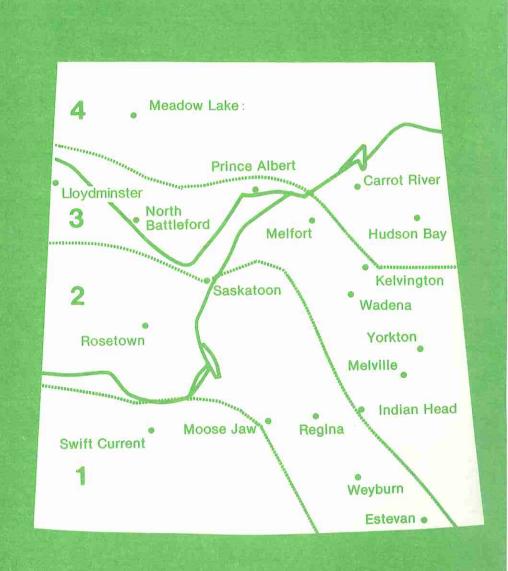


Saskatchewan Agriculture

Plant Industry Branch

# Varieties of Grain Crops for Saskatchewan 1982

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# **Grain Crop Production Areas**

(See map on front page)

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 may 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.

Oats
Main Characteristics of Varieties

	Yiel	d as % of	Harmon		Average					
Variety	Area 1	Area 2	Area 3	Area 4	Maturity in Days	Lodging	Stem Rust	Leaf Rust	Smut	Test Wt. Kg/hl.
Harmon Athabasca Cascade Cavell Fidler Foothill Hudson Kelsey Random Sioux	. 120	. 98. . 104. . 99. . 94. . 98. . 106. . 105.		. 120 . 98 . 106 . 104 . 107 . 104	92 86 92 95 91 89	Fair Poor Good Good Good	Poor Poor Poor Poor	Poor Poor Poor Good Poor Fair Poor Poor Poor Poor	Poor Poor Poor Poor Poor Poor Poor Poor	. 48.7 . 47.4 . 47.7 . 46.1 . 46.8 . 46.2 . 48.2 . 46.7

#### Comments:

Harmon is a plump seeded, moderately strong strawed oat variety.

Athabasca, Cavell, Kelsey and Sioux mature earlier than Harmon but Athabasca, Cavell and Sioux have somewhat poorer disease resistance and Cavell has weaker straw.

Hudson and Random are high yielding, short, strong-straw varieties with lower test weight than Harmon. Random is earlier maturing than Harmon. Hudson is resistant to race C10 of stem rust.

Cascade is a newer variety with a very high yield potential. Cascade is slightly later maturing than

#### Harmon

Fidler is a new variety with excellent disease resistance, however its performance in the absence of disease is no better than Harmon.

Fidler is shorter, slightly later than Harmon, and lighter in test weight. Fidler should only be considered for late seeding in the south-east where rust may be a problem.

Foothill is a later maturing, weak strawed, low test weight forage oat with no advantage over other higher yielding varieties.

							Resis	stance to			
Variety	Area 1	Area 2	Area 3		Average Maturity in Days	Lodging	Shat- tering	Stem Rust	Leaf Rust	Loose Smut	Root Rot
		Yield as %	6 of Neep	awa							
Bread Wheat Neepawa Benito. Canuck. Chester Columbus** Leader** Manitou Napayo. Sinton	.100. .97. .100. .103. .105. .106. .95.	100. 100. 97. 98. 105. 98. 98.	10098	100		Good. Fair Good. Fair Good. Good.	. Good .	Good. Fair. Fair. Good. Good. Good. Good.	Good. Poor. Poor. Good. Fair. Poor. Fair.	Good. Good. Fair. Fair. Good. Good. Good. Poor.	Fair Fair Fair Fair Fair Fair Fair Fair
Utility Wheat Glenlea*						Good.	. Good .	Good .	Good .	. Good.	. Fair
Feed Wheat Pitic 62*	118.	118.	121.	114	↓1 <mark>04</mark>	Good.	. Good	Poor .	. , Fair	. Poor .	. Fai
c	Y	Yleid as %	of Wascr	ana							
Durum Wheat Wascana Coulter Macoun Wakooma	93.	94.	99. 96.	102	01 <mark>01</mark> 499 2100 2102	Good.	. Good .	Good Good .	Good .	. Good Fair Good Fair	. Fair

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

#### Comments:

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.

Columbus, licensed in 1980, also has good leaf rust resistance and has better sprouting and weathering resistance than other varieties, seed of this variety will not be available for seeding in 1982.

Katepwa, licensed in 1981, is similar to Neepawa but has better stem rust resistance. Seed will not be available in 1982.

