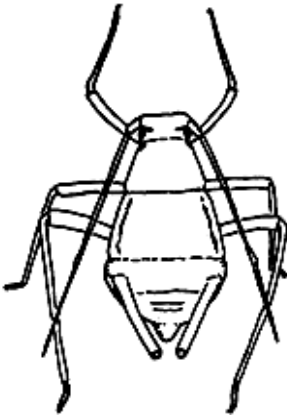


# PLANT & PEST ADVISORY

LANDSCAPE, NURSERY & TURF EDITION \$1.50

NOVEMBER 8, 2001



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### Ornamental Pest Notes

*Steven K. Rettke, Landscape IPM Program Associate*

✓ **Fall Dormant Oils?:** In New Jersey, dormant oils (3-4%) are typically applied during March and April. Many landscapers, however, also apply dormant oils during the late fall months. Dormant oils have proven to be an effective material against a wide range of immature insects/mites and their eggs including, **spider mites, soft scales (armored scales** to a lesser degree), **aphids, eriophiid mites** and adelgids. Are there any potential problems associated with applying dormant oils during the months of November and December in New Jersey?

Some advisors within our industry have stated that fall oil applications are not recommended. It has been suggested that spraying oils on deciduous trees just after leaf drop, when plants have not yet “hardened off” may interfere with interior growth of twigs, causing damage and even twig death. Also, it has been stated that spraying oils on conifers in November and December removes the protective waxy bloom necessary for winter protection, and should therefore be avoided. Furthermore, if applied prior to temperatures dropping below freezing, the emulsion in the oil breaks down, causing the oil to adhere to the bark instead of insects or eggs.

Although the potential negative side effects need to be considered, they do not appear to be widespread problems. The use of a more conservative 2% oil mixture during the fall season may be a safeguard against undesirable side effects and yet still maintain spray effectiveness (e.g., conifers). Attempt to apply dormant oils when temperatures will remain above 40°F for at least 24 hours. Be aware that plants under drought stress will be more prone to injury from oil treatments. Also, remember that oils will remove the blue glaucous bloom on foliage (e.g., Colorado blue spruce & blue junipers). Although the blue color will never return on the sprayed foliage, the untreated new growth will again be blue in color.

✓ **Management of Aphids Using Soaps?:** Although insecticidal soaps are referred to as “biorational” pesticides and are recommended within IPM programs, recent research has indicated that they provide less than satisfactory controls against **aphids** within the landscape. Insecticidal soap is commercially available under the trade name M-PEDE (Mycogen Corp.) and although aphids are included on the label, the new research is indicating only 5% to 10% reduction of an aphid population with a single application when applied at label rates.

SEE PEST NOTES ON PAGE 2

Changes on the M-PEDE label may soon indicate the less than satisfactory controls it achieves against aphids with a single application. Conversely, it is important to emphasize that insecticidal soap will provide outstanding efficacy against **adelgids** (e.g., **spruce galls**) and is highly recommended as a control material against these insects (**precautionary note**: similar to oils, some soap sprays may remove the blue coloration on conifers).

✓ **Biological Controls of Aphids:** The flower fly (or syrphid fly) is an insect that many landscapers and arborists have seen, but incorrectly identified as a type of wasp or bee because of their hovering flight and yellow to orange band markings on their abdomen. Although these beneficial insects are predacious only in the larval stage, they are another important group of predators that rival the abilities of lady beetles and lacewings.

The larvae of flower flies are unknown allies to many landscape plant managers. It is rare not to find at least a few of these 1/8-1/4 inch long tan or greenish maggots feeding within an **aphid** colony. The larvae also have black markings on their bodies and have pointed anterior and blunt posterior ends. These blind larvae will quietly meander over the plant surface, methodically grasping one aphid after another. Once this predator spears an aphid with its pointed jaws (their mouthparts consist of 2 retractable hooks), it raises the body up into the air and sucks out the fluid contents. A flower fly larva can destroy aphids in this manner at a rate of one per minute over an extended period of time.

Flower flies are usually the major predators in the autumn months, since they can function at cooler temperatures than either the lady beetle or lacewing can. Other than aphids, flower fly larvae prey upon **leafhoppers, scales, mealybugs** and **thrips**.

✓ **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.

