UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report
for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture **March 12, 2021**

In This Issue...

- Ambrosia beetles
- Heavy tree pruning
- Cuban tree frogs
- Cicadas and netting
- Sidewalk repair and trees
- Overwintering lady bird beetles
- Rabbit damage
- Impact of 2018 and 2019 weather on trees
- Lesser celandine
- Bittercress
- Moving toward spring
- Fruit trees and resistant cultivars

Announcements

Pest Predictive Calendar

IPMnet
Integrated Pest Management for Commercial Horticulture

extension.umd.edu/ipm

If you work for a commercial horticultural business in the area, you can report insect, disease, weed or cultural plant problems **(include location and insect stage)** found in the landscape or nursery to sgill@umd.edu

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Regular Contributors:
Pest and Beneficial Insect Information: Stanton Gill and Paula Shrewsbury (Extension Specialists) and Nancy Harding, Faculty Research Assistant
Disease Information: Karen Rane (Plant Pathologist) and David Clement (Extension Specialist)
Weed of the Week: Chuck Schuster (Retired Extension Educator)
Cultural Information: Ginny Rosenkranz (Extension Educator, Wicomico/Worcester/Somerset Counties)
Fertility Management: Andrew Ristvey (Extension Specialist, Wye Research & Education Center)
Design, Layout and Editing: Suzanne Klick (Technician, CMREC)

Ambrosia Beetle Activity

By: Stanton Gill

We put a baited alcohol trap out at CMREC in Clarksville and Maria Rojas placed one in the Darnestown area this week. We checked the CMREC trap late on Thursday after the heat of the day had peaked. We had one carabidae beetle (predator beetle) in the trap, two *Xyleborinus saxesenii* (fruit pinhole borer) and one *Xylosandrus germanus* (black stem borer). With the record warm day Thursday, we must have had the very beginning of emergence. Maria Rojas reported that her traps in Darnestown were empty.

It is supposed to cool down for the next 7 days, so I doubt I will see much activity in the baited Lindgren traps but I will send out a special IPM Alert if I see activity going up for *Xylosandrus germanus*.

The first regular IPM report for this year will be sent out on March 26, 2021.

Heavy Tree Pruning

By: Stanton Gill

Jay Nixon sent in this picture of someone's interpretation of how a crape myrtle should be pruned. It is a very novel approach to say the least.

Here is one way someone pruned a crape myrtle
Photo: Jay Nixon, American Pest Management

Cuban Tree Frogs

Cuban tree frogs, a species that has proven quite invasive further south, are being imported into the National Capital Region through various outlets that sell plants from Florida. The frogs are toxic to people, pets, and ecosystems. Houseplants and cut flowers seem to be the main vectors.

Invader Detectives Alert: Cuban Tree Frog: The National Capital Partnership for Regional Invasive Species Management (NatCap PRISM) is releasing this document as a link to emphasize its constantly changing nature. The document is not intended to be complete or perfect, but to provide the best available information during the early phases of an unfolding situation.

Cicada and Netting

By: Stanton Gill

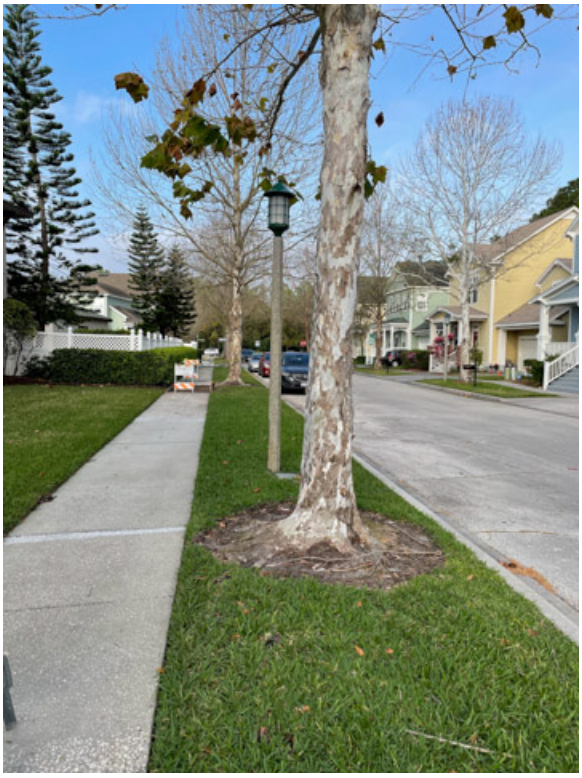
I have received many emails about sources for netting for cicada protection over the last two weeks. In 2004, I saw many netting jobs that blew off the trees or developed holes from branches poking though. The netting works if you tend it regularly and put it in position when females are active and take it down when they are done. Keep in mind, on fruit trees this is reducing air circulation and may increase disease incidence.

