



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.

## Tomato

**Tomato spotted wilt virus (TSWV)** is putting in an appearance 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.

### TSWV fruit symptoms



Whitney Cranshaw, Colorado State University, Bugwood.org

### TSWV leaf symptoms



Sherrie Smith University of Arkansas Cooperative Extension

### TSWV fruit symptoms



Sherrie Smith University of Arkansas Cooperative Extension



### 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.

#### CMV

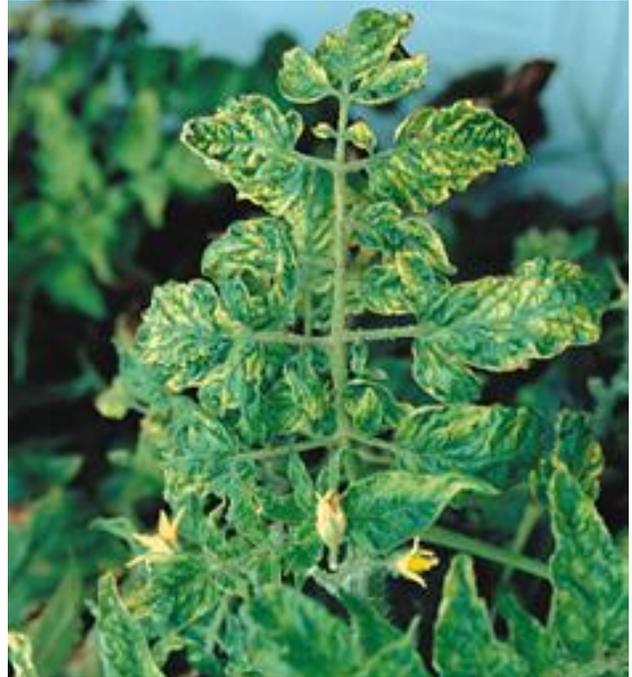


S.K. Green, APS Image Library

### Tomato Mosaic Virus (TMV)

Tomato Mosaic Virus is also known as Tobacco Mosaic Virus. The virus is transmitted mechanically from infected crops or weeds. It can be transmitted via unwashed hands or clothing that has come in contact with infected plants or tobacco products. Smokers are often the means of transmission. It can also be transmitted by chewing insects or tools. Additionally, the virus 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 this virus.

#### TMV



J.P. Jones, APS Image Library



## TMV



APS Image Library

## Phenoxy damage



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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 causes 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.



## Roundup damage



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