



Varieties of Grain Crops for Saskatchewan 1986

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.

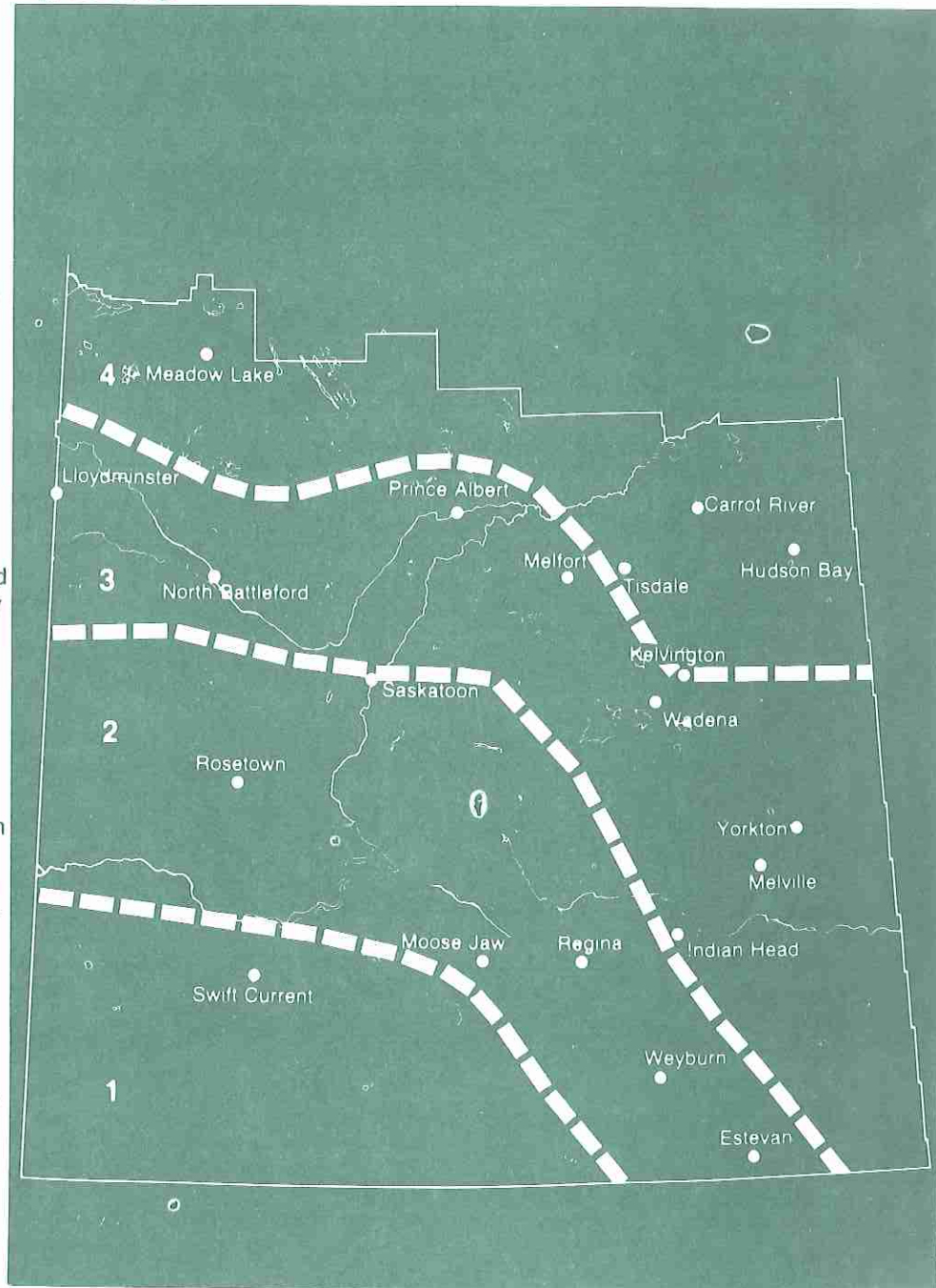
Area 3: Drought is not as likely to be a problem in this area, particularly in the east. Cereal rust may occur in the eastern portion. The frost-free period can be fairly short in the northwestern and northeastern sections.

