



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

May 20, 2005

Stanton Gill (Entomologist), Paula Shrewsbury (Entomologist) and Ethel Dutky (Pathologist), Chuck Schuster (Extension Educator), Ginny Rosenkranz (Extension Educator), and Suzanne Klick, Technician

Do you have questions? Give us a call at 301-596-9413

Black Knot of Ornamental Plum

John Rich of Country Springs Nursery asked me to look at a site with ornamental plums. The plums had large blackened galls on the branches. This swelling of branches is called black knot. Black knot is caused by the fungus, *Apiosporina morbosa* (synonym *Dibotryon morbosum*). . The fungus over-winters in knots on twigs and branches or in the infected wood immediately surrounding them.



Monitoring: Michael Ellis of Ohio State University Cooperative Extension has this information in his fact sheet HYG-3011-94 on black knot:

The black knot fungus infects twigs, branches, and fruit spurs. Usually, infections originate on the youngest growth. On infected plant parts, abnormal growth of bark and wood tissues produce small, light-brown swellings that eventually rupture as they enlarge. In late spring, the rapidly growing young knots have a soft (pulpy) texture and become covered with a velvety, olive-green growth of the fungus. In summer, the young knots turn darker and elongate. By fall, they become hard, brittle, rough and black. During the following growing season, the knots enlarge and gradually encircle the twig or branch. The cylindrical or spindle-shaped knots may vary from one-half inch to a foot or more in length and up to 2 inches in diameter. Small knots may emerge

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from larger knots forming extensive galls. The knots do not produce infective spores until the spring after the second winter following infection. This gives you plenty of time to notice the swellings, and get rid of them. Infective ascospores are forcibly ejected in spring at budbreak and throughout active shoot elongation. Wet weather is required for infection, and moderate temperatures (55 to 75F) provide the highest spore germination. After several years the knots may be invaded by insects and secondary fungi, causing them to decay and lose the black color. **Control:** Control can be difficult on landscape trees because infective spores can blow in from infected *Prunus* species in woodlands. The first step is to prune out all knots. This is easier to do in the fall once the infected twigs have produced a noticeable swelling. In fruit orchards fungicide sprays may be applied to prevent infection. However, this is seldom recommended for the landscape. If possible, *Prunus* species in waste areas and nearby woodlands should either be removed, or all knots pruned out of them.

Anthracnose on Sycamore

The movement to shift our landscapes to mostly native plants has created a demand for native sycamore. The major flaw of this large, impressive, and tough tree is its high susceptibility to anthracnose. The London Planetree became popular long ago because it has good resistance to anthracnose, and provided a similar stature and appearance as the native sycamore. Stanton received some samples in from a nursery growing native sycamores showing the shoot dieback from the disease.



The first thing to remember about all native shade tree anthracnose diseases (closely related fungi cause similar diseases on our oaks, beech, maples and ash), is that disease severity is closely related to weather. In cool, wet springs we see more anthracnose and in warmer, drier springs it can be difficult to find symptoms. The next point to keep in mind is that these diseases, even when severe, do not seriously harm the tree. These fungi have evolved along with their tree hosts, and the trees compensate relatively well to the early spring damage. Thus, we have a disease that will cause conspicuous symptoms, but not serious damage. It can be controlled with fungicide sprays, but unfortunately, the worst disease is promoted by weather that makes spraying most difficult (cold, wet and windy).

Sprays can be effectively used in a nursery production situation on small specimens. Excellent coverage is required. Sprays are not advised for landscape specimens due to the problem of obtaining good coverage. Some fungicides registered for anthracnose control include Heritage, Compass, Daconil Ultrex, Cleary's Protect TO, Terraguard and others. Consult the label for rates and spray intervals. The idea is to start spraying early (at budbreak) to prevent infection of the succulent new growth.

