

PURE BLUESTONE.

The use of pure bluestone (sulphate of copper) has become popular in some fruitgrowing countries as a fungicide for winter use. It has so far proved satisfactory in the Dominion, and may supersede the bordeaux mixture (winter formula), used in the proportion of 1 lb. of bluestone to 10 or 15 gallons of water for pip-fruits, and 1-15 to 1-20 for stone-fruits.

DUAL-PURPOSE SPRAYS (INSECTICIDE AND FUNGICIDE).

COMMERCIAL LIME-SULPHUR (SPECIFIC GRAVITY 33° BEAUME).

This is beneficial in controlling fungus diseases, particularly powdery mildew, and is also useful as a summer spray for red mite and other soft-bodied insects.

Late winter or early spring strength: Pip-fruits—1-10, when buds are bursting; stone-fruits—1-15, when buds show colour.

Spring or early summer strength: Pears—1-15 to 1-20, when buds show colour; apples—1-25 to 1-30, when buds show colour; stone-fruits—1-125, when fruit has set.

Summer strength: Pears—1-80 to 1-100; apples—1-100 to 1-120; stone-fruits—1-125.

The several brands of commercial lime-sulphur are supposed to be of a standard strength, but considerable variation has been found in different barrels of the same brand, and further, through settlement, different specific gravities have been noted in the same barrel. This applies particularly to the home-made article. Where possible stir the vessel well before drawing off, test frequently, and dilute according to the table on next page.

SELF-BOILED LIME-SULPHUR.

Another form of lime-sulphur is the self-boiled mixture. Although this is not such an effective fungicide as the commercial or ordinary home-made article, it provides a useful alternative for use on the more tender-foliaged varieties of trees. The standard self-boiled lime-sulphur mixture is composed of 8 lb. fresh stone lime and 8 lb. sulphur to 50 gallons water. Any finely powdered sulphur (flowers, flour, or "commercial ground" sulphur) may be used in the preparation of the mixture. In order to secure the best action from the lime the mixture should be prepared in rather large quantities, at least enough for 200 gallons of spray, using 32 lb. lime and 32 lb. sulphur. The lime should be placed in a barrel, and enough water (about 6 gallons) poured on to almost cover it. As soon as the lime begins to slack the sulphur should be added, after running it through a sieve to break up the lumps, if any are present. The mixture should be constantly stirred, and more water (3 or 4 gallons) added as needed to form at first a thick paste and then gradually a thin paste. The lime will supply enough heat to boil the mixture several minutes. As soon as it is well slaked water should be added to cool the mixture and prevent further cooking. It is then ready to be strained into the spray-tank, diluted, and applied. The stage at which cold water should be poured on to stop the cooking varies with different limes. Some limes are so sluggish in slaking that it is difficult to obtain enough heat from them to cook the mixture at all, while other limes become intensely hot on slaking, and care must be taken not to allow the boiling to proceed too far. If the mixture is allowed to remain hot for fifteen or twenty minutes after the slaking is completed the sulphur gradually goes into solution, combining with the lime to form sulphides, which are injurious to peach-foliage. It is therefore very important, especially with hot lime, to cool the mixture quickly by adding a few buckets of water as soon as the lumps of lime have slaked down. The intense heat, violent boiling, and constant stirring result in a uniform mixture of finely divided sulphur and lime with only a very small percentage of the sulphur in solution. It should be strained to take out the coarse particles of lime, but the sulphur should be carefully worked through the strainer.

COMBINATION SPRAYS.

When desired the following sprays can be used in combination: Arsenate of lead and bordeaux; arsenate of lead and lime-sulphur solution; arsenate of lead and Blackleaf 40; arsenate of lead, lime-sulphur, and Blackleaf 40.

Care should be taken when combining arsenate of lead with lime-sulphur. It is advisable to make a heavy dilution of both before mixing. To ensure maximum safety against damage to foliage add a dilute solution of lime to the arsenate, using approximately the same weight of lime as arsenate of lead.