

PLANT & PEST ADVISORY

LANDSCAPE, NURSERY & TURF EDITION \$1.50

NOVEMBER 4, 2004



INSIDE

Plant Diagnostic Lab Highlights ...	1
Landscape IPM Notes	2
Moisture and Those Trouble- some Greenhouse Diseases	3
Factors Affecting Earthworm Activ- ity for Fine Turf Management	4
DEP Announces New Invasive Species Policy Directive	5
Soil Fertility Newsletter Targets Turfgrass Disease Suppression	6
Ecological Landscaping Association	6
Calendar of Events	6
New Factsheets on Sports Turf Varieties	7
South Jersey Landscape Conference and Trade Show	7

Plant Diagnostic Laboratory Highlights

Richard J. Buckley, Laboratory Coordinator

General interest

As the year comes to a close, the Plant Diagnostic Laboratory celebrates a record for submissions. We are currently at 3020, which is the second largest submission total in our history. Although the sample numbers were high in 2004, as many as 1000 of the samples were part of statewide surveys for **sudden oak death** and from ongoing research with **bacterial leaf scorch** in shade trees. Removing these samples puts the submission total around 2000 for the year, below normal! It is true, for plant managers, particularly those in the turf industry; this has been a very good year.

Turfgrass

Samples of turfgrass are slow in coming at this time of the year. We continue to get out-of-state samples from warmer and colder areas, but pickings' from the tristate area are slim. We did, however, get our first sample of **yellow patch** from a Long Island golf course, so keep vigilant for the start of the winter disease season.

Overall the year 2004 was good to turf managers; however, those of us with *Poa annua* putting greens might not have seen it that way. The triumvirate of **anthracnose**, **summer patch**, and **annual bluegrass weevil** were the most common problems for golf turf manager in the laboratory this summer. You might say one or all of these guys consistently strikes out the side! May I dare say like facing Mussina, Gordon, and Rivera!

In landscape turf, the most interesting situation was the prevalence of **gray leaf spot** in lawns and landscape turf. There was also a surge in gray leaf spot on perennial ryegrass sports fields. It seems that our message of management and control for gray leaf spot has been heard by the golf turf industry, but has not been clearly defined to those of you in landscape turf. Expect to hear a lot about the disease in the winter landscape meetings.

Ornamentals

In the landscape, the extra rain we have been getting for the better part of two years now is finally starting to cause problems. Trees and shrubs with shallow root systems or those that do best in high oxygen content soils are beginning to show symptoms of decline. The stress on trees planted in compromised sites is also increasing. If we are lucky,

SEE LAB HIGHLIGHTS ON PAGE 5

Landscape IPM Notes

Steven K. Rettke, Ornamental IPM Program Associate

✓ **Live vs. Dead Scale Characteristics:** Many professional landscapers and arborists will be applying early dormant oil applications later this month against over-wintering insect/mite pests. Probably all too often, oil treatments are applied to scale populations that are not viable. Just a little bit of extra time is required to determine if the observed scales are dead or alive.

Compare a live, viable scale insect to a water filled balloon. If the cover is somewhat flexible and soft to the touch it may still be alive. Furthermore, with the use of a sharp pinpoint (e.g., insect mounting pin), determine if insect body fluids are released. When the waxy cover of a live armored scale is removed from the plant surface, it will often appear as a red/yellow "blob of jelly."

As an example, by early spring **pine needle scale** females have already laid most of their red colored eggs and are probably dead (i.e., the female scale has become darkened, dry and shrunken in appearance). Pine needle scale eggs will hatch and red colored crawlers will emerge some time in May. As a side note, do not expect excellent controls of armored scales with the use of dormant oils. Some suppression may occur, but satisfactory results are not always achieved.

✓ **Oils and Mite Controls:** **Spruce spider mites** and **southern red mites** are the two primary species that are active on landscape plantings during the fall season. The spruce spider mite feeds primarily on conifers, while the southern red mite feeds primarily on broadleaf evergreens. Both species have been building their populations for the past several weeks and typically reach peak levels during the month of November. These cool season mites typically have 4 or 5 generations during the fall period. Usually by December they have laid many of their over-wintering eggs.

