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Apple and Plum

Crown gall caused by the bacterium, *Agrobacterium tumefaciens*, is a serious disease of roots, stems, and crowns on many plants. It is commonly found on cherries, grapes, apples, plums, roses, blackberries, raspberries, and several other ornamental trees and shrubs. Rough galls develop at the crown where the soil line meets the crown and main roots. Lateral roots may also develop the galls. On some plants such as Muscadines the galls may be found quite a distance up a main stem. Most galls are only a few inches in diameter, but some reach a foot or more in diameter. Young galls are light, tan-colored, and soft. As they age, they become hard, woody, and nearly black-colored. A few small galls have no visible effect on plants. However, where the galls are large or numerous the plants may become stunted, with small yellow or red leaves as the nutrients are cut off by girdling of the stem by the gall. The bacteria enter the plant through wounds made by animals, insects, grafting and cultivation tools. Infected plants in orchards and landscapes should be pulled up and destroyed. Care should be taken with weed eaters and mowers to avoid injury to the stems. Growing non-susceptible crops such as grasses for three years will nearly eliminate the bacterium from the soil.

Blackberry Crown Gall-
Agrobacterium tumefaciens

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Magnolia

Southern Magnolia (*Magnolia grandiflora*) is a staple in the southern landscape. It's grown for its stately size, glossy evergreen leaves, and lovely blooms. They grow best in acidic soils (pH 5.0-6.0). They prefer well drained, loamy, moist, rich soils. Magnolias are best grown in part shade to full sun. They have large water requirements, needing 40-80 inches of water a year. They don't do well however in heavy soggy soils. Although evergreen, Magnolia begin dropping leaves in the fall through early spring as they replace their leaves a few at a time. The degree of leaf drop depends on genetic and physiological factors affecting the tree. Some will lose most of their leaves before new foliage comes out. This is unsightly and

often frightens homeowners who feel their tree has a serious problem. Magnolias don't suffer from many serious diseases. They can get fungal leaf spots which usually don't do much damage. Insects such as magnolia scale can be a problem. Blackening of the leaves with sooty mold is a good indication of scale infestation. Fine horticultural oil applied early in the season will usually suppress scale.

Magnolia Natural Senescence- abiotic

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Aucuba

Aucuba is an evergreen shrub that does well in shady locations. In fact, it is one of the few shrubs that grow well in deep shade. Leaf spots caused by several fungi can be a problem. Alternaria, Phyllosticta, and Colletotrichum commonly attack Aucuba. Symptoms are large spots up to two inches in diameter along the margins of the leaves. Often, affected plants are already stressed by poor fertility, drainage problems, and root diseases. Soil testing for pH and nutrients is the first step for healthy shrubs. Improving drainage if soil is boggy is critical. An ornamental fungicide such as Daconil or Fungonil gives good protection against fungal leaf spots. Be aware that sun exposure causes the leaves to blacken as well.

Aucuba Leaf Spot- *Phyllosticta* sp.

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Sapsucker damage

There are 21 species of woodpeckers in the United States, including flickers and sapsuckers. Most woodpeckers feed on tree-boring or tree-living insects, but others feed primarily on berries, fruits, nuts, and sap. Sapsuckers feed on insects and sap. The Yellow-bellied sapsucker drills small holes about ¼ inches in diameter in a symmetrical pattern in the bark. Later in the summer the birds made holes that are a series of shallow,

square, or rectangular sap wells in the same circular pattern. The holes are usually made in horizontal rings around the trunk or branches. Sapsuckers lap the nutrient rich sap and eat any insects found in their excavations. Damage to mature trees is usually minimal, but smaller trees and even shrubs can be damaged by the heavy drilling. Woodpeckers are migratory birds and are protected by federal law. Controls include wrapping trees with burlap, loud noises, and visual repellents such as rubber snakes and owls. A particularly effective repellent is one that combines visual and noise together. Follow the link below for one option. http://www.attackspider.com/?gclid=CM39pZbNnIsCFQlQWAodZHwaVQ

Yellow-bellied Sapsucker Damage-*Sphyrapicus varius*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Elmer Verhasselt, Bugwood.org

Pepper

The clinic has seen some pepper seedlings this week with Bacterial leaf spot caused by *Xanthomonas campestris* pv. *vesicatoria*. Bacterial spot of pepper is a serious disease afflicting pepper and tomato. Initial symptoms on peppers are irregularly shaped water-soaked spots. The spots turn brown to blackish brown with age. On a heavily infected leaf the spots will coalesce leaving large necrotic areas. Leaves become distorted, shrivel, and

fall off. Streams of rod-shaped bacteria may be observed under the microscope. Fruit will get small dark brown to black raised spots rendering them unmarketable. 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

Pepper Bacterial Spot-

Xanthomonas campestris pv.

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

St. Augustine

St. Augustine grass is a warm season grass found from the Carolinas to Florida and along the gulf coast to Texas, and in Southern and Central California. It tolerates a wide range of soil types but does not withstand waterlogged sites or drought. St. Augustine is not as cold and drought tolerant as Bermuda but has more shade and salt tolerance. Our first sample arrived at the clinic this spring with Take-all-patch caused by the fungus *Gaeumannomyces graminis*. This disease is active in fall and winter when there is abundant moisture and moderate temperatures. Symptoms, however, are often not expressed until late spring or early summer when temperatures become higher, and grass is stressed by drought. Symptoms begin with leaf yellowing and death of the foliage. Roots become rotted so damaged stolons are easily pulled from the ground. The turf becomes thin as additional roots, stolons and nodes become infected and large areas of grass begin to die. Brown hyphal strands can be seen on the stolons using a hand lens. Large irregular patches of dead and dying turf can form when conditions are right. Cultural controls are important. Core to improve drainage and the root zone. Turf should be de-thatched if thatch build-up is thicker than 0.5 inches. Soil test for pH and nutrients. The optimum pH for controlling Take-all-patch is 6.0-6.5. Avoid high doses of nitrogen and use a balanced fertilizer. Two applications of fungicides 28 days apart in spring and again in fall are effective. Heritage, Eagle, and Insignia are labeled for Tale-all-patch in Arkansas. Green Light Fung-Away Systemic Granules or

Spectracide Immunox is available for homeowners.

St. Augustine Take-All Patch-
Gaeumannomyces graminis

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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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