

# PLANT & PEST ADVISORY

LANDSCAPE, NURSERY & TURF EDITION \$1.50

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## Developing a New Plan for Environmentally Benign Lawn Management

*Bruce Barbour, Environmental Program Leader, Rutgers  
Cooperative Extension*

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Representatives from such diverse backgrounds as The Scotts Company, The National Audubon Society, The Toro Company and the Las Vegas Valley Water District gathered in San Antonio this March for a serious discussion on a topic of common interest...lawns and the environment. What spurred such an unlikely gathering is a growing concern about the future supply of clean water in our urban and suburban communities. Reliable evidence from certain parts of the country has cemented the link between the way we manage the developed landscape and the quality of our water resources. In response, several Water Supply Authorities in partnership with USDA, EPA, the lawn care industry and assorted environmental interests employed the Center for Resource Management of Salt Lake City, Utah to facilitate a process of dialogue and consensus to move towards a common vision of environmentally friendly lawn and landscape management beginning with this conference.

Geoff Brosseau of the Bay Area Stormwater Management Agencies Association told of the situation they faced when diazinon and dursban were found to exceed established TMDL levels in all tributaries to San Francisco Bay. It was determined that the only significant source of these two insecticides in the watershed were landscape, principally lawn, applications. Reps from the San Antonio Water System related how they were able to observe seasonal fluctuations in nitrogen levels in their aquifer that coincided with lawn fertilizer applications. However this was not a meeting convened for finger pointing and debate, as it could easily have turned into. Interests from both industry and environmental and educational interests focused on developing two documents that would embody a consensus view of best management practices for residential landscapes. Paul Parker of the Center for Resource Management shared examples of similar environmental conflicts in which the Center had functioned as consensus builder and told the group to expect that the full working of the process could take several years to complete.

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Many interesting facts were shared by speakers.

- ◆ Average annual expenditure for all garden related goods is \$1,000 per household and total expenditure is \$40 billion. Source: National Gardening Association
- ◆ Only 25% of homeowners thought lawn fertilizers and chemicals were safe. Source: Scotts Company
- ◆ Only 10% of households use a professional lawn care company, 40% use store bought materials and 50% do nothing. Source: Tru Green/Chemlawn
- ◆ Americans spend \$2 billion/year on insect control and \$4 billion/year on fertilizer. Source: National Gardening Association

Some cogent general observations by Bruce Butterfield of the National Gardening Association were: most people mow their lawns too close, they rely too much on fertilizers and pesticides to fix problems generated by soil or cultural conditions, what is needed most is a regionally oriented yard owner's manual.

The work of the conference focused on a 28 page draft document entitled, "Environmental Guidelines for Responsible Lawn Care and Landscaping" and a one page document entitled, "Ten Tips to Save Money and Protect the Environment While Enjoying a Healthy Yard". While consensus on the two working documents featured at the conference was not reached, it was agreed to expand the steering committee, develop a strategic plan, refine both documents after a 3 month comment period, develop 3-5 demonstration projects around the country for a 1 year test and convene another conference in 2 years with an expanded interest group.

You can view the draft document "Environmental Guidelines for Responsible Lawn Care and Landscaping" at [http://www.epa.gov/pesticides/grants/lei/draft\\_guidelines.pdf](http://www.epa.gov/pesticides/grants/lei/draft_guidelines.pdf). The membership of the project steering committee is at <http://www.epa.gov/pesticides/grants/lei>.

Here are the "Ten Tips to Save Money and. Protect the Environment While Enjoying a Healthy Yard".

- 1- KNOW YOUR YARD - Learn about the soils, plants, climate, and wildlife around your home.
2. CHOOSE THE RIGHT PLANT FOR THE RIGHT SPOT - Avoid invasive plant species. Know the requirements and ultimate size of the plant. Select species that require less water, fertilizers, pruning, and pesticides.
3. BE WATER WISE - Water lawn only when needed but to the depth of the root zone, cover bare soil with mulch, use drip irrigation for trees and shrubs, consider reducing irrigated turf with drought tolerant ground covers.
4. KNOW YOUR PEST - Make sure the pest is correctly identified and use the most appropriate method to control the problem; contact your local cooperative extension service for help.