David Clement is interested in finding out which garden centers will be selling netting to protect trees from cicada ovipositing this summer. He is using this information to advise master gardeners so they can direct people to net sources. If you are a garden center and plan to carry netting for cicada protection, contact David Clement at Clement@umd.edu.

Screw Up Around Tree Roots

By: Stanton Gill

Jay Nixon sent in these photos of a sidewalk repair. It is a tough decision, but trees roots do push up sidewalks and the sidewalks have to be repaired. Unfortunately, the tree will suffer from this type of injury. It will surely produce new roots that will again lift the sidewalk. If urban foresters have magic ways to avoiding this type of tree injury, please share them with us.



Sidewalk report is necessary, but trees will be injured as a result
Photos: Jay Nixon, American Pest Management

Overwintering Lady Bird Beetles

By: Stanton Gill

Kathy Laws sent in this picture of lady bird beetles under the bark of a tree on the Eastern Shore. Lady bird beetles overwinter as adults and often look for protected locations such as under bark or in caves. Since there are not too many caves in the Salisbury area, they chose to overwinter under the bark.

Lady bird beetles overwintered under the bark of this tree
Photo: Kathy Laws

Rabbit Damage

Elaine Menegon, Good's Tree and Lawn Care, reported rabbit damage on winged euonymus this week in Hershey, PA. She noted that they had a foot plus of snow this year and is guessing the rabbits started at the middle of the bush and as the snow melted they ate there way down. Elaine noted that she will have to wait to see how they leaf out to determine the amount of damage.

Depending on how much snow you received in your area, damage from rabbits and voles might become evident as the snow melts.

Look for damage from rabbits higher up the stems of plants if there was a lot of snow in your area
Photo: Elaine Menegon, Good's Tree and Lawn Care

Impact from 2018 and 2019

By: Stanton Gill

If you remember it started raining in March 2018 and continued, basically weekly, non-stop through October of 2018. In 2019, the rains started in March and continued with regular downpours through July of 2019, followed by drought -like conditions with no rainfall until november. We saw many white and red oaks die back, and some completely die from this super-saturated soil. One tree that suffers from extreme high moisture is zelkova. Zelkova performs fairly well in dry soil but not super wet soils. This week, I visited a nursery in central Maryland for a site analysis. We examined many 8 - 10" caliber zelkovas that were in a decline spiral. The zelkova trees had many secondary heart rot fungi growing from the trunks. Much of the bark had peeled back and many of the branches were dying back and dropping off the trees. The soil was a good rich clay loam. It has not rained for a week in the area and the soil was still very saturated. You could see that during storms the water funnels through this area. In 2018 and 2019, I am sure there were mini lakes surrounding these trees. The dieback started in 2019 and was really showing up in 2021. The damaged root systems from the extended periods of high moisture and reduction in the roots' ability to exchange gases resulted in dieback. This dieback is still being exhibited a year and a half after the floodgates of rain were upon us.

This area is staying wet even during dry periods (left); damage from extended periods during 2018 and 2019 is showing up this winter
Photo: Steve Clancy, Town Creek Landscaping

Lesser Celandine

One of the early weeds to emerge in the spring is the invasive lesser celandine. Brian Scheck, Maxalea, Inc. found early growth last week in Central Maryland. Chuck Schuster, UME-Retired, covered this weed in the April 26, 2019 IPM report. Early control of this weed is critical because it is not visible above ground later in the season.

Lesser celandine shows up early in the season
Photo: Brian Scheck, Maxalea, Inc.

Bittercress

While visiting sites this week, Mark Schlossberg, ProLawn Plus, Inc. reports bittercress is the main weed he is seeing. Chuck Schuster, UME-Retired, has covered both hairy bittercress and lesser-seeded bittercress in previous IPM reports.

Bittercress is one of the early weeds that is blooming now
Photo: Mark Schlossberg, ProLawn Plus, Inc.