Symptoms from mite feedings during the fall often do not become evident until the following spring or summer. The application of horticultural oil in the fall can be important to prevent unacceptable damage. Dormant oil sprays will suppress mite adults, immatures, and eggs. Oils have a physical mode of action and cause a disruption of cell membranes (indirectly promotes suffocation). Therefore, to be effective, thorough oil coverage is required.

As a reminder, do not make the mistake of applying oil sprays to kill "*overwintering eggs*" of **two-spotted spider mites** (e.g., burning bush). This warm season mite species does *not* overwinter as eggs, but rather as adults. The adults are hidden in protected areas under the plants (e.g., soil/mulch) where oils cannot effectively contact them. Oil applications this time of year will be a waste of time and material. Controls will have to wait until next year when they emerge during the late spring months.

✓ **Antitranspirant Applications:** Within a few weeks many landscapers will begin to apply their annual antidesiccant sprays to broadleaf evergreen plants. An antitranspirant is a film-forming complex of polyethylenes and polyterpenes that when applied to foliage will reduce the moisture vapor transmission rate. These applications help reduce excessive water loss from leaves during the dry winter months when the ground is frozen. When 1 gallon of an antitranspirant is applied to 10 to 20 gallons of water, plant moisture loss during the winter months is reduced between 15 to 20%. In addition, at the 5-10% dilution rate, the sprayed film produces a glossy sheen on broadleaf evergreens that is appealing to many clients during the holiday season.

Some product labels state that a single application will last through the winter season, whereas other labels indicate a second application during mid-winter provides best results. Note that some of the most severe moisture loss from broadleaf evergreens typically occurs during late winter periods (e.g., February). Hence, an antidesiccant in place during this time will usually be most beneficial.

✓ **Speculating on Tree Fertilization:** Fertilizing woody plants is not an exact science. Fertilization only prevents nutrient deficiencies by restoring soil nutrients. It cannot counteract stress or cure slow growth that occurs from other causes. Overfertilization can often take place when trees are fertilized instead of correcting the underlying problem. Overfertilization may be detrimental to the tree, since excess nutrients may be toxic, and nutrient interactions may cause problems. For example, magnesium deficiency may accompany high soil potassium levels. Over vigorous, succulent growth can make trees more susceptible to certain diseases and insects, such as fireblight and aphids. Soil testing is required to determine exact fertilization needs!

Turf planted beneath trees competes for nutrients, and use large amounts of nitrogen. In low input sites, trees may need additional nitrogen to supplement the turf competition and lack of recycling of grass clippings and leaves. Mulching around trees also helps reduce the need for supplemental fertilization.

Research has shown that newly planted trees do not respond to fertilization, probably because nutrient shortages are not growth limiting at this point. These trees have adequate nutrient reserves that will last for a period after transplanting. So fertilization won't hurt such a tree, but it won't enhance it, either. Remember, many trees experience up to a 95% root loss during the transplanting process, which explains the lack of vigor following planting. The tree is reacting to drought stress, not a lack of nutrients. This lasts until the tree can at least partially regenerate its root system.

The best time to fertilize woody plants is in the spring, just prior to new growth. Fertilizer should be

SEE IPM NOTES ON PAGE 6

Moisture and Those Troublesome Greenhouse Diseases!

Ann B. Gould, Ph.D., Specialist in Plant Pathology, and Margery Daughtrey, Senior Extension Associate, Cornell University

Ever pull a seedling out of a poorly drained flat and find that it has no roots? Ever notice that diseases are more troublesome when pots are spaced too closely or when the humidity is too high? What do these two scenarios have in common? **Moisture.** Host plants, pathogens (or agents that cause disease), and the environment in which they occur have a close relationship that determines whether a disease will develop under a given set of circumstances. The environmental condition most likely to impact disease development in the greenhouse is moisture. Living organisms (plant hosts and pathogens alike!) consist chiefly of water, so the uptake of water is critical if these organisms are to grow.