## Oriental Beetles and Nursery Containers

**Steven K. Rettke, Landscape IPM Program Associate**

**O**riental beetle grub damage may be an unrecognized problem within many New Jersey nurseries. During the previous decade, many turf managers became aware of the Oriental beetle grub species. In fact, within many areas of New Jersey, the Oriental beetle has replaced the **Japanese beetle** as the dominant white grub species found in turf. Unlike Japanese beetle adults, the Oriental beetle adults are somewhat stealthy and are not highly noticeable in the landscape. They are mostly nocturnal and do not feed on most ornamental plants. They have poor flying abilities (i.e., can only fly a distance of 50 to 150 feet) and typically fly only 1 or 3 feet off the ground. Adult males also have a relatively short life span. Female Oriental beetle adults will often spend the majority of their lives at the surface of the soil or beneath the surface laying eggs. Females lay eggs between 5-9 inches deep in soil.

It is now known that New Jersey nursery container plantings are also coming under attack by the grub of the Oriental beetle (the problem with this beetle species is with the grubs and not the adults). It was not until 1998 that these beetles were identified as a potential problem within New Jersey nurseries. Japanese beetle grubs feed

SEE ORIENTAL BEETLES ON PAGE 3

The use of an antidesiccant does not guarantee that foliage will be spared against winter "burn" type injuries. It should be remembered these treatments do not prevent, but only reduce moisture loss during the winter. Furthermore, antidesiccants do not protect against plant cells being damaged from the formation of ice crystals within the foliage during excessively cold temperatures.

As always, it is important to read the label included with all antitranspirant products. Notice that these products are designed to be used only with broadleaf and needled evergreens and should not be applied to evergreens having scale leaf type foliage. Using antidesiccants on juniper or arborvitae evergreens, for example, may actually encourage winter type injuries.

✓ **Fall Tree Transplanting** is recommended for most trees. Some species, however, perform better when transplanted in the spring. These sensitive species include: birch, red maple, oak, dogwood, hornbeam, hawthorn, hemlock, golden-rain tree, tuliptree, planetree/sycamore, poplar, *Prunus* spp., willow, silver linden, and zelkova. If these species must be planted in the fall, be sure to allow for extra water at the time of planting and until the ground freezes in December. □

almost exclusively on turf roots, whereas the grubs of Oriental beetles are known to also feed on the roots of woody ornamentals. Although the grubs have been known to feed on a wide selection of container plant species, many nurseries have reported finding them feeding on the fine-fibrous roots of ericaceous plants (e.g., *Rhododendron*) and plants within the genus *Ilex*.

Since the adult of this white grub is relatively inconspicuous and mysterious, nurserymen are often not aware of their presence. As a result, it is postulated that many New Jersey nurseries may have significant populations of Oriental beetle grubs feeding within container plantings, but they have yet to be discovered. Previous routine nursery inspections had not easily discovered the presence of this grub, since it requires searching the soil within the containers. Observations in New Jersey nurseries have shown that plant death from Oriental beetle grubs has occurred in containers as well as field grown plants. For example, more than 100 grubs have been found in large container pots.

Some recent research (1999) at Rutgers has revealed that the use of pheromone traps can readily unmask the presence and population levels of the Oriental beetle adult male within an area (maximum trapping distance is 150 feet). Traps are placed on the ground because of the very low flying behavior of adult male beetles. An infested nursery can have hundreds of Oriental beetles caught per day within traps during peak male flight periods. It has been determined that in many locations in New Jersey, the adults peak during late June to early July.

Interestingly, the use of pheromones can also act as a mating disruption technique. If the synthetically produced sex pheromone of the Oriental beetle is concentrated to such high levels where the males cannot successfully find the females, then eggs are not laid and controls can be achieved. The research with pheromone disruption of beetles is still preliminary, since most of the prior research focused almost exclusively on moths.

Imidacloprid (Marathon) is the only chemical insecticide currently labeled for control of grubs within nurseries. Very limited (<5%) controls of Oriental beetle grubs have been observed using Milky Spore Disease. MACH2, the new insect growth regulator insecticide, is presently not labeled for nursery use. Furthermore, the efficacy of this product against Oriental beetle grubs can be less than satisfactory.

