



Varieties of Grain Crops for Saskatchewan 1988

ISSN 0382-3601

Grain Crop Production Areas

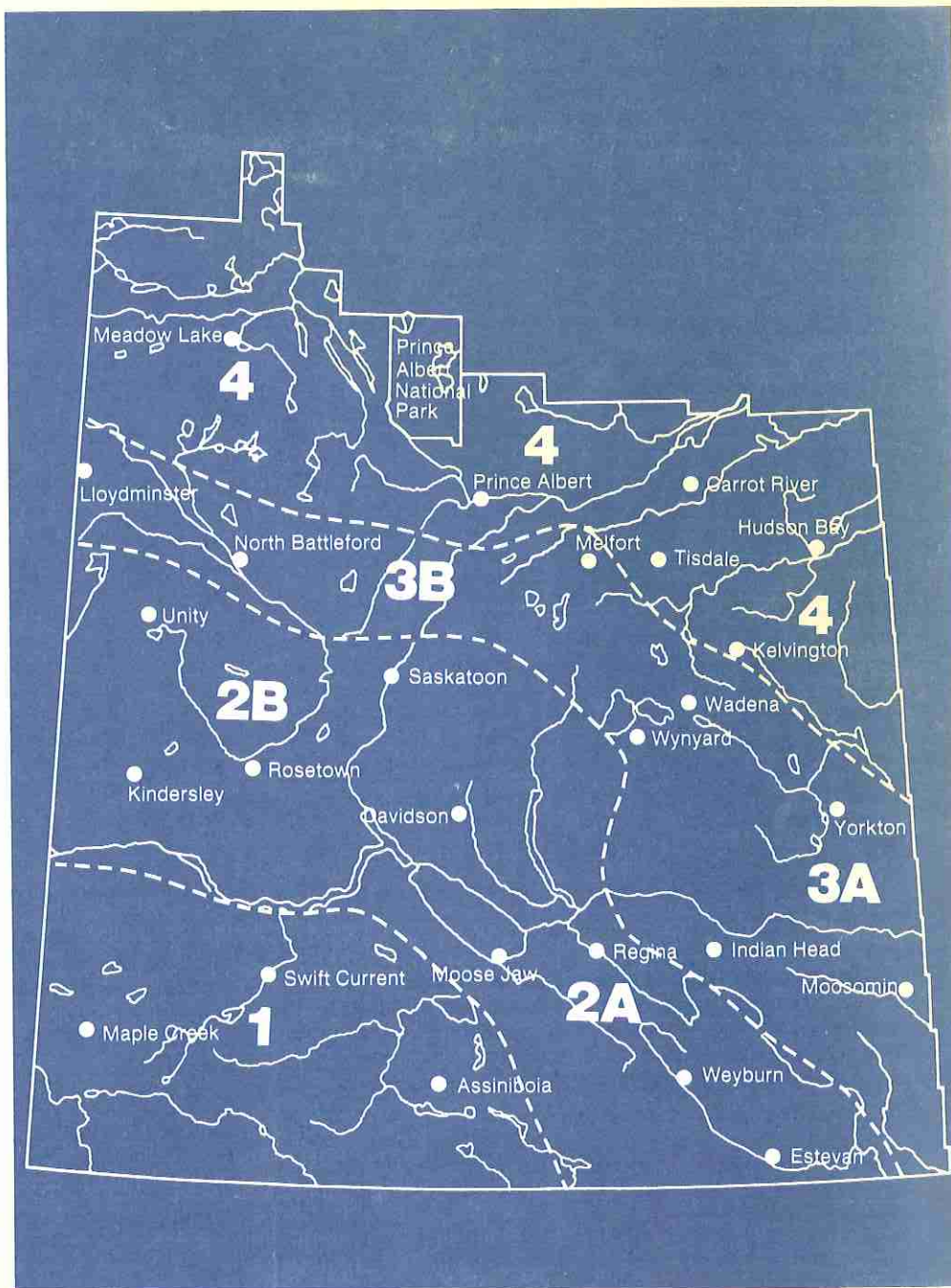
The cropland of Saskatchewan has been divided into four areas based roughly on climate, vegetation and soil type. The relative yields of crop varieties tend to vary from area to area. (See note below.) In choosing a variety a farmer will want to consider the yields in his area and special requirements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

Relative yields presented in this pamphlet are the best estimates of expected yield advantages 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 the natural variability. For example, Katepwa wheat is expected to outyield Neepawa by 3 percent in area 1. A farmer in this area may find that Katepwa will yield anywhere in the range of 6-7 percent lower than Neepawa to 10-11 percent higher than Neepawa. Occasionally, Katepwa may even yield outside this range. Similar variation in relative yields can be expected for most crop varieties.



