

# Description of Grain Varieties and Recommendations as to Where They Should be Grown in Saskatchewan<sup>†</sup>

As Drawn Up by the Saskatchewan Cereal Variety Committee \*  
at Saskatoon, on January 13 and 14, 1938.

## INTRODUCTION

THE status of Canada as a grain exporting country depends primarily upon quality and in view of the world trade situation it is now more necessary than ever that the quality of Canadian grain be kept at the highest possible level. Increased quality is unquestionably more readily secured by the use of varieties of proven merit only and the elimination of all inferior varieties.

The Saskatchewan Cereal Variety Committee was formed in 1928. Since that time, much progress has been made in securing the co-operation of the grain producers in reducing the number and the total acreage of inferior varieties. The use of such varieties is detrimental to the grower's welfare as well as to Canada as a whole. It is almost impossible to keep varieties from getting mixed. Accidental mixing results from using the same seed drills, harvesters, fanning mills, threshers and other machinery for more than one variety of a crop without thorough cleaning between varieties, and from natural agencies such as wind, rain, birds and animals. Admixtures of other varieties in a given variety often reduce the market value of a crop because varieties differ in cultural and quality characteristics and machine methods of producing flour, malt, etc., require uniformity in the raw materials.

## VARIETY ZONES

The information accumulated during the past twenty years on cereal variety performance in Saskatchewan has shown that varietal behaviour is the expression of the various inherited potentialities of the variety as influenced by the environment. Differences in soil, climate, elevation, slope, windiness, sunniness, precipitation, temperature and the various crop pests all have their effect on a variety. As no two varieties are alike, and as no two seasons are alike, it is not easy to predict what a given variety will do in comparison with another one in a given season.

However, a farmer grows grain not for one year alone but for a number of years. Therefore, while seasonal differences may be extremely important, his choice of variety must depend primarily on average performance over many years. The soil survey map of Saskatchewan, the long time weather records kept at stations throughout the province and hundreds of comparative variety plot tests and quality tests furnish the information the farmer needs to aid him in choosing a variety. That is to say, sufficient is known of the comparative reactions of the leading varieties under a wide range of conditions to make possible general recommendations as to their use in the various parts of the province.

Now, 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. Comparatively small differences in precipitation, summer temperature, length of frost-free season and soil type affect markedly the comparative values of cereal varieties. To facilitate the making of specific variety recommendations, it has been necessary to divide the soil-climatic zones into cereal zones. The cereal zone subdivisions of the soil-climatic

