

Application can be made in a number of ways:

1. *In solution*: 1 oz. to 3 gallons of water.
2. *Dry*: Apply while dew is on in the morning or after a rain.
3. *Dry, with dilution*: Mix with some flour or other light powder to any extent desired. Apply as 2.
4. *In fumigation*: Dust over live coals; for dealing with mosquitoes and flies.

FUNGICIDES.

It has long been known that chemical compounds are useful in combatting fungous diseases. As early as 1807 it was found in France that copper sulphate would prevent the germination of the spores of corn smut, but this discovery, one of a very important nature, was not appreciated or made known till a much later date. Sulphur was long used in the same country, but was not nearly so energetic as desired. No advances were made, however, till 1882, when the value of the compounds of copper became known. Since then great strides have been made in improved methods.

As indicated above, copper is a very important ingredient in fungicides. Nearly all the leading remedies contain it in some form or other; and so widely are its compounds used that we have come to term the combinations in which it occurs as "The Copper-Salt Fungicides."

COPPER-SALT FUNGICIDES.

Bordeaux Mixture.

This substance derives its name from the city of Bordeaux, in France, as it was in the vineyard district surrounding this place that it was first found useful. Therefore the name gives no indication as to what ingredients are present.

[The source of the copper in this fungicide is copper sulphate, or what is commonly known as "bluestone." Now copper sulphate is an "acid salt," i.e., it is a salt which shows an acid reaction and will turn blue litmus paper red. This property of bluestone is due to the fact that it is a compound formed by the combination of a weak alkali ($\text{Cu}(\text{OH})_2$) with a very strong acid (H_2SO_4), the outcome being that of a salt in which the acid property predominates. Being acid, therefore, copper sulphate cannot be applied to foliage, because it exerts a burning or destroying influence. Like white arsenic, it must be changed to some other form, a form which will not be injurious. Bluestone can be applied to foliage without doing harm, but in such a dilute form that it is not very effective.

The material used to overcome the acid property just mentioned is slaked lime or milk of lime. A good sample of lime is secured and slaked with a minimum quantity of water, thus changing it into the hydrate, as:

