Svalöf Weibull AB	Newfield Seeds, Cdn. Seed Coaters
Crusher	Svalöf Weibull AB	Brett-Young Seeds
Cyclone	Prodana, Oseco-King Agro	Limagrain Canada Seeds Inc.
DEFENDER	Svalöf Weibull AB	Proven Seed
Delta	Svalöf Weibull AB	Proven Seed
Ebony	Limagrain Canada Seeds Inc.	Limagrain Canada Seeds Inc.
AC Elect	AAFC (Saskatoon)	SeCan Members
AC Excel	AAFC (Saskatoon)	SeCan Members
Frontier	Alberta Wheat Pool	Sask Wheat Pool
Garrison	Svalöf Weibull AB	Proven Seed
AC-H102	AAFC (Saskatoon)	SeCan Members
Hyola 401	Zeneca Seeds	Zeneca Seeds
Hyola 417	Zeneca Seeds	Zeneca Seeds
Impact	Svalöf Weibull AB	SeCan Members
Innovator	AgrEvo/AAFC (Saskatoon)	Sask. Wheat Pool
Jewel	Limagrain Canada Seeds Inc.	Cargill Seed
Legacy	Svalöf Weibull AB	Sask Wheat Pool
Legend	Svalöf Weibull AB	Sask Wheat Pool
LG3650	Limagrain Canada Seeds Inc.	Limagrain Canada Seeds Inc.
LG3310	Limagrain Canada Seeds Inc.	Limagrain Canada Seeds Inc.
Magnum	Limagrain Canada Seeds Inc.	Value Added Seeds
Mari	Maribo, Mycogen	Mycogen Canada Inc.
NORSEMAN	Svalöf Weibull AB	Cargill Seed
OAC Springfield	U of Guelph	
PEARL	Limagrain Canada Seeds Inc.	Limagrain Canada Seeds Inc.
Polo	Maribo Seeds	Mycogen Can. Ltd./ Performance Seeds Canada Inc.
PRINCETON	Svalöf Weibull AB	Sask. Wheat Pool
Quantum	U of Alberta	Sask. Wheat Pool
SETTLER	Svalöf Weibull AB	Value Added Seeds
Seville	Svalöf Weibull AB	Prairie Seed
Trojan	Svalöf Weibull AB	Newfield Seeds, Cdn. Seed Coaters
45A71	Pioneer Hi-Bred	Proven Seed
46A05	Pioneer Hi-Bred	Proven Seed
Stallion	Svalöf Weibull AB	Sask. Wheat Pool
AC Tristar	AAFC (Saskatoon)	SeCan Member
Vanguard	Svalöf Weibull AB	Newfield Seeds, Cdn. Seed Coaters

Crop Kind, Class & Variety	Breeding Institution	Distributor
Polish		
Cash	Svalöf Weibull AB	Newfield Seeds, Cdn. Seed Coaters
CHINOOK	Svalöf Weibull AB	Limagrain Canada Seeds Inc.
Colt	Svalöf Weibull AB	Newfield Seeds, Cdn. Seed Coaters
Eclipse	University of Alberta	Alta. Wheat Pool
Eldorado	University of Alberta	Proven Seed
Goldrush	Svalöf Weibull AB	Proven Seed
Horizon	Svalöf Weibull AB	Sask Wheat Pool
Hysyn 100	Zeneca Seeds	Zeneca Seeds
Hysyn 110	Zeneca Seeds	Zeneca Seeds
Klondike	Svalöf Weibull AB	Proven Seed
MAVERICK	Svalöf Weibull AB	Sask Wheat Pool
AC Parkland	AAFC (Saskatoon)	SeCan Members
Reward	U of Manitoba	SeCan Members
AC Sunshine	AAFC (Beaverlodge)	Western Grower Seed Corp.
Tobin	AAFC (Saskatoon)	SeCan Members
Westwin	Svalöf Weibull AB	Brett-Young Seed
Flax		
Andro	U of S - CDC	SeCan Members
AC Emerson	AAFC (Morden)	SeCan Members
Flanders	U of S - CDC	SeCan Members
Linola™ 947	CSIRO/UGG	Proven Seed
Linola™ 989	CSIRO/UGG	Proven Seed
AC Linora	AAFC (Morden)	SeCan Members
AC McDuff	AAFC (Morden)	Proven Seed
NorLin	AAFC (Morden)	SeCan Members
CDC Normandy	U of S - CDC	Western Grower Seed Corp.
Somme	U of S - CDC	SeCan Members
Vimy	U of S - CDC	SeCan Members
Mustard		
Brown		
commercial		Trade
Oriental		
Cutlass	AAFC (Saskatoon)	Trade
Forge	Colman's of Norwich	Humboldt Flour Mills
Lethbridge 22A	AAFC (Saskatoon)	Trade
AC Vulcan	AAFC (Saskatoon)	Sask. Wheat Pool
Yellow		
Gisilba	Kurt Behm GMBH	Northern Sales
Ochre	AAFC (Saskatoon)	Trade
AC Pennant	AAFC (Saskatoon)	Sask. Wheat Pool
Tilney	Colman's of Norwich	Proven Seed
Viscount	Colman's of Norwich/UGG	Proven Seed

