



# Varieties of Grain Crops for Saskatchewan 1983

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. 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.

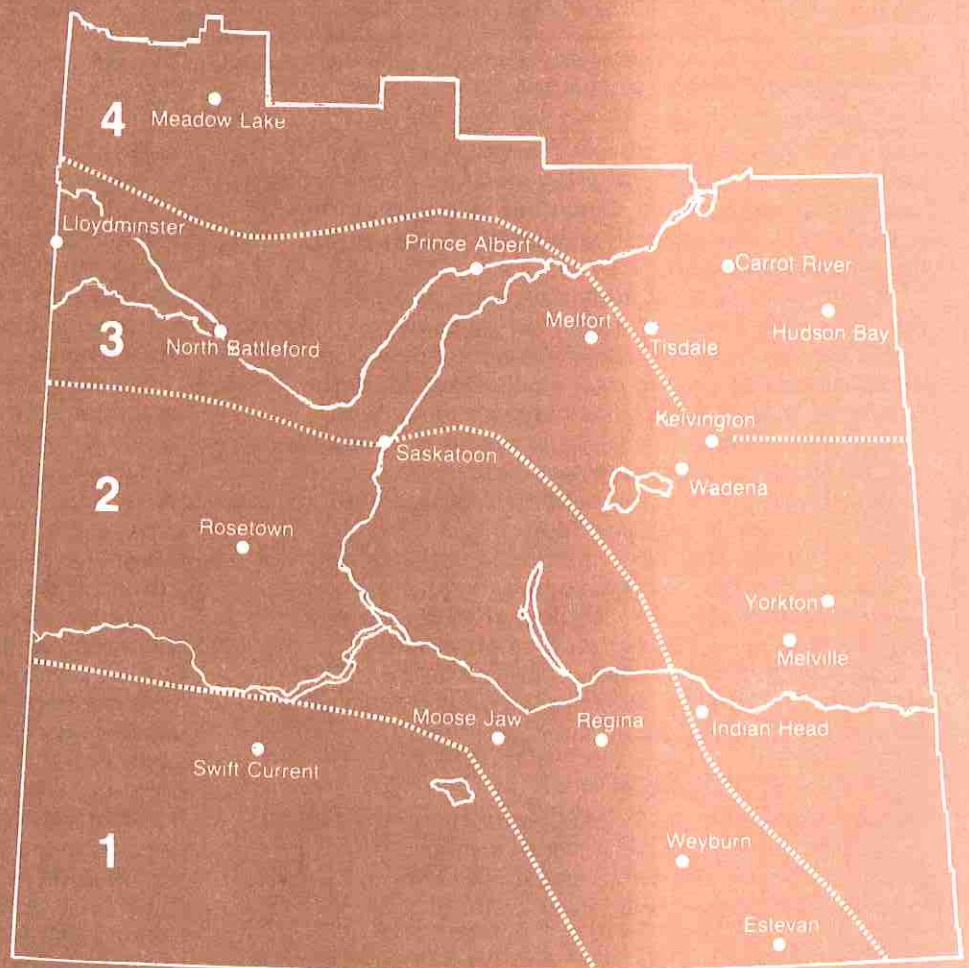
Area 2: Drought and sawflies may be problems in the western and central sections of the area. Cereal rust may be a problem in the southeastern section.

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.

The following tables contain the main characteristics of new and commonly grown varieties of cereals, oilseed crops and minor crops. Varieties that are not listed are considered to be inferior for production in Saskatchewan, except under certain localized conditions. The comments in the tables are based on **averages** for several stations in each area for at least three years. But farmers should be aware that the yields within an area will vary from these average figures.