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 1-2 percent lower than Neepawa to 7-8 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 to ***						
						Shat-Lodging	Stem-terling	Leaf-Rust	Loose-Smut	Bunt	Root-Rot	
Yield as % of Neepawa (See note on front page)												
Bread Wheat												
Neepawa	100	100	100	100	98	G	VG	G	P	G	P	F
Benito	97	98	97	99	97	G	G	G	G	G	F	F
Canuck	99	97	—	—	101	F	F	F	P	F	F	P
Columbus*	100	103	102	98	102	G	F	G	G	F	G	F
Katepwa	103	101	102	103	98	G	G	VG	F	G	G	F
Kenyon**	98	99	100	97	98	G	G	VG	VG	G	F	F
Leader	99	95	—	—	100	F	F	G	F	G	G	VP
Lancer**	97	99	—	—	100	F	G	G	G	G	G	F
Sinton	92	96	97	106	99	G	P	G	G	P	G	F
Canada Prairie Spring Wheat												
HY320*	121	122	124	121	102	G	G	G	G	P	VP	F
Yield as % of Wascana (See note on front page)												
Durum Wheat												
Wascana	100	100	100	100	101	F	VG	VG	VG	F	VG	F
Arcola	95	97	102	102	99	G	VG	VG	VG	F	VG	F
Coulter	94	95	100	102	99	G	VG	VG	VG	F	VG	F
Kyle**	106	106	108	107	103	F	VG	VG	VG	F	G	F
Medora	100	98	103	105	100	G	VG	VG	VG	F	VG	F
Sceptre**	104	101	107	113	100	G	VG	VG	VG	F	G	G
Wakooma	99	100	101	99	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:

Unless changes are made to 1985 regulations, unlicensed **American Semidwarfs** are eligible only for **Canada Feed, Sample Account Variety**. Misrepresentation of grain from such varieties is illegal. All the unlicensed **American Semidwarfs** yield less than **HY320**.

Canada Prairie Spring Wheat

Canada Prairie Spring wheat is a new class of wheat. **HY320**, a high yielding semidwarf wheat, is the only variety eligible for grades of this class. **HY320** is late maturing and must be sown early, particularly in Area 4.

Canada Western Red Spring Wheat

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

Columbus has good leaf rust resistance and has better sprouting and weathering resistance than the other varieties except **Leader**. **Columbus** is easier to thresh than **Neepawa**. **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, licensed in 1985, is similar to **Neepawa** and has better resistance to leaf and stem rust than **Neepawa**. Seed will not be available in 1986.

Leader, **Lancer** and **Canuck** are resistant to wheat stem sawfly. **Leader** is preferred over **Canuck** because **Leader** has better sprouting resistance. **Lancer**, licensed in 1985, has better resistance to wheat stem sawfly, seed shattering and root rot than **Leader**. Seed will not be available in 1986.

Canada Western Amber Durum

Arcola, **Coulter** and **Medora** are early maturing, short-strawed varieties of durum wheat which should be

grown where these characteristics are important. **Arcola** and **Coulter** are adapted to eastern Saskatchewan.

Kyle, licensed in 1984, is higher yielding than the other durum varieties but is a little taller and slightly later maturing, making it best suited to the Brown and Dark Brown soil zones. Seed will not be available in 1986.

Soft White Spring Wheat

Fielder and **Owens** are semidwarf varieties and are superior to other varieties in yielding ability, test weight, and resistance to powdery mildew. 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.

Norstar is the most winter-hardy 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.

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.

Seeding into standing stubble can result in successful winter wheat stands where the previous crop has been harvested at an early date and where moisture conditions are adequate to permit good plant establishment before freeze-up. The standing stubble

assists in trapping snow, and a very firm seedbed is provided. No seedbed preparation is necessary; however, good drill penetration is required. The hoe or press drill or zero-tillage drills will provide the best stands under these conditions.

Winter wheat should be seeded early enough to allow for the establishment of a healthy, vigorous plant 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.