Spring is Coming

As we move toward spring, we still have areas with snow cover, but also see the early spring blooms such as hellebores with honey bee activity.

Snow is melting in Westminster
Photo: Mark Schlossberg, ProLawn Plus, Inc.

A honey bee is nectaring on a hellebore flower
Photo: Luke Gustafson

Warm Weather Pushed Out Fruit Buds

By: Stanton Gill

The warm weather this week is getting everyone excited. Many plants in urban areas and on the Eastern Shore of Maryland have fruit buds swelling on peaches, apricots, and cherry trees. Now is the time of year when you need to apply fixed coppers (a lots of brand names such as Badge, Cueva) to these swelling buds. This will help reduce the damage from *Taphrina deformans* (peach leaf curl) that will show up in June. Preventative applications are the best way to prevent problems with this foliar disease.

Fruit Trees for Your Customers

By: Stanton Gill

In 2020, the demand for fruit trees was extremely strong, driven up by the Covid-19 restrictions and people's desire to grow their own fruit. I suspect this trend will continue in 2021. Many homeowners select fruit by their taste and not on disease resistance. This is a bad choice in our Maryland climate where spring rain periods result in major damage to pears and apples. To help you out in advising your customers, I am including an article I wrote on disease resistant apple and pears cultivars. I hope this helps you out in the upcoming growing season in advising your customers.

Apples and Pears That Fit in an IPM Approach

Stanton Gill

Apples and pears are two of the most popular tree fruits for residential and commercial fresh market production. Unfortunately there is a plethora of diseases and insects that feed on or insect both apples and pears. For commercial production, orchard owners must become educated on the range of disease, insects and mites that can reduce the quality of the fruit. They can then develop an Integrated Pest Management (IPM) program to prevent these problems. Most homeowners do not have the time or interest in learning the life cycle of the many insects and diseases or have the equipment for efficacious use of preventative material for these pests.

A major tenant of an IPM approach is to start by selecting plant material that has better tolerance or varying levels of resistance to some of the pests or diseases. Several universities, independent plant breeders, and government supported experiment stations have selected apples and pears for better resistance to some of the major diseases and some of the insect that plague these fruit trees. Resistance does not mean they are immune. They are more tolerant and suffer less damage from some of the major diseases that is an improvement over non-resistant cultivars.

One of the two of the major disease problems that impacts pears is a bacterial disease called fire blight, caused by *Erwinina amylovora.* The second disease is scab, *Venturia pirina*, which causes spotting and scabbing of fruit, especially during wet springs.

More effort has been put into developing cultivars resistant to these two pear diseases and less work has been done with insect resistance.

Pears

Asian pears bloom early, and European pears bloom later, so most are not compatible simply because they are not in bloom at the same time. There can be cross-pollination between a late-blooming Asian pear and an early-blooming European pear. In 2020, we had an unusual warm spring and both Asian and European pears were in bloom at the same time.

If you grow Asian pears, you will need at least two cultivars to get a good fruit set. The same is true for European type pears. We recommend thinning pear fruit in the spring after fruit set to improve the fruit size. If done in late May to June then it tends to help many cultivars avoid bi-biennial fruit bearing and produce a steady crop each year.

Some nurseries specializing in fruit tree will provide an option for what the pear cultivar is grafted onto for best growth. *Betulaefolia* is a standard understock used for many cultivars of pears. This understock tolerates wetter soils. *Betulaefolia* produces a standard size pear tree but the tree can be keep smaller by vigorous pruning. Another choice is OHx97. This understock is resistant to fire blight and pear decline. It is hardy and provides good anchoring and high yield efficiency. I would tend to select this understock if possible. The third choice is OHx97 which is semi-dwarfing understock that reduces the size of the tree from a standard tree by about 20%. Pears cultivars grafted onto this understock tend to bear fruit earlier and heavily. For this reason, fruit must be heavy thinned in spring until the tree is well established. This usually takes 3 -4 years before it is established well enough to bear a crop without over-stressing the tree.

Asian Pears

There are several Asian pears in the marketplace. Some were cultivated in China, others in n Korea, and some in Japan. Most of these Asian type pears will grow in the Maryland climate. Some of the cultivars available are: Shinsui, Shinseiki, Kosui, Hosui, Nitaka, Nijiseiki (also known as 20th Century), Atago, Yoinashi, Shinko, Olympic (originally known as Korean Giant), Ya Li, Li, Chojuro – from Japan.
We have been growing all of these cultivars in our orchard in Westminster, Maryland since 2001. Over the years we have observed and recorded that certain cultivars are high susceptible to fire blight, some moderately susceptible and some that we have not observed fire blight damaging.