5. PREVENT POLLUTION POSSIBILITIES - Prevent fertilizer, pesticides, yard debris, and pet waste from entering the water sources or waste water systems. Use pesticides only when and where they are needed.
6. READ THE LABEL, FOLLOW THE LABEL - Before using pesticides or fertilizers, know the do's and don'ts. The label is the law. Keep children and pets away from pesticides; Store and dispose of pesticides properly.
7. GO NATURAL - Create wildlife habitat at home. Consider using native plant species and remove invasive exotic plants.
8. PILE IT ON - Build a compost pile with grass clippings, leaves, and other organic material. Use compost as mulch or natural fertilizer to improve soil health.
9. TAKE IT TO THE MAX - Cut your lawn at the highest recommended mower setting and leave the clippings in place.
10. RESPECT YOUR NEIGHBORS - Regardless of whether you have a traditional lawn or a more indigenous landscape keep your yard safe, clean, and well-maintained to add beauty to your neighborhood. Add borders around "natural areas" if necessary. □

# Identifying Clearwinged Borers in Pheromone Traps

Steven K. Rettke, Ornamental IPM Program Associate

**C**learwing borers comprise one of the most damaging groups of insect pests that attack shade trees and shrubs. Controls must be accurately timed, since larvae tunnel under the bark most of the year, where they are unreachable by pesticides. Artificial pheromones, a synthetic of the sex attractant emitted by many insects, are commercially available and recommended for the IPM manager. Adult male moths are attracted to the pheromone-baited sticky trap that helps determine: 1) *if* the borers are present in an area; and 2) *when* to apply insecticide sprays. Pheromone traps enable landscape managers to more accurately determine the first emergence of these borers so that pesticides can be applied more effectively to susceptible hosts.

Many landscapers today are at least familiar with pheromone traps, even though most have never attempted to use them. Too often those who actually do attempt to use these traps become frustrated, because they are unable to identify with certainty the numerous clearwing species that are typically caught (six of the more important clearwings include **lilac borer**, **rhododendron borer**, **peachtree borer**, **lesser peachtree borer**, **dogwood borer**, and **banded ash borer**). To compound the problem, many of the clearwings mentioned above are in the same genus and produce similar pheromones. Therefore, even though lures are often marketed for specific target borer species, they actually capture several species. Sometimes there may be more non-target borers caught within the trap than the specific borer desired.

This article's purpose is to demystify the use of pheromone traps when attempting to attract and identify clearwing moth borers present in the landscape. The casual observation of captured moths at the bottom of sticky traps will show "similar" looking insects that are often mangled and distorted. However, the challenge of identifying individual species becomes surprisingly easy to overcome when other known information about each moth species is considered. The six most important landscape clearwing borers are caught in the traps in a mostly orderly sequence. By learning the relative emergence times of these half dozen or so clearwings, the identification process is greatly simplified.

The first moths to appear in the traps in the spring are the **lilac borers**. Of all the clearwings that are likely to be attracted and caught in pheromone traps, this moth is the least distinctive and colorful. Lilac borers are about 1.5 inches in length, with a relatively robust body and resemble the paper wasp. They have a drab black and

brown coloration and have forewings that are more opaque than most of the other clearwing species. When using general-purpose clearwing lures, the lilac borer is often the most common moth captured.

Another of the earliest appearing moths caught in the spring is the **oak borer**. Although not generally considered a major pest in the landscape, the 1 to 1.5 inch adult males of these moths have a remarkably close appearance to that of the yellow jacket wasp. The prominent yellow markings make this species dissimilar to other clearwings, and therefore, identification is easy to determine.

**Rhododendron borers** are typically the next moths to be captured in late spring, followed very closely by **peachtree borers**. The rhododendron borers are exceptionally easy to distinguish, because they are significantly smaller in size. The **dogwood borer** moth is even smaller in size, but this borer has a history of unreliable trapping in the Northeast (Even when using lures marketed specifically for dogwood borers, chances are other clearwing species will be trapped in higher numbers). Both of these smaller moths have two pairs of wings that contain very few scales, and therefore, are mostly clear in appearance. If by chance, both are being caught in the same trap, counting the number of yellow colored bands around the abdomen will help to differentiate between these two similar looking adults. The rhododendron borer has three yellow bands circling the abdomen, whereas the dogwood borer has only two.

