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POTATO SEED SELECTION

By E. P. Sandsten



CO-OPERATIVE EXTENSION WORK IN AGRICULTURE AND
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By E. P. SANDSTEN

With the growth of co-operative marketing among our potato growers, the question of quality and quantity production will become more important than ever. Co-operative marketing will not eliminate competition between the different states, or even different sections in a state, and the highest grade will in the future, as it has in the past, command the highest price. Further, no co-operative effort among the farmers in the matter of the potato, or any other farm crop, can succeed without standardization.

Under the old system the buyer would take all grades of potatoes at prices commensurate, or at least supposedly commensurate, with the quality, but under a co-operative marketing system, success will in a large measure depend upon the quality of the product handled by the association. No association can be permanently successful unless the products handled are of the highest quality, and can hold their own with the products produced and sold in other sections. Co-operative marketing cannot give the growers the first-grade price for a second-grade product. Co-operative marketing will lead to better farming, resulting in a higher quality and greater quantity.

During a recent visit to the different potato-growing sections of the State, the writer was greatly impressed with the prevalence of disease and poor growth-conditions of the potato fields, and the object of this circular is to urge the grower to practice seed selection this fall so as to prevent serious losses which are bound to occur in the future.

Seed Selection.—The seed problem is undoubtedly the most important problem that confronts our growers. Few farmers pay the proper attention to the selection of seed, planting whatever is left over in the spring of the year, or buying what is left over from the neighbors. Under this system, we are continually selecting seed potatoes in the wrong direction.

It is a well-known fact that the small potatoes generally come from poor hills, hills that lack vigor and vitality, or hills that have been more or less affected with disease. The potatoes from such hills are usually smooth and, from all outward appearances, fine seed, and the grower actually believes that he is using good seed.

Many of our most destructive potato diseases are tuber

borne, and cannot be detected by a superficial examination. The tubers may look perfect, yet be diseased.

If our growers would exercise the same care in the matter of the selection of seed potatoes that they do in the breeding of livestock, the annual yield per acre in the State would be greatly increased.

The average potato grower is not willing to purchase certified seed because of its high cost. The certified seed grown in Colorado is practically all shipped out of the State, especially into the South, where the value of certified seed has been proved after many years of experience. Recent experiments with certified seed versus common seed in one of the central states gave an average increase in yield—the certified over the common seed—of over 50 percent. This result ought to convince the most skeptical grower that it pays to plant nothing but the best seed.

Hill Selection.—Every potato grower can, with little expense and care, produce his own seed potatoes. The best method to accomplish this is by hill selection, and we urge upon the potato growers to start this work this fall. Hill selection should be made during the first half of August. At this time the potato vines will have reached their full development. Disease, if present, will have shown up, and it is relatively easy to distinguish between healthy, vigorous hills and weak and diseased ones. The grower should go over his field carefully and when a particularly promising hill is seen, it should be staked so that it can be readily found afterwards.

A promising hill should not have more than two main stems. One good stem, well branched from the base, strong and vigorous, will show a good yield and vigorous tubers. The height of the stalks is not important, but it is important that the vines should be strong and vigorous. Tall, spindling vines should not be chosen as such vines indicate a lack of vigor or the presence of disease, nor should plants which show a pale or light color be selected, as this may be an indication of mosaic. Curly or crinkled leaves are also indications of disease. Growers can usually tell by looking at a vine whether it is of the right type for the variety, and whether it is strong and vigorous.

After having made the proper selection and the hills selected have been staked, at least one more inspection should be made before frost, and if any of the staked hills have gone bad, the stakes from such should be removed. At digging time the staked hills should be dug before the rest of the field. If any of the staked hills should not measure up to the grower's idea of a pro-

ductive hill, they should be left and only those showing high yield of the typical tubers should be harvested. These should be stored under the best storage conditions and kept separately from other potatoes, for planting the following spring.

Seed Plot.—Enough hills should be selected to enable the farmer to plant a one- or two-acre seed plot, enough to produce seed for the total planting the year following. This seed plot should always be new land, preferably alfalfa sod, thoroughly prepared by plowing ten inches deep and well pulverized.

This process of hill selection may seem to the grower to be a tedious one, yet the time actually consumed in the selection, digging and storage will not be nearly as great as anticipated, and the grower will be amply repaid in the increased yield and the higher quality of the crop.

To be successful a grower should continue hill selection with the seed plot from year to year. The second year the hill selection should be made from the seed plot, in the same manner as stated above. If our growers would practice continuous hill selection and maintain a yearly seed plot for their own use, we have every reason to believe that the yield in the State would be increased from twenty-five to fifty percent, and the percentage of the No. 2 grade of potatoes would be reduced to a minimum. There would be fewer losses from diseases, as the selection would eliminate diseased plants.

All tubers from hill selection should be saved for seed. The small tubers, that is tubers over two ounces, are as good for seed as the larger; they are simply an indication that they start to grow later. The potatoes from the hill selection will ordinarily be of large size and in planting they should be cut to two-eye pieces.

Since many growers prefer whole seed, it is always advisable to plant the potatoes derived from hill selection in the seed plot three or four weeks later than the main crop. This is done to prevent the development of the large seed tubers. If the soil is very fertile, the seed should be planted closer than is the practice in general field culture, as close as ten inches apart in the row.

Bin Selection.—Many potato growers practice bin selection. The seed is picked out from the main crop, usually potatoes that are smooth and true to type. This method, while desirable in itself, will not accomplish the purpose that the grower expects, because so many of the smooth, small, seed tubers come from weak hills, and this weakness is perpetuated by planting these tubers. It is a question whether the straight field run is not better for seed purposes than the selected, small tubers from the main crop. At least, the larger potatoes would have come from more vigorous plants.