

CEREAL CROPS

On the whole the recommendations given here apply particularly to 1948. Revised cereal variety recommendations are published annually. A copy of the recommendations may be obtained free of charge about January 15th each year

from the Extension Department, University of Saskatchewan, Saskatoon, the Dominion Experimental Stations of the Province, or from your Agricultural Representative.

CEREAL VARIETY ZONES

Among all the influences on cereal varieties, it has been found that the soil-climatic environment is of major importance. There are four main soil-climatic zones in Saskatchewan, namely, 1, 2, 3, and 4. To facilitate the making of specific variety recommendations, it has been necessary to divide the soil-climatic zones into cereal zones. The cereal zones are designated by the addition of a letter to the soil-climatic zone number.

for use in the different zones which appear to warrant general usage over relatively large areas. Although a local soil-climatic condition may vary widely from the average for a zone, it will usually be found that one of the recommended varieties will be satisfactory for such a situation. Information on the local adaptation of varieties can always be obtained from the University or the nearest Dominion Experimental Station.

Only those varieties are recommended

Special Considerations

The present trends in the small grain crops are toward:

- (1) more wheat and barley and less oats on the dry open plains, particularly in the South-west.
- (2) more barley, oats and flax and less wheat in the park belt and forest areas of the East and North.

and flax are fairly sensitive to depth of seeding and should not be sown deeper than is necessary; however, the depth required may vary considerably with the soil type. (3) In the drier parts of Saskatchewan oats and barley should be sown early. (4) Flax should always be sown into warm, moist, firm soil, even though seeding has to be delayed to have the right conditions. (5) The new chemical weed killers bid fair to revolutionize flax production, as weeds in the flax crop and in the succeeding crop have for years been the most serious handicap to the flax grower.

The following points deserve special mention. (1) Wheat, barley, oats and rye require in general the same basic seeding rates when expressed in pounds per acre, whereas flax requires approximately a third as much. (2) Barley, rye

VARIETY RECOMMENDATIONS

excelled definitely by newer varieties. It is suggested that the reader keep up to date by obtaining each year the latest recommendations as mentioned previously. It also should be kept in mind that the variety considered best in one situation may not be best under other circumstances in the same zone.

Following are the principal recommendations for 1948. For 1949 and 1950 there may be alterations in these recommendations according to changes which may occur in the varietal situation. Promising new varieties now under test may be added for certain zones and some of the older varieties may be no longer recommended for areas where they are

THE VARIETIES ARE GIVEN IN ALPHABETICAL ORDER FOR EACH ZONE (not including special purpose varieties)