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
Sunflower			Topper ☉ AAFC (Morden) SeCan Members		
AC Aurora	AAFC (Saskatoon)	Western Grower Seed Corp.	TOTEM	Svalöf Weibull AB	Newfield Seeds
Cadet	Mycogen		Trapper	AAFC (Morden)	Public
DO-707	Dahlgren and Company	Pioneer Hi-Bred	Trump	AAFC (Morden)	SeCan Members
DO 827	Dahlgren and Company	Pioneer Hi-Bred	Victoria	Svalöf Weibull AB	Newfield Seeds
Hysun 311	Zeneca Seeds	Zeneca Seeds	CDC Vienna	U of S - CDC	Western Grower Seed Corp, Walker Seed
IS 7000	Interstate Seeds	Sask. Wheat Pool	VOYAGEUR	Svalöf Weibull AB	Proven Seed
IS 7111	Interstate Seeds	Sask. Wheat Pool	Yellowhead	Ad Canada (Morden)	Woodstone Foods Ltd.
IS 6111	Interstate Seeds	Sask. Wheat Pool	YORKTON	Svalöf Weibull AB	Value Added Seeds
6230	Pioneer Hi-Bred	Pioneer Hi-Bred	Lentil		
6322	Pioneer Hi-Bred	Pioneer Hi-Bred	Eston	U of S - CDC	SeCan Members
SF 128	Cargill Seed	Cargill Seed	CDC Gold	U of S - CDC	Sask. Wheat Pool
SF 187	Cargill Seed	Cargill Seed	Indianhead	U of S - CDC	SeCan Members
SF 270	Cargill Seed	Cargill Seed	Laird	U of S - CDC	SeCan Members
AC Sierra	AAFC (Saskatoon)	Western Grower Seed Corp.	CDC Matador	U of S - CDC	Simpson Seeds
Sunwheat 103	Seed Tec International/ Agripro Seeds Inc.	Proven Seed	Rose	U of S - CDC	Proven Seed
Sunwheat 101	Seed Tec International/ Agripro Seeds Inc.	Proven Seed	CDC Redwing	U of S - CDC	Sask. Wheat Pool
Field Pea			CDC Richlea	U of S - CDC	SeCan Members
Anno	D.L.F. Trifolium-Columbia Seeds	Columbia Seeds (AB)	Faba Bean		
CDC April	U of S - CDC	Value Added Seeds	Aladin	University of Manitoba	Public
Ascona	Cebeco	St. Denis Seed Farm (AB)	CDC Blitz	U of S - CDC	Proven Seed
Baroness	Sharpes Int.- Columbia Seeds	Columbia Seeds (AB)	CDC Fatima	U of S - CDC	Euro-Can. Seeds Ltd., Walker Seeds (SK)
Bohatyr	Selgen-Oseva	Sask. Wheat Pool	Orion	AAFC (Lacombe)	Roger Lee (AB) Lyster Farms Ltd. (AB)
Carneval	Svalöf Weibull AB	Sask. Wheat Pool	Outlook	U of S - CDC	SeCan Members
Celeste	Nickerson S.A.	Man. Pool Elevators	Pegasus	U of Manitoba	Roy Legumex (MB)
Century	AAFC (Morden)	Public	Pinto Bean		
Choque	Andre Blondeau-Columbia Seeds	Columbia Seeds (AB)	Fargo	Rogers Brothers Seed Co.	
Clipper		Sask. Wheat Pool	Othello	USDA/ARS (Prosser, WA)	WA & ID seed dealers
CPB CONCORDE	Cambridge Plant Breeders	Proven Seed	Black Bean		
