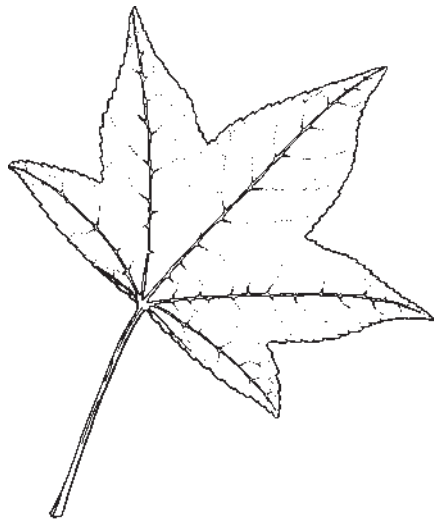


PLANT & PEST ADVISORY

LANDSCAPE, NURSERY & TURF EDITION \$1.50

JULY 22, 2004



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Ornamental IPM Notes

Steven K. Rettke, Ornamental IPM Program Associate

✓ **FALL WEBWORM (1266-1795 GDD = 2nd generation hatch):** A late season pest of mostly visual concern. This native caterpillar feeds within silken webs encircling branches, twigs, and leaves. They only feed inside the web that they enlarge as they grow. Larvae may feed for a few weeks before webs become apparent. The webs become most obvious near the end of larvae feeding periods. The second generation is developing now.

The first generation in late May and June is usually relatively small, while the second generation may sometimes have outbreak populations. Curiously the reverse appears to have occurred in many areas within the state this year. The first generation of the fall webworm this past spring saw unusually prominent populations. As a native caterpillar, many predators and parasitoids are typically available to keep populations in check. It is likely that a suppressed population of some of these beneficials allowed this pest to establish higher than normal population levels. It will be curious to observe if the second generation will also reach outbreak levels, or will the predators/parasitoids build-up in time to prevent it.

More than 100 species of trees may be attacked including mulberry, ash, elm, linden, sweetgum, willow, walnut, hickory, oak, apple, and other fruit trees. Prune out nests (pole pruners can be useful). The early instars are vulnerable to sprays of *Bacillus thuringiensis*, horticultural oils and insecticidal soaps. These control materials will also have limited impacts upon the many effective beneficials.

✓ **SCOLIID WASP:** These are metallic dark blue wasps (1.5 inches) that are seen flying in large numbers just above the turfgrass. Females search for and paralyze Green June Beetle grubs feeding on grass roots near the surface. Eggs are laid on the grubs. Upon hatching, the wasp larvae feed on the grub as they develop into adults by the following summer. Generally these wasps will not bother humans unless accidentally stepped on. Controls against these natural predators are usually not warranted. If the wasps are successfully maintaining the grub population below damaging levels, then chemical intervention against the Green June Beetle is also not necessary.

✓ **SPIDER MITES ON WINGED EUONYMUS:** During the hot summer months, two spotted mites can cause significant damage to winged euonymus/burning bush (*Euonymus alatus*). Infestations began to

SEE IPM ON PAGE 2

build-up during the month of June on the lower, inner leaves, causing a pale white discoloration. With high populations, foliage throughout the plant turns a reddish-brown coloration by July/August. Note that these same symptoms can be similar to plants experiencing physiological stress. When monitoring these plants, always check for spider mite presence by using a beating tray and a magnifier. Make sure live mites are present before treating!

Early detection of two-spotted mites on burning bush is critical to prevent the discoloration and premature defoliation. Plants known to have had a history with this pest should be monitored at least every two weeks throughout the summer months. Proper timing of chemical controls should give excellent results. The many-labeled contact miticides will usually work well when coverage is complete. Horticultural oil can be effective if used cautiously (be careful of drought stressed plants and hot/humid weather) and targeted to the under sides of leaves.

✓ **COOLEY SPRUCE GALL ADELGID (1850-1950 GDD = galls open):** Some of the tip "pineapple" galls on spruce have already opened-up, and the winged adults have emerged. Except to improve the aesthetic appearance of the trees, there is nothing to be gained by picking off the galls after they have opened. Future control windows will occur during the fall or early spring months against the overwintering females located at the bases of terminal buds. Some possible treatments include horticultural oil, carbaryl (Sevin), insecticidal soap or imidacloprid (Merit).

✓ **CICADA KILLERS:** These are *large*, yellow and black wasps that resemble hornets. Usually found nesting in the ground, females prey on annual ("dog-day") cicadas and drag them into their underground tunnels as food for their young. While the female searches for prey, the male wasp guards the nest. Males are aggressive, but cannot sting, since they don't have an ovipositor (stinger). Tolerate these if possible. Large numbers nesting in one area can be damaging to turf, particularly on banks or near access areas. Control at dusk by applying Sevin dust (or granules) to the entry holes.

