



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

April 28, 2006

Regular Contributors:

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Disease Information: Ethel Dutky, David Clement, and Rich Anacker (MDA)

Weed of the Week: Chuck Schuster

Cultural Information: Ginny Rosenkranz

Fertility Management: Andrew Ristvey

We need you – please call in if you are finding insect, disease, weed cultural plant problems. Your input will help us keep this weekly report up on the leading edge. Send submissions to Sklick@umd.edu or Call Stanton Gill at 301-596-9413. Thanks! We look forward to hearing from you.

RAIN!!! RAIN!!!

It finally arrived and in large enough quantities to benefit all of the plants that you have been installing over the last two months in the drought. Even though we have had rain we need a lot more. We are running a deficit and if we don't continue to see rain you and your customers will not be happy in June when it gets hot and we start seeing plants stressing.

Rain and Disease

Everyone has been telling us disease is way down this year. Guess what? The rain on Saturday caused *Gymnosporangium* rust galls and cankers on juniper to produce the spores which infect the apple hosts and the leaf wetness required for infection of the apple leaf. The *Gymnosporangium* rusts require two kinds of plants to complete their life cycle. They overwinter on junipers such as the Easter Red Cedar, *Juniperus virginiana*, as leaf galls or shoot cankers. In cool, wet periods in the spring these galls produce orange gelatinous tendrils upon which the teliospores are found. The teliospores germinate to produce colorless basidiospores. The basidiospores are carried on air currents to infect the pomaceous hosts (apple, *Amelanchier*, some pears). We found several large cedars in the Olney area with the galls producing orange gelatinous tendrils on Sunday. Last week we reported on quince rust, which is also active. This week we are seeing lots of activity from cedar apple rust and cedar-hawthorn rust on junipers.

- Cedar-apple rust is caused by the fungus: *Gymnosporangium juniperi-virginiana*. The fungus alternates between many species and varieties of cedar, (*Juniperus* species) and many pomaceous plants such as apple, pear and hawthorn. Leaf spots are produced on the pomaceous plants.
- Cedar-hawthorn rust is caused by the fungus: *Gymnosporangium globosum*. Small galls are seen on the Junipers, and leaf spots are seen on the pomaceous plants.
- Cedar-quince rust is caused by the fungus: *Gymnosporangium clavipes*. Shoot cankers are seen on the juniper and fruit and twigs are infected on the apples and hawthorns. This is considered the most destructive of the *Gymnosporangium* rusts because of the damage to twigs and fruit.

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Control: Timing is critical for good control on the pomaceous hosts (apple, hawthorn, etc). The sprays have to be applied when spores are being shed from the junipers, usually starting in mid-March. This is still happening right now, due to the rain. No chemical control is usually advised to prevent infection of the junipers. Infection of the junipers is happening all summer and into the fall from spores produced on the apples which would require many sprays all season. The period during which the pomaceous plants are infected is short (March through May). Spray susceptible crabapples, apples, quince and hawthorn with Mancozeb (Cleary Protect TO), Fore (Dithane, Mancozeb), Chlorothalonil (Daconil Ultrex), Triadimefon (Bayleton, Strike) or propiconazole (BannerMaxx). It is the user's responsibility to follow all label instructions on rates, spray intervals and safety.

Leaf Spot on Red Tip Photinia

In wet springs red tip Photinia shows a conspicuous leaf spot, and can be defoliated. The spots are circular, with a brown center and bright red margin. The spots show up on new growth in mid-May and later, but infection is going on now. The fungus that causes this troublesome disease (*Entomosporium maculatum*) over-winters on spotted leaves on the plant and on the ground. Under wet conditions, the new growth can be infected by spores washed or splashed onto them.



Control: There are two practices to control this disease. One method is cultural. Plant Photinia in a sunny spot that has good air circulation. During the growing season, and especially for fall cleanup, use a leaf blower to blow out the spotted leaves. They may be composted.