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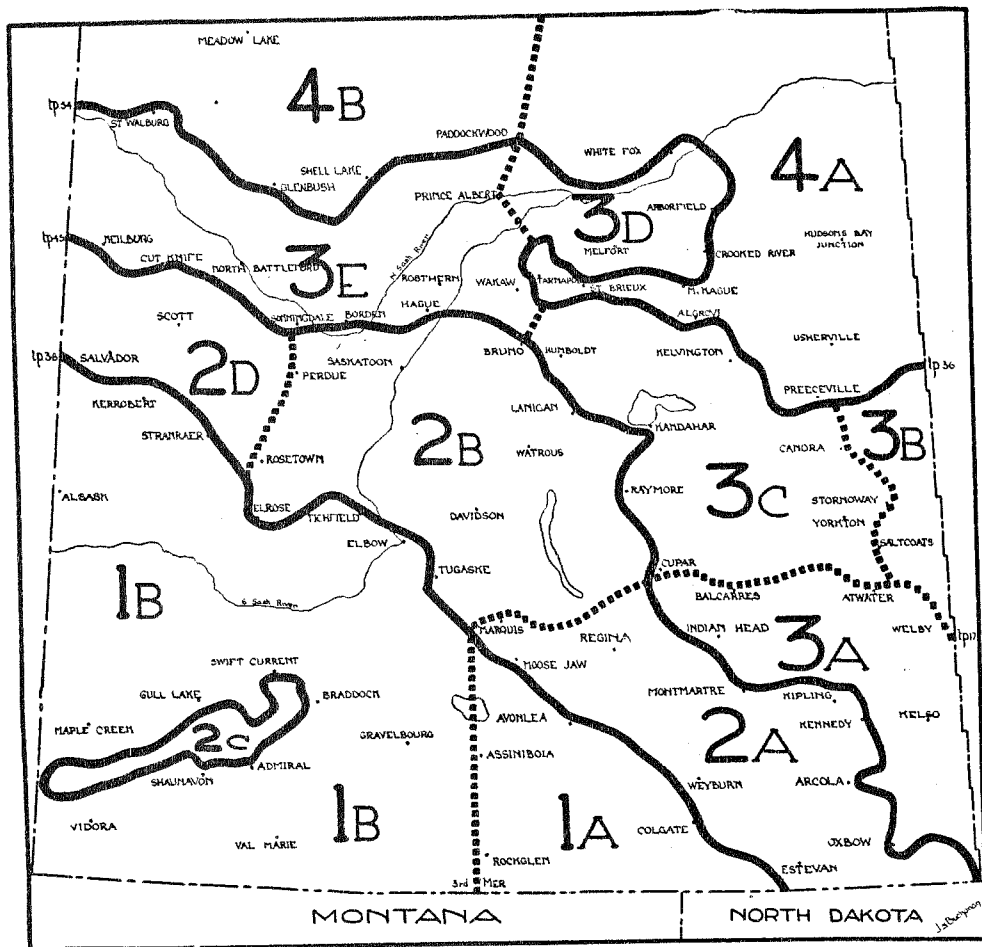
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Note.—The six first-named are cerealists.

zones are designated by the addition of a letter to the soil-climatic zone number. Thus, cereal zone 2B is section B of soil-climatic zone 2.

While definite zones make necessary the exact location of boundary lines, it should be pointed out that a line separating two zones is arbitrary and that a tolerance of several miles one way or another is allowable with respect to variety recommendations. In addition, attention is drawn to the fact that in each zone there are many local areas which differ widely from the average for the zone. Some of these areas have light sandy soil, others have heavy wet soil, some are at a higher elevation than the surrounding country and receive extra precipitation, others may be low lying and subject to frequent early frosts. The detailed soil map of Saskatchewan shows clearly the wide variations which occur in the soil character of any given zone.

Only those varieties are recommended for use in the different zones which appear to warrant general usage over relatively large areas and which are of high market quality. Varieties that are inferior in quality or show disadvantages in other respects should not be grown. The use of varieties that do not show in their general performance sufficient differences from the recommended varieties is discouraged. It will be noted in the next section that several varieties of each crop are recommended. 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. With regard to these exceptions, accurate information on varieties can always be obtained from the nearest experiment station or the University.



CEREAL VARIETY ZONES

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Following are descriptions of the cereal zones and, in the order of preference, the varieties recommended for general use in the different zones.