# Wheat

## Main Characteristics of Varieties

Variety	Yield as % of Neepawa				Average Maturity in Days	Resistance to					
	Area 1	Area 2	Area 3	Area 4		Lodging	Shattering	Stem Rust	Leaf Rust	Loose Smut	Root Rot
<b>Bread Wheat</b>											
Neepawa	100	100	100	100	98	Good	Good	Good	Poor	Good	Fair
Benito	97	101	98	100	97	Good	Good	Good	Good	Good	Fair
Canuck	100	97	—	—	101	Fair	Good	Fair	Poor	Fair	Fair
Chester	103	98	—	—	100	Good	Good	Fair	Poor	Fair	Fair
Columbus*	103	104	104	102	102	Good	Good	Good	Good	Good	Fair
Katepwa**	104	99	102	101	98	Fair	Good	Good	Fair	Good	Fair
Leader	104	97	—	—	100	Good	Good	Good	Poor	Good	Poor
Manitou	95	98	97	98	98	Good	Good	Good	Good	Good	Fair
Napayo	95	95	95	107	99	Good	Good	Good	Poor	Good	Fair
Sinton	92	96	97	106	99	Good	Fair	Good	Good	Poor	Fair
<b>Utility Wheat</b>											
Glenlea*	98	105	109	118	101	Good	Good	Good	Good	Good	Fair
<b>Yield as % of Wascana</b>											
<b>Durum Wheat</b>											
Wascana	100	100	100	100	101	Good	Good	Good	Good	Good	Fair
Coulter	92	94	99	103	99	Good	Good	Good	Good	Good	Fair
Macoun	95	91	96	102	100	Good	Good	Good	Good	Good	Fair
Medora**	99	100	100	100	100	Good	Good	Good	Good	Good	Fair
Wakooma	99	99	100	100	102	Good	Good	Good	Good	Good	Fair

\* These varieties are variable in maturity and may mature later under cool conditions.  
 \*\* Based on less than three years of data.

### Comments:

**Columbus** has good leaf rust resistance and has better sprouting and weathering resistance than other varieties except **Leader**. **Columbus** is late maturing and should be sown early. **Columbus** is easier to thresh than **Neepawa**.

**Benito** has good leaf rust resistance, is earlier maturing and easier to thresh than **Neepawa**.

**Sinton** has good leaf rust resistance but is free threshing and shattering can occur. Seed of **Sinton** should be treated for loose smut prior to seeding.

**Katepwa**, licensed in 1981, is similar to **Neepawa** but has better stem and leaf rust resistance and is easier to thresh. Seed will not be available in 1983.

**Leader** is preferred over **Canuck** and **Chester** because **Leader** has better sprouting resistance.

**Coulter**, **Medora** and **Wakooma** have very good cooking quality. **Medora**, licensed in 1982, **Coulter** and **Macoun** are early maturing, short-strawed varieties of durum wheat which should be grown where these characteristics are important. Seed of **Medora** will not be available in 1983.

### Soft Wheat Spring Wheat

**Fielder**, licensed in 1976, is superior to other varieties in yielding ability, test weight and resistance to powdery mildew. Soft white wheat should be grown only on irrigated land and under contract.

### Winter Wheat

The chief factor limiting winter wheat is winterkill. With proper

**Norstar** is the most winterhardy variety of wheat available. In addition, it is high-yielding with acceptable baking quality.

If a reasonable stand survives the winter, **Norstar** wheat should yield about 25 percent higher than **Neepawa** spring wheat. It also has the additional advantages of early maturity, redistribution of yield requirements, and increased competition with weeds.

Seedbed preparation is one of the most important factors affecting winter wheat survival. A firm seedbed provides the optimum environment for winter wheat. Hot, dry weather, which often occurs in the late summer, quickly dries out seedbeds, making them loose and open. Such seedbeds usually result in uneven germination and weak seedlings which are extremely prone to winterkilling.

Seeding into standing stubble can result in a successful winter wheat stand where the stubble crop has been harvested at an early date. Soil moisture conditions are adequate to permit winter wheat establishment before freeze-up. The stubble assists in trapping snow, and a very firm seedbed is provided. No seedbed preparation is necessary, however, good drill penetration is required. Press drill or zero-tillage drills will provide a firm seedbed under these conditions.

On both summerfallow and stubble, seeding depth is less than 4 cm into the soil. Deeper seeding often results in delayed emergence and weak plants which are susceptible to winterkill. Winter wheat should be seeded early enough to allow for the establishment of a healthy stand.

before freeze-up. However, seeding too early will result in excessive growth in the fall and plants which are usually less resistant to injury and disease. Generally recommended seeding dates in Saskatchewan are around August 25 for the north and September 7 for the extreme south of the agriculture area.

Given the extremes of Saskatchewan winters, snow cover becomes a critical factor in winter cereal production. Snow usually arrives earlier and stays later in the Black and Gray soil zones (Parkland) than

in the Brown. For this reason outside of the Chinook area in the extreme southwest of Saskatchewan, the greatest potential for winter wheat production lies in the northern part of the agricultural area. However, even in the Parkland, it is extremely difficult to maintain adequate snow cover for acceptable winter wheat survival on summerfallow fields. This means that, in most years, some form of snow trapping is necessary in most of Saskatchewan to ensure the successful overwintering of wheat. Standing stubble will provide effective snow trapping.

## BARLEY

### Main Characteristics of Varieties

Type and Variety	Six or Rowed	Rough or Smooth Awns	Yield as % of Bonanza				Average Maturity in Days	Resistance to					
			Area 1	Area 2	Area 3	Area 4		Lodging	Stem Rust	Loose Smut	False Covered Smut	Shattering	Root Rot
<b>Malting</b>													
Bonanza.....	Six	S	100	100	100	100	89	Good	Good	Fair	Poor	Poor	Fair
Argyle**	Six	S	101	100	100	106	91	Good	Good	Poor	Poor	Fair	Fair
Conquest	Six	S	92	92	91	93	88	Good	Good	Fair	Fair	Poor	Fair
Betzes	Two	R	110	99	98	92	90	Poor	Poor	Poor	Poor	Good	Fair
Elrose	Two	R	102	101	100	95	90	Fair	Poor	Poor	Poor	Good	Fair
Harrington**	Two	R	105	105	105	106	92	Good	Poor	Poor	Poor	Good	Fair
Klages	Two	R	105	103	103	100	94	Fair	Poor	Poor	Good	Good	Fair
Norbert**	Two	R	100	101	97	103	92	Good	Good	Poor	Poor	Good	Poor
<b>Feed</b>													
Abee**	Two	R	128	118	112	103	94	Fair	Poor	Poor	Fair	Good	Fair
Fairfield	Two	R	113	108	104	100	91	Fair	Poor	Poor	Fair	Good	Fair
Hector	Two	R	114	107	101	91	92	Fair	Poor	Fair	Fair	Good	Fair
Scout**	Two	R	107	87	88	80	91	Fair	Poor	Poor	Poor	Good	Fair
Summit	Two	R	101	106	106	103	93	Good	Poor	Poor	Fair	Good	Fair
Diamond**	Six	S	105	111	110	107	89	Good	Good	Poor	Good	Fair	Poor
Empress**	Six	R	103	93	101	101	89	Good	Good	Poor	Poor	Fair	Fair
Johnston**	Six	S	115	122	114	112	94	Poor	Good	Fair	Poor	Poor	Fair
Klondike	Six	S	106	108	107	105	91	Good	Good	Fair	Fair	Fair	Fair
Leduc**	Six	R	112	120	111	112	91	Poor	Good	Fair	Good	Fair	Fair
Melvin	Six	S	111	111	109	106	92	Good	Good	Poor	Fair	Fair	Poor

\*\*Less than three years of data for yield figures.

Scout is a hulless variety, add 12% to the yield of Scout for comparison with other varieties.

### Comments:

None of the above 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.

**Argyle** is a new, six-rowed, malting variety with promising quality. It is slightly higher yielding than **Bonanza** in northern and eastern Saskatchewan. It has very good straw strength, is similar to **Bonanza** in height but is 1-3 days later maturing. Limited quantities of seed will be available from SeCan members in 1983.

**Klages** germinates very readily so care should be taken to minimize exposure of swaths to rain.

**Elrose** is a two-rowed malting variety which is similar to **Klages** in malting quality. Limited quantities are being purchased for malting. **Elrose** is 4 to 5 days earlier maturing than **Klages**.

**Harrington** is a new, two-rowed, malting variety with very promising quality characteristics. Plant scale malting and brewing tests will be conducted in 1982-83 to determine the commercial acceptability of this variety and **Norbert**. **Harrington** has yielded well in all areas, however, it is similar to **Klages** and **Elrose** in disease resistance. Thus it is best suited to the traditional two-row area. It is stronger strawed and 2-3

days earlier than **Klages**. Seed of **Harrington** will be available in limited quantities from SeCan members.

