

*Varieties of
Grain Crops for
Saskatchewan
1971*

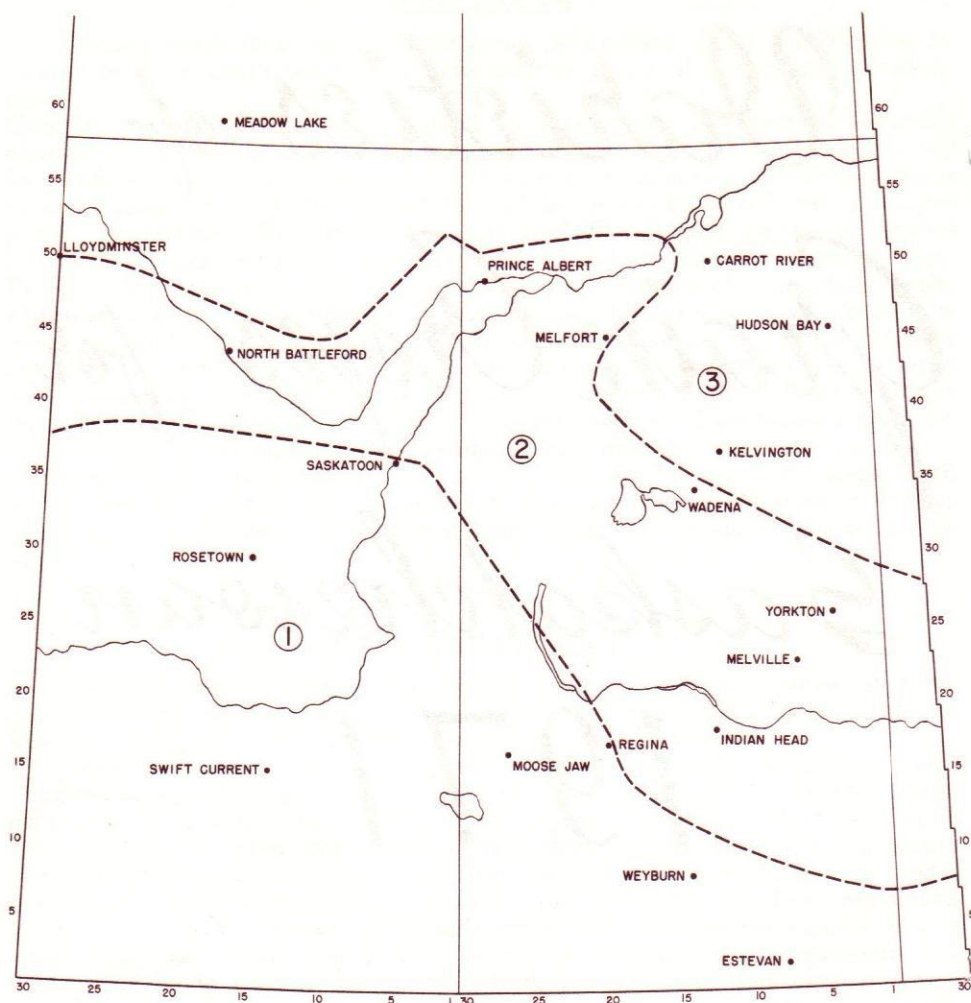
DESCRIPTIONS AS PREPARED BY

The Saskatchewan Advisory Council on Grain Crops

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GRAIN CROP PRODUCTION AREAS

Saskatchewan

1. An area where drought is a definite hazard especially in the southwest. Sawfly outbreaks also occur in this area. Winds of high velocity are common. Rust can occur in the southeastern portion.
2. An area where drought is less likely to be a limiting factor. The frost free period is fairly long. Rust can occur in the eastern portion of this area.
3. An area where rainfall is usually adequate for crop production. Frost and wet harvest weather can be a hazard in this area.

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 commonly grown varieties of cereal and oilseed crops and of varieties that are new to many farmers. The comments are based on tests grown under a wide range of conditions. The relative yield data are based on the averages of a number of stations for three years and thus tend to mask farm to farm variation.

