

PLANT & PEST ADVISORY

LANDSCAPE, NURSERY & TURF EDITION \$1.50

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Ornamental Pest Notes

Deborah Smith-Fiola, Ocean County Agricultural Agent and Steven Rettke, Program Associate in IPM

✓ **Southern Red Mite/Spruce Mite (2375 - 2806 GDD)** - The cooling temperatures have resulted in the common cool season mites starting up activity. Southern red mites are found feeding upon many broadleaf evergreens (especially holly), while spruce mites are most often present on many conifers. Both mite species are well known for the stippling damage they cause during the spring months, but late season controls of the fall populations of these mites are very important.

Keep in mind that the spruce and southern red mite eggs which hatch in the late summer and fall months have a higher percentage of unfertilized eggs. This results in more males during the fall season, creating a higher percentage of fertilized overwintering eggs. This in turn results in more females hatching the following spring. Therefore, fall season controls of these mites is emphasized, since the number of reproducing females will be less next spring.

Mites can develop resistance to chemical pesticides faster than most other pests, because of their rapid reproduction rate and multiple generations per season. Resistance can be curtailed by rotating miticides regularly and changing to a different class of miticide after the third application. Use a threshold of 10-15 mites per tap on a beating tray before treatment. Horticultural oils and insecticidal soaps are two biorational controls where resistance by mites is generally not known. Morestan, Kelthane, Talstar, Avid and Battle/Scimitar are some of the commonly used miticides. Most miticides are effective for less than a week, which usually necessitates a second application within 5-10 days. Even those materials having ovicidal properties (oils and Morestan) require follow-up monitoring. Though they will control eggs, they have limited activity against certain active stages. Furthermore, it is hard to effectively control mite eggs since they are laid on the underside of broadleaf leaves, making coverage difficult.

✓ **Boxelder Bug** is primarily a nuisance pest when they invade buildings in the fall to overwinter. During the fall months these insects can be a curiosity as well as alarming to homeowners who see large numbers congregating at the base of tree trunks, wood piles, or the south side of light colored buildings. This fall gathering stage in sunny places is followed by a flight period to overwintering sheltered locations.

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Adults are 3/8 inch long and are black with reddish wing margins. Large populations of boxelder bugs are associated almost exclusively with female boxelder trees and silver maple trees, although they readily feed on enonymus. The only damage they can cause is to new leaf growth which may be distorted and spotted during heavy infestations. Only very occasionally will they be found feeding on the fruit of apple and plum trees. There is only one generation occurring each year.

Control strategies call for the removal of female boxelder trees. Insecticidal soap applications will suppress populations if sprays are demanded. Vacuum indoors. Many other insecticides are labeled.

✓ **Hemlock Pests** - Elongate hemlock scale (2515 - 2625 GDD) and hemlock woolly adelgid are two pests of hemlocks with an excellent control window in September. The vulnerable "second" generation crawler activity of the elongate hemlock scale (*Fiorinia* scale) occurs during September. Furthermore, hemlock woolly adelgids are still exposed at the base of this years' needles, and will not cover themselves with protective white waxy "cotton" until later in the fall.

Both pests can be effectively and safely controlled with soaps or oils during the early fall when weather conditions are often more favorable. Drought stressed trees during summer dry periods are often relieved during September with increased rain fall and decreased temperatures. Very good coverage is mandatory on the outer branch growth for effective control. Heavy infestations of elongate scale may require a combination of Orthene and horticultural oil (1%) for best results.

✓ **Magnolia Scale (2155 - 2800)** - This is the largest soft scale in the U.S., with adults reaching 1/2 inch in length. Mature females are yellow to brown in color, and have an irregular outline with a depression in the center of the cover. Immatures are black, 1/16 inch long and overwinter on 1 to 2 year old twigs. This scale produces extensive amounts of honeydew, followed by sooty mold. It can also cause yellowing stunted leaves, and twigs to die. The presence of these scales becomes most obvious during late summer and early fall when many ants and swarming bees are attracted to the honeydew.

In August and September, eggs are present under females and sprays are not effective. With small trees, hand-picking adults before eggs hatch and crawlers emerge can be effective. When treatments are required, wait until all crawlers have emerged and apply a horticultural oil or residual insecticide *in October*. A dormant oil spray in late winter or early spring is also effective, and will have the lowest impact on beneficials. □

Plant Diagnostic Laboratory Highlights

Richard J. Buckley, Coordinator, Plant Diagnostic Laboratory

◆ Turf

Summer patch, anthracnose, brown patch, and **pythium blight** are still active in turf areas at this time. **Anthracnose** was diagnosed on turf from golf courses in Burlington, and Morris Counties, and on three golf courses on Long Island. **Pythium blight**-injured turf was submitted from Cape May, Monmouth, and Morris County golf courses, and **brown patch** was identified on turf from Cape May County and a New York golf course. **Summer patch**, a disease diagnosed with increasing frequency since the heavy rains began in late-July, was identified in samples of sod, landscape turf, and golf turf from Monmouth County, Bergen County, Hunterdon County and New York, respectively. **Dollar spot** is also very active at this time and **copper spot** was evident on the Rutgers turf trials for the third year in a row.

