

Fusarium wilt

Plants infected with the *Fusarium* fungus turn yellow starting with one side or branch and gradually spreading through the plants, eventually killing them. Disease is caused by a fungus that infects tomatoes only. Disease is favored by warm soil.

Identification: Both *Fusarium* and *Verticillium* wilt cause leaf yellowing and discoloration of the water-conducting tissues of the plant. Cut affected plants at the base of stems and examine them in cross section to see the browning of the water-conducting tissue compared to the healthy ivory of uninfected plants. *Verticillium* and *Fusarium* discoloration are extremely difficult to distinguish, although *Fusarium* discoloration tends to be darker. *Fusarium* tends to occur more in warmer soils and *Verticillium* in cooler ones. Management for both requires resistant varieties.

Life cycle: Both *Fusarium* and *Verticillium* form resistant structures that can survive in the soil in the absence of a living host. These soil fungi are spread in soil water, on equipment, transplants, or tubers. In the presence of a host plant, the resistant structures germinate and penetrate the plant's roots either directly or through wounds. Once inside the root, the fungus grows until it reaches the water-conducting cells, inside which it spreads upward through the plant, restricting water flow.

Solutions: *Fusarium* wilt of tomatoes can be avoided in many cases by planting resistant varieties which are indicated by the letters F or FF. If you wish to grow susceptible varieties, problems can sometimes be minimized by removing all residue, including roots, which may be susceptible, and using **soil solarization** before you plant.



Yellowing on leaf

Early blight (*Alternaria solani*)

Symptoms of early blight include black or brown spots, usually about 1 cm in diameter, that appear on leaves, stems, and fruit. Leaf spots are leathery and often have a pattern of concentric rings. They usually appear on older leaves first. Fruit spots are sunken and dry and also have a concentric pattern.

Solutions: Spores of early blight are carried by wind and require moisture for germination and infection. The disease can cause severe damage if conditions remain cool and humid for several days after a rain. Avoid overhead irrigation. Crop rotation is useful in infested gardens. **Copper fungicides** applied at the first sign of infestation and repeated every 7 to 10 days may provide control.



Fruit spots caused by early blight

