UNIVERSITY OF ARKANSAS
DIVISION OF AGRICULTURE
Cooperative Extension Service

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PLANT HEALTH CLINIC NEWS

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.

Daylily

Daylilies (Hemerocallis) are one of our toughest flowering plants and a favorite standby in the perennial border. They come in a variety of shapes, sizes, colors, and are able to survive with very little care in most climates. This versatile plant is troubled by few diseases. In the south daylily rust can be a problem as we have discussed in a previous newsletter. Another disease seen at times in daylilies is daylily crown rot caused by Erwinia spp. Previously healthy plants will start to yellow and leaves will detach easily from the crown when pulled. The base of the detached leaf will be soft and slimy with a smell similar to that of a rotted onion. Part of the plant can sometimes be saved if the plant is dug up and the rotted section cut out. The roots of the healthy section should then be dipped in an anti bacterial solution such as Banrot or a Clorox solution and replanted in clean soil. If the entire crown is soft and rotted the plant cannot be saved. High temperatures, high humidity, and over watering seem to be contributing factors for disease development.

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Caryopteris

This low growing shrub known as Bluebeard is one of our finest late season blue blooming plants. It grows best in full sun with well drained soil and adequate amounts of water. Lovely silvery gray foliage sets off the spikes of blue flowers that appear from August to October. Bluebeard blooms on new wood and can be cut to the ground each winter to prevent legginess. A sample of this pretty plant came into the clinic this week with stem galls where the flowers should be. These galls were caused by *Eriophyid* mites. These mites usually overwinter on the host plants. When the buds are swelling in the spring they begin feeding. This causes gall formations where the leaf and flower buds would normally be found. Galls start out green and turn brown by mid to late summer. They can persist for several years on the plant. Control consists of pruning out and destroying the galls and treatment with a miticide such as Kelthane in the spring as buds are swelling. Once the galls are formed it is too late that season to achieve control.

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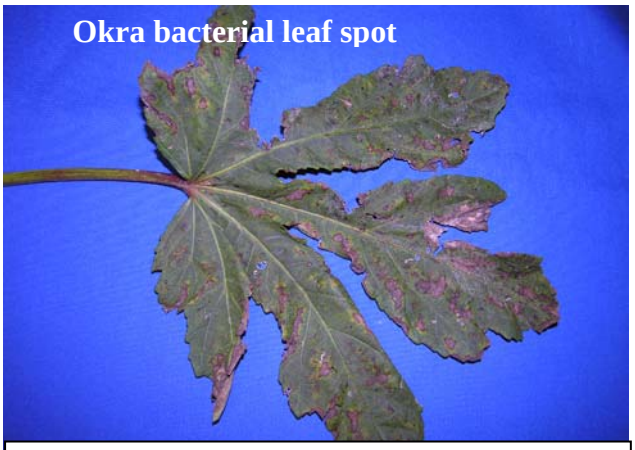
Peas

Bacterial blight caused by *Pseudomonas syringae* pv. *pisi* can bring about severe yield losses when environmental conditions are favorable for disease development. This seedborne bacterial disease has been connected with wet cool springs and/or overhead irrigation. Heavy doses of nitrogen fertilizer can make the disease worse by producing lush succulent tissue that is more susceptible to infection. Symptoms first appear as shiny, water soaked spots on leaves, pods, and stems. The spots coalesce and turn brown with translucent centers and sometimes take on an angular appearance. Lesions on stems may girdle the stem and cause death of the plant above the girdled area. When floral parts are infected, the flower is either destroyed or the resulting pod becomes infected. Lesions on pods appear along the dorsal suture with the seed covered with a bacterial slime. Control can be difficult. Walking through fields when the vines are wet should be avoided. Planting clean seed and using resistant cultivars are the primary means of controlling bacterial blight. A seed sterilizing agent such as 1% sodium hypochlorite has been used to reduce primary infection by 85-90%. A streptomycin seed treatment is also effective but somewhat costly.