Zone	Prevailing Soil Type and Conditions	Wheat	Oats	Barley
1A.....	Open plains, brown soil subject to occasional heavy damage from stem rust; needs drought resistant varieties especially.	Thatcher Apex Renown Ceres Marquis	Banner Victory	Hannchen Trobi Regal
1B.....	Open plains, brown soil, needs drought resistant varieties especially.	Marquis Reliance	Banner Victory	Hannchen Trobi Regal
2A.....	Open plains, dark brown soil; subject to heavy damage from stem rust.	Thatcher Apex Renown Ceres	Banner Victory Gopher	Regal Trobi Hannchen
2B.....	Open plains, dark brown soil; has a slightly lower summer temperature, less precipitation and a slightly longer season than 2A; subject to occasional heavy damage from stem rust.	Marquis Thatcher Apex	Banner Victory Gopher	Regal Hannchen Trobi
2C.....	Bench land, dark brown soil; cooler with shorter frost free season and more precipitation than 2B.	Marquis Reward	Banner Victory Gopher	Hannchen Trobi Regal
2D.....	Open plains, dark brown soil, higher elevation, shorter season, less precipitation and more frost damage than 2B.	Marquis Thatcher Reliance	Banner Victory Gopher	Regal Hannchen Trobi
3A.....	Very dark brown and black soils; park land; subject to frequent heavy damage from stem rust.	Thatcher Renown Apex Ceres Reward	Victory Banner Vanguard Anthony Gopher	Regal Hannchen Trobi
3B.....	Park land, characterized by a deeper, dark soil and a shorter frost-free season than 3C; subject to frequent heavy damage from stem rust.	Thatcher Renown Apex Ceres Reward	Vanguard Anthony Gopher Victory	Regal Trobi O.A.C. 21 *
3C.....	Very dark brown and black soils; park belt; lower summer temperature, less precipitation and a slightly shorter season than 3A; subject to occasional heavy damage from stem rust.	Thatcher Apex Renown Ceres Reward Marquis	Victory Banner Vanguard Anthony Gopher	Regal Trobi Hannchen O.A.C. 21 *
3D.....	Black soil; park area; subject to occasional moderate loss from stem rust.	Thatcher Apex Renown Reward Marquis	Victory Banner Gopher Vanguard	Regal Trobi O.A.C. 21 *
3E.....	Very dark brown soil; park region; less precipitation and slightly shorter season than 3D. Slightly subject to rust in eastern part.	Reward Marquis Thatcher	Banner Victory Gopher	Regal Trobi Hannchen O.A.C. 21 *
4A.....	Grey soils; wooded region; subject to occasional damage from stem rust in southern part.	Reward Thatcher Apex (s. part) Renown (s. part)	Victory Gopher Vanguard Anthony	Regal Trobi O.A.C. 21 *
4B.....	Grey soils; wooded area; frost free season shorter and summer precipitation lower than in 4A.	Reward Thatcher	Victory Banner Gopher	Regal Trobi O.A.C. 21 *

\* See paragraph on O.A.C. 21 in "Barley" section.

## WHEAT

### Introduction

Wheat is the most important export crop of Canada. It is imperative that the different varieties in general use possess essentially the same high milling and baking quality. When that is the case, the exact number of varieties is not vitally important. Various local soil-climatic conditions in Saskatchewan may eventually make necessary the use of appreciably more varieties than are at present recommended.

Frequently two varieties of wheat are used advantageously on the same farm in order to lengthen the seeding and harvesting seasons with the consequent reduction of overhead expense. Where this is done, it is very important that the varieties be of similar high quality and be kept separate at all times.

The discontinuance of the use of white wheat in any part of Saskatchewan is strongly advised. No variety of white wheat has proven of superior merit in the province. Where white wheat is grown, it invariably contaminates the red kernelled wheat grown in the same district.

### Description of Varieties

#### (a) Recommended Varieties

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

1. *Marquis* is still the principal variety of wheat grown in Saskatchewan. It is beardless with smooth white glumes. It matures moderately early, yields well, has excellent milling and baking quality, has strong straw of moderate length, is highly resistant to shattering and is fairly resistant to most diseases of wheat. Its chief drawback is its susceptibility to stem rust. *Marquis* is recommended especially for zones 1B, 2C and 2D. In zones 1A and 2B *Marquis* should not be sown late on account of danger from stem rust. In zones 3C, 3D and 3E, *Marquis* is generally satisfactory if it is sown very early or on the lighter, drier land where it will not suffer seriously from stem rust or from early fall frosts.

