

PLANT & PEST ADVISORY

LANDSCAPE, NURSERY & TURF EDITION \$1.50

AUGUST 13, 1998

Diseases of Turfgrass

Bruce B. Clarke, Ph.D., Turfgrass Pathology

General

Fairy ring, **summer patch**, and **yellow ring** are apparent on turf throughout the State. **Dollar spot** and **red thread** have also intensified on golf and landscape turf during the past few weeks. **Brown patch** and **pythium blight** have been quite troublesome due to extended periods of hot, humid weather this month. Please refer to recent issues of this newsletter for complete disease control information.

Fairy Ring

This disease, caused by a group of fungi known as **basidiomycetes**, is starting to show up on golf greens and home lawns at this time. Symptoms typically appear as continuous or interrupted rings of dark-green turf. Mushrooms, which are often associated with this disease, usually develop only in the mid-spring and fall months. Although chemicals have been relatively ineffective against these fungi in the past, Prostar 50W (6 oz/1000 ft²) and Heritage 50WG (0.4 oz/1000 ft²) have recently shown promise in university tests. Both materials should be applied in large volumes of water (10 to 50 gal H₂O/1000 ft²) or watered in immediately after application (approximately 1/4 inch of H₂O). Aeration prior to treatment may aid in control. Repeat applications as needed every 28 days. To mask symptom expression, maintain adequate fertility and soil moisture.

Take-all patch

This disease, caused by the root and crown infecting fungus *Gaeumannomyces graminis* var. *avenae*, has been reported recently on **bentgrass** greens and fairways in central New Jersey. Although this disease is most prevalent April through June, late-summer and 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, and high pH soils. 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

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Labs for Soil Testing & Plant Analysis

A factsheet entitled "Laboratories for Soil Testing and Plant Analysis" provides a list of laboratories and what testing services they conduct. The factsheet can be obtained from Dr. Joseph Heckman, Plant Science Department, Foran Hall, Rm., 167, 59 Dudley Road, New Brunswick, NJ 08901-8520, (732)-932-9711, ext. 119. □

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Banner, Bayleton, Heritage, or Rubigan in October, November, and April. If the disease has been particularly severe, 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 for best results.

Yellow Tuft

This disease, caused by the fungus *Sclerophthora macrospora*, is present on greens and landscape turf at this time.

Yellow tuft (=Downy Mildew) occurs on almost all cool-season turfgrasses; however, it is usually only a serious problem on turf maintained at a low cutting height. Poorly drained or heavily irrigated sites are often associated with disease development. Infected 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 1/4 to 1 inch in diameter for bentgrass and red fescue turfs, and 1 to 3 inches for bluegrass and perennial ryegrass areas. Tufts are easily removed from the soil due to the absence of adventitious roots. To control, improve drainage, avoid overwatering, mow only when the grass is dry, apply iron sulfate to mask symptom expression, and spray turf with Aliette, Prodigy, or Subdue on a preventive basis (next spring) at 21 day intervals from late March to early June. □

Diseases of Ornamentals

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

Due to environmental conditions conducive to disease development in the spring, the incidence of foliar diseases on shade trees is at an all-time high, and reports of these diseases are still rolling in. Most troublesome this year include shade tree anthracnose (sycamore, ash, chestnut oak, and maple), leaf spots, apple scab, cedar-apple rust, and quince rust. Once symptoms of these diseases develop, it is too late for chemical control. For disease management next year, however, refer to the March 27th and April 10th issues of this newsletter.

Powdery mildew, another foliar disease of landscape plants, is also evident in New Jersey landscapes. Look for superficial, fungal growth in light-colored "powdery" mats on leaf surfaces. To manage powdery mildew, refer to the July 3rd issue of this newsletter.

Bacterial Leaf Scorch of Oak

Bacterial leaf scorch of oak (also known as oak leaf scorch), caused by the bacterium *Xylella fastidiosa*, has appeared in southern New Jersey landscapes earlier this year than is normal. Residents of Camden, Gloucester, and Burlington Counties should be familiar with this disease. Leaf scorch due to this disease is different, however, from scorching caused by environmental, or abiotic, agents.

For example, abiotic agents that can cause scorching in leaves include drought, dehydrating winds, salt, flooding, pesticides, air pollutants, toxic metals, and nutrient extremes. In most cases, this type of scorching is fairly uniform around leaf edges, affects newer leaves as well as older leaves, and will appear on vast expanses of the canopy. In addition, scorch symptoms due to abiotic agents may also develop soon after a known stress (such as drought or a salt application) occurs.

