

Growing Good Potatoes in the Pacific Northwest

Some Ideas on the Homely "Spud" by Men Who Know Whereof They Write

 * The whole world eats pota- *
 * toes. What more natural then *
 * that the world should want its *
 * potatoes of the best. This ar- *
 * ticle, illustrated by photo- *
 * graphs, by Western Washing- *
 * ton Experiment Station, tells *
 * how to raise the best. *
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By J. L. STAHL

ONE of the most stable crops that can be grown by the farmer in western Washington is the potato. It is a crop that usually pays excellent returns when good culture is practiced, but often gives very indifferent returns when neglected.

The ideal soil for potato growing cannot always be had, but a good crop may be secured from quite a variety of soils. Potatoes like best a deep rich garden loam. Such a soil may contain considerable sand, but one containing much heavy clay should be well manured before planting to potatoes. Farm manures are the best addition a soil can receive to put it in good physical condition. With potatoes the manure can be applied the fall before planting so that the leachings from the manure may soak into the soil during the winter. Better, still, if rotation is practiced the manure can be added to a crop grown a year previous to the potatoes. Clover is a good crop to grow just previous to potatoes.

A grower can make no greater mistake than planting in a poorly drained soil, as good drainage is absolutely necessary for the production of smooth and disease-free tubers.

Preparation of Soil

Plowing should be deep, before planting, unless the soil is deficient in humus, and when this is the case the humus content should be increased and the depth of plowing increased accordingly. After plowing it is necessary to work the soil fine, putting it in the best possible tilth. Pieces of sod or hard lumps of dirt have no place in the well prepared potato seed bed.

According to chemical analysis the soils of Western Washington, in general, are lacking in lime, potash and phosphorus. Reports of potato growers who have carried on tests of commercial fertilizers, in a small way, by applying sulphate of potash, acid phosphate, bone meal, and lime in various combinations, show that in some cases the applications gave increased yields while in others they did not. This indicates that there is considerable need for further experiments along this line.

Varieties for Planting

Of over a hundred varieties and seedlings tested at the station for the past three years the following have given the best results: Earliest of All, Early Beauty of Hebron, Early White Ohio, Vermont Gold Coin, American Wonder, Pride of Multnomah and Up-to-date. Varieties which have been tested for only a year but which are very promising varieties are: Pride of the Valley, Puritan, Uncle Sam, Satisfaction, Burpee's Early, Sir Walter Raleigh, Champlon, Rural New Yorker, Carmen No. 1, Carmen No. 3, Netted Gem.

Early Rose and Burbank, two popular varieties, have not given good results in yield or smoothness of tubers. Maggie Murphy and Wilson's Choice, two excellent varieties, were not included in these tests.

Earliest of All. True to its name, the earliest of all the varieties tried; ready for use four days to a week earlier than Early Rose. Tuber white, smooth, roundish in shape with abrupt ends; quality good. Excellent for home use or early market and very prolific.

Early White Ohio. Very similar in shape to the well known Early Ohio, but it has a white skin, making a very desirable market potato as well as an excellent one for home use.

Vermont Gold Coin. A medium season white variety, roundish in shape, flattened, smooth and of excellent quality. It is prolific and very hardy, growing on a variety of soils.

American Wonder. A good standard mid-season variety of an oval shaped, white potato. It is good in quality, prolific and very popular in some localities.

Pride of Multnomah. An excellent late white variety with smooth, oval or kidney shaped tubers. The quality is very good. Many growers consider this the best late variety.

Up-to-Date. A very prolific late variety which has shown its worth at this station for several seasons. The tubers are white, smooth, oval in shape, solid and with very shallow eyes. In quality it is excellent. We can recommend this as one of the best late varieties grown.

Seed Treatment Before Planting

If hill selected seed cannot be secured, the tubers used for the seedlings should be smooth and uniform as to size, shape and color. This will give a more uniform field of potatoes than if the seed was badly mixed. All diseased and discolored potatoes should be discarded. Before plant-

ing and contains enough food material to support three or four vigorous stalks until the plant has developed its own roots. When cutting, all pieces showing signs of disease should be discarded. Only clean and healthy seed should be planted, as rotted or scabby seed is apt to inoculate the soil with spores of the disease. It is best to keep an antiseptic solution, such as formalin, nearby, for cleansing the knives after a diseased tuber has been cut.