◆ Nursery and Greenhouse

A greenhouse grower in Sussex County sent in snapdragon that tested positive for the **tosopviruses, impatiens necrotic spot virus** and **tomato spotted wilt virus**. Samples were diagnosed of viburnum with **Phytophthora root rot**, and lilac with a canker caused by the fungus *Botryosphaeria*. These samples were from a Hunterdon County nursery. A Gloucester County grower had problems with the fungi *Rhizoctonia* and *Fusarium* in dahlia.

◆ Landscape

In the landscape, another dahlia sample, this one from a Monmouth County landscape, was diagnosed with **Rhizoctonia tuber rot**. The same Monmouth County resident also submitted samples of euonymus with **crown gall**, and zinnia with **herbicide injury**. The fungus *Phomopsis* caused a canker on holly branches sent by a Union County resident. **Sphaeropsis (Diplodia) tip blight** was identified on a sample of black pine that was submitted by an Atlantic County landscaper. Other diseases of note include: **Rhizoctonia crown rot** on impatiens, **juniper tip blight** on juniper, and **anthracnose** on hornbeam, each from Middlesex County residents.

On the insect front, **maskell scale** was identified on pine samples from Burlington County. **European elm bark beetles** infested a sample of American elm from Union County. **Gouty oak galls** and **oak spangles** were found on oak branches and leaves from Middlesex County. **Roundheaded appletree borer**, and **shothole borer**, caused damage to a serviceberry sample from Union County. Last, but not least, **mites** were found on most everything!!! □

Diseases of Turfgrass

Bruce B. Clarke, Ph.D., Turf Plant Pathology

◆ General

Fairy ring, summer patch, rust, and yellow ring are quite apparent on turf throughout the State. **Dollar spot** and **red thread** have also intensified on golf and landscape turf during the past few weeks. Symptoms of **brown patch** and **pythium blight** have recently subsided; however, they will reoccur if we return to hot, humid weather. Please refer to recent issues of this newsletter for complete disease control information.

◆ Stem and Crown Rust

These diseases are starting to appear on susceptible cultivars of Kentucky bluegrass and perennial ryegrass, respectively, at this time. As **rust** intensifies, turf prematurely yellows and orange pustules called uredia (reproductive structures) appear on affected blades. To control both diseases, maintain adequate fertility to enhance turf recovery and apply Banner, Bayleton, Daconil, Eagle, mancozeb, Manicure, Sentinel, or Thalonil per manufacturer's recommendations.

◆ Take-all patch

This disease, caused by the root and crown infecting fungus *Gaeumannomyces graminis* var. *avenae*, has been reported recently on **bentgrass** greens, tees, and fairways in central and southern New Jersey. Although this disease is most prevalent in April through June, fall outbreaks are not uncommon. Infection takes place during cool, wet weather and symptoms are most striking after stress. Infected grass first appears bronze to reddish-brown in color and then fades to a dull brown. Patches are usually circular or ring-shaped and range in size from several inches to two feet or more in diameter. The centers of affected turf are frequently colonized by bluegrass (*Poa* spp.), fescue (*Festuca* spp.), or weed species. Upon close examination, decaying roots and leaf sheaths appear black and dark strands of mycelium often develop parallel to the root axes. The disease is enhanced by poorly drained, light textured soils, and high Ph. Although **take-all** is difficult to control, best results have been achieved through the use of acidifying fertilizers (e.g., ammonium sulfate) and preventive applications of Banner, Bayleton, Heritage, or Rubigan in October, November, and April. If the disease has been particularly severe this year, fungicides should be reapplied twice next spring at 21 to 28-day intervals beginning in early April. Chemicals should be irrigated into the root zone (1/8 to 1/4" of water) for maximum effectiveness. Wherever practical, overseed affected areas with less susceptible grasses such as fine fescue, Kentucky bluegrass, or perennial ryegrass to mask symptom expression. Maintain soil Ph at approximately 6.0 to suppress disease development.

