

Plant Disease Notes

Fusarium and Verticillium Wilt

Fusarium Wilt

Fusarium wilt is caused by the soilborne fungus *Fusarium oxysporum*. At least three physiological races of the fungus have been reported; races one and two are known to occur in Alabama.

Fusarium wilt attacks only tomato.

Symptoms. The symptoms of Fusarium wilt can be seen either on a single branch, on several branches on one side of the plant, or on all the lower branches.

Initially, Fusarium wilt causes a yellowing and wilting of lower leaves on infected plants. The yellowing and wilting progress up the plant as the fungus spreads within its host. Yellowed, wilted leaves often dry up and drop prematurely. Eventually the entire plant wilts and dies early, producing few, if any, fruit.

Plants infected with Fusarium wilt will have a brown discoloration of the vascular system (the food- and water-conducting vessels just beneath the epidermis). This discoloration can be used for diagnosis. Cut and peel back the epidermis and cortical tissue (bark) on a section of the main stem slightly above the soil line. If the area just beneath the epidermis has a distinct brown discoloration, then the plant is infected with Fusarium

wilt. The discoloration can extend from the roots up the stem through the branches and into the petioles (leafstalks) of the plant.

Persistence and Transmission.

Fusarium can persist in most soils indefinitely because of its ability to colonize the roots of a number of weeds and to produce resistant spore structures. The fungus usually enters its host through feeder roots. Then it multiplies and colonizes the vascular system. Infection may occur at any time during the life of the plant. The disease is most severe when air and soil temperatures are 78 to 90 degrees F and is more likely to occur in poorly drained soil.

Control. Fusarium wilt can be controlled by the following strategies:

- Plant only certified, disease-free seed and transplants in fertile, well-drained soil.

- In infested soil, grow only tomato varieties that are highly resistant to the fungus.

- In the home garden, plant varieties labeled VFN (Verticillium, Fusarium, and root-knot nematode resistant).

- Disinfect soil through soil solarization. Contact your county Extension agent for more information on this procedure.

- To reduce the disease inoculum level in the soil, grow tomatoes in the same area no more than once every 4 years.

Verticillium Wilt

Verticillium wilt is caused by the soilborne fungus *Verticillium albo-atrum*. Verticillium wilt attacks brambles, eggplant, okra, pepper, potato, strawberries, and more than 300 other herbaceous and woody plants.

Symptoms. The symptoms of Verticillium wilt may be confused

with those of Fusarium wilt. The two fungal wilts cause similar field symptoms and cannot be distinguished except by growing the fungus in the laboratory.

Persistence and Transmission.

The *Verticillium fungus* thrives best in cool, moist soil (60 to 75 degrees F) and, therefore, is not as common as *Fusarium* in Alabama.

Control. Measures for controlling Verticillium wilt are the same as those for Fusarium wilt.



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Use chemicals only according to the directions on the label. Follow all directions, precautions, and restrictions that are listed.

For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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