*Reference: Adapted from presentations delivered by Jim Lashomb, Research Professor, Dept. of Entomology and Jim Johnson, Cumberland County Agricultural Agent at the Rutgers Cooperative Extension South Jersey Nursery Meeting on 10-30-01. □*

## Diseases of Turfgrass

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

### New Merger

Bayer has signed an agreement with Aventis S.A. and Schering AG for the acquisition of Aventis CropScience. Bayer's Crop Protection business and Aventis CropScience will group their business activities within a separate legal entity under the name Bayer CropScience. The formation of Bayer Crop Science will create one of the world's largest crop science companies. This new company will remain a part of the Bayer Group. The approval of regulatory authorities will be required before the new company can take up its business activities. Until that time, both companies, Bayer and Aventis CropScience, will continue to be managed and run as separate entities and will remain competitors in the market.

### Take-all patch

This disease, caused by the root and crown infecting fungus, *Gaeumannomyces graminis* var. *avenae*, has redeveloped on bentgrass greens and fairways recently. Although this disease is most prevalent from 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 during cool weather (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, fungicides should be reapplied twice next spring at 21 to 28-day intervals beginning in early April. Chemicals should be applied in 4 gal water/1000 sq ft or irrigated into the root zone (1/8 to 1/4" of water) for maximum effectiveness. Whenever practical, overseed infested 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.

### Turf Expo

This year's Turf Expo will be held at the Trump Taj Mahal Casino/Resort on December 11-13, 2001. This is an excellent opportunity to receive the latest turf management information from nationally renowned speakers. For additional information, please contact Bea Devine at (732) 821-7134. □

# What to do About Daylily Rust?

Jean L. Williams-Woodward, Ph.D., Extension Plant Pathologist, University of Georgia

**Daylily rust** is probably one of the hottest topics among daylily enthusiasts right now primarily because it is more of a “social” disease rather than a plant health problem. Much of the conversation among daylily societies revolves around who has rust and who doesn’t. Not to sound too pessimistic, but eventually every daylily garden will get the disease.

The reason I am stating this is that symptomless, but infected plants will continue to be sold or traded and the disease is easily spread by air-dispersed spores. No one knows how far a daylily rust spore can travel, but from observations in southern gardens, spores may travel several miles.

Since daylily rust was first identified in Fall 2000 on daylilies within nurseries in the Southeast, the disease has rapidly spread across the country. Every state east of the Mississippi River (except West Virginia and some of the New England states), as well as California, Oregon, Texas, Kansas, Nebraska, and Iowa have identified daylily rust on at least one plant within a nursery or garden. In addition, the disease was spread to several Canadian provinces and England. The spread was primarily through the sale and trading of infected plants by nurseries and daylily enthusiasts.

The disease is so widespread in some areas that it is likely to become endemic and be a recurring problem for daylily growers and hobbyists every year. Several factors contribute to the ability of the rust to spread and survive so well. One is that during the growing season daylily plants are constantly putting out new leaves, so there is always new growth for the rust fungus to infect. Also the leaves expand upwards, so even if fungicides are applied to the leaves to protect them, as the leaf grows, the base of the leaf is not protected and can be infected. Hence, the observation by some growers that infection always seems to be at the base of the leaf. Also, many daylily cultivars are evergreen, which means that living leaves may be present all year long that are capable of supporting rust growth and spore production.

The question I hear so often is “what do I do now that rust is present or potentially coming to my garden or nursery?” The answer I give most often is “I don’t know.” There is a lot that is not known about daylily rust. What is known is that rust spore germination stops at temperatures of 39°F or below and at 90°F or higher. Peak spore germination is around 72°F that corresponds to most fall and spring temperatures. Fall, at least in the South, is when daylily rust seems to “explode.” In the north where temperatures stay below 39°F for much of

the winter, daylily rust may not survive and spread. However, if there are living “green” leaves on daylilies under snow cover that insulates the plants, then the rust may survive.

