



## Arkansas Plant Health Clinic Newsletter

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### Pepper and Tomato

Bacterial Leaf Spot, caused by *Xanthomonas campestris* pv. *vesicatoria*, is a serious disease of peppers and tomatoes. Symptoms on pepper leaves begin as irregularly shaped, water-soaked spots. When wet, the spots turn brown to black, but turn lighter brown when dry. On a heavily infected leaf, the spots will coalesce, leaving large necrotic areas. Leaves become tattered and distorted, shrivel, and fall off. Streams of rod-shaped bacteria may be observed under the microscope. Fruit lesions are small, dark-brown to black, raised spots.

On tomato leaves, the spots are brown and circular. Under wet conditions, spots on leaves, petioles, and rachis coalesce to form elongated dark streaks. Fruit lesions on tomato begin as small, raised blisters which become brown, cracked, scab-like, slightly raised, or sunken in the middle. Yellowish-white greasy halos around the lesions disappear over time. Bacterial Spot results in unmarketable fruit. Overhead irrigation should be avoided where possible. Clean seed and a 2-year crop rotation will reduce incidence. Copper fungicides are effective at the seedling stage.

### Pepper Bacterial Spot- *Xanthomonas campestris* pv. *vesicatoria*



Photo by Sherrie Smith, University of Arkansas  
Cooperative Extension

### Tomato Bacterial Spot- *Xanthomonas campestris* pv. *vesicatoria*



Photo by Sherrie Smith, University of Arkansas  
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## Cucurbit

All cucurbit crops are susceptible to Powdery Mildew, including cucumbers, gourds, honeydews, muskmelons, pumpkins, and squash. Several species of Powdery Mildew fungi have been identified on cucurbits, including *Podosphaera fuliginea* (formerly *P. xanthii*) and *Golovinomyces cichoracearum* (formerly *Erysiphe cichoracearum*). *P. fuliginea* is the predominant pathogen in most regions. Symptoms begin with white, powdery fungal growth on leaf surfaces, petioles, and stems. Yellow spots may develop on the leaf opposite the powdery growth. Lower leaves and crown leaves usually show symptoms first. Heavily infected leaves shrivel and die. Fruit may become sunburned when they lose leaf cover or be smaller than usual. Yields are reduced because of the smaller fruit size or early death of the vine. The flavor may also be negatively impacted, as well as the storability of the fruit. Conditions optimal for Powdery Mildew are temperatures between 75-85 °F and elevated levels of relative humidity (80-95%). The best control is the use of resistant cultivars. There are now many available with excellent resistance. Plants grown under good nutritional and cultural conditions are less susceptible than stressed plants. Fungicides are most effective if used before the disease becomes established. Commercial growers may use Bravo Ultrex, Bravo Weather Stik, Flint 50WG, Microthiol Disperss, Nova 40W, Pristine, Procure 50WP, Quadris 2.08FL, and Quadris Opti 5.5SC. Homeowners may use Ortho Garden Disease Control; or Bonide Fung-onil RTU; or Hi-Yield Daconil Vegetable and Flower Fungicide; or

Garden Tech Daconil Concentrate; or Fertilome Dusting Sulfur; or Bonide Sulfur Plant Fungicide; or Safer Brand Garden Fungicide. Be sure to rotate fungicides.

## Cucumber Powdery Mildew- *Podosphaera fuliginea*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## Grape

Black Rot is caused by the fungus *Phyllosticta ampellicida*, formerly *Guignardia bidwellii*. It is the most economically important disease of grapes. Most homeowner problems with grapes centers on this disease. Infection on the berries starts as a small white dot. In only a few hours, the tiny dot is surrounded by a reddish-brown ring. Within a few days, the berry starts to dry, shrivel, and wrinkle to become a hard, blue-black mummy. All new growth is susceptible throughout the growing



season, including leaf laminates, petioles, shoots, tendrils, peduncles, as well as the fruit. Symptoms on leaves are circular, tan spots that eventually become reddish brown with a narrow, dark-brown border. Black, pimple-like fruiting bodies of the fungus form in the lesions. The fruiting bodies also appear in black lesions on the young shoots. The symptoms on Muscadine fruit are small, black, superficial, scabby lesions on infected berries. The lesions may coalesce to cover most of the berry. Infected berries may crack at the edges of the scabs. Black Rot can be effectively controlled by using Maneb, or Captan, or Abound, or Pristine, starting when shoots are 4-6 inches high and continuing at 14-day intervals until August.

**Grape Black Rot-*Phyllosticta ampellicida*, formerly *Guignardia bidwellii***



Photo by Sherrie Smith, 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.

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