



Saskatchewan  
Agriculture  
and Food

# Varieties of grain crops for Saskatchewan 1993



# ADF



Saskatchewan Agriculture  
Development Fund

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Crop producers will be especially interested in ADF support for crop variety development activities. These are carried out at the University of Saskatchewan and its Crop Development Centre. Funding for this initiative is provided under a five-year agreement totalling \$17.5 million, now in its second year.

In 1992, ADF contributed \$211,100 for Regional Spring Grains Variety Trials, conducted across the province by the University of Saskatchewan.

Reports on completed projects are made readily available to the agri-food community. This enables project findings and data to be applied to greatest advantage by producers and processors. All available reports are catalogued in the *Publications List*, which may be obtained from any Rural Service Centre, directly from the Publications Distribution Centre, Saskatchewan Department of Agriculture and Food, or from ADF.

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## Contributing Agencies



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**The Saskatchewan Agricultural Services Coordinating Committee (SASCC)** coordinates agricultural research and extension activities in the province.

SASCC uses a system of advisory councils which represent the major subject areas: extension, economics, soils and agronomy, grain crops, forage crops, horticulture, crop protection, animal health, animal production, agricultural and food engineering, food production and marketing, and agricultural meteorology.

These councils are then sub-divided to cover narrower subject areas. For example, the Advisory Council on Agricultural and Food Engineering has established sub-councils on structures and environment, power and machinery, soils and water, and food process engineering.

**The Advisory Council on Grain Crops** is responsible for the recommendations contained in this publication, as well as other recommendations for grain crop production. All councils make recommendations to SASCC on research and extension.

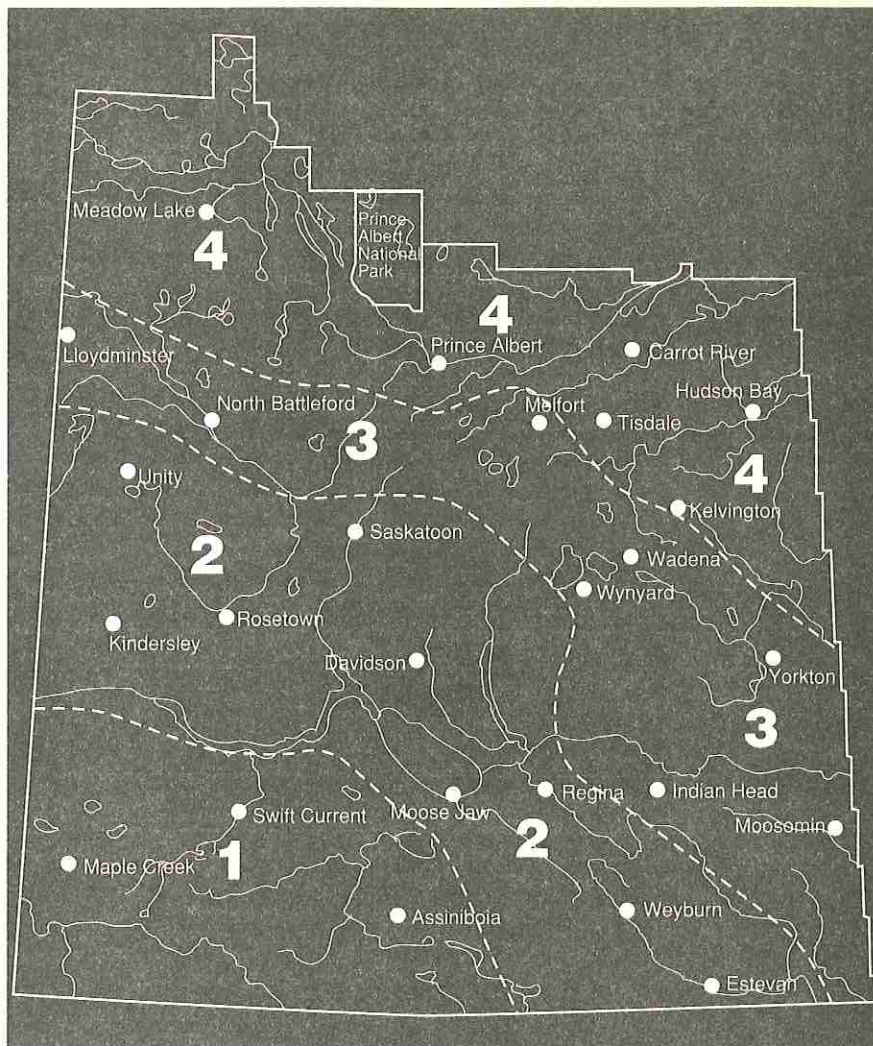
Membership of the Advisory Council on Grain Crops consists of representatives from:

- Agriculture 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

The Advisory Council on Grain Crops gratefully acknowledges the contributions of Agriculture Canada, the University of Saskatchewan, the Crop Development Centre, and all others who were involved in the research and analysis which led to the recommendations made in this publication.

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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. For example, Katepwa will often mature in less than 98 days in Area 1 and may require 120 days in Area 4. The maturity ratings should be considered as a guide to the relative maturity of the varieties, that is, whenever and wherever, Katepwa and Columbus are both seeded at the same time, Katepwa will reach maturity sooner than Columbus. This principle also applies to the other crops.

# Cereal Crops

## Wheat

### Main Characteristics of Varieties

Variety	Area 1	Area 2	Area 3	Area 4	Irr**	Average Maturity in Days	Resistance to*						
							Lodging	Shattering	Stem Rust	Leaf Rust	Loose Smut	Bunt	Root Rot
<b>Yield as % of Katepwa</b>													
<b>Bread Wheat</b>													
Katepwa	100	100	100	100	100	98	G	G	VG	F	G	G	F
Columbus	98	101	101	97	-	102***	G	F	G	VG	F	VG	F
Conway**	101	98	97	97	100	98	G	G	G	P	G	F	F
Kenyon	97	96	97	95	98	98	G	G	VG	VG	G	F	F
Laura	103	104	104	103	92	100	G	G	G	G	F	P	G
Leader	95	95	-	-	-	99	F	F	G	F	F	G	P
Lancer	94	94	-	-	-	99	F	VG	G	G	G	G	F
CDC Makwa	102	103	101	101	100	98	G	G	G	F	G	F	F
CDC Merlin	96	101	99	103+	95	99	G	G	G	VG	G	G	F
AC Minto	101	102	103	101	95	100	G	G	VG	G	VG	G	F
Neepawa**	99	100	99	98	-	98	G	VG	G	P	G	F	F
Pasqua	103	102	103	101	93	99	G	G	G	VG	F	F	F
Roblin	91	90	93	92	93	97	VG	G	G	VG	G	P	G
CDC Teal	98	95	100	100	93	98	VG	G	VG	G	G	F	F
<b>Canada Prairie Spring Wheat</b>													
Biggar	124	118	118	115	121	102***	G	G	G	G	VP	VP	F
Cutler	93	91	98	88+	-	98	G	G	G	P	F	VP	F
Genesis	124	125	127	123	131	102***	F	VG	G	F	F	VP	F
Oslo	96	101	102	97	99	98	G	G	G	G	P	F	F
AC Taber	120	119	119	108+	127	103***	G	G	VG	G	P	G	F
<b>Canada Western Extra Strong</b>													
Bluesky	93	89	93	95	-	99	G	G	G	F	VG	F	G
Glenlea	95	105	108	110	-	101	G	G	G	G	VG	F	G
Wildcat	85	82	87	91	-	98	G	G	G	P	VG	VP	G
<b>Yield as % of Kyle</b>													
<b>Durum Wheat</b>													
Kyle	100	100	100	100	100	103	F	VG	VG	VG	P	VG	F
Arcola**	91	93	97	96	112	99	G	VG	VG	VG	F	VG	F
Medora	96	96	97	97	107	100	G	VG	VG	VG	F	VG	F
Plenty	104	109	109	108	113	102	G	VG	VG	VG	P	VG	G
Sceptre	97	97	98	100	109	100	G	VG	VG	VG	F	VG	G
Wakooma**	92	96	96	97	88	102	F	VG	VG	VG	F	VG	G
Wascana**	96	96	95	90	-	101	F	VG	VG	VG	F	VG	F

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

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

\*\*\* These varieties are variable in maturity and may mature later under cool conditions.