From a host perspective, too little water in the soil (drought stress) or too much soil moisture (which leads to oxygen deprivation) places plants under stress, and plants with water stress are more susceptible to disease. Water is also important to facilitate movement of nutrients from the roots to aerial plant parts, as well as sugars, made in the leaves during photosynthesis, to the roots. Thus, any environmental condition or disease that affects the roots or vascular tissues also places undue stress on the host. Symptoms of plants with water stress include leaf wilt, yellowing (often of lower leaves), scorch, or premature drop, a decline in vigor, progressive branch dieback, and eventual death.

From a pathogen perspective, moisture extremes have a similar impact. Although too much water in the soil deprives pathogens of oxygen, too little water impedes pathogen survival and the infection process. Free moisture on leaf or root surfaces is necessary for fungal growth, germination, penetration, and dispersal of fungal spores to new hosts. Indeed, most pathogenic fungi grow best in a damp environment.

For example, many pathogenic fungi secrete enzymes into leaf or root tissues to macerate, or soften up, host cells, releasing nutrients that are taken up by the fungi as food. Free moisture is needed to help move these enzymes and nutrients across the fungal cell wall.

Bacterial pathogens commonly enter plants through guttation fluid at the edges of leaves as water retreats within tissues during drier parts of the day. Water is also important for the fungal infection process, which is a series of steps that includes spore germination, penetration through the host epidermis, and fungal growth within the plant tissues. The pathogen can be particularly

Tips for Greenhouse Moisture Management

- ✓ Use a balanced potting mix with good properties of aeration and moisture retention. In mixes that do not drain well, a perched water table is created at the bottom of the container, which encourages the growth of microorganisms and pathogens and deprives roots of oxygen.
- ✓ Reduce humidity in greenhouse through proper ventilation. Space plants and water with gentle impact to avoid splashing bacterial pathogens, fungal spores, or plant debris from one pot to the next.
- ✓ Avoid stress: high salts, compacted planting media, thoughtless fertilization, and uneven watering reduce the ability of plants to resist disease and insect troubles.

vulnerable to drying at this time. For most aerial plant pathogens, such as *Botrytis*, prolonged leaf wetness facilitates the disease process. Free moisture and high relative humidity are important for infection of leaf and other above-ground tissues (such as petals, stems, or branches). This process requires a period of continuous leaf wetness — the duration of leaf wetness needed varies with the fungus. It stands to reason, therefore, that irrigation strategy would have a great impact on the development of leaf diseases.

For soil pathogens, water in soil pores is also needed for the motile spores (called zoospores) produced by the water molds (for example, species of *Pythium* and *Phytophthora*) to swim toward healthy roots. Finally, moisture, in the form of rain, splashing, and running water, is important for the dispersal of spores of all kinds of fungi, wherever they may attack, to new hosts. Only a few kinds of fungal diseases (**powdery mildew** and **Botrytis blight**) disperse easily without help from overhead irrigation.

Moisture management in the greenhouse environment

Moisture management is important from both a plant health and a pathogen point of view. Too much or too little moisture during production can have equally devastating results.

Some ornamentals are prone to edema, a physiological disease that is generated by the water relationships of leaf cells. Corky, blister-like outgrowths on the lower surface of leaves occur on edema-prone plants during cloudy periods with abundant moisture. Certain nutritional and light factors may predispose plants to edema. When more water is supplied to leaf tissues than is lost during transpiration, the cells that line leaf stomates

SEE GREENHOUSE MOISTURE MANAGEMENT ON PAGE 7

Factors Affecting Earthworm Activity for Fine Turf Management

Albrecht M. Koppenhöfer, Ph.D., Specialist in Turfgrass Entomology and James A. Murphy, Ph.D., Specialist in Turfgrass Management

As described in our article in the October 7th issue, earthworms are generally very beneficial in turfgrass. However, in fine turf and particularly on low-cut golf course turf their casting activity can cause problems. There are many factors that can affect the size and activity of earthworm populations including physico-chemical soil characteristics, food availability, and reproductive potential and dispersal ability of the species, management practices, and chemicals used in pest management. Little specific knowledge is available on earthworms in turfgrass in the US. Over the next 3 years we will conduct research on earthworms on golf courses in the tri-state area. This will give us a better picture about the actual conditions in our area. For now, however, much of the information summarized below stems from research conducted in turfgrass in the UK.

