



Arkansas Plant Health Clinic Newsletter

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Grape

Multiple species of *Togninia* (asexual: *Phaeoacremonium*) and *Phaeomoniella chlamydospora* have been associated with Grape Measles (Esca), Young Esca, and Petri Disease. Esca is one of the earliest described diseases of grapes, found most frequently in warm temperate zones. Symptoms may appear on the entire vine or just part of the vine. Young vines may have significant differences in vigor, diameter of trunk, shortened internodes, reduced foliage, and reduced leaf size. Foliar symptoms are the most obvious and frequently-observed sign of the disease. Symptoms usually appear first on the leaves at the base of shoots and spread to the rest of the leaves. Leaves display small chlorotic interveinal spots that enlarge and dry out. This often causes premature dropping of leaves. Shoot tip dieback and wilting may occur. Leaf symptoms are most prevalent toward the end of summer. Affected fruit may not mature properly or have pinprick black spots (measles) distributed in the epidermis. The most dramatic symptom is sudden death of all or part of the vine. This occurs because the disease is caused by a vascular pathogen. In the wood, a characteristic zone of brown necrosis forms around a central

area of soft damaged wood. Vines with Esca characteristically exude dark gums from transversely sectioned vascular tissue (tissue cut crosswise, like when making a stump). Grape leaves showing these foliar symptoms without vascular discoloration are probably symptomatic of magnesium deficiency instead. Control is difficult. Some benefit has been observed by dormant season applications of liquid lime sulfur to the main trunk of the vine, but these have been inconsistent because of the nature of the pathogen. *Trichoderma* spp. have been shown to help protect pruning wounds, basal ends of propagation material, and graft unions before infection. A product containing *Trichoderma harzianum* Rifai strain T-22 (RootShield) may be used at the rate of 1-1.5 lb. per 1000 sq. ft (0.5-0.73 kg / 100 m²). Avoid planting or propagating from vines with vascular discoloration.

Grape Esca (Measles)- *Phaeoacremonium* spp.



Photo by Sherrie Smith, University of Arkansas
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Grape Esca (Measles)-
Phaeoacremonium spp.



Photo by Sherrie Smith, University of Arkansas
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Grape Esca (Measles)-
Phaeoacremonium spp.



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Grape Esca (Measles)-
Phaeoacremonium spp.



Photo by Sherrie Smith, University of Arkansas
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Chinese Chestnut

The fungus *Cryphonectria parasitica*, formerly *Endothia parasitica*, is the cause of Chestnut Blight, a devastating disease of the American chestnut. Although no chestnut species are immune to the disease, high levels of resistance have been found in Asian species of chestnut such as the Chinese chestnut, *Castanea mollissima*. Resistance enables the tree to survive attacks of the fungus that would kill an American chestnut. However, resistance is extremely variable, and we occasionally receive a sample of Chinese chestnut seriously affected by Chestnut Blight. Chestnut Blight in Chinese chestnut is usually related to stresses such as drought, injury from weather events, and nutritional/soil issues. Symptoms begin as the yellowing and death of individual branches. The leaves of these branches characteristically hang on through the first winter. Cankers appear on the trunk and branches as yellowish to reddish areas in the bark. As the cankers grow, the bark swells and cracks. Eventually, the bark dies and falls off. Yellowish-brown to orange fruiting bodies may be seen on the bark surrounding the cankers and in the cracks in the cankers. Prune out any limbs with these cankers and burn or otherwise remove them from the property. There are no chemical controls.

Chestnut Blight- *Cryphonectria parasitica*



Photo by Neal Mays, University of Arkansas Cooperative Extension



Chestnut Blight orange fruiting bodies-*Cryphonectria parasitica*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Blue Spruce

It is nearly time to spray spruces for Needle Cast disease caused by *Rhizosphaera kalkhoffii*. Protective sprays applied when new needles are half-emerged from the candles provide satisfactory control. Needle Cast is the most common problem of blue spruce in the landscape. The disease usually starts at the bottom (inside near the trunk) of the tree and progresses outward and upward. The needles will take on a brown or purplish color and then fall to the ground. The first visible signs of infection occur one year after infection in the late fall or spring. Last year's needles turn yellow, then purplish brown and fall from the tree, while the new needles remain green. These new

green needles become infected the spring they emerge and fall to the ground the following season. Small black fruiting bodies (pycnidia) of the fungus may be observed with a hand lens. They appear on the needles in linear rows. Watch your trees for new growth (candles) emerging at the tips of branches. Products containing chlorothalonil such as Bravo or Daconil, and manganese/zinc such as Cleary's Protect T/O are labeled for control of Rhizosphaera Needle Cast. Follow label directions for rate and frequency of application. Blue spruces grow best in fertile, well drained, moist soil. They dislike compacted soils. When stressed by drought or poor soil they are prone to Needle Cast.

Blue Spruce Needle Cast-*Rhizosphaera kalkhoffii*



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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