



VARIETIES OF GRAIN CROPS FOR SASKATCHEWAN 1974

DESCRIPTIONS AS PREPARED BY:
THE SASKATCHEWAN ADVISORY COUNCIL ON GRAIN CROPS
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BY AUTHORITY OF THE HONOURABLE JOHN B. MESSER MINISTER OF AGRICULTURE

GRAIN CROP PRODUCTION AREAS

(See map on front page)

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.

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										
Galt.....	Six	114.....	110.....	102.....	3.....	Good	Good	Poor	Good	Good
Fergus	Two	116.....	107.....	105.....	4.....	Fair	Poor	Fair	Fair	Good
Eligible for C.W. Grades										
Bonanza.....	Six	110.....	109.....	111.....	2.....	Good	Good	Fair**	Fair	Fair
Conquest.....	Six	100.....	100.....	100.....	1.....	Good	Good	Fair**	Fair	Fair
Paragon.....	Six	108.....	107.....	101.....	4.....	Good	Good	Fair**	Fair	Fair
Betzes.....	Two	112.....	101.....	96.....	3.....	Fair	Poor	Poor	Poor	Good
Centennial...	Two	117.....	103.....	98.....	5.....	Good	Poor	Poor	Poor	Good
Hector	Two	123.....	105.....	98.....	4.....	Fair	Fair	Fair	Fair	Good

**Races of loose smut that can attack previously resistant varieties have been found in the eastern part of the province.

COMMENTS:

Loss appraisal studies in Saskatchewan indicate an estimated 1973 yield reduction of 14 percent due to common **root rot**. **HECTOR** and **BONANZA** appear to have superior field tolerance to this disease.

GALT is a six-rowed, semi-smooth awned, short-strawed, variety of feed barley.

PARAGON is a six-rowed, smooth-awned, malting variety. It is shorter than **CONQUEST** and 3 to 5 days later. The malting quality of this variety is considered inferior to **CONQUEST** and **BONANZA** by the maltsters.

BONANZA is a high yielding, six-rowed, malting variety that is intermediate between **CONQUEST** and **PARAGON** in maturity and height.

FERGUS and **CENTENNIAL** are two-rowed, rough-awned varieties. **FERGUS** is no longer eligible

for malting grades in Western Canada and **CENTENNIAL** is rarely purchased for malting.

HECTOR was licensed in 1973. It is a two-rowed, rough-awned variety that has promising malting and brewing quality. Its acceptance by commercial maltsters will depend on the results of plant scale tests currently being conducted. It offers more resistance to lodging and shattering than **BETZES**. It shows great promise for southwestern Saskatchewan and should be an attractive alternative to the varieties **COMPANA** and **PALLISER**.

GATEWAY 63 and **OLLI** are very early maturing, six-rowed varieties; however, their yields are well below **CONQUEST**.

COMPANA and **PALLISER** are locally adapted two-rowed varieties for the southwestern portion of Area 1.

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	Bunt	Root Rot	Shattering
Bread											
Cypress	90	87	—	2	Fair	Poor	Poor	Poor	Poor	Poor	Fair
Manitou	100	100	100	1	Good	Good	Fair	Good	Fair	Fair	Good
Napayo	98	104	101	1	Good	Good	Fair	Good	Fair	Fair	Good
Neepawa	105	103	102	1	Good	Good	Fair	Good	Fair	Fair	Good
Utility											
Glenlea	110	120	124	3	Good	Good	Good	Good	Fair	Fair	Good
Pitic 62	118	120	111	5	Good	Fair	Poor	Poor	Poor	Fair	Good

Type and Variety	Yield as % of Stewart 63		
	Area 1	Area 2	Area 3
Durum			
Hercules	94	93	124*
Pelissier	105	97	—
Stewart 63	100	100	100
Wascana	114	108	111*
Wakooma	113	109	106*

*One year's data only

COMMENTS:

PITIC 62 and GLENLEA are high yielding wheats eligible for utility grades only. PITIC is 5 to 7 days later maturing than MANITOU and is lowest yielding on the Gray soils. Low bushel weight often results from harvesting PITIC 62 too early.