Soil conditions

The effects of soil type on earthworms have varied somewhat among different surveys and may differ among earthworm species. Overall, soil texture may affect earthworm populations more indirectly by affecting soil moisture characteristics that in turn affect the earthworms. Earthworms are very sensitive to soil moisture and are rare in dry environments. However, due to the moisture requirements for turfgrass, particularly fine turf, soil moisture is unlikely to be a major factor in limiting earthworm populations. Casting activity is much lower during dry periods when earthworms migrate downwards into moister soil layers or, if dry conditions persist, enter an inactive state. Earthworms can survive for weeks submerged in water but cannot tolerate prolonged anaerobic conditions as they can occur in waterlogged soils with high clay content.

Earthworms are highly sensitive to the pH of the soil and surface litter. They are generally scarce in soil with < pH 5.0, are most numerous at pH 6.5 – 7.0, and tend to decrease in numbers at pH >7.5. Finally, soil temperature affects earthworm activity. They become active as the soil warms up to about 37°F (3°C) and their activity peaks at 50-60°F (10-15°C).

Cultural practices

Organic fertilizers including dried blood, hoof and horn meal, dried poultry manure and rape meal are acceptable food for earthworms and high rates of casting have been observed on turf areas treated with such material. In contrast, earthworm density and biomass decreased with increasing rates of ammonium nitrate fertilization. Thus, the re-popularization of natural

organic fertilizers in the turfgrass industry during the last couple decades may be contributing to the difficulties experienced with earthworm casting on golf courses today. Also, mowing management, specifically clipping (organic matter) removal can impact earthworm casting; a study reported that the rate of casting was reduced by 58% when clippings were removed.

Inorganic acidifying fertilizers including ammonium sulfate and ammonium nitrate can lower the soil pH to levels that suppress activity/populations as well as limiting the supply of organic matter (food source) for earthworms. However, lowering soil and thatch pH is probably not a viable option for earthworm suppression as it increases the rate of thatch accumulation and may have other negative effects on the turfgrass.

Soil moisture probably has a more important effect on earthworm populations than does soil texture. And it is thought that the abrasiveness of coarse textured soils and the subsequent susceptibility to drought in these soils influences the species composition and abundance of earthworm populations. Thus, the use of sand topdressing has been an effective method in reducing earthworm casting. Relief of soil compaction may increase earthworm numbers. Greater earthworm biomass has been found under plots treated with spring and fall hollow tine cultivation compared to non-cultivated plots.

Effect of insecticides on earthworms

A number of pesticides used in turfgrass management can have negative effects on earthworm populations. The most toxic pesticides are in the groups of the fumigants (e.g., chloropicrin, dichloropropane, methyl bromide) and the vermicides (e.g. ammonium sulphate, lead arsenate, mercuric chloride). Among the pesticides presently or until recently used in turfgrass the organophosphate insecticides fonofos (Crusade, no longer registered) and ethoprop (Mocap, no longer registered), the carbamate insecticides carbaryl (Sevin) and bendiocarb (Turcam/Ficam, no longer registered), and the benzimidazole fungicides benomyl and thiophanate-methyl are the most toxic with a single application at normal rate in spring suppressing earthworms for up to a whole growing season. The organophosphate insecticides isazofos (Triumph, no longer registered), trichlorfon (Dylox / Proxol), diazinon (Diazinon), isofenphos (Oftanol), and chlorpyrifos (Dursban) are less toxic and only have a limited effect on earthworms. Other insecticides including all pyrethroids, imidacloprid (Merit), halofenozide (Mach 2), azadirachtin (e.g. Turplex, azatin), and entomopathogenic nematodes, as well as all herbicides, plant growth regulators, and most fungicides have no significant adverse effects on earthworms.