Canuck, Chester and Leader are sawfly resistant varieties and should only be grown where sawfly damage is likely to occur. The Canadian Grain Commission prefers Canuck over Chester because Canuck has a slightly lower (desirable) level of alpha-amylase activity. Leader, licensed in 1981, is similar to Chester but has much better sprouting and weathering resistance; however, seed of this variety will not be available for commercial planting until spring 1983.

The high-yielding variety Pitic 62 is eligible only for "Canada Feed".

Coulter and Wakooma have better quality than the other durum varieties. Coulter and Macoun are early maturing, short-strawed varieties of durum wheat which should be grown where these characteristics are important.

# Soft White Spring Wheat

Fielder, licensed in 1976, is superior to other varities 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

Winter survival is the chief factor limiting winter wheat production in Saskatchewan. However, with proper management successful production is possible.

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

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

For information on winter wheat refer to the 1981 Guide to Farm Practice, and to the Winter Cereal Production in Sask. Publ. 264. Contact the Crop Sci. Dept., U. of S., or a Sask. Agric. rep.

<sup>\* \*</sup> Based on less than three years data.

							Aver-			Resist	ance to		
	Six or	Rough	Yield as % of Bonanza			age Mat- urity				False Loose and			
Type and Two Variety Rowed	Smooth Awns	Area 1	Area 2	Area 3	Area 4	in Days	Lodging	Stem Rust	Loose Smut	Covered Smut	Shat- tering	Root	
Eligible for	C.W.	Grades*											
Bonanza			100.	100	100.	100	. 89	Good.	Good.	Fair	Poor	Poor	Fair
Argyle * * .	. Six .	S.	101.	100	100.	103	. 91	Good.	Good.	Poor	Poor	Fair	Fair
Conquest.								Good.	Good.	. Fair	Fair	Poor	Fair
Beacon								Good.	Good.	. Fair	Poor	Poor	Fair
Betzes								Poor .	Poor .	Poor	Poor	Good	Fair
Elrose								Fair	Poor .	. Poor	Fair	Good	Fair
Harrington*								Good.	Poor .	Poor	Poor	Good	Fair
Klages	. Two	R.	105	104	103	101	. 94	Fair	Poor .	. Poor	Good.	Good	Fair
Norbert* *								Good.	Good.	Poor	Fair	Good	Poo
Feed													
Fairfield	Two	R.	113	108	. 104	100	. 91			. Poor			
Fergus	Two	R .	107	102	. 98	92	. 93	Fair	Poor .	. Fair	Fair	Good	Poo
Hector	Two	R.	114	107	. 101	91	. 92	Fair	Poor .	. Fair	Fair	Good	Fair
Summit	. Two	R.	101	106	. 106	102	. 93	Good.	Poor .	. Poor	Fair	Good.	Fair
Bedford	Six	S-R .	101	. 101	. 102	103	. 92			. Fair			
Johnston*	Six	S.	115	124	. 114	115	. 94	Poor .	Good.	Fair	Poor .	Poor	Fair
Klondike	Six	S.	106	109	. 108	105	. 91	Good.	Good.	. Fair	Fair	Fair	Fair
Melvin	Six	S.	111	112	. 110	106	. 92	Good.	Good.	. Poor	Fair	Fair	Poo

<sup>\*</sup>See comments

#### Comments:

The grading system for barley is under review. Currently varieties such as Fairfield and Hector are eligible for C.W. grades but are not being purchased for malting and the new malting varieties Harrington and Norbert are not eligible for C.W. grades.

Argyle is a new six-row 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 1982.

**Beacon** is a low yielding, six-row, white aleurone, malting barley. It was licensed to meet the needs of a limited American market.

Klages germinates very readily.

Elrose is a two-rowed malting variety. Preliminary results from plant scale tests indicate that this variety is interchangeable with Klages for malting purposes and the industry is proceeding cautiously with its adoption. Elrose is 4-5 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. Like Harrington this variety is not eligible for current C.W. grades. 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 availabled in limited quantities from SeCan members.

Melvin, 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.

<sup>\*\*</sup>Less than three years data for yield figures in area 4.

### Canola/Rapeseed

#### Main Characteristics of Varieties

	Yield as % Of Candle  Areas Area 2 & 3 4		Average Ma				
Variety			Areas 2 & 3	Area 4	% Oil	Seed Color	Resistance to White Rust
B. campestris (Turnip rape	)						
Candle	100	. 100	87	. 88	42.1	Yellow-brow	n Foir
Tobin	107	. 106	88	. 88		Yellow-brow	
R-500*	100	. 101	96	. 95		Yellow	
B. napus (Argentine type)							
Altex	129	. 128	100	. 100	43.2	Black	Good
Andor	139	. 137	100		43.7	Black	Good
Regent	129	. 132				Black	
Tower,			102			Black	

<sup>\*</sup> High erucic acid variety.

