

## IDEAL TILLAGE.

A GREAT change has come over the ideals of the Ontario fruit grower during the last fifty years. Formerly fruit trees were planted in the corners of the snake fences because they were supposed to need no cultivation, and the apple orchard was seeded down to orchard grass, never to be broken until the trees had to be taken out on account of old age.

Now we find the orchard will repay the owner for the most careful and thorough tillage, unless the desired results can be attained in some other manner. The ideal tillage of an orchard begins as early in spring as the soil can be worked, before it has begun to lose its moisture, and continues during the growing season of the tree or plant, which ends in July or August.

As has been shown in these pages by Prof. Reynolds, the rainfall in most parts of Ontario is amply sufficient for all vegetation, if it can be kept in the soil and not lost by evaporation or by cropping before the time when plant growth should cease and the wood mature in preparation for winter. Constant shallow tillage, by spreading a dust mulch over the soil two or three inches in depth, will wonderfully retain this moisture in the soil beneath, where it can be used by the trees or plants.

## MANURE AND MOISTURE.

THIS conservation of moisture becomes doubly important when we understand the relation it bears to plant nourishment. All plant food is taken up in solution, so that if moisture in the soil is lacking during the growing season to dissolve the mineral plant foods, the trees and plants will get little benefit, no matter how much fertility may be in the soil, or how much fertilizer may be applied. In this possibly we may find an explanation of the frequent disappointment in the use of commercial ferti-

lizers, which, in a dry soil, might remain sometime unused.

## CONTROLLING THE MOISTURE.

ON the subject of controlling soil moisture the Farmers' Advocate makes the following pointed remarks:

Someone has said that the best crop to grow in an orchard or fruit plantation is cultivators. That is especially true this year, for it is seldom we experience such a dry spring, and the beginning of summer seems to bring no improvement in the situation. Now is the time moisture is needed. Trees and bushes and plants are now pushing their growth. Where fruit bearing has begun, an additional burden is imposed. In the absence of rain, we must do what we can to get moisture from the air, and hold what we have by means of the dust blanket or soil mulch, a frequent and shallow stirring of the surface soil. We cannot control the rainfall; irrigation is hardly practical here, and entirely out of the question over the parts where the land is rolling, but we can exercise a great deal of control over the moisture in the soil by frequent cultivation. It is the next best thing, and a means whereby we can do a great deal to counteract the effects of drouth. I believe the time is near at hand when we shall be doing this with our grain crops as well. The question of controlling the moisture is one of the biggest ones confronting the Ontario farmer to-day, as well as the fruit grower. We must use the cultivator.

## ORCHARD TILLAGE AND MANAGEMENT.

H. P. GOULD, assistant pomologist in the United States Department of Agriculture, in Farmers' Bulletin 161, "Practical Suggestions for Fruit Growers," treats on tillage as follows:

As a fundamental factor in progressive orchard management, systematic tillage is a practice of comparatively recent introduc-