✓ **LOCUST LEAFMINER:** The casual observation of black locust trees along the edges of our roads has indicated relatively heavy feeding in many areas this summer by the locust leafminer. The earlier leaf mining by the larvae (June) followed by the skeletonizing from the yellow & black adult beetles (July) has resulted in severe browning and an unthrifty appearance of the foliage. The damage is considered to be mostly cosmetic because it occurs fairly late in the season. The black locust tree has limited ornamental value and hence, spray recommendations are not common. However, they are useful as trees that can grow in poor/marginal site locations. They also make excellent natural lightning rods.

✓ **WHITE GRUBS:** There is no hard and fast rule to predict annual grub population trends. A rule of thumb to consider: If August/September are dryer than normal, turf damage from grubs tend to be high. This is because grubs are feeding on turf roots during a period of reduced water uptake by the plant. This exaggerates symptoms of dry weather stress, so small numbers of feeding grubs tend to cause noticeable damage. On the flip side, if August/September are wetter than normal, the turfgrass uptakes ample water in spite of moderate grub feeding. High numbers of grubs therefore may not cause noticeable damage. The smart IPM manager uses these predictions when preparing management strategies: Use a threshold of 6-8 grubs/sq.ft. before applying a treatment or irrigate the site more often to try to mask damage (especially if late in the season).

✓ **APHIDS:** Most of the aphid species that were present this spring on the new growth of certain plants (e.g., burning bush and spirea), have long ago left to feed on alternate hosts (often weeds). However, many shade trees (maples, oaks, lindens, birches, tulip poplars, etc.) still have populations of aphids. When encountered, first consider if the pest is presenting an aesthetic problem. Is the honeydew/sooty mold an eyesore on the tree or is it a nuisance, appearing on objects under the tree such as a car, patio furniture, or the house? Aphids rarely threaten the health of the tree, particularly later during the season. Action is only necessary if the customer is upset or inconvenienced by the presence of honeydew or sooty mold. If left alone, predators may maintain the population within acceptable levels.

✓ **BEECH SCALE (2513 GDD = crawlers begin):** The tiny, yellow nymphs are 1/32 of an inch long and covered in a woolly white waxy material. They can be found clustered around cracks and wounds on the lower branches and on the north side of beech trees. With heavy infestations, beech scale may result in an unattractive discoloration and "pox marked" appearance of the bark. Copious amounts of honeydew and the resulting black sooty mold may be objectionable. Ladybird beetles and other predators can often suppress beech scale populations. If predators are overwhelmed, pesticides to control nymphs during August & September include: horticultural oil, acephate (Orthene), carbaryl (Sevin), cyfluthrin (Tempo) or insecticidal soap.

✓ **EUONYMUS SCALE (1700 GDD = scale crawlers begin):** Check plants *now* for crawlers! Although second generation crawlers may not peak until the middle of August, we've already seen them in Central Jersey. Monitor before treating by using double-sided tape or sticky traps. Use a hand lens to see the yellow/orange tiny crawlers. Multiple sprays may be required if using horticultural oil since crawlers hatch over a 2-3 week period.

✓ **VOLES (Meadow Mice):** A common animal pest in the landscape, they feed on everything from bulbs,

SEE VOLES ON PAGE 3

Diseases of Turfgrass

Bruce B. Clarke, Ph.D., Specialist in Plant Pathology

Bentgrass Dead Spot

This is the time of year when **bentgrass dead spot** typically occurs in the Mid-Atlantic region. The causal agent, *Ophiosphaerella agrostis*, induces small reddish-brown spots 0.5 to 1 inch in diameter on newly constructed sand-based greens and tees. Spots usually do not coalesce and only enlarge to 4 inches in diameter. Affected areas eventually fade to a light tan color. Initially, symptoms may be confused with **dollar spot**, **copper spot**, **black cutworm** injury and golf ball injury. However, upon close inspection, black flask-shaped fruiting bodies (*pseudothecia*) can be found embedded in necrotic leaf and stem tissue. Active patches often have a half inch bronzed outer margin. Foliar mycelium is not apparent in the field.

