



Arkansas Plant Health Clinic Newsletter

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Tomato

Bacterial Canker (Cmm), caused by *Clavibacter michiganensis* pv. *michiganensis*, is a severe and damaging bacterial disease of tomato. All grow stages of the plant are susceptible to this disease. When plants are infected at the seedling stage, they may die quickly, or produce weak plants. Infected young plants may have wilted branches and yellowed leaves. There are two types of symptoms on mature plants: systemic symptoms and superficial symptoms. Systemically infected plants may have curling, yellowed, wilted leaves which later become brown and collapse. The vascular tissue becomes discolored, with the stem tissue first becoming streaked with light yellow to brown streaks which later turn reddish brown. This can be obvious at the nodes. The superficial symptoms are caused by secondary infections of the bacterium. Infection usually happens at the margins of leaves but can occur on petioles or stems. Dark brown to black lesion will occur on the surface of infected plants, and fruit may be spotted with pale green to creamy-white blister-like leaf spots surrounded by dark rings of dead tissue. Control of bacterial diseases is always difficult. Growers should use only certified disease-free seed and transplants.

Practice crop rotation away from tomatoes and other solanaceous crops for at least 3 years. This includes potatoes, peppers, and eggplants, as well as tomatoes. All diseased plants should be immediately removed from the planting, and all crop debris removed as soon as the crop is finished. Irrigation should occur early in the morning to allow foliage to dry quickly. Applications of fixed copper plus either Maneb or mancozeb may help control superficial populations of Cmm if applied before symptoms appear. Greenhouses should be disinfected using a product designed for the purpose, or by using a 10% bleach solution. Benches, walls, floor, and containers should be treated.

Tomato Bacterial Canker- *Clavibacter michiganensis* pv. *michiganensis*



Photo by Sherrie Smith, University of Arkansas
Cooperative Extension



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Spider Mites

Spider Mites attack many species of plants, including vegetables and ornamentals. Several species of Spider Mites attack tomato, notably *Tetranychus urticae* and *T. evansi*. Spider Mites are typically found feeding and reproducing on the undersides of leaves. They are sap feeders, feeding off the contents of individual plant cells. Their feeding activity produces a white to yellow stippling across the surface of the plant tissues that eventually takes on a bronze appearance. Leaves become dry and brown. Serious infestations



can kill leaves and eventually the plant. In heavy infestations, small webs may be observed. It is important to recognize the problem before leaves start dying. Commercial growers may use Agri-Mek 0.15 EC, or Brigade 2 EC, or Dicofol 4E, or Oberon 2 SC. Homeowners may use Malathion, or pyrethrin EC, or insecticidal soaps. Depending on the product used, applications should be made every 2 to 3 days. Follow label.

Tomato Spider Mite damage- *Tetranychus* spp.



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Tomato Spider Mite damage- *Tetranychus* spp.



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Bean Spider Mite damage- *Tetranychus* spp.



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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Spruce Spider Mite damage- *Tetranychus* spp.



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Watermelon

Pythium Fruit Rot of watermelon, also known as Pythium Cottony Leak, is caused by several species in the genus *Pythium*. This disease is most common and severe in heavy, poorly drained soils. Pythium Fruit Rot can occur on all cucurbits, including cucumber, pumpkin, squash, gourds, melons, and watermelon. The pathogen enters through wounds or where the fruit touches the soil. On most cucurbits, symptoms begin as brown, water-soaked lesions that enlarge quickly and become watery, soft, and rotted. On cucumber, a brown to dark green blister is the first symptom. The blistered area becomes watery and rotted. During wet weather, a cottony mycelial growth appears on the rotted areas of the fruit. Pythium Fruit Rot can spread rapidly through a field by means of contaminated equipment and irrigation water. Excellent soil drainage is the best defense against Pythium diseases. Planting on raised beds through plastic can also reduce incidence of Pythium Fruit Rot as this improves drainage and prevents the fruit from contacting the soil. Homeowners may place fruit on boards or cardboard to prevent soil contact. Ridomil Gold SL and Uniform are labeled for control of Pythium diseases in cucurbits but must be applied as a preventative at planting. These chemicals are ineffective if saturated soils persist.



Watermelon Pythium Fruit Rot (Cottony Leak)-*Pythium spp.*



Photo by Sherrie Smith, University of Arkansas
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Southern Pea Rhizoctonia Root Rot-*Rhizoctonia solani*



Photo by Raven Bough, University of Arkansas
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Southern Pea

Rhizoctonia Root Rot, caused by attacks many different crops. *Rhizoctonia* causes damping off of seedlings prior to or shortly after emergence. The roots and stems of older plants develop reddish-brown lesions and woody reddish-brown cankers near the soil line. The pith becomes brick-red where the fungus enters it. Brown or tan sclerotia develop later in the lesions. Infected plants are typically stunted and yellowed with a poor root system. The best defense is good cultural practices that encourage optimal plant health. Shallow seeding and cultivation have been shown to reduce the severity of *Rhizoctonia* in fields with a history of the disease.

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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."