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

\*\* This variety may not be described in 1994.

- No data available.

#### Comments

Seed of varieties rated poor and very poor to bunt and loose smut should be treated. Please refer to the Seed

Treatment section of this pamphlet or **Seed Treatments and Foliar Fungicides, 1993** pamphlet. During wet harvest weather grades drop more

rapidly due to sprouting in swathed than in standing crops.

## Canada Western Red Spring Wheat

**CDC Merlin** has yield potential similar to **Katepwa** except in Area 1. It has good resistance to leaf rust, stem rust, loose smut and common bunt, and fair resistance to common root rot. It is slightly later maturing and slightly taller than **Katepwa**. Certified seed will not be available for 1993.

**Columbus** has better sprouting and weathering resistance than the other varieties except for **Leader** and **Lancer**. **Columbus** is late maturing and must be sown early, particularly in Area 4.

**Katepwa** is similar to **Neepawa** but has better stem and leaf rust resistance and is easier to thresh.

**Laura** has high yield potential and matures about two days later than **Katepwa**. **Laura** has an awned head and good shattering resistance.

**CDC Makwa** is higher yielding than **Katepwa** and has a similar time to maturity. It has good resistance to stem rust and loose smut; and fair resistance to leaf rust, common bunt, and common root rot.

**AC Minto** is higher yielding than **Katepwa** and matures about two days later than **Katepwa**. It has very good resistance to stem rust and loose smut, good resistance to leaf rust and common bunt, and fair resistance to common root rot. It is slightly taller than **Katepwa**.

**Pasqua** has performed well in all areas. It has good resistance to leaf rust and stem rust; and fair resistance to loose smut, common bunt, and common root rot. **Pasqua** is slightly shorter and stronger strawed than **Katepwa** and slightly later maturing. It has sprouting tolerant 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. Generally, **Roblin** has higher protein content than other cultivars.

**CDC Teal** has very good resistance to stem rust, good resistance to leaf rust and loose smut, and fair resistance to bunt. **CDC Teal** is intermediate to **Katepwa** and **Roblin** for maturity, height, and straw strength. Limited quantities of certified seed of **CDC Teal** may be available in 1993.

**Leader** and **Lancer** are resistant to wheat stem sawfly. **Lancer** has better resistance to wheat stem sawfly, seed shattering and root rot than **Leader**.

## Canada Prairie Spring Wheat

**AC Taber**, **Biggar**, **Cutler**, and **Oslo** are red-seeded and **Genesis** is white-seeded.

**AC Taber** has very good resistance to stem rust, good resistance to leaf rust and common bunt. It is similar in many respects to **Biggar** except that it is slightly taller and later in maturity. Limited quantities of certified seed will be available in 1993.

**Biggar** is a high yielding, awned, semi dwarf wheat. Both **AC Taber** and **Biggar** are late maturing and must be sown early particularly in Area 4.

**Cutler** is lower yielding than **Katepwa** and has a similar time to maturity. Limited quantities of certified seed will be available in 1993.

**Oslo** is similar in maturity to **Katepwa** and lower yielding than **Biggar**.

**Genesis** is white-seeded and is susceptible to sprouting under wet harvest conditions. It is high yielding and late maturing. **Genesis** is slightly taller and weaker strawed than **Katepwa**. It is best suited to Areas 1 and 2.

## 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.

**Arcola**, **Medora** and **Sceptre** are early maturing and have strong straw.

**Kyle** has high yield potential but is a little taller and later maturing than **Wakooma** making it best suited to the Brown and Dark Brown soil zones. **Kyle** receives good grades even under adverse harvesting conditions.

**Plenty** has high yield potential in all areas. It is similar to **Kyle** in height, but is stronger strawed and slightly earlier maturing.

**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** has moderate resistance to shattering,

powdery mildew, and common root rot.

**SWS-52** is about 5 days later maturing and stronger strawed than **Fielder**. **SWS-52** has moderate resistance to black point, bunt, powdery mildew and shattering. They are both susceptible to loose smut and sprouting of the grain before harvest. **Fielder** is susceptible to bunt. **SWS-52 will be deregistered in 1994 and after that time will be eligible only for Canada Feed grade.**

## Canada Western Extra Strong

Changes have been made to the Canada Western Utility wheat class. The Canadian Grain Commission is proposing a new name, and tighter grade specifications which are expected to come into effect August 1, 1993. The changes 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 as those which qualified for the former Canada Western Utility class, namely, **Glenlea**, **Bluesky**, and **Wildcat**.

**Bluesky** and **Wildcat** are earlier maturing than **Glenlea** and lower yielding. These varieties are susceptible to 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. The Canadian Wheat Board will be offering an expanded guaranteed contract program. Details will be available from the Canadian Wheat Board, elevator agents, Extension Agrologists, and local Agriculture Canada Research Stations.

## Winter Wheat

### Comments

**Norstar** is the dominant winter wheat cultivar in western Canada. It is the most winter hardy cultivar available and it is particularly well adapted to conditions of 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 fair straw strength and excellent grain protein concentration. It has performed best under favorable moisture conditions. Poor winter hardiness will restrict production of this

### Main Characteristics of Varieties

Variety	Grain Yield (% Norstar)		Height	Straw Strength	Winter Survival
	Drought Stress*	Favorable Moisture**			
Norstar	100	100	Tall	Poor	Good
Norwin	92	112	Short	Fair	Fair
AC Readymade	86	117	Intermediate	Fair	Poor
CDC Kestrel	97	122	Intermediate	Fair	Good

\* Drought stress – less than 35 bu/acre for Norstar

\*\* Favorable moisture – 35 bu/acre and greater for Norstar.

cultivar to southern Alberta.

**CDC Kestrel** is a tall semi-dwarf cultivar. Its yield has been similar to **Norstar** under drought conditions.

Shorter, stronger straw makes **CDC**

**Kestrel** better adapted than **Norstar** to high moisture environments and irrigation. Under rust conditions **CDC Kestrel** and **Norwin** perform better than **Norstar**.

