

A Home-made Soluble Oil for the San Jose Scale

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Of all the remedies thus far proposed the lime-sulphur wash is the most popular for the San Jose Scale, and the most generally used. That there is a general demand for something more convenient is evident from the activity of the various experiment station workers in proposing new remedies. Hydrocyanic acid gas, whale oil soap, kerosene emulsion, undiluted crude petroleum, kerosene water (a mechanical mixture of kerosene and water), and the kerosene-limoid (K-L) mixture have all been exploited in their turn. They all had their weak points and limitations. Very few are now in use, and these only in restricted areas.

In considering the relative merits of "soluble oil" and the lime-sulphur wash for the treatment of the San Jose Scale, many important factors must be taken into consideration. Under ordinary conditions, the oil spray is more efficient, is as free from injurious effects upon the tree, decidedly cheaper, decidedly more convenient, and less destructive to spraying equipment. In view of the absence of coloring matter it is especially valuable around home grounds or roadsides and in parks. The various commercial preparations, such as Scalecide, Kill-O-Scale, Sure-Kill and Target Brand Scale Destroyer, are very convenient for the man with a few trees to spray. In view of a "soluble oil" prepared according to the formula herewith recommended, being offered for sale by several firms at a much lower figure, the cost of these preparations may ultimately be reduced. The chief advantage of the lime-sulphur wash over oil sprays consists in its influence in controlling the leaf curl, and its invigorating effect on the tree. Where leaf curl is present, an occasional application, once in two or three years is recommended.

THE EMULSIFIER

The value of crude petroleum as an insecticide has long been known. In its undiluted condition it is injurious to vegetation, yet under very favorable conditions, it may be used on dormant trees for the destruction of San Jose Scale. Not only is the undiluted petroleum unsafe, but it is decidedly too expensive. By means of mechanical contrivances or "emulsion pumps," attempts have been made to supply oil in a diluted condition. Such contrivances were a partial success, but were not reliable and their use has been practically discontinued. Chemical reagents must therefore be depended upon to bring the oil into such a condition that it may readily be diluted with water. The combination of chemicals used to bring about this condition is termed the emulsifier; the resultant oil after it has been acted upon by the emulsifier

is termed the "soluble oil," and the diluted "soluble oil" is called the emulsion or spray mixture. The formula for making the emulsifier is as follows: Carbolic acid (liquid crude 100%) two quarts; fish oil (Menhaden), two and a half quarts, caustic potash (granulated), one pound. Heat to 300 degrees F., remove from fire and immediately add: Kerosene, three and a half quarts, water five and a half quarts.

This formula is sufficient to make slightly more than three gallons of the emulsifier, fifteen gallons of the complete "soluble oil," or two hundred and forty gallons of the emulsion ready for spraying.

The carbolic acid, fish oil and caustic potash should be deposited in the kettle before the fire is started. The mixture should be slowly stirred for a few minutes after the fire is lighted, or until the potash is dissolved, at which time the cover should be placed on the kettle to prevent loss from steaming and evaporation.

The cooking is best done in an iron

kettle. The ordinary caldron kettle commonly used on the farm for making soft soap will answer the purpose. A large kettle is not necessary for, as may be seen from the above formula, slightly over one gallon of the cooked mixture (carbolic acid and fish oil) is sufficient to make two hundred and forty gallons of spray mixture. The kettle should be supplied with a close fitting cover, through which has been bored a small hole to accommodate a perforated stopper, by which the thermometer is held in place. A thermometer about eighteen inches long and graduated from two hundred degrees to three hundred and ten degrees Fah., will be most suitable. The graduated portion should be restricted to the upper end so as to project above the cover. Any good thermometer graduated to about three hundred and ten degrees Fah. will answer the purpose. If not long enough to reach the liquid in the kettle, it may be lowered through the hole in the cover by means of a string. The kettle should not be more than half filled to al-



A Seedling Peach as Grown in a Toronto Garden

Mr. Roderick Cameron, Toronto, sends the following history of the peach shown in our illustration. Mrs. R. L. Brereton, Toronto, saved the pit from the finest peach in a basket bought at the Chicago Exhibition. The fruit is different in taste and appearance to any Mr. Cameron has ever seen although he is an authority on the subject. In color it is between a yellow and white, medium in size, ripens after the yellow St. John and is a free stone. Mrs. Brereton was so well pleased with her success in growing this peach that she continued planting and now has trees all around her City lot, which all bear the finest fruit. All the peach seeds have produced fruit as good and almost identical with the parents while the trees are productive. As a rule it is only one out of a hundred seedlings that turn out to be worth growing. Mr. Cameron then asks, can it be possible that peach trees grown from peach stones planted where the tree is to stand are hardier, deeper rooted and longer lived than a tree transplanted from the nursery. He thinks that this would be an interesting matter for the experimental station to decide.