As mentioned above, **peachtree borer** moths appear in the traps almost simultaneously with the rhododendron borers. Although their peak numbers will have declined, it should be noted that the lilac borer adults continue to be caught after these other species begin to emerge. The peachtree borer is about the same length as the lilac borer, but the former is more slender in the body. Distinguishing between these two species should not be a problem, because of the striking difference of the mostly clear wings of the peachtree borer compared to the more opaque wings of the lilac borer.

Another clearwing moth species important to landscapers is the **lesser peachtree borer**. The lures required to attract this species often have the most narrow or specific activity. The chemical compound or synthetically produced pheromone is relatively unique compared to the lures used to attract the other previously mentioned clearwing moths. Additionally, the lesser peachtree borers are known to have two distinct generations of male flight periods. Since the peachtree and lesser peachtree borers are very similar in appearance and have mostly overlapping flight periods, they are the most difficult clearwings to distinguish from each other. The best way to tell them apart is to examine the head region under magnification. If the area between the eyes has a whitish coloration, then it is the peachtree borer.

SEE CLEARWINGED BORERS ON PAGE 4

Remember, unless the lure is specifically stated to attract lesser peachtree borers, distinguishing between these two closely appearing species should not be a problem, since the other lures will be less attractive to the lesser peachtree species. Although the host trees of both species is the same (peach, cherry, plum, etc.), the location of the treatment is important. The peachtree borers lay eggs mostly from ground-level to the lower scaffold branches, while the lesser peachtree borers generally lay eggs at the lower scaffold branches and higher up the trunk.

The **banded ash borers** are the last important clearwing borer species to become active in the urban landscape during the season. With the exception of a single narrow yellow band across the abdomen, this species is similar looking to the lilac borer moth. However, the banded ash clearwing could never be confused with the lilac clearwing, because their adult flight periods are at completely different times of the year. The banded ash clearwing has one of the latest flight periods of the season, usually occurring during September and October. The adult lilac borer, as stated previously, is active primarily in May and June.

Additional information on clearwing borers including color photographs of the species mentioned in this article as well as many others, and information on host plants, flight periods, distribution, and identification can be found in the following publication: Taft, W.H. and J.W. Snow (revised 2004). *A Guide to the Clearwing Borers (Sesiidae) of the North Central United States*. (North Central Regional Publication No. 394). This 36-page publication costs \$13.00 plus \$4.00 shipping and handling and is available from Michigan State University, Distribution Center, 117 Central Services, East Lansing, MI 48824-1001; tel. (517) 353-6740 or it can be ordered from the web at: <http://web2.msue.msu.edu/bulletins>.

*Reference: Karl Valley, "Identifying Clearwing Borers in Pheromone Traps," Integrated Pest Management; Commonwealth of Pennsylvania Department of Agriculture, 1997. □*

## Diseases of Turfgrass

Bruce B. Clarke, PhD., Specialist in Turfgrass Pathology

### Anthracnose

This disease, caused by the fungus *Colletotrichum graminicola*, is apparent on annual bluegrass at this time. The fungus typically attacks turf growing under stress (i.e., low soil fertility and/or heat and moisture stress). Low cutting height can also enhance symptom development. To identify anthracnose in the field, look for small black fruiting bodies with protruding black spines on leaves or stems. For best results, increase turf vigor with light applications of nitrogen, maintain adequate irrigation, reduce thatch, avoid wounding (e.g. switch to smooth rollers on mowers), and raise the cutting height (whenever possible). Apply Banner, chlorothalonil, Compass, ConSyst, Eagle, Endorse, Heritage, Rubigan, Spectro, or thiophanate-methyl on a preventive basis per manufacturer's recommendations. Recent research has indicated that Chipco Signature, Medallion, and Chipco 26GT can effectively suppress this disease when used as tank mix partners (with the previously mentioned fungicides) on a preventive basis at high (e. g. brown patch) rates. More research is needed, however, before these compounds are to be labeled and recommended for the control of Anthracnose. For best results, tank mix or alternate fungicides with different modes of action every 14 to 28 days.

### Brown Patch

For the past two weeks, this disease, caused by the fungus *Rhizoctonia solani*, has been observed on golf and landscape turf. For best results, avoid heavy applications of nitrogen fertilizers during hot, humid weather, water in the early morning hours (12 midnight to 8 AM), and apply Banner, Chipco 26GT, chlorothalonil, Compass, ConSyst, Curalan, Eagle, Endorse, Heritage, Insignia, mancozeb, Medallion, Prostar, Spectro, thiophanate-methyl or Touche, on a preventive basis in areas with a previous history of brown patch.

