

Directions for the Preparation and Use of Insecticides and Fungicides

The following formulae for the preparation and use of insecticides and fungicides are in accordance with the best practice. This calendar has been prepared exclusively for the fruit and truck growers of the Rogue River Valley; and, with this fact in view, only such matter is included as is thought necessary for the intelligent use of insecticides and fungicides in the control of such insect pests and fungous diseases as are of economic importance in the valley.

Bordeaux Mixture

This is the standard fall spray for apples and stone fruits. Bluestone (copper sulphate) 5 pounds Lime (unslaked) 5 pounds Water 50 gallons

Dissolve the bluestone by suspending it in a sack in water, and dilute to 25 gallons. Slake the lime to an even paste and add water to make 25 gallons. Mix these dilute solutions by pouring together slowly into the spray tank or barrel.

Resin-Bordeaux Mixture

This is the standard spray for blackberries, raspberries, and other cane fruits. Resin 1 pound Sal soda crystals 1/2 pound Water 1/2 gallon

Boil together until a clear brown color appears; then add the above to each 50 gallons of Bordeaux mixture made according to the 5-5-50 formula, given above. The reason for using the resin mixture is to cause the Bordeaux to spread and adhere better.

Lime-Sulphur

This is the standard spray used during the spring for all fruit trees, vines, shrubs, etc., before the buds open. Lime-sulphur in concentrated form may be purchased, but there are many who prefer to boil their own solution.

Lime (unslaked) 1 pound Sulphur (flour or flowers) 2.2 pounds Water 50 gallons

In order to make 50 gallons of lime-sulphur at one time, all that is necessary to do is to multiply the above formula by 50. The formula will read: Lime (unslaked) 50 pounds Sulphur (flour or flowers) 110 pounds Water 50 to 55 gallons total product when boiled

Put about 10 gallons of water in the kettle or boiler and start the fire. Place the lime in the kettle, and, after slaking has well started, add the dry sulphur and mix it thoroughly, adding water enough to maintain a thin paste.

Table for Diluting Concentrated Lime-Sulphur Solutions. Columns: Reading on Hydrometer, Specific Gravity, Amount of dilution, Number gals. water to one gal. lime-sulphur solution, For dormant spraying.

This table is constructed for a dilution of 4.5 degrees Beaume or its equivalent 1.030 specific gravity.

Tables Comparing Beaume's Hydrometer and Specific Gravities. Columns: Degrees Beaume, Specific Gravity, Degrees Beaume, Specific Gravity, Degrees Beaume, Specific Gravity.

Rules for Determining Number of Dilutions and Density of Spray.

If the density of the commercial solution or the home-made wash has been first determined by the use of a hydrometer, sprays of any desired density may be calculated by using the above table. Hydrometers do not detect impurities in lime-sulphur solutions; these can be determined only by chemical analysis.

concentrate is .288 and 13.4 volumes of water are added to it. 13.4 plus 1 equals the number of dilutions. .288 divided by 14.4 equals .020 which is the decimal of the spray and corresponds to 3 degrees Beaume.

Self-Boiled Lime-Sulphur

This is the standard summer spray for peaches and other stone fruits to prevent the fruit spot disease. Its use, however, is never necessary if proper fall spraying with Bordeaux has been done. This spray is much safer than dilute lime-sulphur solutions, as it will not injure foliage.

The lime should be placed in a barrel and enough water poured on to almost cover it. As soon as the lime begins to slake, the sulphur should be added after sifting it so as to break the lumps. The mixture should be stirred and more water added as needed to form a thick paste at first and then gradually a thin paste.

The Iron Sulphide Spray

This is the standard spray for apple and rose mildew for this district. The following formula is for summer use, or after the buds have opened.

Iron sulphate (coppers) 1 quart Lime-sulphur (32 degree Beaume test) 1 quart Water 10 gallons Dissolve the iron sulphate in about 5 gallons of water and add the quart of lime-sulphur, stirring well.

It is often necessary to apply the iron sulphide before the buds open, and in this case, washing is not necessary. The best way to apply it in the case of apple mildew is with the spring lime-sulphur spray. For apples badly mildewed the previous year, use the following formula:

Distillate-Oil Emulsion

This is the standard spray for thrips. Water 6 gallons Lye (38 percent) 2 pounds Fish oil 1 1/2 gallons Put water in boiler and add lye. When dissolved and the water boiling, pour in fish oil, and boil for two hours.

The distillate-oil stock emulsion should be made as follows: Hot water 12 gallons Fish-oil or whale-oil soap (above formula) 30 pounds Distillate-oil (raw) 30 to 34 degrees Beaume 20 gallons Have the water boiling when put into the spray tank and add soap while agitator is running at good speed.

Kerosene Emulsion

Kerosene 2 gallons Hard soap (whale-oil soap) 2 pounds Water 1 gallon Dissolve soap in water by boiling; add hot soda to the kerosene. Do not do this near a fire. Agitate the mixture with a spray pump so as to emulsify the oil.

Whale-Oil Soap and Quassia

Whale-oil soap 10 pounds Quassia 5 pounds Water 100 gallons Place the quassia chips in a sack, cover with about 10 gallons of water and soak for 24 hours. Then boil, remove the chips, add the soap and boil until thickened.