## Barley

### Main Characteristics of Varieties

Type & Variety	Yield as % of Harrington							Resistance to*								
	2 or 6 row	Rough or Smooth Awns	Irr Yield as % of Duke	Area 1	Area 2	Area 3	Area 4	Average Maturity in Days	Lodging	Shattering	Net Blotch	Stem Rust	Loose Smut	Other Smuts	Root Rot	
<b>Malting</b>																
Harrington	2	R	—	100	100	100	100	92	G	VG	P	P	P	P	VP	G
Argyle	6	S	—	92	98	96	95	91	VG	VP	F	G	P	P	VP	G
Bonanza	6	S	—	93	91	93	93	89	G	VP	F	G	P	P	P	G
B1602	6	R	—	89	93	94	87	90	G	P	F	G	P	P	F	VG
Duel	6	R	—	95	99	100	96	92	G	VP	G	G	P	P	P	G
Manley	2	R	—	102	107	106	106	94	G	VG	F	G	P	P	P	G
Stein	2	R	—	101	108	104	106	92	F	VG	F	G	P	P	F	G
Tankard	6	S	—	101	103	103	99	92	G	VP	F	G	P	P	P	G
<b>Feed</b>																
Abee	2	R	—	101	104	104	100	94	P	VG	P	P	P	P	F	G
Bridge	2	R	—	108	105	107	99	93	G	VG	P	F	P	P	P	F
Brier	6	S	—	118	109	111	108	92	F	F	G	G	P	P	G	VP
Deuce	2	R	—	97	98	99	98	92	G	VG	F	G	P	P	G	G
CDC Guardian	2	R	—	98	103	104	105	93	F	G	G	G	VG	P	VG	F
AC Lacombe	6	S	—	103	104	108	102	92	F	F	F	G	F	P	VG	F
Noble	6	S	—	100	102	103	100	92	G	G	F	G	P	P	F	P
Viriden	6	S	—	107	105	107	109	95	VG	G	F	G	P	P	F	VG
<b>Hulless</b>																
CDC Buck	6	R	—	82	89	86	85	90	G	F	F	G	P	P	F	G
CDC Richard	2	R	—	79	93	92	86	91	F	F	P	G	VG	F	P	G
Condor	2	R	—	85	83	82	79	92	G	G	P	F	P	P	P	G
<b>Intensive Management</b>																
Duke	6	R	100	92	90	91	88	93	VG	F	F	G	VG	P	F	G
Samson	6	R	95	91	88	87	85	92	VG	F	F	G	P	P	F	G
Winchester	6	R	94	97	85	87	90	90	VG	F	G	P	VG	P	G	G

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

— No data available.



## Comments

A new 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 yet 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.

None of the available varieties are resistant to all three types of smut. Therefore, seed should be treated on a regular basis. See the Seed Facts section for details.

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. Markets for hulless barley have not been clearly defined but it should be valuable for hog feed, pet food and human consumption.

**CDC Guardian** is a new two-rowed feed variety with excellent disease resistance. It combines resistance to the old races of stem rust, net blotch, scald and surface borne smuts. It has moderate resistance to root rot and is susceptible to loose smut.

**AC Lacombe** is a new six-rowed feed variety with excellent yield, good straw strength and disease resistance.

**Noble** is a six-rowed variety. It has yielded well in drier locations. It has good lodging and shattering resistance. **Viriden** is a six-rowed feed variety. It has a very high yield potential but is very late. It has very good straw strength. **Brier** is a six-rowed feed variety. It has very good yield potential and good disease resistance. **AC Stacey** is a new early maturing 6-row feed variety. While it is slightly better than **Jackson**, it is still 10-20% lower yielding than **Harrington**. **Bridge** is a new two-rowed feed variety with good yielding ability; it is slightly later than **Harrington** with similar disease resistance.

**Manley** is a new two-rowed malting variety with very good yield potential and better disease resistance than **Harrington**. It has moderate resistance

to the spot-form of net blotch. **Manley** is later maturing than **Harrington** and should be sown early. **Manley** has completed plant scale malting and brewing trials and has been rated as acceptable by the Brewing and Malting Barley Research Institute. **Stein** is a new two-rowed malting variety with superior yield and better disease resistance than **Harrington**. It is earlier maturing but weaker strawed than **Manley**. Growers are reminded, however, that the industry is very cautious about moving into the use of new varieties. **Duel** is a blue aleurone six-rowed malting variety with higher yield potential than **Bonanza** and **Argyle**. **B1602** has also been judged to have suitable malting and brewing quality. It is a six-rowed white aleurone variety and thus cannot be distinguished from feed varieties. Therefore, it should only be grown under contract. Saskatchewan tests have shown it to be slightly lower yielding than **Bonanza**, otherwise similar to it.

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

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.

## Irrigation

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

**Samson**, **Duke** and **Winchester** are semidwarf feed varieties. They should be grown only under high moisture, high fertility conditions which would cause severe lodging of conventional varieties. High productivity tests in Saskatchewan have shown **Duke** to outyield **Samson** and **Winchester**. **Duke** is 1-2 days later than **Samson** and **Winchester** is 1-2 days earlier.

## 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. Crop grown in 1992 will be malted in January-February, 1993. It will be brewed in May-June, 1993, aged and tested in October-November, 1993. A crop grown in 1993 will be tested in October-November, 1994. 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. **The following lines are currently under test:**

## 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 Canada for further information: **Saskatoon 306-975-4240.**

## Malting Barley Lines under Interim Registration

### Main Characteristics of Lines

Type and Line	Yield as a % of Harrington				Average Maturity in Days	Resistance to*							
	Area 1	Area 2	Area 3	Area 4		Lodging	Shattering	Net Blotch	Stem Rust	Scald	Loose Smut	Other Smuts	Root Rot
<b>Two Row</b>													
B1215	103	103	106	100	93	G	G	P	P	P	P	P	P
TR118	96	102	100	98	93	VG	G	F	G	P	P	F	F
AC Oxbow	94	96	99	100	92	VG	VG	F	G	P	VG	G	F
<b>Six Row</b>													
Creme	92	96	98	92	91	G	VP	F	G	P	P	P	G
BT926	92	90	98	95	91	G	F	P	G	P	VP	G	G

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

#### Comments:

**TR118** is a new two-rowed malting variety. Its performance and quality are similar to **Harrington**. It has very strong straw. Its most interesting feature is

sprouting resistance.

**B1215** is similar in performance and disease reaction to **Harrington**, **AC Oxbow** is lower yielding than **Harrington** but has good disease resistance. It is the only variety with

loose smut resistance. **Creme** is of interest because it has a white aleurone. It may be suitable for the US market for white aleurone six-row. **BT926** is a short, strong early six-row with white aleurone.

## Rye

### Main Characteristics of Varieties

Variety	Yield as % of Musketeer				Resistance to*				
	Area 1	Area 2	Area 3	Area 4	Winter Killing	Shattering	Lodging	Stem Smut	Straw Length
Musketeer	100	100	100	100	G	G	G	G	Tall
Prima	110	109	106	108	G	G	F	G	Tall
Puma**	95	99	97	94	G	G	F	P	Tall

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

\*\* This variety may not be described in 1994.

#### Comments:

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

**Danko**, a new winter variety, is very susceptible to winter killing.

# Oat

## Main Characteristics of Varieties

Variety	Yield as % of Calibre				Test wt. (kg/hl)	% Hull	% Plump	Average Maturity in days	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	93	G	VP	VP	P
Cascade	104	99	99	99	47.4	26.0	48	92	G	VP	VP	P
Derby	101	99	100	104	50.1	22.2	74	93	G	VP	VP	F
Dumont	96	98	96	95	48.8	23.5	64	94	F	VG	VG	G
AC Marie	100	99	99	96	45.5	20.7	35	94	F	VG	G	G
Robert**	93	94	92	93	48.5	22.5	87	93	VG	VG	VG	G
Waldern	96	100	104	108	45.7	25.0	74	94	G	VP	VG	F

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

\*\* This variety may not be described in 1994.

### Comments

**Calibre** has high yield potential and excellent kernel quality, having high test weight and low percent hull.

**Cascade** has high yield potential but poorer kernel quality being lower in test weight with higher hull content. **Cascade** is one to two days earlier maturing than **Calibre**.

**Derby** has high yield potential and test weight, but plumper grain and lower hull content than **Calibre**. It is slightly earlier than **Calibre** but not as early as **Cascade**.

**Dumont** has excellent disease

resistance and good kernel quality, however it has weaker straw and lower yield potential and is one to two days later maturing than **Calibre**. **Dumont** should be considered for the oat rust-area of southeast Saskatchewan.

**Robert** has tan colored grain. It has very good kernel quality and disease resistance, however, yield potential is lower than other varieties. **Robert** has somewhat better tolerance to Barley Yellow Dwarf Virus.

**Waldern** has high yield potential and large grain size. However, it has very low test weight and high hull content and as

such is not as likely to be desirable for milling and specialty markets. It is later maturing than **Calibre**.