2. *Reward* is a beardless variety with somewhat short irregular heads and white hairy glumes. *Reward* has high protein content (excelling *Marquis* especially in zone 3), high milling and baking quality and a high weight per measured bushel. It is 4 to 6 days earlier, is less rust susceptible, is more susceptible to both covered and loose smut, has equally strong but shorter straw and usually yields less than *Marquis*. It does not withstand unfavorable weather conditions or competition with weeds as well as *Marquis*. The best results are obtained by sowing *Reward* about one peck per acre heavier than *Marquis*. *Reward* is recommended especially for zone 3E and for those parts of zones 4A and 4B which are suitable for wheat production. *Reward* is also recommended for zones 2C, 3A, 3B, 3C and 3D on account of its earliness and slight rust resistance.

3. *Thatcher* is a new highly rust resistant beardless variety with smooth white glumes terminating in beaks which are slightly longer and more curved than those of *Marquis*. Compared with *Marquis*, *Thatcher* has heads which are about one-sixth shorter and slightly denser and kernels which are slightly smaller and duller in color; its straw is shorter and much stronger and it matures two to four days earlier. Where there is no stem rust *Thatcher* is slightly lower than *Marquis* in bushel weight. Although *Thatcher* is not completely resistant to stem rust, it yields under rust epidemic conditions much higher than *Marquis*, *Ceres* or *Reward*, and the grain is better in grade, appearance and quality. It also outyields *Marquis* significantly under rust-free conditions. It is very susceptible to covered smut but is practically immune from loose smut. In milling and baking quality this variety ranks equal to *Marquis*. *Thatcher* is recommended especially for zones 2A, 3A, 3B and 3C. It also is recommended for zones 1A, 2B, 3D, 3E and 4A and for trial in zones 2D and 4B.

4. *Apex* is a new highly rust resistant beardless variety resembling *Marquis* in size and shape of the head, in glume characters and in the size, shape and color of the kernel. Compared with *Marquis*, *Apex* is about two days earlier maturing; has slightly shorter, mid-strong straw; is distinctly more resistant to hant and loose smut; is equally resistant to common root rot, shattering and weathering. *Apex* averages slightly higher than *Marquis* in yield under rust-free conditions. It is slightly lower than *Marquis* in bushel weight but the new strain of *Apex* distributed for the first time in the fall of 1937 appears to equal *Marquis* in that respect and is another day or two earlier. *Apex* grades the same as *Marquis* and ranks with it in milling and baking quality. Under rust epidemic conditions *Apex* is much higher in yield than *Marquis*, *Ceres* and *Reward* and has better appearance, grade and quality. *Apex* is recommended for trial in zones 1A, 2A, 2B, 3A, 3B, 3C, 3D and the southern part of 4A.

5. *Renown* is a new highly rust resistant beardless variety with smooth white chaff and a slightly shorter head and longer beak than *Marquis*. The kernel resembles *Marquis* in color

but is slightly longer of equal length is equally resistant *Marquis* in yield in grade and more intensively appears conditions, *Renown* better appearance 3B, 3C, 3D and

6. *Ceres* is resistance. Com weight and grain length, is less recommended for

7. *Reliance* *Reliance* is slightly shorter straw (susceptible to stem early. It is satisfactory *Reliance* is recommended

*Red Bobs* 2 white glumes. much more susceptible baking quality.

*Garnet* is a sharp beak. It and for this reason readily, has slight *Garnet* is used

*Durum* or longer, much weight *Durums* usually, wheat is limited and similar pagrain trade and

1. *Mindus* chaff, brown beak *Marquis*. It is

2. *Pelissier* dry conditions beards and slight zones 1A, 2A

3. *Golden* is distinctly in solid straw and and *Pelissier* better low grades. *G*

(i) Varieties Axminster, Britton, Montana

(ii) Varieties Kota, Parker's White Head.

but is slightly larger. Compared with Marquis, Renown is two to four days earlier; has straw of equal length and nearly equal strength; is distinctly more resistant to bunt and loose smut; is equally resistant to shattering and weathering. Renown has averaged slightly lower than Marquis in yield and bushel weight under rust-free conditions. However, it ranks with Marquis in grade and milling and baking quality. A new strain of Renown which has been tested extensively appears to approach Marquis closely in yield and bushel weight. Under rust epidemic conditions, Renown yields much higher than Marquis, Ceres and Reward and the grain has better appearance, grade and quality. Renown is recommended for trial in zones 1A, 2A, 3A, 3B, 3C, 3D and in the southern part of 4A.

