

Cooperative Extension Circular.

NUMBER 2.

JANUARY 25, 1915.

Montana State College of Agriculture and Mechanic Arts and the
U. S. Department of Agriculture, Cooperating.
Acts of Congress May 8 and June 30, 1914.

Suggestions to Potato Growers in Boys' Club Contests.

POTATO SOILS.

It is well to remember that the quality of potatoes is determined as much, if not more, by the soil in which they are grown as by any other factor. In other words, with a poor potato soil, it is almost impossible to grow potatoes that are smooth and uniform in shape and size, or potatoes with good cooking qualities. Of course, potatoes will grow on almost any soil, but if you have a choice and want to grow good potatoes, select that which is rather sandy. Choose a soil that can be worked soon after a rain without sticking to tools. If the soil on the farm is all black and heavy, a good application of well rotted manure will improve it. Fresh manure should not be used upon land which is to be planted at once to potatoes, for it is thought to have a tendency to increase the amount of scab. If manure is used, it should be applied at least one year before potatoes are to be planted.

The best potato land is newly broken alfalfa or clover sod. If such land is available you need not use manure. Do not attempt to grow potatoes on the same land two years in succession. Potatoes do well on land previously cropped with garden or field peas.

PREPARATION OF LAND.

It is a good plan to plow alfalfa or clover sod in the fall. In the spring work it up well with the disk and replot just before planting. After this spring plowing, the land needs about one double disking and one harrowing with a spike tooth harrow. Disk and harrow before the soil has a chance to dry after the plowing. Old land may be plowed in the spring just before planting, a double disking and harrowing completing the preparation. Heavy land may be benefited by both fall and spring plowing, while rather sandy soil plowed in the fall may not need spring plowing. On the dry farm, especially where the soil is from medium to light, fall plowing gives better results than spring plowing.

VARIETIES

Some of the best early varieties are Early Ohio, Early Triumph, Irish Cobbler, and Early Rose. Burbank (Russet and White) and Pearl are good late varieties. The Russet Burbank is very resistant to disease and is also of high quality.

SELECTING SEED

In selecting potato seed, pick out the tubers with shallow eyes and those of the typical shape of the variety. The typical shape would be the type most commonly produced by the variety you are growing. Do not select those that are pointed at the seed end. A pointed end generally indicates that the seed is running out. In most varieties, it is best to choose tubers that are flat rather than round, and short rather than long.

In many varieties ideal tubers have the cluster of eyes on one side, rather than right at the seed end of the potato. One should always select seed potatoes at digging time. As the potatoes lie in the field after digging, go over the rows first and pick out the very best potatoes for seed. One can get a much better selection in this way. You should select from sixty to seventy-five pounds of seed to plant a tenth of an acre.

TREATING SEED.

If there is any scab on the potato seed, it should be treated. Soak the uncut seed for two hours in a solution made up of one-fourth of a pint or one-fourth of a pound of 40 per cent formalin and seven and one-half gallons of water. This should be enough to treat seventy-five pounds of seed at one time. Put this in a barrel or tub and drop the potatoes in either loose or in the sack. After two hours take them out and spread them out to dry. Do not put them back in the same or other dirty sacks unless the sacks are treated with the seed.

STARTING SEED.

Potato seed should be stored in a cool cellar where it will keep until at least the first of May without growing any sprouts. If you have such storage and the potatoes are dormant, they should be started before planting time. Such seed germinates quickly when planted and the young plants are less likely to be injured by disease. Better stands are secured and the crop is ten days earlier.

To start the potatoes, lay them out in a thin layer on the barn floor, granary floor, or any place where they will get some heat and plenty of light, but will not freeze. The sprouts will start but they will be short and stubby and will not be knocked off in planting. It will take three or four weeks to start dormant seed. Potatoes that have grown long white sprouts in the cellar should have these rubbed off and then be started like dormant seed.

CUTTING SEED.

Under most conditions it is best to cut potatoes in about two ounce pieces. On the dry farm it may be advisable to use a little larger seed piece. Each piece should have at least one eye. It is a good plan to cut the seed from end to end so the cluster of eyes at the seed end will be divided. A half pound potato should be cut into four pieces lengthwise, and a potato weighing

a pound should be cut into four pieces lengthwise and then cut crosswise to make eight pieces. Never cut the seed until you are ready to plant it.