Barley Main Characteristics of Varieties

Type and Variety	2 or 6 row	Rough or Smooth Awns	Yield as % of Bonanza (See note on front page)				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																		
Bonanza	6	S	100	100	100	100	89	G	VP	G	P	P	G					
Argyle	6	S	97	100	101	106	91	VG	VP	G	P	P	G					
Conquest	6	S	92	92	91	93	88	G	VP	G	P	F	F					
Betzes	2	R	110	99	98	92	90	P	VG	VP	P	P	F					
Elrose	2	R	103	101	99	94	90	F	VG	VP	P	P	F					
Harrington	2	R	106	109	107	107	92	G	VG	P	P	P	F					
Klages	2	R	104	101	102	100	94	F	VG	F	P	G	F					
Feed																		
Abee	2	R	116	118	112	109	94	P	VG	P	P	F	G					
Norbert	2	R	98	102	99	103	92	VG	VG	G	P	P	P					
Scout	2	R	101	93	91	83	91	P	VG	VP	P	P	F					
Diamond	6	S	110	114	111	108	89	F	F	G	P	G	VP					
Empress	6	R	102	95	98	104	89	G	F	F	VP	P	P					
Heartland*	6	S	106	111	106	109	92	VG	F	VG	P	P	G					
Johnston	6	S	113	117	115	115	94	VP	P	G	P	P	P					
Klondike	6	S	107	108	107	105	91	G	F	G	P	F	F					
Leduc	6	R	116	121	112	110	91	P	P	G	F	G	P					
Melvin	6	S	112	111	108	105	92	G	F	G	VP	P	VP					
Tupper*	6	R	80	87	91	86	90	G	P	G	F	P	G					

* Less than three years of data for yield figures.

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

Comments:

Moist weather in recent years has caused a heavy build up of disease inoculum, especially net blotch. 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. **Norbert** is the only two-rowed variety with sufficient leaf disease resistance to be grown in the northern and eastern portions of the province.

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.

Six-Rowed Varieties

Argyle, **Bonanza** and **Conquest** are all acceptable for malting. **Conquest** is slightly earlier than **Bonanza** but it is 10 percent lower yielding. **Argyle** 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. All three varieties have good resistance to stem rust but are susceptible to new races of loose smut.

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

Leduc is similar in most respects to **Johnston** except that it is several days earlier maturing.

Diamond combines early maturity with high yield. It has a large kernel but low bushel weight and a high hull percentage. No information is available on its feeding value.

Heartland is a new six-rowed feed variety. It has short, strong straw and high yield potential. It is similar in maturity to **Leduc**.

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

Tupper is a new six-rowed hulless variety suitable for

production on the eastern prairies. It is similar in performance to **Bonanza** but is slightly later. See comments under **Scout**.

Samson is a new semi-dwarf feed variety. It is short and very strong. It should be grown only under high moisture, high input conditions. Seed will not be widely available until 1987.

Two-Rowed Varieties

Klages is the current standard two-rowed malting variety, however it is late and susceptible to leaf diseases. **Klages** germinates very readily so care should be taken to minimize exposure of swaths to rain.

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

Harrington has been rated acceptable by Canadian maltsters and brewers. **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**.

Canola

Main Characteristics of Varieties

Species and Variety	Yield as % of Westar (See note on front page)				Average maturity in days	Resistance* to lodging
	Area 2	Area 3	Area 4	% Oil		
B. napus (Argentine type)						
Westar	100	100	100	43.0		
Andor	90	91	88	42.6	94	G
Regent	85	84	85	42.6	95	P
OAC Triton	64	66	65	40.0	97	G
Tribute**	68	65	63	39.6	99	F
B. campestris (Polish type)						
Tobin	86	85	77	41.9	96	VP
Candle	76	77	71	41.2	85	G
					85	F

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

** No seed available in 1986.

Comments:

Canola is the term used to designate rapeseed varieties with low erucic acid (< 5%) and low glucosinolate (< 30 μ mol/g meal) contents. This quality is required by the domestic industry and the export markets. All varieties in the table are canola varieties.

Varieties of the **B. napus** species are high yielding, but require a long frost-free season to produce economic yields. They also have high oil contents. All **B. napus** varieties show good resistance to white rust (staghead). They are black seeded.

Varieties of the **B. campestris** species yield less than **B. napus** varieties and contain less oil, but they mature 10-14 days earlier. Varieties of the species are best suited to areas with a short growing season in northern Saskatchewan and they escape drought through early maturity. Present varieties are yellow-brown seeded.

Westar gives high seed yield and high oil content. It is the earliest maturing **B. napus** variety and has good lodging resistance. **Westar** is the **B. napus** variety for all areas which allow the successful cultivation of this species.

Andor and **Regent** are lower yielding than **Westar** and their oil contents are also lower. **Regent** has good lodging resistance while **Andor** is susceptible to lodging.

