

Preparation of Bordeaux Mixture

By R. H. ROBINSON, Chemist
Oregon Agricultural Experiment Station

HOME-MADE bordeaux mixture, properly prepared, is superior to any commercial brand. It is very important that directions for its preparation be followed carefully.

The home-made bordeaux mixture is produced when dilute solutions of copper sulfate (bluestone) and milk of lime are poured together. Formulas are generally designated by the proportions of the materials used. For example, the formula used in walnut blight control is known as the 6-4-100 formula and is as follows:

6-4-100 FORMULA

Copper sulfate (bluestone)	6 pounds
Quicklime (stone lime or processed lime)	4 pounds
Water	100 gallons

Other formulas are frequently advised such as 6-6-100 and 12-6-100. The first number always indicates the amount of copper sulfate to use, the second number the amount of lime, and the last the water.

Copper sulfate is available, either as a finely powdered product or in the crystal or lump form. The lime is available, either as quicklime (or stone lime) or in the powdered form known as "processed lime." Hydrated lime also may be used, but one-third more by weight should be taken. Neither quicklime nor hydrated lime that has air-slaked should be used. To prepare 100 gallons of bordeaux mixture, proceed as follows:

1. Slake the required amount of quicklime carefully and add, through strainer, to spray tank containing about 75 gallons of water.

2. Dissolve the powdered bluestone in a few gallons of water (or use stock solution described below under A) and with agitator of spray tank going, add it slowly to the lime in the tank. Finally add more water to make 100 gallons of spray.

When large amounts of bordeaux mixture are required for use over a period of several days, it will be found convenient to prepare stock solutions of both the bluestone and the quicklime. These stock solutions may be prepared as follows:

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A. *Bluestone or copper sulfate solution* may be prepared by suspending in a 50-gallon barrel of water *near the surface*, 50 pounds of bluestone in a burlap bag. Each gallon will then contain 1 pound of bluestone. Wooden barrels must be used for this purpose as bluestone will eat through any metal very quickly. Keep the barrel covered to prevent evaporation.

B. *Quicklime* for making the milk-of-lime solution may be prepared by slacking 50 pounds of high-grade quicklime (or powdered process lime) and then adding water to make 50 gallons of the lime solution. This also, then, will contain 1 pound of quicklime in 1 gallon of water. This milk-of-lime solution may be kept indefinitely if it is covered with a thin film of lubricating oil and the barrel is covered tightly to prevent evaporation.

Preparation of bordeaux mixture. To prepare 100 gallons of bordeaux mixture by the 6-4-100 formula proceed as follows:

1. Add to the tank about 50 gallons of water and start the agitator.
2. Stir up stock solution B thoroughly and dip out 4 gallons of the milk of lime. Pour through strainer into spray tank.
3. Arrange a water inlet to the tank so that the water runs down a trough into the tank. Turn on water full force and pour slowly into the running water, 6 gallons of stock solution A, copper sulfate, so that it will be diluted as much as possible.
4. As the last portion of bluestone is being poured into the intake water, the last of the water should be added.

Precautions

1. Use fresh quicklime of highest purity and avoid burning or drowning by adding too little or too much water. Good hydrated lime if fresh and of high quality (95 per cent pure), may be substituted for the quicklime provided one third more by weight is used.
2. Avoid mixing the concentrated solutions together at any time.
3. Bordeaux mixture should be used immediately after preparation. If the bordeaux is not to be used the day it is made, one eighth of an ounce of sugar should be added for each pound of copper sulfate. For 100 gallons of 6-4-100 bordeaux, one tablespoonful of sugar should be used.
4. Clean water should be forced through spray machine at the end of each day's run to avoid corrosion of metal parts by the bordeaux.