### 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 fairy ring, usually develop in the spring and the fall. Although fungicides are not effective against all species of the fungi that cause fairy ring, Prostar and Heritage have provided good control in many university tests. For best results, maintain adequate soil moisture and fertility to mask symptom expression. Spike affected turf prior to irrigation or the application of fungicides to enhance water movement into the soil profile. The use of surfactants may enhance fungicide efficacy and aid in symptom suppression.

### Turf Field Days at Rutgers University

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

# Plant Diagnostic Laboratory Highlights

Richard J. Buckley, Laboratory  
Coordinator

## Turf

All it takes is a little hot weather to get an explosion of turf samples into the laboratory. It seems a little early, but the rush is definitely on. Leading the charge, of course, is **anthracnose**. Golf turf samples diagnosed with active **anthracnose** were submitted from Atlantic, Burlington, Camden, Union, Mercer, Monmouth, Morris, Passaic, and Sussex Counties in New Jersey, as well as on golf turf from Nevada, Pennsylvania, New York, and Connecticut. We continue to get turf plugs containing **annual bluegrass weevils**. At this point, most of the critters are pupae. **Black turfgrass atenious** larvae were also identified in a plug of golf turf. The larvae – likely third instars – were nearly three inches deep in the root zone and apparently getting ready to pupate. One final note, I have been seeing some **oriental beetles** flying about, so keep up your guard.

## Ornamentals

Diseases of herbaceous ornamentals have kept us busy. Several samples of Rudbeckia were submitted with **bacterial leaf spot** (*Pseudomonas cichorii*) or **fungal leaf spot** (*Septoria rudbeckiae*). Helleborus samples were diagnosed with **black leaf spot**, which is caused by the fungus *Coniothyrium hellebore*. Sedum cuttings, from a Pennsylvania grower, had **bacterial soft rot** caused by *Erwinia carotovora*. We also had some routine **juniper tip blight** from a Somerset County landscape and some **Septoria leaf spot** on Kalmia from Middlesex County. As for the insects, **juniper scale** on arborvitae and juniper, and **globose scale** on plum, and **cottony camellia scale** on camellia and holly provided the challenge. □

# Diseases of Landscape Ornamentals – Fireblight

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

Recent warm, wet spring weather was perfect for development of the bacterial disease known as **fireblight** in susceptible hosts. Fireblight is caused by *Erwinia amylovora*, a bacterium that only affects plants in the *Rosaceae* (rose family). Some common hosts include apple, crabapple, cotoneaster, hawthorn, mountain ash, pyracantha, and pear. Recent reports of the disease on callery pear (Bradford and Aristocrat) have been received from Monmouth County, where in some older plantings of Bradford pear, 30 to 70% of branches are affected by the disease.

Development of fireblight usually begins in the spring as bacterial cells ooze in a yellow-amber liquid from existing cankers on infected plants. These cells are spread to susceptible flowers, leaves, fruit, and stems by insects, wind, splashing rain, or pruning equipment. Insects are especially attracted to this sweet, sticky, bacterial ooze; bees and other pollinating insects commonly pick up bacteria while visiting the cankers and subsequently deposit the cells on developing flowers. *Erwinia* bacteria penetrate tissue through wounds and natural openings such as stomates and nectaries. Twigs and branches infected with the pathogen die rapidly and appear scorched, hence the name “fireblight.” Tender shoots tend to droop and bend as they die, developing a symptom commonly associated with the disease called a shepherd’s crook. As the disease advances, cankers form at the base of infected branches, and highly susceptible plants may die.

Conditions optimal for fireblight development are extended periods of warm (greater than 65 to 75°F), wet weather during spring. To manage the disease, improve plant vigor, but avoid heavy spring fertilization that would promote succulent growth. In late summer (after bacterial oozing no longer occurs), prune all diseased wood at least 6 to 8 inches below the infection, surface sterilizing tools between cuts. Remove water sprouts, and dispose of any infected plant material which may harbor the pathogen. For chemical control, the following bactericides are labeled (check label for host, timing, and rates): copper (hydroxide, metallic, salts, sulfate), fosetyl-Al (pre-bloom and repeat every 7 days until bloom), Junction (5-day intervals during bloom), OR phosphite (7-day intervals through bloom).

