

tween the semi-arid and wet districts; semi-arid ground that was treated with barn-yard manure ten years ago is still showing increased yields as the rainfall has not been sufficient to carry off the plant food it dissolves into the creeks, gullies or other natural drainage, but has penetrated down and been brought back by capillary attraction.

The warm atmosphere and fine soil, that allows of a correct soil mulch, permits with a moderate rain all that correct proportion of air heat and moisture that is essential for the highest state of plant growth.

ORCHARD CULTIVATION

First thing in the spring as soon as the frost is out of the ground and before the surface has become dry, disc or perfectly double disc the ground overlapping half the disc, and two weeks after harrow twice, going over the ground once each way and cross harrow the second time, using the harrow with the teeth slanted back. Continue to harrow at intervals of ten days or two weeks or after a rain, until about the middle of July, when double disc, travelling at right angles to the discing that was done in the spring. Go over with the harrow ten days or two weeks after crossways to the discing, and from then until fall harrow directly after each rain, care being taken to get over the ground before the surface has become dry, and the last thing in the fall before the ground freezes double disc.

In the early part of the season if the orchard is entirely free from weeds it may not be necessary to harrow every ten days or two weeks providing the ground is harrowed directly after a rain, particular care being taken to get over all the ground before the surface has become dry.

During a hot spell it is necessary to examine the ground often to see if a crust has formed under the mulch, if a crust is found it is necessary to immediately double disc to break the crust. This method produced a condition in 1908 that during the dryest and hottest times two inches below the surface the soil was so wet that unless the cultivator teeth were well polished the soil adhered to them.

While there can be no definite rules exactly when to cultivate, it is well to bear in mind the following:

1. That ground harrowed, disced or cultivated directly after a rain, before the surface has become dry, will hold the moisture much longer than if cultivated at any other time.
2. If the ground has a lot of weed seeds in it, harrowing about every ten days will kill practically all the seeds that germinate, and there ought to be no necessity to use the hoe.
3. If a dust mulch is formed and the weather is extremely hot and dry, a crust is apt to form under the dust mulch which needs to be broken up as soon as found.