This year, the leaves of many shade trees in New Jersey landscapes throughout the State exhibit the uniform "scorch" consistent with scorch caused by abiotic agents. In many cases, this symptom may be attributed to diminished root systems affected by soil moisture extremes. For example, root systems already affected by excessive moisture during the spring have been further compromised by the recent period of drought this summer, resulting in symptoms of leaf scorch.

Leaf scorch caused by *Xylella*, however, is not clearly defined. Scorch symptoms are often irregular in shape, and frequently a dull red "band" is apparent between healthy and scorched (necrotic) tissues. These symptoms usually occur in mid- to late-summer on leaves of one or more branches in the canopy. Affected leaves may curl and drop prematurely. As the infection progresses over several years, branches die and the tree declines. Affected trees eventually decline to the point where they must be removed. Species particularly affected by this bacterium in New Jersey landscapes include oaks in the red oak group, although reports of scorch on mulberry and red maple have also been received.

Residents in affected counties should be on the look out for **bacterial leaf scorch of oak**. Since there is no cure for this disease, proper management strategy includes the maintenance of tree vigor for as long as possible. Other diseases, insects, and environmental stresses, including drought, enhance the development of bacterial leaf scorch. Bacterial leaf scorch may also predispose infected plants to other disease and insect problems. Branches that have died due to this disease should be routinely removed. Infected trees that are in a severe state of decline should also be removed. □

Ornamentals Pest Notes

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

✓ **SCOLIID WASP:** These are metallic dark blue wasps, 1 1/2", 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 grub. 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 build-up during the month of June on the lower leaves, causing a pale white discoloration. With high populations, foliage throughout the plant turns reddish/brown 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. Avid, a biorational product, is systemic in action, and has proven excellent results. 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. Insecticidal soaps are generally considered less effective than oils, and typically require numerous weekly applications. (Ref: Bug Bulletin 7/28/97)

✓ **COOLEY SPRUCE GALL ADELGID:** Many 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 now. When high populations require suppression, treatments can be applied later this month when GDD accumulations reach between 1850 and 1950. Treatments include horticultural oil, carbaryl (Sevin), chlorpyrifos (Dursban), insecticidal soap, or imidacloprid (Merit).

Future control windows will open during the fall or early spring months, against overwintering females located at the bases of terminal buds.

✓ **DROUGHT:** Drought and its effects have become quite noticeable throughout many areas of the state. Look for leaf yellowing and early leaf drop in many trees, especially with mature trees (such as tulip poplar, London plane and sycamore). Usually the oldest leaves on a branch are shed in order to conserve water. Also, when trees have greater than normal moisture and fertility (as in this past spring), they tend to send out more foliar growth. The roots may not be able to support all this growth when the roots are dry, thus more shedding. Likewise, excess foliage results in more shading, and trees will drop inner leaves that aren't contributing as much to the tree (e.g. less photosynthesis).

Also look for browning of the edges of foliage, called marginal leaf scorch. Some fungi take advantage of drought-weakened plants. A good example is the pathogen *Botryosphaeria*, which attacks mature rhododendron, azalea, dogwood, and redbud (among others), causing dieback of usually one branch at a time. Prune out these dying branches to prevent its spread and mulch/irrigate. In general, healthy landscape plants should receive a minimum of 1 inch of water a week when rain does not occur.

✓ **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, particularly on banks or near access areas. Control at dusk by applying Sevin or diazinon 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 this summer by the locust leafminer in many areas of the state. 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. They are useful as trees that can grow in poor/marginal site locations.

✓ **BEECH SCALE:** 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

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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.

✓ **WHITE GRUBS:** There is no hard and fast rule to predict annual grub population trends. A rule of thumb: If August/September are *drier* than normal, turf damage from grubs tends 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 4-6 grubs/sq. ft. before applying a treatment; or irrigate the site more often to try to mask damage (especially if late in the season).

