Golf Turf

Most years, the dog days of August bring a slow-down in turf submissions as golf turf managers start to have visions of their aerification and renovation programs coming in a couple of weeks. After a moderate July for turf submissions, August has started with a bang. The increase in samples is arguably due to an increase in rain during late-July. Locally heavy downpours provided as much as 8 inches in some areas. Adequate to excessive soil moisture, high night temperatures, high humidity and serious fog are driving the disease triangle. Yesterday seemed like we had at least one sample of every disease in the Compendium of Turfgrass Diseases. We’ve seen anthracnose, summer patch, take-all, brown patch, dollar spot, slime molds, fairy rings, and pythium diseases in all forms. It was a great day! Looks good for today too – we had golf guys in the lab with dead plugs by 7A.M.!

Did you ever wake up in the summer to see “snow” on your turfgrass? The snow, of course, is fungal mycelium. This week we’ve seen it primarily in two forms: pythium blight and dollar spot. Both diseases start as small dead spots and fuzz up quite readily, so how do you tell which disease is which? Pythium blight causes a dark brown leaf blight, which may often manifest itself as a black, greasy decline. Patches of Pythium blight will grow rather large and coalesce into non-descript dead spots as large as several hundred square feet. Dollar spot on the other hand causes small dead spots with almost “white” leaf blight. Dollar spot also has a distinct leaf lesion that is often described as ‘hourglass” shaped. When you see early morning “snow” on your turf in mid-summer, both diseases should pop into your head as potential problems, but a closer look at the symptoms should easily narrow your focus.

By the way – folks are calling about gray leaf spot – so far no disease in the lab. If you manage lots of ryegrass; however, the disease window runs into October, so keep your eyes wide open.

Ornamentals

It’s been all nursery stock in the ornamentals realm this period. Heavy rains hurt those guys too. Phytophthora crown and root rot on the woodies and Pythium root rot on the more succulent stock have been diagnosed very frequently. In fact, out of 17 samples of nursery stock we saw this week, all but two had either Pythium or Phytophthora.

See Lab Highlights on page 2
Cankers: Stress-related Diseases in the Landscape
Ann Brooks Gould, Ph.D., Specialist in Plant Pathology

Stress (winter damage, poor growing environment, or prolonged moisture extremes) takes its toll on landscape plant material. Not only does environmental stress directly impact plant health, it also predisposes affected trees to diseases, especially cankers, and insect pests.

A canker is a localized necrosis of the cambium and bark on trunks, stems, or twigs of woody and non-woody plants. Many cankers are caused by opportunistic fungi that infect plants through wounds, other openings, and at the base of dead branches. These lesions girdle the stem as they enlarge, and tissue distal to the canker dies. The fungus spreads as fruiting bodies produced in the dead tissue release spores during favorable weather. Although many canker diseases are caused by fungi that are normally weak pathogens, if host defenses are sufficiently compromised by other stresses, these cankers may kill weakened trees.

Several canker diseases most common in New Jersey landscapes include those caused by the fungi Nectria, Botryosphaeria, and Cytospora.

**Cytospora canker**

A common canker disease of conifer and Prunus species is caused by species of the opportunistic fungus Cytospora (syn. Valsa or Leucostoma). Coniferous hosts affected by this disease include spruce (black, Colorado blue, Engelmann, Norway, red, and white), Douglas fir, balsam fir, eastern hemlock, eastern, European, and Japanese larch, and red, eastern white, and Himalayan white pine. Species of Prunus include apple, crabapple, apricot, ash, blackthorn, cherry, chokecherry, Russian olive, peach, pear, plum, prune, serviceberry, and golden willow.

In Prunus species, a yellow to orange-brown oozing is associated with the cankered regions on the branch. In conifers, cankered regions are resin-soaked, often first affecting the lower branches and progressing up the tree.

**Botryosphaeria dieback and canker**

The fungus Botryosphaeria is another weak opportunist that attacks trees and shrubs wounded or weakened by environmental stress, particularly drought. The disease can result in a branch dieback that may kill trees or severely reduce their aesthetic value. Plants affected by Botryosphaeria canker include ash, birch, cotoneaster, crabapple, dogwood, elm, firethorn, hop hornbeam, mountain laurel, locust, magnolia, mimosa, photinia, pieris, privet, rhododendron, and wax myrtle. Indeed, Botryosphaeria canker is quite evident now on
CANKERS FROM PAGE 2

older rhododendrons in landscape plantings affected by recent hot, dry weather.

