

Potato Growing in the West

Our Cheapest Food---Best Varieties---The Early Market

By John Bracken

Prof. of Field Husbandry, University of Saskatchewan

The potato crop occupies a position of relative unimportance as compared with grain crops in Western Canada, yet its use is so universal and its future so promising that the important points in connection with its culture should be well understood by all growers. In the three prairie provinces potatoes are used almost altogether for human food. As yet none have been used for making starch or alcohol and only the unmarketable ones and the small surplus above the needs of the family have been used as food for stock. Until recently the only market outside the farm has been that of the local villages, towns and cities.

The potato furnishes the cheapest food the farmer can grow. When one considers that from 15 to 20 per cent. of the total yield is starch, or in other words, that a 200 bushel potato crop contains between 1,800 and 2,400 pounds of starch the value of this crop forces itself on one's attention.

When given suitable soil conditions the potato is very productive. Yields ranging from 70 to 800 bushels have been produced in different seasons. The average for all varieties, good and poor, under field conditions, at Saskatoon for the last five years is just over 200 bushels per acre. The better varieties averaged 250 bushels. Under more favorable conditions average yields approaching 400 bushels per acre have been reported. Of course, under drier climatic and poorer soil conditions lighter returns have been secured. The potato is an "intertilled" crop and being such leaves the land in much better condition for grain than any other crop with the exception of corn. Potato ground and corn ground have produced nearly as high yields of grain as a good summerfallow and much higher yields than land that in the previous year carried any other kind of crop.

Few Difficulties in Potato Growing

The production of potatoes presents fewer difficulties than that of most crops. Drought can generally be guarded against by thorough fallowing and planting in wide rows. Spring frosts often cut down the tops and lessen the yield but they seldom kill the plants, unless the planting has been done very early. Fall frosts sometimes come before the plants are mature thus lessening the yield and lowering the quality of the tubers for cooking purposes. Insect damage is generally negligible, and but few diseases with the exception of scab are prevalent. Freedom from disease is a condition that we should appreciate and do what we can while the soil is clean to keep it so. None of these difficulties should be considered serious since they seldom affect the yield to a very great extent.

Soil and Climatic Preferences

For potatoes a deep rich dark, well-drained loam is generally the most productive. The medium to light types of loam soils often produce the best quality and the earliest crops. Potatoes will, however, do well on all normal soils. On those inclined to alkalinity more scab develops. Sandy loams and soils rich in humus generally produce the cleanest tubers. The potato prefers a moist, cool climate and a fairly long growing season. The eastern and northern portions and the semi-wooded areas have a cooler and more moist growing season, but the period between spring and fall frosts is shorter in that area than in the open plains section. The high temperatures of July and August, particularly when they occur in protracted spells of dry weather, are conducive to a second growth or a growth from the newly formed tubers. Hot dry spells of long duration are not favorable to good yields.

Preparation of the Land

Generally speaking a good fallow is the best preparation for potatoes. Corn ground is perhaps the next best. Breaking down the year previous is also a good preparation. Stubble land, either fall or spring plowed, is sometimes used but is very much less productive and, in dry years produces very small returns. If the fallow or corn ground or breaking is firm, the condition desired for wheat, it is better to plow the land or plow in the potatoes. Potato ground should be fairly loose to a good depth but not so loose that it will dry out. In hard soils "mis-shapen" tubers usually develop. Barnyard manure applied to the fallow and plowed under, or applied before corn when the latter precedes potatoes, is an excellent practice. Fresh horse manure, particularly if it is applied in large quantities or in close contact with the tubers, encourages potato scab. If it is to be

applied immediately before the potato crop, well rotted manure is much to be preferred.

