FLAXSEED

CANADA is in urgent need of more vegetable oils. The seed-bearing type of flax is the most important oil-producing crop now grown in this country.

The present price of flaxseed ($2.25 per bushel) as announced by the Government, makes its production more attractive than in some years past. Furthermore there are no quotas restricting the delivery of flaxseed at present.

The high quality of Canadian flaxseed continues to attract buyers, and there is no danger of over-production for some years at least. Districts which produce starchy or piebald wheat can grow flaxseed of highest market quality.

Success in the production of flax depends upon the use of good seed of suitable varieties, sown on clean land, well prepared to produce a good seed-bed, coupled with favourable growing conditions.

Present Situation and Outlook

Flaxseed is the only oil-producing crop now grown extensively in Canada outside of certain areas suitable for the production of soybeans. The oil produced therefrom normally is used chiefly in paints and other industrial products. Large quantities of oilseeds, oils and fats also are imported from the Pacific area for use in soaps and edible products. This source of supply is at present unavailable due to the spread of the war. There will also be a diversion of supplies of linseed oil to uses not practical in normal periods. As a consequence, Canada faces a shortage of these vegetable oils.

In the United States flaxseed production normally falls short of consumption by about 15 million bushels. In 1941, the industry crushed between 40 and 45 million bushels. Since the war will cut off over 50 per cent of their former imports of vegetable oils, it is estimated that at least 50 million bushels of flaxseed will be required in 1942 if domestic requirements are to be met. Great Britain and Russia will also require substantial quantities of oil which of necessity will have to come from the Americas.

While efforts will be made to increase the production in Canada of soybeans and other sources of fats there is a definite need for an increase in acreage of flax in 1942. It is estimated that a crop of at least 20 million bushels of flax could be absorbed during the coming year. The production in 1941 was approximately 6½ million bushels.

Crop Value a Factor

In viewing the market prospects for flax, Western farmers naturally study the relative prices of wheat and flax. The normal yield of flaxseed is less than half that of wheat and about one-third that of barley. Assuming that an

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acre of flax can be handled as cheaply as an acre of wheat and considering the average yield of each, the price of flax should be at least twice that of wheat in order to make it attractive. The fixed price of $2.25 per bushel for flax compared with the initial price of 90 cents for wheat both in store Fort William and Port Arthur, as recently announced by the Dominion Government, provides an unusual inducement for those in a position to grow flax.

Advantages of Flaxseed Production

In addition to prospective crop value there are other obvious advantages in producing flax. This crop is not restricted by any delivery quotas. A second cash crop provides insurance against either over-production or failure of other crops. Flax fits into the rotation in exactly the same way as wheat or other small grains, and is sown, harvested and threshed with the same machinery, therefore requiring practically no extra cost to produce. Some farmers find that since flax has the ability to stand long without shattering, they are able to extend the use of their equipment. In general, the northern areas of the Prairie Provinces, which produce wheat of lower baking strength than the most southerly districts, are more suitable for the production of high quality flax. Earlier maturing varieties such as Redwing are pushing the flax acreage northward.

Points of Importance in Production

In the past, the practice when breaking new land was to seed flax the first year, to be followed by wheat. This practice is not so rigidly followed today as virgin prairie may be more profitably used for the production of registered seed of grains other than flax. Yields of wheat following flax are as good as, and in some cases better than, those following wheat, oats or peas. A good practice is to sow flax after brome grass or other sod. This has a number of advantages, but one of the most important is that flax is less readily attacked than are wheat or oats by the wire worms which are likely to be abundant in such sod land. The place of flax in the rotation should be so arranged as to give the crop the best protection against its greatest weakness, inability to compete with weeds. Summer-fallow land, which occupied a greatly increased area last year, should provide ideal growing conditions for flaxseed production in 1942.

In areas where sawflies are likely to be prevalent, flax offers an attractive substitute for wheat on account of its immunity to sawfly attack.

Seed and Seeding

Cultivation prior to seeding may be a means of reducing weed competition and is necessary to the preparation of an even, clean and firm seed-bed. It is important that the land should be in a good state of tilth, and that sowing be at an even depth, and no deeper than is necessary to cover the seed well. The rate of seeding appears to be dependent on the moisture supply, and nothing is gained by the increase of the stand beyond the capacity of the soil. The amount of seed required will vary from 28 to 40 pounds per acre, depending partly on the size of the seed. The seed should be carefully cleaned. Increases in germination of flaxseed injured during threshing have resulted from the use of mercuric dust treatments (1½ oz. Ceresan or 2 oz. Leytosan).

