

5655
A761
M1197
no. 126

DISEASES AND INSECTS OF CUCUMBERS, MELONS, SQUASH, AND RELATED CROPS

SPECIAL
COLLECTION
1955

Diseases and insects are the most important limiting factors in the growing of cucurbit crops in Virginia. The most destructive diseases of these crops are bacterial wilt, downy mildew, anthracnose, and mosaic. The cucumber beetles and the pickle and melon worms are the most destructive insects.

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Cucumber Beetles and Bacterial Wilt

The most serious injury by cucumber beetles is done soon after the insects come out of hibernation. At that time, the young plants, if not protected, might be completely destroyed within a few hours. The beetles deposit their eggs around the base of the plants. In a few days these eggs hatch into small, white larvae, which bore into the stems and roots. In addition to the injury caused by the beetle, it frequently inoculated the plants with bacterial wilt, often seen later in the season. To control bacterial wilt, it is necessary, first, to control the cucumber beetle.

Control: First, try to prevent the beetles from entering the garden or field when the plants are coming up. This means that the vines and fruit of the previous year's crop should have been disposed of at the end of the bearing season, to deprive the beetles of food. Eliminating crop residue, and trash in fence rows, will do much to reduce winter survival.

After careful attention has been given to sanitation, follow with a thorough dusting with a mixture of rotenone or methoxychlor and copper or zineb, or a calcium arsenate and copper dust. (Do not use a dust containing a poisonous insecticide after the fruit begin to form). Make the first application of the insecticide-fungicide dust as soon as the ground cracks above the germinating seed. Blow the poison dust into the crevices to cover as much of the stem as possible, so that it will be present when beetles attack the young tender shoots. Make additional applications of the dust at 4- to 5-day intervals, until the beetles are under control, then apply a copper or zineb dust (without poison) at 7- to 10-day intervals until the harvest is finished.

Downy Mildew

Downy mildew is a fungus disease which causes yellow spots on the leaves. When the spots become numerous, the leaves wither and die and the plants may be partially or entirely defoliated. The downy mildew fungus does not overwinter in Virginia, but does survive on plants farther south. During rainy periods in the spring, the disease moves up from the south by means of wind-borne spores.

Control: Downy mildew can be effectively controlled by frequent applications of copper or zineb dust. Fungicidal dusts containing 5% metallic copper, or 3.9% zineb have proved satisfactory. Zineb is very effective and causes less injury to the foliage. Make the first application when the vines are about 20 inches long or earlier if the disease is present in the neighborhood. Repeat the treatment at 7- to 10-day intervals throughout the season. If rain washes the dust off, repeat the application. Ready-mixed dusts can be purchased from most large seed stores and farm supply dealers.

Pickle and Melon Worm

Frequently cucumbers, melons, and squash are attacked by fruit worms. The young caterpillars feed at first on the blossoms and tips of the vines, later boring into the fruits. Rot usually sets in after the worm enters the fruit. Infested fruits are not marketable.

Control: A combination dust, composed of 1% lindane and zineb or 1% parathion and zineb are the best materials for the control of fruit worms and leafspot diseases. However, a 1% lindane dust will give effective control of the fruit worms. Make one or two applications of dust before the fruit sets and, for fast growing crops, repeat the application in 7 days, when using lindane or in 5 days when using parathion. Fruits will require brushing or washing before marketing. CAUTION!! Do not apply lindane to crops grown on land to be planted to potatoes or other root crops within a year or two because off-flavor may occur to root crops.

A methoxychlor-zineb or methoxychlor-copper dust will give control of fruit worms and leafspot diseases, but neither are quite as effective as the lindane or parathion.

Varieties planted for early harvest will escape most of the injury.

Other Diseases

Anthracnose frequently causes considerable injury to cucurbits. It can be partially controlled by dusting with fungicides as outlined under downy mildew. Mosaic causes stunting of the vines and a wrinkling and mottling of the leaves. The yield of fruit is frequently very much reduced. Cucumber beetles and other insects that spread the disease must be controlled, and all milkweed, pokeweed, wild cucumber, ground cherry, and other plants that carry mosaic, in or near cucumbers, squash, etc., should be destroyed.

Equipment

For small areas of an acre or less, a hand-operated rotary duster will be satisfactory. However, for larger commercial areas, a tractor or truck-mounted power duster will be much more satisfactory. If power dusting is anticipated, space the rows to give room for the operation of such equipment.

MR-126 (revised, January 1955)

Prepared by Specialists in Plant Pathology and Entomology

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, VIRGINIA POLYTECHNIC
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