✓ **SAPSUCKERS:** The characteristic straight rows of holes from the pecking of yellow-belly sapsuckers is a curiosity to many. The birds are not searching for the larvae of boring insects as often erroneously assumed. Actually they eat the live inner bark (phloem) of the trees as well as any insects that are attracted to the resulting wounded areas & sap flow that their pecking creates. Unless the holes are close enough together to cause girdling of stems or branches, the trees are usually not adversely affected. Once birds have identified a suitable tree, they return year after year. (Ref: Branching Out Newsletter - 7/17/98)

✓ **APHIDS:** Although most of the aphid species that were present this spring on the new growth of burning bush and spirea, for example, have long ago left to feed on alternate hosts, 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 in 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.

✓ **EUONYMUS SCALE:** Check plants *now* for crawlers! Although second generation crawlers are not typically out until mid-August, we've already seen them in Central Jersey. Monitor before treating with double-sided tape or sticky traps, and use a hand lens to see the yellow/orange tiny crawlers. □

Herbicide Use in the Container Nursery

Albert O. Ayeni, Ph.D., Weed Science

It is time for another round of herbicide application in the container nursery to control weeds for the fall and winter months. By now you probably have selected the herbicides to use or are about to make up your mind. Remember the following:

1. Not all herbicides are safe on all container stock. Confirm that the products you choose are safe on the stock you wish to apply them.

2. Not all herbicides are effective on all types of weeds you may have in your nursery. Identify the weeds that are most likely to be major problems in the nursery and confirm which herbicides are most suitable for the weeds (see Plant & Pest Advisory: Landscape, Nursery & Turf Edition, April 23, 1998 p.3). Also confirm when best to apply the herbicides.

3. Most preemergence (PRE) herbicides work best when applied before weed seeds germinate. Apply such herbicides within 2 days after the first irrigation. A delay in application until weeds have **germinated** weakens herbicide effectiveness. Note that weed seeds start to germinate within 2 to 3 days after water application but may not **emerge** until 5 to 7 days after water application. So do *not* wait until you see the weeds before applying your PRE herbicides.

4. Avoid heavy irrigation in the first 2 to 3 weeks after PRE herbicide application. Light irrigation keeps the herbicide within one-inch depth of media where most of the troublesome weed seeds are located. Heavy irrigation shortly after herbicide application moves the herbicide out of the zone where it is needed most.

5. If you must use postemergence (POST) herbicides, do *not* apply overhead irrigation within 6 to 12 hours after herbicide application. This does not apply to drip irrigation which has no effect on the activity of POST herbicides.

6. Seek advice from your Rutgers Cooperative Extension (RCE) County Agent or herbicide vendor on herbicide tank mixing. Some herbicides work well as a tank mix with other herbicides, but some tank mixtures are harmful to container stock. **Never** assume you can always tank-mix all types of herbicides for use within the container nursery premises.

7. Keep all the open spaces within and around the nursery premises free of weeds. This practice will significantly reduce the amount of weed seeds that re-infest the containers.

8. It is your responsibility to follow the EPA guidelines for proper herbicide handling in the container nursery environment. If you have any questions on any aspect of herbicide use in the container nursery, call your RCE County Agent. □

Timely Tips for a Healthy Poinsettia Crop

Jim Willmott, Camden County Agricultural Agent

Conscientious effort early in production is essential for finishing healthy poinsettias: Now's the time! The following are important considerations:

Start with quality cuttings - nothing is more important! Remember: well-conditioned cuttings result from well-managed stock plants. For most growers it is best to purchase from specialists who have the time, experience and resources to produce uniform cuttings that are pest free and not too "hard" or too "soft". Highly diversified growers have so much going on in the spring and stock plants are often neglected and crowded.

Give prompt attention to arriving cuttings. Unrooted cuttings are vulnerable to heat and desiccation. Delays often cause irreversible damage. Provide mist as soon as possible. However, be sure to take time to thoroughly inspect the foliage, stems and roots for symptoms and signs of diseases, insects or mites. Use of magnification facilitates this task. A helpful tool for hands-free magnification is the Optivisor available from IPM suppliers such as Gemplers.

Thoroughly clean and disinfest production areas, tools and media. Pythium, Rhizoctonia, Botrytis and Erwinia often attack during propagation. Fungicides (Phyton 27 for Erwinia) are helpful, but they may affect rooting. *Good sanitation reduces the presence of pathogens and is the best disease preventative strategy.* Liberally apply disinfecting solutions such as Greenshield, Physan 20, Triathlon or other labeled brand. Chlorine bleach is effective, but when in solution with water, it breaks down quickly and when in contact with poinsettia roots will cause plant damage. Solutions lose efficacy within hours. Prepare a fresh solution for each job. Most bleach products contain 5.25% sodium hypochlorite. This concentration should be mixed at a rate of one part to nine parts water. Tools and surfaces should soak for 30 minutes.