Planting

Depth of planting will depend upon the character of the soil. In light, sandy soils which tend to dry out, the

used for the first application and 100 gallons per acre did the work nicely. For the second application 5-5-50 strength was used and 200 gallons per acre was required. The first application cost \$2.50 per acre, while the second cost was almost doubled. Most of this seed was taken from the field that had been badly blighted the previous season but no diseased seed was planted; all the seed was treated for scab and planting was in clean land. In return for this trouble and expense about 20 tons of potatoes per acre were harvested practically all free from blight and scab. Many growers who failed to select and plant clean seed and neglected to spray, harvested less than 50 per cent. of their crop. Some report a total loss.

Selection of Seed

One of the most important principles of potato growing and one which is too often neglected is the selection of seed. We would not plant screenings to raise a wheat crop nor use our poorest stock for breeding purposes. Why then should we sell our best potatoes and use the culls for seed?

Shortly before digging time go through the fields and mark with stakes the healthiest, best formed and most vigorous plants. Dig these hills first and save the uniform tubers from the best yielding hills. Use these tubers for the selected seed of next year. If the grower has a large acreage of potatoes he can plant the selected seed in rows near the main field, giving them as good care as he gives the main crop. From these rows he may choose out the best hills each year for the selected seed of the next year, using the remaining rows for seed of the main field. For a small field enough seed can be secured directly from the selected hills without growing the selected rows in addition.

It is good practice for a grower to have a small variety field where he can try several varieties and determine those best adapted to his particular conditions. Different strains of the same variety often differ in more characters than the varieties themselves. Some growers by careful selection are securing strains of varieties which surpass the parent strain, while others are securing new varieties. While this may seem an unimportant practice to some growers, nevertheless, it has a tendency to produce and maintain only the best strains of the best varieties.

Storage and Varieties

Growers differ on the subjects of storage and market. Some believe potatoes should be kept out of doors and covered with earth while others prefer to have a storage room or cellar for storage. All, however, agree that stored potatoes should be kept cool and dry.

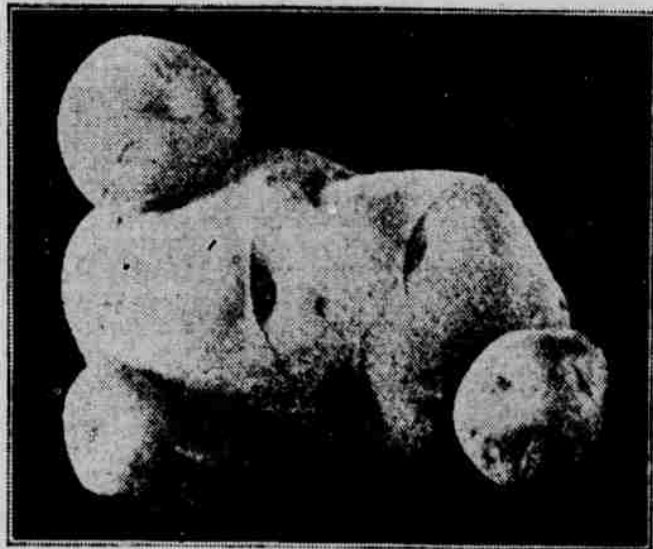
Potatoes kept out-of-doors are usually piled in a dry well-drained location and covered with boards and a few inches of soil to protect them from freezes and rain. They should not be pitted in a hole in the ground or piled on a poorly drained location, for water is apt to collect around the tubers and rotting soon takes place.

When stored indoors the tubers keep best in bins, sacks or barrels in a cool, well ventilated room.

Whether it is a better practice to market in the fall just after harvesting or whether storage and spring marketing is best depends much upon local conditions and the object for which the crop is grown. Potatoes grown particularly for seed are kept in storage and sold in the spring. With good facilities for storing, some growers find it more profitable to hold their marketable tubers and sell them in the spring when prices are usually high. Others claim the difference between fall and spring prices will no more than balance the loss by shrinkage in storage.

