



Varieties of Grain Crops for Saskatchewan 1984

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Grain Crop Production Areas

The cropland of Saskatchewan has been divided into four areas based roughly on climate, vegetation and soil type. The relative yields of crop varieties tend to vary from area to area. In choosing a variety a farmer will want to consider the yields in his area and special requirements such as early maturity, disease resistance or sawfly resistance.

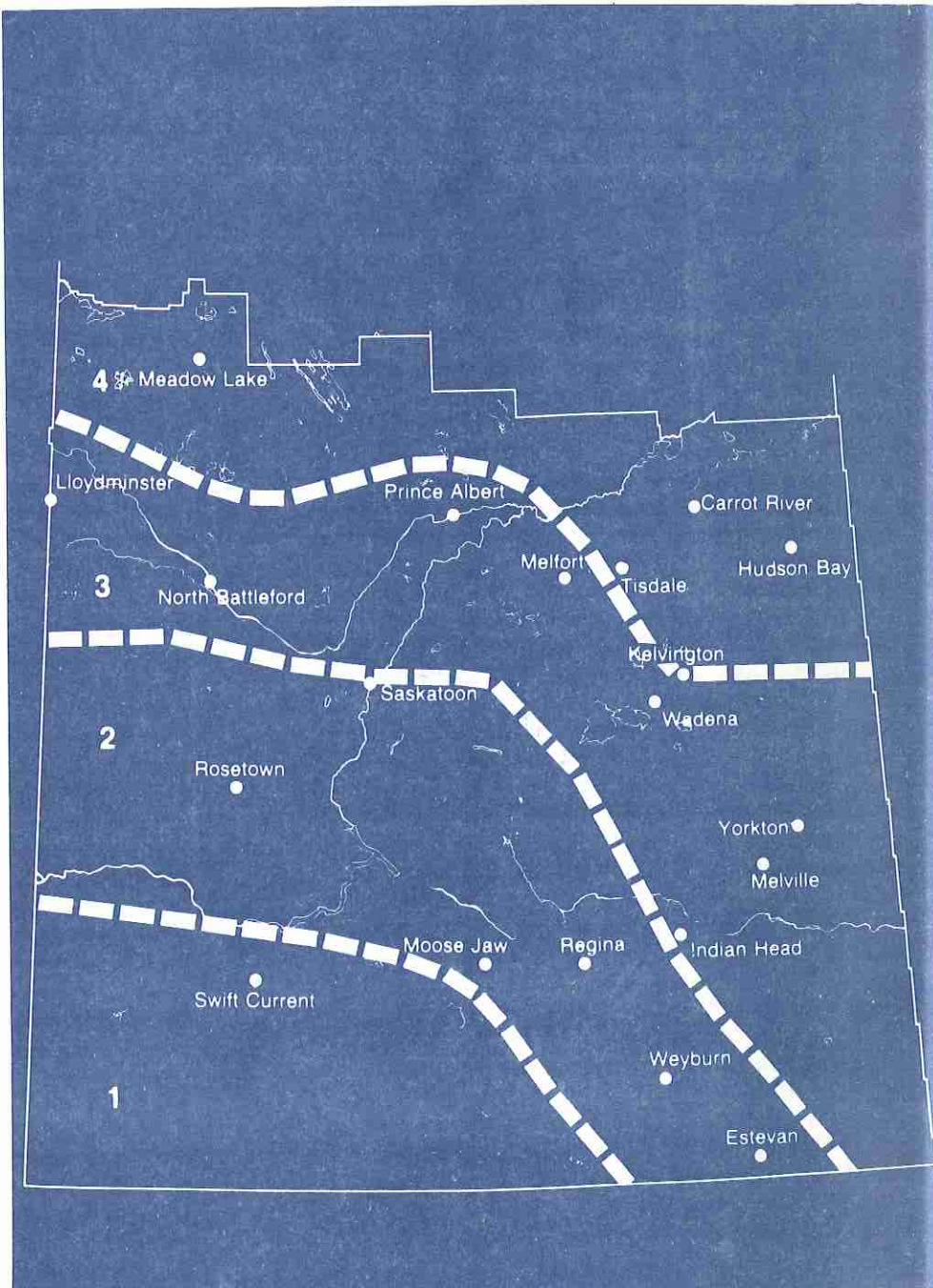
Area 1: Drought is a definite hazard and high winds are common. Sawfly outbreaks often occur in this area. Cereal rust may be a problem in the southeastern section.