6. *Ceres* is a bearded variety with smooth white glumes and a moderate degree of rust resistance. Compared with Marquis, *Ceres* ranks equal in milling and baking quality, bushel weight and grade, yields as well, is about two days earlier, has mid-strong straw of similar length, is less resistant to covered smut and is more subject to sprouting in the stook. *Ceres* is recommended for zones 1A, 2A, 3A, 3B and 3C.

7. *Reliance* is a bearded variety with smooth white glumes. Compared with Marquis, *Reliance* is slightly higher in bushel weight; slightly lower in protein content, has slightly shorter straw of nearly equal strength, holds its grain less tightly, yields higher, is equally susceptible to stem rust and smuts, is distinctly more resistant to spring frost and is equally early. It is satisfactory in milling and baking quality and is admitted to the top grades. *Reliance* is recommended for use in zones 1B and 2D.

#### (b) Varieties of Secondary Importance

*Red Bobs 222, Supreme, and Early Triumph* are completely beardless varieties with smooth white glumes. Compared with Marquis, they are 2 to 4 days earlier, have shorter straw, are much more susceptible to stem rust and yield as well. They rank with Marquis in milling and baking quality. They are used principally in the western parts of zones 1B, 2D and 3E.

#### (c) Garnet

*Garnet* is a beardless variety with smooth white glumes which have a characteristic short sharp beak. It is fully a week earlier than Marquis but is inferior to Marquis in baking quality, and for this reason is graded separately. *Garnet* is very susceptible to stem rust, shatters fairly readily, has slightly weak straw and sprouts readily when exposed to wet weather after cutting. *Garnet* is used extensively in zones 3D, 3E, 4A and 4B where danger from fall frost is great.

#### (d) Durum Wheats

*Durum* or macaroni wheats compared with Marquis, are more susceptible to smuts, have longer, much weaker straw, are somewhat less drought resistant, and are usually later maturing. Durums usually have strongly bearded heads with large amber kernels. The market for durum wheat is limited as this wheat is not used for bread flours but for making macaroni, spaghetti and similar paste products. Mixtures of durum and bread wheats are very undesirable to the grain trade and receive lower grades.

1. *Mindum* is the standard durum as regards macaroni quality. It has smooth brown chaff, brown beards and amber kernels. *Mindum* is distinctly less drought resistant than Marquis. It is grown to a small extent in zones 2A, 2B and 3A.

2. *Pelissier* is essentially equal to *Mindum* in macaroni quality and yields better under dry conditions. It is admitted to the top durum grades. It has smooth white chaff, black beards and slightly larger amber kernels than *Mindum*. *Pelissier* is used to a small extent in zones 1A, 2A and 2B.

3. *Golden Ball* is a variety which cannot enter the top durum grades because its quality is distinctly inferior to that of *Mindum*. *Golden Ball* has hairy white chaff, black beards, solid straw and a large amber kernel with characteristic features. It yields as well as *Mindum* and *Pelissier* but the market price is lower, and mixtures of these varieties are likely to receive low grades. *Golden Ball* is not recommended.

#### (e) Varieties Not Recommended

(i) Varieties with white grain or with distinctly inferior bread making quality: Alaska, Axminster, Brownhead, Club, Dicklow, Hard Federation, Huron, Ladoga, McKenzie's Selection, Montana King, Quality, Vermilion, White Fife.

(ii) Varieties of insufficient general merit: Early Prolific, Early Red Fife, Hope, Kitchener, Kota, Parker's Selection, Percy, Pioneer, Prelude, Preston, Red Pife, Renfrew, Ruby, Stanley, White Head.