Due to the primarily beneficial nature of earthworms no pesticides are registered for earthworm control. Because earthworms are the most important food source for moles, some pesticides are sometimes applied in the hope to reduce mole problems. However, there is no scientific evidence that suppressing earthworms will alleviate problems with moles. □

DEP Announces New Invasive Species Policy Directive

Will Prohibit Planting of Non-native Species on State Lands

New Jersey Department of Environmental Protection (DEP) Commissioner Bradley M. Campbell announced in October, 2004 a new policy directive prohibiting the planting of non-native species on state lands. The initiative will help to reduce the spread of invasive species that choke out New Jersey's natural flora and threaten wetlands and waterways.

"State agencies need to lead by example and stop planting invasive species on lands that we manage," said Commissioner Campbell. "This is a small, but important step in our long-term struggle to address this significant threat to New Jersey's rich natural heritage."

Under the policy directive, Commissioner Campbell is ordering DEP employees and DEP consultants and contractors not to use invasive, nonindigenous plant species in planning and implementing plantings, landscaping and land management activities such as habitat restoration and reforestation on state lands and waters.

Included in the policy directive is an advisory list that will be periodically updated, which enumerates invasive plant species that have already been identified by the DEP as unsuitable for planting. The list to date includes 20 tree species, 40 shrub species, 15 vine species, 66 herb species, and 16 grass and sedge species.

The McGreevey Administration has been aware of and confronting the problem of invasive species for some time. In July 2003, the Final Report of the New Jersey Comparative Risk Project identified invasive species, including plants, insects and other organisms, as one of the top four environmental problems facing New Jersey. In 2004, Governor James E. McGreevey signed an executive order forming an Invasive Species Council charged with submitting an Invasive Species Management Plan for the state next year.

There are more than 1,200 nonindigenous plants in New Jersey that have been introduced accidentally or intentionally mostly from Europe and Asia. Because these tend to have few if any natural predators or parasites on this continent, they are aggressive competitors for space and nutrients in New Jersey's natural areas. Invasive species also threaten New Jersey's agricultural resources through lost production and marketability for agricultural products. Nationally, damage from invasive species costs is estimated at \$123 billion annually.

Invasive species often form dense stands or thickets that crowd out native vegetation. Harmful invasive species not only threaten plant biodiversity but also affect wildlife that depend on the displaced native species for food. Invasive species alter and potentially harm the structure, composition and function of natural ecosystems.

A report entitled An Overview of Nonindigenous Plant Species in New Jersey is available on the DEP's Web site at <http://www.nj.gov/dep/parksandforests/natural/heritage/InvasiveReport.pdf>.

A copy of the Commissioner's policy directive is available at <http://www.nj.gov/dep/commissioner/policy/index.html>. □

Invasive Nonindigenous Plant Species of New Jersey*

**This is a partial listing. For the entire list including vines, herbs and graminoids, go to http://www.nj.gov/dep/commissioner/policy/pdir2004-02_appendix.pdf.*

Trees

- Black locust
- Callery pear
- Catalpa
- Chinese elm
- Crack willow
- Devil's walking stick
- Empress tree
- Japanese cork tree
- Mimosa
- Norway maple
- Paper-mulberry
- Scotch pine
- Siberian elm
- Sweet cherry
- Tree of heaven
- Umbrella tree
- White mulberry
- White poplar
- White willow
- Yellow buckeye

Shrubs

- Amur honeysuckle
- Autumn olive
- Black alder
- Bramble
- Bush honeysuckles
- Butterfly-bush
- Clammy locust
- Common buckthorn
- Coral-berry
- Dog rose
- European barberry
- European spindle-tree
- False indigo-bush
- Fragrant sumac
- Garden red currant
- Japanese barberry
- Japanese holly
- Jetbead
- Linden arrow-wood
- Morrow's bush honeysuckle
- Multiflora rose
- Oriental redbud
- Privet
- Rose acacia
- Rugosa rose
- Russian olive
- Scotch broom
- Shrub lespedeza
- Siebold viburnum
- Smooth buckthorn
- Snowberry
- Sweetbrier
- Tartarian honeysuckle
- Winged burning bush
- Winter creeper