WHEAT—Main Characteristics of Varieties

Type and Variety	Yield as % of Manitou			Order of Maturity	Resistance to					
	Area 1	Area 2	Area 3		Lodging	Stem Rust	Leaf Rust	Loose Smut	Root Rot	Shattering
Bread										
Canthatch	99	98	99	2	Good	Fair	Poor	Fair	Fair	Good
Chinook	93	88	—	2	Fair	Poor	Poor	Poor	Poor	Fair
Cypress	91	87	—	3	Fair	Poor	Poor	Poor	Poor	Fair
Manitou	100	100	100	3	Good	Good	Fair	Fair	Fair	Good
Neepawa	104	103	101	2	Good	Good	Fair	Fair	Fair	Good
Pembina	92	95	95	1	Good	Good	Fair	Good	Fair	Fair
Selkirk	90	92	99	2	Good	Good	Fair	Good	Poor	Fair
Thatcher	100	98	98	2	Good	Poor	Poor	Fair	Fair	Good
Feed										
Pitic 62*	117	117	111	6	Good	Fair	Fair	Poor	Fair	Good

Yield as % of Stewart 63		
Area 1	Area 2	Area 3

Durum										
Hercules	90	90	—	3	Good	Good	Good	Good	Poor	Good
Pelissier	105	101	—	6	Fair	Poor	Good	Fair	Poor	Good
Ramsey	100	99	—	5	Fair	Good	Good	Poor	Poor	Good
Stewart 63	100	100	—	6	Fair	Good	Good	Fair	Poor	Good

COMMENTS:

None of the bread wheat varieties has good resistance to leaf rust but **Neepawa** and **Manitou** are better than **Selkirk** and **Pembina**.

Selkirk and **Neepawa** are the only varieties having good resistance to bunt. The quality of **Neepawa** is equal to the other bread wheats.

Cypress or **Chinook** should be used where sawflies are a problem. **Cypress** is more resistant to sawflies than **Chinook**.

Pitic 62 is a variety of Mexican origin eligible only for feed grades. It is higher yielding but is about a week later than **Manitou** and has low bushel weight.

Hercules is a rust-resistant variety of durum wheat. It is earlier, shorter and stronger-strawed than the other durum varieties, but is lower in yield. It is the only durum variety early enough for use in Area 3.

Soft, white spring wheat may be grown on irrigated land. It is susceptible to leaf rust. Contract production for a miller is essential for successful marketing.

*Yield figures marked with an asterisk were calculated from less than 3 years data.

BARLEY—Main Characteristics of Varieties

Type and Variety	Six or Two Rowed	Yield as % of Conquest			Order of Maturity	Resistance to				
		Area 1	Area 2	Area 3		Lodging	Stem Rust	Loose Smut	Covered Smut	Shattering
Feed										
Centennial	Two	112	106	106	2	Good	Poor	Poor	Poor	Good
Galt	Six	110	110	106	3	Good	Good	Poor	Good	Good
Eligible for C.W. Grades										
Bonanza*	Six	109	109	114	2	Good	Good	Good	Fair	Fair
Conquest	Six	100	100	100	1	Good	Good	Good	Fair	Fair
Paragon	Six	105	107	108	4	Good	Good	Good	Fair	Fair
Betzes	Two	109	104	109	2	Fair	Poor	Poor	Poor	Good
Fergus*	Two	112	107	114	2	Fair	—	Fair	Fair	Good

COMMENTS:

The eligibility of **Centennial** for C.W. grades is still under consideration.

Galt is a six-rowed, semi-smooth awned variety of feed barley. It is shorter than **Conquest** but this short straw may or may not be a disadvantage depending upon growing conditions.

Paragon is a six-rowed, smooth-awned malting variety. It is shorter than **Conquest** and four to five days later. The malting quality of this variety is such that other varieties will be preferred by the maltsters.

Bonanza is a new six-rowed malting variety. It is intermediate between **Conquest** and **Paragon** in maturity and height.

Fergus is a two-rowed, rough-awned variety of malting barley.

Gateway 63 and **Olli** are very early maturing varieties, however, their yields are well below **Conquest**.

Compana and **Palliser** are locally adapted in the southwestern portion of Area 1.

RYE—Main Characteristics of Varieties

Type and Variety	Yield as % of Antelope			Resistance to			Kernel		Straw Length
	Area 1	Area 2	Area 3	Winter Killing	Shattering	Lodging	Color	Size	
Fall Rye									
Antelope	100	100	—	Good	Poor	Poor	Variable	Small	Tall
Cougar	116	113	—	Fair	Good	Good	Green	Medium	Medium
Frontier	119	115	—	Good	Fair	Poor	Green	Medium	Tall
Spring Rye									
Prolific	—	—	—	—	Fair	Fair	Green	Medium	Tall

COMMENTS:

Frontier has the best combination of winter hardiness and yielding ability. **Cougar**, although not as winter hardy, is shorter than **Frontier** and is more resistant to shattering.

The varieties **Sangaste**, **Petkus** and **Dominant** are not sufficiently winter hardy for Saskatchewan conditions.

Rye is susceptible to ergot. Grain with one or more ergot bodies per 1000 kernels should not be used for feed.