**Calibre**, **Cascade**, **Derby**, **Jasper** and **Waldern** are susceptible to oat-rusts and may be at risk if grown in the oat-rust area of southeast Saskatchewan.

**AC MARIE** is a new variety with excellent disease resistance and is adapted to southeast Saskatchewan. It has good yield potential and very low hull content, however it has low test weight and poor grain plumpness. It is later maturing than **Calibre**.

# Triticale

## Main Characteristics of Varieties

Variety	Yield as % of Frank				Average Maturity in Days	Resistance to*				
	Area 1	Area 2	Area 3	Area 4		Lodging	Stem Rust	Leaf Rust	Bunt	Root Rot
Frank	100	100	100	100	105	G	VG	VG	VG	F
Wapiti	98	101	98	83	107	G	VG	VG	VG	G
Banjo	96	101	102	95	107	G	VG	VG	VG	G

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

### Comments:

**Triticale** matures 3-5 days later than **Biggar** wheat, therefore, should be seeded as early as possible. **Triticale** matures very late in Area 4. Seed of **Banjo** may be limited in availability in 1993.

# Oilseed Crops

## Canola

### Main Characteristics of Varieties

Type & Variety	Yield as % of Legend (see comments section)			% Oil	Average Maturity in days	Resistance to*				
	Area 2	Area 3	Area 4			Lodging	White Rust	Blackleg**	Sclerotinia Stem Rot	
<b>Argentine</b>										
Legend	100	100	100	42.3	97	G	VG	F	P	
Bounty	109	107	101	42.4	96	F	VG	P-F	P	
Celebra	98	95	100	43.1	99	VG	VG	F	P	
Crusher	110	96	95	44.3	100	VG	VG	F	P	
Cyclone	120	111	112	42.9	97	VG	VG	G	P	
Delta	106	102	110	41.8	98	VG	VG	F	P	
AC Elect	103	102	102	43.9	97	G	VG	P-F	P	
AC Excel	97	97	98	43.5	96	G	VG	F	P	
Garrison	114	109	119	42.5	98	VG	VG	F-G	P	
HC 120	96	108	115	42.9	97	F	VG	P	P	
Hyola 401	112	112	98	42.0	98	VG	VG	P	P	
Profit	96	90	90	44.2	97	F	VG	F	P	
Seville	113	104	97	42.3	98	VG	VG	F	P	
Vanguard	99	94	99	42.8	97	G	VG	F	P	
Westar	92	98	100	43.0	94	P	VG	VP	P	
Stallion (TT)	77	80	72	40.4	98	G	VG	F	P	
Tribute (TT)	66	65	72	39.7	96	VP	VG	VP	P	
AC Tristar (TT)	70	76	68	41.5	95	P	VG	VP	P	
<b>Industrial Oil Rapeseed</b>										
Hero (HE)	82	84	79	43.3	95	G	VG	G	P	
Mercury (HE)	89	90	96	43.7	94	G	VG	G	P	
<b>Polish</b>										
Yield as % of Tobin										
Tobin	100	100	100	41.6	84	G	G	P	P	
Colt	101	99	100	42.4	85	G	VP	P	P	
Eclipse	95	94	94	42.9	85	G	F	P	P	
Eldorado	100	99	94	42.8	84	G	P	P	P	
Goldrush	96	101	96	41.5	86	G	G	P	P	
Horizon	102	102	102	42.4	85	G	VP	P	P	
AC Parkland	97	101	102	43.1	85	G	VG	P	P	
Reward	99	100	96	43.1	84	G	VG	P	P	

TT = Triazine tolerant; HE = High erucic acid.

\* Resistance ratings: VG — very good; G — good; F-G — fair to good; F — fair; P-F — poor to 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.

**Comments:**

Argentine varieties yield, on average, 20% more seed than Polish varieties, and mature in 94 to 100 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 greater than that of Argentine varieties. Polish varieties are also less likely to produce green seed.

**Argentine canola**

Argentine varieties are black seeded and have very good white rust resistance, but are highly susceptible to sclerotinia stem rot. **Blackleg, which is now widespread in Saskatchewan, can cause severe yield losses in Argentine varieties that have very poor resistance.** Westar is highly susceptible to blackleg and will suffer severe yield losses if grown in blackleg prone areas. **Cyclone, Garrison, Hyola 401 and Seville** are high yielding varieties that have medium maturity, very good lodging resistance and medium oil content. **Cyclone** has also good blackleg resistance, **Garrison** and **Seville** have fair to good and fair blackleg resistance, respectively, while **Hyola 401** has poor resistance.

**Crusher**, a new variety, has variable yield, very good lodging resistance, fair blackleg resistance and very high oil content, but is late maturing. **Profit** is low yielding, has fair blackleg resistance and very high oil content. **Celebra** and **Vanguard** have fair blackleg resistance, medium maturity, but yield less. **Bounty** matures early, and has poor to fair blackleg resistance. **Legend, AC Elect** and **AC Excel** have medium maturity, good lodging resistance and fair, poor to fair, and fair blackleg resistance, respectively. **AC Elect** yields more than **AC Excel** and both have high oil content while **Legend** has low oil content. **Delta** has good yield, very good lodging resistance, but has very low oil content. **HC 120** has variable yield and poor blackleg resistance. Argentine type varieties respond well to irrigation, but blackleg susceptible varieties should be avoided since irrigation may increase the incidence of blackleg. Irrigation might also delay maturity by one week or more under cooler conditions at harvest.

**Triazine tolerant canola**

Seed yields of Argentine type triazine tolerant (TT) varieties, under weed free conditions, are substantially lower than those of other Argentine varieties. They also have significantly lower oil contents. These varieties should only be considered for planting on fields where severe infestation of stinkweed and/or wild mustard are expected. For registered herbicides, consult "Weed

Control in Field and Forage Crops 1993". **Stallion, Tribute** and **AC Tristar** are triazine tolerant varieties, they are early to medium in maturity. **Stallion** has fair blackleg and fair lodging resistance while **Tribute** and **AC Tristar** are highly susceptible to blackleg, and also have poor lodging resistance.

**Polish canola**

Polish varieties are yellow-brown seeded. They all have poor blackleg and sclerotinia stem rot resistance. Polish varieties have similar yields, except for **Eclipse** which is lower yielding. **Tobin** is early maturing, has good white rust resistance, but low oil content. **AC Parkland** and **Reward** have very good white rust resistance, and high oil content. **Colt** and **Horizon** are highly susceptible to white rust, and have medium oil content. **Goldrush** has good white rust resistance, but low oil content. **Eldorado** has poor resistance to white rust, while **Eclipse** has fair resistance. A new race of white rust, found in 1988, can attack all Polish type varieties.

**Industrial oil rapeseed**

For special industrial oil markets a high erucic acid oil is needed. **Hero** and **Mercury** are Argentine type high erucic (HE) acid varieties that have high oil content, good blackleg resistance and very good straw strength. Information on the contract production of **Hero** and **Mercury** should be obtained from companies which contract such production.

**Flax**

**Main Characteristics of Varieties**

Variety	Yield as % of NorLin					Average Maturity in Days	Seed Size	Resistance to*		
	Area 1	Area 2	Area 3	Area 4	Irr.			Rust	Wilt	Lodging
NorLin	100	100	100	100	100	101	Medium	VG	G	G
Andro	99	90	94	92	89	100	Medium	VG	F	G
Flanders	103	105	99	99	113	102	Small	VG	G	VG
AC Linora	85	84	91	81	110	102	Medium	VG	G	VG
Somme	103	99	103	100	108	101	Medium	VG	G	F-G
Vimy	113	103	101	97	86	101	Large	VG	G	F

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

**Comments:**

**Andro** is an early-maturing, rust-resistant variety that should replace the old rust-susceptible variety **Noralta**.

**Flanders** is a variety that is a higher yielding and earlier maturing replacement for **McGregor**. It is well suited for irrigation production.