The best control for any disease in landscape and production is to use resistant varieties. In reviewing Dirr's reference (*Manual of Woody Landscape Plants*) I find no resistant sycamores listed. In fact Dirr says "do not plant it; the tree is too large and is constantly dropping leaves, twigs and fruits...etc.etc."... The disease resistant varieties that everyone knows about are
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'Bloodgood', 'Columbia', 'Liberty' and 'Yarwood'. These are all "London Planetrees, *Platanus x acerifolia*", a cross between the sycamore and the oriental planetree (*P. orientalis*). These varieties were evaluated not only for resistance to anthracnose, but also for resistance to powdery mildew. They also have better form and are not as large as our native sycamore.

Leyland Cypress, Arborvitae, and Juniper

Leyland cypress will be starting to start new growth in the next couple of weeks. Leyland cypress has ruled as king of the screening plants for the last 20 years. Arborvitae are making a good comeback with increased use in landscapes over the last 10 years. Leyland cypress and arborvitae are hit by two armored scales, the minute cypress scale and juniper scale, which should be producing crawlers very shortly. Be on the lookout for scale activity on your customers' plants.

Minute Cypress Scale, *Carulaspis minima* and Juniper Scale, *Carulaspis juniperi*

The minute cypress scale, *Carulaspis minima* (photo), looks very similar to the Juniper scale but minute cypress scale is the most common armored scale we find on Leyland cypress and arborvitae in our metropolitan area. This scale has a crawler period that is 2 weeks later than Juniper scale.



Plants damaged: *Juniperus* (Junipers), leyland cypress, and cryptomeria.

Damage: These two armored scales feed on the sap of the host plant. The scale is usually found on small branches and settle on leaf scales. Heavily infested foliage will yellow and dieback.

Description and life cycle: This armored scale overwinters as mature 3rd instar females filled with eggs. The crawlers of juniper scale appear in May when multiflora rose is in bloom and mountain laurel blooms are open. Females molt three times and males molt 5 times. Winged males can be found in August through September. Males mate with females and then the male dies. Females develop eggs and overwinter as egg filled females. One generation is produced annually.

Monitoring: Examine foliage and stems for the presence of the scale covers when mountain laurel and multiflora rose are in bloom. Covers will have to be examined using a 10-16x magnifier. Double sided tap can be placed on small twigs to capture crawlers that emerge in late spring to early summer.

Control: Horticultural oil can be applied at a labeled dormant rate in late winter to early spring before new growth initiates. The oil will suffocate the female insects overwintering on the stems and leaves. A thorough application must be made. During the growing season a summer rate (listed on the label) of horticultural oil can be used to kill crawlers and young scale insects. Systemic insecticides can be applied. Check with Cooperative Extension offices in your state or local garden centers for appropriate systemic insecticides and the time to apply them for the best control.

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Azalea lace bugs on azaleas

On May 14 in Bethesda, Bill Miller found lace bug nymphs and cast skins on the azalea *Rhododendron* 'Narcissiflorum' (syn. 'Shiro-manyo') which is a double white form from the Mucronatum group.

Monitoring: Look for yellow stippling on the upper leaf surface of the new foliage azaleas. Look on the underside of the foliage for active nymphs (black with tiny “spines” on the body), and black hardened droplets of lace bug frass.

Control: If large numbers of nymphs are active then treat azaleas with a residual or systemic insecticide such as acephate (Orthene), imidacloprid (Merit or Marathon), or a short residual such as horticultural oil. Be sure to get thorough coverage under the leaves with the oil.

White pine adelgid

A Maryland nursery grower e-mailed us pictures from a site in Pennsylvania of a white pine heavily infested with white pine adelgid.

Monitoring: Look for white wax on trunk and branches

Control: Unless populations of this adelgid are very high they do little damage to the tree. Horticultural oil will suppress the population. A soft scrub brush and bucket of soapy water should also do the trick to remove adelgids from the bark.



Pine Needle Scale, *Chionaspis pinifoliae*

Pine needle scale is found on mugo pine, Douglas fir, spruce, and Japanese black pine. The crawlers just hatched out this week on May 16 in the Woodbine area.

Monitoring: Examine the needles of susceptible trees. You can detect the crawlers using a 10x magnifier.

Control: In most cases, populations of pine needle scale are low and do not warrant control measures.