◆ Gray leaf spot

Gray leaf spot has been identified on perennial ryegrass samples from Pennsylvania. This disease devastated perennial ryegrass and tall fescue plantings throughout the Mid-Atlantic states during the late-summer and early fall months in 1995. Symptoms start as tiny, brown leaf and stem lesions that enlarge into oblong spots. In severe cases, the leaves curl and lesions may extend the entire width of the blade. Extensive foliar blighting can occur during warm (75-85°F), wet weather. Newly established seedlings are more susceptible to infection than mature plantings. When conditions are conducive to infection, the causal agent (*Pyricularia grisea*) produces abundant one to two celled, pear-shaped spores (conidia). Although this disease is not usually observed in New Jersey, the recent warm wet weather apparently enhanced its development. For best results, avoid over-fertilization and extended periods of leaf wetness (i.e., water in the early morning hours). Fungicide efficacy studies conducted last year in Georgia, Maryland, and Kentucky indicated that Heritage (0.2 to 0.4 oz/1000 ft²) and Cleary 3336 50W (6 to 8 oz/1000 ft²) were most effective when applied on a preventive basis every 14 to 21 days beginning in mid to late-July. Rutgers currently has two ongoing fungicide tests at golf courses with a previous history of the disease and will be reporting on data for each study at the New Jersey Turfgrass Expo in Atlantic City (December 9-11, 1997). □

Diseases of Ornamentals

Ann B. Gould, Ph.D., Plant Pathology

✓ **Aster** - At this time of year, look for **rust** on sensitive varieties. Once infection takes place, pustules take 10 to 14 days to develop. For best results, apply preventive sprays of mancozeb or triforine at 10- to 14-day intervals or triadimefon (Bayleton) every 14 to 21 days *now* according to label recommendations.

✓ **Azalea** - During the next few weeks, **rust** should be developing on deciduous azaleas in many parts of the State. **Rust**, caused by the fungus *Pucciniastrum*, can be easily identified by the appearance of bright orange-colored pustules (uredia) on the undersurface of affected leaves. To control, avoid planting azaleas near hemlocks (the alternate host), and spray foliage with mancozeb at 10- to 14-day intervals from mid-August through September.

✓ **Iris** - **Bacterial soft rot** is common throughout the State at this time. Foliage of infected plants typically appears scorched with a number of water soaked lesions apparent near the soil surface. As the disease progresses, the interior of the rhizome is almost completely decayed, leaving the tough outer skin intact. Since infection takes place almost entirely through wounds, controlling the iris **borer** in the spring and removing infected plants from established beds is especially important for optimum control.

✓ **Mimosa** - **Fusarium wilt** on mimosa is common in southern New Jersey this time of year. Symptoms appear as a **wilt** of selected branches followed by a rapid decline of the entire tree within one to three months. An excellent diagnostic feature in the field is the presence of black streaking in the vascular system. No chemical control is available at this time.

✓ **Poinsettia** - **Root and stem rot** due to infection by *Rhizoctonia* and *Pythium* can be troublesome in greenhouses. When infections progress slowly, the foliage turns yellow and the edges of the lower leaves frequently roll upward along the midrib. Rapidly declining plants, however, may suddenly wilt and fall over due to extensive root and stem decay. For optimum control, use only sterilized soil or fresh artificial mix that is well drained, avoid excessive greenhouse temperatures (above 80-90°F), limit mechanical injury, prevent over-watering, and apply 1/2 lb of Truban 30W (or 1 fl. oz. of Subdue 2E) plus 1/2 lb of thiophanate-methyl per 100 gal. of water as a soil drench. Repeat at 6- to 8-week intervals. Severely infected plants should be discarded.

✓ **Snapdragon** - Be on the lookout for **leaf rust** on snapdragon. If left untreated, severely infected plants will eventually die. For best results, apply Bayleton or mancozeb **now** to protect new growth throughout the summer and fall months.

✓ **Zinnia** - During hot, dry weather, Zinnia varieties susceptible to **stem and root rot**, caused by the fungi *Fusarium* and *Rhizoctonia*, can rapidly wilt. To control **stem and root rot**, discard wilted plants, avoid soil moisture extremes, and drench remaining stock with thiophanate-methyl per manufacturer's recommendations. Repeat at 2- to 4-week intervals. □

Editor's Note: This is the last biweekly issue of the Plant & Pest Advisory Landscape, Nursery & Turf edition for the '97 season. There will be monthly issues for September, October, November and December.

Weekly Weather Summary

Keith Arnesen, Agricultural Meteorologist

TEMPERATURES AVERAGED MUCH BELOW NORMAL. EXTREMES WERE 93 DEGREES AT WOODSTOWN, ON THE 19TH AND 41 DEGREES AT CHARLOTTEBURG ON THE 24TH. WEEKLY RAINFALL AVERAGED 1.62 INCHES NORTH, 2.66 INCHES CENTRAL, AND 5.43 INCHES SOUTH. THE HEAVIEST 24 HOUR TOTAL WAS 13.52 INCHES AT POMONA ON THE 20TH TO 21ST. ESTIMATED SOIL MOISTURE, IN PERCENT OF FIELD CAPACITY, THIS PAST WEEK AVERAGED 94 PERCENT NORTH, 86 PERCENT CENTRAL AND 81 PERCENT SOUTH. FOUR INCH SOIL TEMPERATURES AVERAGED 68 DEGREES NORTH, 72 DEGREES CENTRAL AND 75 DEGREES SOUTH.

