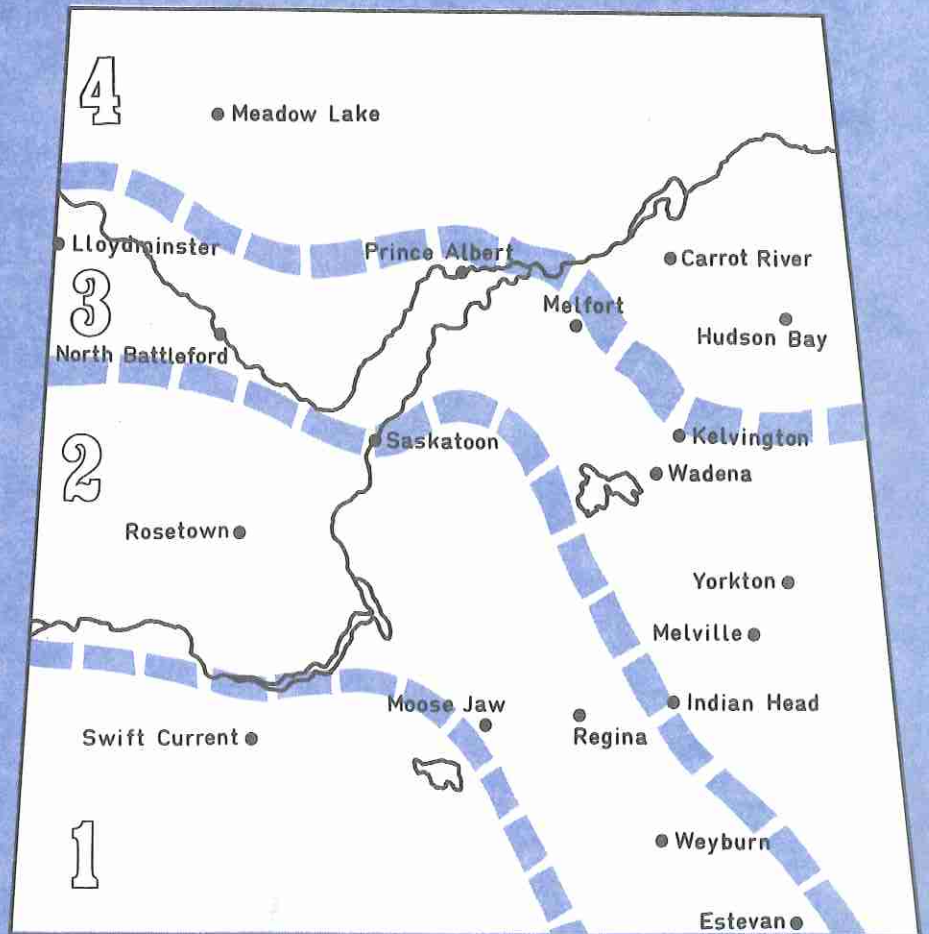




# Varieties of Grain Crops for Saskatchewan 1977



Descriptions as prepared by:  
THE SASKATCHEWAN ADVISORY COUNCIL  
ON GRAIN CROPS

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## GRAIN CROP PRODUCTION AREAS

(See map on front page)

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

- Area 1:** Drought is a definite hazard and high winds are common. Sawfly outbreaks often occur in this area. Cereal rust may occur in the extreme southeastern section.
- Area 2:** Drought and sawflies can be problems in the western and central sections of the area. Cereal rust may be a problem in the southeastern section.
- Area 3:** Drought is not as likely to be a problem in this area, particularly in the east. Cereal rust may occur in the eastern portion. The frost-free period can be fairly short in the northwestern and northeastern sections.
- Area 4:** Rainfall is usually adequate for crop production. However, early fall frosts and wet harvest weather are frequent problems.

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

The following tables contain the main characteristics of new and commonly grown varieties of cereals, oilseed crops and minor crops. Varieties that are not listed are considered to be inferior for production in Saskatchewan, except under certain localized conditions. The comments in the tables are based on averages for several stations in each area for at least three years.