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Honeylocust plant bug and leafhopper

Steve Sullivan of Brickman Company reports that honeylocust plant bug was causing major damage on honeylocust in the Calverton area of Prince George's County this week. Honeylocust (*Gleditsia tricanthos*) grown in urban landscapes are often simultaneously attacked by the honeylocust plant bug and by the leafhopper, *Macropsis fumipennis*.

Monitoring: Examine newly emerging growth in spring using a 10-16x magnifier to see the nymphs of plant bugs and leafhoppers.

Control: March is the time to apply systemic soil drenches or injections if you anticipate problems with leafhopper or plant bug.

Diaphnocoris chlorionis (**honeylocust plant bug**) is a member of the Miridae family and has one generation per year. Honeylocust plant bugs overwinter as eggs just below the bark surface, usually on twig growth. The eggs hatch just as the vegetative growth of the honeylocust starts to open. The nymphs move from the woody twig tissue to the newly emerging green growth and start to feed. Most of the damage that will show up later in the season occurs at this early feeding time.



Honeylocust plant bug



Leafhopper and plant bug damage on honeylocust

Macropsis fumipennis (**leafhopper**) feeds on leaflet stalks and the leaf petioles. Its eggs are inserted into young twig growth by females and it overwinters in this egg stage. This pest has one generation per year and the hatching occurs as new green growth emerges from the honeylocust. The leafhopper is green and blends in with the green plant tissue. Adult leafhoppers can be found on the honeylocust until July. The leafhopper contributes to the damage incurred by the honeylocust plant bug.

Gouty oak gall

Rick LaNore reported gouty oak gall on white oak on May 11 in Harwood.

Monitoring: The adult wasps have made small galls on leaves at this time of year

Control: This insect has a complicated life cycle with a generation that lives and forms galls in the leaves of oak (~ 3 month generation time) and a generation that lives and forms galls on the woody stems (~ 33 month generation time).



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Control for this pest is very difficult. To learn more about the biology and management of this pest see the following reference: *Eliason, E. and D.A. Potter. 2001. Biology and Management of the Horned Oak Gall Wasp on Pin Oak. Journal of Arboriculture 27(2):92-100.*

Imported willow leaf beetle

Rick LaNore reported adults of imported willow leaf beetle on weeping willow will on May 11 in Harwood. Mark Adams with The Brickman Group found this beetle on May 10 in Pasadena.

Monitoring: Look for larvae on leaves causing skeletonization

Control: Materials to suppress this leaf beetle include spinosad (Conserve) or *Bacillus thuringiensis* 'tenebrionis'. Remember *Bt* 'tenebrionis' is only effective on the larval stage. This is a different *Bt* than the one used for caterpillars.

Cottony camellia taxus scale

Rick LaNore found the overwintering females of cottony camellia taxus scale on Burford holly on May 11 in Harwood. In Brookeville, we found a sample on May 16 on blue holly with the females starting to exude white wax but eggs are not present yet. Steve Sullivan with The Brickman Group brought in a sample of privet with this scale on May 17.

Monitoring: Look for females on stems and leaves. They are starting to create white wax for the egg sac.

Control: Wait until crawler stages. We will let you know when this occurs.



Cottony camellia taxus scale on blue holly



Cottony camellia taxus scale on privet

Spruce spider mites

Rick LaNore reported adult spruce spider mites on Alberta Spruce on May 11 in Harwood.

Monitoring: Use a piece of paper under the foliage and wrap sharply to dislodge mites onto the paper.

Control: Several materials works on these mites including Horticultural Oil, Hexygon, Avid, Floramite.

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Aphids

Mark Adams with The Brickman Group found winged and wingless *Viburnum* aphids (*Aphis viburniphilia*) on snowball viburnums on May 13 in Pikesville. Mark also found aphids feeding on roses on May 9 in Baltimore. Steve Sullivan is finding large populations of aphids on winged euonymus this week.

Monitoring: Look for aphids on tip growth of plant. Also look for lady beetle adults, larvae, and eggs (see beneficial of the week below) and other beneficials.

Control: Insecticidal soap, Endeavour, Acephate. If aphid populations are high there are usually numerous beneficials associated with them. If left to do their thing, these beneficials will suppress the aphid populations.