Norbert has not been accepted as a malting variety and thus should be grown for feed purposes. It 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. Like **Klages** it is susceptible to sprouting.

Abee is a feed variety with high yield potential and plump kernels. It is similar to **Klages** in maturity and straw strength but it is shorter than **Klages**.

Scout is a hulless variety 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.

OAC-Triton and **Tribute** are triazine tolerant varieties. Their seed yield, under weed free conditions, is significantly lower than the other **B. napus** varieties. They also have very low oil contents. **OAC-Triton** is late maturing and has a tendency for lodging. **Tribute** is relatively early maturing but is very susceptible to lodging. Both varieties have poor seedling vigor and require careful seedbed preparations. They should be planted only under severe infestations with stinkweed and wild mustard weeds which cannot be controlled with ordinary canola herbicides. For registered herbicides, consult a copy of "Chemical Weed Control in Cereal, Oilseed, Pulse and Forage Crops 1986." **Tobin** gives higher seed yield and oil content than **Candle** and has good resistance to white rust, whereas **Candle** is susceptible. **Tobin** is also more resistant to lodging than **Candle**.

For special industrial oil markets a high erucic acid oil is needed. Varieties producing such oils are available and information should be obtained from the industry. They are grown exclusively under contract.

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.

Oat Main Characteristics of Varieties

Variety	Yield as % of Harmon (See note on front page)				Average Maturity in Days	Resistance to *				Test.Wt. Kg/ht.	% Hull
	Area 1	Area 2	Area 3	Area 4		Lodging	Stem Rust	Leaf Rust	Smut		
Harmon	100	100	100	100	91	G	VP	VP	P	48	24.1
Calibre	108	110	112	117	93	G	VP	VP	P	50	22.9
Cascade	115	108	110	116	92	G	VP	VP	P	47	26.0
Dumont	106	109	106	109	94	F	VG	VG	VG	49	23.5
Fidler	104	99	99	107	91	VG	G	G	VG	46	25.0
Jasper**	94	101	104	98	89	F	P	VP	P	50	22.5
Riel**	102	106	104	103	93	G	VG	VG	VG	50	21.0

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

** Based on less than three years of data.

Comments:

Harmon is plump seeded, however, it does not have the yield potential of several newer varieties.

Calibre is a new variety with high yield potential and kernel quality superior to **Harmon**, having very high weight and low percent hull. **Calibre** is later maturing than **Harmon** but not as late as **Dumont**.

Cascade has high yield potential but poorer kernel quality, being lighter in test weight with higher hull content. Its maturity is intermediate to that of **Harmon** and **Calibre**.

Dumont has excellent disease resistance and kernel quality at least equal to **Harmon**, however it has weaker straw, lower yield potential than **Calibre** and is three to four days later maturing than **Harmon**. This variety

should be considered for use in the oat rust-area of southeastern Saskatchewan.

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**.

Jasper is a new, early maturing variety with kernel quality equal to **Calibre**, however its yield potential is considerably lower. It appears to be best adapted to northern Alberta.

Riel is a new variety with excellent kernel quality and disease resistance. However, its yield potential is lower than other varieties available in Saskatchewan. It appears to be adapted to production only in Manitoba.

Flax Main Characteristics of Varieties

Varieties	Yield as % of Dufferin (See note on front page)				Average Maturity in Days	Resistance to *		
	Area 1	Area 2	Area 3	Area 4		Rust	Wilt	Lodging
Dufferin	100	100	100	100	102	VG	G	F
Linott	95	95	95	94	100	VG	G	F
McGregor	103	101	103	100	103	VG	G	VG
Noralta	97	99	100	97	99	VP	G	F
NorLin	107	101	102	108	101	VG	F	G
NorMan	118	101	102	104	101	VG	G	G

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

Comments:

McGregor is a high yielding but later maturing variety. It has better straw strength than other varieties.

NorLin is high yielding and slightly earlier maturing than both **Dufferin** and **McGregor**.

NorMan is a new, medium-late variety that is similar

in yield to **McGregor** and **NorLin** in the Dark Brown and Black soil zones.

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

Corn, Fababean, Safflower, Tame Buckwheat and Triticale

For information refer to the 1984 Guide to Farm Practice in Saskatchewan.