GLENLEA is rust resistant, taller than MANITOU, and earlier maturing than PITIC 62. It is high yielding on the Gray and Black soils but shows less advantage over the bread wheats in the Brown soil zone.

Seed of the new durum variety WAKOOMA will

be available this year. It is similar to WASCANA but has even better quality. Because of their higher pigment content WAKOOMA and HERCULES are more desirable for the export market than are STEWART 63 and RAMSEY.

WASCANA and WAKOOMA are higher yielding than HERCULES but 2 to 3 days later maturing and slightly taller. HERCULES is best suited to those areas where early maturity is required.

PELLISSIER is late maturing but possesses good drought resistance and is best suited to the Brown soil zone. Market demands for this variety may be low in some years.

OATS Main Characteristics of Varieties

Variety	Yield as % of Harmon				Resistance to				Percent Hull
	Area 1	Area 2	Area 3	Order of Maturity	Lodging	Stem Rust	Leaf Rust	Smut***	
Fraser	107	108	105	5	Good	Poor	Poor	Good	Low
Garry	102	99	98	3	Good	Poor	Fair	Good	High
Harmon	100	100	100	4	Good	Poor	Fair	Good	Medium
Hinoat	85	80	88	1	Good	Poor	Poor	Good	High
Kelsey	106	106	107	3	Good	Poor	Fair	Good	Low
Random	109	109	106	3	Good	Poor	Fair	Poor	Medium
Sioux	106	104	104	2	Good	Poor	Poor	Good	Medium

***A race of loose smut that can attack previously resistant varieties has occasionally been found. Apparently the incidence of this race has remained low.

COMMENTS:

All varieties of oats are susceptible to race C10, the predominant race of stem rust in western Canada. Early seeding helps to protect the crop from this disease.

FRASER is a late maturing, strong-strawed variety with a low percentage of hull. It yields well in most areas and especially well on the black soils.

HARMON is a plump-seeded, strong-strawed variety and has largely replaced GARRY and RODNEY. It matures from two to three days earlier than FRASER and has fair resistance to leaf rust.

RANDOM is well adapted to all areas, has short, strong straw and matures 4 or 5 days earlier than FRASER. It is 1 to 2 pounds lighter in bushel weight

than HARMON and is susceptible to prevalent races of loose smut.

KELSEY is a medium maturing, slender-strawed variety that is well adapted to all areas. The kernels have a low percentage of hull and are high in energy.

SIOUX is an early maturing variety with good yielding ability on most soils. SIOUX and KELSEY have slender straw which may be important in livestock feeding.

HINOAT was licensed in 1973 as a special purpose, high protein milling oat. It matures 4 to 5 days earlier than SIOUX, our earliest maturing variety, and is approximately 10 inches shorter than standard varieties. Protein content of HINOAT has averaged 3% higher than standard varieties in Saskatchewan, but yields have averaged 20 to 25% lower than RANDOM.

FLAX Main Characteristics of Varieties

Variety	Yield as % of Redwood 65				Resistance to			Seed Size	Flower Color
	Area 1	Area 2	Area 3	Order of Maturity	Rust	Wilt	Oil Quality		
Linott	93	95	95	2	Good	Good	Good	Medium	Blue
Noralta	94	96	96	2	Poor	Good	Good	Small	Blue
Norland	97	98	89	3	Poor	Fair	Good	Large	White
Raja	80	84	85	1	Good	Good	Good	Large	White
Redwood 65	100	100	100	3	Poor	Good	Good	Medium	Blue

COMMENTS:

A new race of rust appeared in 1973. NORALTA, NORLAND and REDWOOD 65 are susceptible to the new rust, LINOTT and RAJA are the only varieties resistant. Adequate supplies of pedigreed seed of these varieties will not be available until 1975.

