



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.

Wheat

Several bacterial diseases affect wheat that are easily confused without serological testing. Basal Glume Rot, caused by *Pseudomonas syringae* pv. *Syringae*, and Black Chaff, caused by *Xanthomonas campestris* pv. *Undulosa*, are both seed-borne diseases of wheat with similar symptoms. The diagnostic symptom for Basal Glume blotch is a dull brown to black discoloration on the lower part of the glume. When disease is severe, the entire glume may be discolored. Grain heads may shrivel and die if the peduncle is girdled by the bacterium. Lesions, 2-10 mm long begin on the leaves as small water-soaked dark green spots that quickly become brown and necrotic. Black Chaff and bacterial streak are two phases of the same disease. Generally, symptoms become evident after heading when a large number of water-soaked, elongated light brown lesions appear between the veins on upper leaves. When field conditions are wet, bacterial ooze may be observed. Head symptoms are black longitudinal stripes on the glumes and purplish-black lesions on the peduncle and rachis. There is no control for either bacterial disease other than using clean seed.

Wheat Basal Glume blotch- *Pseudomonas syringae* pv. *syringae*



Raven Bough, Plant Health Clinic lab tech

Cherry

Cherry leaf spot caused by, *Blumeriella jaapii*, anamorph *Phloeospora padi*, is the most important fungal disease of cherry wherever cherries are grown. Plums are susceptible as well. Symptoms begin as small reddish to purple circular spots on the leaves. On the underside of the leaves, extruded masses of white to pink spores are produced during wet conditions. The leaves take on a mottled appearance as the tissue becomes yellow, leaving the area around the lesions green. On plums, the necrotic lesions may drop out, giving a shot hole appearance. The infected leaves fall prematurely, reducing fruit yields and weakening the tree. In severe cases complete defoliation may occur. Early defoliation may reduce bud survival and fruit set for at least two seasons. The fungus overwinters in leaves fallen on the ground which were infected the previous season. Therefore, sanitation is important in controlling Cherry leaf spot. Clean up all fallen leaves. Fungicides should be applied at petal fall and at 7-10 day intervals to harvest. Commercial growers may use a copper fungicide, or Syllit, or Gem, or Pristine. Homeowners may use Captan, or a copper fungicide.

Cherry leaf spot- *Blumeriella jaapii*, anamorph *Phloeospora padi*



Sherrie Smith University of Arkansas Cooperative Extension

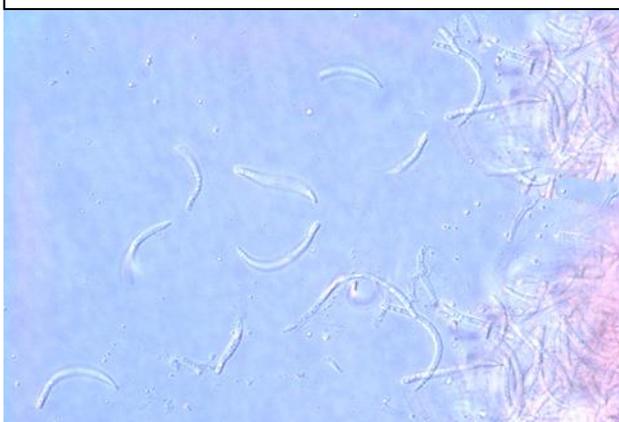


**Cherry leaf spot- spore mass-
Blumeriella jaapii, anamorph**



Sherrie Smith University of Arkansas Cooperative Extension

**Cherry leaf spot- anamorph
Phloeosporella padi- spores**



Sherrie Smith University of Arkansas Cooperative Extension

uneven watering practices preventing the plant from taking the calcium up. Tomato, pepper, squash, and other fruiting vegetables are susceptible. Symptoms are a dark, dry rot at the blossom end of the fruit. Secondary bacteria and fungi may invade the rot causing eventual collapse of the entire fruit. Prevention starts with a soil test well in advance of the growing season. Plants should be mulched to prevent the rapid drying of the soil. Even soil moisture enables the plants to take up the calcium more easily. Fertilize properly. Excessive amounts of nitrogen or potash depresses the uptake of calcium.