(iii) Durum varieties of unsatisfactory macaroni quality: Golden Ball, Pentad, Monad, Tumillo.

## OATS

### Introduction

Most of the oats grown in Saskatchewan are used locally for feed but there is usually an important saleable surplus. This should be of the quality desired by both domestic and foreign markets. Yellow oats or mixtures of yellow and white oats are not wanted by Canada's oat customers. Furthermore, no variety of yellow oats has proven outstanding in Saskatchewan. The best areas for growing oats as a cash crop are located in zones 3A, 3B, 3C, 3D, 3E, 4A and 4B. However, this crop is grown extensively throughout the province as horse feed, and the necessity of having adequate supplies has led many farmers to sow a fairly large proportion of their oats early in May on summerfallow or on other well prepared soil. This procedure has proven very satisfactory since the yields of oats sown early on good land are usually large.

### Description of Varieties

#### (a) Recommended Varieties

1, 2. *Banner and Victory* have been the leading oat varieties in Saskatchewan for years and still hold that position. They are recommended for all of the settled parts of the province. Both varieties have open panicles and white kernels, are high in yield, medium late in maturing, moderately strong strawed, have good quality, are moderately susceptible to smut and susceptible to stem rust. *Banner* has a more slender and slightly longer kernel than *Victory*. In general, *Banner* slightly outyields *Victory*, but the latter has plumper seed.

3. *Gopher* is a week earlier than *Banner* or *Victory* and has much stronger straw, but does not yield as well. It has open panicles and white kernels, excels *Banner* and *Victory* in grain quality on account of the low percentage of hull, but the straw is short. *Gopher* is moderately susceptible to smut and susceptible to stem rust. This variety is recommended for all areas where an early oat with strong straw is desired.

4. *Anthony* is a white seeded, open panicle oat not unlike *Banner* in earliness, straw strength and kernel character. It yields distinctly lower than *Banner* and *Victory* in the drier parts of Saskatchewan, but in the moister areas, approaches *Victory* in yield. Under rust conditions, it yields more than *Victory* or *Banner* on account of its high degree of stem rust resistance. It is recommended especially in zones 3B, 3D and 4A and also in zones 3A and 3C.

5. *Vanguard* is a white seeded, open panicle oat of the general *Banner* type. Compared with *Anthony*, *Vanguard* is fully as resistant to stem rust, as high in yield, several days earlier and much more resistant to smut. Neither variety is suited to dry open plains conditions. Under rust-free conditions *Vanguard* is out-yielded by both *Banner* and *Victory* but when an oat rust epidemic occurs, this yield relationship is reversed. *Vanguard* is recommended for trial in zones 3A, 3B, 3C, 3D and the southern part of 4A.

#### (b) Other Varieties

1. *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. Dust treatment should be used for controlling smut as formaldehyde is very injurious to the seed.

#### (c) Varieties Not Recommended

(i) Varieties with yellow kernels—*Gold Rain*, *Sixty Day*.

(ii) Varieties with insufficient general merit—*Abundance*, *Alaska*, *Cartier*, *Gerlach*, *Great Liza*, *Green Russian*, *Leader*, *Legacy*, *Liberty*, *Ligowa*, *Marvellous*, *New Era*, *Prolific*, *Swedish Select*, *White Cross*.

## BARLEY

### Introduction

Approximately 90% of the barley produced in Saskatchewan is grown as a cleaning crop and is used for feed; the remaining 10% is utilized by the malting trade. The bulk of the Saskatchewan barley which enters commercial channels is grown east of the third meridian and north of township 10, with the greatest concentration in zones 3B, 3C, 3D and 4A. Where barley is grown for market it should be of the quality and appearance desired by the trade. For best results it should be sown on well prepared soil and special care given in harvesting and threshing.

1. *Regal* is compared with but much stronger. *Regal* is liked for its recommended.

2. *Trebi* is a grain. It is the compared with higher, is lower in feed barley for a

3. *Hannche* with *Regal*, *Hannche* higher bushel weight beards when full pearling barley and 3E.