Fire blight highly susceptible:

- **Nijiseiki (also known as 20th Century) –**highly susceptible. Often infested trees are killed
- **Ya Li**
- **Li**
  Both Ya li and Li are highly susceptible to fire blight and plants can be severely damaged, and in some cases killed by this disease.
- **Nitaka**
  Nitaka is highly susceptible to injury from fire blight.
- **Kosui**
- **Hosui**
  Both Kosui and Hosui are moderately susceptible to fire blight

Most resistant to fire blight

- **Olympic (originally known as Korean Giant)**
  In 20 years of growing the Olympic cultivars, we have yet to see fire blight damage Olympic pear.

European Pears

Several new cultivars are on the market or will soon be on the market that exhibit good resistance to fire blight.

Bell: This will be on the market in 2022. It is a new release from USDA-ARS Appalachian Fruit research Station in Kearneysville, West Virginia. It is reported to have excellent resistance to fire blight. Highly flavored and has performed well in taste test. Well worth the wait to plan for 2022.
Cold Snap: This pear was developed by the Harrow Research Station in Ontario, Canada. This cultivar is reported to have high resistance to fire blight. Nice color overlays the green undertone. Fine textured fruit with

excellent flavor. Our planting in Westminster is reaching the third year in 2021 and we will see how it performs.
Blake's Pride: Medium size pear with yellow skin and excellent aromatic flavor. It has a high degree of resistance to fire blight.
Harrow Crisp: This pear was developed by the Harrow Research Station in Ontario, Canada. This cultivar is reported to have high resistance to fire blight. This fruit needs to be thinned early in the season (late May to June) to obtain good fruit size. Flavor is reported to be excellent. Our planting are still young at this point in 2020 and we will see if it performs well in Maryland as it has in Canada
Magness: A medium sized fruit with greenish-brown skin. Flesh is juicy and excellent quality. The cultivars has good resistance to fire blight.
Potomac: This cultivar was develop through a joint effort between USDA and Ohio State University. It exhibits good resistance to fire blight. The tree is reported to be moderately vigorous and fruit size medium.
Seckel: This is a small sized pear but fairly good resistance to fire blight injury. High quality fruit that is well suited to home fruit production. The skin is yellow brown in color at maturity. Heavy producer that, if thinned after fruit set in spring, produces a little larger fruit. Fruit needs to be picked firm and allowed to soft slightly for full sweetness.
Shenandoah: This is a new release from the USDA and Ohio State university breeding program. Resistance to fire blight it reported to be good. The fruit is large and stores well in cooler for up to 5 months.

Apples

There are many diseases that damage the fruit of apples, but there are four major diseases that are the most damaging. These include bacterial fire blight, powdery mildew, cedar apple rust, and apple scab. Plant breeders have concentrated their efforts on developing apple cultivars that are resistant to these four major diseases. Some cultivars demonstrated strong resistance to one of these four, but not necessarily all four, for each cultivar listed. Diseases such as sooty molds and bitter pit may be a problem in wet seasons on all apple cultivars, including disease resistant apples. If Maryland experiences prolonged wet periods or excessive rain periods some of these resistant cultivars may suffer from heavy disease pressure and show some damage. Very little breeding has been done for resistance to insect damage. There are some rootstocks that are reported to be tolerant of woolly apple aphid*, Eriosoma lanigerum*, which has part of it life cycle in the root system of apples. Normally this aphid is found on the stems of apple trees. Woolly apple aphid has adapted to live and reproduce asexually on apple year-round in most fruit growing areas. Woolly apple aphid overwinters as a nymph on the roots of apple. It can also overwinter as a young nymph on the above-ground part of the tree in protected areas on the trunk or main limbs. In severe winters, above-ground colonies may be killed. As temperatures warm in the spring, overwintering aphids produce live young that migrate up and down the tree. Nymphs on the roots move upward to provide a source of infestation if above-ground colonies do not survive the winter.