The disease is most serious on high sand content greens and tees (one to six years old). Outbreaks have not been observed on fairways. Environmental conditions that appear to enhance disease development include hot, dry weather. The disease also appears to be more common in sunny locations than in shaded areas. Benzimidazole (e.g., Cleary 3336 50W), dithiocarbamate (e.g., Fore Rainshield 80W), nitrile (e.g., Daconil Ultrex 82.5SDG), phenylpyrrole (e.g., Medallion 50WG) and phosphonate (e.g., Chipco Aliette Signature 80WG) chemical classes have provided the most effective control of bentgrass dead spot in tests conducted by Rutgers faculty. Of the sterol-inhibiting fungicides, only propiconazole (e.g., Banner MAXX 1.3 MC) adequately controlled the disease in these trials, whereas myclobutanil (e.g., Eagle 40W) and triadimefon (e.g., Bayleton 50W) proved ineffective at the rates tested. The strobilurin fungicide pyraclostrobin (e.g., Insignia) consistently suppressed the disease, while the strobilurins trifloxystrobin (e.g., Compass 50WG) and azoxystrobin (e.g., Heritage 50WG) provided poor to fair control of bentgrass dead spot. Carboximide (e.g., Prostar 70W) and phenylamide (e.g., Subdue MAXX 2MC) fungicides and a strain of *Bacillus subtilis* (e.g., Companion I) did not control bentgrass dead spot, compared to untreated turf.

Pythium Blight

With the recent return to hot, humid weather, **pythium blight** has been reported on golf turf. **Pythium** thrives in low or poorly drained areas, especially when the night temperatures are above 68 to 70°F. For best results, improve drainage, water in the early morning hours (mid-night to 8 am), avoid over-fertilization, and apply Alude, Banol, Chipco Signature, Heritage, Koban, Magellan, mancozeb, Prodigy, Quell, Subdue MAXX, Terraneb SP, or Terrazole, according to the manufacturer's recommendations. Caution: Koban and Terrazole can be phytotoxic during hot weather, so follow label directions carefully and experiment on a small area of turf before large scale use.

Slime Mold

Although slime mold is not actually a disease, inquiries have been received recently about the appearance of tan to black colored clumps on turf, flowerbeds, and home gardens. In many cases, this material has been reported to occur virtually overnight on plant stems, grass blades, soil mounds, or other vertical objects and is easily removed with light pressure. Leaf tissue underneath these clumps is green and healthy. Upon close examination, these mysterious structures are actually clumps

SEE TURF DISEASES ON PAGE 4

Turf Management

Jim Murphy, Ph.D., Specialist in Turf Management

There has been an increasing amount of billbug damage in many areas that have the "look" of drought damage. These areas have not responded well to the recent 1-inch plus rains in and around the New Brunswick area, which is further evidence that something more than drought is limiting turf health/vigor. Assessments indicate that 25 to 50% of the damage in these "drought" areas is due to billbug feeding.

So it appears that this is a rather severe year for billbugs, unless control measures were implemented. In fact, damage is so widespread we are able to rate for billbug damage in a number of our turf cultivar trials.

See Rutgers Cooperative Extension fact sheet 1015 for information on integrated control of billbugs at: <http://www.rce.rutgers.edu/pubs/pdfs/fs1015.pdf>. It is also available through your county Cooperative Extension office. □

VOLES FROM PAGE 2

perennials, trees and shrubs. They typically feed on roots and cause girdling to woody stems. Voles range in size from 3" to 5" long, with a 1-2" tail. Voles have both surface and underground tunnels (within 1-2" of the surface), pushing soil out of the tunnels after burrowing for short distances. Voles are most active in early morning and evening, yet will feed throughout the day. To manage voles, eliminate their cover by mowing vegetation around trees and shrubs, and raking up leaves in the fall. Protect young trees by placing tree guards around the trunks, sinking the guard at least 6" below the ground. □

Plant Diagnostic Laboratory Highlights

Richard J. Buckley, Laboratory Coordinator

Turf

A radical change in the weather since Independence Day began to wake local turf stands out of summer dormancy. If your lawn was not turned into a lake by the heavy rains, then your grass probably looks pretty good right now. Turf stands that have not recovered, however, may have an infestation of **billbugs**. Rutgers Cooperative Extension personnel have reported **billbug** damaged turfgrass in a number of locations in New Jersey. We have quite the infestation on the turfgrass research farms. Several samples of perennial ryegrass and Kentucky bluegrass submitted to the laboratory were also found to have active infestations of **billbug**. Sod growers and sports fields are the primary sources of our samples, but you can bet that the critters are having a good year in residential lawns.