Zone	Prevailing Soil and Climate	Wheat		Oats	Barley	Flax
		Bread	Durum			
1A	Brown soils; subject to frequent droughts	Rescue† Thatcher	Pelissier Stewart	Ajax Fortune	Titan	Royal⊕
1B	Brown soils; subject to more frequent droughts than 1A	Rescue† Thatcher		Ajax□	Titan	Royal⊕
1C	Brown soils, chiefly burn-out types; subject to more frequent droughts than 1A	Rescue† Thatcher	Pelissier Stewart	Ajax□	Titan	Royal⊕
2A	Dark brown soils; subject to occasional droughts; better moisture conditions than 1A	Thatcher	Stewart	Ajax Exeter Fortune	Plush Titan	Royal
2B	Dark brown soils; slightly cooler than 2A	Thatcher	Pelissier Stewart	Ajax Exeter Fortune	Plush Titan	Royal
2C	Dark brown soils, bench land; cooler, shorter frost free season and better moisture conditions than 1A	Rescue† Thatcher		Ajax	Titan	Royal
2D	Dark brown soils; higher elevation and distinctly shorter frost free season than 2B	Rescue† Thatcher		Ajax Exeter Fortune	Plush	Royal
2E	Dark brown heavy clay soils; more drought resistance than 2A and 2B	Apex Regent Thatcher	Stewart	Exeter Fortune	Plush Titan	Royal
2F	Brown and dark brown heavy clay soils; more drought resistance than 1A and adjoining 2B	Apex Rescue† Thatcher		Ajax Victory	Titan	Royal
3A	Black soils; better moisture conditions than 2A	Redman Thatcher	Stewart	Exeter Fortune	Montcalm Plush Vantage	Dakota Royal
3B	Deep black and degraded black soils; shorter frost free period and better moisture conditions than 3A	Redman Regent Thatcher		Exeter Fortune	Montcalm Plush Vantage	Dakota Redwing Royal
3C	Black soils; better moisture conditions than 2B, and cooler than 3A, 3C and 3G	Redman Regent Thatcher	Stewart	Exeter Fortune	Montcalm* Plush Vantage	Royal
3D	Deep black soils; better moisture conditions than 3E	Redman Thatcher		Exeter Fortune	Hannchen Montcalm* Plush Vantage	Redwing Royal
3E	Black soils; shorter frost free season and better moisture conditions than 2D	Thatcher		Ajax Exeter Fortune	Montcalm* Plush	Dakota Redwing
3F	Degraded black and some grey soils; shorter frost free period than 3D	Thatcher		Exeter	Hannchen Montcalm Plush Vantage	Redwing
3G	Black soils, medium to light textured, more droughty than 3E	Thatcher		Ajax Exeter Fortune	Plush	Redwing
3H	Degraded black soils; distinctly short frost free season	Redman		Fortune Victory	Montcalm	Redwing
4A	Gray and strongly degraded black soils; short frost free season	Thatcher		Exeter	Montcalm	Redwing Royal
4B	Gray soils; distinctly short frost free season; better moisture conditions than 3E	Thatcher		Exeter Fortune	Montcalm	Dakota Redwing

†For sawfly control only.

*See the description of Montcalm in the text.

□Oats as a crop are not recommended for this zone, but for those who do grow oats the variety Ajax is suggested.

⊕Flax as a crop is not recommended in Zone 1, and is hazardous to grow at many points in Zones 1A and 1B, but for those who do grow flax the variety Royal is suggested.

FLAX

To control flax diseases it is advisable to treat the seed every year with ceresan or a similar mercuric dust at the rate of 1½ ounces per bushel. In addi-

Recommended Varieties

Royal is moderately resistant to wilt and rust, but is susceptible to pasmo. It has medium-sized light brown seeds with a characteristic shading off toward very pale brown at the big end. Royal is a high yielder, is late maturing and has slightly weak straw.

Redwing is resistant to wilt, susceptible to rust and pasmo and has small brown seeds. It is lower in yield than

Varieties Not Recommended

Viking is a variety having white blossoms and very large yellow seeds. Compared with Royal it is equally late and has much shorter straw. Viking is highly resistant to rust and wilt, but very susceptible to pasmo. It is high in oil extraction and quality.

Victory is a variety with white blossoms and large brown seeds. Compared with Royal it is equally late and has shorter straw. Victory is highly resistant to rust and wilt but susceptible to pas-

tion, as most of the diseases overwinter on the straw, flax should not follow flax.

Royal but as it matures a week earlier it is recommended where early maturity is essential.

Dakota is highly resistant to both wilt and rust and appears to be moderately susceptible to pasmo. It has medium-sized brown seed. Dakota matures earlier and more uniformly than Royal but is slightly lower in yield.

mo. It is high in percentage of oil and in oil quality.

Others: Crown, Cheyenne, Bison, Buda.

Promising Varieties Under Test

Rocket is a variety having blue blossoms and large brown seeds. Compared with Royal it is slightly earlier, slightly lower in yield and better in oil content and quality. It is resistant to rust and moderately resistant to wilt and pasmo.

RYE

Rye is a vigorous, high-yielding crop in most sections of the Province and is particularly useful on the lighter textured, droughty soils. Fall rye is valuable in the control of annual weeds and for the control of soil erosion.