Rust and other flax diseases overwinter in Sas-

katchewan. To minimize these diseases, avoid planting flax on or near flax stubble. Use clean seed as the refuse or debris in the seed may be infected with the disease.

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

RYE

Type and Variety	Yield as % of Antelope			Winter Killing	Resistance to		Kernel		Straw Length
	Area 1	Area 2	Area 3		Shattering	Lodging	Color	Size	
Fall Rye									
Antelope	100	100	—	Good	Poor	Poor	Variable	Small	Tall
Cougar	146	122	—	Fair	Good	Good	Green	Medium	Medium
Frontier	116	116	—	Good	Fair	Poor	Green	Medium	Tall
Kodiak	118	113	—	Fair	Fair	Fair	Tan	Large	Tall
Puma.....	140	129	—	Good	Good	Fair	Green	Medium	Tall
Spring Rye									
Prolific	—	—	—	—	Fair	Fair	Green	Medium	Tall

COMMENTS:

PUMA and FRONTIER are the most winter-hardy varieties. COUGAR is often grown because of

its shorter straw and high yields when there is no winter damage.

There are no rye tests in Area 3 but rye is being grown successfully in that part of the province.

RAPESEED

Rape is best adapted to the parkland area of the province. Varieties of the *Brassica napus* species are higher yielding than *Brassica campestris* under the favorable moisture conditions of the north-central 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. *B. napus*, however, is resistant to the white rust-downy mildew (staghead) disease.

ter than ZEPHYR and ORO. It is equal or superior in these characteristics to the normal erucic variety, TARGET. Certified seed stocks of MIDAS should be adequate to plant all of the *B. napus* acreage in Western Canada in 1974.

The low erucic *B. napus* variety, MIDAS, is higher in seed yield and oil content, earlier maturing and shorter

TORCH contains a lower level of erucic acid than SPAN and is higher in oil and protein content than SPAN. Certified seed stocks of TORCH should be adequate to plant all of the 1974 *B. campestris* acreage.

Rapeseed varieties which do not produce low erucic acid oil should only be grown under contract.

Variety	AREA 2			AREA 3		
	Yield as % of Echo	Maturity in days	% Oil	Yield as % of Echo	Maturity in days	% Oil
B. napus (Argentine type)						
Midas*	118	100	43.1	117	103	43.1
Zephyr*	106	102	39.9	107	107	40.5
Target**	106	100	42.8	109	104	43.1
B. campestris (turnip rape)						
Torch*	91	87	40.2	93	90	39.9
Span*	92	87	39.8	90	90	39.2
Echo**	100	88	41.1	100	90	40.8

*Low Erucic Acid Variety

**Target and Echo are included as standard varieties for information purposes only.

MINOR CROPS

FIELD PEAS

Main Characteristics of Varieties

Variety	Yield as % of Century	Maturity in Days	Seed Size	Vine Length
Century	100	101	Large	Tall
Trapper	98	101	Small	Medium
Triumph	115	106	V. Large	Medium

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 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.

CENTURY is a tall growing variety with large, yellow seeds and is usually seeded at about 170 pounds per acre.

TRAPPER is a medium tall variety with small, yellow seeds and is usually seeded at about 110 pounds per acre.

TRIUMPH is a medium tall variety with very large green seeds and is usually seeded at about 220 pounds per acre.

FABABEAN (Horse Beans)

Main Characteristics of Varieties

Variety	Yield as % of Ackerperle	Maturity in Days	Seed Size	Plant Height
Ackerperle	100	114	Small	Tall
Erfordia	112	114	Large	Tall
Diana	106	112	Medium	M. Tall

COMMENTS:

Fababeans are a promising source of protein for livestock feeding. They should be seeded early. Seed at about 150 pounds per acre (5 seeds per square foot) 3 inches deep in rows 6 to 7 inches apart. Fababeans seeds are very large and a seeder with a deep-fluted

cup must be used to prevent seed cracking. Swathing can be done as soon as the lowermost pod turns dark on 25% of the plants in order to reduce shattering losses. Fababeans seed should be inoculated before planting. See SEED INOCULATION section.

