



A Western Irrigated Orchard in Bloom

injurious to foliage home-made arsenite of soda, as an insecticide to add to the fungus-destroying bordeaux. As this is an article on summer spraying, it should contain the information that summer spray should contain: Commercial lime-sulphur 32B, one to ten gallons of water; arsenate of lead, three-quarters of a pound to ten gallons of water.

THE APPARATUS

Use a pump of sufficient power to give a fine spray from the nozzle. If a hand pump is used, have the handle long, the cylinder large, the strainer fine, the intake pipe of good size—any other packing except cotton wick—a large air chamber, and a good strong half-inch hose. A quarter-inch hose loses too much power through friction. It would be all right on a power pump. I have used and seen used about fifteen different makes of nozzles, and the best, in my opinion, is the aluminium nozzle, sold by the Niagara Spray Company. It is light, effective, of great delivery, and with sufficient power to make a fine spray.

HOW TO APPLY

Spray may be applied on any day, in any kind of weather, and a given area finished at once, and all this work may be done from the platform of a wagon; but these conditions do not attend thorough spraying. I submit that a tree cannot be thoroughly sprayed at one time, with the wind in one direction, though we often try to do so. An orchard should be sprayed on one day with the wind, and three-quarters of the tree sprayed. It is not impossible to find in any week the wind in such a direction that the remainder of the trees can be sprayed. The spray should go into the tree from the ground as well as from a wagon. A fine dry day, with a slight wind, is the best for spraying. A bent connection at the nozzle will allow the spray to be easily directed by turning the rod.

In the application of lime-sulphur, some advocate the use of coarse nozzles

and an abundance of spray to wet the whole tree and surrounding country.

What Cultivation Shall I Give My Orchard?

T. G. Bunting, Central Experimental Farm, Ottawa, Ont.

(Continued from May issue)

AN excess of water in the soil at any time is never advantageous to trees, but rather injurious, and should be removed by drainage, as before stated, and the sooner the water is removed in the spring the better, for then cultivation can begin, and after it begins it is desirable not to have any great loss of moisture other than that which is taken in through the roots of the trees. Each rain will destroy this soil mulch, so then cultivation should be given as soon after each rain as possible in order to restore this mulch.

During a dry period, or a prolonged drought, the soil mulch will largely lose its efficiency if not renewed at intervals of from ten days to two weeks. Therefore, during the season of two or three months, ranging from say the middle of April to near the end of July, it will be necessary to cultivate as soon after each rain of consequence as possible. These cultivations should be as frequent during this season as every ten days or two weeks whether there is rain or not.

FREQUENT CULTIVATION

This will mean that the orchard will require to be cultivated from five to seven times during this period. The first cultivation will quite likely be by means of the plow, or if the land is in very good condition the disc may be used to advantage. The depth of plowing will depend on the accustomed depth of plowing in the orchard, and it should never be much deeper than four inches, and preferably between three and four inches.

Some, in using the disc, will cultivate just as shallow as they possibly can. The following cultivations may be by means of the disc, acme harrow, or any

As this seems to be uselessly expensive and not really as efficient as a fine mist, I try to get the latter and give the foliage a good coat of spray that will stick and dry.

We generally give three applications during the summer, besides the one in early May. One is given just before the blossoms open. This keeps in check the hunch caterpillar, canker worm, and brown tail moth, if any winter pests have escaped, as well as the black spot fungus.

One spray is given as the little apple forms and while it is yet sticking its calyx into the air for the codling moth and black spot. The third is given about two weeks later, if there is wet, muggy weather, for black spot. I am aware that the foregoing is not all orthodox, but it might excite criticism and thought, the latter being the most important thing on earth.

of the spike or spring tooth harrows, but it is a good plan to use the disc harrow occasionally as this tends to loosen up the soil more than the other harrows referred to. Some, I know, will think that this is more cultivation than is necessary in the orchard, but if they turn to the methods followed by the best fruit growers they will see that this method is being followed because it pays.

COVER CROPS

The object of ceasing to cultivate the orchard by the end of July, or at least the first of August, is because the growth of the tree has been completed by this time and there should now be an ample supply of plant food for the trees' requirements during the balance of the season. This also affords us an opportunity of sowing a crop to serve as a cover in the orchard during the fall and winter, and besides, the crop so sown takes up the available and surplus supply of soluble plant food, and holds it until the following spring, when the cover crop may be turned under and on decaying the plant food will again become available to the trees. At the same time we are increasing the supply of organic material in the soil which plays a very important part in the soil reactions, and if legume crops are occasionally used we can increase the supply of nitrogen, which is the most valuable and costly element that is required by the orchard.

If we faithfully cultivate as we should for the above two reasons, we will never be troubled seriously with weeds in the orchard. Even should the orchard be full of twitch or couch grass it can be got rid of in a very few years by the careful following up of this cultivation