Early seeding generally produces the highest yields per acre. The common practice has been to seed flax when it is too late for wheat. With some farmers, fear of spring frosts has been responsible; with others, moisture has been a determining factor. If moisture came late, flax would be seeded instead of, and later than, wheat. Late sowing, and therefore late ripening, frequently

are responsible for difficulties in harvesting and threshing. Late rains stimulate weed growth which may smother the crop or at least delay the harvest. Fall ploughing may thus be delayed and fall cultivation hindered. Flax is more likely to be damaged by fall frosts because of late sowing than by spring frosts on new seedlings. Flax should be sown on clean summer-fallow or breaking about the second week in May. However, if spring cultivation is necessary to destroy weed growth, flax may be seeded as late as May 24 in southern districts.

Varieties Recommended

The situation with regard to flax varieties has changed appreciably during recent years. Previous to 1934 more than 75 per cent of the crop consisted of the variety called Crown. This variety has a very serious defect in that it is very susceptible to the disease known as flax wilt. Though some producers are still growing Crown, the spread of Bison has been so remarkable that it has become the most widely grown variety in both Canada and the United States.

The popularity of Bison rests on many favourable characteristics, chief among which are resistance to flax wilt, a large, bold plump seed, and a growth that is vigorous and productive. A recent survey has shown an increase in the Redwing variety, especially in Manitoba and Alberta. Redwing is wilt-resistant and is earlier maturing than Bison. It is recommended for those districts where frosts are likely to be a hazard or in any area where, because of early maturity, it might fit in more satisfactorily with general farm operations.

In the spring of 1939 a selection from Crown by the University of Saskatchewan, called Royal, was licensed and distributed. This variety is much more wilt-resistant than Crown. In comparison with Bison it is slightly later in maturity and has a smaller seed but usually exceeds it in yield.

The Weed Problem

Flax seedlings are rather slow in making growth, produce little shade, and are therefore poor competitors with weeds. This is an added reason for early seeding. Late seeding, with consequent late harvesting, allows many weeds to reach maturity and choke out the flax and rob it of moisture and fertility.

Generally, light soil is not well adapted to the successful growing of flax. In the main, soils which are well suited to the growth of cereal grains and other farm crops, and which hold moisture well, will produce a good crop of flax. Thus the areas of most extensive production are those where heavy loam soils predominate, such soils, having greater ability to retain moisture than have the lighter soils.

It is the general experience of producers that grasshoppers may do more damage to flax than to other grain crops, owing to the succulency of the stem of the flax plant at the time of invasion. It may be considered risky to seed flax where a grasshopper infestation is to be feared. Early seeding, however, which provides early maturity, may tend to reduce the damage. Late seeding finds the flax still green when other grains have become almost mature.

Harvesting Methods

Flax is usually cut with the ordinary binder when the bolls are ripe and the stems yellow. Flax should be cut when dry, as otherwise it is very difficult to handle. If free from weeds, it makes a good " combine " crop since it does not shatter easily and may be left standing longer than other grains. To combine well it should be fully ripe and thoroughly dry. Owing to the fibrous nature of the plant, no attempt should be made to thresh flax under unfavourable weather conditions. There should be no end play in the cylinder, as the

cracking of the seed caused thereby will lower the grade. Careless threshing also increases the amount of seed injury, which may not readily be detected by superficial examination. A careful examination of the flaxseed before cleaning will indicate which weed screen to use. For small varieties, a 1/14-inch or a 1/15-inch round hole sieve for a bottom sieve and one 1/16 inch by $\frac{1}{4}$ inch for a top sieve are satisfactory. In the case of large varieties, a 1/12-inch round hole sieve may be used in the bottom. Flaxseed should be stored only in a dry place.

Handling Flaxseed

Extra precautions are necessary to prevent leakage and loss when handling the crop during and after threshing. The threshing machines should be put in first-class condition, and bins and wagons should be carefully gone over for leaks. Owing to the nature of flaxseed, very considerable quantities may be lost through faulty machinery, bins and wagons.

Flax cannot be handled when it is damp, and in some districts farmers may have only a few hours in the day when the crop may be dry enough to thresh. This makes the problem of threshing rather difficult, but where farmers own their own threshing outfit these drawbacks are greatly reduced.

It would seem that most of the difficulties encountered with the production of a flax crop may be avoided or at least very greatly reduced if an early variety is used, sown at the proper time on land free from weeds.

Conditions indicate that for the next few years Canada may be dependent on her own production of vegetable oils, of which flaxseed supplies the greater portion.

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