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PLANT DISEASES

Frost or Anthracnose?

The cold snap experienced in Illinois at the end of April and/or beginning of May (depending on your location) caused some symptoms that could be confused with anthracnose. Look at symptoms, timing, and host to help distinguish the two. Anthracnose was discussed briefly in issues no. 3 and 4 of this newsletter.

Symptoms of anthracnose include brown to black spots, brown to black blotches, and sometimes (as with sycamore anthracnose) death of entire young leaves. Rarely does anthracnose cause all of the foliage to die. Frost damage can range from brown to black leaf tips to death of all leaves on a tree, depending on severity. Frost damage happens suddenly, usually overnight. It often turns leaves black. Try placing some fresh leaves in the freezer for an hour, then remove them, and observe the symptoms. Leaves will look water-soaked, followed by shriveling, and eventually a brown or black color. This is how freeze injury on trees and shrubs outdoors looks as well. Often, however, we don't see symptoms until the foliage has turned completely brown or black.

Either problem could appear at this time. In fact, anthracnose has been seen in central Illinois for the last 2 weeks on sycamore, ash, maple, and ash. Anthracnose is favored by moisture and cool (but not freezing) temperatures from bud break to 2 weeks later. Frost damage requires near freezing temperatures.

The host is also a significant clue. Anthracnose may appear on many plants; but we usually see it in Illinois on ash, birch, maple, oak, sweetgum, sycamore, and walnut. If you are seeing damage on other species, anthracnose is probably not to blame. Sandy Mason, Champaign Extension Unit, reports frost injury to Kentucky coffeetree, ash, and mulberry, with death of all emerged leaves. Leaves were just "burnt up or fried." These trees will recover but will need moisture to help produce new leaves. Weekly watering in periods of drought would be helpful. *(Nancy Pataky)*

Slime Mold vs. Sooty Mold

Slime molds and sooty molds sound alike; so what is the difference? These two problems can be confusing to landscapers, consultants, master gardeners, and even specialists, so let's look at the similarities and differences.

Sooty molds are black growths of mycelium of true fungi that appear on leaves or stems. Most sooty mold fungi are Ascomycetes in the Capnodiales family. They are superficial, meaning you can completely wipe them off the plant tissue with a paper towel or just your finger. They may appear black and fluffy in warm, humid weather; but they dry down to a thin, paperly layer in drought. This crusty layer can be peeled off the foliage.

Although sooty molds do not cause significant loss of plant health, they can reduce photosynthesis by covering up the foliage. More importantly, they grow on insect excrement or "honeydew." This sugary substance is ideal for sooty mold growth. Therefore, if you see sooty mold on a plant, look for an insect problem. If you control the insect, you control the sooty mold.

Slime molds are not true fungi. They are classified as myxomycetes because they have some qualities of plants and animals. They are known as fungal-like members of the Kingdom Protozoa. Slime molds are slimy masses of naked protoplasm with many nuclei and no definite cell walls. They grow in moist dark places and creep over the surface of their substrate and engulf their food. They are not parasitic, however, and feed only on dead organic matter. This may sound like a creature from the deep lagoon, but the movement is too slow for us to watch.

Most slime molds are white, tan, or bright colors like orange and yellow. They have a slimy appearance in warm weather after a rain or irrigation. They have resting spores and flagellated zoospores that need water to survive. Like sooty molds, slime molds will not harm plants other than to block photosynthesis. Use a heavy stream of water to wash these off plants. Rake and stir mulches to help them dry out more quickly. *(Nancy Pataky)*

Pine Wilt Alert

Pine wilt is a scary disease that can kill a mature pine in a season. We have been seeing this disease in Illinois for at least 25 years. It appears in Illinois each year; but there have already been two positive cases of pine wilt at the Plant Clinic this season, so it is time to once again review the symptoms.

Pine wilt is caused by a nematode called the pinewood nematode. The pine wilt name appropriately describes the sudden gray-green, wilted appearance of limbs or entire mature pine trees. There is no recovery, and trees quickly turn brown in heat. Trees do not recover with watering because they cannot absorb water.

