



## BORDEAUX FORMULAS

While there are many Bordeaux formulas for the control of plant diseases, generally the 10-10-100 works well for many disease-causing pathogens. Among its many uses are applications in fall to control the overwintering fire blight inoculum in pears and apples, leaf curl and shot hole pathogens in peach and nectarine, downy mildew and powdery mildew fungi in grapes, peacock spot pathogen in olives, walnut blight bacteria in walnut, and black spot fungus in roses. Because Bordeaux colors the sprayed plants blue and may discolor house paint, it is not used as often on ornamental plants as it is on trees, vines, or agricultural plants.

**The three hyphenated numbers in a Bordeaux formula (e.g., 10-10-100) represent the amount of each material present. The first number refers to the pounds of copper sulfate, the second number refers to the pounds of hydrated lime, and the last number refers to the total gallons of water to be used. Thus, a 10-10-100 Bordeaux means: 10 pounds of copper sulfate, 10 pounds of lime, and 100 gallons of water. A 1 gallon mixture of 10-10-100 Bordeaux contains 3-1/3 tablespoons of copper sulfate and 10 tablespoons of hydrated lime in 1 gallon of water.**

## THE MATERIALS

Copper sulfate and hydrated lime can be purchased at most garden centers.

**Copper Sulfate.** Powdered copper sulfate, often referred to as "bluestone," is finely ground, dissolves relatively quickly in water, and is a must for the preparation of Bordeaux mixture. Ordinary lump copper sulfate is not satisfactory because it is slow to go into solution. Store copper sulfate in a dry place. If it gets moist, it becomes lumpy and is then difficult to work with.

**Lime.** Either hydrated lime or slaked lime can be used to prepare Bordeaux. The most important point is that fresh lime be used. Don't use lime from last season.

*Hydrated Lime.* Use only good quality hydrated lime (calcium hydroxide). The hydrated lime should be fresh; i.e., not carbonated by prolonged exposure to air. Hydrated lime is stable and usually readily available under several trade names. Because it comes as a dust, protect your eyes, nose, and mouth from any dust powder by using a [dust and mist filtering respirator](#) when mixing.