

Insecticide Formulæ.

We have been requested to publish the formulæ for spraying solutions, etc., as suggested by the Department of Agriculture for Ontario. Druggists will find it of decided advantage to keep this before them, that they may be able to supply any information their customers desire.

FUNGICIDE.

Bordeaux Mixture.

Copper Sulphate	4 lbs.
Quick lime	4 lbs.
Paris Green (for leaf-eating insects)	4 oz.
Water (1 barrel)	40-50 gals.

Dissolve the copper sulphate (bluestone) by suspending it in a wooden or earthen vessel containing four or five or more gallons of water. Slake the lime in another vessel. If the lime, when slaked is lumpy or granular, it should be strained through coarse sacking or a fine sieve. Pour the copper sulphate solution in a barrel, or it may be dissolved in this in the first place, half fill the barrel with water, add the slaked lime, fill the barrel with water and stir thoroughly. It is then ready for use.

Copper Sulphate Solution.

Copper Sulphate (bluestone)	1 lb.
Water	25 gals.

As soon as dissolved it is ready for use.
For use before the buds open only.

Ammoniacal Copper Carbonate.

Copper Carbonate	5 oz.
Ammonia	2 qts.
Water (1 barrel)	40-50 gals.

Dissolve the copper carbonate in the ammonia. The ammonia and concentrated solution should be kept in glass or stone jars tightly corked. It is ready for use as soon as diluted with the 50 gallons of water. To be used when Bordeaux cannot be applied on account of staining the fruit.

Corrosive Sublimate.

For potato scab soak the tubers for 1½ hours in a solution of 2 ozs. in 16 gals. of water. When dry cut up for planting.

Corrosive Sublimate is a fatal poison to take internally. It also corrodes metal. The solution should therefore be made in wooden vessels. All treated seeds should be planted, and any solution left over should be poured into a hole in the ground.

INSECTICIDES.

Kerosene Emulsion.

Kerosene (coal oil)	2 gals.
Rain water	1 gal.
Soap	½ lb.

Dissolve the soap in water by boiling; take from fire, and, while hot, turn in kerosene and churn briskly for five minutes. To be diluted before using with eight parts of water.

For bark lice and other sucking insects.

Paris Green.

Paris Green	1 lb.
Lime (fresh)	1 lb.
Water	200 gals.

For dry application.—1 lb. Paris Green with 50 lbs. land plaster, slaked lime or any other perfectly dry powder.

For insects which eat foliage.

Hellebore.

White Hellebore	1 oz.
Water	2 gals.

Or to be dusted undiluted over attacked plants.

Pyrethrum (or Insect Powder.)

Pyrethrum Powder	1 oz.
Water	3 gals.

For dry application.—Mix thoroughly 1 part by weight of Insect Powder with 4 of cheap flour, and keep in a close vessel for 24 hours before dusting over plants attacked.

NOTES.

1. When there is danger of disfiguring fruit with the Bordeaux mixture use the ammoniacal copper carbonate solution.

2. Experience in spraying during the past two years indicates that it is best to use the combined insecticide and fungicide, commencing as soon as the buds begin to swell, again when the leaves appear, and continue it at intervals of 10 to 15 days, until the trees have been sprayed 3 to 5 times, which will depend upon the weather. In the case of a rainy season, it may be necessary to spray at least five times, while if dry, and the mixtures have been allowed to remain on the foliage, then three or four times may be sufficient.

In no case spray while the trees are in bloom, but immediately after. It is contrary to law.

3. The combined insecticide and fungicide, containing Paris green and Bordeaux mixture, is to be used for insects that chew, and injurious fungi, but kerosene emulsion alone for those insects that suck the juices of plants, such as aphids, thrip, red spider, oyster shell bark louse, etc.

4. A stock solution for the preparation of Bordeaux mixture may be prepared as follows: Dissolve 25 pounds of copper sulphate in 25 gallons of water. One

gallon of this contains one pound of the copper sulphate. In another barrel slake 25 pounds of good lime, and add 12½ gallons of water. One gallon of this contains two pounds of lime. To make the mixture, take four gallons of the copper sulphate solution and two of the lime. Now fill up the amount to 40 gallons with water.

5. Prepare the mixtures well, apply them at the proper time, and be as thorough as possible in the work.

TO PREPARE RESORCIN PASTES.

Given the task of preparing a homogeneous paste carrying a certain proportion of resorcin—say a zinc carbonate and starch paste—to which it is desired to add 5 per cent. of resorcin, what is the best method to pursue? You will find that you will not succeed if you powder the resorcin dry, by itself, in a mortar; nor can you obtain the result by dissolving the resorcin in water. Schmatola (*Pharm. Zeit.*) says that beautiful results are obtained by rubbing the resorcin with a little ether, until dry. By this means you get a powder that works up homogeneously in any proportion.—*Nat. Druggist.*

The class which has just closed at the Optical Institute of Canada was one of the best and largest in its history, and immediately after its closing Dr. Hamill gave a three days' instruction in advanced work to the graduates of the institution—over thirty from all parts of Canada attending. The success of these advanced talks and enthusiasm of the attendants were so pronounced that the doctor promises one more sometime during the year.

NITRIC ACID ON SAWDUST.—Strong nitric acid has set pine and sawdust afire in three minutes by simply saturating the sawdust with it. Hence, when nitric acid is spilled upon the woodwork there is danger of fire, and the acid should be neutralized immediately with ammonia.

IMMUNITY FROM SNAKE POISON.—In order to confer immunity against the bites of serpents in certain portions of Africa, the patient is inoculated with the poison of the alcatifa, a venomous serpent of east Africa. After the operation the person takes an oath never to kill a venomous serpent.