DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System

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SPDN
Southern Plant Diagnostic Network
Issue 23-July 26, 2016

Arkansas Plant Health Clinic Newsletter

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Tomato

Bacterial Stem Rot

Bacterial Stem Rot of tomato occurs both in the greenhouse and the field and is most common on trellised and staked tomatoes. The causal agent is *Pectobacterium carotovorum* syn. *Erwinia carotovora* subsp. *carotovora.* Wilting of the plant typically starts at the time of the first fruit harvest. The pith disintegrates leaving a hollow stem. You may determine the hollow stem syndrome by pinching the stem. When the stem is cut open a brown discoloration is observed. Occasionally black slimy lesions form on the outer surface of a stem. The stem becomes black and sloughs off easily. Wounding is the route by which the bacterium enters the plant. Good sanitation practices and crop rotation are the means used to control Bacterial Stem Rot.

Tomato Bacterial Stem Rot- *Pectobacterium carotovorum* syn. *Erwinia carotovora* subsp. *carotovora*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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Tomato Bacterial Stem Rot-

Pectobacterium carotovorum* syn. *Erwinia carotovora* subsp. *carotovora

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Tomato Yellow Shoulder

Fruit exposed to high temperatures during maturation and ripening can develop this disorder. Some cultivars are more prone to it than others. Some afternoon shade often reduces the amount of Yellow Shoulder. Along with Yellow Shoulder we often see Cracking. Cracking is usually associated with excess amounts of water. The plant tissue swells with the water faster than the skin can grow and Cracking occurs.

Tomato Yellow Shoulder-Abiotic

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Tomato Cracking-Abiotic

Photo by Rachel Bearden, University of Arkansas Cooperative Extension

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Black-Eyed Peas

Bacterial wilt of bean is caused by the pathogen *Curtobacterium flaccumfaciens* pv. *flaccumfaciens* (Hedges) Collins & Jones (syn. *Corynebacterium flaccumfaciens* subsp. *flaccumfaciens* [Hedges] Dawson). During periods of moisture stress, infected plants wilt. Leaves become flaccid with interveinal chlorosis and necrosis. White bacterial pustules occur when the bacterium invades leaf tissue. Seed infection manifests itself with yellow or purple discoloration of the affected seeds. Seedlings from infected seeds develop purple discoloration of the stems and are stunted or killed. The bacterium may be seed transmitted or enter through wounds. Bacterial wilt develops most rapidly at temperatures of 98.6°F (37°C) or greater. Clean up all bean crop residue after the crop is finished. Plow under any remainder. Crop rotation of two or more years with a nonhost is advisable. Seeds treated with an antibiotic such as streptomycin help reduce surface inoculum.

Bean Bacterial Wilt- *Curtobacterium flaccumfaciens* pv. *flaccumfaciens*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Cowpea Curculio

by Ricky Corder

The Cowpea Curculio, *Chalcodermus aeneus* Boheman (Order Coleoptera: Family Curculionidae), is a weevil pest of peas, beans, and other legumes. The adult weevils are black, about 1/4 inch (6.4 mm) long with a prominent and have "pits" over most of their body's surface. Cowpea Curculio overwinters as adults in weedy areas or refuse. In the spring the adults emerge and begin feeding. They feed on seeds within pods by puncturing the pod with their snout. These punctures also provide a place for females to lay eggs. Larvae are grub-like and feed on seeds within the pod.

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Mature larvae chew through the pod and drop to the ground where they pupate.
Insecticides available to homeowners include (always check label for rates and special instructions):

- bifenthrin 0.3% + zeta-cypermethrin 0.075% (Ortho Bug-G-Gon Insect Killer for Lawns and Gardens)
  Apply when insects first appear. Reapply as necessary to maintain control, waiting at least 7 days between applications.

- carbaryl (various brands)
  For suppression ONLY. DO NOT apply within 14 days of grazing, 14 days of harvest for forage, 3 days of harvest of fresh beans or peas, or 21 days of harvest of dried beans, dried peas, seed, or hay.

- malathion 57% (various brands)

Commercial growers may use those above as well as:

- beta-cyfluthrin (Baythroid XL)
- beta-cyfluthrin + imidacloprid (Leverage 360)
- esfenvalerate (R) (Asana XL 0.66 EC)
- lambda-cyhalothrin (R) (Karate Z)
- zeta-cypermethrin (R) (Mustang Maxx 0.8 EC)

Cowpea Curculio Pod Damage- *Chalcodermus aeneus*

Photo by Ricky Corder, University of Arkansas Cooperative Extension

Cowpea Curculio Larvae and Seed Damage- *Chalcodermus aeneus*

Photo by Ricky Corder, University of Arkansas Cooperative Extension

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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.

"This work is supported by the Crop Protection and Pest Management Program [grant no. 2017-70006-27279/project accession no. 1013890] from the USDA National Institute of Food and Agriculture."