Chemical control can be used to prevent on new growth if the disease has been severe, resulting in heavy leaf blight and drop. Many fungicides are registered including: propiconazole (BannerMaxx); and Triadimefon (Bayleton, Strike); and thiophanate-methyl (Cleary's 3336); and Heritage and Compass and many others.

Euonymus Leaf-Notcher Caterpillar

James Hogan, Chartwell Golf and Country Club, found later instar larvae of *Pryeria sinica* (leaf-notcher Euonymus caterpillar) on *Euonymus kiautschovicus* in Severna Park. Damian Varga, Scientific Plant Service, also reported it on *E. sieboldiana* on April 25th in Crownsville, MD. Azalea 'Coral Bells', *Viburnum x pragense*, and *Vinca minor* were in full bloom. *Taxus baccata* was in first leaf.



Monitoring: Look for marginal notches and coarsely shredded leaves. In large numbers, these caterpillars can defoliate large areas of shrubs.

Control: Prune sections of plant with eggs or larvae if possible early in spring. Use *Bacillus thuringiensis* var. *kurstaki* to control early instar caterpillars.

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Hemlock Woolly Adelgid

Marty Adams reported adelgid crawlers on hemlock on April 26th in Glen Arm (Baltimore County).

Monitoring: Look for white wax produced by females in April and May and again in October.

Biological Control: Two ladybugs, *Scymnus ningshanensis* and *Pseudoscymnus tsugae*, have been introduced and feed on hemlock woolly adelgid. A derodontid beetle, *Laricobius nigrinus*, has also been introduced to control this pest.

Chemical Control: Small trees can have applications of horticultural oil or insecticidal soap applied to the foliage. Larger trees should have soil injections or a drench of a neonicotinoid such as imidacloprid (Merit) or dinofenuron (Safari).



Cottony camellia scale

Marty Adams brought in a holly sample on April 20th with white, cottony ovisacs starting to expand.

Monitoring: Look for sooty mold and honeydew on foliage.

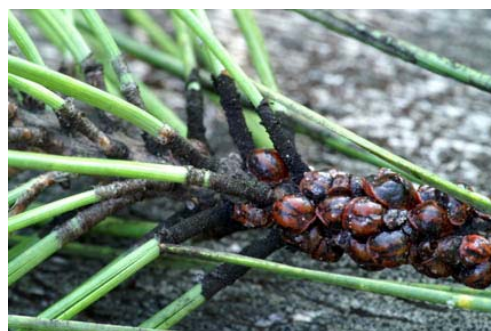
Control: Soil injections of imidacloprid; Distance or oil for crawlers.



Pine Tortoise Scale, *Toumeyella parvicornis*

Kevin Nickle, Prolawn Plus, brought in a pine sample covered in pine tortoise scale. The females are producing copious amounts of honeydew at this time of year. We found twice-stabbed ladybird beetles active on the scale. The crawlers should occur in late May to early June.

Control: Soil injection of imidacloprid or apply Distance in May or June when crawlers are detected.



Hawthorn leafminer, *Profenusa canadensis*

Joanne Lutz in Washington D.C. is reporting leaf splotch mines forming on hawthorn from the hawthorn leafminer. The hawthorn leafminer has 2 to 3 generations in the Maryland area. Damage at this time of year is from the first generation.

Control: Soil injections of imidacloprid should control this pest. Joanne reports that they made soil applications in January and they're still seeing damage. We've contacted Bayer Company to see if the application is correct or if there is some other reason why they're still seeing damage.

Gypsy Moth

Damian Varga reported hatch of gypsy moths on Blue Spruce in Ellicott City on April 25, 2006.

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Boxwood leafminer, *Monanthropalpus flavus*

So far, there are no adults on the boxwoods being monitored here in Ellicott City at the research center. Tony Murdock is not seeing any on the English boxwoods that he is monitoring in Washington D.C. Monitor boxwoods closely because the adults will be out soon.

Monitoring: Adults are yellowed bodied and usually hover en masse over boxwoods. Shake bushes to detect flying adults. The adults will be active for about two weeks.