**Norbert** is a new, two-rowed, malting variety with promising quality characteristics. **Norbert** is a strong strawed variety with plump kernels. It is 2-3 days earlier than **Klages** but is lower yielding than other two-rowed malting varieties. **Norbert** has good resistance to net blotch and stem rust. Thus it is better adapted to the eastern prairies. Seed of **Norbert** will be available in limited quantities from SeCan members.

**Mevin, Klondike** and **Johnston** are high yielding, six-rowed, feed varieties. **Melvin** has good heat and drought tolerance. **Johnston** has the highest yield potential but it is taller, weaker and later than the other two varieties.

**Diamond, Empress** and **Leduc** are new, six-rowed, feed varieties. **Diamond** combines early maturity with high yield. It has a plump kernel but low bushel weight and a high hull percentage. No information is available on its feeding value. Seed is not available for 1983.

**Leduc** is similar in most respects to **Johnston** except that it is several days earlier maturing. Seed is not available for 1983.

**Empress** was licensed for high moisture barley production in central Alberta. It does not appear to have any advantage for Saskatchewan. Seed is not available for 1983.

**Abee** is a new, two-rowed, feed variety with high yield potential and plump kernels. It is similar to **Summit** in maturity. It is shorter than **Klages** but similar in straw strength. Seed is not available for 1983.

**Scout** is a new, two-rowed, hulless variety. This variety is similar in most respects to **Fairfield**. Because the hull is left in the field 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. **Scout** is higher in protein and lower in fiber than hulled varieties. Seed is not available for 1983.

**Otal** is a new, six-rowed, feed variety for Northern Alberta. It is early (85 days) but very low yielding (97, 78, 79, 89 in areas 1-4 respectively). Limited quantities of seed are available for 1983.

## Canola/Rapeseed

### Main Characteristics of Varieties

Variety	Yield as % of Candle		Average Maturity in days	% Oil	Seed Color	Resistance to White Rust
	Area 2	Areas 3 & 4				
<b>B. campestris</b> (Turnip rape)						
Candle .....	100	100	85	42.2	Yellow-brown	Fair
Tobin .....	109	102	85	43.0	Yellow-brown	Good
R-500* .....	100	100	93	44.7	Yellow	Poor
<b>B. napus</b> (Argentine type)						
Altex .....	123	121	98	43.1	Black	Good
Andor .....	130	127	97	43.5	Black	Good
Regent .....	123	125	100	43.3	Black	Good
Westar .....	139	143	96	43.7	Black	Good

\*High erucic acid variety.

#### Comments:

Canola is the term now used to designate seed, oil and meal from low erucic, low glucosinolate varieties such as **Tobin, Candle, Regent, Altex, Andor, Westar** and **Tower**. Canola quality seed is now required by the domestic industry and preferred by our export markets. **Torch** and **Midas** should not be grown.

Seed supplies of the new high yielding, white rust resistant **B. campestris** variety **Tobin** will be in good supply for 1983. **Tobin** should be considered as a replacement for **Candle**.

**Westar**, a new early maturing **B. napus** canola variety has given the highest yields of seed and oil.

Certified seed stocks of **Westar** will be limited in 1983 to contract production with domestic crushers. A good supply of certified seed of **Andor**, which yields more than **Regent** or **Altex** and is similar to **Altex** and **Westar** in maturity, will be available for seeding in 1983.

R-500 which has very large yellow seed and produces oil with a very high erucic acid level, should only be grown under contract for special industrial oil markets.

Under irrigation, **B. napus** varieties usually give a greater increase in yield than **B. campestris** varieties, but irrigation may delay maturity by 4 to 5 days.

## Oats

### Main Characteristics of Varieties

Variety	Yield as % of Harmon				Average Maturity in Days	Resistance to				Test Wt. Kg/hl.
	Area 1	Area 2	Area 3	Area 4		Lodging	Stem Rust	Leaf Rust	Smut	
Harmon.....	100...	100.....	100.....	100.....	91	Fair.....	Poor .....	Poor .....	Fair.....	48.2
Cascade .....	119...	106.....	113.....	117.....	92	Fair.....	Poor .....	Poor .....	Poor .....	47.4
Dumont* .....	109...	109.....	106.....	109.....	94	Fair.....	Good .....	Good .....	Good .....	48.8
Fidler .....	104...	97.....	97.....	106.....	92	Good .....	Good .....	Good .....	Good .....	46.1
Foothill.....	103...	99.....	102.....	99.....	95	Poor .....	Poor .....	Poor .....	Poor .....	46.8
Hudson .....	107...	106.....	108.....	107.....	91	Good .....	Fair.....	Fair.....	Fair.....	46.2
Kelsey .....	99...	105.....	105.....	105.....	89	Fair.....	Poor .....	Poor .....	Fair.....	48.2

\*Yield information for DUMONT based on less than 3 years of data.