In Illinois, pine wilt is most common on Scotch and Austrian pines. Still, it may infect all pine species except white pine. The disease affects entire branches or entire trees and not just branch tips. Of course, there is always an exception; and in this case, it is Austrian pine. We have documented cases of pinewood nematodes in Austrian pine that initially showed symptoms on branch tips only. This symptom can be confused with Sphaeropsis blight. Sphaeropsis was discussed in issue no. 3 of this newsletter.

Although many nematodes infest the soil and roots, the pinewood nematode is present in the wood. It does not move into the root system of pines. Pinewood nematodes are vectored (spread) by Sawyer beetles and a few related long-horned beetles that feed at the top of trees, moving the nematode from tree to tree as the beetle feeds. The nematode is microscopic and causes blockage of the water-conducting tissues—resulting in a wilt symptom. The nematodes are not visible to the naked eye, but symptoms are quite apparent.

Samples to be tested for pine wilt should be sent to the Plant Clinic or another lab where a nematologist is available. Our fee is $18.75. Branch samples should be 1 to 2 inches in diameter and long enough to put into a vise so that wood discs can be cut from the branch. The pinewood nematode is not uniformly distributed within a tree. We find that the most reliable samples are from branches that have brown needles still attached. When sampling Austrian pine, also include the terminal 12 inches of a stem with brown needles attached.

There is no cure other than to rapidly remove and burn or bury infected trees, which helps prevent the beetles from spreading the pathogen to healthy pines. Affected trees should be burned or buried to reduce reservoirs of infection. Prune dead branches from live trees to minimize attractiveness to beetle feeding. Beetles that emerge from the dead wood may carry the nematode and fly to healthy pines miles away.

Replace dead pines with Norway or blue spruce, Douglas fir, cedar, hemlock, or other nonhost species. Consider the site, soil, and space when selecting a replacement tree. Consult *Report on Plant Disease (RPD)*, no.1104, "Pine Wilt Disease," for details about this disease. RPDs are available in Extension offices, as well as on the Web at the Extension VISTA web site found at http://www.ag.uiuc.edu/%7Evista/horticul.htm. *(Nancy Pataky)*

Plant Management Network

The Plant Management Network (http:/www.plantmanagementnetwork.org) is a unique cooperative resource for the applied plant sciences. Designed to provide plant science practitioners fast electronic access to proven solutions, the network offers an extensive searchable database comprised of thousands of Web-based resource pages from the network's partner universities, companies, and associations.

For the horticulturaly minded, the *Applied Turfgrass Science* and *Plant Health Progress* journals provide credible and current research and reports in areas important to practitioners, policy makers, and the public. In addition, you'll gain access to the image database, B&C tests online, and F&N tests online.

F&N (Fungicide and Nematicide) Tests is published annually as a national compilation of efficacy-research results for new fungicides and nematicides, as well as new findings with older products. These brief reports address a wide range of agricultural and horticultural crops, including turfgrass and ornamentals. *B&C (Biological and Cultural) Tests* is published annually as a national compilation of research results for biological and cultural controls of plant diseases. These brief reports address a wide range of agricultural and horticultural crops, including turfgrass and ornamentals.

Some parts of the Plant Management Network are free; other areas require a subscription. Annual subscription fees range from $38 (member affiliated) to $45 (regular personal). Complementary access is available to employees of partner organizations, such as the University of Illinois. *(Bruce Paulsrud)*

INSECTS

Scouting Watch

European pine sawfly was reported to be 1/2 to 3/4 inch long on May 10 in Hennepin, just south of LaSalle-Peru. These colonial insects can be controlled with hand-removal or sprays of carbaryl (Sevin), a pyrethroid, or other labeled insecticide.

Euonymus scale crawlers should be present at this time. They are lemon yellow and easily seen on the foliage. Sprays of acephate (Orthene), bifenthrin (Talstar), cyfluthrin (Tempo), insecticidal soap, or summer oil should be effective.