**AC Linora** is a new late maturing variety that is best adapted to Manitoba and the irrigated areas of Saskatchewan.

**NorLin** is high yielding, medium-early variety most suited to Area 3 and 4.

**Somme** is a new medium-early maturing variety that may replace **NorLin**.

**Vimy** is a medium-early variety with large seed that is very well adapted to Areas 1, 2, and the southern portion of Area 3.

Frozen flax should be analyzed by the Saskatchewan Feed Testing Laboratory to determine that it is free of prussic acid before using it as a livestock feed.

**Condiment Mustard**

**Main Characteristics of Varieties**

Type & Variety	Yield as % of Cutlass	Average Maturity in days
<b>Oriental</b>		
Cutlass	100	91
Forge	97	93
Lethbridge 22A	87	93
<b>Brown</b>		
Commercial	89	94
<b>Yield as % of Ochre</b>		
<b>Yellow</b>		
Ochre	100	93
Gisilba	95	93
Tilney	97	93

**Comments:**

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.

Oriental mustard varieties are yellow seeded. **Cutlass** is high yielding and early maturing. **Forge** has good yield

and superior seed quality. **Lethbridge 22A** is low yielding and susceptible to lodging. **Cutlass** and **Lethbridge 22A** are resistant to white rust, while **Forge** is highly susceptible.

**Commercial Brown** mustard is brown seeded. It yields 10% less than **Cutlass** and is highly susceptible to white rust.

Yellow mustard varieties are large seeded and the seed is light yellow in colour. They yield, on average, 30% less than the Oriental mustard variety **Cutlass**. **Ochre** is high yielding while **Gisilba** and **Tilney** yield less.

All mustard varieties are resistant to blackleg.

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

**Sunflower (oilseed)**

**Main Characteristics of Varieties**

Variety	Yield as % of IS 7111	Average Maturity in days	Oil %
IS 7111	100	120	47.5
IS 7000	100	119	47.5
IS 6111	119	119	45.1
DO 707	117	122	45.9
S1296	107	121	46.0
6322	119	122	46.5

**Comments:**

Sunflower requires 110-125 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 southeastern Saskatchewan. The introduction of early maturing varieties and continued research may expand the production area north. Later maturing hybrids have been grown but should be considered only in the extreme southeast of Saskatchewan and at Outlook. Contractors and

crushers may pay a premium for high oil content. The Saskatchewan Sunflower Committee conducted tests at Saskatoon, Watrous, Brownlee, Outlook, Carievale, and Penzance.

**Sunwheat 101, AC Sierra, Sunwheat 103, and AC Aurora** are very early maturing sunflower varieties available for contract production in 1993. These varieties are adapted to all areas of Saskatchewan and can be produced using conventional equipment. For further information contact the seed companies.

# Pulse Crops

## Yellow Field Pea

### Main Characteristics of Varieties

Variety	Yield as % of Express		Average Maturity in Days	Vine length (cm)	Resistance to**			Seed Weight (g/1000)
	Area 2 and Southern 3	Area 4 and Northern 3			Ascochyta Blight	Powdery Mildew	Seed Coat Breakage	
Express	100	100	95	62	P	VP	P	240
AC Tamor	64*	88*	99	57	VP	VG	G	280
Bellevue	82	79	104	87	P	P	G	180
Bohatyr	84*	86*	97	73	F	VP	G	270
Century	74	83	101	106	P	P	F	230
Fortune	94	98	104	69	P	VP	F	200
Miko (SL)	84	91*	95	75	P	P	F	260
Miranda	76	76*	95	44	P	VP	P	350
Patriot (SL)	86	89*	93	67	F	VP	F	200
Richmond	101*	97*	94	67	F	VP	F	210
Spring	87*	89*	91	62	P	P	F	240
Tara	91	86	102	96	F	VG	F	210
Tipu (SL)	85	79	99	103	P	P	P	230
Titan	82	85	101	109	P	P	G	250
Topper	82	106*	97	102	VP	P	F	290
Trapper	84	80	100	95	P	P	F	140
Victoria	94	87	96	84	P	VP	F	190
Yellowhead	81*	98*	103	107	VP	VP	G	250

## Green Field Pea

### Main Characteristics of Varieties

Variety	Yield as % of Radley (Radley yields 80% of Express)		Average Maturity in Days	Vine length (cm)	Resistance to**			Seed Weight (g/1000)
	Area 2 and Southern 3	Area 4 and Northern 3			Ascochyta Blight	Powdery Mildew	Bleaching***	
Radley (SL)	100	100	96	57	F	VP	F	210
Danto (SL)	62*	98*	98	52	P	P	F	290
Emerald	117*	106*	96	75	P	P	F	250
Orb (SL)	119*	104*	94	55	P	VP	P	230
Princess	83	92*	92	58	P	P	G	200
Ricardo	93*	106*	94	52	F	VP	F	280
Trump	98	111*	98	63	P	VP	F	250

(SL) indicates semi-leafless variety.

\* Limited data.

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

\*\*\* Bleaching data from 4 locations in 1992.

#### Comments:

Green seeded varieties are generally lower-yielding than yellow seeded varieties. There is a higher risk of low grades due to bleaching.

Field pea is best adapted to the more northerly Black and Gray soil zones. 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 pea tough and drying in an aeration bin. The recommended seeding rate for **Trapper** is 135 kg/ha (120 lb/ac). Other varieties should be

*Continued on next page*

sown at higher rates in proportion to seed weight.

Under dry conditions, short vine types (< 80 cm) and semi-leafless varieties may provide poor weed competition. As well, short vines make harvesting more difficult. On the other hand, the semi-leafless characteristic has the advantage of facilitating harvest, as vines do not lay as flat on the ground.

Of the new varieties **Bohatyr**, **Emerald**, **Orb**, **Patriot**, **Ricardo**, **Richmond**, **Spring**, **Topper**, **Trump**, and **Yellowhead**, some certified seed

may be available in 1993. Seed of **AC Tamor** will not be available in 1993. Woodstone Foods Ltd., of Portage La Prairie, has exclusive rights to **Yellowhead** and it can only be grown under contract with this company.

Damaged and uncleaned seed of all varieties are of lower quality and are only suitable for the feed market. When growing field pea for feed, one should select a high-yielding variety, such as **Tara**, **Sirius**, **Stehgolt** and **Whero** are newly registered feed varieties and only limited yield data are available. Small seed size is desirable for reducing the

cost of seeding feed varieties, but **Stehgolt** has very large seed.

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.

## Lentil

### Main Characteristics of Varieties

Variety	Yield as % of Laird	Height (cm)	Days to First Flower	Resistance to *		Seed Size	Seeding Rates kg/ha(lb/A)
				Ascochyta Blight	Anthracnose		
Laird .....	100 .....	41 .....	53 .....	F .....	VP .....	Large .....	90-100 (80-90)
CDC Richlea .....	112 .....	35 .....	50 .....	VP .....	VP .....	Medium .....	60-70 (53-62)
Eston .....	108 .....	30 .....	48 .....	VP .....	VP .....	Small .....	45-50 (40-45)
Rose .....	99 .....	32 .....	47 .....	VP .....	VP .....	Medium .....	60-70 (53-62)

\* Resistance ratings; VG — very good; G — good; F — fair; P — poor; VP — very poor

### Comments:

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 they will regrow 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 8-node stage to facilitate swathing.

Five lentil varieties have been developed for western Canada. **Laird** is a tall, late-maturing variety with extra-large seeds and has become the industry standard for quality. **Laird** has fair resistance to ascochyta leaf, stem and pod blight. **Eston** is a short, erect, early-maturing variety with small seeds and is highly susceptible to ascochyta blight. **CDC Richlea** is a high yielding Chilean-type lentil and is highly susceptible to ascochyta blight. Seed of **CDC Richlea** will not be available in 1993.