Control: Soil applications of imidacloprid (Merit – in landscape, Marathon as soil drench)

Lace Bugs

Ellery Vodraska found lace bug adults and nymphs on azaleas on April 27th in College Park. She also found adult lace bugs on cotoneaster in Upper Marlboro. We are seeing a few adults on our cotoneaster here in Ellicott City. Tony Murdock is seeing Andromeda lace bug damage from last year's infestation in Bethesda, but no adults yet.

Monitoring: Look on the undersides of foliage for the nymphs, especially new foliage with stippling damage.

Control: If lace bug populations are high, treat with horticultural oil or a systemic such as Orthene, Tristar, Safari, or Merit.

Ambrosia Beetle Damage this Week

A nursery in central Maryland sent in a sample of *Cornus kousa* with heavy damage from *Xylosandrus germanus*.

Control: Not much this late in the season. We reported adult activity in March and suggested spraying susceptible trees then to prevent problems.

Pearleaf Blister Mites, *Eriophyes pyri*

Marie Rojas, IPM Scout, started to see pearleaf blister mites on 'Red Spire' pears on April 19th in Beallsville. Mites were also found damaging Bradford pear and Asian pear in the Bethesda area. **Control:** Nothing at this time of the year. Overwintering females can be controlled with applications of sulfur applied just after leaf drop in October.



Photo shows damage on both the upper and lower sides of the leaf.

Aphids

Aphids are being reported on a variety of plants including roses and spirea.

Monitoring: Look for aphids on new growth of plant.

Control: Horticultural oil, Insecticidal soap, Orthene, or Merit. Natural enemies often move onto the plant and reduce aphid populations.

Southern Red Mites and Spider Mites

Marie Rojas is seeing spruce red mite activity on firs on April 19th in Beallsville. Marie Rojas is starting to see spider mites hatch out on *Chamaecyparis* spp on April 20th in Laytonsville.

Control: Horticultural oil, insecticidal soap, Hexygon, Akari, Floramite.

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Boxwood mite

Tony Murdock is seeing boxwood mite activity on English boxwood in Washington D.C. We are also starting to see boxwood mites here at the research center in Ellicott City.

Monitoring: Examine foliage and look on the undersides of foliage for the mites. Mites cause stippling of the foliage. In heavy infestations, entire leaves can turn yellowish-white and drop prematurely.

Control: 1% horticultural oil, 1% oil and Hexagon, Avid, Floramite.

Spiny Witchhazel Gall Aphids, *Hormaphis spinosus*

Marie Rojas reported spiny witchhazel gall aphids damaging river birch on April 19th in Beallsville. The aphids are also damaging the river birches here in Ellicott City.

Monitoring: The witchhazel gall aphid makes curious oblong and spindle galls on the upper leaf surface of witch hazel. In early April the winged forms emerged from a slit at the base of the galls on witch hazel. The winged adults moved to the birch in April and are now actively feeding and causing the leaves of birch to be distorted.



Control: Probably not necessary in most cases. If a customer insists on control, a systemic insecticide such as Orthene applied to the foliage would control this pest. Foliar applications of Tristar are effective for aphid control.

Fall Cankerworms

The Home and Garden Information Center is receiving calls from residents in Anne Arundel County who are seeing heavier than usual populations of cankerworms this year. Marty Adams also saw cankerworms on pussy willow on April 26th in Columbia.

Monitoring: Preferred host plants include oak, hickory and maple. The caterpillars have prolegs at the back of the body and an absence of prolegs in the mid-part of the body. When they crawl they often “inch” over the leaf surface, humping up as they move.

Control: Most trees will recover from the early season defoliation but valuable specimens can be treated. For control use Conserve or Confirm.

