



Picking, Grading and Packing Apples in the Orchard of Johnson Bros., Forest, Ont.

First, to plant only healthy plants in setting out a new plantation; second, avoid planting where raspberries or

other related plants have grown; third, to remove and burn old canes immediately after the fruit is gathered.

Some Advantages of Fall Plowing

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THERE has been considerable diversity of opinion among orchardists as to which is to be preferred—spring or fall plowing. While under some conditions spring plowing will give better results than will plowing in the fall, and in a few cases should be adopted entirely, yet on the whole we prefer to do a large portion of our plowing in the fall. Perhaps it might be well to enumerate some of the conditions under which spring plowing would be advisable, after which we can deal more particularly with the subject in hand.

On sharply rolling land and on steep hillsides spring plowing is always advisable, because the soil is liable to wash badly during the winter months. If the soil is very sandy the wind, too, is apt to carry a lot of it away. In orchards grown under such conditions, cover crops should be grown and not plowed under until the spring. They hold the snow and thus in a large measure prevent freshets, which carry away so much soil fertility from hilly land.

CAREFUL WORK REQUIRED

A case in which, if done at all, fall plowing has to be done most carefully is in renovating old orchards that have been neglected and left in sod for a number of years. To be effective, fall plowing must be reasonably deep. Otherwise, the furrows become compact during the winter, and when the furrows are thin there is nothing to cultivate in the spring, and the ground must be re-plowed. But in such orchards the root system is usually quite

near the surface and if deep plowing is practised the roots are so seriously damaged that the trees receive a set back from which they may require a number of years to recuperate.

An argument used by many against the practice of fall plowing is the tendency to induce winter injury. Under the conditions we have mentioned we can readily realize how damage might be done to the trees because of careless plowing, but it has never been our experience that sun-scald and similar troubles were brought about by fall plowing. We have always believed that such injury was due entirely to weather conditions, a few warm days bringing on a premature flow of sap during late winter, after which a cold snap would freeze the sap and burst the bark.

VALUABLE TIME SAVED

One of the chief advantages of fall plowing, to our mind, is the amount of time which is saved thereby during the busy spring season. As a general rule, when land is ready to be plowed in the spring it is ready to be worked. It is obvious then that if the land is plowed the previous fall, one can commence cultivating earlier in the season to the extent of the amount of time saved by not having to do that same plowing in the spring. It is in the early growing season that we desire to stimulate our trees and the earlier the better. The trees need all the nourishment they can obtain to set and carry a good load of fruit. Later in the season the supply of nourishment must be curtailed and

the wood matured before frost. So we plant cover crops. Early cultivation is therefore a necessity.

A most important factor to be considered is the destruction of injurious insects. A large proportion of these pests spend various stages of their life cycle in the ground during the winter months. When the land is turned over their cocoons and egg masses are exposed to the frost and the action of the weather and destroyed.

MAKES PLANT FOOD AVAILABLE

In increasing the available plant food in the soil, fall plowing plays an important part. Frost and water are two of the greatest disintegrating agencies in nature. Heavy clay soils most particularly are benefited by their action. The hard pan when exposed during the winter is broken into particles and in the spring works up nicely. We have noticed that land which has a tendency to heave badly and throw the trees out is not nearly so liable to show this tendency when fall plowed.

The conservation of soil moisture is an important factor in up-to-date orchard practice. There are very few crops grown that do not require more moisture than that which falls during the growing season. Some require several times more. It is apparent then that the rain which falls during the winter months must be saved for future use. Here again fall plowing plays a part. The loose soil that has been turned up absorbs and holds the rain and melted soil which would otherwise largely run off.

CONSERVE MOISTURE

Thus the subsoil becomes a reservoir in which is stored the water needed the following season. This water tends to dissolve and with the aid of the frost break up the complex soil compounds. The soil also because it is more open is more aerated, and therefore better suited to the growth of bacteria, which in turn break up the organic matter of the soil. Nitrates, which are so necessary to the early spring growth of the tree, are thus liberated when most needed.

With labor ever becoming scarcer and harder to obtain, how to employ the help to the best advantage becomes an acute problem. Here again fall plowing proves advantageous. At this season of the year the teams are not much required for other kinds of work, which will not be the case next spring. To the man who engages in other lines of farming in addition to orcharding, the advantage of getting as much plowing as possible done in the fall is even more evident.

Thorough cultivation is the great secret of success in all crops, whether vegetable, orchard or farm. It is a choice between the two, cultivation is much more valuable than irrigation.