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Preventing
plant diseases in the
vegetable garden

Lester E. Dickens^{1/}

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Quick Facts

Plant diseases adversely affect yield and quality of vegetables.

Disease-causing microbes are spread from plant to plant by air currents, water, insect vectors and by contaminated seeds, transplants, soil and implements.

Disease prevention can be obtained by good management practices including crop rotation, sanitation, cultural practices, using resistant varieties, healthy seed and plants.

Before starting any kind of treatment, it is essential to obtain a positive diagnosis from a qualified specialist.



Plant diseases adversely affect yield and quality of vegetables. Preventing diseases adds great pleasure to raising your own garden.

Diseases of plants are caused by various pathogenic microbes interacting with environmental conditions that are suitable for disease development. The disease-causing microbes are spread from plant to plant by air

currents, water, insect vectors, and by contaminated seeds, transplants, infested soil and implements.

Diseases of vegetables can be prevented by a combination of good management practices to achieve good control. Cultural practices should include *crop rotation* in which the sequence of plants is changed every year. Alternating with unrelated plants disrupts an abnormal increase in population of a pathogen.

First of all, keep a record of the garden layout. Divide the seeds and transplants into groups according to families of plants, such as cabbage family, cucumber family, tomato family and onion family. Plants of the same family should not follow one another in successive years in the same soil. Cabbage should be followed with beans, cucumbers or sweet corn since these plants are not related. Related plants may be attacked by the same fungus.

Along with a planned sequence of crops, *sanitation* also will help reduce the hazard of disease-causing microbes being carried over from the previous crop. Plant refuse may be plowed under in the fall or removed from the garden and thoroughly composted before it is returned to the garden. Plant parts known to be diseased should be removed from the garden and not composted since pathogenic microbes may survive composting.

Plowing under plant residues in the fall or soon after clearing the garden space hastens decay of the organic matter. The objective should be to reduce populations of harmful microbes that normally live in the soil and to prevent the reintroduction of such pathogens by practicing crop rotation and sanitation.

Many *cultural practices*, such as proper seedbed preparation, weed control, soil moisture and nutrients, are important in producing healthy plants. Mulches are useful in maintaining uniform levels of soil moisture; this is important in preventing blossom-end rot of peppers and tomatoes. Wide fluctuations in soil moisture may induce this physiological disorder.

Weed control eliminates sources of virus, such as cucumber mosaic virus, which may be

^{1/}Lester E. Dickens, CSU extension professor, plant pathology (5/1/79)

transmitted by insects to such garden plants as cucumber and tomato.

If available, use disease-resistant varieties that are well adapted to your area. Information on *resistance* may appear on the seed package, otherwise such information may be available from the seed company or nursery.

Healthy seed and disease-free transplants are essential; do not use plants that show abnormalities. Healthy, certified disease-free onion sets should be used, since the fungus disease, pink root, is spread by infected sets.

Fungicide *seed treatments* give an added degree of protection against soil-borne pathogens in the early stages of seed germination. Chemically treated seed should not be handled with bare hands.

Other control measures include *soil treatments* that are best applied by an experienced, certified applicator. Various fungicides are available for *foliage treatments*.

Before starting any kind of treatment, it is essential to obtain a positive diagnosis from a qualified specialist.