**Laird**, **Eston** and **CDC Richlea** have

yellow cotyledons, while **Rose** has red cotyledons. **Rose** seed is flat and splits poorly, limiting its use in the red split lentil market.

**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 (35-40lbs/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 seed-borne ascochyta and anthracnose and avoid planting next to the previous year's lentil residues. Growers from 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. The risks associated with seed-borne anthracnose have not been fully determined.



## Faba Bean

### Main Characteristics of Varieties

Variety	Yield as % of Outlook		Average Maturity in Days	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

\* Limited data.

#### Comments:

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.

**Aladin** is the highest yielding variety under irrigated production. **Orion** is the

earliest maturing variety and is a good performer in areas with a short growing season.

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.

canary seed may be grown successfully on well-prepared stubble, providing 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. No serious insect or disease problems have been identified. 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.

## Pinto Bean

Pinto bean can be grown under irrigation in Saskatchewan in regions that have a warm, long growing season (110 days).

**Topaz**, **Fiesta** and **Othello** are registered varieties. For dryland production on summerfallow in the Dark Brown soil zone, **Othello** is recommended.

The crop does not tolerate frost, flooding or salt-affected soils. Seed in late May at 80-100 kg/ha (70-100 lb/A). Plant seed at 6cm depth 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. The field should be smooth, level and rock-free to facilitate swathing or direct harvesting with a flex header equipped with an air reel. Seed should be free of common bacterial blight.

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. **Saffire** matures in about 119 days. Seed shallow but into a firm moist seedbed at about 27 lbs/A. **Saffire** has moderate resistance to Sclerotinia head rot and Alternaria leaf spot. Contract production is advisable.

**AC Stirling** is a newly registered variety with acceptable birdfeed quality and higher oil content compared to **Saffire**. Certified seed is in limited supply for 1993.

## Other Crops

### Canary Seed

The seed of annual canarygrass, more commonly called canary seed, is used as food for caged and wild birds. It is generally grown under contract with the contracting companies providing the seed. 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

## 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
- Yorkton 782-1511
- North Battleford 445-7000

#### 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 9 Weatheradio stations: call your nearest Environment Canada office for more details

#### Public phone numbers

- Regina 780-6674 (24 hrs)
- Saskatoon 975-4255 (24 hrs)
- Prince Albert 953-8640 (Mon-Sat, 5 a.m.-6:30 p.m. Sun, 8 a.m.-4 p.m.)
- Broadview 696-2229 (24 hrs)
- Estevan 634-2833 (24 hrs)

# 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. 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 (ie. 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 "Disease control in field crops 1993" 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

Ergot attacks all varieties of rye, triticale, wheat and barley, as well as most common species of grass. Oat is rarely attacked and all broadleaved species are immune. Grain containing 0.1% ergot is considered poisonous and should not be used as food. For details on the disease obtain a copy of 'Ergot of Grains and Grasses'. Publ. 1438.

## Seed Inoculation

Legume crops are only able to fix atmospheric nitrogen if their roots are well nodulated with nitrogen-fixing bacteria. Whenever a legume is planted in a field it is important that the seed be inoculated with the **proper** strain of

nitrogen-fixing bacteria immediately before seeding. The use of a sticker such as a syrup solution or a powdered milk solution will help assure proper inoculation.

## Seed-borne Diseases of Lentil

Lentil producers should plant lentil seed that has been tested for seedborne ascochyta and anthracnose 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 batchdriers, 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
<b>Wheat</b>		
<b>Bread Wheat</b>		
Benito .....	Ag Canada (Winnipeg) .....	SeCan Members
Columbus .....	Ag Canada (Winnipeg) .....	SeCan Members
Conway .....	Univ. of Sask. — Crop Development Centre .....	Sask Wheat Pool
Katepwa .....	Ag Canada (Winnipeg) .....	SeCan Members
Kenyon .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
Lancer .....	Ag Canada (Swift Current) .....	SeCan Members
Laura .....	Ag Canada (Swift Current) .....	SeCan Members
Leader .....	Ag Canada (Swift Current) .....	SeCan Members
CDC Makwa .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
CDC Merlin .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
AC Minto .....	Ag Canada (Winnipeg) .....	SeCan Members
Neepawa .....	Ag Canada (Winnipeg) .....	public
Pasqua .....	Ag Canada (Winnipeg) .....	SeCan Members
Roblin .....	Ag Canada (Winnipeg) .....	SeCan Members
CDC Teal .....	Univ. of Sask. — Crop Development Centre .....	Value Added Seeds Inc.

### Canada Prairie Spring Wheat

Biggar .....	Ag Canada (Swift Current) .....	SeCan Members
Cutler .....	Univ. of Alberta .....	Proven Seed (UGG)
Genesis .....	Ag Canada (Swift Current) .....	SeCan Members
Oslo .....	NAPB; Sask Wheat Pool .....	Sask Wheat Pool
AC Taber .....	Ag Canada (Swift Current) .....	SeCan Members

### Canada Western Utility

Bluesky .....	Ag Canada (Beaverlodge) .....	SeCan Members
Glenlea .....	Univ. of Manitoba .....	public
Wildcat .....	Ag Canada (Beaverlodge) .....	SeCan Members

### Durum

Arcola .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
Kyle .....	Ag Canada (Swift Current) .....	SeCan Members
Medora .....	Ag Canada (Winnipeg) .....	SeCan Members
Plenty .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
Sceptre .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
Wakooma .....	Ag Canada (Swift Current) .....	public
Wascana .....	Ag Canada (Swift Current) .....	public

### Soft White Spring Wheat

Fielder .....	Univ. of Idaho & USDA; Ag Canada (Lethbridge) .....	public
SWS-52 .....	Ag Canada (Lethbridge) .....	SeCan Members
AC Reed .....	Ag Canada (Lethbridge) .....	SeCan Members

### Winter Wheat

CDC Kestrel .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
Norstar .....	Ag Canada (Lethbridge) .....	public
Norwin .....	Montana Ag Exp. Station & USDA (Aberdeen); Univ. of Sask. — Crop Development Centre .....	public
AC Readymade .....	Ag Canada (Lethbridge) .....	SeCan Members

### Winter Rye

Danko .....	Alberta Wheat Pool	
Musketeer .....	Ag Canada (Swift Current) .....	SeCan Members
Prima .....	Ag Canada (Swift Current) .....	SeCan Members
Puma .....	Univ. of Manitoba .....	public

### Spring Rye

Gazelle .....	Univ. of Sask. .....	public
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Crop Kind, Class & Variety	Breeding Institution	Distributor
<b>Triticale</b>		
Banjo .....	Univ. of Manitoba .....	Value Added Seeds Inc.
Frank .....	Ag Canada (Swift Current) .....	SeCan Members
Wapiti .....	CIMMYT; Alta Ag .....	SeCan Members
<b>Barley</b>		
<b>Malting</b>		
Argyle .....	Univ. of Manitoba .....	SeCan Members
Bonanza .....	Ag Canada (Brandon) .....	public
B1215 .....	Busch Ag. Res. Inc. .....	Sask Wheat Pool
B1602 .....	Busch Ag. Res. Inc. .....	Sask Wheat Pool
Creme .....	Univ. of Sask. — Crop Development Centre .....	Proven Seed (UGG)
Harrington .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
Manley .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
Tankard .....	Univ. of Sask. — Crop Development Centre .....	SeCan members
TR 118 .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
Duel .....	Busch Ag. Res. Inc. .....	Sask Wheat Pool
AC Oxbow .....	Ag Canada (Winnipeg, Brandon) .....	SeCan Members
Stein .....	Univ. of Sask. — Crop Development Centre .....	Proven Seed (UGG)