Peach tree borer is susceptible to basal trunk applications of permethrin (Astro) at this time. They commonly occur on older purpleleaf plum and flowering cherry.

Viburnum borer primarily attacks *Viburnum opulus compacta* at the crown, causing dead and dying stems from the ground that break off easily. It also occurs on other viburnums, particularly those under

stress. Basal applications of permethrin (Astro) will be effective at this time. *(Phil Nixon and Curt Braffit)*

Flatheaded and Roundheaded Apple Tree Borers

Now is the time of year to be aware of potential problems in nurseries and landscapes from the flatheaded appletree borer, *Chrysobothris femorata*, and/or the roundheaded appletree borer, *Saperda candida*. Both are wood-boring beetles (Order: Coleoptera) that attack a wide range of trees and shrubs. They tend to prefer plants in the rose family (Rosaceae), including crabapple, cotoneaster, hawthorn, mountain ash, pyracantha, and quince. Young maples *(Acer* spp.) are particularly susceptible to attack from either borer species. Flatheaded and roundheaded appletree borers are opportunistic, with a tendency to attack damaged or dying trees, or newly transplanted trees and shrubs. These borers rarely attack healthy, vigorously growing trees and shrubs. Adult beetles, which feed on fruit, bark, and leaves, may infest plants growing in nurseries and landscapes.

Flatheaded appletree borer adults are about 12 mm long, metallic in appearance, and vary in color from brown to gray. Roundheaded appletree borer adults are about 24 mm long and are gray, with black stripes on the wing covers. Adult females of both species lay eggs individually in the crevices or slits in the bark, typically near the base of plants. Eggs hatch into legless, creamy white larvae 3 to 4 mm long. The larvae burrow through the bark into the cambium and then move up and down the plant, feeding within the sapwood. Larvae, which are 25 mm long when full-grown, create long, winding, tortuous tunnels that may girdle and kill large branches and/or young trees. The presence of larval activity can easily be detected via the white sap flowing from cracks in the bark surface. Eventually, the larvae bore into the heartwood to pupate. When flatheaded appletree borer adults emerge, they leave a D-shaped hole, whereas adult emergence holes of the rounded appletree borer are (you guessed it) round. The adult females of both species generally emerge in late spring to early summer and live up to 40 days. Flatheaded appletree borer has one generation per year in Illinois; rounded appletree borer takes 2 to 3 years to complete a life cycle.

The best way to minimize or reduce problems with both borer species, as with all wood-boring insects, is to avoid stress by maintaining plant health. Trees and shrubs that are properly irrigated, fertilized, mulched, and pruned are less susceptible to attack from both borers. Remove any dead wood from trees and shrubs because this provides potential entry sites for the borers. Additionally, avoid storing freshly cut wood near plants, as adult beetles that emerge can attack nearby trees and shrubs. A commercially available horticultural wrap of paper or burlap may be useful in protecting young trees and shrubs. In nurseries, removing grassy and broadleaf weeds by mowing or using a postemergent herbicide may reduce problems with both species.

The insecticide recommended for controlling both flatheaded and roundheaded appletree borer is imidacloprid (Merit). Imidacloprid is a systemic insecticide, so applications must be made early enough (May to early June) so that the active ingredient is present in the plant tissues when the larvae begin tunneling beneath the bark. The larvae are then killed before they cause any plant injury. Imidacloprid does not provide any control if plants are stressed. *(Raymond A. Cloyd)*

Cottony Maple Scale

We are receiving reports of silver maple trees dripping in the Kankakee County area and have seen some specimens of cottony maple scale from northern Illinois. This insect occurs in the northern half of Illinois. with its southern boundary being at or slightly north of I-72. It attacks primarily silver maple and sumac but is also found in much lower numbers on other maples, honey locust, black walnut, and linden. This scale can cause some dieback of branches on silver maple but is typically not numerous enough on other hosts to cause obvious damage. It's important to realize that little can be done right now about the problem.