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

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

Area 4: Rainfall is usually adequate for crop production. However, early fall frosts and wet harvest weather are frequent problems.

The dividing lines do not represent distinct changes over a short distance. The change from one area to another is gradual.



Relative 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 will vary from the average figures reported because of the natural variability. For example, Klages barley is expected to outyield Bonanza by 5 percent in area 1. A farmer in this area may find that Klages will yield anywhere in the range of little better than Bonanza to as much as 9 or 10 percent better. Occasionally, Klages 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 ***					
						Lodging	Shattering	Stem Rust	Leaf Rust	Loose Smut	Root Rot
Yield as % of Neepawa											
Bread Wheat											
Neepawa	100	100	100	100	98	G	VG	G	P	G	F
Benito	97	99	97	100	97	G	G	G	G	G	F
Canuck	99	97	—	—	101	F	G	F	P	F	F
Columbus *	103	104	103	100	102	G	G	F	G	F	F
Katepwa	103	100	101	103	98	G	G	VG	F	G	F
Leader	100	95	—	—	100	F	G	G	F	F	P
Napayo	95	97	97	101	99	G	G	G	P	G	F
Sinton	92	96	97	106	99	G	F	G	G	P	F
Utility Wheat											
Glenlea *	98	105	109	118	101	G	G	G	G	G	F
Yield as % of Wascana											
Durum Wheat											
Wascana	100	100	100	100	101	F	VG	VG	VG	F	P
Arcola **	95	100	102	99	99	G	VG	VG	VG	F	F
Coulter	93	94	99	102	99	G	VG	VG	VG	F	F
Macoun	95	92	96	99	100	G	VG	VG	VG	F	P
Medora	100	97	102	101	100	G	VG	VG	VG	F	F
Wakooma	99	100	101	99	102	F	VG	VG	VG	F	F

* 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:

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 should 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.

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

Leader and **Canuck** are resistant to sawflies. **Leader** is preferred over **Canuck** because **Leader** has better sprouting resistance.

Arcola, licenced in 1983, is an early maturing short, strong-strawed durum wheat which is well adapted to the Black soil zone. Seed will not be available in 1984.

Arcola, **Coulter**, **Medora** and **Wakooma** have very good cooking quality. **Arcola**, **Coulter**, **Macoun** and **Medora** are early maturing, short-strawed varieties of durum wheat which should be grown where these characteristics are important.

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

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.

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 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				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	P	G				
Argyle *	6	S	101	101	101	106	91	VG	VP	G	VP	P	P	P				
Conquest	6	S	92	92	91	93	88	G	VP	G	P	F	F	G				
Betzes	2	R	110	99	98	92	90	P	VG	VP	P	P	P	F				
Elrose	2	R	103	100	98	95	90	F	VG	VP	P	P	P	F				
Harrington	2	R	107	105	105	106	92	G	VG	P	P	P	P	F				
Klages	2	R	105	102	102	100	94	F	VG	VP	P	P	G	F				
Norbert	2	R	101	102	98	103	92	VG	VG	G	P	P	P	VP				
Feed																		
Abee*	2	R	120	116	110	103	94	P	VG	P	P	F	F	F				
Scout*	2	R	106	88	88	80	91	P	VG	VP	VP	P	P	F				
Diamond*	6	S	106	109	109	104	89	F	F	F	VP	G	P	P				
Empress*	6	R	103	95	99	100	89	G	F	F	VP	P	P	F				
Johnston	6	S	115	121	113	111	94	VP	P	G	P	P	P	F				
Klondike	6	S	107	108	107	105	91	G	F	G	P	F	F	F				
Leduc*	6	R	113	119	112	111	91	P	P	G	P	G	F	F				
Melvin	6	S	112	111	108	105	92	G	F	G	VP	P	P	VP				

* 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 1982 and 1983 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

Bonanza and **Conquest** are eligible for the highest CW (Canada Western) grades. **Conquest** is slightly earlier than **Bonanza** but it is 10 percent lower yielding. Both varieties have good resistance to stem rust but are susceptible to new races of loose smut.