Soil Fertility Newsletter Targets Turfgrass Disease Suppression

Joseph Heckman, Ph.D., Specialist in Soil Fertility

The Soil Profile is a newsletter providing information on issues relating to soils and plant nutrition in New Jersey. This newsletter has been published annually by Joseph Heckman, Rutgers Cooperative Extension Specialist in Soil Fertility since 1990. The current issue of this newsletter summarizes research findings and disease control recommendations based on soil fertility and plant pathology research conducted on turfgrass at Rutgers University over the past 15 years. This issue of the newsletter is now on the Center for Turfgrass Science web site at:

<http://turf.rutgers.edu/extensionandoutreach/>. □

Ecological Landscaping Association

The Ecological Landscaping Association (ELA) is a nonprofit organization of dedicated landscape professionals, individual gardeners, educators, and more who are committed to educating themselves and others about ecological landscaping.

The ELA through education and networking, advocates environmentally responsible landscaping and horticultural practices to professionals and the public. As stewards of the land and its resources, ELA supports landscape design, installation, and maintenance that are guided by a knowledge of and respect for natural ecosystems.

ELA's *Guide to Healthy Landscapes*, first in a series, Volume One, "From the Ground Up: Site and Soil Preparation," is now available. Written by ecologically-minded landscapers and professionals, this practical volume offers 82 pages of in-depth information about soil management for the long-term health of the landscape. Future issues will discuss design, site analysis, lawns, and more. The target audience for the publication is landscape professionals and interested homeowners.

The Guide is available for \$25.00 for ELA members and \$30.00 for non-members, includes postage and handling.

ELA's 2005 Winter Conference & Eco-Marketplace will be March 4th & 5th, 2005 at the Royal Plaza Hotel in Marlborough, MA.

Information on the conference or ordering the Guide to Healthy Landscapes can be obtained from their website at: <http://www.ela-ecolandscapingassn.org> or contacting them at: Ecological Landscaping Association, 60 Thoreau Street, #252, Concord, MA 01742-2456, Phone: 617-436-5838. □

Calendar of Events

December 2, 2004 – South Jersey Landscape Conference and Trade Show 8:00 am – 4:00 pm at Masso's Crystal Manor, South Delsea Drive, Glassboro, NJ. Pre-registration is required. Contact Jerome L. Frecon at 856-307-6450 ext 1, fax 856-881-4191 or Carl Nordstrom at 800-314-4936 or 609-291-7070, fax 609-291-1121. NJ Pesticide Applicator Units and Certified Nursery and Landscape Professional Credits will be issued.

January 5, 2005 – **MANTS** – Mid Atlantic Nursery Trade Show (3 Days) at the Baltimore Convention Center, Baltimore MD. For information call 800-431-0066 or visit the website: www.mants.com.

January 19, 2005 – New Jersey Nursery and Landscape Association Trade Show and Educational Sessions (2 Days) 8:00 am-6:00 pm at the Doubletree Hotel Somerset/Garden State Exhibit Center, Exit 10 off I-287, Somerset, NJ. Sponsored by the NJ Nursery and Landscape Association, 605 Farnsworth Avenue, Bordentown, NJ. For more information call NJNLA at 800-314-4936 or fax 609-291-1121 or visit their website at: www.gardennj.net.