WEATHER SUMMARY FOR THE WEEK ENDING 8 AM MONDAY 8/25/97

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	1.96	22.29	-1.18	79	51	64.	-5	1905	-178	87
CANOE BROOK	1.71	23.46	-1.15	80	52	66.	-3	2279	184	92
CHARLOTTEBURG	1.40	24.24	-.61	79	41	62.	-4	1785	126	92
FLEMINGTON	2.01	23.57	-.15	79	51	65.	-5	1982	-167	93
LONG VALLEY	1.62	24.12	-1.51	76	50	64.	-3	1765	-92	89
NEWTON	1.03	19.81	-3.13	76	48	62.	-5	1650	-252	92
FREEHOLD	1.83	23.08	-.04	80	54	67.	-4	2261	-27	88
LONG BRANCH	2.34	22.01	-1.37	78	56	67.	-4	2182	-28	79
NEW BRUNSWICK	1.58	29.02	5.71	80	53	67.	-5	2192	-189	89
PEMBERTON	2.30	23.04	-.64	83	61	72.	1	2517	183	69
TOMS RIVER	6.35	25.53	1.61	83	54	69.	-2	2235	43	73
TRENTON	1.56	24.30	2.15	81	52	66.	-6	2167	-319	77
CAPE MAY COURT HOUSE	3.67	19.72	-.93	81	56	70.	-3	2325	157	83
DOWNSTOWN	5.25	22.87	1.02	80	56	69.	-3	2322	-139	82
GLASSBORO	2.54	24.53	1.72	79	55	68.	-4	2471	2	79
HAMMONTON	5.20	24.88	2.06	81	56	69.	-3	2305	-168	86
POMONA	14.16	36.20	15.16	80	54	67.	-4	2311	5	83
SEABROOK	4.99	23.93	3.01	81	57	69.	-3	2475	-30	79
ATLANTIC CITY MARINA	5.76	24.94	4.77	82	61	72.	0	2349	113	72
WOODSTOWN	2.35	20.33	-2.25	93	50	70	NA	2506	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
Last Week	266 (Ending 08/18/97)									
This Week	203 (Ending 08/25/97)									

Rutgers Cooperative Extension - NJAES
U.S. DEPARTMENT OF AGRICULTURE
Rutgers - The State University of New Jersey
P.O. Box 231
Cook College
New Brunswick, N.J. 08903-0231

PLANT & PEST ADVISORY LANDSCAPE NURSERY & TURF EDITION CONTRIBUTORS

RCE Specialists and Staff

Raul I. Cabrera, Ph.D., Nursery Management
Bruce B. Clarke, Ph.D., Turf Pathology
Ann B. Gould, Ph.D., Ornamentals Plant Pathology
Joseph R. Heckman, Ph.D., Soil Fertility
James A. Murphy, Ph.D., Turf Management
George J. Wulster, Ph.D., Floriculture
Paula Shrewsbury, Ph.D., Ornamental & Turf Entomology
Richard J. Buckley, Coordinator, Plant Diagnostic Laboratory

RCE County Agricultural Agents and Program Associates

Atlantic, Charlene H. Costaris (609-625-0056)
Bergen, Joel Flagler (201-599-6162)
Burlington, Raymond J. Samulis (609-265-5050)
Camden, James Willmott (609-784-1001)
Cumberland, James R. Johnson (609-451-2800)
Essex, Jonathan H. Forsell (201-678-7988)
Gloucester, Jerome L. Frecon (609-863-0110)
Hunterdon, Winfred P. Cowgill, Jr. (908-788-1338)
Middlesex, William T. Hlubik (908-745-3443)
Monmouth, Richard G. Obal (908-431-7261)
Morris, Edmund Milewski (201-285-8300)
Ocean, Deborah Smith-Fiola (908-349-1246)
 Steven Rettke, Prog. Assoc. IPM
Passaic, Stanley Kamara (201-305-5742)
Somerset, Clare S. Liptak (908-526-6293)
Union, Madeline A. Flahive, Prog. Assoc. (908-654-9854)
Warren, William H. Tietjen (908-475-6505)

Newsletter Production

Jack Rabin, Assistant Director, NJAES
Cindy Rovins, Editor and Designer

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