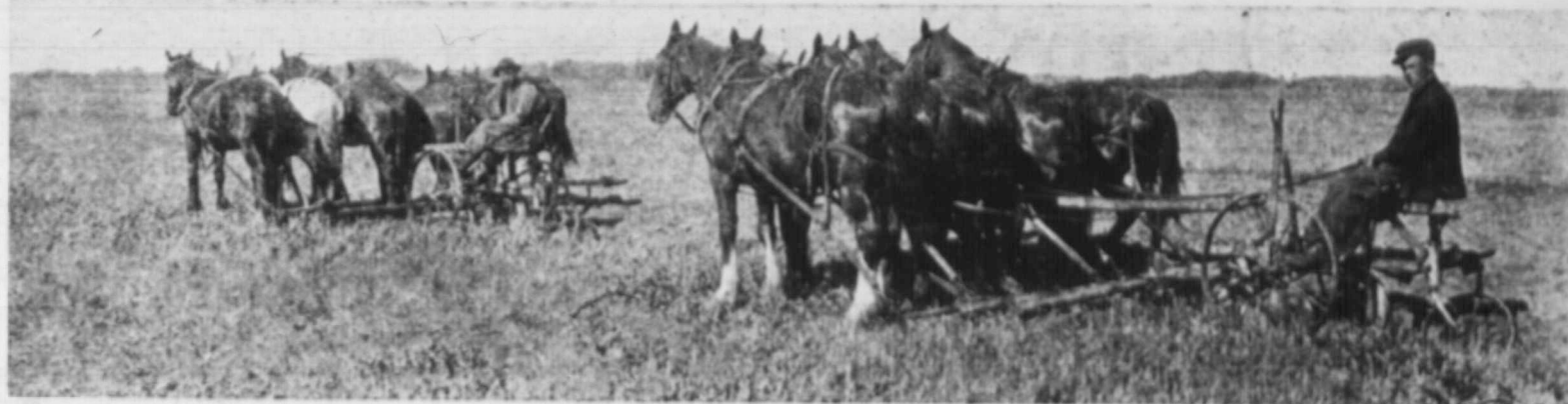




Seed Grain---Preparation and Seeding

Seed Defects—Varieties to Sow—Cleaning and Testing—Time, Rate and Depth to Sow

By John Bracken, Professor of Field Husbandry, University of Saskatchewan

Over thirty-five million bushels of seed will be sown this spring on the farms of Western Canada and the yield and quality of the crop will depend in a large measure upon the character of the grain used.

The characteristics of productive seed of any variety are high quality and high purity. By high quality is meant freedom from damage from frost, bin burning, sprouting, weathering, rust and immaturity, and absence of shrunken and broken kernels. By high purity is meant freedom from weed seeds, disease, other classes of grain and other varieties of grain.

The most common defects found in seed grain are: (1) Weed seeds; (2) Disease; (3) Small and shrunken seeds, or seed of weakened vitality; (4) Dead grains; (5) Unsuitable varieties.

The weed seeds most often found in wheat, oats and barley are wild oats, cockle, wild buckwheat, and tall mustard, but in poorly cleaned, or uncleared samples many others may be found. In flax—blue burr, hare's ear mustard, common mustard and false flax are the most common impurities.

The smut diseases cause much loss annually to western farmers. These fungus plants not only lower the yield of crops, but the quality as well. If living smut spores (which function as seeds) are sown with the seed, the crop is sure to be infected.

Small shrunken or weak seed produces weak plants that are less productive and much less likely to withstand spring frosts after the plants are up. This is where the chief danger lies in using grain from a rusted crop.

Dead grains produce no crop. Frost often kills the seed of the oat crop, while heating often destroys the vitality of wheat and other grain. It is always wise to test the seed for both percentage and vigor of germination. This is particularly advisable after a season when early fall frosts have been known to occur as well as in cases where dampness or heating in the bin have been suspected.

The Best Varieties To Grow

The following are the best available varieties for Saskatchewan conditions:—

Wheat, Marquis.—High in quality, short straw, early in maturing, non-shattering, good yielder. This variety is more likely to give more satisfactory returns than Red Fife on heavy soils, on fallowed land, in moist regions where fall frosts are feared and in those areas where a short straw is preferred.

Red Fife.—High in quality, long straw, late in maturing, a good yielder. It is suited to the lighter and earlier types of soil, to the drier parts of the province, to all regions where fall frosts are not feared, and where long straw is desired.

Pioneer.—High in quality, long and weak straw, earlier than Marquis, fair yield. It is a good wheat for all regions where Marquis is not early enough and where the crop seldom lodges.

Prelude.—High in quality, short straw, earlier than Pioneer, bearded, shatters easily, low in yield. This variety may be found satisfactory in regions north of the present wheat growing area, but on account of its low yield it is not worthy of a place in districts where Marquis matures.

Oats, Banner.—High yield, strong straw, late in maturing—the old standard oat and a general favorite still.

Victory.—High yield, strong straw, late in maturing, excellent quality. A keen rival of Banner.

Gold Bala.—High yield, strong straw, medium

early, excellent quality, yellow color, an excellent medium early variety.

Daubeney.—Medium to low in yield, strong straw, early, excellent quality. Only recommended for late seeding.

Barley, O.A.C. No. 21.—Six rowed, bearded, hulled, very productive, medium early. The leading and most popular sort.

Hannchen.—Two rowed, bearded, hulled. A "nodding" barley, very productive, later than O.A.C. 21. The heaviest yielding two-rowed barley. A good variety where longer straw is desired and where a few days later in maturing is not an objection.

