TPM/IPM Weekly Report for Arborists, Landscape Managers & Nursery Managers
University of Maryland Cooperative Extension

September 4, 2009

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Disease Information: Karen Rane (Plant Pathologist) and David Clement (Extension Specialist)
Weed of the Week: Chuck Schuster (Extension Educator, Montgomery County)
Cultural Information: Ginny Rosenkranz (Extension Educator, Wicomico/Worcester/Somerset Counties)
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Please call us if you are a commercial horticultural business finding insect, disease, weed or cultural plant problems in the landscape or nursery. Send submissions to Sklick@umd.edu or call Stanton Gill at 301-596-9413.

Tupelo Leafminer
Tupelo leafminers are mining leaves of black tupelo in Ellicott City this week. Their feeding within the leaf causes splotches on the foliage which will expand over time. Sometimes mistaken for a foliar disease, you can hold the leaf up to the light to see the larva and fecal droppings inside. The last instar larva will cut oval-shaped leaf pieces and tie them together with silk before dropping to the ground to pupate.
Control: Rake up leaves to remove many of the overwintering cocoons at the base of the tree. If the population is high, you can treat foliage the following year with a systemic when mines first start to form.


Early damage by the tupelo leafminer


Larva extracted from leaf

Thank you to the Maryland Arborist Association, the Landscape Contractors Association of MD, D.C. and VA, the Maryland Nursery and Landscape Association and FALCAN for your financial support in making these weekly reports possible. Photographs by Suzanne Klick, Stanton Gill or Shannon Wadkins unless otherwise noted.

Elm Yellows

Elm yellows, also known as elm phloem necrosis, was confirmed last week in a sample of American elm 'Valley Forge' taken from a nursery. The disease is caused by a phytoplasma, a bacteria-like organism vectored by leafhoppers. The infected tree had yellow foliage on several branches, and the inner bark (phloem) tissue was a butterscotch color instead of the normal greenish white of healthy trees. The diseased inner bark has a distinctive odor of wintergreen, which is more evident when strips of infected bark are enclosed in a jar for several minutes. Advanced symptoms include leaf drop, wilt and branch dieback, and trees can die within one or two years of infection. Unfortunately, no chemical controls are currently available to manage elm yellows. Prompt removal of all symptomatic trees is currently the only way to slow the spread of the disease. **Photo of symptomatic tree by Pennsylvania Department of Conservation and Natural Resources - Forestry Archive, Bugwood.org**

Redheaded Pine Sawfly

We have received several reports of redheaded pine sawfly activity this week. In Wicomico County, they have been reported on Western white pine (*Pinus monticola*). The larvae feed gregariously. The grower removed them by hand. In the Frederick area, Jason Kopp found larvae feeding heavily on mugo pines. There were about 100 larvae per plant. This group feeding of larvae can defoliate whole sections of a pine very rapidly in late August to early September.

Physical control: Prune off the tip growth while the larvae are small.

Chemical control: Horticultural oil sprayed onto the larvae will give control. Neem products can also be used to control early instar larvae. Spinosad (Conserve) will also give control.

Deer Ticks

Along those same lines as we move into the fall be aware that deer ticks are active as the cool weathers moves into the area. Check yourself regularly when working out in the nursery, especially if you are letting the grass strip grow taller. Treat your clothing with 20% Deet products when entering tall grass areas or working at the edge of woods.

Deer Alert

We're receiving reports of incidences with deer on the roadway so be on alert this month for deer as you drive around at this time of year. Look for browsing injury in the landscape and nursery. A University of Maryland fact sheet is available on deer management at http://extension.umd.edu/publications/PDFs/FS655.pdf. It also includes a list of susceptible and less susceptible plants.

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Eriophyid Mites on Echinacea

Steve Algeier, Carroll County Office, University of Maryland Extension, sent in a sample of echinacea last week to the Plant Diagnostic Lab. Karen Rane found loads of eriophyid mites in the flowers. Steve reported that echinacea and aster both had severely distorted flower heads and the florets were not developing.

Eriophyid mites are extremely tiny (0.3 mm in length), microscopic, spindle-shaped mites with elongated bodies. They resemble sausages with the head and legs located on one end of the body. Eriophyid mites only have 4 legs, which is a unique characteristic among mites. All other mites have 8 legs as adults.

