

# LOUISIANA PLANT PATHOLOGY

## DISEASE IDENTIFICATION AND MANAGEMENT SERIES



### Tomato Spotted Wilt

#### *Tomato Spotted Wilt Tospovirus*

Tomato spotted wilt is a major viral disease of tomato, pepper, tobacco, several field crops and a variety of ornamental hosts in the southeastern United States. This disease is generally a problem only on spring crops, and the incidence of the disease varies from year to year based in part on weather conditions and the prevalence of alternate weed hosts.

Various symptoms are associated with Tomato Spotted Wilt Virus, and these can differ from one variety to another. Symptom development will also depend on the stage of plant growth at the time of infection. Young leaves of infected plants may take on a bronze cast or may exhibit purpling of the veins on the underside of the leaf. Dark, necrotic, irregularly-shaped spots of various sizes develop on leaves and stems. Infected plants will be stunted and the leaves and stems will droop, giving the plant a wilted appearance. Plants that are infected when young may not set fruit and the fruit of plants infected later in the season may take on a roughened appearance, will not color up properly and will exhibit ring spots that are typically yellow and red.

The virus that causes the disease, TSWV, is a tospovirus that is transmitted by several species of thrips, including the western flower thrips (*Frankliniella occidentalis*), the tobacco thrips (*F. fusca*) and the onion thrips (*Thrips tabaci*). Only the larval stage of the thrips is capable of acquiring the virus, which is then transmitted only by the resulting adult thrips. The virus is not readily transmitted by mechanical means, so is not likely to be spread by workers or gardeners handling infected plants.

The management of TSWV relies primarily on the use of resistant varieties. (For listings of TSWV-resistant tomatoes and peppers, please see the Louisiana Plant Disease Management Guide.) Highly reflective metallized mulches are also used in commercial plantings to delay the introduction of the virus until as late in the season as possible. Because the virus is almost always introduced into the field or garden by thrips coming in from an outside source, controlling potential weed hosts of both TSWV and the thrips in the surrounding area is also helpful. Weeds in Louisiana known to be hosts of TSWV include wild lettuce (*Lactuca* sp.), buttercup (*Ranunculus* sp.) and sowthistle (*Sonchus* sp.). Insecticides used to control thrips in the crop itself have only limited value as the adult thrips can transmit the virus before the insecticide has a chance to work. However, they may help to prevent the spread of the virus within the field.

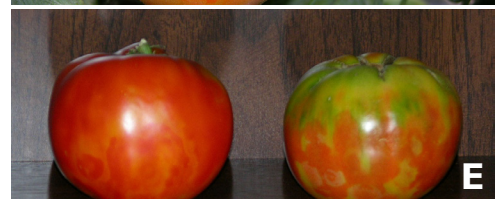


Fig. 1. Tomato spotted wilt virus in tomato. Bronzing and necrosis of foliage (A); yellowing, necrosis and wilting of foliage as well as the roughened appearance of green fruit (B); severe stunting of plant infected early in the season (C); uneven color development in maturing fruit (D); and spotting of mature fruit (E).





*Fig. 2. TSWV in pepper.*



*Fig. 3. TSWV in Perique tobacco.*

**Visit our website: [www.lsuagcenter.com](http://www.lsuagcenter.com)**

**Author**

Dr. Donald M. Ferrin  
Department of Plant Pathology  
and Crop Physiology

**Photo Credits**

Dr. Donald M. Ferrin

**Louisiana State University Agricultural Center**, William B. Richardson, Chancellor  
**Louisiana Agricultural Experiment Station**, David J. Boethel, Vice Chancellor and Director  
**Louisiana Cooperative Extension Service**, Paul D. Coreil, Vice Chancellor and Director

Pub. 3191

(online only)

07/11

The LSU AgCenter is a statewide campus of the LSU System and provides equal opportunities in programs and employment.