Wheat

Main Characteristics of Varieties

Variety	Area 1	Area 2	Area 3	Area 4	Average Maturity in Days	Resistance***						
						Shat-Lodging	Stem-terring	Leaf Rust	Loose Smut	Bunt	Root Rot	
Yield as % of Neepawa												
Bread Wheat												
Neepawa	100	100	100	100	98	G	VG	G	P	G	P	F
Benito	97	97	98	99	97	G	G	G	G	G	F	F
Columbus*	100	104	104	99	102	G	F	G	G	F	G	F
Conway	103	100	99	97	97	G	G	G	P	G	F	F
Katepwa	102	101	103	102	98	G	G	VG	F	G	G	F
Kenyon	98	100	101	97	98	G	G	VG	VG	G	F	F
Laura	105	110	110	100	100	G	G	G	G	F	P	G
Leader	98	96	—	—	100	F	F	G	F	F	G	P
Lancer	95	96	—	—	100	F	G	G	G	G	G	F
Roblin	94	95	97	97	97	G	G	G	VG	G	P	F
Canada Prairie Spring Wheat												
HY320*	119	123	125	122	102	G	G	G	G	P	VP	F
Oslo**	99	108	110	100	98	G	G	G	G	P	F	F
Canada Western Utility												
Bluesky**	101	100	100	103	99	G	G	G	F	VG	F	G
Glenlea	96	106	111	112	101	G	G	G	VG	VG	F	G
Wildcat**	94	93	97	94	98	G	G	G	P	VG	P	F
Yield as % of Wascana												
Durum Wheat												
Wascana	100	100	100	100	101	F	VG	VG	VG	F	VG	F
Arcola	97	98	104	106	99	G	VG	VG	VG	F	VG	F
Kyle*	108	105	107	112	103	F	VG	VG	VG	F	G	F
Medora	100	98	103	104	100	G	VG	VG	VG	F	VG	F
Sceptre	103	99	105	107	100	G	VG	VG	VG	F	G	G
Wakooma	99	100	102	102	102	F	VG	VG	VG	F	VG	G

* These varieties are variable in maturity and may mature later under cool conditions.
 ** Based on less than three years of data.
 *** Resistance ratings: VG — very good; G — good; F — fair; P — poor; VP — very poor.

Comments

Threshing characteristics of wheat varieties can be estimated from their response to shattering. For example, **Neepawa** has very good resistance to shattering and is difficult to thresh. **Columbus** and **Leader** have fair resistance to shattering and are among the easier varieties to thresh.

Canada Western Red Spring Wheat

Conway has performed well in the Brown soil zone. Seed will not be generally available in 1988.

Columbus has good leaf rust resistance and has better sprouting and weathering resistance than the other varieties except **Leader**. **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.

Kenyon is similar to **Neepawa** and has very good leaf and stem rust resistance.

Laura is higher yielding than other varieties except in Area 4. **Laura** has an awned head and good shattering resistance. Seed will not be generally available in 1988.

Roblin has very good leaf and good stem rust resistance. Seed will not be generally available in 1988.

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

Canadian Prairie Spring Wheat

HY320 is late maturing and must be sown early, particularly in Area 4.

Oslo is similar in maturity to **Neepawa** and lower yielding than **HY320**.

Canada Western Utility

Bluesky and **Wildcat**, registered in 1987, are earlier maturing than **Glenlea** and lower yielding. Seed will not be generally available in 1988.

Canada Western Amber Durum

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

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

Kyle is higher yielding than other durum varieties but is a little taller and later maturing, making it best suited to the Brown and Dark Brown soil zones.

Sceptre is the shortest, strongest, strawed durum variety.

Soft White Spring Wheat

Fielder and **Owens** are semidwarf varieties and are the only varieties eligible for grades of this class. They are both susceptible to loose smut, bunt, and sprouting of the grain before harvest. **Owens** has resistance to stripe rust which occurs in some locations of southern Alberta.