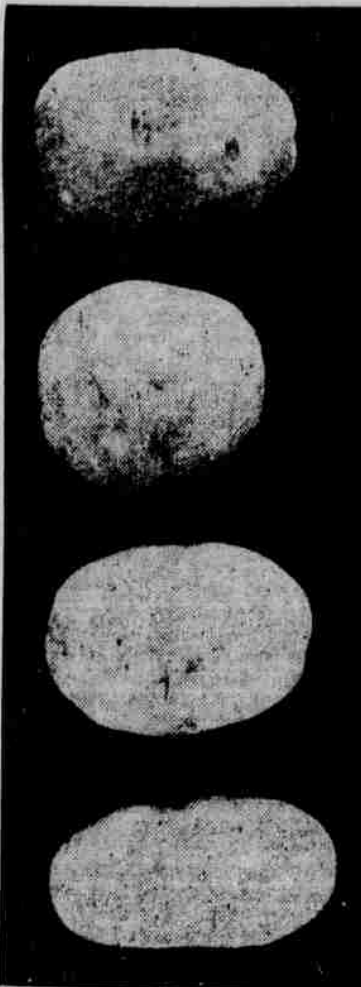
Catering to a fancy potato trade is sometimes quite profitable, but such a trade is usually quite limited. Carload lots of one or two varieties are usually more easily marketed than small quantities, or even large quantities containing several varieties.

A potato trade that seems at present badly neglected is the seed potato trade. It is hard to secure good seed potatoes in western Washington, particularly in it hard to secure seed from selected hills. This station has been selecting seed potatoes of several good varieties for the past three years and has a few hundred pounds of such seed for sale at reasonable prices. The amount of seed potatoes sold to each individual grower will be limited.



A poor type for seed. Eyes too deep. Tuber irregular in shape.

VARIETY SPECIMENS



Early Beauty of Hebron, 8½ Oz.
 Vermont Gold Coin, 8½ Oz.
 Up-to-date, 8½ Oz.
 Pride of Multnomah, 6½ Oz.

ing the seed should be soaked in a good antiseptic solution to kill all spores of disease which might be clinging to the surface of the tuber. A common solution for this treatment is one pint of formalin (commercial formaldehyde), in every 30 gallons of water. Place the seed in sacks and soak them in the solution two hours, then dry the seed before cutting and planting. Sacks or pails in which the cut seed is placed should receive the same treatment as the tubers.

The seed can either be cut or whole tubers planted. If planting is done very early in the spring and the field is apt to overflow, whole seed will be less apt to rot than cut seed. Otherwise, it is considerably cheaper and just as well to plant cut pieces. A seed piece weighing two or three ounces makes a convenient size for

seed piece should be planted four or five inches deep, while three inches is wide enough if the soil is heavy. Early potatoes should not be planted quite as deep as later varieties.

The distance between rows and hills will also depend on the soil and the variety of potato. Varieties which produce large tubers should be planted closer than those which produce small tubers. Good care will also permit closer planting than if the soil is to be neglected. The usual planting distance is from 12 to 18 inches in the row with rows 30 to 40 inches apart. Varieties which produce large tubers will usually require from eight to 12 sacks per acre for planting while varieties having smaller tubers will require from five to seven sacks.

Cultivation

Soon after the seed is planted, cultivation should begin. Harrow thoroughly every week or 10 days until the plants are well above the ground. After this the surface soil should be cultivated often enough to hold an earth mulch and keep weeds from starting. Cultivating deep, close to the plants, after they are half grown is apt to break off many lateral roots and this should be avoided. Some growers raise the teeth of their cultivators nearest the plants so that they can stir the soil close to the rows without cutting off lateral and surface roots. Hill or ridge cultivation also tends to destroy many of these roots and unless the soil is wet or the variety apt to grow out of the soil, hilling should not be practiced. The crop is easier harvested by this method and it is an easy habit to acquire, but in general it is not the best practice.

Spraying

Late blight has become so prevalent in western Washington fields that spraying is almost a necessity. Bordeaux mixture should be used in such sprayings. At least two applications of Bordeaux should be made, and during a rainy season more will be necessary. Make the first application when the plants are eight to 10 inches in height. Watch the plants to see when it is necessary to make later applications. As long as the Bordeaux shows plainly on the foliage of the plants it will not be necessary to make a second application. Drench the plants thoroughly. A little squirt of spray on one plant and a little on another will not control this costly disease. The expense of spraying will vary according to the ease with which the material may be mixed and applied and the strength and amount of material used. Two applications of Bordeaux mixture were made during the summer of 1913. One was made when the plants were about 10 inches in height and the other when they had almost covered the ground. Bordeaux mixture 4-4-50 strength was