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Virginia Polytechnic Institute, Blacksburg, Agricultural Extension Service
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TIMELY CONTROL OF GARDEN DISEASES AND INSECTS

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To most people the control of garden diseases and insects consists only of spraying or dusting. However, this is not entirely correct because the use of chemicals is but one of several methods of controlling these pests.

GOOD GROWING CONDITIONS are necessary to help plants repel attacks by diseases and insects, and to enable them to recuperate rapidly after pest injury. This includes the destruction of old diseased plant refuse and the proper fertilization and cultivation of the garden. The destruction of plant refuse is important to reduce the carry-over of disease organisms and overwintering insects. Clean up and destroy such refuse as diseased carrot tops, celery leaves, cull fruits, and vines of tomatoes, cucumbers and other crops. It is much more practical to add humus to the home garden in the form of barnyard manure than to plow under diseased garden refuse. It is of particular importance to gather and burn or otherwise destroy the leaves and fallen fruit of grapes, and the shriveled fruits or brownrot mummies of peach and plum, and the leaves and heavily spotted canes of raspberry, etc. Early destruction of plant refuse is, of course, the most desirable.

Follow a carefully planned rotation so that plants of the same family will not be grown in the same part of the garden in succeeding years. Many plant diseases attack all members of the same family; for example, cabbage, kale, collards, cauliflower, brussels sprouts, and radish belong to the same family.

GOOD SEED AND PLANTS are essential to success. Buy garden seed from a reliable dealer. Western-grown bean seed are free of bacterial blight and anthracnose. Plant only "certified" Irish potatoes.

RESISTANT VARIETIES will help solve many of your problems. Golden Acre, Marion Market, and Ballhead are cabbage varieties resistant to yellows. Rutgers, Pritchard, and Southland are excellent wilt-resistant tomatoes. Virginia Savoy and Old Dominion are resistant to spinach blight. Yellow-skinned varieties of onions are usually more resistant to rot than are white onions.

If plants are bought, be certain that they are disease-free and vigorous and do not show any dead or rotten spots. Home grown plants are usually the safest to use.

Do a thorough job of controlling insects and diseases after first, creating the best possible growing conditions along the lines outlined above. U.S.D.A. Misc. Pub. No. 605 and other material in the hands of your county extension agents will give you further information on these points. Then, after you have done these things, concentrate your efforts on chemical control measures, such as spraying and dusting.

SPRAY OR DUST

Sprays are usually more effective and cheaper than are dusts; however, dusting is more convenient and much quicker. A good compressed-air sprayer or rotary-type hand duster is essential in the home garden. However, a plunger-type hand duster can be used in small gardens. Applying poisons by shaking the dust onto

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plants from a sack is not recommended. It wastes materials, does not give adequate coverage to the undersides of the leaves, and in general, is ineffective in the control of certain insects and diseases.

RULES FOR SUCCESSFUL SPRAYING OR DUSTING. There are four fundamental rules for spraying or dusting, all of which are important if success is to be attained.

1. Start applications early. Don't wait until serious injury has been done.
2. Use recommended materials. The material must control the pests without injury to the plants.
3. Be thorough. Cover the entire plant, both top and bottom sides of all leaves.
4. Keep at it. Spray or dust often enough to assure control, especially after each rain.

MATERIALS. Rotenone is the best all-round insecticide for the home garden. It is more satisfactory than other insecticides for controlling the Mexican beetle, cabbage worms, and many other troublesome insects. As a dust, use rotenone at 3/4% concentration; or if a spray is preferred, use 10 level tablespoonfuls of a 4% or 5% rotenone powder to 3 gallons of water. A 20% sabadilla dust or a 10% activated sabadilla dust should be used for the control of Harlequin cabbage bug, squash bug, and green stinkbug. In most cases, it is best to use ready-prepared dusts. Follow the manufacturer's directions when using brand named materials.

DDT-copper dusts and sprays are effective and safe for use on Irish potatoes. Combination dusts of this kind are on the market. They should contain 3% DDT and 7% copper.

For the control of aphids or plant lice, use 40% nicotine sulfate as a spray prepared by mixing 1½ teaspoonfuls of the material to each gallon of water; or use 3% nicotine dusts. A cubic inch of laundry soap or a tablespoonful of granular or flake soap per gallon will improve the spray. A home-made nicotine dust can be prepared by mixing 5 teaspoonfuls of 40% nicotine sulphate to each pound of hydrated lime. Nicotine dusts should be used promptly or stored in tight containers in a dry place.

CUTWORMS. Cutworms may be controlled by using paper collars around the stems of the plants at setting. About one inch of paper should be below the surface of the ground and from 1 to 2 inches above the surface. These pests can also be controlled by a fairly heavy application of a 10% Toxaphene, or 10% DDT dust applied to the surface of the ground underneath each plant immediately after transplanting.

DISEASES. Apply sprays or dusts as a preventative before any disease appears. Copper and organic compounds are usually preferred to sulphur for use on vegetables. Follow directions given by the manufacturer of the product used.

The new zineb-methoxychlor or copper-rotenone dusts are very effective in controlling most of the leaf-spot diseases, and insects of the home garden. These dusts will effectively control leaf-spots and leaf blights on vegetables and flowers and most of the common garden insects, such as the Mexican bean beetles, the cucumber beetles, potato beetles, cabbage worms, and the young stages of aphids or plant lice. If bought in 50 pound bags, the materials are inexpensive.

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Fenne and Rowell

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