



**TPM/IPM Weekly Report for Arborists,
Landscape Managers & Nursery Managers
University of Maryland Cooperative Extension
Central Maryland Research and Education Center**

April 8, 2005

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Hey! We need your input.

Please call, fax or e-mail what insect activity or diseases you are finding out the in the landscape and nursery. Call 301-596-9413 or e-mail Suzanne Klick, Technician at CMREC, at Sklick@umd.edu. Our fax number is 301-596-9632.

Juniper Webworm, *Dichomeris marginella*

Steve Sullivan of The Brickman Company found juniper webworm actively webbing branches and feeding on *Juniper chinensis* in the Glen Burnie area (near MVA) and in the Annapolis area on Wednesday afternoon. This insect has one generation per year. The active larvae are most likely overwintering 5 -7th instar larvae and they generally produce the most webbing at this stage. We should see adults out in mid to late May with the first generation for 2005 active in late May and June. The early instar larvae that will be present later will feed as needle miners at first, then start to feed on the surface.

Control: Conserve

Plant in bloom nearby: Bradford pear just starting to open bloom, Star magnolia in full bloom, forsythia in full bloom.



Photo by Chris, Maier, Connecticut Agricultural Experiment Station Archives, Connecticut Agricultural Experiment Station, www.forestryimages.org



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Ambrosia Beetles are out this week

Matthew Grayson of Foxborough Nursery in Harford County called on Monday and reported that he had nine ambrosia beetles in his ambrosia beetle trap on Friday, April 1st and 60 in the trap by Monday, April 4th. We found 26 beetles at CMREC in Clarksville on Wednesday, and Bill Ramsey from Sun Nursery found 19 beetles in his alcohol trap on Wednesday morning. Bob Rabaglia, Maryland Department of Agriculture, identified the beetles in the traps in Harford County as *Monarthrum fasciatum*, and *Xyleborus plliculosus*. The beetles at CMREC included these two as well as *Monarthrum mili* and *Xyleborinus saxesenii*. *X. saxesenii* has the most potential to be aggressive. The beetles in the genus *Monarthrum* are natives and the other two are exotics that have been established in Maryland for awhile. These species are out at the same time as the damaging beetle in the genus *Xylosandrus* (which were not found in the traps). One grower reported that he is finding *Cornus kousa* with ambrosia beetle boring in the trunk and branches.

Ambrosia beetle, *Xylosandrus germanus*

These tiny beetles, in the family Scolytidae, have been a problem in early spring in Maryland in 2002, 2003 and 2004. We are interested in whether you see damage in your landscapes or nurseries. **Give us a call** if you see the frass extruding from trunks of trees. Overwintering adults become active with the first warm period of the spring. In 2003 we first reported adult flight activity on March 21. The damage from the tunneling females may not show up until later in April.



Male (left), Female (right)

Photo by Bob Rabaglia, Maryland Department of Agriculture



Frass caused by *Xylosandrus* extruding from maple.

Damage: The females use their mandibles to cut into the trunk and major branches. The small round holes are about 1/32" in diameter. Females push out long chains of wood frass that project from the tree. Damage occurs in the cambium as the females cut through, but she continues to excavate wood and travel into the heartwood the tree. Smaller diameter trees with large infestations may have such heavy damage to the cambium that the tree may dieback. Females

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will lay eggs and deposit spores of a symbiotic blue stain fungus along the excavated gallery. The beetles actually feed on the fungi. The boring and introduced fungus damage and clog the xylem causing dieback and ultimately death of the tree. Sometime the beetle carries in *Fusarium* fungal spores. The *Fusarium* will often kill the tree.

Plants commonly damaged by ambrosia beetle: *Acer saccharum* (Sugar maple), *Acer palmatum* (Japanese red maple) *Betula* (beech), *Cornus* spp (dogwoods), *Ilex* spp. (Holly), *Halesia*, *Styrax*

Overwintering: This beetle is reported to overwinter as adults in leaf litter and in galleries in trunks of trees. Adults become active when temperatures rise in spring. In springs where we have 5 – 7 days of above normal warm weather the adult emergence is concentrated with lots of damaged being detected.