#### Comments:

**Harmon** is a plump seeded, moderately strong strawed oat variety, however it does not have the yield potential of several newer varieties.

**Kelsey** is earlier maturing than **Harmon** but has somewhat smaller kernels.

**Hudson** is a relatively high yielding, short, strong-strawed variety but it has low test weight and small kernels.

**Cascade** has very high yield potential although it is slightly later maturing, lighter in test weight and smaller seeded than **Harmon**.

**Dumont** is a new variety with excellent disease resistance, good yield potential and kernel quality

equal to **Harmon**, however it is three to five days later maturing than **Harmon**. This variety should be considered for use in the oat rust-area of south-eastern Saskatchewan. See of **Dumont** will not be available in 1983.

**Fidler** has good disease resistance, but its performance in the absence of disease is only equal to **Harmon**. It has low test weight, small kernels, is short-strawed and is slightly later than **Harmon**.

**Foothill** is a late maturing, weak-strawed, low test weight forage oat with no advantage over other high yielding varieties.

## Flax

### Main Characteristics of Varieties

Varieties	Yield as % of Dufferin				Average Maturity in days	Resistance to		Seed Size	Flower Colour
	Area 1	Area 2	Area 3	Area 4		Rust	Wilt		
Dufferin.....	100.....	100.....	100.....	100.....	102	Good .....	Good .....	Medium.....	Blue
Culbert.....	81.....	88.....	86.....	89.....	96	Good .....	Good .....	Medium.....	Blue
Linott.....	92.....	95.....	94.....	92.....	100	Good .....	Good .....	Medium.....	Blue
McGregor* .....	109.....	105.....	104.....	102.....	103	Good .....	Good .....	Small .....	Blue
Noralta.....	94.....	99.....	99.....	95.....	99	Poor .....	Good .....	Small .....	Blue
NorLin* .....	103.....	100.....	101.....	111.....	101	Good .....	Good .....	Medium.....	Blue

\* Less than three years of data.

#### Comments:

**Culbert** is a United States bred variety adapted to late seeding in the Red River Valley area of Manitoba.

**Noralta** is susceptible to a number of races of rust. Rust and other flax diseases overwinter in Saskatchewan so to minimize these diseases avoid planting flax on or near flax stubble. Use clean seed since the refuse or debris in the seed may be infected with the disease.

**McGregor**, licensed in 1981, is a high yielding but later maturing variety. **McGregor** has better straw strength than other varieties.

**NorLin**, also licensed in 1981, is similar to **Dufferin** in yield but is slightly earlier maturing. Seed of this variety will not likely be available until 1984.

Frozen flax should be analysed by the Saskatchewan Feed Testing Laboratory to determine that it is free of Prussic acid before using it for Livestock feed.

## Faba beans

### Main Characteristics of Varieties

Variety	Yield as a % of Ackerperle	Average Maturity in Days	Seed Size	Plant Height	Seeding rate (kg/ha)
Ackerperle .....	100.....	112.....	Small .....	Tall .....	150
Aladin .....	119.....	112.....	Large .....	Tall .....	175
Diana .....	102.....	106.....	Medium.....	Medium Tall .....	160
Herz Freya.....	105.....	106.....	Medium.....	Tall .....	165
Outlook.....	112.....	109.....	Small .....	Medium Tall .....	150

#### Comments:

**Aladin** and **Outlook** are new Canadian varieties, the seed of which will not be generally available until 1985. Faba beans are best adapted to the irrigated areas of the Dark Brown soil zone or to that portion of

the Black soil zone with the longest growing season. Faba bean seed should be inoculated before planting. See **Seed Inoculation** section.