Okra

Okra may also bacterial diseases. Bacterial leaf spot caused by Xanthomonas spp. Starts as small water soaked spots that enlarge, assume an angular shape, and eventually turn brown. It is important to avoid overhead irrigation, excess nitrogen, and to rotate every growing season. Okra should not be grown in same spot where tomatoes, pepper, eggplant, or potatoes have been grown the previous 3 years. Rotate with corn legumes, or onions.



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Linden Tree

The Little Leaf Linden (*Tilia cordata*) has a spreading pyramidal shape, fragrant flowers, and is tolerant of a wide variety of soils. This tree which reaches a height of

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40-60 ft. has outstanding ornamental features and is increasingly seen planted in both public and private landscapes. Unfortunately, Linden trees are susceptible to verticillium wilt. Verticillium wilt is a fungal disease that attacks over 300 species of plants. The disease is soil borne and enters the plants through wounds in roots, or by direct penetration. Verticillium invades the xylem where it kills the cells that transport water. This cell death causes discolored streaking in the vascular tissue that is diagnostic for the disease. The color of the streaking ranges from olive to tan, brown, or black depending on the host species. Outward symptoms are leaf discoloration, scorch, and limb dieback. The infected tree tries to fight the infection by producing gums and tyloses to block the infection. This also impedes water flow and results in the wilting symptoms. There is no treatment. Some trees limp along for years with the disease, while others succumb the first season. The life of afflicted trees may sometimes be prolonged with a good irrigation and fertilizer program. Verticillium wilt is worse in drought stressed trees. A good deep soaking once a week during the growing season and the application of ammonium sulfate fertilizer is recommended. It is best not to replant a susceptible cultivar in the same location.

Verticillium in Linden

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Althea

Althea, also known as Rose of Sharon, is a quick growing shrub that blooms freely from midsummer until fall. Rose of Sharon grows to 10 by 5 ft. in full sun and comes in a range of colors from white through the pink shades. It is as ubiquitous in the southern landscape as crape myrtle. A sample arrived at the clinic heavily infested with mealy bug. Mealy bugs, (Psuedococcidae), are sap feeding, soft bodied insects that are covered with a fine whitish wax. The ones we see on our plants are females. The males have wings and resemble a tiny wasp. They do not feed. The juveniles are 1/32" and flesh colored. The white waxy coating resembles tufts of cotton on heavily infested plants. They can cause leaf and bud distortion and weaken plants when numbers are high. They also produce a sticky sap called honey dew that often grows sooty mold. Insecticidal soaps, Neem oil, and Malathion are effective against mealy bug. Repeat applications are usually necessary.

Mealy bug on Althea

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Corn

Corn smut is caused by the fungus *Ustilago maydis*, and is generally not considered a serious pathogen. Annual loses seldom exceed 2% where resistant cultivars are grown. All above ground parts of the plant can be infected, but the disease is most spectacular when kernels are infected. Large galls form where the kernels are as the fungus invades the kernels and starts growing. At first the galls are a glistening silvery white to greenish white. The interior of the gall eventually darkens and turns into a mass of powdery, dark olive brown to black spores. The incidence of smut is higher on nitrogen rich soils, or recently manured soils.

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Resistant varieties are the best method of control. In some parts of the world infected ears are considered a delicacy while the galls are in the fresh soft stage. It is sold fresh or canned as huitlacoche, cuitlacoche, or maize mushroom.

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Boxwood

A common disease of boxwood is canker caused by the fungus *Volutella buxi*. Symptoms become noticeable as certain branches or individual plants do not put on new growth in the spring. Leaves turn from normal to light green to tan. Leaves on infected branches turn upward and lie close to the stem instead of spreading out like leaves on a healthy stem. The bark at the base of an infected limb shows gray to black discoloration under typically peeling bark. Sometimes small pink colored waxy fruiting bodies of the fungus may be observed on the branches and leaves. Control consists of removing infected branches as soon as they are seen, cleaning up all leaves caught within the shrub and on the ground, and the application of copper based fungicides or lime sulfur during the dormant season before new growth starts in the spring. It is very helpful to maintain a proper water regimen during the entire year to reduce stress. Boxwoods need watered during the winter if it is a dry winter. This is true of all evergreens.