Dakeld 23 is the most suitable variety of fall rye on account of its winter

hardiness and high yield. The seed is small, wrinkled and mostly greenish in color.

Prolific is the most suitable variety of spring rye because of its high yield. The seed is large, fairly smooth and generally green in color.

FIELD PEAS AND BEANS

Special care is required in growing and harvesting these crops. Disease is an important factor and care should be taken to sow only disease free seed.

Dashaway is an early maturing small seeded, good yielding yellow pea. The blossoms are white and the vine has medium length.

Arthur is a medium large yellow pea. It is high yielding and medium late maturing. The blossoms are white and the vine is fairly long.

Early Blue is an early maturing, medium sized high yielding blue pea. It has white blossoms and a very short vine.

Great Northern is a medium-late maturing large white bean of good yield and high quality. It is recommended especially as a market crop.

Norwegian is a very early maturing large brown bean. It is recommended for home use because of its earliness, good yield and high quality.

FORAGE CROPS

Grasses and legumes suited to the rigorous climatic conditions of Saskatchewan are few in number but fortunately they are well adapted and very satisfactory. Drought resistance and winter hardiness are the two qualities which are most essential.

Perennial crops are of great importance in building up and maintaining soil resources. Most perennial grasses add fibre to the soil and have a beneficial effect on soil structure which in most cases assists in preventing wind and water erosion. Similar effects can not be obtained with annual cereal crops. The legumes add nitrogen to the soil and thus improve its fertility. Experiments have shown that in certain districts when grown in rotations, perennial forage crops aid in the control of weeds which are otherwise difficult to control. Recommendations with respect to the use of these crops for soil improvement and weed control will be found in the sections on Soils, Cropping Systems, and Weed Control.

On a large proportion of Saskatchewan farms the limited area in grassland and the rundown condition of the grass is not favorable to a flourishing livestock industry. In many instances the provision for winter feed supply is particularly unsatisfactory. The increasing use of combines in recent years has progressively made this situation more acute. It cannot be too strongly emphasized that unless other dependable supplies are available the growing and building up of hay reserves should be a part of the farm production program. Pasture land in many areas is in an unthrifty and unproductive state. This is due mainly to insufficient acreage for the stock being carried. The reseeded of rundown native or cultivated pastures and the seeding of additional acreages are required on many farms. Land not suitable for cereals may often be suitable for the production of forage crops.

CHARACTERISTICS OF ADAPTED GRASSES AND LEGUMES

Crop characteristics, such as type of root (whether creeping or not), height, leafiness, varieties, etc., are considerations which enter into the choice of a crop or mixture of crops to grow. Table 1 summarizes the main characteristics and suitability for different purposes of the forage crops which can be grown successfully in Saskatchewan.

Varieties

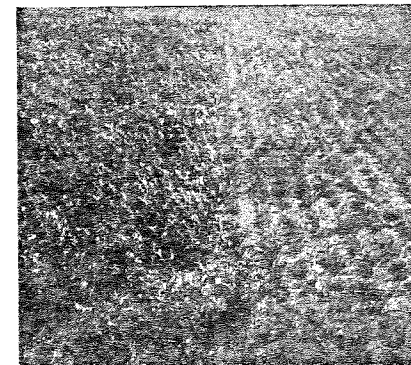
Crested Wheat Grass.—Fairway is leafier and finer stemmed and although equal in yield it is two to three inches shorter than Common. Under drought Fairway ripens off or becomes dormant more quickly than Common. For use as a hay crop the taller growth of the Common makes it easier to harvest.

Brome.—Common or Superior are recommended. Parkland, while considerably more leafy and less strongly creeping, is lower in hay and seed yield.