## Field Peas

### Main Characteristics of Varieties

Variety	Yield as % of Century	Average Maturity in Days	Seed Size	Cotyledon Color	Vine Length	Seeding Rate kg/ha
Century.....	100.....	100.....	Large .....	Yellow.....	Tall .....	190
Tara.....	131.....	100.....	Medium.....	Yellow.....	Medium.....	175
Trapper.....	109.....	98.....	Small .....	Yellow.....	Medium.....	125

#### Comments:

Field peas are best adapted to the parkland area of the province. Growers should investigate potential markets such as home-grown protein, industrial use, export of pea soup before seeding. Protein content varies considerably among fields of the same variety and, thus, it is advisable to obtain a protein analysis on peas used in livestock rations. Field pea seed

should be inoculated before planting. See **Seed inoculation** section.

**Tara** is a recently licensed variety with greater powdery mildew resistance than **Century** or **Trapper**. The irregular seed shape of **Tara** may result in lower market value.

## Tame Mustards

### Main Characteristics of Varieties

Variety	Type	Yield as % of Lethbridge 22A
Lethbridge 22A ...	Oriental.....	100
Stoke.....	Oriental.....	101
Domo.....	Oriental.....	110
Blaze .....	Brown .....	98
Elka .....	Brown .....	92
Commercial.....	Brown .....	92
Gisilba .....	White .....	76
Kirby.....	White .....	77
Ochre .....	White .....	77

#### Comments:

White mustard was previously termed yellow mustard in Canada. The name white mustard agrees with the convention in other parts of the world, and avoids confusion with Oriental mustard which also has a yellow seed color.

The mustards are less drought resistant than wheat, but are grown more extensively in drier regions of the province than is rapeseed, because of the better seed quality obtained under these conditions.

The three types of mustard grown commercially are White, Brown and Oriental. All are intermediate in maturity between Argentine and turnip rape. White mustard is slightly lower yielding than turnip rape and is similar in plant height. It is quite resistant to shattering, and because of the risk of loss due to wind damage to the fluffly swath, should preferably be straight combined. Brown and Oriental mustards usually yield 10-15% more than Argentine rapeseed and 20-30% more than White mustard. They are more susceptible to shattering than White mustard, and are usually swathed although straight combining is feasible.

Mixtures of mustard and rapeseed due to volunteer plants or to handling on the farm cause substantial losses through grade reduction.

The mustards are almost exclusively contract crops, yield differences between the types being compensated for by contract price differences.

**Faba beans**  
Main Characteristics of Varieties

Variety	Yield as a % of Ackerperle	Average Maturity in Days	Seed Size	Plant Height	Seeding rate (kg/ha)
Ackerperle	100	112	Small	Tall	150
Aladin	119	112	Large	Tall	175
Diana	102	106	Medium	Medium Tall	160
Herz Freya	105	106	Medium	Tall	165
Outlook	112	109	Small	Medium Tall	150

**Comments:**

**Aladin** and **Outlook** are new Canadian varieties, the seed of which will not be generally available until 1985. Faba beans are best adapted to the irrigated areas of the Dark Brown soil zone or to that portion of

the Black soil zone with the longest growing season. Faba bean seed should be inoculated before planting. See **Seed Inoculation** section.

**Field Peas**  
Main Characteristics of Varieties

Variety	Yield as % of Century	Average Maturity in Days	Seed Size	Cotyledon Color	Vine Length	Seeding Rate kg/ha
Century	100	100	Large	Yellow	Tall	190
Tara	131	100	Medium	Yellow	Medium	175
Trapper	109	98	Small	Yellow	Medium	125

**Comments:**

Field peas are best adapted to the parkland area of the province. Growers should investigate potential markets such as home-grown protein, industrial use, export of pea soup before seeding. Protein content varies considerably among fields of the same variety and, thus, it is advisable to obtain a protein analysis on peas used in livestock rations. Field pea seed

should be inoculated before planting. See **Seed inoculation** section.

**Tara** is a recently licensed variety with greater powdery mildew resistance than **Century** or **Trapper**. The irregular seed shape of **Tara** may result in lower market value.

**Tame Mustards**  
Main Characteristics of Varieties

Variety	Type	Yield as % of Lethbridge 22A
Lethbridge 22A	Oriental	100
Stoke	Oriental	101
Domo	Oriental	110
Blaze	Brown	98
Elka	Brown	92
Commercial	Brown	92
Gisilba	White	76
Kirby	White	77
Ochre	White	77

**Comments:**

White mustard was previously termed yellow mustard in Canada. The name white mustard agrees with the convention in other parts of the world, and avoids confusion with Oriental mustard which also has a yellow seed color.