Hemlock woolly adelgid

Mark Adams is finding hemlock woolly adelgid crawlers on May 9 in northern Baltimore. Bob Mead is reporting higher than normal populations of hemlock adelgid in the Baltimore area this week.

Monitoring: Look for white wax and presence of settled stages

Control: Horticultural oil, foliar or soil applications of Merit.

Privet rust mites, *Phytoptus avellanae*

Mark Adams found privet rust mites on a privet hedge on May 9 in Baltimore. Female mites overwinter under bud scales. The females laid eggs in May and the immatures are now active. They are yellow to white and spindle shaped. This eriophyid mite can build up to high numbers in spring. The mite only has two pairs of legs.

Plants damaged: Amur privet and California privet

Monitoring: Damage appears as russetting of foliage rather than a coarse chlorotic fleck. The leaves will often cup and twist

Control: horticultural oil, insecticidal soap, Avid, Kelthane.

Euonymus caterpillar (*Pryeria sinica*)

We received a report that the Euonymus caterpillar (*Pryeria sinica*) is migrating all over a Severn neighborhood and is a real nuisance as they go up buildings in search of a place to pupate. Neighbor community leaders are calling expressing their concern over the caterpillar invasion. Let's get real here. The larvae will pupate soon and the problem will pretty much solve itself.



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Beneficial of the Week:

Multi-colored Asian lady beetle – a pest or beneficial?

(by Michael Raupp and Paula Shrewsbury, images by M. Raupp)

Earlier this season we discussed the Multi-colored Asian lady beetle, *Harmonia axyridis*, as a pest in the Weekly Pest Report. This lady beetle is actually a nuisance pest to people as it invades their home. However it is not a pest to plants. Most of these beetles have exited homes now that the warm weather is here. Let's discuss why we might actually like these pretty little beetles.

This lady has a voracious appetite. *Harmonia axyridis* has been feasting on herds of aphids on trees and shrubs this week and their consumption is prodigious. In one grove of barberries on the UMD College Park campus aphid populations went from roughly 10 aphids per leaf to zero in the span of 48 hours. *Harmonia* adults have been reported to consume more than 250 aphids each day and the larvae may eat more than 1500 during their development. In addition to consuming large numbers of aphids, they will feed on adelgids, scales insects, psyllids, and probably many other soft-bodied insects they encounter. Like many predators, they will eat each other. This species is largely arboreal spending time in the canopies of many types of trees and shrubs found in our landscapes. They are highly beneficial when it comes to reducing populations of aphids. If given the opportunity (ex. not getting sprayed by pesticides) these predators really can do their job well.

Adults of this magnificent insect are highly variable in color and spot pattern (see image). Their body color ranges from a pale orange to vermilion. The number of spots on the wing covers varies from 0 to 20. One diagnostic feature is a dark patch in the shape of an M just behind the head. Females lay lemon yellow lady beetle eggs (see image) in clusters of about 20. The juvenile stages or larvae (see image) are mostly black but with two lateral orange stripes on the middle segments of their abdomen. These creeping youths resemble tiny, short-snouted alligators. The larvae take a week or two to develop and then transform into pupae (see image). Within a few days the adults will emerge from the pupal skin and resume their conquest of the realm of aphids. Be sure to monitor for these “beneficial” beetles in your landscapes or nurseries.



Eggs



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Pupa

Larva



Adult

What's in bloom?