Argyle is a potential 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.

Melvin, **Klondike** and **Johnston** are high yielding, 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 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.

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

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

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 is a potential malting variety with very promising quality characteristics. Plant scale malting and brewing tests were begun 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**.

Norbert is a potential 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. 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.

Canola Main Characteristics of Varieties

Species and Variety	Yield as % of Westar			% Oil	Average maturity in days	Resistance * to lodging
	Area 2	Area 3	Area 4			
B. napus (Argentine type)						
Westar	100	100	100	43.2	95	G
Andor	93	92	93	42.8	96	F
Altex	89	86	90	42.7	97	F
Regent	89	86	92	42.8	98	G
B. campestris (Polish type)						
Tobin	79	73	76	42.4	86	G
Candle	73	69	72	41.8	86	G

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

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 relatively long frost-free season to produce economic yields. They also have high oil contents. All **B. napus** varieties show good resistance to white rust and are black seeded.

Varieties of the **B. campestris** species yield about 75% of **B. napus** varieties and contain less oil, but they mature 10-14 days earlier. Varieties of this species are best suited to the short season areas in northern Saskatchewan and the southern regions (Area 1) where they escape drought through early maturity. Present varieties have yellow-brown seeds.

Westar gives high seed yield and high oil content. It matures in 95 days and has good lodging resistance. The overall performance of **Westar** is superior to all other varieties.

Andor, **Altex** and **Regent** are lower yielding than **Westar** and their oil contents are also lower. **Andor** and **Altex** are susceptible to lodging.

Tobin gives higher seed yield and oil content than **Candle** and has good resistance to white rust, whereas **Candle** is susceptible.

R500 (not included in the table) is a high erucic **B. campestris** variety with large, bright yellow seeds. It should only be grown under contract for special industrial oil markets. The performance of **R500** is similar to that of **Candle** with the exception that **R500** matures later (93 days) than **Candle**.

A triazine-resistant **B. napus** canola variety could be available for contract production in 1984. In comparison to **Westar** under weed-free conditions, it is 30% lower yielding, contains 3% less oil and matures 4 days later. The variety is subject to lodging and its poor seedling vigor requires careful seed bed preparations.

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.	% 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	48.2	24.1
Calibre	109	109	113	114*	93	G	VP	VP	P	49.9	22.9
Cascade	117	106	112	117	92	G	VP	VP	P	47.4	26.0
Dumont	108	109	106	112*	94	P	VG	VG	G	48.8	23.5
Fidler	104	97	101	106	91	VG	G	G	G	46.1	25.0
Foothill	103	98	102	101	95	VP	VP	VP	P	46.8	25.5
Kelsey	99	105	105	105	89	G	VP	VP	F	48.2	22.6

* Yield information for Calibre and Dumont in Area 4 based on two years data only.

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

Comments:

Harmon is a plump seeded, moderately strong strawed oat variety, 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 test weight and low percent hull. **Calibre** is later maturing than **Harmon** but not as late as **Dumont**. Seed of **Calibre** will not be commercially available in 1984.

Cascade has 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 has weaker straw and 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. Limited amounts of commercial seed will be available in 1984.

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.

Kelsey is earlier maturing than **Harmon** but has somewhat smaller kernels and does not have the yield potential of several newer varieties.

Flax

Main Characteristics of Varieties

Varieties	Yield as % of Dufferin				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
Culbert	84	89	89	90	96	VG	F	F
Linott	96	95	96	93	100	VG	G	F
McGregor	106	103	101	102	103	VG	G	VG
Noralta	96	97	98	95	99	VP	G	F
NorLin	110	102	101	113	101	VG	F	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**.

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.

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

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.

Rye

Main Characteristics of Varieties

Type and Variety	Yield as % of Puma				Resistance to *			
	Area 1	Area 2	Area 3	Area 4	Winter Killing	Shattering	Lodging	Straw Length
Winter Rye								
Puma	100	100	100	100	G	G	F	Tall
Cougar	96	96	92	90	F	G	G	Medium
Frontier	92	94	98	105	G	F	P	Tall
Musketeer	106	103	104	105	G	G	G	Tall

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

Comments:

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

Musketeer is a new variety of winter rye. It has good winterhardiness, high test weight and early maturity. It has better resistance to lodging than **Puma** or

Frontier. Its kernels are about 10% larger than those of **Puma**, **Cougar** or **Frontier** and are more uniform in size and colour. On average **Musketeer** is higher yielding than **Puma**, **Cougar** and **Frontier**.

