

Tomato Diseases And How To Prevent Them

Tomatoes are good food but home-grown tomatoes are the perfect food. Tomatoes contain little fat and no partially hydrogenated polyunsaturated oil but are in fact loaded with vitamin C, goodness, and excellent flavor. Tomatoes were once known as "love apples" because they were thought to be an aphrodisiac, but as I get older I believe that to be a terrible waste of such a wonderful vegetable.

Charles Wilber of Crane Hill, Ala., currently holds the world record for the greatest tomato yield. In 1987, four of his plants yielded a total of 1,368 pounds or 342 pounds per plant! Mr. Wilber credits his high tomato yields to reducing or eliminating environmental stress on the plants. Poor soil fertility, insects, and diseases are probably the greatest cause of tomato stress. For serious home tomato growers, check out the newsletter called "The Tomato Club" (114 E. Main St., Bogota NJ 07603) dedicated to growing tomatoes.

Water, heat, insects, and diseases cause great stress on growing tomato plants. Tomatoes are prone to a number of leaf, stem and fruit diseases that can drastically cut your home garden tomato yield. Less than 10 diseases and only a handful of insect pests are responsible for the majority of tomato problems. Here is a list of some of the more prevalent tomato diseases in southeastern North Carolina and the cures. Contact your North Carolina Cooperative Extension Service for additional information on tomatoes.

■ **Bacterial leafspot**, canker or speck are caused by a diverse group of bacteria (*Xanthomonas*, *Pseudomonas*, and *Corynebacterium*) that are generally spread on seed, transplants or from water splash (from the soil). Symptoms will vary depending upon which part of the plant is affected but in general small lesions (1/16 of an inch) will first look dark and water-soaked, then appear brown. For control, use disease-free transplants. Spray with copper fungicides at first appearance of disease and repeat at 7- to 10-day intervals.

■ **Early Blight** is a common killer of home tomatoes. Caused by the fungus *Alternaria solani*, irregular brown spots that are 1/4-inch in diameter with miniature "bullseye spots" appear first on lower leaves. The disease will often move from the lower to upper leaves. Fruit will often develop dark brown sunken lesions near the stem. For control, rotate tomato beds with other areas in your garden and use disease-free transplants. Spray one of the following fungicides: Bravo, Evade, Maneb, or fungicides labeled for tomatoes that contain chlorothalonil at the first sign of disease and repeat every 7 to 10 days.

■ **Late Blight** is a serious disease of tomatoes caused by the same pathogen (*Phytophthora infestans*) that caused the great potato famine in Ireland in the late 1840s. Dark water-soaked patches appear on leaves during humid, wet weather which eventually cause the leaves to shrivel and brown (the plant will be eventually defoliated). The fungus is most active during cool nights (45 to 60F) and warm days (70 to 85F). Use the same precautions and controls as used for early blight.

■ **Leafspots** are caused by a large contingent of fungi. Septoria is perhaps the most common. Use the same precautions and controls as outlined for early blight.

■ **Southern Bacteria Wilt** is a terrible bacterial disease that clogs up the water-conducting vessels in the plant stem. Plants with this disease show gradual stem wilt and eventually die. No pesticide is really effective. Use genetically resistant plant varieties and rotate the location of your tomato beds.

■ **Verticillium Wilt** and **Fusarium Wilt** are the fungal equivalent



of bacterial wilt and symptoms are somewhat similar. The main stem of the tomato will have brown streaks

just inside the stem when sliced lengthwise. Plant genetically resistant varieties. For example, VFN used in the name of a tomato means that a variety is resistant to Verticillium Wilt (V), Fusarium Wilt (F) and root-knot nematodes (N).

Viruses, like Tobacco Mosaic Virus (TMV) and Cucumber Mosaic Virus, cause older leaves to be mottled yellow and green, curled and deformed. Viruses are spread by insects, on the hands of tobacco smokers, and when infected plant juices come in contact with non-infected plants. There is no control for infect-

ed plants. Immediately discard infected plants to prevent further infection in the garden. Use genetically resistant varieties if available when planting your garden.

■ **Blossom-End Rot** is a physiological disease of the fruit which causes the blossom end of the tomato to have a dark brown, leathery rot. The problem is caused by a calcium deficiency and is often induced by hot dry weather, poor soil fertility or a combination of factors. Lime according to soil test recommendations, irrigate plants regularly in dry weather and spray to drip with 0.5

ounces of either (but not both!) calcium chloride or calcium nitrate in one gallon of water weekly after first appearance of the disease.

■ **Nematodes** are a terrible problem of tomatoes in sandy soil. No pesticides are available to the homeowner that do a respectable job of nematode control in the garden. Incorporate lots of organic matter (manures, mulches, etc.) into your garden. Research has shown that composts containing high levels of chitin (the material making up shrimp shells, crab shell, and fish scales) inhibit nematode popula-

tions. Use varieties of tomato that have genetic resistance to nematodes (see Verticillium wilt).

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