Di-Syston Update

Dan Gilrein, Cornell University, spoke with staff at Bayer regarding the status of Di-Syston 15G for use on ornamentals, including Christmas trees. His comments are as follows:

Some recent notices had gone out announcing that Di-Syston 15G now has registrations for use in Christmas trees. It always had that use (at least in recent memory) and the Christmas tree use was nothing new, but there was concern that this particular use would be lost. There were also some notices regarding loss of use on ornamentals. The following is my understanding of the situation with ornamental plants and Christmas trees:

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As of December, Bayer will no longer be shipping product with the existing label, which has uses on 'trees and shrubs,' 'flowers and groundcovers,' and 'Christmas trees'. Dealers can continue to sell product with these labels (providing it's allowed in the various states, of course) until supplies are exhausted.

After December, the Di-Syston 15G label will ONLY allow uses on Christmas trees and coffee; there will be no more label uses on 'shrubs and trees' and 'flowers and groundcovers.'

The new 2007 label, which has just recently been approved by EPA, will for the first time include new language stipulating use with a closed-system applicator (such as the Select-A-Feed) when using on Christmas trees. The current containers are designed to accept the new applicator if you want to use it now, but the labels do not require the closed -system applicator yet.

The 1-2% disulfoton granular materials will continue to be available to homeowners. Arborists and landscape applicators will still be able to buy these for the occasional birch or other landscape plant. In discussion with our NY regulatory authorities, the understanding (with NY) is that the 15G formulation is not intended for residential use. Regulators in other states may have a different interpretation.

Fertility Management: Getting the Blues with Aluminum Sulfate

Recently, a nursery noticed that their containerized *Hydrangea macrophylla* were showing signs of leaf scorch and root death. They figured that this problem had been brought on by the use of aluminum sulfate, a fertilizer that generates the blues in the sepals of certain hydrangeas. The nursery applied the specified amount of aluminum sulfate correctly as a top dress before bud break. There were no problems until last week. Then, they started noting the tell-tail signs of leaf and root damage. What happened?



Aluminum sulfate is typically used (and sometimes overused) to create the blue color in the sepals of specific hydrangea species like *H. macrophylla*. Aluminum is the causal agent of the blue color in hydrangea sepals as it complexes with pigments (one anthocyanin and another co-pigment) in the plant. The sulfate is useful for acidifying the soil which makes the aluminum more available. When growing *H. macrophylla* in soils, the addition of aluminum sulfate may or may not be necessary and this depends on whether aluminum is already present in the soil. If you are managing hydrangeas for blue color, get the soil tested first for pH and aluminum. If aluminum is present, merely manipulating the soil pH to between 5.0 and 5.5 will make soil aluminum available and produce blue color sepals. However if aluminum is not present in the soil, or if you are growing hydrangea in soilless potting media like pine bark and peat (which lacks aluminum), then adding aluminum sulfate is necessary to achieve the blue color. Be aware that aluminum is very toxic to plants, so keep it away from other plantings that you manage.

Additionally aluminum sulfate has a high salt index, which brings us back to the nursery problem. Hydrangeas are particularly aluminum tolerant and may use the pigment complex to sequester the metal. In this nursery case, aluminum toxicity was not the issue. On the other

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hand, high electrical conductivity (EC) was the problem. So, when using aluminum sulfate on containerized hydrangeas, it is important to frequently monitor your EC and pH, before application and especially during the first week after application. For more information on substrate monitoring, see the April 7th edition of this IPM Report where I described VTEM or PourThru monitoring.



Shoot and root damage of *H. macrophylla* from high substrate salt content brought on by the use of aluminum sulfate.

Weed of the Week: Bermudagrass

Bermudagrass (*Cynodon dactylon*), also called wiregrass, is a warm season perennial grass found throughout this region. The roots are fibrous, coming from nodes of both rhizomes and stolons. The leaf blades are often hairy on the upper side, two to six inches in length, and one eighth to one quarter inches wide. This perennial can be spread by stolons, and roots thus making mechanical removal difficult. Bermudagrass tolerates a wide range of moisture and fertility ranges and adapts to most conditions. While Bermudagrass is used in certain lawn settings it will spread into the landscape beds and can be difficult to control.



The flowers of Bermudagrass consist of three to seven fingerlike projections spikes that come from a single point. The individual spikes are flat and are one to three inches in length. Close mowing does not stop seed production.