Winter Wheat

Winter survival is the chief factor limiting winter wheat production in Saskatchewan. However, with proper management successful production is possible. This means that, in most years, some form of snow trapping is necessary in most of Saskatchewan to ensure overwintering.

Norstar is the most winter-hardy variety of winter wheat

available. In addition, it is high-yielding and has acceptable baking quality.

Norwin is a semi-dwarf variety. It has very short, strong straw. Its winter hardiness and yield are inferior to **Norstar**. **Norwin** should be grown only under low winter stress, high moisture conditions where lodging and excessive straw production are problems.

Barley

Main Characteristics of Varieties

Type and Variety	2 or 6 row	Rough or Smooth Awns	Yield as % of Harrington				Average Maturity in Days	Resistance to**														
			Area 1	Area 2	Area 3	Area 4		Lodging	Shattering	Net Blotch	Loose Smut	Other Smuts	Root Rot									
Malting																						
Harrington	2	R	100	100	100	100	92	G	VG	P	P	VP	G									
Bonanza	6	S	93	91	93	93	89	G	VP	G	P	P	G									
Argyle	6	S	92	91	95	99	91	VG	VP	G	P	VP	G									
Ellice	2	R	91	97	98	100	92	G	VG	F	P	P	F									
Klages	2	R	98	92	95	93	94	F	VG	P	P	G	G									
Feed																						
Abee	2	R	107	105	104	102	94	P	VG	P	P	F	G									
Deuce	2	R	100	100	99	103	92	G	VG	F	P	G	G									
Scout	2	R	91	83	83	79	91	P	VG	VP	P	VP	G									
Diamond	6	S	104	103	103	101	89	F	F	G	P	G	VP									
Heartland	6	S	101	101	101	106	92	VG	F	VG	P	P	G									
Johnston	6	S	107	106	107	107	94	VP	P	F	P	VP	P									
Leduc	6	R	108	107	103	102	91	P	P	F	F	G	F									
Noble	6	S	99	100	100	—	92	G	G	F	P	P	P									
Tupper	6	R	75	79	85	83	90	G	P	F	F	VP	G									
Virден*	6	S	111	108	109	114	95	VG	G	G	P	F	G									
Intensive Management+																						
Samson	6	R	—	—	—	—	92	VG	F	F	P	F	G									
Duke	6	R	—	—	—	—	93	VG	F	F	P	F	G									
Winchester	6	R	—	—	—	—	90	VG	F	G	P	G	G									

+ These varieties are suited only to high input conditions, see comments section.

* Less than three years of data for yield figures.

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

Comments:

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.

Of the varieties listed in the table, only **Johnston**, **Leduc**, **Duke** and **Winchester** have satisfactory resistance to scald.

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.

Growers are reminded that commercial evaluation of new malting varieties requires a minimum of three years. Until this is done, only very limited quantities will be purchased for malting.

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.

Samson, **Duke** and **Winchester** are new 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** by 5%, **Winchester** is intermediate. **Duke** is 1-2 days later than **Samson** and **Winchester** is 1-2 days earlier. **Winchester** is susceptible to stem rust.

Noble is a new six-rowed feed variety. It has yielded well in drier locations. It has good lodging and shattering resistance and is similar to **Leduc** in maturity.

Virден is a new six-rowed feed variety. It has very high yield potential but is very late. It has very good straw strength.

Canola Main Characteristics of Varieties

Type & Variety	Yield as % of Westar				Average maturity in days	Resistance to*			
	Area 2	Area 3	Area 4	% Oil		Lodging	White rust	Blackleg	Sclerotinia Stem Rot
Argentine									
Westar	100	100	100	43.4	96	F	VG	VP	P
Polish									
Tobin	82	86	84	41.9	86	G	G	P	P
Triazine Tolerant									
OAC Triton	66	67	69	40.1	100	P	VG	P	P
Tribute	67	67	70	40.1	97	VP	VG	P	P

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

Comments:

The three types of canola (Argentine, Polish, TTC) belong to two different species. The black seeded varieties **Westar**, **OAC Triton** and **Tribute** are *Brassica napus*; the yellow brown seeded variety **Tobin** is *Brassica campestris*. On average **Westar** gives high seed yield, high oil content, matures in 96 days and has fair lodging resistance, **Westar** can be grown in all areas which allow the successful cultivation of later maturing varieties. Under irrigation, **Westar** usually gives a greater increase in yield than **Tobin**, but irrigation may delay maturity by 4 to 5 days. **Tobin** matures, on average, 10 days earlier than **Westar**. While, on average, **Tobin** yields less than **Westar**, when the growing season is shortened by frost or drought, the yield of **Tobin** can be equal to or higher than **Westar**, and **Tobin** is less likely to produce green seed.