The increase in moisture has also brought on the fungi. Of particular note is the heavy **brown patch** pressure. The fungus that causes **brown patch**, *Rhizoctonia solani*, is very active during periods of high relative humidity and warm nights. Just add a little leaf wetness from irrigation or a passing shower and outbreaks of **brown patch** occur. It is interesting to watch the disease turn on and off with the changing weather conditions. A couple of samples even managed to get into the laboratory. **Brown patch** was diagnosed on turfgrass from Burlington County, Delaware, and New York.

No report on turf diseases at this time of year can be complete without mention of **anthracnose** and **summer patch**. These diseases have dominated the laboratory since mid-June. Golf turf samples diagnosed with **anthracnose** were submitted from Bergen, Camden, Gloucester, Essex, Mercer, Middlesex, Monmouth, Morris, and Union Counties in New Jersey as well as on golf turf from Pennsylvania, New York, Colorado, and Virginia. **Summer patch** was diagnosed on plugs of annual bluegrass sent from Bergen, Burlington, Camden, Gloucester, and Monmouth Counties in New Jersey, and from several golf courses in Connecticut, New York, and Pennsylvania.

Ornamentals

Those of us with the turfgrass gene often don't notice anything above four inches, but ornamental plants have problems too. As a pathologist and a turf dog, the only good tree is a dead tree and this season has not been a disappointment! Samples of ornamental pears continue to be submitted to the laboratory with **fire blight**. Some rather large trees have been absolutely hammered. The question from several arborists was how to prune out the damage when as much as 50% of the canopy sustained

injury. Crab apple, cotoneaster, and firethorn have also found their way into the laboratory with **fire blight**.

Quince rust, which is caused by the fungus *Gymnosporangium clavipes*, has also been common. This disease, which is not often thought of as a problem of ornamental pear, has also done considerable damage to the species. In some cases, the symptoms of branch dieback caused by the rust appear very similar to those caused by **fire blight**. If you suspect **rust**, look very closely at the dead twigs for the characteristic swellings caused by the aecial stage of the fungus. One should also note that pears in the Princeton area with **cicada oviposition damage** look similar. Again, take a close look before you take action.

Last but not least are the insects. The **bagworms** are back, **Japanese beetle** adults are swarming, and **plant hoppers** cover the herbaceous ornamentals. The **plant hoppers** keyed in our laboratory were from the families Flatidae and Acanaloniidae. **Flatid** nymphs secrete a waxy waste that leaves a residue on the plants very similar to **psyllids**. Some **psyllids** cause considerable damage, but the **flatids** are not an economic threat. **White pine weevil** is killing the leaders on spruce, Douglas fir, and white pine at this time. **Spruce spider mites** were identified on juniper and spruce from Mercer, Hunterdon, and Bergen Counties. **Basswood leafminer** was found on oak from Burlington County, and **pine bark beetles** killed a black pine in Middlesex.

Nursery

The wet and warm summer weather has brought on **Phytophthora crown and root rot** in our container nurseries. Samples of Rhododendron, Pieris, and Chamacyparis were diagnosed with the disease. □

TURF DISEASES FROM PAGE 3

of the common **slime mold** fungus *Fuligo*. *Fuligo* is not injurious to plants and will soon disappear on its own. However, it can be easily dispersed with a rake or steady stream of water if desired. No fungicides are recommended.

Turf Field Days at Rutgers University

The **Rutgers Turfgrass Research Field Day – Lawn and Landscape section** has been set for July 28, 2004 at the Plant Science Research Farm in Adelphia, NJ. Registration will begin at 8:00 AM. Guided tours will commence at 9:00 AM and will conclude at 3:30 PM, "rain or shine." The **Rutgers Turf Research Field Day – Golf and Fine Turf section** will be held on July 29, 2004 at the Turf Research Farm (Ryders Lane) in North Brunswick, NJ. This event starts at 8:30 AM (registration); field tours will run from 9 AM to 2:30 PM, "rain or shine." The cost of registration for each day will be \$35 (lunch included). Pesticide recertification credits and GCSAA CEUs (July 29 only) will be available at the conclusion of each program. Call Marlene at (732) 932-9400 ext. 339 for further information or directions. □

Cream Ridge Nursery Research & Extension Meeting

Thursday, August 12, 2004

1:30 to 6:00 p.m.

