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Orchard Cultivation*

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A KNOWLEDGE of this practice is becoming more and more important, for upon it depends largely the success of the fruit grower. The demand for good fruit, especially apples, has increased very much in the past few years on both the home and foreign market, and there is no reason why a greater number of people in this province should not specialize in this branch of agriculture which has proven to be so profitable to our neighbors in the province of Ontario and to the grower of British Columbia.

The argument that the growers of Quebec cannot compete successfully with those of the provinces just mentioned on account of unsuitable soil and climatic conditions is unfounded, for nowhere else can some of the hardy varieties be grown and produced so well as in this province. A good many farmers possess fruit trees which yield fair returns; but to make fruit growing a profitable business the trees must be properly cared for, and if any one of the operations is more important than another, I should say it is cultivation. The method that has in principles been recognized to be the best by all successful fruit growers and at Experimental Farms is the following:

PREPARATION OF THE GROUND

Where ordinary field crops, such as cereals and hoed crops yield profitable returns, then the soil will be rich enough for an orchard generally speaking. The required conditions are the same as for these, namely, a good friable loam soil of good depth, tilth, and drainage. The required conditions, except the last, can be obtained by thorough plowing and subsequent tillage. Experience has taught us that land in fine tilth has produced better crops than untilled land, even if the latter did contain more plant food. The reason is that tillage unlocks plant food, makes it more readily available, and regulates the moisture holding capacity of a soil which is a very important factor in fruit growing. If the soil is not deep and the subsoil compact it will be necessary to work the latter also to some depth, and drainage with tiles will ameliorate such soils most efficiently. Should the chosen piece have been in sod for some time it will be

found best to grow hoed crops on it for a year or two, and this will give the farmer an opportunity to become acquainted with it and make all necessary improvements. It must be borne in mind that the ground should give suitable moisture conditions, and this capacity is increased by adding humus to light soils and draining waterlogged land. Moreover, it is of equal importance that the roots shall be able to penetrate the soil easily; therefore, it must be friable and well and deeply plowed. Heavy lands are improved by the addition of vegetable matter. Once a soil has been, so to speak, transformed into suitable conditions of food and moisture and the trees have been planted, it remains to

Must Have It

"No use being in the fruit business without The Canadian Horticulturist. One might as well quit both as one. Please find enclosed one dollar for two years' subscription."—Watson C. Orr, Winona, Ontario

maintain these conditions, and this leads us to the question of subsequent cultivation or tillage.

CULTIVATE THE WHOLE AREA BETWEEN THE TREES

Measuring the length of roots of young trees and comparing that length with the width of the crown it has been found that the roots occupy an area twice as large as the crown does, it follows that if the trees are planted the usual width apart their roots will ultimately occupy the whole area between the rows; moreover, the roots most actively engaged in taking up food are the youngest; those that are farthest away from the trunk. These facts show that in order to obtain the best results the whole area occupied by the roots must be cultivated, and this holds equally true for a young orchard, because in that case the ground must always be in such a state as to allow the roots to expand rapidly and grow at a depth when moisture is always available, and where they shall be protected more or less from the plow or frost. The sooner and the better cultivation is practised the better the results obtained later—and that with considerable less work.

The next important point to be kept in mind is that all cultivation should begin as soon as the ground can be worked to advantage. The season of wood growth begins early in spring and ends in the middle of summer. Consequently the ground should be in such condition as to permit the trees to make a vigorous early start and continue to furnish a readily available supply of food and moisture during the summer.

DEEP PLOWING

The first step in subsequent orchard tillage consists in plowing deeply, diminishing the depth close to the trees. The depth will vary also according to the condition of the land at the start, heavy lands will need deep cultivation, taking precautions not to touch them while too wet, as puddling would be the result. On the other hand, lands already friable need not be plowed deeply. If there is sod on the ground, it is advisable to plow it under early in the spring, for this will cause its more rapid decomposition. If there is no sod, and the land needs humus or manure, this is also a good time to plow it under. In order to get a level culture, plow one year towards the trees and the next away from them. Thus the first step consists in improving the physical and chemical condition of the soil, the second, however, is to hold the moisture in the ground, or at least to prevent its rapid evaporation.

The ground left exposed after plowing begins to settle, becoming more or less compact, and a straight path is thereby formed for the underground water to pass into the air. This would also exist if grass is growing for the large leaf area would transpire a great deal of water. Therefore, the remedy in the first case is to form a dry soil mulch on the surface, whereas the loss of water in the second case can be prevented by not growing grass, but following a system of cultivation. The best mulch is prepared by breaking up the surface soil into very small particles to a depth of not more than three to four inches after plowing. This corresponds to the hoeing of crops which checks this rapid evaporation, destroying weeds at the same time. This operation must be repeated in the orchard quite often, if possible, every 10 days, or at least after every rain.

*Extract from an address delivered before the Quebec Pomological Society.