Symptoms of Botryosphaeria canker vary with the species and age of the host and the severity of the predisposing stress. In rhododendron, you might first notice that the leaves are wilted, off-color, and curled downward parallel to the midrib. The affected tissue eventually turns brown, and more branches may be affected as the season progresses. These symptoms are due to the presence of cankers closer to the soil line, which form as the fungus kills infected bark and sapwood tissue. The cankers range from small, elliptical lesions that coalesce into large diffuse areas of blighted tissue, to large, elongate cankers delimited by callus tissue. Affected bark turns dark, rough, and may peel away. Multiple cankers of various sizes often develop on branch tissue, growing slowly until the limb is girdled and killed. The entire plant may be killed once the canker moves from the branch into the main stem.

Nectria canker

Perennial Nectria canker, caused by the fungus *Nectria galligena* (= *Neonectria galligena*), is a prevalent and easily recognizable canker disease of more than 60 species of trees and shrubs in North America. In New Jersey, perennial Nectria canker is very common on apple, basswood, birch, elm, locust, maple, oak, sophora, and walnut. The disease can cause a severe dieback of branches that reduces the aesthetic value of trees in the landscape and, when affecting the trunk, may render trees unfit for use as lumber.

*Nectria* is an opportunistic fungus that infects twigs, branches, and trunks through wounds in the bark and at the base of dead branches. Symptoms of perennial Nectria canker are first evident as small, sunken, oval-shaped lesions of dead tissue called cankers. In some cases, cankers appear only as depressed regions on the bark and can be difficult to detect. As cankers develop, the fungus grows in concentric circles from the central infection point through affected wood. In response to infection, the tree often attempts to halt or compartmentalize fungal spread by producing a layer of callous tissue around the canker. The fungus colonizes the callous during the subsequent dormant period, and in the following growing season the host responds by producing another layer of callous. This cycle can be repeated for a number of years, and the resulting canker resembles rings of callous tissue in a target or “bulls-eye” pattern.

Since the *Nectria* fungus must infect trees through existing openings, perennial cankers most often surround a branch stub or a mechanical wound. Pruning wounds, cracks, leaf scars, sunscald lesions, and senescent branches are all effective entry sites for the fungus. Disease progress is slow; perennial cankers usually expand at a rate roughly equivalent to the increase in the diameter of the tree, thus individual cankers rarely completely girdle affected limbs. However, when more than one canker is present on a branch or trunk, the cankers can combine, completely girdle the branch, and kill branch tissue distal to the cankers. In addition, the structural integrity of affected branches is compromised, and the tree becomes more susceptible to breakage.

*Nectria* overwinters as bright red or orange fruiting bodies called perithecia on the canker surface. Spores produced within perithecia (known as ascospores) are the result of sexual reproduction. At any time when the temperature is above freezing, ascospores are forcibly ejected from the perithecia and spread to susceptible tissue by rain and wind. The fungus also produces spores called conidia through an asexual process. Creamy-white fruiting bodies known as sporodochia protrude from lenticels. Conidia ooze from sporodochia during warm, rainy periods in late spring and summer and are splashed to new infection sites.

Canker management

Environmental stresses can readily predispose plants to attack. When planting new trees and shrubs, choose a site that is suitable to the horticultural requirements of the species. For example, planting sun-loving plants in shady locations or placing plants outside their natural range can predispose these plants to canker disease. In older, established plantings, maintain or improve plant vigor with proper pruning, fertilization, and irrigation. Since drought stress predisposes trees and shrubs to canker development, watering during times of drought is particularly important.

Prune moderately affected trees at least 6 to 8 inches below discolored tissue during dry or cold weather to minimize the spread of spores. If possible, remove the branch at the branch collar; make a clean cut flush with the collar, not with the trunk. Remove and discard (compost, chip, bury) infected plant parts. Improve the vigor of affected trees through proper irrigation, fertility, and pruning as well as judicious use of composted mulch (no more than 2 to 3 inches) over the root zone. Fungicides are ineffective against canker diseases and are not recommended.

Since trees affected by drought stress, mechanical injury, or winter injury and storms are susceptible to canker development, expect to see more canker problems this growing season. Keep this in mind when monitoring landscape trees and shrubs for plant health.
Diseases of Turfgrass
Bruce B. Clarke, Ph.D., Specialist in Turfgrass Pathology

General

Anthracnose, algae, brown patch, dollar spot, Pythium blight, and summer patch are all active on golf and landscape turf at this time. Dollar spot has been particularly severe on susceptible turf during the past few days. Reduce the leaf wetness period by mowing or dragging affected areas to remove dew in the early morning hours, and maintain adequate nitrogen fertilization to help reduce disease severity and allow fungicides to more effectively control dollar spot outbreaks. Refer to recent issues of this newsletter for complete disease control information.