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

Field Peas (Yellow)

Main Characteristics of Varieties

Variety	Yield as % of Century		Average Maturity in days	Resistance to * Powdery Mildew	Seed size	Seeding rate (kg/ha)
	Area 2 and southern 3	Area 4 and northern 3				
Century	100	100	100	P	Large	190
Tara	131	117	100	G	Medium	175
Trapper	105	104	98	P	Small	125

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

Comments:

Field peas are grown mainly in the more northerly black and gray soil zones. Dockage is often greater for larger seeds as they tend to crack more in harvesting and handling. The angular seed shape of

Tara may result in lower market demand and price. Seed should be inoculated before planting. See **Seed Inoculation** section.

Lentils

Main Characteristics of Varieties

Variety	Yield as % of Laird	Height (cm)	Days to First Flower	Seed Size	Seeding rate (kg/ha)
Laird	100	41	51	Large	70-80
Eston	107	30	48	Small	35-40

Comments:

Lentils are best adapted to the Brown, Dark Brown and southernmost areas of the Black soil zones. They have about the same growing season requirement as durum wheat. However, lentils have 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 can be induced naturally during most years in the Brown and Dark Brown soil zones or 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 lentils can and should be seeded early, even earlier than wheat and as soon as the soil temperature at seeding depth exceeds 5°C. Early seeding is also important from the standpoint of reducing the hazard from early fall frosts which severely damage immature seeds. Lentils 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. **Eston** is a short, erect, early-maturing variety with small seeds. **Laird** has some tolerance to *Ascochyta* leaf, stem and pod blight.

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.

Marketing lentils is a highly specialized business and it is advisable to grow lentils under contract.

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

Tame Mustards

Main Characteristics of Varieties

Species and Variety	Type	Seed yield as % of Domo
B. juncea		
Domo	Oriental	100
Lethbridge 22A	Oriental	91
Stoke	Oriental	92
Blaze	Brown	89
Ekla	Brown	83
Commercial	Brown	82
S. alba		
Gisilba	White	69
Kirby	White	72
Ochre	White	71

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**.

Mustards 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 mustard with canola, 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 10-15% more than **B. napus** canola and are earlier maturing. White mustard varieties yield 30% less than the Brown and Oriental mustards, but they have good shattering resistance.

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

Sunflowers

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

Oilseed sunflower is adapted to the Dark Brown and Black soil zones in southeastern Saskatchewan. Because of the relatively short growing season in this province early maturing cultivars are required. Early hybrid cultivars such as **Interstate 7000** and **7101**, **DO 704XL** and **S166** have almost totally replaced the open pollinated cultivars **Saturn** and **Corona**. Several of these hybrids have exhibited vigorous growth, good disease resistance, high yields, and uniformity in maturity. Later maturing hybrids such as **Cargill 204** and **205**, **DO-844**, and **Hybrid 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.

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

Corn, Faba beans, 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 (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. Herbicides registered for use on canaryseed include bromoxynil, MCPA, flumprop methyl and difenzoquat. However, canaryseed 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 at the same stage as for straight combining.

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

Smutts 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 the presence of smut is uncertain, it may be a wise precaution to treat seed of susceptible varieties periodically. Varieties rated **Very Poor** should be treated every second year and varieties rated **Poor** should be treated every third year.

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

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

Various fungicides have been registered for the control of seeding diseases. Flax, rye and winter wheat seed should be treated to promote good seedling growth.

Wireworms, which attack all grain crops, and flea beetles, which attack canola and mustard, can be controlled by seed treatment with insecticides. Read the label carefully and follow all directions.

Treated seed **must not** be allowed to contaminate grain delivered to an elevator or used for feed.

Ergot

Ergot attacks all varieties of rye, triticale, wheat and barley, as well as most common species of grass. 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 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.

Ascochyta on Lentils

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.

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