Oat Main Characteristics of Varieties

Variety	Yield as % of Harmon (See note on front page)				Average Maturity in Days	Resistance to *					
	Area 1	Area 2	Area 3	Area 4		Lodging	Stem Rust	Leaf Rust	Smut	Test.Wt. Kg/ht.	% Hull
Harmon	100	100	100	100	91	G	VP	VP	P	48	24.1
Calibre	108	110	112	117	93	G	VP	VP	P	50	22.9
Cascade	115	108	110	116	92	G	VP	VP	P	47	26.0
Dumont	106	109	106	109	94	F	VG	VG	VG	49	23.5
Fidler	104	99	99	107	91	VG	G	G	VG	46	25.0
Jasper**	94	101	104	98	89	F	P	VP	P	50	22.5
Riel**	102	106	104	103	93	G	VG	VG	VG	50	21.0

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

** Based on less than three years of data.

Comments:

Harmon is plump seeded, however, it does not have the yield potential of several newer varieties.

Calibre is a new variety with high yield potential and kernel quality superior to **Harmon**, having very high weight and low percent hull. **Calibre** is later maturing than **Harmon** but not as late as **Dumont**.

Cascade has high yield potential but poorer kernel quality, being lighter in test weight with higher hull content. Its maturity is intermediate to that of **Harmon** and **Calibre**.

Dumont has excellent disease resistance and kernel quality at least equal to **Harmon**, however it has weaker straw, lower yield potential than **Calibre** and is three to four days later maturing than **Harmon**. This variety

should be considered for use in the oat rust-area of southeastern Saskatchewan.

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**.

Jasper is a new, early maturing variety with kernel quality equal to **Calibre**, however its yield potential is considerably lower. It appears to be best adapted to northern Alberta.

Riel is a new variety with excellent kernel quality and disease resistance. However, its yield potential is lower than other varieties available in Saskatchewan. It appears to be adapted to production only in Manitoba.

Flax Main Characteristics of Varieties

Varieties	Yield as % of Dufferin (See note on front page)				Average Maturity in Days	Resistance to *		
	Area 1	Area 2	Area 3	Area 4		Rust	Wilt	Lodging
Dufferin	100	100	100	100	102	VG	G	F
Linott	95	95	95	94	100	VG	G	F
McGregor	103	101	103	100	103	VG	G	VG
Noralta	97	99	100	97	99	VP	G	F
NorLin	107	101	102	108	101	VG	F	G
NorMan	118	101	102	104	101	VG	G	G

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

Comments:

McGregor is a high yielding but later maturing variety. It has better straw strength than other varieties.

NorLin is high yielding and slightly earlier maturing than both **Dufferin** and **McGregor**.

NorMan is a new, medium-late variety that is similar

in yield to **McGregor** and **NorLin** in the Dark Brown and Black soil zones.

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

Corn, Fababean, Safflower, Tame Buckwheat and Triticale

For information refer to the 1984 Guide to Farm Practice in Saskatchewan.

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.

Field Pea (Yellow)

Main Characteristics of Varieties

Variety	Yield as % of Century (See note on front page)		Average Maturity in days	Resistance to** Powdery Mildew	Seed size	Seeding rate kg/ha (lb/A)
	Area 2 and southern 3	Area 4 and northern 3				
Century	100	100	98	P	Large	190 (170)
Tara	130	122	100	G	Medium	175 (156)
Trapper	104	108	97	P	Small	125 (110)
Victoria*	103	125	94	P	Medium	175 (156)

* Less than three years of data for yield figures

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

Comments:

The 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 considerably reduced by harvesting peas tough and drying in an aeration bin.

Tara has an angular seed shape which often results in lower market demand and price.

Tipu is a newly licensed 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. Seed will not be available in 1986.

Titan is a newly licensed pea that is very large-seeded and high yielding. Seed will not be available in 1986.

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

The field pea, like other legumes, offer 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 considerably less nitrogen fertilizer to attain high yields. See seed inoculation section.

Tame Mustard

Main Characteristics of Varieties

Species and Variety	Type	Seed Yield as % of Cutlass
B. juncea		
Cutlass	Oriental	100
Domo	Oriental	99
Lethbridge 22A	Oriental	93
Commercial	Brown	96
S. alba		
Gisilba	White	68
Kirby	White	70
Ochre	White	71
Tilney	White	74

Comments:

The three types of mustard grown belong to two different plant species. Oriental mustard (yellow seeded) and Brown mustard (brown seeded) are **Brassica juncea**. White mustard (yellow seeded) is **Sinapis alba**.