OAC Triton and **Tribute** are triazine tolerant canola (TTC) varieties. Their seed yield, under weed free conditions, is significantly lower than that of **Westar**. They also have lower oil content. **OAC Triton** is late in maturing and has a tendency to lodge. **Tribute** is earlier maturing but is very susceptible to lodging. Both varieties have poor seedling vigor and require careful seedbed preparation. They should be planted only under severe infestations with stinkweed and/or wild mustard, weeds which cannot be controlled with canola herbicides. For registered herbicides consult "Chemical Weed Control in Cereal, Oilseed, Pulse and Forage Crops 1988".

For special industrial oil markets a high erucic acid oil is needed. Varieties producing such oils are available and information on the contract production of these varieties should be obtained from the industry.

Corn, Fababean, Safflower, Buckwheat and Triticale

For information refer to the 1987 Guide to Farm Practice in Saskatchewan.

Condiment Mustard

Main Characteristics of Varieties

Type & Variety	Yield as % of Cutlass	Average Maturity in days
Oriental		
Cutlass	100	94
Domo	99	95
Lethbridge 22A.....	88	95
Brown		
Commercial	90	96
Scimitar	92	97
White		
Gisilba	70	99
Kirby	73	98
Ochre	70	99
Tilney	73	101

Comments:

The three types of mustard grown belong to two different plant species. The yellow seeded Oriental mustard and the brown seeded Brown mustard are *Brassica juncea*, the yellow seeded White mustard is *Sinapis alba*. 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. White mustard should be straight combined because of possible losses due to wind damage to the fluffy swath. Any mixtures of rapeseed in mustard, due to volunteer plants in the field or to improper handling on the farm, cause substantial losses through grade reductions.

Oriental and Brown mustard varieties yield 10 to 20% more seed than **Westar** canola. White mustard varieties yield 30% less than the Oriental and Brown mustards. All mustards are resistant to blackleg.

Mustard is usually grown under contract. Differences in yield between the types is compensated for by contract price.

Cutlass is the highest yielding, earliest maturing Oriental mustard variety and has superior seed quality.

Scimitar is a new Brown mustard variety resistant to white rust.

Oat Main Characteristics of Varieties

Variety	Yield as % of Calibre				Test wt. (kg/ha)	% Hull	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	93	G	VP	VP	P
Cascade	106	99	99	99	47.4	26.0	92	G	VP	VP	P
Dumont	97	100	97	96	48.8	23.5	94	F	VG	VG	G
Harmon	93	91	89	85	48.2	24.1	91	G	VP	VP	P
Jasper	92	95	92	90	50.0	22.5	89	F	VP	VP	P
Riel	93	97	94	93	50.0	21.0	93	G	VG	VG	G
Robert**	90	102	96	87	48.5	22.5	93	VG	VG	VG	G

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

** Less than three years of data.

Comments:

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

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

Dumont has excellent disease resistance and good kernel quality, however it has weaker straw and lower yield potential than **Calibre**, **Dumont** is one to two days later

maturing than **Calibre**. This variety should be considered for use in the oat rust-area of south-eastern Saskatchewan.

Jasper is an earlier maturing variety with kernel quality equal to **Calibre**, however its yield potential is considerably lower.

Riel and **Robert** have tan colored grain. They have very good kernel quality and disease resistance, however, yield potential is lower than other varieties available. They appear to be best adapted to Manitoba.

Rye Main Characteristics of Varieties

Type and Variety	Yield as % of Puma				Resistance to*				
	Area 1	Area 2	Area 3	Area 4	Winter Killing	Shat- tering	Lodging	Stem Smut	Straw Length
Winter Rye									
Puma	100	100	100	100	G	G	F	P	Tall
Musketeer	106	102	104	105	G	G	G	G	Tall
Prima	104	111	108	107	G	G	F	G	Tall

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

Comments:

Stem smut has been observed in a number of fields in Area 1 in recent years. The use of either **Prima** or **Musketeer** could alleviate the problem.

