

INSECTICIDES.

No. 1.—*Lime and Sulphur Wash*.—For winter use.

This spray is now so universally recommended, and is so effectual, not only as an insecticide, but to a large extent as a fungicide, that it is deemed expedient to give a full resume of its uses and the formulae for its manufacture in the various States and in Canada. From the U. S. Year Book, 1906, I take the following:—

"The lime-sulphur-salt, or so-called California wash, has been for many years the principal treatment for the San Jose scale (*Aspidiotus perniciosus*—Comst.) in orchards in California and elsewhere on the Pacific slope, and within the last five or six years it has become practically the standard treatment for this insect in the East. Originally developed as a dip for the control of scab on sheep, it was first used as an insecticide on fruit trees, according to Quayle, in 1886, by a Mr. F. Dusey, of Fresno, Cal., who experimented with a sheep dip prepared by Mr. A. T. Covell. The wash proved very efficient, and with modifications came quickly into favour. Lime-sulphur preparations, either dry or in the form of washes, have long been more or less used by orchardists in the control of insects and fungi, but these preparations are not comparable to the boiled lime-sulphur-salt wash, and practically the usefulness of the latter as a scalecide was an independent discovery. Since first used on fruit trees, the wash has been variously modified in formula, and it has been shown to have a considerable range of usefulness, both as an insecticide and as a fungicide.

"For small orchards, of 50 acres or less, it may not be considered advisable by owners to erect a steam-cooking plant, but the writer believes it would be economy to do so where orchards of 25 acres or more are to be treated, especially if the trees are large ones. If but small quantities of wash are needed, as for the treatment of a small home orchard, an ordinary kettle or hog-scalding will be satisfactory. It may be placed on bricks on the ground and the fire built beneath, as in the ordinary heating of water. The kettle should hold 35 to 40 gallons, and preferably more if a barrel spray pump is to be kept supplied; and it will be necessary to make final dilution of the wash in the spray-pump barrel. With some such facilities for cooking, one barrel sprayer can be kept busy most of the time.

"For larger orchards, if a steam outfit is not considered advisable, large iron kettles holding from 60 to 80 gallons should be placed in a brick furnace, one or more kettles being used, according to size of orchard and the number of spray gangs which it is proposed to run. With a battery of three or four large kettles and with proper water facilities, from 150 to 200 gallons of wash may be prepared every hour. An important objection to this method of cooking is that the wash, when prepared, must be dipped from the kettles and poured into the spray barrel or tank, entailing an important loss of time; and to prevent burning, while cooking, the wash must be constantly stirred. Time and labour-saving conveniences, however, may often be provided which will considerably lessen these difficulties."