CPB PHANTOM	Cambridge Plant Breeders	SeCan Members	CDC Espresso	U of S - CDC	Specialty Seeds
Danto	L. Dsenfeldt	Brett-Young Seeds, Cargill Seed	CDC Nighthawk	U of S - CDC	Value Added Seeds
DISCOVERY	Svalöf Weibull AB	Proven Seed	UI 906	U of Idaho	Alberta Wheat Pool
Emerald	Selgen-OSWA	Sask. Wheat Pool	Small White		
ENDEAVOR	Svalöf Weibull AB	Sask. Wheat Pool	CDC Whistler	U of S - CDC	Western Grower Seed Corp.
Express	Svalöf Weibull AB	Newfield Seeds	Navy		
FLUO	Andre Blondeau-Columbia Seeds	Columbia Seeds (AB)	Seaforth	U of Guelph	Trade
GRANDE	Svalöf Weibull AB	Sask. Wheat Pool	AC Skipper	AAFC (Lethbridge)	Klemnauer Seed (AB)
Highlight	Svalöf Weibull AB	Newfield Seeds	Chickpea		
Impala	Cebeco	St. Denis Seed Farm (AB)	Desi		
Keoma	Anttila P.B. Farm	Sask. Wheat Pool	CDC Marango	U of S - CDC	Canadian Select Grain
MAJORET	Svalöf Weibull AB	Newfield Seeds	Cheston		Trade
MIKO	PBAI, Poland	Sask. Wheat Pool	Green		Trade
Miranda	Cebeco; Manitoba Pool	Manitoba Pool	Myles	USDA/Washington State U	Public
Montana	Cebeco	Canseed (AB)	Kabuli		
MUSTANG	Danisco	Cargill Seed	UC 27	U of California	Public
ORB	Sharpes International	Proven Seed	Sanford	USDA/Washington State U	Public
Patriot	Svalöf Weibull AB	Newfield Seeds	Dwellely	USDA/Washington State U	Public
Princess	Wilbur Ellis Co.	Walker Seeds	Canary Seed		
PROFI	Danisco	SeCan Members	Ellias	U of Minnesota; U of S - CDC	Public
Radley	Sharps-Columbia Seeds	Columbia Seeds (AB)	Keet	U of Minnesota; U of S - CDC	Public
Ricardo	Cebeco	Brett-Young Seeds	Safflower		
Richmond	Svalöf Weibull AB	Wheat City Seeds	Saffire	AAFC (Lethbridge)	Jerry Kubic (AB)
Scorpio	Cebeco	Brett-Young Seeds	AC Stirling	AAFC (Lethbridge)	SeCan Members
Sirius	Inst. P.P.P., Czech Republic	Terramax	AC Sunset	AAFC (Lethbridge)	Alberta Wheat Pool
Spring D	Maribo	Brett-Young Seeds, Cargill Seed			
Stehgolt	M.V.L. The Netherlands	Terramax			
AC Tamor	AAFC (Morden)	Euro-Can Seeds Ltd. Walker Seeds (SK)			
Tara	AAFC (Morden)	SeCan Members			
Titan	AAFC (Morden)	SeCan Members			

The Advisory Council on Grain Crops, a committee of the Saskatchewan Agricultural Services Coordinating Committee (SASCC), supervises, coordinates, 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



Agriculture and
Agri-Food Canada



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