



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.

Ajuga

Ajuga or "Bugleweed" makes a very pretty display in the spring with its low decorative foliage and spikes of blue flowers. The plant grows 5-6 inches tall and spreads by runners. It is a very reliable plant in shade to part sun, blooming for about a month in mid- spring. The only really serious disease of Ajuga is crown rot caused by *Sclerotium delphinii*. Crown rot occurs primarily during warm wet weather on heavy, poorly drained soils. Patches of Ajuga that were doing splendidly suddenly start to wilt and melt out, usually from the center outward. Upon examination, crowns and roots are soft and rotted. White mycelial growth is found growing over the crown and roots. Later in the season tiny, round, brown sclerotia are found at the base of the plants on the stem and crown. Increasing air circulation and improving drainage can help limit the spread, but this is a difficult disease to control. The only chemical recommended for homeowner use is thiophanate methyl. This may be used as a soil drench to protect healthy plants. All diseased plants should be immediately removed from the bed. Where practical, new soil, healthy plants, and improved drainage will cure the problem. Be aware that the pathogen may be moved around the garden on tools, plants, soil, and the bottom of your shoes.

Ajuga crown rot



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Crown rot sclerotia



<http://www.mobot.org/gardeninghelp/images/Pests/Pest76.jpg>

Ajuga



Richard Old, XID Services, Inc., Bugwood.org



Cottonwood

Marssonina blight, caused by *Marssonina populii*, is a common disease of cottonwoods and poplar species. The initial infection occurs in the spring as tender new leaves are emerging. During the summer, adjacent healthy leaves are attacked by spores from coker@uamont.edu the early infections. By the end of summer, most of the leaves on the tree may be infected. Leaves may fall prematurely, and in severe cases twig death may result. Symptoms begin as dark brown or black flecks on the leaf. The spots enlarge to circular spots with a darker border. Spots may coalesce to form large blotches. At a distance, the tree may have a bronze cast and thinner foliage. Although trees are rarely killed, repeated infections make trees susceptible to other diseases and to insects. Marssonina leaf blight is more common on trees under stress from drought, boggy soils, heat, and poor nutrition. Trees under sprinkler systems that keep the foliage continuously wetted are particularly vulnerable. Control consists of good cultural practices designed to promote good tree health. Most trees benefit from being fertilized twice a year, once in the spring and once in the fall. A yearly soil test is a valuable tool in a fertilizer schedule. Trees should be kept watered during periods of drought. All fallen leaves and twigs should be raked up and disposed of. Marssonina leaf blight responds well to ornamental fungicides. However, the size of mature trees makes this not practical for most homeowners.

Cottonwood Marssonina leaf blight



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Tomato

Leaf mold, caused by *Cladosporium fulvum*, is a disease found commonly in greenhouse tomatoes, and less frequently in field-grown tomatoes. However, we do see it in the field in seasons with long periods of high humidity and prolonged leaf wetness. The first symptoms on the leaves are small yellow spots on the upper leaf surface with corresponding olive-green to grayish-purple, velvety spots on the underside of the leaves. Leaves turn brown, crinkle up and die, falling from the plant prematurely. Fruit infections show as black, leathery, stem end rot on both green and ripe fruits. The rots can encompass 1/3 of the fruit surface. Resistant varieties are available, but this fungus mutates rapidly, so a previously resistant variety may prove susceptible in subsequent years. It is important to avoid overhead irrigation when watering the plants. If overhead irrigation can't be avoided, do it early in the day so the leaves have a chance to dry. Don't over-crowd plants. Provide adequate row and plant spacing. After harvest, remove and destroy tomato debris. Practice crop rotation. Plant in an area that has not had tomatoes, potatoes, eggplant, or peppers planted in that spot the last three years. Fungicides such as Maneb, or Gavel, or Tanos, or products containing Chlorothalonil provide protection if applied weekly.

Tomato leaf mold



Clemson University - USDA Cooperative Extension Slide Series,
Bugwood.org



Okra

Those who like okra can't get enough of this favorite southern vegetable. Okra grows best on sandy, well drained loamy soils with a pH of 6.5 -7.0. It has minor disease problems when adequate growing conditions are provided. However, okra is susceptible to wilt diseases caused by verticillium or fusarium species. Symptoms are yellowing and wilting of leaves and eventual collapse of the plant. When the stems are cut open, brown streaking and flecking can be seen in the vascular bundle. It is impossible to tell which pathogen is responsible for the wilting with certainty, without culturing tissue in the lab. Verticillium is more common during cooler weather, and the streaking is sometimes darker brown to black in color. There is no real resistance to these diseases in okra. The only control measures are to clean up all plant debris every season, and to practice crop rotation.

Nematode

Okra is also extremely susceptible to root knot nematodes. Home gardeners have few remedies beyond rotation, and soil solarization.

Okra fusarium wilt



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Okra fusarium wilt



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Okra root knot nematode



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