### BARLEY

#### Main Characteristics of Varieties

Type and Variety	Six or Two Rowed	Yield as % of Bonanza				Average Maturity in Days	Resistance to				
		Area 1	Area 2	Area 3	Area 4		Lodging	Stem Rust	Loose Smut	False Loose and Covered Smut	Shattering
<b>Eligible for C.W. Grades</b>											
Bonanza	Six	100	100	100	100	89	Good	Good	Fair	Fair	Fair
Betzes	Two	113	96	98	87	90	Poor	Poor	Poor	Poor	Good
Conquest	Six	93	90	91	93	88	Good	Good	Fair	Fair	Fair
Hector*	Two	116	105	98	88	92	Fair	Fair	Fair	Fair	Good
<b>Feed</b>											
Fairfield*	Two	125	109	103	99	91	Fair	Poor	Poor	Fair	Good
Fergus	Two	111	100	97	88	93	Fair	Poor	Fair	Fair	Good
Galt	Six	111	105	103	98	90	Good	Good	Poor	Good	Good
Klondike**	Six	116	116	105	103	91	Good	Good	Fair	Poor	Fair
Peguis**	Six	85	107	102	100	91	Good	Good	Fair	Poor	Fair
Windsor	Six	109	98	98	96	91	Good	Good	Poor	Fair	Fair

\* See comments

\*\*Yield figures for area 4 based on less than 3 years data.

#### COMMENTS:

Loss appraisal studies in Saskatchewan (1973-1976) indicate an estimated average yield reduction of 13% due to common root rot. HECTOR and BONANZA appear to have superior field tolerance to the disease.

WINDSOR is a six-rowed feed barley and the only variety with good scald resistance.

BEACON is a white aleurone, six-rowed barley

which is being grown under contract. It is 2-3 days earlier than BONANZA and 10-15% lower yielding.

HECTOR is a two-rowed, rough-awned variety that does well in areas 1 and 2. The Canadian and American malting industries have indicated that they prefer other varieties. Thus very little of this variety is being purchased for malting.

FAIRFIELD is a new high yielding two-rowed variety. It is equal in malting quality to BETZES, but the kernels of this variety tend to resemble those of the variety FERGUS. It will be selected for malting only if the sample contains fewer than 15% of kernels which resemble FERGUS. FAIRFIELD provides an excellent alternative to FERGUS due to its superior yield and earlier maturity.

KLAGES is a two-rowed malting barley which is

being grown under contract. It is 5-6 days later than BETZES and is a good yielder as long as moisture is not limiting.

KLONDIKE is a new six-rowed feed barley. It is 2-3 days later than BONANZA, 7-13 cm shorter and is higher yielding in all areas.

PEGUIS is a new 6-rowed feed barley which has good field tolerance to leaf diseases.

## WHEAT

### Main Characteristics of Varieties

Variety	Area 1	Area 2	Area 3	Area 4	Average Maturity in Days	Resistance to					
						Lodging	Shattering	Stem Rust	Leaf Rust	Loose Smut	Root Rot
<u>Yield as % of Neepawa</u>											
<b>Bread Wheat</b>											
Neepawa	100	100	100	100	98	Good	Good	Good	Poor	Good	Fair
Canuck	99	97	—	—	101	Fair	Good	Fair	Poor	Good	Fair
Chester	98	97	—	—	100	Fair	Good	Fair	Poor	Fair	Fair
Manitou	95	98	97	98	98	Good	Good	Good	Poor	Good	Fair
Napayo	94	94	95	101	99	Good	Good	Good	Poor	Good	Fair
Sinton	91	99	98	107	99	Good	Fair	Good	Good	Fair	Fair
<b>Utility Wheat</b>											
Glenlea	102	109	113	125	101	Good	Good	Good	Good	Good	Fair
Pitic 62	115	113	119	112	104	Good	Good	Poor	Fair	Poor	Fair
<u>Yield as % of Wascana</u>											
<b>Durum Wheat</b>											
Wascana	100	100	100	100	101	Good	Good	Good	Good	Good	Poor
Hercules	85	89	92	97	98	Good	Good	Good	Good	Good	Poor
Macoun	94	88	93	94	100	Good	Good	Good	Good	Good	Poor
Wakooma	98	98	100	100	102	Good	Good	Good	Good	Good	Fair
<u>Yield as % of Winalta</u>											
	Area 3	Area 4	Plant Height			Resistance to					
						Winter Killing	Lodging				
<b>Winter Wheat</b>											
Winalta	100	100	Medium			Poor	Fair				
Kharkov	101	111	Tall			Fair	Poor				
Sundance	117	121	Tall			Fair	Poor				

### COMMENTS

SINTON is a new bread wheat variety that is resistant to leaf rust. It is similar to NEEPAWA in height and maturity, is freer-threshing but shattering can occur, particularly if swathing is delayed. SINTON seems adapted to all areas except the drier Area 1.

