



DISEASE MANAGEMENT: Verticillium Wilt



Verticillium albo-atrum *Verticillium dahliae*

SIGNS & SYMPTOMS:

- Verticillium wilt can easily be confused with Fusarium wilt and other wilt diseases of tomato and pepper.
- Infected plants usually show mild to moderate wilt during the warmest part of the day, but recover at night.
- Lower leaflets or leaves may show characteristic V-shaped lesions, with yellowing in a fan pattern that narrows down from the leaf margins.
- Vascular discoloration is evident in lower stems when they are cut open longitudinally.
- This discoloration is said to be a lighter shade of brown than Fusarium wilt diseases, but in our experience, this is not a reliable characteristic for diagnosis.

DISEASE CYCLE & EPIDEMIOLOGY:

- Verticillium wilt is a cool weather disease. It occurs in southern Florida during the winter months when daytime temperatures are 68-75°F.
- *Verticillium* can survive in soil for up to 8 years as microsclerotia (hard, resting structures).

FIELD SIGNATURE:

- Look for wilted plants that recover at night.

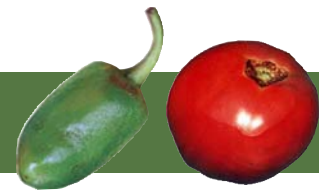
PHOTOS:

Figure 1. Symptoms of wilting of tomato plant due to Verticillium infection. Courtesy of: FDACS.

Figure 2. V-shaped lesions characteristic of Verticillium wilt of tomato. Courtesy of: FDACS.

Figure 3. Vascular browning associated with Verticillium wilt of tomato. Courtesy of: University of California Statewide IPM Program.

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CULTURAL CONTROLS:

- Crop rotation may be helpful but limited because of the wide host range of these two species.

CHEMICAL CONTROL:

- Fumigation with broad-spectrum chemicals (mostly methyl bromide/chloropicrin) has been the major means of controlling Verticillium wilt.

RESISTANT CULTIVARS:

- Resistant cultivars are available for race 1 of *V. albo-atrum*, but "new" races have been identified. **See pgs. 10-12 for resistant tomato cultivars.**



Figure 4. Symptoms of wilting of tomato plant due to Verticillium infection. Photograph by: UF/IFAS.



Figure 5. Chlorosis of tomato seedling infected with *Verticillium albo-atrum*. Photograph by: FDACS/DPI.

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References:

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- Sanogo, S. 2003. Chile pepper and the threat of wilt diseases. Online. Plant Health Progress doi:10.1094/PHP-2003-0430-01-RV.