The mustards are less drought resistant than wheat, but are grown more extensively in drier regions of the province than is rapeseed, because of the better seed quality obtained under these conditions.

The three types of mustard grown commercially are White, Brown and Oriental. All are intermediate in maturity between Argentine and turnip rape. White mustard is slightly lower yielding than turnip rape and is similar in plant height. It is quite resistant to shattering, and because of the risk of loss due to wind damage to the fluffy swath, should preferably be straight combined. Brown and Oriental mustards usually yield 10-15% more than Argentine rapeseed and 20-30% more than White mustard. They are more susceptible to shattering than White mustard, and are usually swathed although straight combining is feasible.

Mixtures of mustard and rapeseed due to volunteer plants or to handling on the farm cause substantial losses through grade reduction.

The mustards are almost exclusively contract crops, yield differences between the types being compensated for by contract price differences.

**Rye**  
Main Characteristics of Varieties

Type and Variety	Yield as % of Puma				Resistance to			Kernel		Straw Length
	Area 1	Area 2	Area 3	Area 4	Winter Killing	Shattering	Lodging	Color	Size	
<b>Winter Rye</b>										
Puma	100	100	100	100	Good	Good	Fair	Green	Medium	Tall
Cougar	92	96	98	95	Fair	Good	Good	Green	Medium	Medium
Frontier	85	90	95	99	Good	Fair	Poor	Green	Medium	Tall
Kodiak	73	90	91	96	Poor	Fair	Fair	Tan	Large	Tall
Musketeer	100	98	104	102	Good	Good	Good	Green	Large	Tall

**Comments:**

**Cougar**, **Frontier** and **Puma** are the most commonly grown varieties. Although **Cougar** is not as winter hardy as **Frontier** and **Puma**, it is popular because of its short straw.

**Puma** is similar in height and winterhardiness to **Frontier**, but more resistant to lodging and shattering. **Puma** on the average is higher yielding than **Cougar** or **Frontier**.

**Kodiak** is less winter-hardy; taller and more prone

to lodging than **Cougar**. Kernel size is about 10% larger than **Cougar**, **Frontier** and **Puma**.

**Musketeer** is new high-yielding variety of winter rye. It has good winterhardiness, large seeds, high test weight, and early maturity. Pedigreed seed will be available in quantity by the fall of 1983.

**Gazelle** is the highest yielding variety of spring rye licensed for production in Saskatchewan. Winter rye is approximately 35% higher yielding than spring rye.

**Lentils**

Lentils are grown only for human food. They are best adapted to the brown, dark brown and southern areas of the black soil zones. Disease problems may reduce seed quality in parts of area 3 if rainfall is abundant in late July and August. Lentils do best when seeded on stubble land. They have about the same season requirement as wheat, but should be sown early. Young lentil plants are frost hardy whereas immature pods of late sown plants are easily damaged by fall frosts.

**Laird** is a tall, large-seeded, late maturity variety and should be sown at 75-80 kg/ha.

**Eston** is a short, small-seeded, early maturing variety and should be sown at 35-40 kg/ha.

The main problems in lentil production are weed control and harvesting. Lentils do not compete well with weeds so should be sown on relatively clean land. Some herbicides are now available for use on lentils. Growers should consult the Crop Development Centre in Saskatoon or the Plant Industry Branch, Saskatchewan Agriculture in Regina regarding weed control.

Lentils should be sown on relatively stone-free land. Since the plants are short, swathing must be carried out at ground level to avoid harvest losses.

Lentil seed should be inoculated before planting. See **Seed Inoculation Section**.

Ascochyta may be a serious problem in years and areas with wet weather just before and after swathing. **Laird** has good resistance, but **Eston** is susceptible. Seed should be analysed for the incidence of this disease before it is planted. Do not seed Lentils into Lentil stubble.

**Sunflowers**

Sunflowers require 120 to 130 days to mature, depending on the cultivar and growing season. Both the oilseed and confectionery seed-types are grown in Saskatchewan as contract cash crops.