Maintain favorable rootzone temperatures - about 70°F. Often growers are caught off-guard by cool nights. Low rootzone temperatures delay root development and predispose plants to infectious disease troubles. Bottom heat technology is essential for healthy propagation. Some growers complete the entire crop cycle with floor heat or other related designs.

Maintain favorable air temperatures. High temperatures, especially when combined with intense summer light, can injure young plants and promote troubles with Rhizopus, Erwinia and Rhizoctonia. Generally temperature and light can be increased as roots develop. Be sure ventilation systems are functioning well. If day tempera-

tures can be kept cool, height control (stretching) is less of a problem.

Manage height early. Early height control is important for finishing compact plants. Watch for excessive internode elongation and manage either through temperature control or growth retardants. Avoid most growth retardants after bract color. Some drench applications, Bonzi for example, have been effective later without jeopardizing bract size.

Pinch at the right time. Stems need time to elongate after pinching. Once short day flower initiation occurs, new internodes do not form and stem elongation will be limited. Follow suggestions for each individual cultivar that you grow. Remember with all the new ones, success may be variable until you learn preferences of different cultivars.

Provide needed nutrients. Nutrients leach from cuttings during misting. Some growers apply low concentrations of calcium and/or potassium nitrate during propagation. Once rooted, supply 100-150 ppm of nitrogen at each watering. Increase this according to cultivar preferences, up to 200 ppm continuous liquid feed. Don't over-fertilize! Too much may "burn" tender roots or promote soft vegetative growth. In either case infectious pathogens, insects and mites can take advantage. Also, high nitrogen may aggravate problems with stem breakage during finishing. Be especially sensitive to some of the newer slower growing cultivars. Many of the dark leaf types, for example, like a "leaner feed". Sound nutrient management strategies always require an understanding of media and irrigation water chemistry. Be sure to test both! Growers in coastal areas, including parts of Southern Jersey, may see high sodium and chloride due to salt-water intrusion into wells.

Control the gnats. Fungus gnats are most damaging during cutting production. Management should begin before production. Treat fungus gnat larvae under benches with labeled insecticides several weeks prior to cutting arrival. Monitor soil for larvae with quarter inch slices of potatoes. Place slices on soil surface and examine them for larval infestation. Use potatoes to determine the extent of an infestation before treating and also to evaluate control after treating. If larvae survive, adult flies can be detected with yellow sticky cards. They can easily be controlled with aerosol formulations of insecticides.

Monitor for pests. The practice of IPM requires formalized monitoring and record keeping. Scout for whiteflies, fungus gnats, thrips and aphids. Keep alert for mites! Lewis mites have become increasingly common in recent years presumably since Marathon does not control mites. Besides root diseases, Erwinia stem rot, a bacterial disease, often cause damage during propagation. Later, keep an eye out for powdery mildew. It's been sporadic, but troublesome for some growers in recent years. This disease is favored by the cooler, darker

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Calendar of Events

August 17, 1998 - IPM Pest Clinic (Turfgrass); Adelphia Research Farm, \$5, 9:30-11:30, Contact RCE of Ocean County at 732-349-1246.

August 19, 1998, 5:00-7:00 p.m. - Weed Control/Production Management Nursery Twilight Meeting, Centerton Nursery then Hopewell Nursery, Bridgeton, NJ, Contact RCE of Gloucester County at 609-863-0110.

August 25, 1998 - IPM Pest Clinic (Ornamentals), Georgian Court College, Lakewood, \$5, 9:30-11:30. Contact RCE of Ocean County at 732-349-1246.

November 12, 1998 - 1998 Philadelphia Regional Greenhouse Conference and Poinsetta Varieties Trial, Warrington Motor Lodge, Warrington, PA and Delaware Valley College, Doylestown, PA. Co-sponsored by Penn State Cooperative Extension and Delaware Valley College. Contact Thomas Contrisciano 610-378-1327.

Pesticide Certification Exams:

Bergen County (July 28, Aug 25, Sep 22); Burlington County (Aug 4, Sep 1); Cumberland County (Aug 6, Sep 3); Mercer County (Aug 7, Sep 4); Middlesex County (July 16, Aug 13, Sep 17); Morris County (July 22, Aug 20, Sep 23); Union County (July 14, Aug 11, Sep 15). To register call NJDEP Pesticide Control at 609-984- 6614.