### Feed

Abee .....	Alta Ag (Lacombe) .....	SeCan Members
Bridge .....	Ag Canada (Lethbridge) .....	SeCan Members
Brier .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
Deuce .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
CDC Guardian .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
AC Lacombe .....	Ag Canada (Lacombe) .....	SeCan Members
Noble .....	Alta Ag (Lacombe) .....	SeCan Members
Virde .....	Ag Canada (Brandon) .....	SeCan Members

### Hullless

CDC Buck .....	Univ. of Sask. — Crop Development Centre .....	Proven Seed (UGG)
Condor .....	Alta Ag (Lacombe) .....	SeCan Members
CDC Richard .....	Univ. of Sask. — Crop Development Centre .....	Proven Seed (UGG)

### Intensive Management

Duke .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
Samson .....	Alta Ag (Lacombe) .....	SeCan Members
Winchester .....	Western Plant Breeders; Prairie Pools .....	Sask Wheat Pool

### Oat

Calibre .....	Univ. of Sask. — Crop Development Centre .....	SeCan Members
Cascade .....	Ag Canada (Lacombe) .....	SeCan Members
Derby .....	Univ. of Sask. — Crop Development Centre .....	Proven Seed (UGG)
Dumont .....	Ag Canada (Winnipeg) .....	SeCan Members
AC Marie .....	Ag Canada (Winnipeg) .....	SeCan Members
Robert .....	Ag Canada (Winnipeg) .....	SeCan Members
Waldern .....	Ag Canada (Lacombe) .....	SeCan Members

### Canola

#### Argentine

Bounty .....	Weibull's, Allelix .....	Proven Seed (UGG)
Celebra .....	Svalöf; Bonis .....	Newfield Seeds, Canadian Seed Coaters
Crusher .....	Svalöf; Bonis .....	Brett-Young Seeds Ltd.

# 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
Cyclone .....	Prodana, Oseco-King Agro .....	Pride Dealers	AC Sierra .....	Ag Canada (Saskatoon) .....	Western Grower Seed Corp.
Delta .....	Weibull's, Allelix .....	Proven Seed (UGG)	Sunheat 103 ...	Seed Tec International .....	Proven Seed (UGG)
AC Elect .....	Ag Canada (Saskatoon) .....	SeCan Members	Sunheat 101 ...	Seed Tec International .....	Proven Seed (UGG)
AC Excel .....	Ag Canada (Saskatoon) .....	SeCan Members	<b>Field Pea</b>		
Garrison .....	Weibull's, Allelix .....	Proven Seed (UGG)	Bellevue .....	Univ. of Sask. —	
HC 120 .....	King Agro .....	Pride Dealers	Crop Development Centre .....		
Hyola 401 .....	ICI Seeds Canada .....	ICI Seeds Canada	Bohatyr .....	Selgen-Oseva .....	Sask. Wheat Pool
Legend .....	Svalöf; Bonis .....	Sask Wheat Pool	Century .....	Ag Canada (Morden) .....	public
Profit .....	Ag Canada (Saskatoon) .....	SeCan Members	Danto .....	L. Dsenfeldt .....	Brett Young Seeds
Seville .....	Weibull's, Allelix .....	Prairie Seed	Emerald .....	Selgen-OSWA .....	Sask. Wheat Pool
Stallion (TT) .....	Svalöf; Bonis .....	Sask Wheat Pool	Express .....	Svalöf; Bonis .....	Newfield Seeds
Tribute (TT) .....	Ag Canada (Saskatoon); University of Guelph .....	SeCan Members	Fortune .....	Svalöf; Bonis .....	Newfield Seeds & A. J. Seeds, Esterhazy
AC Tristar (TT) ..	Ag Canada (Saskatoon) .....	SeCan Members	Miko .....	PBAI, Poland .....	Sask. Wheat Pool
Vanguard .....	Svalöf; Bonis .....	Newfield Seeds, Canadian Seed Coaters	Miranda .....	Cebeco; Manitoba Pool .....	Manitoba Pool
Westar .....	Ag Canada (Saskatoon) .....	SeCan Members	Orb .....	Sharpes .....	Proven Seed (UGG)
<b>Industrial Rapeseed</b>			Patriot .....	Svalöf; Bonis .....	Newfield Seeds
Hero (HE) .....	Univ. of Manitoba .....	CanAmera	Princess .....	Wilbur Ellis Co; CanMar Grain .....	Ron McKinnon
Mercury (HE) ...	Univ. of Manitoba .....	CanAmera	Stu Robson		
<b>Polish</b>			Radley .....	Booker Seeds Ltd; Columbia Seeds .....	Columbia Seeds (Alta.)
Colt .....	Svalöf; Bonis .....	Newfield Seeds, Canadian Seed Coaters	Ricardo .....	Cebeco .....	Brett-Young Seeds
Eclipse .....	Univ. of Alberta .....	Alta. Wheat Pool	Richmond .....	Svalöf .....	Wheat City Seeds
Eldorado .....	Univ. of Alberta .....	Prairie Seed, Canadian Seed Coaters	Spring .....	Maribo .....	Brett-Young Seeds
Goldrush .....	Weibull's, Allelix .....	Proven Seed (UGG)	AC Tamor .....	Ag Canada (Morden) .....	SeCan Members
Horizon .....	Svalöf; Bonis .....	Sask Wheat Pool	Tara .....	Ag Canada (Morden) .....	SeCan Members
AC Parkland .....	Ag Canada (Saskatoon) .....	SeCan Members	Tipu .....	Ag Canada (Morden) .....	SeCan Members
Reward .....	Univ. of Manitoba .....	SeCan Members	Titan .....	Ag Canada (Morden) .....	SeCan Members
Tobin .....	Ag Canada (Saskatoon) .....	SeCan Members	Topper .....	Ag Canada (Morden) .....	SeCan Members
<b>Flax</b>			Trapper .....	Ag Canada (Morden) .....	public
Andro .....	Univ. of Sask —		Trump .....	Ag Canada (Morden) .....	SeCan Members
Crop Development Centre .....		SeCan Members	Victoria .....	Svalöf; Bonis .....	Newfield Seeds
Flanders .....	Univ. of Sask. —		Yellowhead .....	Ad Canada (Morden) .....	Woodstone Foods Ltd
Crop Development Centre .....		SeCan Members	<b>Lentil</b>		
AC Linora .....	Ag Canada (Morden) .....	SeCan Members	Eston .....	Univ. of Sask —	
McGregor .....	Ag Canada (Morden) .....	SeCan Members	Crop Development Centre .....		SeCan Members
NorLin .....	Ag Canada (Morden) .....	SeCan Members	Indianhead .....	Univ. of Sask. —	
Somme .....	Univ. of Sask. —		Crop Development Centre .....		SeCan Members
Crop Development Centre .....		SeCan Members	Laird .....	Univ. of Sask. —	
Vimy .....	Univ. of Sask. —		Crop Development Centre .....		SeCan Members
Crop Development Centre .....		SeCan Members	Rose .....	Univ. of Sask. —	
			Crop Development Centre .....		United Grain Growers
<b>Mustard (Condiment)</b>			CDC Richlea .....	Univ. of Sask. —	
<b>Brown</b>			Crop Development Centre .....		SeCan Members
Commercial .....		Trade	<b>Faba Bean</b>		
<b>Oriental</b>			Aladin .....	Univ. of Manitoba .....	public
Cutlass .....	Ag Canada (Saskatoon) .....	Trade	Orion .....	Ag Canada (Lacombe) .....	Roger Lee (Alta) Lyster Farms Ltd (Alta)
Forge .....	Colman's of Norwich .....	Humboldt Flour Mills	Outlook .....	Univ. of Sask. —	
Lethbridge 22A ..	Ag Canada (Saskatoon) .....	Trade	Crop Development Centre .....		SeCan Members
<b>Yellow</b>			Pegasus .....	Univ. of Manitoba .....	Roy Legumex (Man)
Gisilba .....	Kurt Behm GMBH .....	Northern Sales	<b>Pinto Bean</b>		
Ochre .....	Ag Canada (Saskatoon) .....	Trade	Othello .....	USDA/ARS (Prosser, WA) .....	WA & ID seed dealers
Tilney .....	Colman's of Norwich .....	Proven Seed (UGG)	<b>Canary Seed</b>		
<b>Sunflower</b>			Elias .....	Univ. of Minnesota; Univ. of Sask. —	
DO-707 .....	Dahlgren and Company .....	farmer dealers	Crop Development Centre .....		public
DO-855 .....	Dahlgren and Company .....	farmer dealers	Keet .....	Univ. of Minnesota; Univ. of Sask. —	
IS 7000 .....	Interstate Seeds .....	Sask. Wheat Pool	Crop Development Centre .....		public
IS 7111 .....	Interstate Seeds .....	Sask. Wheat Pool	<b>Safflower</b>		
S 1296 .....	Northrup King .....	farmer dealers	Saffire .....	Ag Canada (Lethbridge) .....	Jerry Kubic (Alta)
6322 .....	Pioneer .....	Pioneer	AC Stirling .....	Ag Canada (Lethbridge) .....	SeCan Members
AC Aurora .....	Ag Canada (Saskatoon) .....	Western Grower Seed Corp.			