Finally, consider replacing troublesome and highly susceptible plant material with material that is more resistant to this disease.<sup>1</sup> Highly susceptible callery pears include Aristocrat, Autumn Blaze, Capital, Fauriei, and Redspire; moderately susceptible cultivars include Cleveland Select, Earlyred, and Whitehouse. Although Bradford is reported to be moderately resistant in certain locations, it will develop fireblight under conditions optimal for disease development.

<sup>1</sup> Source: University of Missouri Extension

<http://agebb.missouri.edu/pdc/diagnosticreports/resistant01.htm>. □

## Sudden Oak Death (Phytophthora Canker) Update

*Ann B. Gould, Ph.D., Specialist in  
Plant Pathology*

*Phytophthora ramorum*, the fungus that causes sudden oak death (or Phytophthora canker) was detected on a single lilac at a Cape May County nursery on May 27th, 2004. The plant was one of more than 2,100 plants tested in a statewide survey conducted since mid-March by the New Jersey Department of Agriculture (NJDA), the U.S. Department of Agriculture - Animal Plant Health Inspection Service, and Rutgers Cooperative Extension. At the Cape May County nursery, all plants in the infected lot (12 plants) were burned. The remainder of host and associated host plants within a 10 meter radius are on stop sale pending further tests. To date, no further incidence of the disease has been found in New Jersey.

Sudden Oak Death became a concern in New Jersey when it was learned that large wholesale and mail order nurseries in California affected by the disease had shipped suspect plants to the state in 2003. Fact sheets were mailed by the NJDA to New Jersey residents who received potentially infected plant material from the mail order nursery in California, along with information on steps homeowners should take to dispose of dead plant material. The NJDA also mailed advisory letters containing a U.S. Forest Service color fact sheet on Sudden Oak Death to nearly 1,900 nurseries and garden centers throughout the state to alert nursery owners to the symptoms of Sudden Oak Death. □

## Sudden Oak Death Workshop

A workshop entitled "Sudden Oak Death and its Potential Impact on the New Jersey Nursery Community" will be held at 6:30 p.m. on June 29th at the Rutgers Cooperative Extension office of Gloucester County, County Government Services Building, 1200 N. Delsea Drive, Clayton, NJ. The workshop, sponsored by Rutgers Cooperative Extension, the New Jersey Department of Agriculture, and the New Jersey Nursery and Landscape Association, will address regulatory and survey issues associated with the disease as well as disease development and pathogen biology. All are welcome to attend. For further information contact the Rutgers Cooperative Extension of Gloucester County office at 856-307-6450 ext 1. The full program is available from their website at: <http://gloucester.rce.rutgers.edu>. □

## UV Rays

*Jayne Sojka, Lady Bug IPM*

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The sun produces both visible and invisible rays. The invisible rays, known as ultraviolet -A (UVA) and the ultraviolet-B (UVB), cause most of the problems. Both cause suntan, sunburn, and sun damage. There is no "safe" UV light.

Harmful UV rays are more intense in the summer. The sun's harmful effects are also increased by wind and reflections from water and sand. Even on cloudy days UV radiation reaches the earth and can cause skin damage. The UV index is a prediction of ultraviolet intensity in a given location. It can be found in the weather section of most newspapers and some television weather forecasts.

A good number of growers and I have been talking about the long term effects of the sun. One gentleman shared that he has skin cancer on his nose, ears and back of his neck. These are areas that one has a more difficult time covering with clothes and may miss with sunscreen but yet these areas are the most vulnerable.

To protect your skin from the sun, the American Academy of Dermatology recommends:

- 1) Wear effective sun protective clothing
- 2) Avoid the sun between 10 A.M. and 4 P.M.
- 3) Wear a hat with a 4-inch brim and sunglasses
- 4) Use better than 25 SPF broad spectrum sunscreen
- 5) See a doctor for an annual skin exam if you have areas of concern.

Now let's face it, avoiding the sun between 10:00 A.M. and 4:00 P.M is not practical in our line of work. So the answer for our working environment is Sunscreen and protective clothing. I came across an excellent source of information on sun protective clothing. Check it out:

Sun Precautions  
2515 Wetmore Avenue  
Everett, Washington 98201  
1-800-882-7860 or on the internet  
[www.sunprecautions.com](http://www.sunprecautions.com)

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