

AGRICULTURAL EXPERIMENT STATION  
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STOPPING DAMPING-OFF IN VEGETABLE SEEDLINGS

by  
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Damping-off frequently occurs among seedlings whether or not the seeds have been treated. The little plants, just after they have emerged from the soil, are easily killed down by fungus organisms that are likely to be present in any garden soil. Seedlings that die or fall over are said to "damp-off." Damping-off can be almost completely eliminated by partially sterilizing the soil as with heat or strong disinfectants such as Formalin or Chloropicrin, also called "tear gas." A good job of soil sterilization requires special equipment or special chemicals which are now hard to get. Fortunately, there are remedies for damping-off when it does occur. This circular describes some of these for different plants.

WHAT TO DO FIRST

Just as soon as damping-off is observed, stop watering for awhile. Allow the soil to dry some around the plants. If the seedlings are in flats or in cold-frames, give them as much air and light as is possible. The dryer the soil, the more the light, and the better the air drainage, the less the danger that damping-off will continue. Of course, the soil around the seedlings cannot be allowed to dry completely or the seedlings will die from that cause. That is why watering with a chemical that will prevent damping-off provides both water for the plants and chemicals against the disease. Chemicals that may be used and methods of applying are listed below:

CHEMICAL TREATMENTS

METHOD 1 - RED COPPER OXIDE DRENCHES. While only small amounts of this chemical are available in 1943, we are listing this method first because it can be safely and effectively applied to many kinds of vegetables.

Mix one ounce of RED copper oxide in 3 gallons of water. Stir thoroughly. The dust is not soluble in water but is merely suspended in water. Stir hard and frequently while applying. Gently drench the plants and soil where the damping-off is occurring. The suspension may be applied with a cup or with a sprinkling can after first removing the spray cap from the spout. Drench the plants and the ground around them. One application is usually enough.

This treatment can be used on cucumbers, melons, eggplants, beets, spinach, carrots, peppers, lettuce, and tomatoes.

Do not use this treatment on cabbage, cauliflower, broccoli, or kale.

METHOD 2 - SEMESAN DRENCH. Dissolve 1 ounce of Semesan in 4 gallons of water. Drench the soil in spots where damping-off is occurring. Try to prevent the liquid from wetting the tops of the unaffected plants. Be certain to use SEMESAN and not Semesan Junior or Semesan Bel.

This treatment is advised for cabbage, cauliflower, broccoli, and kale.

Do not use Semesan drench on tomatoes.

METHOD 3 - POTASSIUM PERMANGANATE DRENCH. The cheap grade of Potassium Permanganate as used for chicken houses, etc. can be used to stop damping-off. Dissolve one ounce of the chemical in 4 gallons of water. Drench the seedlings and then about 5 days later drench them again. This treatment is mild and not as effective as the above.

This treatment seems usable on almost any kind of seedling. May be especially useful on tomatoes and pepper.

#### COMMENTS

The Red Copper Oxide and the Semesan treatments are the simplest and easiest to use.

Don't try to stop damping-off with acids, compounds containing chlorine, or with wood ashes.

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