The Best Varieties of Potatoes

Several qualities combine to determine the suitability of different sorts for western conditions. Among these, yield, cooking quality, disease resistance, early maturity, shape and depth of eyes, are among the most important. Many scores of potato varieties have been tested in Western Canada and the same ones have not proven best under all conditions. At Brandon the recommended varieties of white potatoes are Table Talk and Ash Leaved Kidney, while the pink ones considered best are Manitoba Wonder, Reeves Rose and Bovee. At Saskatoon the leading early variety is Early Ohio, the



An Automatic Potato Planter

best medium early ones are Rochester Rose, Everett and Irish Cobbler. Among the best late varieties are Carman No. 1, Gold Coin, Table Talk, Wee McGregor and Pingree. At Indian Head the white varieties recommended are, Carman No. 1, Empire State and Gold Coin. The pink sorts recommended are Everett and Vick's Extra Early. At Rosthern, Dreer Standard, Morgan's Seedling and Everett have proven the most productive but the varieties recommended are, white, Irish Cobbler, Dalmeny Beauty and Rochester Rose. At Scott, Morgan's Seedling, Hawling's Kidney, Wee McGregor, Table Talk and Gold Coin have yielded the most over a period of three years. At Lethbridge, Gold Coin, Irish Cobbler, Carman No. 1, Rochester Rose, Reeves Rose and Vick's Extra Early are recommended, while at Lacombe, Table Talk, Ashleaf Kidney, Irish



Western Potato Growers have fewer insects and diseases to contend with than those of the older provinces

Cobbler, Morgan's Seedling, Rochester Rose and Country Gentleman are recommended.

Under some conditions it is desirable to change the seed. Generally speaking, however, this is a bad practice unless it has been found by experience that the tubers produced on one's own farm are not as productive as those of the same variety secured from another place. There is no evidence to show what portions of the province or of Western Canada produce the most vigorous tubers for seed. This information will become available in time, but until it is secured, growers would do well to use their own seed unless disease is discovered or experience has demonstrated that tubers secured from other places produce a more vigorous growth. Our virgin soils are now free from disease and it should be the grower's firm determination to keep them so by rejecting all seed that contains any semblance of disease other than common scab.

Firm, unwilted potatoes that have not sprouted will produce more vigorous plants than any others. Potatoes, like the seed of grain crops, should be treated to aid in controlling disease. Either a solution of Formalin, or Corrosive Sublimate will aid in the control of, but may not entirely prevent potato scab. If Formalin is to be used the same strength recommended for treating wheat is best. One pound to 30 or 40 gallons of water is the proper strength and the potatoes should be soaked in this solution for one and a half hours. If Corrosive Sublimate is to be used one ounce to seven gallons of water is the best proportion. The tubers should be soaked in this solution for one and a half hours. It should be remembered that Corrosive Sublimate is a deadly poison. In treating potatoes with it wooden retainers should be used because of its corrosive action on metal vessels.

Size and Condition of Sets

The larger the set planted the larger the yield will be. But the net yield, that is, the total yield less the number of bushels of seed planted is greatest when sets about two ounces in size, having two or three or more eyes in each set, are used. The size of the set should vary with the size of the potato and the number of eyes it contains. The fewer eyes in a tuber the larger the portion planted should be and vice versa. Whether the seed end or the stem end of a large tuber is better depends upon whether the eyes in the stem end develop as well as those in the seed end. Both ends are equally good for seed if the eyes are not partially or wholly dormant in the stem end. The eyes in the seed end generally develop first and more of them are likely to grow. For these reasons the seed end often produces an earlier crop and a better stand. The seed ends are also likely to produce more small potatoes for the reason that more stock develop from the greater number of sprouts.

Because of the fact that some of the sets in the middle or stem end of large tubers remain dormant and do not grow, thus lessening the stand, larger yields have been secured from the use of small set potatoes at Saskatoon than from sets of equal size cut from large tubers. It should be understood, however, that these yields were due altogether to a better stand. It is quite probable that given an equal stand in each case the yield from sets cut from large tubers would be greater than that from sets of equal size from small tubers. If tubers are cut, they should be planted as soon as possible after cutting or in case some delay makes it impossible to plant at once they should be sprinkled with land plaster in order to prevent excessive drying.

Time and Depth

The stems and leaves of young potatoes will freeze with the slightest frost. Planting should therefore be delayed until danger of heavy spring frosts is past. At Saskatoon in the years 1914 and 1915 the largest yields from our main crop were secured by plantings made during the first half of May. There is considerable danger of frosts even after these dates, but some risk in the spring must be run in order to have the crop fairly well developed before fall frosts come. For small areas of potatoes earlier planting than this might be practiced. It should, however, be remembered that the earlier the planting the greater the danger from late spring frosts, and that much later planting is a common practice among many good farmers.

The depth to plant varies with the type of soil and the moisture condition. From two to five inches re-

Continued on Page 28