In my own garden in Zone 7b (Watkinsville, GA), dormant-type daylily cultivars were infected in October 2000. Being a plant pathologist, I debated whether to remove the infected leaves or not, and I decided to keep them so I could see how the disease would survive during the winter. The previous winter was one of the coldest the area has experienced in several years with about three killing freezes that kept the dormant cultivars truly dormant (something that doesn’t always happen in my garden) and there was no snow cover to insulate plants. In my garden, the disease did not survive and my plants are still rust-free. There are several reasons for why I think the disease did not survive, including that my daylily plants are dispersed among other perennials and are not grown in solid daylily beds. There is a lot of space between my plants so daylily leaves never matted down or clumped together. Also, in between the freezes, there were periods of warmer temperatures that helped to rapidly decay the old daylily foliage, and after the foliage began decaying I could not recover rust spores from it in my lab.

However, the daylily rust was able to survive in container nurseries within the same hardiness zone. Survival in the nurseries may have been because the infected foliage dried on top of the containers rather than rapidly decaying as within my garden. No one knows at this time how long daylily rust spores (urediniospores) survive under different environmental conditions. What is also not known is if the fungus survives systemically within the crown of the plant. From my limited garden experience, daylily rust does not appear to survive this way, but it cannot be ruled out and more studies are needed to determine where and how rust will survive.

At this time of the year if rust is already rampant through a garden or nursery, my recommendation is to forget about it for the time being. Let colder temperatures start killing back daylily foliage, then start cutting back and removing all daylily foliage from the garden. Removal of the foliage should be done prior to when snow is expected to cover the garden permanently through the winter, which will vary depending upon where the garden is located. If the garden is not snow covered and evergreen cultivars are present, fungicides may be necessary to reduce rust infection over the winter and especially in the spring when temperatures begin to warm.

From fungicide trials conducted in Georgia, Daconil, mancozeb (ex. Dithane, Fore), and Heritage worked the best at stopping spore germination. The current recommendation is to spray plants weekly with

*SEE DAYLILY RUST ON PAGE 5*

Daconil or a mancozeb-containing fungicide to protect plants from infection. Once rust is detected in the garden, remove the infected foliage and the foliage from surrounding plants, even if no rust is evident, and begin weekly spraying with a tank-mix of Bayleton (or FungAway sold in home garden centers) or Banner Maxx with Daconil to reduce disease spread. Weekly spraying is not why people started growing daylilies and the expense in dollars and time is the major concern for growers and hobbyists. As long as daylily rust remains the "social" disease, it must be controlled in gardens that are planning on selling plants, and stop-sale orders can be issued on infected plants by state department of agriculture inspectors.

Eventually, growers and hybridizers will identify plants that are very susceptible to rust, those that rust constantly explodes on even with fungicide treatment, and remove or stop growing them. Daylily nurseries in the South are already doing this. Then, the cultivars remaining will have less rust on them, which means less rust spores to spread to other plants, as well as less rust pustules that detract from the beauty of the daylily plant. Daylily rust does not kill plants immediately, but it weakens susceptible plants and negatively impacts their growth.

Daylily rust is here and it will probably survive and stay in many areas of the country. But eventually through breeding efforts and effective controls, it should become more of a nuisance pest rather than a dreaded "plague." Daylilies are beautiful plants and nothing compares to them in perennial gardens. **Black spot** has not put rose growers out of business, yet it can completely defoliate plants, killing them over time. So, I don't think daylily rust will take over and destroy the daylily industry. To those who have rust, good luck in reducing its impact on your garden or business. To those without rust, good luck in keeping it out.

*Submitted by Ann Brooks Gould, Ph.D., Specialist in Plant Pathology. □*

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**Editor's Note: This is the last issue of the Landscape, Nursery & Turf edition of the Plant & Pest Advisory for the 2001 season. Thank you for subscribing.**

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## Professional Course Offerings

The following are the 2001/2002 fall and winter courses offered through Rutgers' Office of Continuing Professional Education. For course descriptions, fees and locations, contact Rutgers - Cook College, Office of Continuing Professional Education, phone 732-932-9271, fax 732-932-1187, email [ocpe@aesop.rutgers.edu](mailto:ocpe@aesop.rutgers.edu), or on their website at <http://www.cook.rutgers.edu/~ocpe>.

