

Government of the Province of Saskatchewan

DEPARTMENT OF AGRICULTURE

WINTER RYE

FIELD HUSBANDRY CIRCULAR No. 21.

Saskatchewan grown Rye won all the first prizes and the Championship for Winter Rye at the Dry Farming Congress, El Paso, Texas, in October, 1916.

Notwithstanding this, however, the cultivation of winter rye has as yet received but little attention in Saskatchewan. It is true that on the Experimental Farm at Indian Head rye has been grown with marked success since 1903, and of late years a few progressive farmers in the province have grown a small acreage each year. The great majority of farmers, however, have had no experience in growing this grain, and consequently do not realise that its introduction would result not only in a direct financial benefit, but would also aid materially in solving some of the problems of cultivation and management which now confront them.

The records of the Indian Head Experimental Farm show that the average yield of winter rye during seven years was 43 1-3 bushels, the highest yield recorded being 55 1-3 bushels in 1908 and the lowest 32 bushels in 1911. At Saskatoon the yields have not been so high and, in one season when the spring opened up early and spring frosts were unusually late the crop was caught by spring frosts when in the blossom stage, resulting in partial failure, locally.

Information obtained from farmers growing this crop shows that the average above mentioned is only slightly over the averages which they have obtained. The expense of growing and harvesting the crop is, approximately, the same as for growing wheat. Prior to the war when wheat was from 75c to 80c at shipping point, rye was about 60c per bushel. Of late years the price obtained at typical Saskatchewan points has ranged from 80 to 90 cents per bushel, while in October, 1916, Saskatchewan growers realised from \$1.10 to \$1.15 per bushel at point of shipment. In view of these facts the financial returns from the crop must have been highly satisfactory.

ORIGIN AND USES.

Rye has been cultivated and has had a place among both grain and pasture crops for upwards of two thousand years. Its original home is supposed to have been in South-eastern Europe, in the vicinity of the Caspian Sea. For centuries it was the principal bread food of Europe, and is still extensively used as human food in Germany, Austria, Russia, the Scandinavian peninsula and elsewhere. In

America, in addition to bread making, it is principally used as a food for stock and to a small extent, like wheat and corn, in the manufacture of alcoholic beverages. When cut green the crop is frequently used as hay, and in dairy sections it is used extensively as a pasture both in fall and early spring.

ADVANTAGES IN SASKATCHEWAN.

While not recommending that winter rye displace any of the grain crops already grown in the province, where they grow successfully, it is nevertheless believed that this crop can with advantage be added to those that have a regular place in our system of cropping, and in many fields and districts be a profitable substitute for wheat on fallow land, especially where a wheat crop is liable to lodge or be frosted or be filled with wild oats. The advantages on the cultivation and management of a farm which may be expected to result from the introduction of winter rye as an additional grain crop may be briefly summarised as follows:

1. Summerfallow that is sown to rye in the latter half of August or early September is not subject to soil drifting, either in fall, winter or spring, as it is when a spring sown grain, such as wheat, is used because the crop occupies the land and prevents drifting.

2. Owing to its rapid and early growth rye chokes out many weeds, It is of particular value in combating wild oats on this account, and also because it ripens between the middle of July and the end of the first week in August, or much earlier than barley.

3. As rye makes vigorous early growth in May and June the crop is well developed before the arrival of summer droughts, so that in place of appreciably decreasing the yield these really assist in maturing the crop.

4. Rye ripens much earlier than wheat and consequently is not subject to damage from early fall frosts.

5. Ripening before other cereals it distributes the harvest season over a longer period of time and justifies a farmer in hiring his harvest labour perhaps a month earlier than he otherwise might, thereby securing it at a lower rate.

6. A field of Winter Rye affords fall pasturage and also the earliest green pasturage in the spring that can be provided by a grain crop in this country. If sown early Winter Rye may be pastured in the fall, but care should be exercised to see that it is not eaten off too early, otherwise in a severe winter, on exposed elevations, the grain will be killed out. Unless stink weed or other annual weeds are present, early spring pasturing, provided the top soil is dry, does not cause serious injury but lessens the yield of grain. If cut green it makes excellent fodder and generally yields as much per acre as the heaviest producing grain crops. When grown for hay two crops may often be taken in one season, about June 15 and August 1.

7. In newer districts where gophers and cut worms sometimes do real serious damage to spring grain, a crop of Winter Rye is so far advanced by June 1 (a time when these pests are very destructive) that it has largely lost its palatability and attraction.

8. Fall Rye, because of its earliness, is also practically proof from rust damage, which is no small advantage in itself.

On June 1, 1916, Winter Rye at the Saskatchewan College of Agriculture, averaged 16 inches high and was in the "shot blade," while the earliest wheat did not cover the ground, and was less than 5 inches long.