Life cycle: Adults overwinter. The complete lifecycle of larval development to adult emergence for the first generation is 55 days. The second generation occurs in early summer but rarely causes significant injury. Most damage occurs in spring with the first adult activity and 1st generation larval feeding.

Monitoring: Alcohol traps can be used to monitor for adult flight activity in your area. Examine susceptible trees trunks for frass being push out in long chains from the trunk and major branches.

Control: Apply permethrin (Astro) as soon as the tunnels are found. If you can catch the females as they are starting to drill in you can often cause them to back out. In past years we found that vigorous trees survive and the small holes will heal over (assuming the beetle did not get a chance to introduce a *Fusarium* disease).

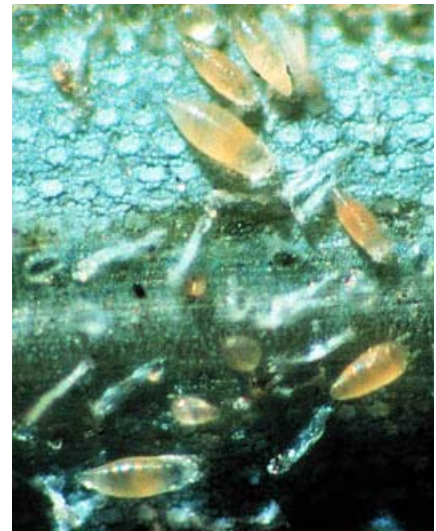
Hemlock rust mites on hemlock

In 2003 we had reports of hatch of hemlock rust mite, when degree day units reached 40 –50. This week we found rust mites active in the Brookeville area.

Monitoring: Use a hand lens to examine hemlock foliage this week. The mites are sausage shaped, yellowish in color, and very tiny. They can be found on the upper and lower surfaces of hemlock needles.

Damage: Feeding by this eriophyid mite results in hemlocks that are off color. Plants appear nutrient deficient.

Control: If rust mites are active, treat plants with horticultural oil. Be sure to get coverage on the upper and lower needle surface. *Note:* The hemlock rust mite is in a different family (Eriophyidae) than spider mites (Tetranychidae), the more common mite you come across. Most traditional miticides do not control eriophyid mites.



Treating for Japanese Beetles using Imidacloprid

We have received questions about using imidacloprid as a soil injection to control adult Japanese beetles on trees for the 2005 season. Yes, Japanese beetle adult populations should be very large in several locations in 2005. In areas with new landscapes and a lot of new turfgrass

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you can expect lots of feeding activity. We were sampling in the Olney and Brookeville area this week and found large numbers of white grubs in the soil in the upper 6 - 8" of the soil. However, turf seldom needs treatment against white grubs in the spring because turf is vigorous and can tolerate feeding damage. Also note that controlling white grubs in turf in the spring does not prevent infestations of turf in the fall, new adults fly into the turf area in June and July.

The arborist that called asked about the range of application rates for trees. I called Bruce Steward at Bayer Company and asked him to clarify what is the recommended rate. For the Merit (imidacloprid) with 1.6 oz packets you mix this with 25 gallons of water. Measure the Diameter at Breast Height (DBH) and for every 1" of DBH apply 1 quart (32 ounces) of finished product. Bruce Steward suggested that a soil drench or injection should be made 2 months before Japanese adults show up. Last year the adults showed up in early June on the Eastern shore and at the end of June in the Washington County area. In trials we conducted in 2002 and 2003 we did not have great success with imidacloprid applied as a soil injection on Lindens. Some arborists have told us it worked well for them in controlling Japanese beetle feeding on other species of trees. We would love to hear what successes or failures you have had and what rates you used.

Multi-colored Asian ladybugs (or ladybeetles) are active this week

Mark Schlossberg of ProLawn Plus called with a customer who was experiencing a large number of beetles active in their house last week. These are the multicolored Asian lady beetle, (*Harmonia axyridis*). The beetles found their way into houses last fall and have been quietly overwintering in people's houses. Now that spring is here the beetles are active and trying to get back outside. Asian lady beetles are a beneficial biological control in trees during the summer, and in fields and gardens during the fall, but can be a severe household nuisance during late fall and winter. Wooded residential and industrial areas are especially prone to problems.