Arsenate of Lead

Arsenate of lead 4 pounds Water 100 gallons It is better to purchase arsenate of lead than to attempt to make it. In mixing, preparatory to spraying, the amount of arsenate of lead for each spray tank full should be worked into a very thin paste having the appearance of milk of lime.

Tobacco Sprays

Tobacco black leaf 1 gallon Water 63 gallons Sulphate of nicotine (black leaf 40) 1 pint Water 112 to 125 gallons This is the standard summer spray for sucking insects, such as green aphids, woolly aphids and other aphids.

Hellebore

Hellebore 1 ounce Water 2 gallons This is valuable as an insecticide for use on vegetables which are almost ready for market and on which arsenicals cannot be used.

Pyrethrum

Pyrethrum 1 ounce Water 2 gallons This is a contact insecticide but is not poisonous to man. Burning a little pyrethrum powder in a room will tend to destroy flies and mosquitoes. It may be dusted on plants as a dry powder.

Carbolated Lime

This may be used for root maggots. Work the mixture into the soil. Lime (unslaked) 10 pounds Carbolic acid (crude) 1 to 2 pints Water 50 gallons Slake the lime with a little water, add the rest of the water and the carbolic acid.

Carbolic Acid Emulsion

This, like the above formula, may be used to destroy eggs and young maggots infesting onions, radishes and other garden crops. Carbolic acid (crude) 1 pint Soap (hard) 1 pound Water 1 gallon Dissolve soap in boiling water; add acid and stir or churn, as in making kerosene emulsion, until the substance becomes creamy. Too use, dilute one part of the emulsion by adding 30 parts of water.

Bran-Arsenic Mash

White arsenic 1 pound Brown sugar (or molasses) 1 to 2 pounds Bran 5 pounds Thoroughly mix the above and add enough water to make thoroughly wet. A spoonful should be placed near the crown of each tree. The mash may be used to kill grasshoppers, but it is usually best to cover the trees and use the Bordeaux mixture as a repellent.

Bran-Paris Green Mash

Paris Green 1 pound Bran 40 pounds Molasses or sugar 1 to 2 pounds Salt 1/2 pound Make a mash by adding water; add molasses (or sugar) and salt; mix thoroughly and scatter in small piles among plants or in beds before planting. This bait will prove more or less effective in killing cut worms and cabbage worms. It may be sown among the rows of plants to be protected. It is valuable for destroying cut worms in young onions.

Formalin

Formalin (40 percent solution) 1 pint Water 30 gallons This is a preventive of potato scab and smut of grains. Potatoes and grains should be soaked in it for about two hours. Smut of onions may also be prevented by treating the seed. Practically all garden seeds will be disinfected by the use of this formula.

Corrosive Sublimate

This is the standard disinfectant when working with PEAR BLIGHT. No other disinfectant should be used to wash the cut surfaces or to disinfect the pruning tools. Corrosive sublimate 1 part Water 1000 parts Corrosive sublimate may be purchased in tablet form at drug stores, and directions for making solutions will be found on the container. Never put corrosive sublimate into a metallic container, always use a glass bottle. Be sure to label the bottle "POISON" in large, plain letters. It is the deadliest of poisons.

Pine Tar

For soil-infesting, seed-eating insects such as the wire worm, tar may be used with good results. Pine tar 1 teaspoonful Seeds 15 pounds Dampen the seeds, such as corn, squash, canteloupes, etc., with a little warm water. Put in the tar and mix thoroughly; allow to dry before planting. The tar acts as a repellent.

Sticky Preparations

Tanglefoot may be purchased in cans or pails. It is manufactured by O. and W. Thum Co., Grand Rapids, Michigan. By putting it on bands of paper or strawboard secured about the trunks of trees, it will catch such insects as creep up or down the trunks of trees. It will not dry readily, and one application will last a long time.

Whitewashes

(1) Government Whitewash Lime (unslaked) 40 pounds Salt 15 pounds Spanish whiting 3 pounds Glue 1/2 pound Water 5 gallons Slake the lime in warm water and cover so as to keep in the steam; strain through a fine sieve or strainer; add the salt, well dissolved, in warm water. Then add the rice boiled hot; the Spanish whiting; and finally the glue which has been previously dissolved over a slow fire. Lastly, add the five gallons of hot water. Stir well and let stand for a few days. Apply hot with a brush. One pint of the mixture will cover a square yard. Coloring matter may be put in, such as Spanish brown, yellow ochre, etc.

Whitewash for Trees

Lime (air slaked) 30 pounds Tallow 4 pounds Salt 5 pounds Water Enough to make wash flow well When old trees are cut back for top working, they may be protected from sun scald by using the above wash.

White Lead Paint

White lead, slightly thinned with linseed oil, should be used where large cuts are made, or in case where the wood is exposed by the removal of the bark and cambium as in the case of pear blight eradication. It should not be applied in the latter case until it is certain that the disease has been eradicated.

Grafting Wax

(1) Resin 4 pounds Beeswax 2 pounds Tallow 1 pound (2) Resin 3 pounds Beeswax 2 pounds Linseed oil 1 pint (3) Resin 4 pounds Beeswax 2 pounds Linseed oil 1 pint

Grafting Wax for Walnuts

(1) Beeswax 1 pound Resin 5 pounds Linseed oil 1 pint Lamp black 1 ounce (2) Beeswax 1 pound Resin 5 pounds Linseed oil 1 pint Lamp black 1 ounce

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