# Testing Varieties in Saskatchewan

Information in the pamphlet "Varieties of Grain Crops in Saskatchewan" 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 Grain Crops Sub-council to the Saskatchewan Advisory Council on Grain Crops.

These trials are conducted by researchers from Agriculture Canada and the University of Saskatchewan. 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 considered to be 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 Sub-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 Research Stations and farmers' fields. Multiple small plots (30 ft. to 45 ft. ) 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 between 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 likely to be 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 relative 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 4% in Area 2. A farmer in this area may find that Laura will yield anywhere in the range of about 7 percent less than Katepwa to about 16 percent 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.

**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. For example, Neepawa will often mature in less than 98 days in Area 1 and may require 120 days in Area 4. The maturity ratings should be considered as a guide to the relative maturity of the varieties, that is, whenever and wherever, Neepawa and Columbus are both seeded at the same time, Neepawa will reach maturity sooner than Columbus.

## **Reading Material**

### **Agriculture 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.

### **Flax Council**

Growing Flax.

### **Saskatchewan Agriculture & Food**

Aeration of Grain in Storage.

Blackleg: A Disease of Canola.

Canaryseed Production in  
Saskatchewan.

Control of Canada Thistle.

Dry Pea Production in Saskatchewan.

Disease control in field crops 1993.

Durum Production.

Fababean Production in Saskatchewan.

Forage Crop Recommendations.

Grasshopper Control.

Hulless Barley Production.

Legume Inoculation.

Lentil Production in Western Canada.

Insect Control in Field Crops.

Irrigation Handi-Facts; Sask. Water  
Corp.

Milling & Race Horse Oat Production.

Mustard Growers Manual.

Natural Air Grain Drying.

Orange Wheat Blossom Midge.

Russian Wheat Aphid.

Safflower Production on the Canadian  
Prairies.

Saskatchewan Fertilizer Practices.

Soft White Spring Wheat, Sask. Water  
Corp.

To Spray or Not to Spray.

Weed Control in field and forage crops,  
1993.

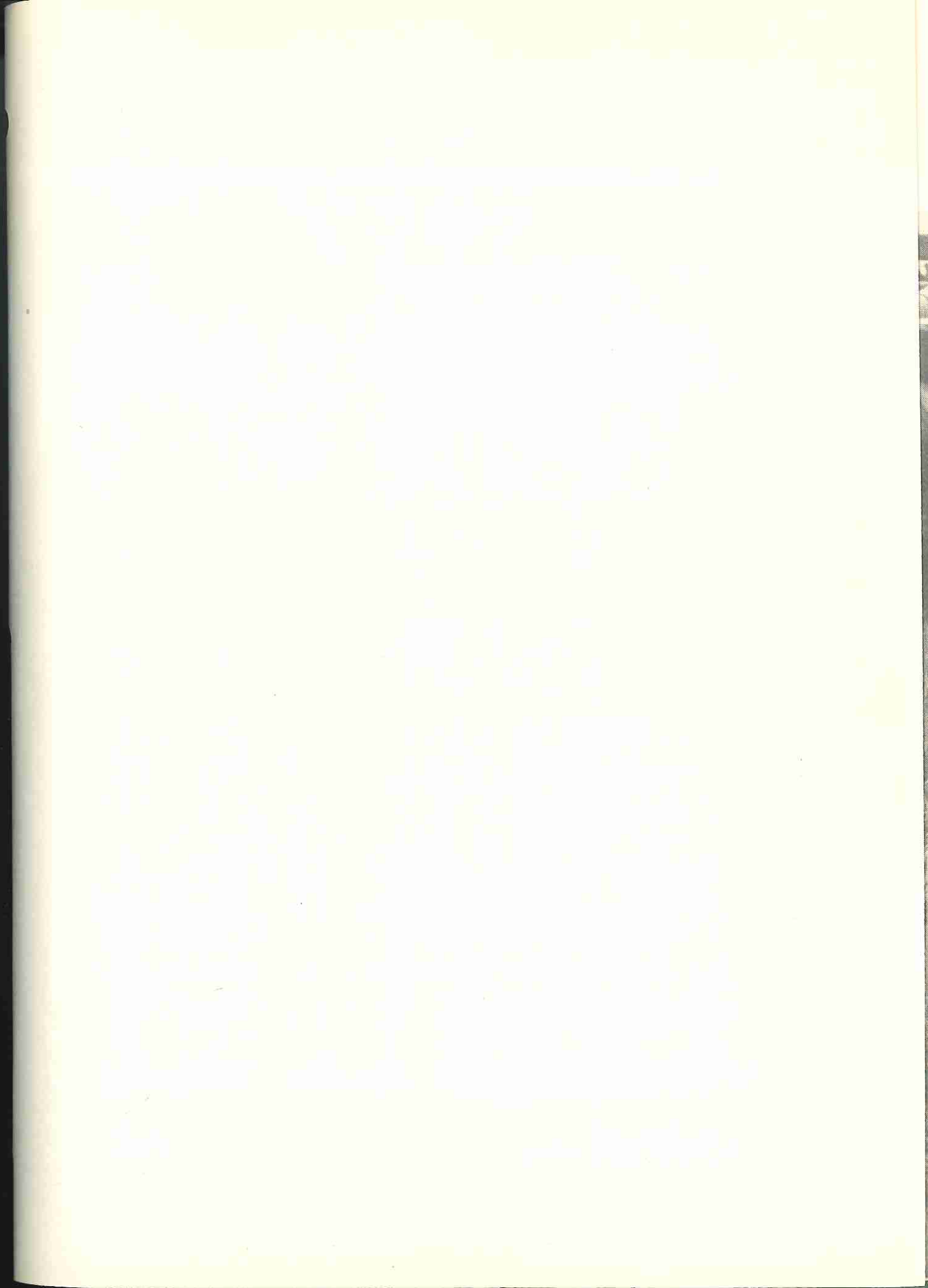
Weed Identification Series.

Weed Seedling Identification.

Winter Wheat Production; Series.

### **Saskatchewan Seed Grower's Association**

Seed Guide, 1993.



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***Contributing Agencies***



Agriculture  
Canada



Saskatchewan  
Agriculture  
and Food



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