At this time, the scale are reddish brown, about 1/4 inch diameter, roundish bumps on the twigs and branches. They are feeding on the plant sap, extracting much of the nitrogen and water, and excreting the remaining concentrated sap or light syrup solution known as honeydew. In very heavy infestations, one can stand under the tree and feel a light "rain" of honeydew. The honeydew is sticky and covers tree branches, sidewalks, and cars under the tree. A black sooty mold grows on the honeydew, turning branches and other objects a dull black.

During the first half of June, each female produces a white, spherical egg mass up to 3/8 inch in diameter. On heavily infested trees, the branches appear to be covered with popcorn. These eggs hatch into crawlers around mid-July, when Queen Anne's lace, *Daucus carota,* and elderberry, *Sambucus canadensis,* are in bloom. These tan crawlers, first-stage nymphs, are very tiny but are easily seen as specks moving on the twigs and leaves.

The crawler is the stage of the life cycle that disperses to other hosts. They orient themselves with their posteriors facing into the wind and raise their abdomens and hind legs up into the air in an effort to be blown off of the plant. Updrafts may carry the

crawlers for miles, with some eventually landing on suitable hosts. The crawlers also climb onto birds' feet and other insects for a free flight to another host.

After a couple of weeks of roaming, the crawlers settle down onto the undersides of leaves and molt to the next nymphal stage. These young nymphs appear as elongate-oval brown bumps 1/16 to 1/8 inch long. They retain their legs, and so they can crawl back onto the twigs by late-season leaf fall. Back on the twigs, they molt to a legless stage for the winter.

This is a native insect that has an important natural enemy. The twice-stabbed lady beetle adult is a black, round beetle about 1/8 inch in diameter. There is a large red spot on each of the two wing covers, giving the insect its name. They lay eggs that hatch into grayish white, fuzzy larvae that look much like the cottony maple scale egg mass. If you prod one of these larvae, it will move very slowly; but, of course, scale egg masses don't move at all. Turning a larva over will reveal a yellowish underside, with short legs and small head easily seen with a hand lens. Both the larvae and adults of the twice-stabbed lady beetle eat all stages of the cottony maple scale—eggs, crawlers, older nymphs, adults.

These beetles build up in numbers in response to the increase in scale population. However, like all successful predators, the prey increases in numbers before they do. If they reproduced too fast, the lady beetles would eat all of the prey too fast and starve to death before their larvae reached adulthood when they could reproduce. As a result, cottony maple scale usually becomes very noticeable for about 3 years until the lady beetles build up to wipe them out. After the third year, the adult twice-stabbed lady beetles are very numerous crawling around on trees, houses, and other upright objects looking for food. Most of them starve to death, causing a crash in the lady beetle population. This allows the cottony maple scale gradually to increase in numbers to become a noticeable pest about 7 to 8 years later.

This infestation may be less than 3 years because of the presence of the multicolored Asian lady beetle, the insect we love to hate. This is the nineteen-spotted, orange to red, lady beetle that comes into our houses in huge numbers. This arboreal lady beetle will likely feed on the cottony maple scale as well.

Control recommendations are to spray the cottony maple scale during the winter with a dormant oil spray, but do not apply it to sugar or Japanese maple. At that time, the twice-stabbed lady beetle adults will be under loose bark and not harmed by the spray. Crawler sprays of acephate (Orthene), befenthrin (Talstar), cyfluthrin (Tempo), insecticidal soap, malathion, or summer oil can also be applied in July when the crawlers are active. If twice-stabbed lady beetle larvae or adults are numerous, they will probably eat more scale than the spray will kill, so do not spray. Typically, the only way that cottony maple scale is a problem for more than 3 years is when poorly timed crawler sprays provide little control of the scale but kill off the lady beetles. Do not apply acephate to red or sugar maple. *(Phil Nixon)*

Home, Yard, and Garden Pest Newsletter is prepared by Extension specialists from the University of Illinois at Urbana-Champaign and the Illinois Natural History Survey. Information for this newsletter is gathered with the help of staff members, Extension field staff, and others. Karel Jacobs and Donna Danielson of The Morton Arboretum also provide information and articles.

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