Insect Notes
Celeste Welty, Extension Entomologist

**Brown marmorated stink bug (BMSB):** Stink bugs are being detected in some orchards and in pheromone traps that we have deployed in 36 counties around Ohio. Trap reports are posted online in a [Google document for trap reports in 2018](u.osu.edu/fruitpathology/fruit-news-2/). Our exciting news on the biocontrol front is that on June 25th, we recovered live specimens of the samurai wasp from a sentinel egg mass of BMSB that was placed in a willow tree in a treeline at OSU's Waterman Farm in Columbus. Two days later, samurai wasps emerged from another sentinel mass at the same farm. We are now using these to start a colony of this tiny parasitoid wasp, which is the best-known natural enemy of the brown marmorated stink bug. We are also deploying sentinel eggs at selected commercial orchards in central and eastern Ohio to determine whether we can detect the wasp at additional sites. (Visit our last OFN addition for more details at [u.osu.edu/fruitpathology/fruit-news-2/](u.osu.edu/fruitpathology/fruit-news-2/))

**Japanese beetles:** The beetles are starting to show up in abundance in raspberries, peaches, apples, as well as in sweet corn and in landscape plants. Damage by Japanese beetle is best prevented by insecticide applications directed at the first beetles to invade an area, before they send out messages to other beetles to aggregate. Some of the most effective products have been around for a long time: carbaryl (Sevin and others) and pyrethrins plus PBO (EverGreen Pro and others). If traps are used to remove beetles from an area, they should be set up at a distance away from the crop rather than adjacent to the crop because they can attract many beetles into the area around the trap.
If you grow apples or pears you probably know that we are having a severe outbreak of fire blight this season. Since May 2 we had 28 to 35 days of high to extreme risk for fire blight depending on the growing region. As long as weather conditions favor new shoot growth the bacteria that cause fire blight will continue to replicate and spread. Even growers who protected their trees with antibiotic applications during bloom are experiencing high levels of the disease in their orchards.

So, what can you do right now, if you have moderate to severe fire blight in your orchard?

According to OSU Horticulture Extension Specialist Dr. Diane Miller, “most fruit trees in Ohio will continue to grow until early July”. Since the only way to slow fire blight infections after bloom is to slow down shoot growth and promote hardening-off, growers should consider applying a growth regulator to expedite the hardening-off process.

- Apply a growth regulator such as Apogee or Kudos at 12 oz/acre. A non-ionic surfactant such as Regulaid should be added to the tank mix to improve performance consistency. Refer to the product labels for other recommendations and restrictions. For young dwarf blocks a rate of Apogee or Kudos can be reduced to 6 oz/A.

- Apogee and Kudos take about 10-15 days to “kick in”, but growth suppression can last for 2-5 weeks per application. During the 10-15 day “kick in” period, Cueva can be applied at 2 qt/A to limit the spread of bacteria. Refer to the product label for application restrictions for Cueva.

- If weather conditions that promote shoot growth persist, a second application of Apogee or Kudos may be needed, especially on highly susceptible varieties. However, once the shoots harden-off they are no longer susceptible to fire blight.
Since it is turning out to be a bad year for fire blight growers should prioritize which blocks they focus on for immediate treatment. Young blocks (3-8 years old) with a few fire blight strikes should be given the highest priority, followed by young blocks with severe strikes, and older blocks with a few strikes. Fire blight can kill a young tree very quickly, therefore regular scouting is critical, especially in newly planted blocks. For growers who do not want to apply a growth regulator to young dwarf and semi dwarf trees and prefer to prune out disease strikes the following best practices should be implemented.

- Do not prune during wet weather of very humid conditions.
- Prune before necrosis (browning) develops.
- Make cuts 6-12 inches below the visible infection.
- Remove and burn infected tissue immediately.
- Disinfect pruning tools between trees, especially if pruning is done during bloom.
- Spray copper following pruning to protect the wounds from new infections.