Alfalfa.—Ladak is more drought resistant, more winter hardy and higher yielding than Grimm throughout Saskatchewan. In addition it has some resistance to bacterial wilt which Grimm lacks. Outside the Grimm seed growing area it is recommended that Ladak be

used whenever seed can be obtained. Grimm, however, is a very satisfactory variety if Ladak is not obtainable.

Sweet Clover.—Arctic, Alpha, and Common White are all white blossomed. Arctic is finer stemmed and more uniform than Common. Alpha is very fine stemmed and leafy but grows only



Crested wheat grass alfalfa mixture on left and crested wheat alone on right. Sown 1937, photographed August 1, 1939, after having been cut twice. Over a period of years the mixture yielded twice as much as the grass alone.

Varieties Not Recommended

Mindum is the standard durum variety as regards macaroni quality, but it is being superseded in Saskatchewan by Stewart, which yields better.

Golden Ball. This variety is so poor

WINTER WHEAT

While winter wheat is not recommended for general use in Saskatchewan, it is being grown more or less satisfactorily in Zone 1C and some parts of Zones 3B, 3H, 4A and 4B. The advantages of winter wheat, where it winters successfully, are that it excels spring wheat in yield and in getting ahead of late summer drought and early fall frosts. It is worth noting that breeding and testing work on this

OATS

On the dry open plains, where oats are often a disappointing crop, it is recommended that they be sown early

Recommended Varieties

Exeter is a late maturing large seeded variety which yields well in the cooler, moister areas of Saskatchewan. It has slightly weak straw of good length. It is resistant to most races of stem rust but susceptible to some, and moderately susceptible to leaf rust and smuts.

Ajax is an early maturing variety with strong somewhat short straw. It is resistant to most races of stem rust, but susceptible to some, and has moderate resistance to leaf rust and smuts. It has a somewhat small kernel but has yielded well in the drier areas of the Province

Varieties Recommended for Special Purposes

Valor is a very early maturing variety with large plump kernels and strong straw. Because of its earliness and large seed it is useful as a cleaning crop for wild oats. It is susceptible to rusts, but resistant to smuts.

Varieties Not Recommended

Banner resembles Victory closely in adaptability, lateness, yielding ability, length and strength of straw and susceptibility to disease. Banner has a somewhat more slender kernel and is better adapted to dry conditions than Victory.

Legacy. Compared with Victory Legacy is earlier and has stronger straw but has not yielded as well under Saskatchewan conditions.

Laurel is a high yielding hullless variety with strong, short straw. It is a week earlier than Banner and yields about two-thirds as much threshed grain. Laurel is useful for special feeding purposes as for poultry and pigs.

in macaroni quality that its license for sale as seed was revoked some years ago.

Carleton is a sister of Stewart but lower in yield.

crop is under way.

At the present time the varieties **Kharkov** and **Yogo** are being used. Both are hard, red winter wheats with awned heads and narrower longer kernels than Thatcher. They are susceptible to stem rust and moderately winter hardy. The variety **Yogo** is considered harder than Kharkov.

on summerfallow or other well prepared land. The recommended varieties all have open panicles and white seed.

and is useful in other areas where frost is a hazard.

Victory is a late plump seeded variety which yields well where rust is not a factor. It has slightly weak straw of good length and is susceptible to smuts and rusts.

Fortune is a new high yielding, smut resistant oat which possesses rust resistance similar to that of Exeter. This variety compared with Exeter is equal in yield, slightly earlier and stronger strawed.

Brighton is a high yielding hullless variety with large kernels; is moderately resistant to smuts, but susceptible to rusts. It is useful for special purpose feeding such as young pigs, cattle and poultry.

Garry is a new variety, resistant to the rusts and smut. It has not yielded as well as Ajax or Exeter in Saskatchewan. Garry is strong strawed, later in maturity than Ajax but earlier than Exeter. It is susceptible to Helminthosporium victoriae, a serious root rotting disease.

Others: Anthony, Beacon, Beaver, Cartier, Eagle, Erban, Gopher, Vanguard.