LAB HIGHLIGHTS FROM PAGE 1

maybe we'll see some milder, dryer winter weather. Disease problems of note include a wide variety of **leaf spot disease, rusts, anthracnose, and tip blights**. Those **fungi** that attack succulent plant tissue in the spring rains had a nice year. Fortunately those diseases have the least impact on overall plant health. **Insect pests** that chew leaves were out in abundance as well. Various **caterpillars, sawflies, and weevils** had an abundance of food and reproduced accordingly. 2004 also brought us loads of **Japanese beetles**, an **Asian longhorned beetle** infestation, a couple new **bark beetle** invaders, and more **stink bugs!** Pretty cool – can't wait to see what next year brings! □

IPM NOTES FROM PAGE 2

uniformly distributed within the dripline. Most of the tree's root system is in the top 4-8 inches of the soil, extending from the trunk 2-3 times as far as the branches. Research shows that fertilizing beyond the dripline may not be cost-effective, due to limited response. However, trees with narrow, columnar forms respond best to fertilization beyond the dripline.

Sources: D. Smith-Fiola, *Landscape IPM Notes*, Rutgers Cooperative Extension, Mar. 1996 & G. Watson, *Grounds Maint.*, Jan. 1992. □

New Factsheets on Sports Turf Varieties

The following new Rutgers Cooperative Extension fact sheets are available on the web at www.rce.rutgers.edu or from your County Extension office.

FS544 - "Tall Fescue Varieties for New Jersey Sports Fields", by Dr. James Murphy, Extension Specialist in Turf Management, and Bradley Park, Sports Turf Education and Research Coordinator.

FS545 - "Kentucky Bluegrass Varieties for New Jersey Sports Fields", by Dr. James Murphy, Extension Specialist in Turf Management, Dr. Stacy Bonos, Assistant Professor in Turfgrass Breeding, and Bradley Park, Sports Turf Education and Research Coordinator.

FS546 - "Perennial Ryegrass Varieties for New Jersey Sports Fields", by Dr. James Murphy, Extension Specialist in Turf Management, and Bradley Park, Sports Turf Education and Research Coordinator.

GREENHOUSE MOISTURE MANAGEMENT FROM PAGE 3

(where gas exchange occurs) become too full and burst. Some of the crops especially prone to edema are begonia, fern, ivy geraniums, and pansy.

As a rule, even for crops not prone to edema, you should avoid prolonged periods of leaf wetness to curb the success of aerial plant pathogens. If using overhead irrigation, design and time watering events to minimize the length of time foliage stays wet. Consider using drip irrigation or aimed microemitters which do not place moisture on foliar surfaces. And water thoroughly, but less often, to keep the surface of the mix dry between waterings to reduce root and crown rots caused by *Rhizoctonia* and *Phytophthora*. □

Editor's Note: This is the last issue of the Landscape, Nursery & Turf edition of the Plant & Pest Advisory for the 2004 season. Thank you for subscribing.

South Jersey Landscape Conference and Trade Show

Thursday, December 2, 2004
Masso's Crystal Manor
South Delsea Drive, Glassboro, NJ

Program

Featured speaker for this program is Dale Hendricks, well known perennial plant developer and speaker. Mr. Hendricks is owner of North Creek Nurseries of Landenberg, Pennsylvania. The following is the complete listing of speakers on the program.

8:00 – 9:00 A.M. - Registration and Breakfast in Trade Show

MODERATOR – Morning Session - Carl Nordstrom, Executive Director NJNLA.

9:00 to 9:10 A.M. - Welcome by Steve Doerler, President New Jersey Nursery and Landscape Association.

9:10 A.M. to 9:40 A.M. - Marketing and Construction of Gazebos, Trellises, and other Landscape Structures into your Designs by Steve Kozitzky of Vixen Hill Cedar Products.

9:40 A.M. to 10:15 A.M. - Major Insect Problems in the Landscape in 2004 by Dr. Jim Lashomb, Specialist in Ornamental Entomology, Rutgers Cooperative Extension.

10:15 A.M. to 11:00 A.M. Visit your exhibitors in Trade Show

11:00 A.M. to 11:45 A.M. - Marketing and the Design of Water Gardens and Ponds by Jim Sullivan, Aquarius Irrigation Supply Co.

11:45 A.M. – Questions for speakers and Comments by Carl Nordstrom.