A few additional comments:

Hard cider apple varieties are susceptible to fire blight and should be managed the same way as fresh market or cider varieties.

While ornamental flowering pear trees (*Pyrus calleryana*) are a favorite of homeowners and city planners, they are VERY susceptible to fire blight. Growers should remove any ornamental pears on their property to prevent the spread of bacteria into the orchard.
SAVE THE DATE:
2019 Ohio Produce Network
January 16-17, 2019
Embassy Suites in Dublin, Ohio

WE WANT TO SEE YOU THERE!
Be sure to take part in the Value Added Product Tasting Context – bring your favorite jam, sauce, salsa or specialty item to enter!

Keynote Speaker: Chief Communications Officer of Wendy’s Liliana Esposito

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Updates can be found at: opgma.org/ohio-produce-network/

Upcoming Events:
Grape Field Day; July 19th; Kingsville, OH – Link Here
Hop Production and Management Field Day; July 17th; Mechanicsburg, OH – Link Here
Farm Science Review; Sept 18 – 20th; London, OH - Link Here
When scouting for disease always remember to check the underside of the leaves!

Melanie Lewis Ivey, Assistant Professor, Fruit Pathology and Fresh Produce Safety

Powdery Mildew in Raspberry

Powdery mildew is a common disease of many fruit crops and most commercial growers and home owners can easily recognize the white snowflake-like spots on the surface of leaves. However, in some crops, the spots are on the underside of the leaves and the disease can go unnoticed. This is the case with raspberry powdery mildew.

Raspberry powdery mildew, caused by the fungus *Podosphaera macularis*, can infect the fruit, shoots and leaves of red and black raspberries. The lesions on leaves first appear on the lower leaf surface causing light green to yellow blotches on the upper surface. The yellowing of the leaves can be confused with a nutrient deficiency. As the disease progresses the spots can cover both the lower and upper leaf surfaces. Infections occur at temperatures between 65 and 80 F. The fungus doesn’t need water to cause infections but does need high relative humidity (95-99%).

When scouting for disease always remember to check the underside of the leaves!

Susceptible black raspberry varieties include ‘Munger’ and ‘Himalaya’ and susceptible red raspberries include ‘Puyallup’, ‘Canby’, ‘Fairview’, ‘Haida’, ‘Skeena’, ‘Wakefield’, and ‘Washington’. Many fungicides are registered for powdery mildew control. Consult the 2018 Midwest Fruit Pest Management Guide (pages 109-113) for the most current fungicide recommendations. Late in the season infected primocanes should be removed and burned or put in the trash. **Do not compost diseased canes or leaves.**

On pepper and strawberry, powdery mildew also first appears on the underside of the leaves. However, the powdery mildew fungi that infect pepper and strawberry will not infect raspberry.

![Strawberry leaf with powdery mildew symptoms. Notice that the white powdery growth on the underside of the leaf corresponds to the yellow necrotic spots on the upper side of the leaf. Yellowing of leaves on a plant with powdery mildew (right). (Pictures by: Betsy Anderson, Wayne County OSU Extension)](image)
The days of dealing with just American dog ticks in Ohio is over. We now have two additional invasive species that are impacting people and dogs. The American dog tick is more of a nuisance pest because fewer than 1% carry Rocky Mountain spotted fever. There were 34 reported cases of that disease last year in Ohio distributed around the state. The season for this tick is April through July.

The blacklegged 'deer' tick was found in Coshocton and Ashtabula County’s in 2010. Now more than two-thirds of Ohio’s counties have reported the blacklegged tick. The Ohio department of Health reported 267 Lyme disease cases last year but the actual number may be closer to 3,000 based on CDC estimates. The poppy-seed sized nymph is the bad actor because it is active through the spring into the fall. Because of its small size and brief feeding interval of three days the tick is often not detected. Therefore when a rash and flu-like symptoms appear the patient may not recollect a tick bite. Healthcare professionals are just recognizing the possibility of seeing Lyme disease patients so it is important to save the specimen so tick-borne disease may be included in the diagnosis. The large adult peek in the fall is a problem because Ohioans are not used to applying repellent and doing tick checks that time of year.

