DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System

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SPDN
Southern Plant Diagnostic Network
Issue 15-June 12, 2009

Arkansas Plant Health Clinic Newsletter

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Tomato

Tomato Spotted Wilt Virus (TSWV)

Tomato Spotted Wilt Virus (TSWV) is appearing across the state. Symptoms include stunting, wilting, and sometimes a one-sided growth habit. Young leaves often turn a bronze or black color with numerous dark spots. Growing tips may die back. Young plants with these symptoms will usually not produce fruit. Older plants will fruit, but the fruit will have chlorotic rings and necrotic spots. There is no cure or treatment for this viral disease. Affected plants should be pulled up and destroyed to prevent the disease from being spread to new plants by thrips.

Tomato Spotted Wilt Virus (TSWV)-Tospovirus

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Tomato Spotted Wilt Virus (TSWV)-Tospovirus

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Tomato Spotted Wilt Virus (TSWV)-Tospovirus

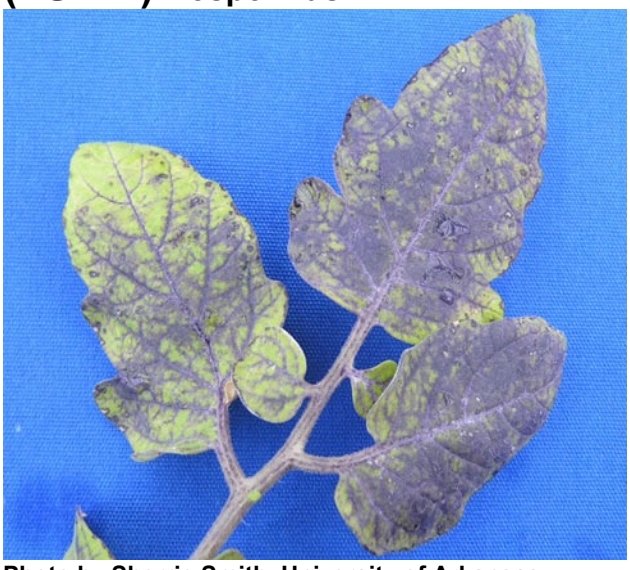

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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Cucumber Mosaic Virus (CMV)

Cucumber Mosaic Virus infects more than 750 plant species and can be found wherever tomatoes are grown. CMV is usually transmitted by aphids. Infected plants are stunted and bushy with distorted and malformed leaves. Leaves may also show green or yellow mottling. The most classic symptom is extreme shoe stringing of leaf blades. This symptom is sometimes confused with herbicide injury. Infected plants sometimes produce no fruit or small fruit.

Tomato Cucumber Mosaic Virus (CMV)-*Cucumovirus*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Tomato Mosaic Virus (TMV)

Tomato Mosaic Virus and Tobacco Mosaic Virus are transmitted mechanically from infected crops or weeds. They can be transmitted via unwashed hands or clothing that has contacted infected plants or tobacco products. Smokers are often the means of transmission. They can also be transmitted by chewing insects or tools. Additionally, the viruses can persist in the soil on root debris for at least two years. Leaf symptoms are light and dark green mottling to bright yellow mottling. Leaves often have puckered areas, and leaflets may be narrowed giving the plant a ferny appearance. Infected fruit may have green and yellowish-red rings or mottling and dark brown spots. Internal browning of fruit can also occur. Severely infected plants are stunted and affected fruit is not marketable. There are good varieties resistant to these viruses.

Tomato Mosaic Virus (TMV)-*Tobamovirus*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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Tomato Herbicide Damage

Herbicide damage is often confused with virus symptoms. Note that roundup damage on Solanaceae crops such as tomatoes and potatoes cause yellowing and bleaching at the base of leaves and leaflets. Mottling caused by virus is spread through the leaf surface (see TMV image above).
The phenoxy herbicides such as 2,4-d and Grazon cause intense clubbing of new growth. People often inadvertently apply these herbicides incorporated in manure or compost. Unlike glyphosate, these compounds have a long residual life in the soil and can affect sensitive plants for several years. Plants with herbicide damage are usually not productive.

Tomato Glyphosate (Roundup) Damage-Abiotic

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Potato Phenoxy Damage-Abiotic

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

This bulletin from the Cooperative Extension Plant Health Clinic (Plant Disease Clinic) is an electronic update about diseases and other problems observed in our lab each month. Input from everybody interested in plants is welcome and appreciated.

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