Plant	Plant Stage (Bud with color, first bloom, full bloom, first leaf)	Location and Degree Days (DD) (Location in parenthesis indicates degree day site close to reported site of bloom)
<i>Aesculus pavia</i> (Red buckeye) <i>Aesculus hippocastanum</i> (White chestnut)	Full bloom (May 18 – Salisbury)	259 DD
<i>Astilbe</i> ‘Vision in Red’	First bloom (May 15 – Silver Run)	
<i>Astilbe</i> ‘Double Pleasure’	Full bloom (May 15 – Silver Run)	
<i>Cornus kousa</i>	First bract (May 18 – Salisbury)	259 DD
<i>Enkianthus campanulatus</i> ‘Red Bells’	Full bloom (May 15 – Silver Run)	
<i>Galax aphylla</i> (Wandflower)	First bud (May 15 – Silver Run)	
<i>Gleditsia triacanthos</i> (Honeylocust)	Full bloom (May 18 – Ellicott City)	442 DD
<i>Paulownia tomentosa</i> (Princess tree)	Full bloom (May 17 – Ellicott City)	432 DD
<i>Philadelphus lewisii</i> (Mockorange)	Full bloom (May 18 – Salisbury)	259 DD
<i>Prunus pensylvanica</i> (Wild cherry)	Full bloom (May 18 – Salisbury) Full bloom (May 18 – Ellicott City)	259 DD 442 DD
<i>Rhododendron atlanticum</i>	First bloom (May 15 – Silver Run)	
<i>Rhododendron</i> ‘Borsault’	Full bloom (May 18 – Salisbury)	259 DD
<i>Rhododendron</i> ‘Buzzard’	Full bloom (May 15 – Silver Run)	
<i>Rhododendron</i> ‘Choice Cream’	First bloom (May 15 – Silver Run)	
<i>Rhododendron</i> ‘Gilbraltar’	First bloom (May 15 – Silver Run)	

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Rhododendron 'Klondyke'	First bloom (May 15 – Silver Run)	
<i>Staphlea trifolia</i> (American bladdernut)	Full bloom (May 15 – Silver Run)	
<i>Syringa vulgaris</i> French lilacs	Full bloom (May 18 – Salisbury)	259 DD
<i>Weigela florida</i>	Full bloom (May 18 – Salisbury)	259 DD
<i>Wisteria floridbunda</i> (Chinese wisteria)	Full bloom (May 17 – Ellicott City)	432 DD

Degree Day Information (as of May 19, 2005):

Annapolis	320
College Park	455
Ellicott City	450
Frederick	315
Germantown	431
Glen Burnie	346
Rockville	389
Salisbury	266
Silver Spring	491
Waldorf	484
Washington DC	445 (May 18)

Weed of the Week - Yellow Wood Sorrel

Yellow Wood Sorrel (*Oxalis stricta*) is a weed common to the northeast. It is often found in shaded areas and grows as an annual as well as a perennial. The plant may spread by slender rhizomes and produces seed from its yellow flowers. The leaves are smooth, palmately compound and are divided into three heart shaped leaflets. Each leaflet has a center crease allowing the leaf to fold upward in half. The plant will fold its leaves at night and again reopen them in the morning.



Control can be obtained through the use of broadleaf weed control products if used early in the season, and through the use of glyphosate as a post emergent herbicide. Mechanical cultivation and mulching are also effective in the control of this prolific weed.

Photo courtesy of the University of Vermont.

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The Maryland Arborist Association, Inc.
&
University of MD Extension Service

Evening Plant Diagnostic Clinic At CCBC Dundalk

LOCATION: CCBC Dundalk
7200 Sollers Point Road
Baltimore, MD 21222-4649

DATE: May 26, 2005
TIME: 5:00 PM - 8:30 PM

COST: Early registration, before May 19, \$30.00 (includes dinner)
Late registration, after May 19, \$35.00 (may not include dinner)

5:00 PM Registration

5:30 PM Introduction: Insects and Diseases

6:00 PM Dinner

6:30 PM Entomologist Stanton Gill will discuss insects and disease, including Emerald Ash Borer and Cicada damage from last year. Plant pathologist Ethel Dutky will be conducting a walking diagnostic tour of the plant material. Richard Anacker, MD Dept. of Ag., will discuss Sudden Oak Death in Maryland. Jeffrey Webb will discuss the Horticultural program offered at CCBC Dundalk.

Early Registration Fee includes dinner
MAIL TO: Maryland Arborist Association, Inc.
P.O. Box 1
Taneytown, MD 21787-0001

CALL: MAA 1-888-638-7337
FAX: 1-888-638-7337

I/We will attend the MAA, Evening Plant Diagnostic Clinic on Thursday, May 26, 2005.
Enclosed is a check for \$_____, for the following people.

NAMES: _____

NAMES: _____

NAMES: _____

Make checks payable to: Maryland Arborist Association, Inc.

2 CEU's available

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