#### Comments:

Canola is the term used to designate varieties such as Candle, Tobin, Tower, Regent, Altex, and Andor which produce both low erucic acid oil and low glucosinolate meal. These quality characteristics are now in demand in both the domestic and export market. Production of the high glucosinolate varieties Torch and Midas is not recommended.

Tobin, a new B. campestris canola variety, is higher yielding and has higher oil content than Candle. Tobin also has good resistance for white rust-staghead disease. Limited stocks of Certified seed will be available for production under contract in 1982.

Andor, a new B. napus canola variety, is higher yielding than Regent and Altex and similar to Altex in days to mature. Certified seed stocks will not be available for general distribution until 1983.

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

Under irrigation **B. napus** varieties will produce higher returns than **B. campestris** varieties because of their higher yield potential. Maturity may, however, be delayed by 4 or 5 days with irrigation.

Flax Main Characteristics of Varieties

Variety	Yield as % of Dufferin				Avanona	Resista	nce to		
	Area 1	Area 2	Area 3	Area 4	Average Maturity in Days	Rust	Wilt	Seed Size	Flower
Dufferin	77 88	89 95	86 94	87. 88.	95	Good	Good	Medium	Blue
McGregor* Noralta	88	100	106	100. 92.	103	Good	Good	Small	Blue

<sup>\*</sup>Limited 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: 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. Seed of this variety will not likely be available until 1983.

Frozen flax should be analysed by the Saskatchewan Feed Testing Laboratory to determine that is is free from prussic acid before using it for livestock feed.

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 or 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 a lower market value.

#### Fababean

Main Characteristics of Varieties

Variety	Yield as % of	Average Maturity	Seed	Plant	Seeding Rate
	Ackerperie	In Days	Size	Height	kg/ha.
Ackerperle	100	112	Small	Tall	150
Diana	102	106	Medium	M. Tall	160
Herz Freya	105	106	Medium	Tall	165

#### Comments:

Fababeans are a promising source of protein for livestock feeding and are exported for human food. They should be sown early and are best adapted to irrigated areas in the Dark Brown soil zone. Higher seeding rates are used under irrigated conditions. They also are fairly well adapted to that portion of the Black soil zone with the longest growing season. Only the earliest varieties should

be considered for the northern areas. Seed 7 cm deep in rows 15 to 17 cm apart. Fababean seeds are very large and a seeder with a deep-fluted cup must be used to prevent seed cracking. In order to reduce shattering losses, swathing can be done as the lowermost pod turns dark on 25 percent of the plants. Fababean seed should be inoculated before planting. See Seed Inoculation Section.

Tame Mustards
Main Characteristics of Varieties

Variety	Туре	Yield as % of Lethbridge 22A
Lethbridge 22A	Oriental	100
Stoke*	Oriental	105
Domo	Oriental	116
Blaze	Brown	102
Ekla	Brown	95
Commercial	Brown	92
Gisilba	Yellow	80
Kirby	Yellow	71
Ochre	Yellow	79

<sup>\*</sup>relatively late

#### Comments:

Ekla brown mustard is particularly high in allyl

isothiocyanate, the hot substance in brown and oriental mustards.

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 Yellow, Brown and Oriental. All are intermediate in maturity between Argentine and turnip rape. Yellow 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 yellow mustard. They are more susceptible to shattering than yellow 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 a 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

	Yiel	das % of	Puma		F	Resistance	e to		Kernel	Straw Length
Type and Variety	Area 1	Area 2	Area 3	Area 4	Winter Killing	Shat- tering	Lodging	Color	Size	
Winter Rye										
Puma	100	100	100	.100	Good.	Good.	Fair	Green	. Medium	Tall
Cougar	90	96	96	. 93					. Medium .	
Frontier	87	90	. 94	98					. Medium	
Kodiak	79	93	91	95					. Large	
Musketeer									Large	

#### 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 most 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 a new high-yielding variety of winter rye. It has good winterhardiness, large seeds, high test weight, and early maturity. Pedigreed seed will be available by the fall of 1982.

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. Lentils should be sown at a rate of 56 to 66 kg/ha.

A variety Laird is taller and has a larger seed size. Laird should be sown at 75-80 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 level, stonefree 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. Seed should be analysed for the incidence of this disease before using it for seed.

#### 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 sunflowers 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: CMH 101, 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. 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. The seed is about the size of flax and should not be sown deeply. Hot dry weather at heading time can reduce yields to very low levels.

Average yields in Saskatchewan during the past three years have been 800 kg/ha. Herbicides can be used for the control of broadleaved weeds.

Seed and detailed information are available from contract buyers of the crop.

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 feed. 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. When growing any legume for the first time, inoculate the seed immediately before planting using inoculant specific to that crop; for example alfalfa inoculant does not work on peas.

# **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.

## 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 susceptable varieties every 2-3

The virulent form 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 seedling 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

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