OATS—Main Characteristics of Varieties

Variety	Yield as % of Garry			Order of Maturity	Resistance to				Percent Hull
	Area 1	Area 2	Area 3		Lodging	Stem Rust	Leaf Rust	Smut	
Fraser.....	101	109	107	5	Good	Good	Fair	Good	Low
Garry.....	100	100	100	2	Good	Good	Fair	Good	High
Harmon.....	102	100	102	4	Good	Good	Fair	Good	Medium
Kelsey.....	102	103	105	3	Good	Good	Good	Good	Low
Rodney.....	100	102	99	4	Good	Fair	Fair	Good	Low
Sioux.....	102	101	105	1	Good	Good	Fair	Good	Medium

COMMENTS:

Fraser is a late maturing, strong-strawed variety with good resistance to stem rust and smut. It is well adapted to all regions of Saskatchewan.

Harmon and **Rodney** are plump-seeded, strong-strawed varieties that mature slightly earlier than **Fraser**.

Kelsey and **Sioux** are strong-strawed varieties with good resistance to rust and are well adapted to all regions.

FLAX—Main Characteristics of Varieties

Variety	Yield as % of Redwood 65			Order of Maturity	Resistance to		Oil Quality	Seed Size	Flower Color
	Area 1	Area 2	Area 3		Rust	Wilt			
Noralta.....	96	98	94	2	Good	Good	Good	Small	Blue
Norland.....	98	95	92	3	Good	Fair	Good	Large	White
Raja.....	—	88	89	1	Good	Fair	Medium	Large	Blue
Redwood 65.....	100	100	100	3	Good	Good	Good	Medium	Blue

COMMENTS:

Flax rust and other diseases overwinter in Saskatchewan. Rust susceptible varieties should not be grown because they serve as a source of new rust races. All varieties listed are rust resistant, but seeding flax on flax stubble should be avoided to minimize the hazard of other diseases.

Redwood 65 and **Norland** are late maturing varieties and should be sown early for maximum yield. For delayed seeding use the early maturing variety **Noralta**.

Frozen flax should be analyzed to determine that it is free from Prussic acid before using it for livestock feed.

RAPESEED

Rape is best adapted to the parkland area of the province. Varieties of the *B. napus* species are higher yielding than *B. campestris* under the favorable moisture conditions of the northeastern part of the province. In areas where frost or drought may occur, varieties of the *B. campestris* species generally give more reliable results. *B. campestris* is also more resistant to frost in the seedling stage and less susceptible to shattering.

The variety **Oro** produces a seed oil free of erucic acid and is available only under contract production.

Zephyr and **Span** produce an oil similar to Oro, but seed supplies of these new varieties are likely to be limited. It is anticipated that they will be the dominant varieties grown in 1972.

Variety	Area 2			Area 3		
	Yield as % of Echo	Maturity in Days	% Oil	Yield as % of Echo	Maturity in Days	% Oil
B. napus						
Target	125	97	43.0	124	104	45.1
Turret	127	97	43.8	124	105	45.0
Oro	114	101	40.6	111	108	41.8
Zephyr	120	98	40.6	118	105	41.9
B. campestris						
Echo	100	87	41.0	100	89	41.4
Polar	96	87	42.2	92	88	42.9
Span	97	86	40.1	87	86	40.1

1970 data for **Span** are given in the table. Figures for other varieties are calculated from 1969 and 1970 test results. Better than average moisture conditions during the past two years in Area 2 resulted in higher yields from varieties of the *B. napus* species than would normally be expected.

TAME MUSTARDS

The three types of mustard grown commercially are Yellow, Oriental and Brown. They have shown good adaptation to the Brown and Dark-Brown Soil Zones. Mustards are less susceptible to shattering than rapeseed. In drought tolerance and maturity, they are intermediate between Echo rapeseed and wheat. Yellow mustard yields are generally lower than Echo rapeseed whereas yields of Oriental and Brown mustard usually exceed Echo rapeseed.

Practically all mustard is grown under contract.

OTHER INFORMATION RELATING TO GRAIN CROP PRODUCTION

Bulletins on fertilizers and weed control, generally revised annually, are available from sources given below. Information on crops, plant diseases, insect pests and other aspects of production can be found in the Guide to Farm Practice in Saskatchewan, 1969, and other pamphlets. These publications may be obtained from Agricultural Representatives, Research Stations and the University of Saskatchewan.

MISCELLANEOUS CROPS

TRITICALE

The future of the crop Triticale is still somewhat uncertain. Definite improvements are required before it can become fully competitive with the established feed grains. The variety **Rosner** was licensed in 1969. In Saskatchewan this variety does not yield as well as wheat, oats or barley. It can be considerably later maturing and is frequently damaged by ergot.