Squash Blossom end rot-abiotic



Raven Bough-Plant Health Clinic lab tech

Tomato Blossom end rot-abiotic



APS Image Library-J.W. Scott

Squash

Blossom end rot of squash is caused by a lack of calcium in the developing fruit. This may be the result of a genuine lack of calcium in the soil, or as a result of



Sherrie Smith

Tomato

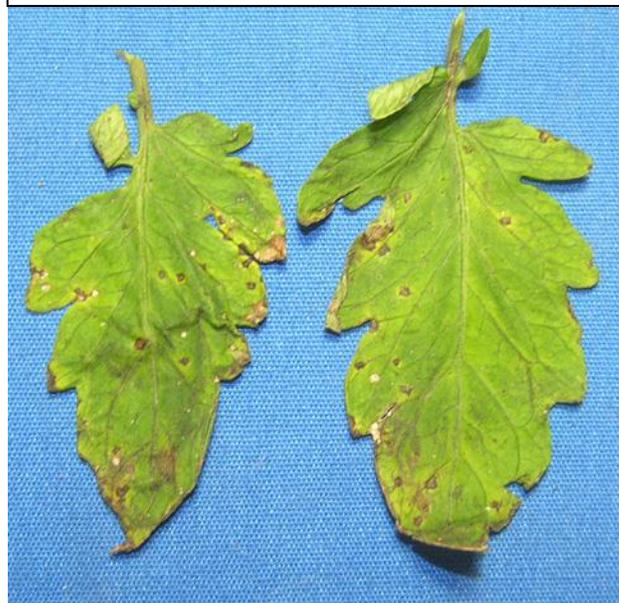
Bacterial speck is caused by the bacterium *Pseudomonas syringae* pv. *tomato*. Symptoms on leaves are tiny, round, dark brown to black spots. Spots may run together under environmental conditions favorable for disease development, killing large areas of tissue. Lesions on stems and peduncles are elongated. Fruit lesions are minute specks that are dark and rarely exceeding 1mm (.04inch). A dark green halo may be associated with the fruit spot. Controls are the same as for Bacterial spot. The pathogen survives in seed, crop debris, and volunteers. Control measures consist of crop rotation, using clean transplants, seed treatments, elimination of cull piles near production areas, and the timely application of bactericides when necessary. Kocide is labeled for tomato in Arkansas for bacterial diseases.

Tomato bacterial speck- *Pseudomonas syringae* pv. *tomato*



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Tomato bacterial speck- *Pseudomonas syringae* pv. *tomato*



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Tomato bacterial speck- *Pseudomonas syringae* pv. *tomato*



John Gavin University of Arkansas Cooperative Extension



Request for help from Dr. Robbins:

Root knot nematode populations are needed for our Arkansas species study. I am a nematologist in the department of Plant Pathology in Fayetteville. My student and I are trying to amass populations of as many species of Root knot nematode (*Meloidogyne* sp.) as possible for species identification using molecular techniques. At present no root knot species in Arkansas have been identified using molecular technology. We are interested in receiving populations from home gardens, shrubs, flowers, trees and grasses. For samples we need about a pint of soil and feeder roots in a sealed plastic bag that is plainly identified by plant host, location (City County, physical address, collector and date of collection). Please send samples to us at the follow address:

Dr. Robert Robbins
Cralley-Warren Research Center
2601 N. Young Ave
Fayetteville, AR 72701
Phone 479-575-2555
Fax 479-575-3348
Email: rrobbin@uark.edu

**Tomato Root knot nematode-
Meloidogyne spp.**



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**Soybean Root knot nematode-
Meloidogyne spp.**



Sherrie Smith University of Arkansas Cooperative Extension