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conditions of fall. It is essential to detect it in the earliest stages to limit damage. Finally, don't forget about Botrytis. Clean facilities with good ventilation have the fewest problems. Don't neglect good culture, especially proper spacing and sanitation. Botrytis diseases can be devastating late in a crop, and this pathogen has shown resistance to several fungicides. □

Plant Diagnostic Laboratory Highlights

Richard Buckley, Coordinator, Plant Diagnostic Lab

Turfgrass

Fairy ring is the most common disease submission from golf turf since late-July. **Fairy ring** is becoming more of a problem as turf managers reduce water and fertility inputs on the golf course, particularly on fairways. Of the nearly 60 fungi known to form rings in turf, none are considered to be pathogens. They are saprophytes that kill turf as a by-product of their activity in the turf stand. In most cases, the cause of death is attributable to hydrophobic soil conditions created by the fungus. This situation is exaggerated by low soil moisture. Furthermore, many **fairy rings** stand out in under-fertilized turf as dark green rings of stimulated grass. Mushrooms come and go in response to environmental conditions like temperature and soil moisture content. **Fairy rings** were identified on several samples from golf courses in New Jersey, New York, and Pennsylvania.

Anthracnose continues to be a problem for many golf turf managers. The disease was diagnosed on samples submitted this period from golf turf in Ocean, Passaic, Monmouth, and Bergen Counties. Other summer disease problems were in full swing on most turf areas throughout the state. Outbreaks of **brown patch** and **pythium blight** were common. Dr. Bruce Clarke told me that the **Pythium blight** on the turf farm in New Brunswick looked like snow! Several samples incubating in the laboratory at this moment look very much like **Pythium**. **Brown patch** was diagnosed on landscape samples from Camden, Hunterdon, and Bergen Counties. **Summer patch** was confirmed in one sample of Kentucky bluegrass from Monmouth County. Finally, **leaf spot and melting out** caused considerable injury to a section of Kentucky bluegrass in Central Park's great lawn.

Landscape and Nursery

Root and crown rots continue to cause problems in nurseries and urban landscapes at this time. **Phytophthora root and crown rot** was diagnosed on rhododendron from Morris and Somerset County landscapes. **Armillaria crown rot** was identified on rhododendron in a Union County landscape. This plant had been irrigated into submission! **Rhizoctonia root and crown rot** was a problem for gardeners in Morris and Cumberland Counties. Lilac and geranium were the hosts of the *Rhizoctonia* with these samples. **Pythium root rot** caused problems for a chrysanthemum grower in Union County. Other diseases and insects of note include: a **Dutch elm disease** sample from Mercer County; **pine bark beetles** from Middlesex County; **lacebug** on Mountain Laurel from Atlantic County; **coniothyrium canker** on red maple from Atlantic County; and **juniper tip blight** and **oak anthracnose** in submissions that were also from Atlantic County. □

Rutgers Cooperative Extension - NJAES
U.S. DEPARTMENT OF AGRICULTURE
Rutgers - The State University of New Jersey
88 Lipman Drive
Cook College
New Brunswick, N.J. 08901-8525

PLANT & PEST ADVISORY LANDSCAPE NURSERY & TURF EDITION CONTRIBUTORS

RCE Specialists and Staff

Albert Ayeni, Ph.D., Weed Science
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
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 (609-566-2900)
Cumberland, James R. Johnson (609-451-2800)
Essex, Jonathan H. Forsell (973-678-7988)
Gloucester, Jerome L. Frecon (609-863-0110)
Hunterdon, Winfred P. Cowgill, Jr. (908-788-1338)
Middlesex, William T. Hlubik (732-745-3443)
Monmouth, Richard G. Obal (732-431-7261)
Morris, Edmund Milewski (973-285-8300)
Ocean, Deborah Smith-Fiola (732-349-1246)

Steven Rettke, Prog. Assoc. IPM
Passaic, Stanley Kamara (973-305-5742)
Somerset, Betsey Saul, Agricultural Assistant (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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Use of Trade Names: Trade names are used in this publication with the understanding that no discrimination is intended and no endorsement is implied. In some instances a compound may be sold under different trade names, which may vary as to label clearances.