Gazelle is the only registered variety of spring rye.

Flax Main Characteristics of Varieties

Variety	Yield as % of Dufferin				Average Maturity in Days	Seed Size	Resistance to*		
	Area 1	Area 2	Area 3	Area 4			Rust	Wilt	Lodging
Dufferin	100	100	100	100	102	Medium	VG	G	F-G
McGregor	104	100	102	96	103	Small	VG	G	VG
Noralta	98	99	99	97	99	Small	VP	G	F-G
NorLin	109	104	103	108	101	Medium	VG	F	G
NorMan	112	104	103	103	101	Medium	VG	G	G
Vimy**	135	113	100	99	101	Large	VG	G	F

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

** Less than three years of data.

Comments:

McGregor is a high yielding but later maturing variety. It has better straw strength than other varieties and should be considered for irrigation in areas where maturity is not a problem.

NorLin is high yielding and slightly earlier maturing than both **Dufferin** and **McGregor**. **NorLin** has good straw strength making it a good choice for irrigation.

NorMan is a medium-late variety with similar characteristics to **NorLin**.

Vimy is a new medium-late variety that is very well adapted to zones 1 and 2. Seed of **Vimy** will not be generally available in 1988. It has fair straw strength which will make it unsuited to irrigation production.

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.

Field Pea (Yellow) Main Characteristics of Varieties

Variety	Yield as % of Century		Average maturity in days	Resistance to **			Seed size (g/1000)
	Area 2 and Southern 3	Area 4 and Northern 3		Ascochyta blight	Powdery mildew	Seed coat breakage	
Century.....	100	100	101	P	F	F	250
Bellevue*.....	118	87	105	P	P	G	190
Express*.....	111	119	96	P	P	P	260
Fortune*.....	121	114	104	P	P	F	210
Tara.....	126	117	103	P	G	F	230
Tipu.....	97	102	99	P	P	P	240
Titan.....	111	106	102	P	P	G	270
Trapper.....	103	106	100	P	F	F	150
Victoria.....	103	128	95	P	P	F	190

* Limited data only.

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

Comments:

Field pea is grown mainly in 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 is a problem with many varieties, but it can be reduced by harvesting pea tough and drying in an aeration bin. Seed of **Bellevue**, **Express**, **Fortune**, **Tipu**, **Titan** and **Victoria** will not be generally available in 1988. 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 size.

Bellevue is a newly registered variety of high yield potential but late maturity. It is well adapted to the more southerly field pea growing area of the province.

Express is a newly registered, early maturing, and high yielding variety. Under dry conditions, vine length is very short making harvest difficult.

Fortune is a newly registered, high yielding, but late maturing variety.

Tara has an angular seed shape. This variety may be profitably grown for the expanding feed markets.

Tipu is a newly registered semi-leafless pea similar to **Century**. The main expected advantage of this plant type is easier harvesting as it does not lay as flat on the ground. This variety is quite susceptible to cracking when harvested too dry.

Titan is a newly licensed pea that has large seed and is high yielding.

Victoria is an early maturing variety that appears to be well adapted to the humid, cooler conditions of the more northerly grain growing area.

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 reduces input costs by replacing nitrogen fertilizer for profitable pea production. 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	Seed Size	Seeding rates kg/ha(lb/A)
Laird.....	100	41	51	Large	70-80(62-72)
Eston.....	107	30	48	Small	35-40(31-36)

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 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. Thus, they should be seeded on a smooth, rock-free seedbed to facilitate swathing.

Two 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 some resistance to Ascochyta leaf, stem and pod blight. **Eston** is a short, erect, early-maturing variety with small seeds.

Lentil producers should plant lentil seed that has been tested for seed-born Ascochyta and use only seed testing "non-detected" or as low as is readily available.

Lentil marketing is a highly specialized business and it is advisable to grow lentil under contract.

For cropping practices, weed control and inoculation information, see the reference section.