These mites are a specialized group of plant feeders. In general, many eriophyid mites feed on a few closely related species or genera of plants. Eriophyid mites feed deep within the plant tissues sucking out plant juices with their stylet-like mouthparts and transferring a substance, which causes deformation of plant growth. Eriophyid mites live and reproduce within the folds of plant tissues. The eggs are spherical and generally laid in groups. They hatch in less than two weeks into young mites that may take approximately two weeks to a month to mature into adults. Several generations may occur throughout the growing season.

Eriophyid mites can easily come in on plant material from a supplier. If you are a grower examine your plants for eriophyid mites in September and make sure you are not selling customers infested plants. Once damage is evident, it is too late because the mites are already established within the plant. The number of miticides for controlling eriophyid mites is limited. Pest control materials with translaminar properties are your best choices for "managing" eriophyid mites. These would include abamectin (Avid) and chlorfenapyr (Pylon) which can be used in greenhouses only. Additional pest control materials that may work on eriophyid mites, if you can make contact, are pyridaben (Sanmite), fenpyroximate (Akari), and endosulfan (Thiodan).

Many eriophyid mites are on this flower head
Photo by Karen Rane

Close-up of one of the eriophyid mites
Photo by Karen Rane

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***Zamopsyche commentella* on Tree trunks**

Last year Steve Sullivan, The Brickman Group, called to report weird cone-shaped insects on the trunk of maple trees in Glenwood. I (Stanton) went to the site to photograph the insects. Mary Kay Malinoski, HGIC, and I examined them and thought they were some sort of moth larvae in the family Psychidae. We sent samples to Gaye Williams at MDA and she thought they were more likely to be bagworms (*Thyridopteryx* sp). Gaye sent the samples off to a taxonomist. A year later we have found out that they are most likely *Zamopsyche commentella*. Since then we found a zelkova tree that had these interesting insects on the trunk in Frederick County about 2 weeks ago. The damage is not extensive and control is probably not necessary. They are very unusual looking insects with a bark covering that looks like a cone-head version of a bagworm. If anyone else finds these insects on tree trunks send us an email at sgill@umd.ed or call at 410-868-9400.

Puss Caterpillars

We've been reporting on 'stinging' caterpillars for several weeks this summer. This week, Herb Reed, Calvert County Extension, collected a sample of several puss caterpillars. He noted that they were causing moderate to severe damage on American hollies. There were also larvae on the sides of the house and roof gutters.

Yellow-necked Caterpillars

We found yellow-necked caterpillars feeding on river birch this week. The caterpillars feed in groups and they were clustered on 3 or 4 leaves working as a group consuming the foliage. **Control:** It is easy to cut off the infested branch or apply Bt. Another option is to let them feed. At this point in the season the foliage has been on the plant long enough that the long term damage to the tree is minimal.

Hickory Horned Devil

It's the season for caterpillars. Steve Clancy sent us a photo of hickory horned devil caterpillars that he found last week. The green larvae are quite large with orange 'horns'. They do not have stinging hairs and are harmless to handle. This caterpillar feeds on various plants including hickory, ash, lilac, sumac, sweet gum, sycamore and walnut. The adult moth is predominantly orange.

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Tuliptree Scale

Last week we had reports that tuliptree scale females were swelling up on magnolias near Frederick. Crawlers should be active very soon in this area. Look for honeydew on the foliage.

Host Trees: We usually find tuliptree scale on tuliptree and deciduous magnolia trees. This scale can also find its way onto buttonbush, hickory, linden, redbud and walnut.

Control: Distance and horticultural oil will work well in controlling this scale in September. In 2003 an IPM scout found a predaceous caterpillar (*Laetilia coccidivora)* feeding on this scale. It was introduced to control scales and is one of the few predaceous caterpillars that feed on scale.

Tuliptree scale and crawlers

Larva of *Laetilia coccidivora*

Praying Mantid

Praying mantids are general predators that can be found in the landscape. Mantids are mating at this time of year. Look for females with swollen abdomens that are full of eggs.

Jessica Bly sent us this photo of a praying mantid feeding on another mantid.