4. *O.A.C. 2* is the standard day or two earlier to break off at yield. There is amount required barley produced is recommended where high quality 3C, 3D, 3E, 4A

1. *Colsess* is officially resemble is 3 or 4 days later equally long straw lower in bushel weight is not a market

2. *Himalay* variety having s but not suitable

(i) Varieties *Glabron*, *Guy M*

(ii) Varieties *Peatland*, *York*,

1. *Dakold* for yield and winter

2. *Prolific* s of its high yield.

1. *Redwing* matures several oil yield but high commended for

2. *Bison* is a but only fair oil straw of average

## Description of Varieties

### (a) Recommended Varieties

1. *Regal* is a nodding, six-rowed smooth awned barley with bright straw-colored kernels. Compared with O.A.C. 21, *Regal* is a day or two later in maturing, has slightly shorter but but much stronger straw, has much greater neck strength, and excels in bushel weight and yield. *Regal* is liked particularly on account of its high yield and the absence of barbs on the beards. It is recommended for all of the zones.

2. *Trebi* is a semi-nodding, rough awned, six-rowed barley with large greenish-blue colored grain. It is the highest yielding barley at all of the experimental stations in Saskatchewan. Compared with *Regal*, *Trebi* has shorter, weaker straw, is more difficult to thresh, yields much higher, is lower in bushel weight and matures about a day earlier. *Trebi* is recommended as a feed barley for all of the zones.

3. *Hannchen* is a two-rowed nodding, rough awned variety with white kernels. Compared with *Regal*, *Hannchen* has shorter, much weaker straw, is about equally high in yield, has even higher bushel weight and matures about two days later. *Hannchen* tends to drop many of its beards when fully ripe. This variety has high quality for pearling, but the demand for good pearling barley is very limited. *Hannchen* is recommended for zones 1, 2A, 2B, 2C, 3A, 3C and 3E.

4. O.A.C. 21 is a nodding, six-rowed, rough awned variety with greenish-blue seeds. It is the standard six-rowed malting barley of Canada. Compared with *Regal*, O.A.C. 21 is a day or two earlier with weaker and slightly longer straw, weaker necks which allow the heads to break off at maturity, lower bushel weight, particularly under dry conditions, and lower yield. There is in Canada a fairly steady but limited demand for malting barley. The total amount required is approximately 10,000,000 bushels or about 12 per cent. of the amount of barley produced. O.A.C. 21 is the best available variety for supplying this requirement, and is recommended in Saskatchewan for those areas of the deep park belt and settled wooded region where high quality malting barley can be produced; such areas occur principally in zones 3B, 3C, 3D, 3E, 4A and 4B.

### (b) Other Varieties

1. *Colsess* is a nodding, six-rowed, hooded, hulled, white seeded variety which superficially resembles *Sixty Day* but is very superior to it in yield and straw strength although it is 3 or 4 days later. Compared with *Regal*, *Colsess* is nearly as high in yield, has equally strong, equally long straw which is especially palatable to stock, is about two days earlier, very much lower in bushel weight and much more susceptible to both covered and loose smut. *Colsess* is not a market barley but is recommended as a feed and hay barley for all zones.

2. *Himalayan* is a rough awned, early maturing, high yielding, hullless, green-kernelled variety having short strong straw under dry conditions. It is satisfactory for home feed uses but not suitable for market.

### (c) Varieties Not Recommended

(i) Varieties with insufficient general merit—Canadian Thorpe, Chevalier, Coast, Feeder, Glabron, Guy Mayle, Manchuria, Success, Velvet, White Hullless, Wisconsin Pedigree 38.

(ii) Varieties requiring further test—Sans Barb Nos. 2 and 3, Sanalta, Newal, Olli, Peatland, York, Rex, Pontiac, Mensury Ot. 60.