12:00 P.M. to 1:15 P.M. Lunch and Visit Trade Show Exhibitors.

MODERATOR - Afternoon Session - Jerry Frecon, Agricultural Agent, Rutgers Cooperative Extension.

1:15 P.M. to 1:45 P.M. - Pesticide Safety by Pat Hastings, Program Associate, Rutgers Cooperative Extension.

1:45 P.M. to 2:30 P.M. Using Perennials and Grasses in the Landscape by Dale Hendricks, North Creek Nurseries, Landenberg, Pa.

2:30 P.M. to 3:00 P.M. - Major Disease Problems in the Landscape in 2004 by Rich Buckley, Rutgers Plant Diagnostic Laboratory.

3:00 P.M. to 4:00 P.M. - Reception with Vendors

4:00 PM - Breakdown

N.J. Pesticide Applicator Units – Core – 1 Unit,
3A, PP2 & 6B – 1 Unit

Certified Nursery and Landscape Professional Credits = Five Total
Facilities are accessible to the physically handicapped.

For program information call Jerry Frecon at Rutgers Cooperative Extension of Gloucester County at 856-307-6450 Ext 1, or Carl Nordstrom at 1-800-314-4836. □

FIRST CLASS
POSTAGE PAID
PERMIT #576
MILLTOWN, NJ 08850

Rutgers Cooperative Extension - NJAES
U.S. DEPARTMENT OF AGRICULTURE
Rutgers - The State University of New Jersey
Plant & Pest Advisory
18 College Farm Road
Cook College
New Brunswick, N.J. 08901-8551

PLANT & PEST ADVISORY LANDSCAPE NURSERY & TURF EDITION CONTRIBUTORS

RCE Specialists and Staff

Bruce B. Clarke, Ph.D., Turf Pathology
Ann B. Gould, Ph.D., Ornamentals Plant Pathology
Steven Hart, Ph.D., Weed Science
Joseph R. Heckman, Ph.D., Soil Fertility
Albrecht Koppenhofer, Ph.D., Turfgrass Entomology
James A. Murphy, Ph.D., Turf Management
Gladis Zinati, Ph.D., Nursery Management
Richard J. Buckley, Coordinator, Plant Diagnostic Laboratory
RCE County Agricultural Agents and Program Associates
Bergen, Joel Flagler (201-599-6162)
Burlington, Raymond J. Samulis (609-265-5050)
Camden, James Willmott (856-566-2900)
 Steven Rettke, Program Associate IPM
Cape May, Russell Blair (609-465-5115)
Cumberland, James R. Johnson (856-451-2800)
Essex, Jan Zienteck, Program Coordinator (973-353-5958)
Gloucester, Jerome L. Frecon (856-881-4191)
Hunterdon, Winfred P. Cowgill, Jr. (908-788-1338)
Mercer, Annette Capp, Program Associate (609-989-6830)
Middlesex, William T. Hlubik (732-745-3443)
Monmouth, Richard G. Obal (732-431-7261)
Morris, Pedro Perdomo (973-285-8307)
Somerset, Nick Polanin (908-526-6293)
Sussex, Brian Oleksak, Program Associate (973-579-0985)
Union, Madeline Flahive-DiNardo (908-654-9854)
Warren, William H. Tietjen (908-475-6505)

Newsletter Production

Jack Rabin, Associate Director for Farm Services, NJAES
Cindy Rovins, Crop Management Communications Editor

Rutgers Cooperative Extension (RCE) provides information and educational services to all people without regard to sex, race, color, national origin, disability, or age. RCE is an Equal Opportunity Employer.

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.

Use of Trade Names: No discrimination or endorsement is intended in the use of trade names in this publication. In some instances a compound may be sold under different trade names and may vary as to label clearances.

Reproduction of Articles: RCE invites reproduction of individual articles, source cited with complete article name, author name, followed by Rutgers Cooperative Extension, Plant & Pest Advisory Newsletter.

For back issues, visit our web site at: www.rce.rutgers.edu/pubs/plantandpestadvisory