Oilseed sunflower are adapted to the Dark Brown and Black soil zones in southeastern Saskatchewan. Because of the need for early maturity, early open pollinated cultivars such as **Saturn** and **Corona** are well adapted. Later maturing hybrids which may require as much as 10 days more to mature are commonly offered by sunflower contractors. Several of these hybrids have exhibited vigorous growth, high yields and uniformity in maturity. These later maturing hybrids should be planted early, preferably before wheat and should be considered only in the extreme southeast of Saskatchewan and at Outlook. The following hybrids have been grown: **DO 844**, **Cargill 204**, **Cargill 205**, **Hybrid 894**.

**Commander** and **Sundak** are confectionery cultivars which perform equally well at Outlook under irrigation. **Sundak** is a rust resistant variety which matures 1-2 days later than **Commander**.

**Safflower, Corn, Tame Buckwheat**

For information refer to the 1981 Guide to Farm Practice in Saskatchewan.

**Triticale**

**Carman**, the highest yielding variety, yields 12-14% more than **Neepawa**. **Carman** matures about a week later than **Neepawa**. As some difficulty has been experienced in marketing triticale, producers are advised to grow licensed varieties only under contract.

## Canary Seed

This is an annual grass with the same maturity requirement as wheat. However, it is less drought tolerant and if grown in the Brown Soil Zone, it is often seeded on fallow. The seed is about the size of flax and should be sown into a firm moist seedbed, not deeper than 6-7 cm. Seed at 25-30 kg/ha.

Average yields in Saskatchewan during the past three years have been 900 kg/ha. Hot dry weather at heading time can reduce yields to low levels. Herbicides can be used to control broadleaf weeds and wild oats. Canary seed should be straight combined or swathed only when fully ripe.

## 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 and sclerotia. Most commercial elevators are not equipped to clean grain to seed standards.

### Seed Treatment

Smuts that attack wheat, barley, oats and rye can be controlled by chemical seed treatments. If smut was observed in a crop which is being used for seed it should be treated. However, if presence of smut is uncertain, it may be a wise precaution to treat seed of susceptible varieties periodically. Varieties rated **Poor** should be treated every second year and varieties rated **Fair** should be treated every third year.

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

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 rape 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. Oats are 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 this 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 given legume is planted in a field for the first time, 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. Once a field has been **properly** inoculated, the soil population of nitrogen-fixing bacteria should be adequate for that legume for at least five years.

## 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. When drying, keep the grain temperature sufficiently low such that the germination is not affected. 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.

## 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.

Canadian Seed Grower's Association, Sask. Br.  
Pedigreed Seed Directory, 1983.

### Canola Council of Canada

Canola Canada's Rapeseed Crop, Canadian Sunflower Seed, Canadian Mustard Seed. Publ. 56.  
Insect Pests and Diseases of Canola and Mustard.

### Saskatchewan Agriculture

Aeration of Grain in Storage. Publ. 736-1.  
Cereal & Oilseed Treatments, 1983.  
Chemical Weed Control in Cereal, Oilseed and Pulse Crops, 1983  
Forage Crops Recommendations for Saskatchewan, 1983  
Insect Control in Field Crops.  
Nitrogen Fertilization in Crop Production.  
Phosphorus Fertilization in Crop Production.  
Saskatchewan Fertilizer Practices, 1983.  
Save The Soil.  
Understanding salt-affected soils.  
Weed Identification Series.  
Weed Seedling Identification.

### University of Saskatchewan, Saskatoon

Canaryseed Production in Saskatchewan. Publ. 462  
Dry Pea Production in Saskatchewan. Publ. 225.  
Fababean Production in Saskatchewan. Publ. 416.  
Flax Production in Saskatchewan. Publ. 412.  
Guide to Farm Practice in Saskatchewan, 1981.  
Inoculation of Pulse Crops. Publ. 381.  
Lentil Production in Western Canada. Publ. 413.  
Malling Barley in Saskatchewan. Publ. 362.  
Winter Cereal Production in Saskatchewan: Oats, barley, triticale, wheat and rye. Publ. 264.  
Production of Stubble-in Winter Wheat: Influence of Seeding Date, Nitrogen and Phosphorus Fertilization for Successful Winter Wheat Production.  
Seeding Winter Wheat into Stubble.  
Steps for the Successful Production of Stubble-in Winter Wheat.  
Prepared by: The Grain Crops Committee of  
The Saskatchewan Advisory Council on Crops.