### RYE—Recommended Varieties

1. *Dakold* fall rye is recommended as the most suitable variety on account of its high yield and winter hardiness. The seed is small, wrinkled and mostly greenish in color.

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

### FLAX—Recommended Varieties

1. *Redwing* has blue blossoms and medium brown seeds. Compared with *Bison*, *Redwing* matures several days earlier, is equally wilt resistant, is about as high in grain yield, is lower in oil yield but higher in oil quality and has shorter straw of equal strength. This variety is recommended for general use.

2. *Bison* is a variety with blue blossoms and fairly large brown seeds of high oil content but only fair oil quality. *Bison* is highly resistant to wilt, is high in yield, fairly early, and has straw of average height and strength. It is recommended for general use.

(b) *Other Varieties*

*Linota* and *Buda* are also highly wilt resistant varieties of medium earliness and good yield. *Crown* and *Premost* are highly susceptible to wilt and should be replaced by disease resistant varieties as rapidly as possible.

**PEAS—Recommended Varieties**

1. *Chancellor* (Dashaway) is an early maturing small white pea of good yield. The blossoms are white and the vine has medium length.
2. *Mc Kay* is a medium sized white pea with a black eye. It is high yielding and medium late in maturing.
3. *Guinivere* is a high yielding, late, medium large white pea with white blossoms and medium long vines. It is a selection made from Arthur Ott. 18.

**BEANS—Recommended Varieties**

1. *Norwegian* is a very early maturing brown bean of good yield and high quality.
2. *Navy, Ott. 711* is a medium late maturing white bean of good yield and high quality.

**SEED TREATMENT FOR SMUT CONTROL**

All of the cereal varieties in common use in Saskatchewan are more or less susceptible to loose and covered smuts. Loose smut of wheat and barley does not increase seriously in the crop in most parts of the province probably because our dry climate is unfavorable to its development. Bunt or covered smut of wheat, covered smut of barley and the smuts of oats can be controlled by proper seed treatment. In recent years, dry treatments with chemical dusts have replaced the formalin solution method, on many farms. The dust treatments are very satisfactory if the directions are followed carefully and the necessary precautions taken. New improved cerasan dust will control bunt of wheat, covered smut of barley and the loose and covered smuts of oats. Copper carbonate dust will control bunt of wheat but is not recommended for the control of covered smut of barley or the smuts of oats. There are, in addition, other dusts which are under test and some of which may prove satisfactory, but there is insufficient information available to warrant recommending any of them at this time. A dusting machine is almost essential to assure a good dust treatment of cereal seeds. Usually a stronger germination is obtained with the dust treatments than with formalin; this is an advantage in fields infested with root rots or wireworms, or under any other circumstances where quick germination is required. Moreover, the dust treatments are recommended when badly shrivelled or otherwise weakened seed is used. The dusts are poisonous and certain precautions in this respect are necessary. The formalin solution treatments, if properly done, are very effective in controlling smut and may be used in the control of bunt of wheat, covered smut of barley and the smuts of oats. Occasionally formalin may cause severe seed injury and a general retardation in seedling growth. This is particularly true in the case of hullless oats. Full directions for seed treatments can be obtained from the Field Husbandry Department and the Dominion Laboratory of Plant Pathology, University of Saskatchewan, or from the nearest experiment station.

**OTHER CONSIDERATIONS**

In this report, varieties are described and recommended, but rates, dates and depths of seeding and cultural considerations are not included. Recommendations on these points will be found in the section on "Cropping Systems" of the Guide to Saskatchewan Agriculture.

It should be pointed out here that flax, peas and beans require special treatment as to soil preparation, sowing, harvesting and threshing. This is particularly true of flax which is a cash crop and can be produced successfully on a large scale providing the grower gives it the special treatment required. Circulars and bulletins containing detailed recommendations for producing each of these crops as well as for growing the true cereals, wheat, oats, barley and rye, may be obtained by writing to your nearest experiment station or the Extension Department of the University of Saskatchewan.