Asian lady beetles, like other accidental invaders, are "outdoor" insects that create a nuisance by wandering indoors during a limited portion of their life cycle. They do not feed or reproduce indoors; they cannot attack the house structure, furniture, or fabrics. They cannot sting or carry diseases. Lady beetles do not feed on people though they infrequently pinch exposed skin. Lady beetles may leave a slimy smear and they have a distinct odor when squashed.

The multicolored Asian lady beetle is 1/3 inch in length; dome-shaped; yellowish-orange to red with variable black spots on the back. Deep orange is the most common color. The 19 black spots may be faint or missing. There is a black "M" or "W" (depending on which direction you are looking at the beetle from) shaped mark on the thorax (area just behind the head).

Management: Sealing exterior gaps and cracks around windows, doors, eaves, roofs, siding and other points of access before the beetles appear can prevent unwanted entry. Experience suggests, however, that comprehensive pest proofing is time-consuming, often impractical and usually not 100% effective. For large infestations with intolerable numbers of beetles, vacuum them up with a shop vacuum and move them outdoors. Long-term relief may come from planting trees that will grow up to shade the south and west sides of the house. Indoor sprays are of very limited benefit. Black light traps have been used indoors and if you search the internet you will

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find people selling beetle black light traps for the rich (usually \$150 -\$200) for a trap. If you use a black light trap you still have to empty out the beetles in the morning, placing them outside. Tell your customer these are beneficial bugs and they will see lots of activity for the next couple of weeks then they will all find their way outdoors or die trying and either way the problem will be solved.

White Pine Weevil found in Spruce

Marty Adams found spruce plants with white pine weevil (*Pissodes strobe*) damage this week. He found adults and larvae in the Columbia area on April 8 2005. The insect overwinters as adults under leaf litter. Females are active in early spring laying eggs in tip growth. Larvae feed for about 4 - 6 weeks.

Damage: The larvae tunnel underneath the bark of terminal growth.

Plants in bloom nearby: Star magnolia in full bloom. Bradford pears with 50 % of blooms open.



Watch for Cottony Camellia/Taxus Scale

We visited a site in Annapolis on April 1st and found a heavy infestation of Cottony camellia/Taxus scale, *Chloropulvinaria floccifera*. This is a soft scale that overwinters as 2nd instar females on the undersides of leaves. This scale can reproduce quickly with over 1000 eggs per female. The crawlers should be out in late May, around 500 degree days and when the Fringe tree is in bloom.

Monitoring: Look for sooty mold on leaves and honeydew. Examine undersides of leaves for presence of 2nd instar females.

Control: If you are planning to use soil injection or soil drench of imidacloprid (Merit) do it soon. Horticultural oil can be applied to suffocate the overwintering females.

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Overwintering 2nd instar cottony camellia/Taxus scale females



Sooty mold on leaves

Boxwood leafminer

Marty Adams with Bartlett Tree Company reported larvae of boxwood leafminer on American boxwood in Columbia, MD on March 30, 2005. *Corylus americana* was in first bloom.

Scurfy Scale (*Chionaspis furfura*)

Marty Adams found the overwintering adults of scurfy scale on Washington hawthorn in Ellicott City on March 15th. *Mahonia bealyi* was in full bloom

Cicada Damage

Steve Sullivan with The Brickman Group reported branch dieback on *Ilex crenata*, *Ilex cornuta* and *Ilex opaca* from last year's cicadas in College Park on April 4th.

Botryodiplodia

Marty Adams reported finding botryodiplodia on upright blue juniper in Owings Mills on March 19th. *Helleborus* 'Phedar Strain' was in first bloom and *Mertensia* spp. were in first bud.

Volutella on Boxwood

David Clement at the Home and Garden Information Center (HGIC) received a plant sample of Volutella on Boxwood on March 28th. The sample is from Howard County. Boxwoods show dying sectors or isolated shoots, and close inspection finds the peach-colored fruiting bodies of *Volutella*. In boxwood, this disease is also thought to be expressed on stressed plants with the primary problem being damage to the roots or winter desiccation. Fungicide sprays for *Volutella* on boxwood are not recommended. Address any cultural problems, and prune out the dead shoots.