Promising Varieties Under Test

Larain is an early maturing, strong-strawed variety with plump kernels. It may prove useful as a special purpose oat in certain parts of Saskatchewan.

BARLEY

Barley is now being grown extensively on the open plains where, under good conditions, it gives more feed units per acre than either wheat or oats. It is recommended that barley in this area

Varieties Recommended for General Use

Plush is a six-rowed, smooth-awned, medium late, high yielding variety with moderately strong straw. It is moderately resistant to stem rust but susceptible to leaf rust, loose and covered smut. It is reasonably satisfactory for combining and is eligible for feed grades only.

Montcalm is a six-rowed smooth-awned blue seeded variety of high malting quality. It has moderately weak straw and is poor for combining. Montcalm is eligible for grade 1 C.W. six-row. It is susceptible to rusts and loose smuts, but moderately resistant to covered smut.

Titan is a six-rowed, smooth-awned early maturing, strong strawed variety

Varieties Recommended for Special Purposes

O.A.C. 21 has been the standard malting barley in the past, but is being largely replaced by Montcalm for agronomic reasons. O.A.C. 21 is a six-rowed, rough-awned blue seeded variety with a weak neck and prone to shatter.

Warrior is the best available hooded

Varieties Not Recommended

Newal is a six-rowed, smooth-awned strongly nodding variety. Compared with Plush, Newal is equal in general yielding ability, time of maturity, straw length and strength, bushel weight and susceptibility to diseases. Newal excels Plush in the northwest whereas Plush excels Newal in the southeast.

Regal is a six-rowed, smooth-awned variety which, compared with Plush, is lower in yield, a day later, has stronger straw of equal length and is more susceptible to rusts but less susceptible to smuts. Regal continues to do well in the northwest.

Prospect is a six-rowed, smooth-awned early maturing variety. Compared with Plush, Prospect averages lower in yield and bushel weight, equal in straw length and strength and similar in disease reactions. Prospect does well in the southwest, excelling Plush in most years.

Rex is a two-rowed, smooth-awned variety. Compared with Plush Rex averages lower in yield, equal in time of maturity and straw length, similar in disease reactions, distinctly higher in bushel weight and much higher in straw strength and in resistance to shattering

be sown early on summerfallow or other well prepared land. In the moister parts of Eastern and North-eastern zones a considerable amount of barley is grown for malting purposes as well as for feed.

which yields well. It is a good combine variety and is eligible for the feed grades. Titan is susceptible to rusts but is resistant to both loose and covered smut.

Hannchen is a two-rowed, rough-awned late maturing variety which has moderately weak short straw and is satisfactory for combining. It is eligible for the top two-row grades. Hannchen is susceptible to rusts and smuts.

Vantage is a six-rowed, smooth-awned, medium late variety, resistant to stem rust. Compared with Plush, Vantage has stronger straw, greater neck strength, is more resistant to shattering and has similar susceptibility to leaf rust and to loose and covered smut.

(awnless) variety. It is very useful where early maturity is required. It has strong straw and is satisfactory for combining. It is susceptible to rusts, moderately resistant to covered smut and resistant to loose smut. Warrior is eligible for the feed grades.

and neck breaking. On account of the last three characteristics Rex is popular as a combine barley.

Olli is a nodding, six-rowed, rough-awned variety with blue seeds. It is very early maturing and yields fairly well under moist conditions in the north-eastern part of the Province, but its yield on the open plains is comparatively poor. It is susceptible to rusts and smuts.

