



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.

Grape by Katsunori Saito

Grape anthracnose, also called bird's-eye rot, is a significant disease in regions with rainy, humid and warm climates. It is not a pathogen native to the U.S. and was most likely introduced via plant material imported from Europe in the mid-1800s. The disease was probably brought into this country by grape plant material imported from Europe. It quickly established in American vineyards and became a significant disease of grape in rainy, humid, and warm regions of the United States. Anthracnose of grape is caused by the fungus *Elsinoe ampelina*. (Ellis & Erincik, 2008)

Symptoms and signs: All succulent parts of the plant, including fruit stems, leaves, petioles, tendrils, young shoots, and berries, can be attacked by Anthracnose. In the early stage, numerous small, circular, and reddish spots occur on succulent shoots. Spots then enlarge, become sunken, and produce lesions with gray centers and round or angular edges. Dark reddish-brown to violet-black margins eventually surround the lesions (Figure 1, blue arrows). Lesions may coalesce, causing a blighting or killing of the shoot. On berries, small, reddish circular spots develop. The spots enlarge to an average diameter of 1/4 inch and may become slightly sunken (Figure 1, red arrows). The centers of the spots turn whitish gray and are surrounded by narrow reddish-brown to black margins. This typical symptom on fruit often resembles a bird's eye, and the disease has been called bird's eye rot (Ellis & Erincik, 2008, Hoover et al, 2011). Acervuli (fungal fruiting structures) eventually develop in the lesions. A pinkish mass of fungal spores exudes from these structures during prolonged wet weather, and white hyphae are established over stems and fruit's bodies.

Disease Management

- Sanitation is very important. Prune out and destroy (remove from the vineyard) diseased plant parts during the dormant season, including infected shoots, cluster stems, and berries.
- Eliminate wild grapes near the vineyard.

The disease can infect wild grapes, and infected wild grapes have been observed near diseased vineyards. The spores are spread over relatively short distances by splashing rain and should not be able to move over long distances by wind into the vineyard.

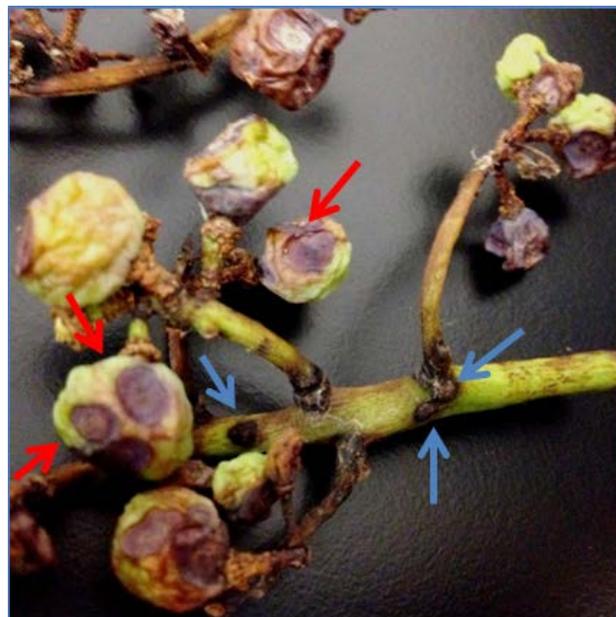
- Canopy management can aid in disease control.

Any practice that opens the canopy to improve air circulation and reduce drying time of susceptible tissue is beneficial for disease control. These practices include selection of the proper training system; shoot positioning, and leaf removal.

- Fungicide use.

Apply a dormant application of liquid lime sulfur in early spring, followed by applications of foliar fungicides during the growing season. (Ellis & Erincik, 2008, Hoover et al, 2011) Homeowners may use Ortho Home Orchard Spray, or Hi-Yield Captan, or Bonide Citrus, Fruit and Nut Orchard Spray, or Spectracide Immunox Plus.

Grape Anthracnose (Bird's-eye Rot-*Elsinoe ampelina*)



Katsunori Saito, University of Arkansas Plant Pathology Graduate student



Grape Anthracnose (Bird's-eye Rot)-*Elsinoe ampelina*



Sherrie Smith University of Arkansas Cooperative Extension

structures, but they are distinctly thinner and often much more elongated.

On most sites, this disease will only be a problem during wet years. Several fungicides are available to treat needle casts on Christmas trees in commercial settings. It is not practically feasible to spray larger ornamental trees. Prune low hanging branches to reduce humidity and increase airflow under the tree. Needles are a source of fungal spores. Raking them out from underneath the tree and burning them can reduce disease infection and spread. A few fungicides are also available for homeowner use for smaller ornamental trees. Mancozeb and Daconil are labeled for control of *Lophodermium*. Infected trees should be sprayed 3-4 times beginning in late July, in mid-August, in mid-September, and if disease is severe again in mid-October.

Pine Lophodermium Needle Cast- *Lophodermium pinastri*



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Pine Jason Pavel

Lophodermium is a fungus that causes Lophodermium Needle cast on pines. *L. pinastri* and *L. seditiosum* have both been identified as causative agents. The spores initially infect wet pine needles at the end of summer. This infection first becomes noticeable during the late fall and winter months as yellow spots. These spots turn brown with a yellow halo by spring. The spots grow, turning the needles partially or fully yellow and then brown. Parts of these needles may remain green. Fully brown and dead needles will drop off the tree early in the summer, and by late summer, the fungus will have produced reproductive structures. These reproductive structures are black and appear football-shaped. They release wind-blown spores during wet weather to cause new infections on pine needles, thus repeating the cycle. Ploioderma needle cast also has black reproductive



Pine Lophodermium Needle Cast- *Lophodermium seditiosum*



J. Staley, "Diseases of Woody Ornamentals and Trees, APS Press

Flowable w/Zinc, or Hi-Yield Maneb Garden Fungicide, or Green Light Tomato and Vegetable Spray. Organic Gardeners may try Bayer Advanced Natria Disease Control, or Bonide Liquid Copper Fungicide Concentrate, or Kaligreen, or Bonide Remedy, or Bonide Copper Dust, or Hi-Yield Bordeaux, or AgraQuest Serenade.

Tomato Septoria Leaf Spot- *Septoria lycopersici*



Keith Grisham University of Arkansas Cooperative Extension

Tomato

The Plant Health Clinic has received numerous samples of tomato with severe leaf damage. Septoria Leaf Spot caused by *Septoria lycopersici* is one of the most damaging diseases of tomato foliage. Septoria is favored by warm temperatures and high humidity. Symptoms of Septoria generally appear on the lower leaves after the first fruit sets. Lesions are circular, about 2.6mm in diameter, with dark brown margins with tan to gray centers. A narrow yellow halo may often be observed around the lesion. Small black fruiting bodies of the fungus (pycnidia) may be observed in the centers of the lesions using a hand lens. Lesions may coalesce to form large blighted areas. Foliage turns yellow, then brown and dry. The plant has an almost burned appearance. There are no resistant cultivars available. Control measures include crop rotation with a non-host, control of weeds in tomato crops, removal of all crop debris, and avoidance of night watering and overhead irrigation. Protective fungicides at regular intervals during the growing season will be necessary for most growers. Quadris, Cabrio, Flint, Bravo, Mancozeb, and Gavel are labeled for Septoria leaf spot control. Homeowners may use Ortho Garden Disease Control, or Fertilome Liquid Fungicide, or Bonide Fung-onil Multipurpose Fungicide Concentrate, or Garden Tech Daconil Fungicide Concentrate, or Bonide Mancozeb



Tomato Septoria Leaf Spot- *Septoria lycopersici*



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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

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