Lone star ticks have been working their way into our state for decades and some Ohio counties like Jackson, Scioto and Vinton have had higher populations for sometime. However, this tick could be found in any Ohio county because, they are distributed primarily by migratory birds. The ticks will attach and feed on just about any host. Lone star tick bites can also result an allergic reaction called ‘red meat’ or ‘mammalian meat’ allergy. OSU allergy physicians are seeing more patients with this condition.

The important thing is to be tick aware. The Ohio Department of Health has updated their website with prevention information. (https://www.odh.ohio.gov/ticks%20)

Wearing long light-colored pants tucked into socks or boots, shirt tucked into pants, wearing repellent and do tick checks are key to preventing tick bites. Forcible removal of ticks with pointy tweezers as soon as they are discovered is important. Save the tick in hand sanitizer in a baggie is a good way to save the specimen. Take it with you to your healthcare professional if symptoms appear.
The Ohio Big Three

Ticks of Public Health Importance

American dog tick, *Dermacentor variabilis*

Blacklegged ‘deer’ tick, *Ixodes scapularis*

Lone star tick, *Amblyomma americanum*

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Photos courtesy the Tick Research Laboratory, Texas A&M University
http://tickapp.tamu.edu/

2017 Cases Compared to Incidence 2007-2016

Human Lyme Disease (2017)

267 Cases

Source: Ohio Department of Health
*Data as of 1/03/2018
County-level data are based on the county of residence of the case
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Are Hops Excluded or Exempt from the FSMA Fresh Produce Safety Rule?

Melanie Lewis Ivey, Assistant Professor, Fruit Pathology and Fresh Produce Safety

There is often some confusion as to whether or not hops are excluded or exempt from the Food Safety Modernization Act (FSMA) Produce Safety Rule. While Hop Growers of America Inc. advocated for hops to be listed on the “rarely consumed raw” list, the final rule issued by the Food and Drug Administration (FDA) did not include hops on this list. Therefore, hop growers are NOT excluded from FSMA. But are you exempt? Just to make things more confusing there are two types of exemptions: 1) Qualified Exemption and 2) Exemption.

1) Qualified Exemptions
The Produce Safety Rule states that “hops used in the making of beer will be eligible for exemption from the requirements of the produce safety rule” under the provisions 21 CFR § 112.2(b)(1), provided the farm establishes and maintains documentation in accordance with the law. Translated this means:

Farms producing hops that are commercially processed (brewing, distilling, refining) to adequately reduce the presence of microorganisms of public health significance qualify for an exemption from the Produce Safety Rule if they maintain the proper documentation. The following documentation is required:

- A document that clearly states “not processed to adequately reduce the presence of microorganisms of public health significance.” This document must be added to the package, bill of lading or other pertinent documentation and is referred to as the labelling requirement.
- Annual written assurance from the buyer(s) that the commercial processor is following procedures that adequately reduce the presence of microorganisms of public health significance. The procedure for processing must be included in the written document.

The compliance date for the rule depends on your rolling average farm gate value for the past three years (see box below).

2) Exemptions
Farms with an average farm gate value of less than $25,000 are exempt from the Produce Safety Rule and are not required to meet the labelling or written assurance requirements listed above. However, it is important to keep track of your sales since the farm gate value is a rolling average. For more information on the Fresh Produce Safety Rule you can contact a member of the OSU Fruit And Vegetable Safety Team (link here).
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**Grower Resources:**

NEW: Midwest Fruit Pest Management Guide 2018  
(Additionally: Kocide 3000-O is now registered in Ohio! [Click here for the label.])

NEW: 2018 Grape Spray Guide

OSU Fruit Pathology Resources

OSU Fruit and Vegetable Pest Management

OSU Fruit and Vegetable Diagnostic Laboratory

OSU Bramble: Production Management and Marketing Guide (Bulletin 782)

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