Botryosphaeria on Rhododendron

David Clement also received a sample of *Botryosphaeria* on Rhododendron from Prince George's County on April 2nd. Several species of *Botryosphaeria* infect a wide variety of woody plants

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in the landscape. *Botryosphaeria* cankers can take several years to develop so the canker girdles the stem and causes wilt and death of the branch. Look for swollen areas with cracks in the bark. These are often found on branches showing early symptoms of wilt, pale leaf color, etc. Many other woody plants are infected, including witchhazel, apple, firethorn, Callery pear and other pears (this can be confused with fire blight, but it shows up early, fire blight requires hot weather), birch, Leyland cypress, rhododendrons and many others.

Management: Prune out the cankered branches back into healthy wood.

What is happening now with diseases?

When you combine tender new foliage and moist weather, you have conditions that are favorable for infection by many plant disease agents. Many of our common landscape diseases have to perform their primary infection now in order to have substantial disease during the growing season. Some like cool weather. Some examples are:

Apple Scab. The ascospores are being forcibly ejected into the air from over-wintering perithecia in fallen leaves. These will infect apples and crabapples starting at “green tip” stage, which is starting now. The best control for apple scab in landscapes is the use of resistant varieties. In fruit orchards, the first scab sprays are going on now to try to prevent as much of these first infections as possible.

Powdery mildews. The powdery mildew over-wintered as cleistothecia on bark and on the ground in fallen leaves. They are opening now and ejecting their ascospores into the air for long distance dispersal. This will allow infection of the first green tissues on trees and shrubs. Later infections will arise from spores produced on the white mildew.

***Gymnosporangium* rusts.** These are the familiar “Cedar-Apple Rust” and Quince Rust”. These fungi infect two different kinds of plants (*Juniperus* spp. and many pome fruit trees and shrubs) to complete their life cycle. Now is the time that the fungal stage on the Eastern Red Cedar (*Juniperus virginiana*) is producing the spores that will be carried by wind to infect foliage and fruit on the pomaceous hosts. Cedar-Apple rust (*G. juniperi-virginiana*) makes leaf galls on the juniper that resemble small golf balls. Now these leaf galls are extruding orange gelatinous tendrils, making them look like small space



monsters! Basidiospores produced on the gelatinous tendrils are carried on wind to infect apples, crabapples and some other pomaceous plants. Hawthorn rust (*G. globosum*) also makes leaf galls, smaller than the previous ones. Quince rust (*G. clavipes*) produces slightly swollen twig and trunk cankers on the juniper. Most of the year these are so inconspicuous, they go unnoticed. But now, these cankers are swollen and colorful, with a red-orange velvety masses protruding from cracks in the bark. Spores from these cankers infect hawthorn and *Amelanchier* twigs and fruit.

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Control of all the *Gymnosporangium* rusts can be obtained on the pomaceous plants by preventing this initial infection. Fungicides such as the mancozebs and chlorothalonil (Daconil Ultrex) do a good job, and only need a few applications. Once the weather warms up, the infection period ends. The use of resistant varieties is still preferable for the landscape, but it is complicated because varieties with good resistance to Cedar-Apple rust may be susceptible to Quince rust. Because Quince rust infects shoots, it causes distortions and dieback.

Peach leaf curl and Oak leaf blister. These diseases are caused by several species of fungi in the genus *Taphrina*. Infection is only possible under cool, wet conditions and on very young leaf tissues. These can be conspicuous on oaks, but don't cause serious damage. They can be more damaging on the stone fruit, and usually a dormant season spray is used as insurance to prevent extensive leaf curl. The *Taphrina* fungus over-winters on bark and bud scales and is washed into swelling buds to infect the young leaf tissue. Thorough coverage of the bark and buds is needed for control.