Brown Patch

This disease, caused by the fungus Rhizoctonia solani, is still active on tees, greens, and home lawns in many parts of the state. To reduce the incidence and severity of brown patch, avoid heavy (> 0.25 lb N/1,000 sq ft) applications of water soluble nitrogen during hot weather, irrigate between midnight and 8 AM to reduce the period of leaf wetness, and spray turf with Armada, Banner, Chipco 26GT, chlorothalonil, Compass, ConSyst, Disarm, Endorse, Headway, Heritage, Insignia, mancozeb, Medallion, Prostar, Spectro, Tartan, thiophanate-methyl, Trinity, Triton, Touche, Tournay or Velista per manufacturer’s recommendations.

Gray Leaf Spot

Gray leaf spot, caused by the fungus Pyricularia oryzae, has been reported in Southern and Central New Jersey during the past few weeks. Symptoms start as tiny, brown leaf and stem lesions within small to 4 inch diameter patches. As the disease progresses, the leaves twist and curl in a “J-shape” and lesions may extend the entire width of the blade. Patches can rapidly coalesce into large (one to two feet diameter) areas of blighted turf. Extensive foliar blighting can occur during warm (75-85°F days and 60-75°F nights), wet weather. When conditions are conducive to disease development the pathogen produces abundant one to two-celled, pear-shaped spores (conidia). Newly established seedings have been particularly severe on susceptible turf during the past few days. Reduce the leaf wetness period by mowing or dragging affected areas to remove dew in the early morning hours, and maintain adequate nitrogen fertilization to help reduce disease severity and allow fungicides to more effectively control dollar spot outbreaks. Refer to recent issues of this newsletter for complete disease control information.

Pythium Blight

Pythium blight continues to be reported on golf and landscape turf, particularly in areas with poor air circulation and a dense turf canopy. Since Pythium thrives in low or poorly drained areas, especially when it is humid and the night temperatures are above 68°F, we should see more of this disease if the “hot, muggy” weather continues into early-September. For best results, improve drainage, water in the morning hours, avoid over fertilization, and apply Alude, Banol, Biophos, Chipco Signature, Disarm, Headway, Heritage, Insignia, Magellan, mancozeb, Prodigy, Quell, Segway, Stellar, Subdue MAXX, or Vital Sign according to the manufacturer’s recommendations.

Slime Mold

We have seen a lot of slime mold on golf course greens over the last few. The most common genera associated with turf are Fuligo, Physarum, and Mucilago. These organisms are not true fungi, but rather are classified as protists. They appear this time of year on turf surfaces as small grayish or purplish colored clumps (sporangia) after periods a light rain or irrigation. Slime molds will not injure turf and are easily dispersed by wind, rain, mowers, or a steady stream of water. No fungicides are labeled or recommended for the control of slime molds on turf.

See Turf Diseases on page 5
Summer Patch

Summer patch continues to be reported on susceptible turf due to the extremely hot, humid summer. This disease, caused by the root-infecting fungus *Magnaporthe poae*, can be quite troublesome on Kentucky bluegrass, annual bluegrass, and fine fescue turf. To control existing infections, apply 0.2 lb. ammonium sulfate/1,000 sq ft and immediately water it into the thatch to arrest the infection and to avoid foliar burn during hot weather. The use of penetrant fungicides such as Armada, Banner, Bayleton, Compass, Disarm, Eagle, Headway, Heritage, Insignia, Rubigan, Tartan, thiophanate-methyl, Tourney, Trinity, or Triton in 4 to 5 gal of water/1000 sq ft may aid in recovery; however, most of the damage has already occurred. If fungicides cannot be applied with this much water, irrigate them into the thatch immediately with 1/16 to 1/8 inch of water. Aerification (when symptoms are not present in the fall) and improved drainage will also aid in disease suppression next year. Soil pH should be maintained at or slightly below 6.0 for optimum disease control.

Yellow Tuft

This disease, caused by the fungus *Sclerophthora macrospora*, continues to be apparent on greens and irrigated landscape turfs. *Yellow tuft* (=Downy Mildew) can affect all cool-season turfgrasses, but it is usually only a serious problem on turf maintained at a low cutting height. Poorly drained or heavily irrigated sites are typically associated with enhanced disease development. Infested turf appears stunted, off-color (yellow to light green), and may exhibit slightly broadened leaf blades and dense clusters of shoots. Patches range in size from 0.25 to 1 inch in diameter for bentgrass and red fescue turfs, and 0.5 to 3 inches for Kentucky bluegrass and perennial ryegrass areas. Affected turf is easily removed from the soil due to the absence of adventitious roots. To control this disease, improve drainage, avoid overwatering, mow only when the grass is dry, apply iron sulfate to mask symptom expression, and spray turf with Signature, Insignia, Prodigy, or Subdue MAXX on a 10 – 21 day schedule this fall or on a preventive basis next year from late-March to early-June.

Turfgrass Expo

This year’s Turfgrass Expo will be held at the Trump Taj Mahal Casino/Resort from December 4 - 6, 2012. This is a great opportunity to receive the latest turf management information from nationally renowned speakers. For additional information, please contact Cece Peabody (973) 812-6467, e-mail execdirector@njturfgrass.org or Anne Diglio (848) 932-6396, e-mail diglio@aesop.rutgers.edu.