SUNFLOWERS

Sunflowers can be grown in Central and southern Saskatchewan by using an early variety such as **Krasnodarets**, which requires about 120 days to escape frost injury. Early planting is recommended since sunflower seedlings can tolerate some frost. Sunflowers should be planted on clean summerfallow in rows 6" to 18" apart. Chemical weed controls for both grass and broad-leaved weeds are available. However, reasonable weed control can be obtained by timely cross harrowing during the early stages of growth. Sunflowers are very sensitive to 2,4-D drift. Special attachments are required for combine harvesting.

SAFFLOWER

Safflower is a higher risk crop than sunflowers, requiring 120 to 140 days to mature. It can tolerate some frost in the early seedling stage but is easily damaged by fall frosts. Clean land is required because safflower 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. Safflower can be planted and harvested with conventional grain equipment. Its most suitable area of production is the southern and southwestern part of the province.

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 blossom 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.

The variety **Tempest** is about 10% higher yielding than **Tokyo**.

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. 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.

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.

LENTILS

Lentils are an annual legume crop grown for human food. They have about the same growing season requirements as wheat. The main production problems are weed control and short growth which makes harvesting difficult. To assure a market, it is advisable to grow lentils under contract.

Lentil seed should be inoculated before planting. See **SEED INOCULATION**.

OTHER INFORMATION RELATING TO GRAIN CROP PRODUCTION

Bulletins on fertilizers and weed control, generally revised annually, are available from sources given. Information on crops, plant diseases, insect pests and other aspects of production can be found in the Guide

to Farm Practice in Saskatchewan and other pamphlets. These publications may be obtained from Agricultural Representatives, Research Stations and the University of Saskatchewan.

SEED FACTS

A good practice is to 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

Home grown seed should be carefully cleaned to remove weed seeds, trash and small or broken kernels. The cleaning job should not be rushed, and farmers should not object if a high percentage is cleaned out.

SEED TREATMENT

Chemical seed treatments can be used to control certain diseases and insects. The smuts that attack wheat, barley, oats and rye, can be controlled in this manner. Pedigreed seed, seed of resistant varieties (see variety descriptions), and seed of susceptible varieties that is free of smut should not require treatment. If smut was observed in a crop which is being used for seed it should be treated. When growing cereal varieties which are susceptible to smuts and the presence of smut is uncertain it may be a wise precaution to treat home-grown seed every two or three years depending on the susceptibility of the variety.

Various fungicides have been registered for the control of seedling diseases. Flax and rye 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. A seed treatment may contain a fungicide alone, an insecticide alone or a dual-purpose mixture. 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. This means cleaning out bins, truck boxes and augers used for handling treated seed.

Unless left-over treated seed is being stored for future use it should be buried. Care should be taken to prevent exposure of treated grain to wildlife.

ERGOT

Ergot attacks all varieties of rye, wheat (both common and durum) and barley, as well as most common species of grass. Oats are rarely attacked, and all broad-leaved species are immune. Cool, moist weather at flowering time increase risk of ergot infection. To minimize ergot infection use clean seed, cut nearby grasses before flowering, and avoid seeding rye, wheat or barley on land which produced an ergoty crop in 1973. Grain containing 0.1% ergot is considered poisonous and should not be used as feed.

SEED INOCULATION

The legume crops mentioned above (peas, lentils and fababeans) add nitrogen to the soil only if their roots are well nodulated with nitrogen-fixing bacteria. When growing a particular legume on a field for the first time, inoculate the seed immediately before planting. Packaged inoculant for specific crops is available from seed dealers. Peas and lentils are nodulated by the same bacterial strains. Fababeans require a different strain. Inoculants packaged for use on alfalfa and clovers are not effective on peas, beans and lentils. Be sure the inoculant is not outdated, and follow instructions on the package.

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. 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.