SOME OBJECTIONS TO WINTER RYE.

The chief objection to the use of Winter Rye in a wheat growing district is in its "volunteering." Unless care is taken the rye seeds get distributed about the farm and grow up in other crops. It is possible that a mixture of Winter Rye in wheat might lead to the lowering of the grade. There need, however, be no danger from this source if reasonable care is taken to see that the threshed grain is prevented from being distributed about the farm, or if a rye crop is followed by oats instead of wheat.

CULTIVATION.

On account of its ability to produce good yields when sown on soil too poor to grow other cereals, rye has been much used on light and sandy soil. It will, however, respond to a fertile soil and to good cultivation as well as any other grain. To obtain the best results the seed bed should be in fine tilth, well compacted and should contain a large amount of moisture. Summerfallow, ploughed 6 to 8 inches deep during the first week in June, harrowed immediately and well worked thereafter so that the soil is compacted, the rainfall retained, and all weeds kept down, makes an ideal seed bed for rye. As rye makes much of its growth during May, a time when there is usually very little precipitation, the importance of summerfallowing the year previous, so as to conserve all the moisture possible, cannot be over-estimated. The crop ripens early, so that damage from fall frosts need not be considered, while the early spring growth produces a stiff straw that seldom lodges. Rye should not be grown continuously on the same field, as this practice is favourable to the development of ergot. This fungus frequently attacks rye when sown in low wet land or grown repeatedly on the same field. When the crops are properly rotated there is little danger from this disease.

SEEDING.

Seed can be procured from any Western seed house or from farmers who are already growing the crop. Care must be taken to procure home grown seed, as the crop from imported seed will often winter kill. In Saskatchewan rye should be sown during the latter part of August so that it will have time to get well established before winter. When this is done there is very little danger of winter killing. The seed should be sown with an ordinary grain drill, being planted from 2½ inches to 3 inches deep, so that it is certain to be down into moisture. When sown on well prepared summerfallow one bushel per acre is ample. (This amount will be sown if the drill is set to sow one bushel of wheat.) Heavy seeding is apt to result in stunting the crop before the usual June rains arrive. It is perfectly safe to sow seed from a crop that has just been harvested. Late seeding or too thick seeding should be avoided. On the Agricultural College farm at Saskatoon in 1914 the highest yield was obtained from a seeding of one-half bushel per acre. Light seedings have, as a rule, given the

largest yields at Saskatoon, but the soil conditions were probably better than on the average farm. Ordinarily not less than three-quarters nor more than one and one-quarter bushels of seed should be used.

Should stink weed infested land sown to rye show a new growth of this pest after the rye is sown, a stroke of the harrow should be given to destroy such weeds, so that as few as possible of them enter the winter alive. When fall harrowing with very light harrow is contemplated for stink weed, then the thicker seeding of $1\frac{1}{4}$ bushels should be practised to allow for the plants damaged and destroyed by the harrow. Again in the spring the harrow may be used to advantage to break up the surface crust and kill any weeds which may have started. If intended primarily for fall pasture the rye should be sown early in August or late July, but should not have the stock turned on it till late in October, so that the rye plants may first be well rooted. Spring pasture of weedy fields is not advisable, as it gives the weeds a chance and causes the crop to be considerably later in maturing.

"North Dakota No. 959" is the hardiest and therefore the best variety to use.

HARVESTING.

Under ordinary conditions winter rye is ready to cut by the first week in August of the year following that in which it is sown. In a dry year it will be ready somewhat earlier, probably from July 15 to 30, depending on location, tillage, rainfall, thickness of seeding, etc. It should be cut with a grain binder and handled exactly like wheat. Care must be taken, however, to have the grain thoroughly dry when it is threshed, as rye seems to become musty more readily than other grains. Stooking is best done, with least shelling, on the same day as cut. Rye should not be allowed to get over-ripe as it shells easily.

MARKETING.

While there is always a good demand for rye on the Toronto and Montreal markets and in the larger cities in the United States, it is somewhat difficult to obtain satisfactory prices at local points. Under these circumstances, owing to the fact that only a small amount is grown in the West and market facilities have not therefore developed, the best method of marketing is to ship in carload lots to some of the larger centres—Toronto, Minneapolis or Duluth, and there sell through a Winnipeg commission firm. Owing to rye being duty free and the freight rate to Duluth the same as to Fort William, Duluth has been for the past two years the best market for Saskatchewan rye. Under The Canada Grain Act rye is graded as Nos. 1 or 2 Canadian West Rye, or Rejected. No weight per measured bushel is specified, but 56 pounds is the accepted weight in commerce.