Snow Removal and Ice Control Management  
December 6, 2001

Landscape Lighting: A Practical Approach  
January 8 - 9, 2002

Basics of Plant Materials for Landscape Use  
January 4 - March 15, 2002 (Eleven consecutive Friday mornings)

Basics of Landscape Design  
January 4 - March 8, 2002 (Ten consecutive Friday afternoons)

Professional Landscape and Grounds Management School  
January 7 - 18, 2002 (Two weeks, Monday - Friday)

Athletic Field Management School  
January 7 - 11, 2002 - Week One  
March 4 - 8, 2002 - Week Two

Professional Park Maintenance: Managing and Enhancing Park Use and Safety  
January 16, 23, 30 and February 6, 2002 (Four consecutive Wednesdays)

Better Landscapes Through Better Soils  
February 19 & 20, 2002

Athletic Field Construction and Maintenance  
February 26, 27 & 28, 2001

Irrigation Systems: Designing, Installing and Cost Estimating  
January 24, 31 - February 7, 14 & 21, 2002 (Five consecutive Thursdays)

Water Gardens: Designing and Maintaining Ponds in the Landscape  
February 13, 2002

Selecting Plants for Difficult Sites in the Residential and Commercial  
Landscape: Dry and Shady Sites  
February 27, 2002

*SEE FALL AND WINTER COURSES ON PAGE 6*

*FALL AND WINTER COURSES FROM PAGE 5*

Hazardous Tree Identification  
December 12, 2001

Modern Techniques for Large Tree Climbing and Rigging  
December 5, 2001 NEW  
9:00 a.m. – 3:30 p.m.

Urban Forestry: Make Your Town a Tree City USA  
January 4, 11, 18, 25 & February 1, 2002 (Five consecutive Fridays)

Arborists: Innovations, Techniques and Solutions NEW  
Day 1: February 20, 2002  
Day 2: March 27, 2002

Large Tree Pruning and the ANSI A – 300 Standards  
March 26, 2002 NEW

Building Garden Spaces: The Ins & Outs of Building Your Landscape  
January 26, 2002 (Saturday)

Landscape Construction: Building Practical and Innovative Solutions for Your Customers  
February 26 – 27, 2002

Concrete Pavers: Creative Applications and Efficient Installation Methods  
March 4, 2002

Designing and Installing Concrete Block and Timber Retaining Walls  
March 5, 2002

Advanced Topics in Turfgrass Diseases  
January 24 & 25, 2002

Landscape Integrated Pest Management (IPM): An Intelligent Approach to Managing Pests  
January 22, 23, 29, 30, February 5 & 6, 2002 (Six full days)

Advanced Topics in Ornamental Plant Pathology  
January 31, 2002

Advanced Topics in Insects of Ornamental Plants  
February 7, 2002

Managing Turf and Landscape Weeds  
February 20 & 21, 2001

Pest Management of Ornamental Landscape Plants  
February 21, 2002

Pest Management of Landscape Turf  
February 22, 2001

Pesticide Safety for Landscape Contractors  
February 28, 2002

Advanced Topics in Turfgrass Insects  
March 7, 2002

Roadside and Right-of-Way Vegetation Management  
March 26, 2002

## **Business Management**

Estimating Residential and Commercial Landscape Proposals  
January 10 & 11, 2002

Building Your Business: Understanding Your Career, Your Business, Your Bids & Your Customers  
January 9, 2002 NEW

Inglés práctico y de uso diario relacionado con la jardinería  
(Landscape English for Spanish-speaking Landscapers)  
Date to be announced

Everyday Spanish for Landscape Contractors  
February 12 & 19, 2002

Landscape Marketing: Secrets of Success  
February 15 & 16, 2001

## **Evening Seminar Series**

### Evening Plant Materials Seminar Series:

Unique and Dependable Plant Material for Landscapes  
January 3 – February 21, 2002  
(Thursday courses) 6:30 – 10:00 p.m.  
(Saturday courses) 9:00 a.m. – 1:00 p.m.

January 3: Bulbs: How, When and Where to Plant Them

January 10: Winter & Spring Perennials

January 17: Summer Perennials

January 24: Fall Perennials

January 31: Mixed Borders: Woody & Herbaceous

February 7: Vines: Annuals & Perennials

February 14: Small Trees & Shrubs for Screening and Accent

February 16 (Saturday): Feature Plants and Proper Placement

February 21: Ornamental Grasses and Bamboo

February 23 (Saturday): Native Plants

Design of Greenhouse Systems  
January 8 & 9, 2001

Rutgers Professional Golf Turf Management School:  
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