SUNFLOWERS

Sunflowers are a high risk crop but have been grown with some success in southern and central Saskatchewan. Production is usually on a contract basis. Sunflowers require 120 to 130 days to mature, but can be seeded early as seedlings have good frost resistance. Sunflowers are highly susceptible to 2,4-D drift and birds can cause serious seed losses during ripening.

SAFFLOWER

Safflower is a higher risk crop than sunflowers and requires 120-140 days to mature. It can tolerate some frost in the early seedling stage but is easily damaged by fall frosts. It is a poor weed competitor in its early stages of growth. Dry atmospheric conditions are required during flowering for maximum seed set, otherwise many empty hulls are produced which lower both yield and oil content. Seed yields are extremely variable.

SOYBEANS

Soybeans are not recommended in Saskatchewan as yields have not proved economic.

TAME BUCKWHEAT

Tame buckwheat is usually produced under contract. This crop will grow under a wide range of soil conditions but performance is highly dependent on weather. Buckwheat is very susceptible to frost; therefore, early June seeding is recommended. Also, it is very sensitive to high temperatures and dry weather, especially at blooming time. It does not recover from lodging as do most other crops. Yields in Saskatchewan have been extremely variable. There are no selective herbicides for weed control in buckwheat.

PEAS

Field peas do well in the moist areas of the province. Growers should investigate marketing prospects before planting this crop. The variety **Century** is preferred for the food trade. Both **Century** and **Trapper** are suitable for livestock feed.

Field peas grown from properly inoculated seed normally contain about 24% protein and have been shown to be a useful ingredient for swine, poultry and cattle rations.

CANARY SEED

This is an annual 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. Herbicides can be used for the control of broadleaved weeds.

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

CORN

Corn is recommended for silage purposes only since grain corn does not usually mature in Saskatchewan.

SEED CLEANING

Pedigreed seed has been cleaned to high standards. Home-grown seed should be rigorously cleaned to remove weed seeds, trash, and small kernels. Country elevators generally can not do an efficient seed cleaning job and sometimes contaminate seed with weeds and seeds of other crops.

SEED FACTS

Quality seed is basic to good crop production. Seed quality can be related to three characteristics: genetic quality, physical quality and germination.

Genetic quality—Each variety listed in this folder has certain inherited characteristics which adapt it for a particular area. Genetic quality can not be measured by examining the seed. The only assurance of genetic quality is to use pedigreed seed. Pedigreed seed of grain varieties fall into the categories Foundation, Registered and Certified. Its genetic purity is assured by the Canadian Seed Growers' Association and the Canadian government. Pedigree seed can be paid for by an over-quota delivery of commercial grain.

Physical quality—This includes a number of characteristics which can be measured and sometimes recognized by sight. Mechanical purity or freedom from weed seeds, other crops and inert material is important. Small sized seed should be screened out, as it produces lower yielding plants than the large seed in the same lot. Quality seed should be free of seed-borne diseases. Tests for surface-borne smut are available through some grain companies.

Germination—A germination test shows the percentage live seeds with normal seedling growth. Dead seeds, or those producing abnormal seedlings are of no value. Grain companies do laboratory germination tests as a free service.

SEED TREATMENT

Chemical seed dressings may contain a fungicide for the control of some plant diseases, an insecticide for the control of wireworms in grain crops or flea beetles in rape, or a combination of both (dual purpose).

Seed treatment with a fungicide is used primarily to control smut diseases in cereal crops, and seed decay and damping-off in oilseed crops, especially flax. For several years both organic mercury and non-mercury compounds have been available for the control of the surface-borne smuts (bunt of wheat, covered and false loose smut of barley, and smuts of oats), and recently a systemic fungicide (trade name: Vitavax) has been registered for the control of some of these same smuts and also for the embryo-borne loose smuts of wheat and barley. Although mercuric seed treatments for cereals are being phased out, in 1971 both mercuric and non-mercuric compounds may be used on seed of cereals as well as oilseeds. Varieties of wheat, barley and oats that are resistant to smuts require no treatment for these diseases.

Seed dressings should be used only for the purposes stated on the label and the directions given there should be carefully followed. Treated grain must not be delivered to an elevator. Truck boxes, bins and augers should be cleaned after being used for treated seed. Treated grain must not be used for feed or be allowed to contaminate grain used for food or livestock feed. Care should be taken to prevent exposure of treated grain to wildlife.

DAMP AND FROZEN SEED

Seed which is stored damp or tough may be lower in germination. Grain which is being saved for seed should be dried if necessary, soon after harvest. Drying temperature should be kept below 100°F. for batch driers, or 110°F. for recirculating and continuous driers. Frozen grain should never be sown without a laboratory germination test. There is frequently a high percentage of abnormal seedlings which may be unnoticed by an inexperienced observer.