Mustard can be grown in the drier regions of the province because of the better seed quality obtained under these conditions. **B. juncea** varieties (Oriental and

Brown mustard) usually are swathed, but straight combining is also possible. **S. alba** varieties (White mustard), because of their better shattering resistance and possible losses due to wind damage of the fluffy swath, should preferably be straight combined. Any mixtures of canola in mustard due to volunteer plants in the field or to handling on the farm, cause substantial losses through grade reductions.

The **B. juncea** varieties of mustard (Oriental and Brown mustard) yield 10-20% more than **B. napus** canola and are earlier maturing. White mustard varieties yield 30% less than the Brown and Oriental mustard. Both mustard species are resistant to blackleg.

Mustard is grown only under contract. Yield between the types is compensated for by contract price differences.

Cutlass oriental mustard was licensed in 1985. It is similar in yield to **Domo**, and superior in quality characteristics.

Rye Main Characteristics of Varieties

Type and Variety	Yield as % of Puma (See note on front page)				Resistance to *				
	Area 1	Area 2	Area 3	Area 4	Winter Killing	Shattering	Lodging	Stem Smut	Straw Length
Winter Rye									
Puma	100	100	100	100	G	G	F	P	Tall
Cougar	97	95	92	91	F	G	G	VP	Medium
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:

Musketeer and **Puma** are the most commonly grown varieties. **Cougar** is less winter-hardy than **Musketeer** or **Puma**; however, it may be preferred if less straw is required.

Prima is a new variety of winter rye. It is similar to **Musketeer** in many characteristics. Quantities of seed

for commercial production will not be available in 1986.

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 variety of spring rye licensed for production in Saskatchewan.

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

oilseed and confectionery seed types are grown in Saskatchewan as contract cash crops. 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 "none-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 Main Characteristics of Varieties

Type, Brand and Hybrid	Yield as % of USDA 894	Average Maturity in days	Oil %
Oilseed			
USDA 894	100	124	40.7
Cargill 205	111	123	44.4
Dahlgren 164	113	123	43.1
Sun M 20	104	117	45.2
Interstate 7101	107	122	42.4
Interstate 7111	113	121	45.3
Interstate 7000	113	120	45.8
	Yield as % of Sundak	Average Maturity in days	Seed Size % over 20/64 Screen

Confection

Sundak	100	131	24.8
Dahlgren 131	108	130	26.0

Comments:

Sunflower requires 110-130 days to mature, depending on the cultivar and the growing season. Both the

Oilseed sunflowers 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 such as **Interstate 7000, 7101 and 7111** have almost totally replaced the open pollinated cultivars **Saturn** and **Corona**. Later maturing hybrids such as **Cargill 205, Dahlgren 164** and **USDA 894** 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. The very early hybrid, **Sun M 20**, is a possibility for interested growers who are located outside the traditional sunflower growing area.

Confectionery sunflower is best adapted to production under irrigation. Hybrid cultivars such as **Dahlgren 131**, and the open pollinated cultivars **Commander** and **Sundak** are offered by confectionery sunflower contractors.

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.

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, oats 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, if the presence of smut is uncertain, 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 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 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. 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 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 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.

Asochyta 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. 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.

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.

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.
Mustard Production Manual.
Sunflower Seed Crops. Publ. 1687.

Canola Council of Canada

Canola Production Manual.
Insect Pests and Diseases of Canola and Mustard.
Fertilizer Practices for Canola.

Flax Council

Flax Production Manual

Saskatchewan Agriculture

Aeration of Grain in Storage. Publ. 736-1.
Cereal & Oilseed Seed Treatments, 1986.
Chemical Weed Control in Cereal, Oilseed, Pulse and Forage Crops, 1986.
Corn Production and Utilization, 1982.
Forage Crop Recommendations for Saskatchewan, 1986.
Insect Control in Field Crops.
Irrigation Handi-Facts; Irrigation Branch
Saskatchewan Fertilizer Practices, 1986.
Orange Wheat Blossom Midge
Soft White Spring Wheat, Irrigation Branch, 1983.
Weed Identification Series.
Weed Seeding Identification.

Saskatchewan Seed Grower's Association.

Pedigreed Seed Directory, 1986.

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, 1984.
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.