

## ON THE LAND

## SELECTION OF SEED POTATOES.

The selection and treatment of seed-potatoes has been the subject of a great amount of literature as well as carefully carried-out experimental work (writes Mr. W. H. Taylor, Horticulturist to the Department, in the *N.Z. Journal of Agriculture*). There is fairly general agreement on two points—namely, that immature sets are likely to produce the heaviest crop, and that whole sets about the size of a hen's egg are better than cut sets or tubers of smaller size.

It is not, however, to be concluded that nothing more is necessary than to plant sets of the size mentioned taken from an immature crop. A process of selection is necessary, or specially grown seed-tubers, else it might well happen—probably would, in fact—that such sets would produce a crop inferior to that obtained from sets cut from large tubers. It is well known that potato varieties deteriorate after being grown a certain number of years. The length of time they retain original characteristics varies in different varieties, and is greatly affected by the manner of selection for seed purposes. In a field of potatoes there are always found variations in the produce of the different hills. Some will give a good number of small tubers and a very small proportion of large. Others yield a small number of tubers, large tubers predominating. Both these types are bad, and a sure sign of weakening. Sets taken from such hills might be expected to reproduce themselves in a similar character. The produce would not be quite the same, but almost surely it would be inferior in character.

The life of a variety begins with the first stock of tubers raised from seed. Then commences the increase of the stock from tubers. During this process it is presumed that some selection is carried out, though it may not be much. The process is continued until there is a large stock ready for distribution. The value of this stock will depend on the constitution of the variety—that is, how it behaves under the stress of large production. The whole of this large stock had its origin in one seed, and the enormous reproduction from tubers only must have a weakening effect. A strong constitution, combined with care in selection, will maintain vigor in a variety for a long time: but without this care no matter what the natural strength of a variety may be, it is bound to run out in a comparatively short time, or at least the produce of a field will be varied with some good hills and some bad ones.

The method of saving seed-tubers that is most common among farmers and others is to retain for planting tubers that are too small for sale or use as table potatoes, these being taken from the bulk. It follows that hills that produced a preponderance of small tubers are the ones that supply most seed-tubers. Hills that produced a small number of tubers of any kind will also be represented. On the other hand, the hills that produced the best crops of good tubers will supply a very small number of sets. Thus the poor-cropping hills supply the bulk of the sets. It is reasonable to suppose that if large tubers were kept for planting, these being cut to suitable sets, better crops would result, and in most cases it would be so. This, however, depends on several things, the most important, perhaps, being that a proportion of the large tubers would come from hills of poor production. It is evident that deterioration is hastened by haphazard methods, and there can be no assurance of good crops being obtained in that way.

There are several methods of conserving the desirable characteristics of a variety and enabling the cultivator to reproduce them in his crops. One plan is to use for seed purposes large sets specially selected from good hills, or more roughly from crops that average good. There are several objections to this method, which need not be considered now. Another plan is to plant large uncut tubers specially to produce seed tubers. The sets being uncut, the expectation is to obtain from them a large number of seed-size tubers.

The planting is done late, about Christmas-time. This secures tubers that are not over-matured, that are lifted late and consequently easily kept till planting-time, and that are the direct offspring of high-grade tubers. Quite obviously this is a more economical method than planting cut sets. A third method, and the best, is to go through the growing crop and dig the most promising hills, selecting tubers of the right size, and carefully storing them till planting-time. This should be done before the crop is fully matured, but not until the skin of the tubers is fairly firm. If the skin can be easily rubbed off it is too early to dig them.

A disputed point is that regarding the advisability of greening the tubers by exposing them to the sun. Like most things, the greening process can easily be overdone, but if judiciously carried out it has good points. If the tubers are lifted at the proper stage the skin will be somewhat tender, and in that state the tubers are easily bruised. A short exposure, just long enough to green the skin, will render it tougher, and there will then be no danger of rubbing it off or bruising. If, however, the tubers be exposed too long they will be in danger of burning, and corky patches may be formed, which would be injurious. Again, in some places where sun-heat is great and the soil becomes very hot they could not be exposed long without suffering injury. It is a matter for the exercise of common-sense. Where there is available a cool, airy building of some kind, in which the tubers can be placed in a thin layer, exposure to the sun is not necessary.

## DIG IN THE AUTUMN.

If you would have the utmost fertility of soil in the coming year, with also a minimum of labor in the spring time, digging must be completed before winter sets in. By winter is meant the hard, cold frosts, that can be reckoned on when that season is here (says a writer in *Farm, Field, and Fireside*).

The scientist has found that there is a great virtue in autumn weather, that is highly useful to the plot-holder. We all know that much of the utility of the earth as a growing agency is derived from countless millions of microbes that infest the upper crust of the soil. These agencies for good are extremely active in the autumn, and digging encourages them in their good work.

As far back as 1907 the British Board of Agriculture issued a leaflet emphasising the importance of getting all earth turned over in the autumn, so that it could experience all the benefits winter could bestow. It was found that the more extensive the practice of autumn digging was adhered to the greater were the results in fertility during the coming season. Also there was a distinct saving of labor during the period of sowing, as the tilth of the soil was finer and easier to work, and later as the season advanced there was far less weeding to do, the autumn digging having effectually buried many thousands of weed seeds, thus converting them into useful humus instead of living plants fighting with vegetables for the limited amount of nourishment and sunshine the plot could yield them.

No hard and fast rule can be laid down as to when digging should be finished by. It can, however, be taken as a general rule, and one that should be closely observed, that the sooner digging is now accomplished the better. Let Nature do as much of your work as she will, and she can do a wonderful amount during the autumn and winter. But you must first open up the soil, so that all her wonderful fertilising agencies can get to work deep down where the roots of next year's plants will have to find their food.

"The Irish patriots hold that they never have yielded themselves to the sway of England and therefore never have been under her laws, and never been rebels. If I were an Irishman, I should be (in heart) a rebel."  
—Cardinal Newman.

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