CHESTER is a new sawfly-resistant variety that is earlier and a little shorter than CANUCK. CHESTER

and CANUCK are higher yielding and more resistant to lodging than other sawfly-resistant varieties.

The license for NORQUAY has been revoked because problems have been experienced in distinguishing its seed from bleached seed of the bread wheats.

WASCANA, WAKOOMA, MACOUN and HERCULES all possess improved quality for spaghetti and macaroni production and are more desirable for the export market than the older varieties

STEWART 63, RAMSEY and PELISSIER. These older varieties are also lower yielding and should not be grown.

Winter survival is the chief factor limiting winter wheat production in Saskatchewan. However, seeding winter hardy varieties between August 15 and September 7 with adequate fall moisture and the presence of early and persistent snow cover have resulted in successful commercial production in areas 3 and 4 and the southern portion of area 1. If a reasonable stand survives the winter, winter wheat should yield about

15% higher than red spring wheat. It also has the additional advantages of early maturity, redistribution of labor requirements and increased competition with weeds.

Soft white wheat should be grown only on irrigated land and under contract with a milling company. SPRINGFIELD has acceptable quality and has higher yield and better leaf rust resistance than LEMHI 62. FIELDER, licensed in 1976, is superior to SPRINGFIELD in yielding ability, test weight and resistance to powdery mildew.

## OATS

### Main Characteristics of Varieties

Variety	Yield as % of Harmon				Average Maturity in Days	Resistance to				Percent Hull
	Area 1	Area 2	Area 3	Area 4		Lodging	Stem Rust	Leaf Rust	Smut	
Harmon	100	100	100	100	91	Fair	Fair	Fair	Fair	24.1
Cavelle	103	109	105	102	86	Poor	Poor	Poor	Poor	24.1
Garry	100	100	100	95	90	Fair	Fair	Fair	Fair	23.8
Hudson	105	107	110	109	91	Good	Good	Good	Fair	24.7
Kelsey	98	106	106	106	89	Fair	Fair	Fair	Fair	22.6
Random	111	107	110	109	89	Good	Poor	Fair	Poor	24.1
Sioux	105	105	106	105	87	Fair	Fair	Poor	Fair	23.1
Terra*	73	79	76	82	92	Good	Poor	Fair	Poor	Hulless

\* Yields of varieties in the hulless class cannot be directly compared with standard varieties which have from 22-25% hull. Groat yield of HARMON would be 76% of its net yield.

#### COMMENTS:

HARMON is a plump-seeded variety with moderately strong straw.

RANDOM is a widely adapted, high yielding variety that is responsive to fertilizer and early seeding. It has short, strong straw but it is lighter in test weight than HARMON.

SIOUX, KELSEY and CAVELLE are early varieties recommended for delayed seeding with

CAVELLE being earlier than SIOUX and KELSEY. SIOUX and CAVELLE are better adapted than KELSEY to area 1.

HUDSON has short strong straw and is the only commercial variety resistant to race C10 stem rust, but is low in test weight.

TERRA, a hulless variety, was licensed in 1976 and is susceptible to stem rust and smut. Seed of TERRA should be treated with a chemical fungicide.

### 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.

## FLAX

### Main Characteristics of Varieties

Variety	Yield as % of Redwood 65				Average Maturity in Days	Resistance to		Seed Size	Flower Color
	Area 1	Area 2	Area 3	Area 4		Rust	Wilt		
Redwood 65	100	100	100	100	105	Poor	Good	Medium	Blue
Dufferin	101	96	99	103	103	Good	Good	Medium	Blue
Linott	92	93	91	97	101	Good	Good	Medium	Blue
Noralta	100	96	95	97	99	Poor	Good	Small	Blue
Norland	105	96	96	85	105	Poor	Good	Large	White
Raja	62	75	79	76	94	Good	Fair	Large	Blue

#### COMMENTS:

DUFFERIN, LINOTT and RAJA are the only rust resistant varieties presently available. DUFFERIN should be considered a replacement for REDWOOD 65.

NORALTA, NORLAND and REDWOOD 65 should not be grown since they are susceptible to new races of rust which first appeared in 1973.

Rust and other flax diseases overwinter in Saskatchewan. 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

### Main Characteristics of Varieties

Type and Variety	Yield as % of Puma				Winter Killing	Resistance to		Kernel		Straw Length
	Area 1	Area 2	Area 3	Area 4		Shattering	Lodging	Color	Size	
<b>Fall Rye</b>										
Puma	100	100	100	100	Good	Good	Fair	Green	Medium	Tall
Cougar	101	98	92	93	Fair	Good	Good	Green	Medium	Medium
Frontier	88	88	94	99	Good	Fair	Poor	Green	Medium	Tall
Kodiak	86	87	92	106	Fair	Fair	Fair	Tan	Large	Tall

#### COMMENTS:

ANTELOPE, a popular fall rye variety for many years, has been replaced by newer varieties possessing better kernel type and higher yielding ability.

Yield data are likely to fluctuate widely due to winter killing.

GAZELLE spring rye averages about 27% higher yielding than PROLIFIC.

**RAPESEED**  
**Main Characteristics of Varieties**

Variety	Area 3			Area 4		
	Yield as % of Torch	Average Maturity in Days	% Oil	Yield as % of Torch	Average Maturity in Days	% Oil
<b>B. campestris</b> (Turnip rape)						
Torch	100	83	39.6	100	85	40.4
Span	100	84	39.1	95	85	39.6
R-500*	88	92	42.8	82	93	43.8
<b>B. napus</b> (Argentine type)						
Midas	119	98	43.3	125	105	43.6
Tower	112	98	42.5	111	106	42.2

\*High erucic acid variety.

**COMMENTS:**

TOWER will be more readily marketable than MIDAS because it produces better quality meal with low glucosinolate level and high protein content.

R-500, which has large yellow seed, produces oil with a very high erucic acid level and should only be grown under contract for specialized industrial oil markets.

The **B. campestris** strain CZY 3-1821 will be contracted on a limited acreage by Saskatchewan rapeseed

processors in 1977. This strain has yellow-brown seed and produces both low erucic acid oil and low glucosinolate meal. In 3 years of tests, CZY3-1821 has yielded approximately 15% less than TORCH.

Under irrigation **B. napus** varieties will produce higher returns than **B. campestris** varieties because of their higher yield potential. Maturity may, however, be delayed by 4 or 5 days with irrigation.

**FIELD PEAS**  
**Main Characteristics of Varieties**

Variety	Yield as % of Century	Average Maturity in Days	Seed Size	Cotyledon Color	Vine Length	Seeding Rate (kg/ha.)
Century	100	100	Large	Yellow	Tall	190
Trapper	100	98	Small	Yellow	Medium	125
Triumph	107	103	V. Large	Green	Medium	245

**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 consid-

erably 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.

**FABABEAN (Horse Beans)**  
**Main Characteristics of Varieties**

Variety	Yield as % of Ackerperle	Average Maturity in Days	Seed Size	Plant Height	Seeding Rate (kg/ha.)
Ackerperle	100	108	Small	Tall	150
Diana	110	104	Medium	M. Tall	175
Herz Freya	112	103	Medium	Tall	180

## COMMENTS:

Fababeans are a promising source of protein for livestock feeding. They should be seeded early and are best adapted to that portion of the Black soil zone with the longest growing season. Only the earliest varieties should be considered for the northern areas. Seed 7 cm deep in rows 15 to 17 cm apart. Fababean seeds are very large and a seeder with a deep-fluted cup must be used to prevent seed cracking. In order to reduce shattering losses, swathing can be done as soon as the lower most pod turns dark on 25% of the plants. Fababean seed should be inoculated before planting. See SEED INOCULATION section.

## 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 make harvesting difficult. To assure a market, it is advisable to grow lentils under contract.