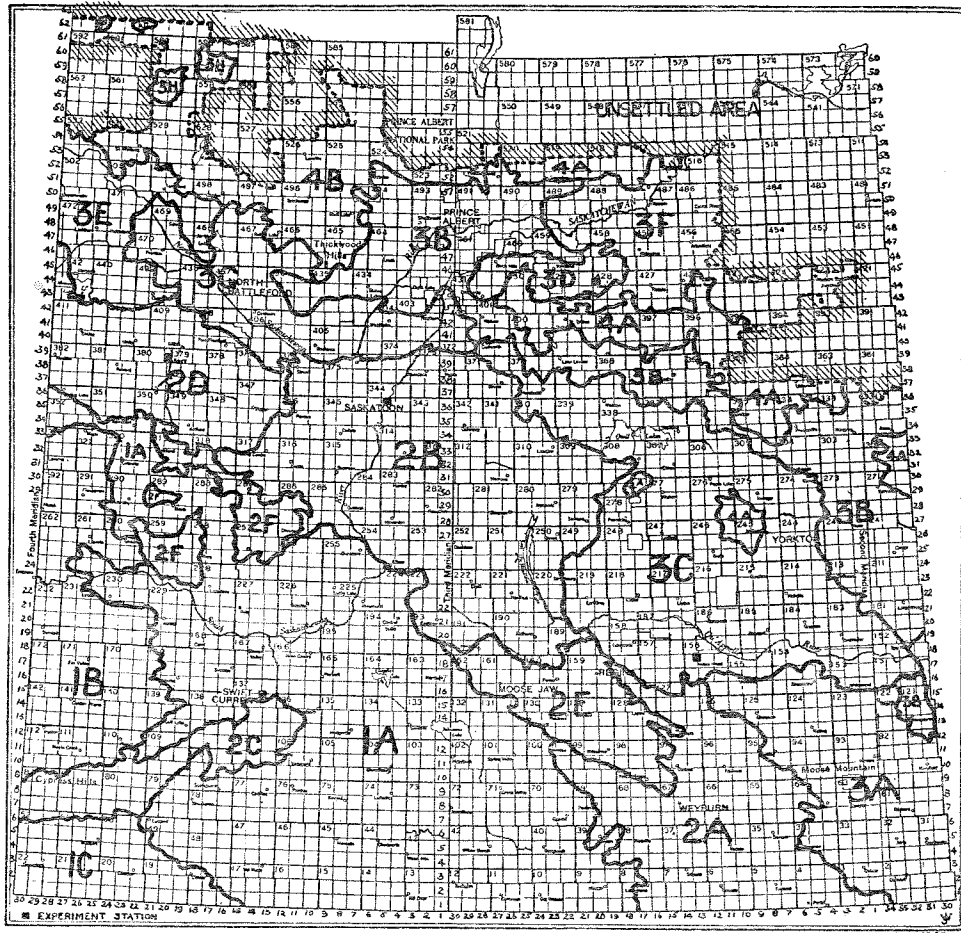
Others: Canadian Thorpe, Colless, Himalayan, Mensury, Sanalta, Trebi, and Wisconsin 38.

Promising Varieties Under Test

Compana is a two-rowed, smooth-awned variety, released by the Montana Experimental Station as a dry land feed barley. It combines well and resists grasshoppers better than most varieties. If licensed for sale in Canada it will be useful in the drier parts of southwestern Saskatchewan.

Velvon II is a six-rowed, smooth-awned variety which has shown a great deal of promise. It is an excellent combine variety. If licensed for sale in Canada it will probably replace Plush in northwestern Saskatchewan.

CEREAL VARIETY ZONES



BREAD WHEAT

Recommended Varieties

These are varieties of outstanding merit for one or more of the zones. In all cases they are hard red spring varieties resistant to stem rust and of proven excellence.

Thatcher has wide adaptability and is recommended for all zones except 3H. It has short, strong straw, early maturity and high resistance to shattering. The kernels are small and tend to bleach when exposed to weathering. It is moderately resistant to common rootrot and

resistant to loose smut, but susceptible to leaf rust and bunt.

