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GEORGIA COASTAL PLAIN EXPERIMENT STATION
Tifton, Georgia

Information based on results of practical experiments in agriculture for press release and distribution to farmers

BLUE MOLD CONTROL BY SPRAYING TOBACCO PLANT BEDS

Spraying tobacco beds with cuprous oxide-cottonseed oil emulsion is the most practical method of controlling blue mold. While it does not give 100 per cent control, it prevents heavy losses and furnishes enough plants in season. The cost including materials and depreciation on a good hand sprayer varies from $1.25 to $3.50 per hundred yards a year.

MATERIALS AND FORMULA FOR 25 GALLONS: Any one of three spray mixtures gives satisfactory results. The two following are equally effective but the first is considerably cheaper. A third formula, also inexpensive, is given on the attached sheet. Use proportionate amounts for mixing other than 25 gallons.

Formula No. 1:	Yellow Cuprocide (83% copper)	4 ounces
	Vatsol OTC	4 ounces
	Cottonseed oil (crude or refined)	1 quart
	Water to make	25 gallons
Formula No. 2:	Yellow Cuprocide (83% copper)	4 ounces
	Self-Emulsifying Cottonseed (SEC) oil	1 quart
	Water to make	25 gallons

NOTE: Red copper oxide, or Cuprocide (86% copper), can be substituted for Yellow Cuprocide and used at the same rate. Cuprocide 54-Y should be used at the rate of 6 ounces to 25 gallons. Cooking oil containing mixtures of cottonseed, soybean and peanut oils may be substituted for pure cottonseed oil.

DIRECTIONS FOR MIXING 25 GALLONS OF SPRAY: (1) In mixing formula No. 1, stir the Vatsol into a half gallon of water and add the quart of oil. (2) Pump this mixture through the spray nozzle several minutes until a milky white emulsion is produced. (3) Add water to bring the volume to 24 gallons. (4) Stir the yellow copper oxide powder into a gallon of water and pour into the diluted oil emulsion. (5) Hold the nozzle in the spray and operate the pump several strokes to complete the mixing. Make only enough for one application at a time and use immediately.

In mixing formula No. 2 pour the quart of SEC oil in a half gallon of water and emulsify in the usual manner. Dilute with water to bring the volume to 24 gallons and add the yellow copper oxide as described above.

WHEN AND HOW OFTEN TO SPRAY: Begin spraying in mild winters soon after the first of February, especially old beds in areas where mold usually appears first each season. Begin before mold appears in the bed regardless of size of the plants, and continue twice a week (Monday and Thursday) until the outbreak has passed and the affected plants have started to recover. When in doubt, begin spraying early once a week, increasing to twice weekly when mold appears in the joining county. Apply 2 to 3 gallons per 100 yards each time on plants in the 4-leaf stage, increasing to 5 gallons on plants half large enough to set. Small plants may be sprayed through the cover.

A HOME-MADE YELLOW COPPER OXIDE-OIL SPRAY FOR BLUE MOLD CONTROL.

A superior yellow copper oxide for use in the regular copper-oil spray for blue mold control can be made on the farm by mixing bluestone, syrup (molasses), and lye. If home-made syrup is available free, this is the cheapest form of copper as well as one of the most effective. A stock solution made according to directions below will keep two months. Enough may be prepared at one time to last through the spray season.

HOW TO MIX STOCK SOLUTION: The following are required for mixing 4 gallons of stock: 4 pounds bluestone, 2 quarts cheap syrup and two 13-ounce cans lye (Red Devil or other lye containing about 75% sodium hydroxide.) Use only wooden or earthen containers. Dissolve the 4 pounds bluestone in 2 gallons of warm water, or suspend it in a bag just beneath the surface of the water a day in advance of mixing. When the crystals are dissolved, add 2 quarts syrup. Then dissolve the two 13-ounce cans of lye in a gallon of water and slowly pour into the bluestone-syrup solution, stirring thoroughly. Add water to bring the volume to 4 gallons. The resulting mixture is a temporary green paste that later turns to a yellow suspension. Let stand in a barrel, keg or churn a week before using or until the yellow color appears. Keep covered and stir well each time before dipping any out for use.

HOW MUCH STOCK SOLUTION TO PREPARE: Four gallons of stock, when mixed with spreader and oil in the right proportion, will make enough spray to treat a 250-yard bed 10 to 12 times. Prepare the solution in early February or sooner in mild winters Directions for using are given below.

MATERIALS FOR MIXING 25 GALLONS OF SPRAY: By using the same formula and directions, any amount may be mixed at one time.

Formula No. 3:	Yellow copper oxide stock solution - - - -	3 quarts
	Vatsol OTC (or other recommended spreader)*	4 ounces
	Cottonseed oil (crude or refined) - - - -	1 quart
	Water to make 25 gallons	

Cost $1.56 per 100 gallons based on 1939 prices, exclusive of syrup.

DIRECTIONS FOR MIXING 25 GALLONS: (1) Stir the Vatsol OTC powder or other spreader into a half gallon of water and add the quart of oil. (2) Pump the mixture through the spray nozzle several minutes until a milky white emulsion is produced. (3) Add water to the emulsion until the total volume is practically 25 gallons. (4) Stir the yellow copper stock solution, dip out 3 quarts and pour into the diluted oil emulsion. (5) Hold the nozzle in the spray and operate the pump several strokes to complete the mixing. Use immediately. Make only enough at a time to spray the beds once.

Spray twice a week, with a good hand sprayer, beginning before mold appears in the bed, irrespective of size of plants. Spray thoroughly with at least 100 pounds pressure so as to completely moisten but not drench the foliage. Use 2 to 3 gallons per 100 yards on plants in the 4-leaf stage, increasing to 5 gallons on plants half large enough to set.

* NOTE: Increase the Vatsol OTC from 4 to 6 ounces in hard water. Either Dreft or Orvus, 6 ounces to 25 gallons, may be substituted for Vatsol OTC; also one pint of Lethane Spreader to 25 gallons may be substituted. The Vatsol is less likely to cause injury. Self Emulsifying Cottonseed (SEC) oil may be used with the home-made copper, in which case no spreader is required.