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

## 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.

MANCAN is a new variety with about a 25% larger seed than TEMPEST or TOKYO. MANCAN and TEMPEST are about 10% higher yielding than TOKYO.

## TAME MUSTARDS

The mustards are intermediate between rapeseed and wheat in drought tolerance. Mustards are less susceptible to shattering than rapeseed and can be straight combined.

The three types of mustard grown commercially are YELLOW, ORIENTAL and BROWN. Yellow mustard in comparison to turnip rape is slightly lower in seed yield, a few days later in maturity and similar in plant height. Brown mustard matures a few days later than Yellow mustard but earlier than Argentine type rapeseed. Seed yields of Brown and Oriental mustard are usually 10 to 15% higher than Argentine type rape and 25 to 30% higher than Yellow mustard. The yield differences among the mustard species are usually compensated by a contract price differential.

In the last few years, there has been a trend by contracting companies to replace the unnamed strains of Canadian origin with the following named varieties.

GISILBA — a variety of Yellow mustard from Germany that is equal in yield and other characteristics to common Canadian Yellow mustard strains.

SABRE — a yellow mustard variety equal in yield to GISILBA suitable for condiment purposes and also as an industrial oil source.

LETHBRIDGE 22A — an Oriental mustard with superior seed color under a wide range of climatic conditions.

STOKE — an Oriental mustard with high yield of seed and allyl isothiocyanate.

EKLA — a German Brown mustard variety slightly lower yielding than common Canadian strains but higher in allyl isothiocyanate.

BLAZE — a brown mustard variety 12% higher in yield than EKLA, but slightly lower in allyl isothiocyanate content.

Mixtures of mustard and rapeseed due to volunteering or handling on the farm cause substantial losses through a grade reduction. Rapeseed and mustard should not be grown on the same farm and preferably not in the same district.

## TRITICALE

ROSNER is the only licensed variety of Triticale but it is not high yielding. Some introduced non-licensed varieties have been grown under contract in 1976. Exaggerated claims for yield and protein content have been made and the introduced varieties are too tall and late maturing for Saskatchewan. Difficulty has been experienced in marketing Triticale. The University of Manitoba and Agriculture Canada have extensive research underway and much improved varieties are in advanced tests. At the present time the growing of Triticale is not recommended.

## SUNFLOWERS

Sunflowers have been grown successfully in central and southern Saskatchewan. Because of the need for early maturity, only early varieties such as KRASNODARETS are recommended. The crop is more drought-tolerant than other oilseed crops and is adapted to a range of soil types. In general, the lighter soils which warm up early in the spring are preferred. Early planting is recommended since sunflowers have good resistance to frost into the four-leaf stage.

Solid seeding in rows 30 to 45 cm is the standard practice. The standard grain seeding equipment, preferably the press or double-disc drill, sowing at about eight kg. per hectare will provide a desirable population of 62,000 plants per hectare. Sunfallow provides some crop return in a summerfallow year. A single or double row of sunflowers sown 3.3 meters apart on cereal stubble allows normal grain tillage machinery to either straddle the row or till between the rows. For best results in the crop following sunfallow the stalks should be left standing to trap the winter snow.

Herbicides are available for control of most weeds in sunflowers. However, if there is any secret to successful sunflower production, it is the practice of cross-harrowing in the seedling stage. Sunflowers are extremely susceptible to 2,4-D or MCPA 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 part of the province.

## 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.

# SEED FACTS

## PEDIGREED SEED

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

Seed should be carefully cleaned to remove weed seeds, trash, small or broken kernels and sclerotia. Sclerotia (hard, black fungal bodies) of *Sclerotinia* are frequently present in seed of broad-leaved crops. These bodies should be removed. In rapeseed, screening and spiral cleaning are effective.

The cleaning job should not be rushed and a significant percentage of seed clean-out is to be expected.

## 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, rye and hullless oat 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.

## MAGNETIC SEED TREATMENT

Magnetic treatments of wheat, oats, barley, rape, flax, peas and fababeans were tested extensively in Saskatchewan in 1974, 1975 and 1976. In almost every case seed treatments neither increased yield nor affected maturity. The use of magnetizers is not recommended.

## 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 increases 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 the previous year. 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, fababeans 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 37°C for batch driers, or 43°C 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.