A similar weed to Bermudagrass is Nimblewill, but can be distinguished by reviewing the ligule, on Bermudagrass it is hairy and on Nimblewill it is membranous.

Control of Bermudagrass in a landscape setting can be achieved with the application of post emergent non selective herbicides that contain glyphosate but may take more than one application to control. Late summer treatment provides better long term control of this difficult to control weed. Ornamec can be used in some ornamental beds where non grass species are planted.

Eastern Shore Update

This week we had 2 inches of rain! The Eastern Shore usually has about 15 inches of rain from January to this time in April, but we have only had about 7.46 inches of rain in Salisbury. The rain really helped the new foliage and flowers on the trees.

Amelanchier canadensis (Shadblow Serviceberry) is in full bloom in the woodlands. Local boxwoods are in bloom. *Cercis canadensis* (Eastern Redbud) and *Cercis chinensis* 'Don Egolf' are in full leaf. *Cornus florida* are now in full bloom. *Leucothos fontanesiana* is also in bloom. The tiny flowers of the northern bayberry are fragrant, and the new foliage on the photinia is bright red. The Kwanzan Cherry is in full bloom although the rain did pound a few

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petals off. Various Viburnums, some hydrangas, Flame honeysuckle, and the Flowering Almond shrub are now in bloom. *Syringa vulgaris* (Lilac) is also perfuming the air and the. Herbaceous perennials in bloom include the fringed bleeding heart, the false Solomon's seal and the native columbine.

What's in Bloom?

Plant	Plant Stage (Bud with color, first bloom, full bloom, first leaf)	Location
<i>Agarum canadense</i>	First bloom (April 25)	Reisterstown
<i>Antennaria</i>	First bloom (April 26)	Glen Arm
<i>Aronia melanocarpa</i>	First bloom (April 25)	Reisterstown
<i>Asimina triloba</i>	Full bloom (April 26)	Columbia
Azalea 'Coral Bells'	Full bloom (April 25)	Crownsville
<i>Calycanthus florida</i>	Full bloom (April 24)	Reisterstown
<i>Heuchera americana</i>	First bloom (April 25)	Reisterstown
<i>Ilex</i> 'Nellie Stevens'	Full bloom (April 26)	Glen Arm
<i>Luecothoe catesbyi</i>	First bloom (April 25)	Reisterstown
<i>Menziesia cilicalyx</i>	Full bloom (April 26)	Glen Arm
<i>Neviusia alabamensis</i>	Full bloom (April 25)	Silver Run (Carroll County)
<i>Paulownia tomentosa</i>	First bloom (April 28)	Clarksville
<i>Rhododendron austrinum</i>	First bloom (April 25)	Reisterstown
<i>Rhododendron vaseyi</i>	Full bloom (April 25)	Westminster
<i>Sedum ternatum</i>	First bloom (April 25)	Silver Run (Carroll County)
<i>Stranvaesia davidiana</i> 'Winterthur'	First bloom (April 26)	Glen Arm
<i>Styrax obassia</i>	First bloom (April 26)	Glen Arm
<i>Syringa reticulata</i> 'Ivory Silk'	First bloom (April 26)	Glen Arm
<i>Taxus baccata</i>	First leaf (April 26)	Severna Park
<i>Uvularia sessilifolia</i>	First bloom (April 25)	Silver Run (Carroll County)
<i>Viburnum prunifolium</i>	Full bloom (April 25)	Glenelg
<i>Viburnum x Pragense</i>	Full bloom (April 26)	Severna Park
<i>Vinca minor</i>	Full bloom (April 26)	Severna Park
<i>Waldsteinia fragoides</i>	First bloom (April 25)	Ellicott City
<i>Wisteria floribunda</i> (Japanese Wisteria)	Full bloom (April 27)	Salisbury

Degree Day Information (as of April 27, 2006):

Baltimore, MD (BWI)	280
Hagerstown, MD	214
Mechanicsville, MD	296
National Arboretum	339
Salisbury	228

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