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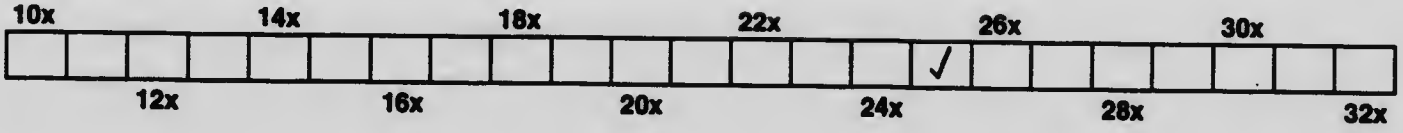

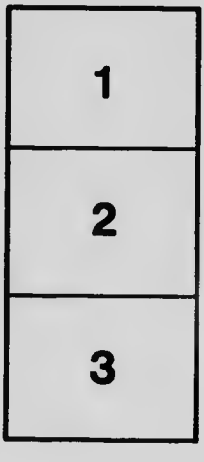

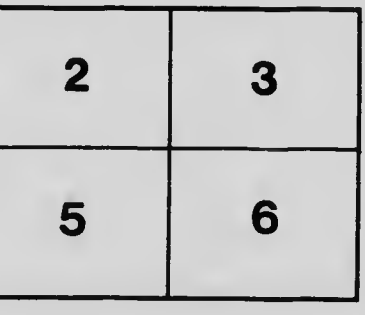

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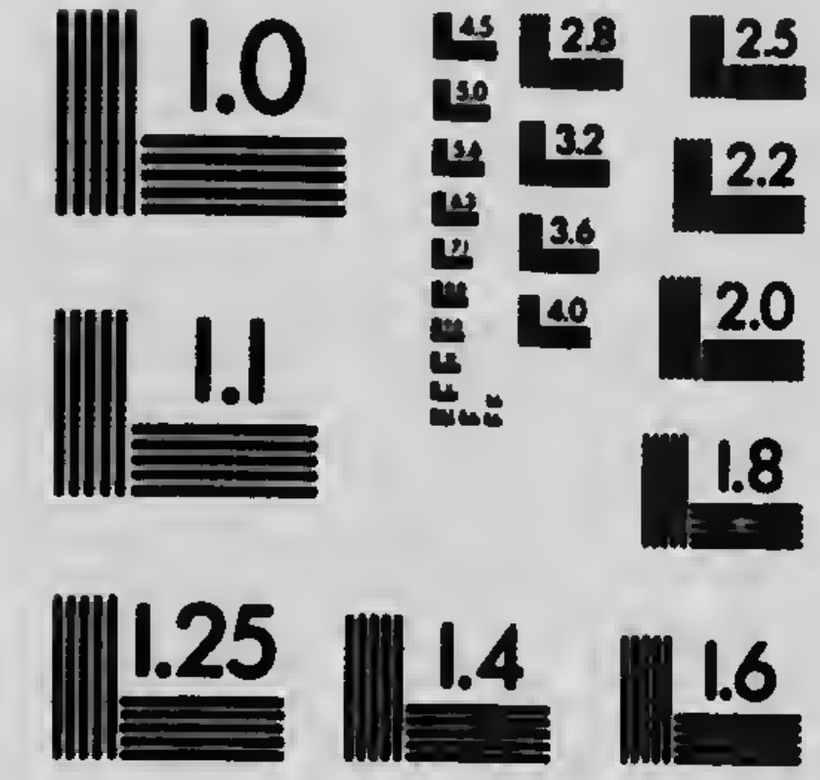

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Dominion of Canada

DEPARTMENT OF AGRICULTURE

EXPERIMENTAL FARMS

Experimental Farm, Nappan, N.S.

J. H. GRISDALE, B. Agr., Director.

W. W. BAIRD, B.S.A., Superintendent.

Potato Growing in the Maritime Provinces

BY

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The importance of the potato growing industry to the farmers of the Maritime Provinces cannot be over-estimated. As a crop it is very easily grown and can be readily disposed of on available markets, giving profitable returns. The popularity of the potato as a food product, due to the cheapness of its production, its nourishing properties and availability throughout the year, insures a steady demand for all seasons. In addition to this, it is invaluable to the starch industries and has many other commercial uses. The demand is steadily increasing year by year, yet up to the present the production has fallen far short. The consequent future of this industry is, therefore, very promising.

Yet, notwithstanding the many years of experience agriculturalists have had in potato growing, there is still considerable room for improvement in the methods employed. The following suggestions, based on the many experiments conducted at this and other stations, are therefore given in an endeavour to correct some of the evils of the present day practices and thereby appreciably increase the total yield of this, the largest potato-producing section of the Dominion.

SELECTION OF VARIETIES

Undoubtedly the primary consideration of those engaged in the industry is the question of which varieties will prove most suitable to their particular conditions. Probably the quickest and most satisfactory way to decide this question is to find out what varieties have given the best results at the Experimental Station in their province and then to discover by experimentation which of these is best suited to the grower's needs. At the Nappan Station, Irish Cobbler, Carman No. 1 and Rawlings' Kidney are the most promising varieties of those tested during the last number of years. A free distribution of samples of potatoes is made every spring by these stations to those requesting same.

SOIL

The soil on which the potatoes are to be grown will influence the size of the to a greater or less extent. While potatoes give good returns on a wide

variety of soils, the best results are obtained on a rich, friable, deep sandy loam. Such a loam should be well drained yet retentive of moisture. This crop requires a considerable amount of moisture, yet an excess is very harmful. The more loose and open the soil is, consistent with the other factors, the better shaped the tubers will be. A heavy soil always results in smaller potatoes with a higher percent. of ill-formed ones.

For this reason it is advisable to have potatoes follow sod, as the decaying vegetable matter so supplied serves to keep the soil open and to retain moisture. Clover sod is especially desirable for this purpose on account of the large amount of nitrogen it contains. In fact, this method is rapidly gaining in popularity and is now very generally used. By giving a light application of barnyard manure to the clover in the autumn, all the fertilizer ingredients required for the succeeding crop are supplied. Green manure may be applied in the fall, but only well rotted manure should be put on in the spring.

Where commercial fertilizers are applied, the following formula for a complete fertilizer is most generally used:—250 lbs. Nitrate of Soda; 350 lbs. Superphosphate and 200 lbs. of Muriate of Potash, the whole being applied at the rate of from 600 to 800 lbs. per acre.

SELECTION OF SEED AND TREATMENT OF SETS

The tubers used for seed purposes should be medium to large in size and as near the true type as possible. These should be cut into sets, each containing from two to three eyes with a reasonably large portion of the body of the potato attached. As a rule the larger the number of eyes to the set the higher percentage of unmarketable potatoes will be in the subsequent crop. The necessity of having a fairly large set will be seen when it is understood that the young plant must depend wholly upon this source for its nourishment until it has produced a sufficient number of roots to supply its own needs.

The sets should be planted as soon after cutting as possible. It has been proved that the practice of keeping them several days before planting results in a decreased yield. When it is necessary to keep them, owing to the unfavorable weather conditions, etc., it is advisable to cover them with land plaster or gypsum. This is for the purpose of preventing evaporation of moisture.

PLANTING

The planting should be done as early as possible in the spring as is consistent with safety from spring frosts. The soil should previously be very thoroughly prepared. Spring plowing is generally advisable except where the soil is heavy, in which case fall plowing materially assists in opening it up through the action of the frost. The plowing should be followed with sufficient thorough cultivation to make the soil loose and open to a depth of at least five inches.

Much diversity of opinion exists regarding the proper method of planting. Where potatoes are grown on a large commercial scale, the use of a good potato-planter is to be recommended. The very appreciable saving in time and labor and the greater uniformity of depth and distance apart of the sets are the main advantages of this method.

Probably the method most generally adopted is that of opening a deep furrow with a double mould board plow. After the sets are dropped they may be covered with the same implement. The furrow should be sufficiently deep so that when the sets are covered and the soil levelled, the sets will be from three to four inches below the surface, depending upon the texture of the soil and the season of crop required. On heavy land, fairly shallow planting is advisable, while on medium to light soil a depth of from four to five inches gives the best results.

Shallow planting is also advisable where an early crop is desired. Possibility of injury by late spring [illegible]s is an important consideration which must not be lost sight of in this connec[illegible]n.

Probably the best results are obtained by planting the sets from twelve to thirteen inches apart in rows thirty inches apart.