Sunflower (oilseed)

Main Characteristics of Varieties

Variety	Yield as % of USDA 894	Average Maturity in days	Oil %
USDA 894.....	100.....	127.....	42.5
Cargill 205.....	110.....	124.....	45.0
Dahlgren 164.....	106.....	125.....	43.5
Dahlgren 855.....	110.....	123.....	46.3
Interstate 7000.....	106.....	123.....	47.4
Interstate 7101.....	105.....	124.....	43.8
Interstate 7111.....	108.....	123.....	47.2
Stauffer 1296.....	115.....	123.....	48.0
Sun M 20.....	99.....	118.....	46.5
Sun'S 600.....	112.....	124.....	47.2

Sunflower (confection)

Variety	Yield as % of USDA 894	Average Maturity in days	Seed Size % over 20/64 Screen
Sundak.....	100.....	128.....	24.8
Dahlgren 131.....	105.....	126.....	26.5

Comments:

Sunflower requires 110-130 days to mature, depending on the cultivar and the growing season. Both the oilseed and confectionery seed types are grown in Saskatchewan as contract cash crops.

Oilseed sunflower is adapted to the Dark Brown and Black soil zones in southeastern Saskatchewan. Because of the relatively short growing season in this province early maturing cultivars are required. Early hybrid cultivars have replaced the open pollinated cultivars. Later maturing hybrids have also been grown. These later hybrids should be planted early and should be considered only in the extreme southeast of Saskatchewan and at Outlook. Contractors and crushers may pay a premium for high oil content.

Confectionery sunflower is best adapted to production under irrigation. Hybrid cultivars are offered by confectionery sunflower contractors.

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 licensed varieties are available. **Alden** and **Keet** are similar in yield, but **Keet** is earlier maturing and more resistant to lodging. The maturity requirements are equal to wheat. Average moisture is required for canary seed and growing the crop on sandy soils is not recommended. Summerfallow is generally used, but canary seed may be grown successfully on well-prepared stubble, providing adequate moisture is available.

Seed 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 the previous year.

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

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. However, it may be a wise precaution to treat seed of susceptible varieties periodically, depending on the susceptibility of the variety. Varieties rated **Very Poor** should be treated every year and varieties rated **Poor** every second year.

The virulent form of blackleg is now widespread on canola in Saskatchewan. Treatment of seed with a recommended fungicide is highly recommended in order to reduce the risk of introducing the disease into unaffected areas. Growers with carry-over stocks of treated seed should have these tested for germination.

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

Various fungicides have been registered for the control of seeding diseases. Flax, 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 powered milk solution will help assure proper inoculation.

Ascochyta on Lentil

Lentil producers should plant lentil seed that has been tested for seed-borne Ascochyta and use only seed testing "none-detected" or as low as is readily available.

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 area should be prepared to spray these fields with recommended insecticides if necessary. Refer to **Orange Wheat Blossom Midge** Publication.

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

A minimum of 3 years is recommended between canola crops to reduce the incidence of blackleg.

References

Agriculture Canada

Ergot of Grains and Grasses, Publ. 1438.
Growing Buckwheat, Publ. 1468.
Growing Corn, Publ. 1025.
Heated Air Grain Driers, Publ. 1700.
Insects and Mites of Farm-Stored Grain, Publ. 1595.
Sunflower Seed Crops, Publ. 1687.

Canola Council of Canada

Canola Production Manual.
Fertilizer Practices for Canola.

Flax Council

Growing Flax

Saskatchewan Agriculture

Aeration of Grain in Storage, Publ. 736-1.
Blackleg: A Disease of Canola.
Chemical Weed Control in Cereal, Oilseed, Pulse and Forage Crops, 1988.
Forage Crop Recommendations for Saskatchewan, 1988.
Grasshopper Control.
Insect Control in Field Crops.
Irrigation Handi-Facts; Irrigation Branch.
Mustard Production Manual.
Saskatchewan Fertilizer Practices, 1988.
Seed Treatments and Foliar Fungicides, 1988.
Orange Wheat Blossom Midge.
Soft White Spring Wheat, Irrigation Branch, 1983.
Weed Identification Series.
Weed Seedling Identification.

Saskatchewan Seed Grower's Association.

Seed Guide, 1988.

University of Saskatchewan

Canaryseed Production in Saskatchewan, Publ. 462.
Dry Pea Production in Saskatchewan, Publ. 225.
Fababean Production in Saskatchewan, Publ. 416.
Guide to Farm Practice in Saskatchewan, 1987.
Inoculation of Pulse Crops, Publ. 362.
Winter Wheat Production. Series 1 to 6.

Prepared by: The Grain Crops Committee of
The Saskatchewan Advisory Council on Crops.