

Bordeaux and Paris green (K-L-B-P) and resin soap.

During the past month a considerable amount of work on this and allied forms of emulsion has been done in the laboratories of the Experimental Farm, Ottawa, and though this research is not completed, it may be advisable, as we are now at the season when spraying must be more particularly attended to, to publish certain of the more important facts which the work has brought to light.

First: Freshly slaked lime makes a smoother emulsion and one that stays in suspension longer than one made with ordinary air-slaked lime; the latter, however, furnishes a satisfactory emulsion if it is not too much carbonated by long exposure to the air.

Second: By using lime slaked immediately before using, the quantity may be materially reduced. A perfect emulsion can be made by slaking half pound of good quicklime and emulsifying with one quart of kerosene and two gallons of water.

Third: By the use of freshly slaked lime less time is needed for the churning in order to bring the mass to a perfect emulsion. Much, of course, depends on the vigor used in this part of the preparation, but on small quantities two to three minutes of continuous pumping were found sufficient.

Fourth: It is not apparently a matter of much moment that the lime be dry and powdery when mixed with the kerosene. Excellent emulsions have been made both from air-slaked lime and freshly slaked lime when they have been quite moist or even made into a thick cream with water before adding the kerosene.

FLOUR EMULSION.

Fifth: Flour has been successfully substituted for lime. Beginning with the same weight as proposed by Prof. Close, viz., one pound to one quart of kerosene, which made a perfect emulsion, the amount of flour has

step by step been reduced until it was found that eight ounces were sufficient to hold in perfect suspension the quart of kerosene. The preparation with flour is most simple. The requisite amount of kerosene is placed in the vessel (pail or barrel)—which is preferably dry—and flour added in the proportion stated, viz., eight ounces to one quart, the whole thoroughly stirred and the water added, two gallons for every quart of kerosene. This is then vigorously churned as already described. The time necessary to churn will vary from two to four minutes, according to the quantity to be emulsified, and the emulsion is then ready for use.

When the emulsion is required for immediate use, the quantity of flour may be further reduced. It was found that as small a quantity as two ounces would emulsify one quart of kerosene, but that on standing a few hours a perceptible layer of kerosene had separated.

It has, further, been found that by scalding the flour before adding the kerosene a less weight is required. An excellent emulsion, which showed not the slightest separation of kerosene after one week, was prepared by scalding two ounces of flour, mixing the resulting paste with one quart of kerosene and emulsifying with two gallons of water.

The flour emulsion is smooth, readily and easily atomized, and does not clog the nozzle. Any separation into layers (no free kerosene will appear for several days, at least) may be readily overcome or remedied by simply stirring the mixture. It is equally effective, as might be expected, as an insecticide with the lime-formed emulsion, and amongst other advantages that may be claimed for it there is no perceptible whitening of the tree or foliage; and, further, in some places it may be found cheaper and easier to make than the lime emulsion. Its use is suggested as an alternative where good lime is unobtainable and also for mak-