CULTIVATION

One of the most important factors influencing the size of the crop, and unfortunately the one most generally neglected, is the subsequent cultivation. Experiments have conclusively shown that frequent and thorough cultivation is essential if a maximum yield is to be obtained. It is generally advisable to plow up and harrow down the rows twice before the plants are sufficiently high to be injured; this very effectively controls the weeds. The ordinary cultivator can be then used, loosening the soil as deeply as possible and as close to the young plants as is safe. These cultivations should be repeated every week or ten days, and particularly after every rain, until the tops are large enough to cover the ground.

Ridging is advisable on stiff moist soil, but if the soil is loose and open with a tendency towards drying out, level cultivation will be more satisfactory.

INSECTS AND FUNGUS DISEASES

Like all other agricultural products, potatoes have their full quota of insect enemies and fungus diseases. It is very necessary that these should be efficiently controlled where good yields are desired. The following are the more important of these, together with the preventative measures:—

1. Potato "Bugs"—Colorado Potato Beetles.

Paris Green ..... 8 ozs., and Arsenate of Lead 1½ lbs.
Lime ..... 8 ozs.
Water .....40 gallons.

OR

Paris Green ..... 8 to 12 ozs.
Lime ..... 8 ozs.
Water .....40 gallons.

OR

3 lbs. Arsenate of Lead to 40 gallons water.

2. Early and Late Blight.

Bordeaux Mixture.
6 lbs. Bluestone.
4 lbs. Lime.
40 gallons Water.

The Bordeaux and Paris Green are generally combined and applied together for the above pests and a great saving in time and labor is thereby effected.

3. Common Scab.

Soak all seed potatoes for three hours in one of the following solutions:
1:2000 solution of Corrosive Sublimate;
or 1 lb. Formalin in 30 gallons of water.

4. Powdery Scab.

Change seed and plant only sound tubers on new soil. Immediately notify the Dominion Botanist, Central Experimental Farm, Ottawa. A severe penalty is imposed for non-conformity with these regulations.

5. Potato Canker.

Up to the present this disease, which is most virulent and destructive, has not been reported in Canada. It is quite possible that it may appear at any time, however, and unceasing vigilance is necessary for prompt control.

When in doubt regarding any potato disease, forward samples immediately to the Dominion Botanist, who will be pleased to identify same and suggest remedies for their eradication. All letters and parcels under twelve ounces so addressed do not require any postage.

All spraying operations should be very thorough and must be carried out at the proper time to derive the greatest benefit. The materials used should be as pure as possible, and a good pump of sufficient carrying capacity and power is very necessary. More than one application may have to be given, but time, labor and material so expended will be more than justified by the increased returns of good tubers.

HARVESTING.

The proper time to harvest potatoes is a question that does not receive the consideration it should. Much time and labor may be economized by paying closer attention to this phase of the industry.

When the crop is not affected with Late Blight the harvesting should be done as soon as the the tops die. Growth is then finished and the tubers are in good condition for storing. If allowed to remain in the ground until other crops are harvested, as is usually the case, the soil may become wet and the tubers start to decay.

A crop that is affected with rot, however, should be left as long as possible, as the majority of affected potatoes will show signs of the disease by then and may be removed and destroyed. In this way the most of the diseased tubers will be got rid of. If stored with the sound potatoes the whole crop may become infected and lost in a short time.

All harvesting should be done during dry weather. Tubers stored while wet are very liable to decay.

Potatoes should be stored in a dry, cool and well ventilated cellar. A method that has given excellent results is that of slatted bins. The bins are raised four or five inches from the floor and a space the same width is left between the bin and the wall. The slats are separated sufficiently to allow a free circulation of air throughout the tubers. With a system such as this, potatoes may be kept in good condition for a long period. Should any evidence of decay be noted, all the tubers should be gone over and the infected ones removed. This will control to a considerable extent further infection.

As a general rule, potatoes may be most advantageously marketed in the fall. An earlier return is thus realized and the possibility of loss by decay is obviated.

It is hoped every effort will be made by agriculturists to place the potato-growing industry on the extensive commercial basis it so deserves. At the various Experimental Farms and Stations in the Maritime Provinces, every effort is being made to render assistance in this regard, and the sincere co-operation of all growers is asked. Should any grower possess a new strain, which gives evidence of being superior to, or at least the equal of the standard varieties, a thorough test will be made of it by any of these stations on request. Any further request for assistance or information will be given prompt attention.