Shade Tree Anthracnose Diseases. Most of our forest trees have one or more native anthracnose diseases. All of these diseases require cold, wet conditions and young developing plant tissues for successful infection. One of the most conspicuous shade tree anthracnose diseases is on Sycamore. Other species attack oaks, maples, ash, and beech. The symptoms are similar for all. Young leaves are infected and may be entirely blighted, or have brown spots and blotches. Young shoots may be blighted, and hang black and dead on the tree. In springs that are especially wet and cold, the entire tree may be defoliated. Other years the symptoms are so mild they go unnoticed. These trees evolved along with these diseases, and even when the tree looks terrible, it won't be killed and no control is needed. For the sake of beauty and a calm client, the London Plane Tree is usually used instead of our native Sycamore because the London Plane is resistant to anthracnose.

The *Discula* Anthracnose on our Eastern Flowering Dogwood (*Cornus florida*) is an example of an exotic fungus (*Discula destructiva*) introduced into a susceptible population. The introduction took place in the late 1970's. Many dogwoods in forest and landscapes were killed. Now, the disease seems to be moderating. Although I still advise protectant fungicide sprays to reduce the severity of this disease on key landscape dogwoods, I observe many forest and landscape dogwoods that are never sprayed, and always show some symptoms of anthracnose (leaf spotting), but are not showing the rapid decline seen in the early years of the epidemic. Perhaps most of the highly susceptible trees have been killed, and now the survivors are carrying on.

What is in bloom?

Plant	Plant Stage (Bud with color, first bloom, full bloom, first leaf)	Location and Degree Days (DD)
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<i>Cornus mas</i> (Cornelian Cherry)	First bloom (Ellicott City – March 29)	Ellicott City - 30 DD
<i>Corylopsis spicata</i> (Spike winter hazel)	First bloom (Silver Run, Carroll Co.)	
<i>Corylus americana</i> (American hazelnut, American filbert)	First bloom (Columbia – March 30)	Ellicott City – 36 DD
<i>Corylus avellana</i> 'Contorta' (Harry Lauder's Walking Stick)	Full bloom (Columbia – March 30)	Ellicott City – 36 DD
<i>Forsythia</i>	Full bloom (Glen Burnie – April 6)	Glen Burnie – 53 DD
<i>Helleborus</i> 'Phedar Strain'	First bloom (Owings Mills – March 29)	
<i>Mahonia bealyi</i>	Full bloom (Ellicott City – March 15)	Ellicott City – 23 DD
<i>Mertensia spp.</i> (Bluebells)	First bud (Owings Mills – March 29)	
<i>Pyrus calleryana</i> (Bradford Pear)	Buds opening (Ellicott City – April 4) First bloom (Glen Burnie – April 6) Full bloom (College Park – April 6)	Ellicott City – 50 DD Glen Burnie – 53 DD College Park – 62 DD
<i>Rhododendron mucronulatum</i> 'Cornell Pink'	Bud with color (Chevy Chase - March 19)	Rockville – 9 DD
<i>Salix babylonica</i> (Weeping Willow)	First leaf (College Park, Laurel, Beltsville – April 5)	College Park – 46 DD
<i>Spirea prunifolia</i> (Bridalwreath Spirea)	First leaf (Ellicott City – April 4, 2005)	Ellicott City – 50 DD

Degree Day Information (as of April 7, 2005):

Annapolis	33
College Park	79
Ellicott City	95
Frederick	48
Germantown	80
Glen Burnie	72
Rockville	58
Silver Spring	76
Waldorf	104
Washington DC	93

Weed of the Week

Chickweed is a winter annual that prefers cool moist areas. Chickweed grows in a dense prostrate fashion in both turf and ornamental beds. Reproduction is by seed, usually germinating

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in late summer or early spring. Leaves are opposite, egg shaped and pointed at the apex. The root system is fibrous and shallow and easily detaches when the foliage is pulled.

Common Chickweed can be distinguished from Mouseear Chickweed by noting the presence of hair on the leaf blades. Mouseear Chickweed has a hairy leaf blade and will root at the nodes.

Control of Chickweed can be achieved through either pre emergent or post emergent pesticides. Chickweed in ornamental beds can be controlled with an early spring application of “Snapshot” which is a mixture of isoxaben and trifluralin, but requires one half inch of rainfall or irrigation within three days to properly activate. Post emergent Chickweed in turf can be controlled by many of the broadleaf herbicides. Post emergent chickweed in beds can be achieved through the use of a glyphosate product.

Photos courtesy of Virginia Tech



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