Keep in mind that various apple understocks, part of tree growing in the ground on which a cultivar is grafted, is important. Some understocks will dwarf a fruit tree, depending on the understock, from making a small tree under 10 ft to some reducing growth to 80 % of a full-sized tree. The greater the dwarfing effect from the understock, the greater the need to supply support staking to keep the tree from leaning over dramatically. Some of the understocks have been selected for dwarfing ability, but also resistance to *Phytophthora* root rots, fire blight, and other root related diseases.

For homeowner markets, many suppliers do not identify which understocks is used and merely list a tree as dwarf, semi-dwarf, or full size. You can check with some direct suppliers to see if they allow you to select the various understocks. You are welcome to contact me at Sgill@umd.edu and I can discuss the qualities of the various understocks I have used over the last 20 years.

Apple Cultivars

Bonita: This is a new cultivar that shows good scab resistance. The fruit has pink to bright red color over a yellow green background. Slightly acidic, juicy and crunchy bite. Combines the beauty and acidity of its parents: Cripps Pink and Topaz.
CrimsonCrisp: The deep red color on this medium sized apple is very attractive. It has a very firm, crisp texture and is very disease resistant for scab, and powdery mildew, and fire blight. It tends to have a spreading growing habit. The cultivar was developed by Purdue University.
Crimson Topaz: Developed in the Czech Republic, this disease-resistant apple traces its lineage back to several apple varieties including Vanda, Rubin, James Grieve and Golden Delicious. Crimson Topaz has proven to be a relatively easy apple to grow. It is not very susceptible to scab disease and moderately resistant to powdery mildew and fire blight. It will grow to a desirable medium to large size with proper thinning of the trees every year. This apple has thin, red and yellow striped skin. Crisp, sweet –tart interior paired with slightly tart undertones. Good resistance to scab, cedar apple rust, powdery mildew and moderately good resistance to fire blight.
Enterprise: This cultivar was developed by Purdue University and is a very late maturing apple that ripens into late October to November in most years to reach maturity. . Medium to large sized fruit and the tree is spreading and productive. Enterprise is highly resistant to scab, fire blight and cedar apple rust. It is moderately resistant to powdery mildew. The skins is fairly thick. Similar to a tart flavor of McIntosh, this variety has an even crunchier, crisper bite without a sour, after taste
Florina (Querina): This cultivar originates from France. It has good resistance to scab disease. It also has moderate resistance to fire blight and mildew but is susceptible to cedar apple rust. Its parentage includes Jonathan. The dark red, medium-size fruit has a sweet/tart flavor and ripens in October.
Galarina: This apple is from France and has Gala –like flavor. It is medium sized and with orange-red skin on a yellow background. This cultivar has shown strong resistance to powdery mildew and scab. I have not seen any problems with fire blight on these cultivars. We have been growing this cultivar since 2017. It holds up and stays crisper than a Gala apple. This is a good alternative to Gala selections.
Gold Rush: Gold Rush is a Purdue University release that was developed in cooperation with Rutgers's University. It a very late ripening fruit that can tolerate cold and should be left on the tree into November for ripening. The apple is very crunchy, tart followed by a sweet flavor. It is very disease resistant to powdery mildew and scab. The apple holds well in cold storage for several months. We have been growing this one for 10 years and have yet to see problems with fire blight, even in bad fire blight seasons.

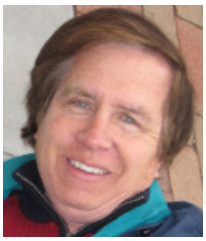
New IPMnet Website

University of Maryland Extension is making changes to its website so the look of the IPMnet site will be different. URLs will be new, too. We will post the new link in a future report. The change is scheduled to take place in early April.

New International Boxwood Seminar Series

The Boxwood Blight Insight Group (BBIG), is sponsoring an International Boxwood Seminar series to be hosted by AmericanHort and its research arm, Horticultural Research Institute (HRI). The series is open to all boxwood enthusiasts across the globe. The first presentation is March 18, 2021 from 1:00 to 2:00 Eastern US/ Canada Time, and is entitled "Boxwood Blight: a 15-year love-hate relationship" presented by Dr. Thomas Brand, Department Head of Ornamental Plant Cultivations, Tree Nurseries, Public Greenery @ Chamber of Agriculture of Lower Saxony, Germany. For more information and to pre-register online, go to https://us02web.zoom.us/webinar/register/8016123772513/WN_gpDb6xsAQ7iRxrRRSof-DA

CONTRIBUTORS:



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Photos are by Suzanne Klick or Stanton Gill unless stated otherwise.