We Can Grow Crepe Myrtle, Even in Parts of North Jersey

*Crepe myrtle* (or crapemyrtle) is probably blooming or just past blooming where you are. This beautiful shrub or small tree simply needs moist well-drained soils. It will do well with the acid-loving plants in a soil with a pH of 4.5 to 5.5 or with the larger group of landscape plants in soils that are just slightly acidic at a pH of 6.5.

Crepe myrtle is marginally hardy in north New Jersey, dying back to the ground in the winter. Fortunately this isn’t a problem, since the plant blooms on new wood, that is, wood produced in the current growing season.

In South Jersey, and other areas of zone 7b, prune in late winter or early spring when the shrub is still dormant. Using sharp pruners is important since cleaner cuts will seal over more quickly. Prune weak branches and twigs; these are branches smaller than a pencil in diameter.

Since much of the top growth dies back, pruning in north Jersey is easier. After eliminating the deadwood, cut back the remaining trunks close to the ground, especially any that are crossed or rubbing. As a result of this winter kill, the trunks don’t live long enough to produce their characteristic exfoliating bark, and the plant will not reach its full size.

The US National Arboretum developed mildew-resistant cultivars. Some of these are listed according to size:

**Size group 4, small shrubs, 3.3 to 6.6 feet**

- ‘Hope’ (pink/white)
- ‘Hopi’ and ‘Pecos’ have pink flowers
- ‘Zuni’ (purple)

**Size group 5, medium height, 6.6 to 13 feet**

- ‘Byers Wonderful White’ (white)
- ‘Choctaw’ (bright pink)
- ‘Comanche’ and ‘Potomac’ and ‘Tuscarora’ all have coral pink flowers.
- ‘Lipan’ and ‘Muskogee’ both have pale lavender flowers.
- ‘Tuskegee’ has rose flowers

References:


Clare Liptak, is an IPM scout, horticulturist, and Certified Tree Expert #208. clare.liptak@gmail.com.
Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much above normal, averaging 77 degrees north, 78 degrees central and 77 degrees south. Extremes were 94 degrees at South Harrison, Downstown and Hammonton on the 6th, and 59 degrees at Belvidere on the 31st. Weekly rainfall averaged 1.55 inches north, 1.11 inches central, and 0.93 inches south. The heaviest 24 hour total reported was 2.60 inches at Hammonton on the 5th to 6th. Estimated soil moisture, in percent of field capacity, this past week averaged 88 percent north, 79 percent central, and 74 percent south. Four inch soil temperatures averaged 76 degrees north, 77 degrees central and 76 degrees south.

Weather Summary for the Week Ending 8 am Monday 8/6/12

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*PRECIPITATION TOTALS FOR THE SEASON AT NEWTON ARE TOO HIGH DUE TO A PROBLEM WITH THE AUTOMATIC RAIN GAUGE FOR A FEW WEEKS, THE PROBLEM HAS BEEN CORRECTED

WES KLINE -- GDD BASE 40 PINEY HOLLOW LAST WEEK 260 (Ending 7/30/12) THIS WEEK 271 (Ending 8/6/12)
TOTAL UNITS BASE 40 FOR FEBRUARY=55

Great Tomato Tasting

Rutgers Snyder Research and Extension Farm
140 Locust Grove Road, Pittstown, Hunterdon County, NJ 08867
Wednesday – August 29, 2012 (Rain or Shine), 3pm - dusk

Rutgers New Jersey Agricultural Experiment Station and Rutgers Cooperative Extension proudly announce the Annual Snyder Farm Open House and Great Tomato Tasting!

The event includes the popular tasting of over 60 heirloom and hybrid varieties of beefsteak, plum, cherry and grape tomatoes. Also, tasting of apples and peaches from the NJAES Tree Fruit Breeding Program, basil, honey and more. The Melda C. Snyder Teaching Garden will showcase demonstration gardens of deer tolerant ornamentals; blueberries, hazelnuts, and hollies from the Rutgers breeding programs, along with a wall of fruit highlighting apple and upright growing peach trees for the home landscape.

Wagon tours of the farm’s research plots will be held throughout the event. Included will be chef demonstrations featuring preparation of several tomato recipes.

Please bring a non-perishable food item to support the Rutgers Against Hunger (RAH) program; http://rah.rutgers.edu

Admission: $7.00 per person, children under 10 are free
RSVP please: 908-730-9419 x-3501 or online https://njaes.rutgers.edu/rsvp/tomato.

For more information visit:http://snyderfarm.rutgers.edu/tomatoes.html.
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Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The pesticide user is responsible for proper use, storage and disposal, residues on crops, and damage caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact RCE in your County.

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