**Rutgers Fruit Research & Extension Center
283 Route 539, Cream Ridge, New Jersey**

Agenda:

1:00 Registration

1:30 Welcome, Carl Nordstrom, NJNLA
Dr. Joe Goffreda, Director Cream Ridge Research Station

- ❖ "Cyclic Irrigation and Substrate Media Mixes for Pot-in-Pot Nursery Production", Dr. Gladis Zinati, Specialist in Nursery Management
- ❖ "Container and Field Weed Management", Dr. Steve Hart, Specialist in Weed Management in Turf and Ornamentals
- ❖ "Selection and Use of Pesticide Protective Equipment and Beneficial Insect Studies", Pat Hastings, Program Associate in Pest Management

- ❖ "Nursery IPM and Plant Diagnostics", Steve Rettke, Program Associate in IPM and Rich Buckley, Director, Plant Diagnostic Lab
- ❖ "Oriental and Asian Ambrosia Beetle Update", Jim Johnson, Cumberland County Agricultural Agent
- ❖ "Ornamental IR-4 Project", Tom Freiberger, IR-4 Project
- ❖ "Cankers and Stress on Ornamental Trees, Dr. Ann B. Gould, Specialist in Plant Pathology

5:00 Pesticide Credits, SOCIAL TIME AND FOOD (Sandwiches, salads, and beverages)

COST: Free!

Pesticide License Recertification Credits: (anticipated) Core-1, PP2-3, 3A-3

Pre-registration is required, *deadline is August 9, 2004*. To register, call the Mercer County Extension Office, at (609) 989-6830 by Monday, August 9, 2004.

This program is sponsored by Rutgers Cooperative Extension of Mercer and Monmouth Counties in cooperation with the New Jersey Nursery and Landscape Association.

Weather Summary for the Week Ending 8 am Monday 7/19/ 4

| WEATHER STATIONS | RAINFALL | | | TEMPERATURE | | | | GDD BASE50 | | MON %FC |
|--|----------|-------|-------|-------------|----|-----|-----|------------|-----|---------|
| | WEEK | TOTAL | DEP | MX | MN | AVG | DEP | TOT | DEP | |
| BELVIDERE BRIDGE | 3.40 | 16.86 | -1.04 | 85 | 60 | 69. | -4 | 1514 | 254 | 100 |
| CANOE BROOK | 3.27 | 20.19 | 1.20 | 89 | 59 | 70. | -4 | 1660 | 396 | 99 |
| CHARLOTTEBURG | 4.56 | 20.82 | 1.65 | 81 | 56 | 67. | -4 | 1403 | 381 | 100 |
| FLEMINGTON | 7.43 | 25.05 | 6.73 | 85 | 60 | 69. | -5 | 1568 | 264 | 100 |
| LONG VALLEY | 3.29 | 18.50 | -1.11 | 80 | 58 | 66. | -5 | 1346 | 248 | 100 |
| NEWTON | 2.77 | 17.95 | .46 | 83 | 59 | 68. | -4 | 1426 | 302 | 100 |
| FREEHOLD | 3.26 | 20.44 | 2.61 | 88 | 56 | 70. | -5 | 1703 | 296 | 95 |
| LONG BRANCH | 3.46 | 18.18 | .42 | 84 | 63 | 71. | -3 | 1516 | 186 | 83 |
| NEW BRUNSWICK | 3.88 | 20.53 | 2.87 | 87 | 62 | 71. | -4 | 1663 | 176 | 100 |
| TOMS RIVER | 4.49 | 20.92 | 2.82 | 85 | 61 | 72. | -2 | 1743 | 403 | 69 |
| TRENTON | 3.79 | 17.10 | .33 | 87 | 62 | 71. | -5 | 1734 | 185 | 79 |
| CAPE MAY COURT HOUSE | 3.18 | 16.46 | .72 | 85 | 61 | 73. | -3 | 1658 | 229 | 78 |
| DOWNSTOWN | 3.71 | 18.59 | 2.15 | 87 | 61 | 72. | -4 | 1806 | 244 | 100 |
| GLASSBORO | 7.22 | 27.80 | 10.31 | 87 | 65 | 73. | -3 | 1917 | 376 | 100 |
| HAMMONTON | 3.16 | 19.99 | 2.61 | 88 | 61 | 73. | -3 | 1868 | 332 | 100 |
| POMONA | 3.92 | 16.63 | .96 | 86 | 62 | 73. | -2 | 1775 | 350 | 74 |
| SEABROOK | 5.32 | 22.93 | 7.05 | 86 | 64 | 74. | -2 | 2015 | 446 | 100 |
| SOUTH HARRISON | 2.87 | 22.07 | 4.43 | 86 | 63 | 72 | NA | 1911 | NA | NA |
| WES KLINE — GDD BASE 40 PINEY HOLLOW Last Week 253 (Ending 7/12/04) This Week 222 (Ending 7/19/04) | | | | | | | | | | |

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