PLANTING.

Early potatoes may be planted as soon as the ground can be prepared, but they should not be planted so early as to have the plants frosted. If experience shows that you may expect frost up until the middle of May, do not plant before May 1st. Potatoes that are to be irrigated should be planted in rows at least three feet and nine inches apart with the seed pieces dropped one in a place and fifteen inches apart. The seed should not be planted any deeper than necessary to get it into moist soil. Potatoes to be ~~grown without irrigation~~ should be planted at least four inches below the surface of the ground. They can be planted in furrows from four to six inches deep and covered with only two or three inches of soil. The furrow can be filled completely after the plants are up. The rows need not be over three feet apart and the plants should be eighteen inches apart in the row.

CULTIVATION.

Irrigated potatoes should be given deep cultivation and each time a little more dirt should be thrown up over the ridge. At the time the first water is applied, these ridges should be at least ten inches high. If the cultivator available will not ridge up this high, the final ridging may be done with a plow or better with a lister. Non-irrigated potatoes should be given level cultivation. This should not be deep, but should be frequent enough to keep down weeds and maintain a surface mulch. If the potatoes form near the surface of the ground, the plants may be slightly ridged at the last cultivation. After the vines cover the ground, cultivation is not necessary.

IRRIGATION.

First have the ground in proper condition for irrigation as described under cultivation. If possible, do not irrigate until the potatoes are set (this will be about blooming time), but the plants should not be allowed to wilt. In many varieties, tubers which have started to ripen for lack of moisture, will grow knobs when water is applied. Plan to irrigate early enough to avoid any check in growth. Run a small stream of water in the bottom of each furrow, and run it long enough to moisten the ground well. In many parts of the State one irrigation will be sufficient. Remember that late irrigation retards ripening and produces potatoes with poor cooking qualities. Where frosts may be expected early in September, late potatoes should not be irrigated after the first of August.

DIGGING.

Potatoes should be carefully dug to avoid any injury to the tubers. Bruised or cut tubers are unfit for exhibition or storage. On exhibition they will be scored down for blemishes and

in storage they are likely to rot. It is best to dig small plots with a fork, keeping well away from the vine to avoid cutting any of the tubers. Pick the potatoes up as soon as dry and always handle them carefully.

STORAGE.

Potatoes are best stored in cool cellars. They may be stored either in sacks or bins, and these, as well as the cellar, should be clean. It is well to leave the cellar open at first so the potatoes will cure, or dry out. The best temperature for storage is from thirty-two to thirty-five degrees.

THE POTATO BUG

This is really the only insect that troubles potato vines in Montana. The old beetles appear almost as soon as the vines are up in the spring. These are seldom numerous enough to cause really serious damage. They may be picked off by hand, and this, if done soon enough, may save spraying for the young slugs which appear later. The young often appear in such numbers as to strip all the leaves off of the vines. When they begin to hatch from the clusters of yellow eggs which are usually laid on the under side of the leaves, dust the plants with Paris green. At first these young are very small, soft-bodied insects which appear almost black in color. They grow very fast and later they are more red than black. Their appetites grow even faster than they do so do not neglect the dusting too long. The Paris green can best be applied with a powder sprayer but it can be sifted on from a cheesecloth bag. Mix the poison with about four times its bulk of flour, it will go farther, and dust the plants well. A pound of Paris green should be ample to dust your tenth-acre plot twice. Remember that this material is very poisonous and should not be left in reach of small children or animals.

SELECTING AND PREPARING POTATOES FOR EXHIBITION

It is a fact that those who grow the best potatoes do not always win the prizes and the reason for this is that they do not exhibit their best potatoes. First select potatoes of medium rather than large size. In most varieties, those weighing a pound are large enough. Select those of uniform size and shape. One small or one large potato, or one of poor shape, spoils the whole exhibit. Select tubers with shallow eyes and those free from disease or injuries of any kind. In other words, if you are exhibiting twelve potatoes, have them all the same size, the same shape and all free from blemishes. Gather them carefully, wash them carefully (a sponge is better than a brush), dry them, wrap each in paper and keep in a cool, dark place until they are placed on exhibit.

REPORT RESULTS TO MISS AUGUSTA EVANS, BOZEMAN, MONT.
leader of Boys' and Girls' Clubs, cooperating with Bureau of Plant Industry, U. S. Department of Agriculture.