Apex.—Compared with Thatcher it has somewhat longer but weaker straw, slightly later maturity and equal resistance to shattering. The kernels are slightly larger, brighter, and have less tendency to bleach. It is moderately resistant to rootrot, bunt and loose smut, and moderately susceptible to leaf rust. The new Apex, Sask. 2177, compared with the old Apex is higher in yield,

stronger strawed, higher in bushel weight and one day later.

Regent.—Compared with Thatcher it has slightly weaker straw of equal length, earlier maturity and equal resistance to shattering. The kernels are larger and have less tendency to bleach. Regent is resistant to some races of leaf rust but susceptible to a number of races prevailing at the present time. It is resistant to most races of bunt but moderately susceptible to rootrot and moderately resistant to loose smut.

Rescue.—Compared with Thatcher it has weaker straw of equal length, slightly later maturity and equal resistance to shattering. The kernels are

Varieties Not Recommended

Marquis is an awnless stem rust susceptible variety. Compared with Thatcher Marquis averages lower in yield, has longer slightly laxer heads, larger brighter kernels with less tendency to bleach, longer straw of equal strength, two to four days longer ripening period, equal resistance to shattering, after-harvest sprouting, common rootrots and spring frosts, less resistance to loose smut and slightly more resistance to bunt. "Varietal surveys indicate that many farmers in Western Saskatchewan still grow this variety, although scores of accurate comparable results in that part of the Province show greater returns from Thatcher and Rescue."

Reliance is an awned variety. Compared with Thatcher it has somewhat longer, weaker straw, considerably later maturity and less resistance to shattering. The kernels are larger, brighter, and have less tendency to bleach or to shrink under extreme dry conditions. It is moderately resistant to rootrot, but susceptible to loose smut, bunt, leaf rust and stem rust.

Renown is a medium early, stem rust resistant variety with many excellent characteristics, but insufficient yielding

DURUM WHEAT

Durum or macaroni wheats have a place in the farm economy in certain areas of the Province. They have proven valuable in the sawfly infested area on account of their moderate resistance to

Recommended Varieties

Stewart is of good quality and is eligible for the top grades. It has moderately strong straw, is resistant to stem and leaf rust but is susceptible to bunt and moderately susceptible to common rootrot.

larger, brighter and have less tendency to bleach. It is moderately susceptible to common rootrot, susceptible to bunt, loose smut and leaf rust. The chief characteristic of this variety is its resistance to wheatstem sawfly damage.

Redman.—Compared with Thatcher it has straw of equal length and strength, slightly earlier maturity and equal resistance to shattering. The kernels are larger and have less tendency to bleach. Redman is resistant to many races of leaf rust but moderately susceptible to those prevailing at the present time. It is resistant to bunt, moderately resistant to loose smut, and moderately susceptible to rootrot.

capacity under most Saskatchewan conditions.

Red Bobs.—Compared with Thatcher it has straw of equal length and strength, equal maturity and distinctly less resistance to shattering. The kernel is larger and brighter but has a greater tendency to be starchy under moist conditions. It is moderately susceptible to rootrot, and susceptible to leaf rust, bunt and loose smut, and very susceptible to stem rust.

Garnet is a vigorous, early maturing variety which is still grown somewhat in Northwestern Saskatchewan in spite of its high susceptibility to rust, weak straw, propensity to sprout in the stook, and in spite of being graded separately.

Others: Newthatch, Rival and Mida.

Promising Varieties Under Test

Saunders.—Compared with Thatcher it has slightly shorter straw of equal strength, is one day earlier maturing and has equal resistance to shattering and loose smut. The kernels are larger with less tendency to bleach. Saunders is susceptible to leaf rust and moderately susceptible to covered smut and black chaff.

this insect pest. They are later maturing and weaker in the straw but, in zones where they are recommended, usually yield as much as and frequently more than the bread wheats.

Pelissier.—Compared with Stewart it is inferior in quality and not eligible for grades above 3 C.W. It has stronger straw, is susceptible to stem and leaf rust, bunt and common rootrot. It has outyielded Stewart in the drier parts of the Province.