Mating praying mantid pair found here at the research center

Look for praying mantid eggs in the landscape this fall and next spring

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Indian Wax Scale

Tony Murdock sent in a holly sample with a light infestation of Indian wax scale. This scale looks like a blob of white wax. The crawlers were active in July. Monitor holly, camellia, barberry, nandina and pyracantha.
Control: Soil injection of imidacloprid (Merit) or Dinoterfuron (Safari)

Beneficial of the Week, Brian Clark

Antlions

Adult antlions are flying. These insects look very similar to dragonflies. However, they are much slower fliers. The easiest way to tell is from the club like antennae of the antlion adults. The antlion larvae eat small arthropods, mainly ants (hence their name), while the adults of some species eat small pollen and nectar. While not communal, antlion larvae often build their nests in the same location. The larvae then build a silken cocoon before finally emerging as the adult.
Antlion photos below by Brian Clark

Adult antlion

Pits created by the ant lions to catch ants

Weed of the Week

Autumn olive, *Elaeagnus umbellate*, is a woody perennial found throughout the United States in many different settings. This plant is native to Asia and came to the United States in the 1830's, and now is considered an invasive weed. This shrub-like perennial can grow to heights of 20 feet producing a cream colored flower which will occur in clusters of five to ten. The fruit is a pink to red berry, speckled with scales, which has been used as an edible product. Leaves are alternate, elliptical in shape being up to three inches long and one and one quarter inches wide. The upper surface of the leaves is dark green and the lower surface is covered with gray to silver scales. The

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leaf margins are untoothed and wavy. Often mistaken for the Russian olive which has thorns, but autumn olive does not.

Control of autumn olive needs to start as soon as the first plant is noticed. In the early stages plant removal is the best method. Once the plant has become established cutting it stimulates the plant to produce many sprouts. Foliar applications can be made using a two percent solution of glyphosate applied in the late summer to small plants. Larger plants should be cut down near the base before applying a twenty percent solution of glyphosate to the stump. Garlon 4 has been used as a 16% solution mixed with a mineral or plant-oil based carrier and applied directly to the stump.

Plant of the Week, Ginny Rosenkranz

Common boxwood, *Buxus sempervirens*, is an evergreen shrub that can grow to a height and width of 15-20 feet and will thrive in zones 5 to 8. It is a very dense plant and needs to be thinned in the winter to allow good air circulation to prevent fungal diseases. The leaves are waxy coated, dark green on top, lighter green below, and have a strong odor. There are some people who like the odor and many that don't. It is possible that the odor is what keeps the plant from becoming deer food. Boxwood has a very fibrous root system that is close to the soil surface and the plants do best with only ½ inch of mulch to prevent root problems. They grow best in well drained, sandy loam soils with a soil pH of 6.5-7.2. They often develop root problems in heavy clay soils. Even in the southern states, boxwood needs to be protected from winter winds and drastic temperature extremes. There are varieties like 'Northern Beauty' that thrive and hold their color in the winter, but many will show some bleaching or yellowing going into the early spring. The natural shape of boxwood is often described as billowy or cloud like, but the plant does very well pruned into formal hedges and topiaries. Pruning is best done in the winter months to prevent winter kill of new foliage. Boxwood thrive in mottled sunlight or morning sun with afternoon shade. Plantings next to driveways and brick walkways in full sun often dry out and become more susceptible to insect and disease problems. Boxwood leaf miner, boxwood mites, boxwood psyllid, boxwood webworm, mealy bugs, scales and nematodes are all major insect problems and canker, blight, root rot, winter injury and sun scale are disease and abiotic problems.

Degree Day Information (as of September 3):

Baltimore, MD (BWI)	2948
Dulles Airport	3117
Frostburg, MD	1854
Martinsburg, WV	2722
Mechanicsville, MD	2802 (as of August 31)
National Arboretum	3663
Reagan National	3285
Salisbury	3092

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Upcoming Programs

September 16, 2009 LCA 2009 Practical Diagnostic Techniques for Landscape Managers
Location: Dave & Busters, White Flint Mall (top level)
Go to http://www.lcamddcva.org/conferences/monthly.cfm for the announcement

October 2, 2009 - Mark your Calendars to attend this Field Day organized by University of Maryland Extension and the Maryland Nursery and Landscape Association.

Growers will get a chance to see University of Maryland field research to help improve nursery production. We have invited Matt Taylor from Longwood Gardens to talk about some of the innovative and sustainable practices that Longwood Gardens is using in its nursery and landscape areas. We also have invited Jeff Derr to speak on new innovations in weed control. Rick Snell and his staff will give a tour of his progressive nursery in Frederick County.

The schedule with registration form is available at http://www.ipmnet.umd.edu/09Oct02C.pdf.

We look forward to seeing you at the field day.

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