Golden Thorpe.—Two rowed, bearded, hulled. An "erect" barley, very productive, later than O.A.C. 21. Stiffer in the straw than Hannchen, and a better looking grain. Suited to heavier and richer soils.

Spring Rye; Common.

Winter Rye; N.D. No. 959 or Saskatchewan.

Flax; Fremont.—Brown seeds, purple blossoms, productive, medium early.

Peas; Solo.—A heavy yielding, rather late sort.

sown placed sixty times these numbers on the land. And yet practically all could have been removed with a fanning mill.

It is important that the crop producer know not only the proportion of his seed that will grow, but also the vigor of the possible growth. Both the percentage and vigor of germination can be determined by giving a definite number of the grains opportunity to grow. A box of moist soil or two layers of dampened blotting paper will serve this purpose. It is only necessary to count out a number of seeds, usually one hundred, and after planting them in the soil or placing them between the blotters, keep them moist and at the temperature of the ordinary living room and count the number that germinate on the fourth and each subsequent day.

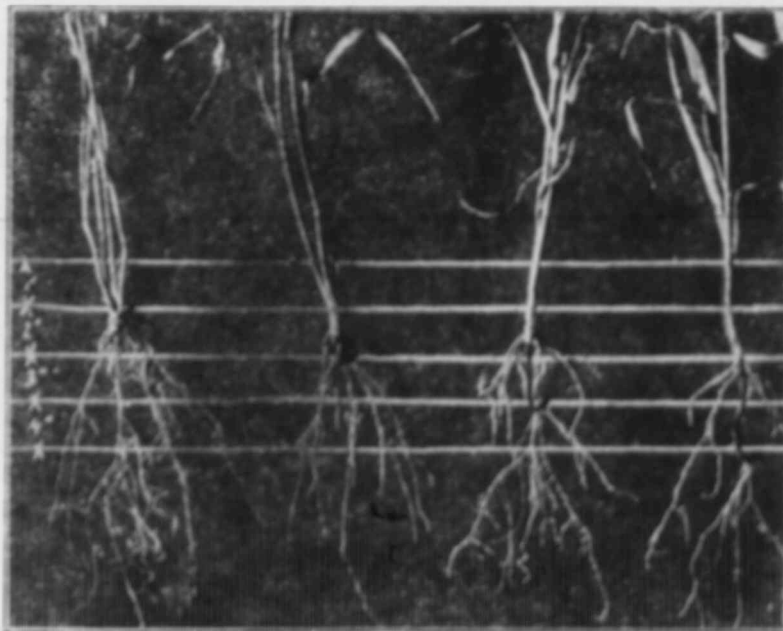
From such a test one will gather an accurate idea of the percentage germination and the relative vigor of the growth from the seed he is about to use. The best seeds will germinate first and develop the most vigorous plants, while the poorer seeds will either not grow at all or produce only a feeble growth. Of course the seed under test should be protected from frost and kept from drying out.

Dates of Seeding

Conclusive data on the subject of time of seeding in Western Canada are not yet available. The general opinion among experienced farmers is that wheat should be sown as soon after April 10 as the land is fit, and oats and barley in the three or four weeks following April 25. We have observed that on land that is in good condition the longer wheat is left unsown after the first of May, and oats and barley after the middle of May, the lighter the yield is likely to be. In the dates of seeding trials at Saskatoon carried on during the last three years, April 20 proved the best date for seeding wheat on fallow and April 30 on fall plowing. Oats, barley and flax produced the most when sown between April 20 and May 20. Winter Rye on fallow yielded most when sown the first few days of September and on fall plowing when sown August 20. April 30 with peas proved the best time to sow.

The best time to sow in any given district varies with: (1) The probability of early fall frosts—the greater the danger the earlier the seeding should be done. (2) The amount of water stored in the soil—the drier the soil the earlier the crop will mature and, therefore, the later it may be sown and yet avoid frost. (3) The productiveness of the soil—the more rank the growth, the longer the crop will take to ripen, hence the earlier it should be sown. (4) The type of soil—a heavy soil is a cold soil, a light soil a warm one. Crops ripen later on heavy soils and, therefore, need to be sown earlier. (5) The time required to mature the class or variety or crop used. Under the different conditions that exist in this province, six-rowed barley, spring rye and flax ripen in from 75 to 110 days; two-rowed barley in 85 to 115 days; oats (standard varieties) 95 to 120 days; wheat 90 to 140, and peas 95 to 140. Obviously the late ripening crops should be sown first unless they are too tender to resist spring frosts. (6) The resistance of the crop to spring frosts. The less frost in spring a crop will stand the later it should be sown. If good seed is used, most cereals will survive after heavy spring frosts, but it has been observed that wheat and rye are rather more resistant to low temperatures than oats or barley. (7) The liability of the district to

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Root development of wheat seedlings sown at different depths. "Sow into the moisture" is a good motto.

Arthur.—A heavy yielding, medium early variety.

Golden Vine.—A popular small seeded, medium early sort.

Cleaning and Testing Seed

A good fanning mill properly handled will in addition remove small shrunken grain, weed seeds, smut balls and many of the dead and weakened grains. In seasons when much of the grain is shrunken or frosted, and some of the seed damaged, impure, or dead, the use of the fanning mill is essential if best results are to be obtained.

Since the writing of this article was commenced a sample of "cleaned" wheat containing at the rate of 1,920 wild oats per bushel (16 per one half pound) has come to hand with the request that we advise the sower whether he should get a new fanning mill or not. Another sample taken from a farmer's drill contained 7 smut balls, 226 wild buckwheat, 2 wild mustard, 2 ball mustard, 12 lamb's quarters, 1 blue burr, 2 docks, 1 hare's ear mustard, 1 barley, and 8 oats in a single pound. Every bushel