PENNSYLVANIA VEGETABLE MARKETING & RESEARCH PROGRAM

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Pennsylvania Vegetable IPM Weekly Update

June 21, 2023

These are cooperative projects involving Penn State University researchers, Penn State Cooperative Extension educators, growers, the Pennsylvania Department of Agriculture, the Pennsylvania Vegetable Marketing and Research Program and the Pennsylvania Vegetable Growers Association.

PA Vegetable and Berry Current Issues as of June 21, 2023

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GENERAL CONDITIONS

According to the Northeast Regional Climate Center, the first part of June has started off cooler than average especially in western PA due to a stalled low-pressure system that also brought smoke from the Canadian wildfires into the region. Precipitation has also been below average for much of the state aside from the northeastern corner which saw average to slightly above average rainfall. The NOAA Climate Prediction Center currently predicts a warmer and wetter than average July for much of the mid-Atlantic region.

FIELD PRODUCTION

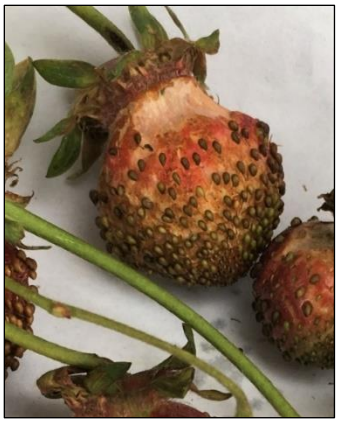
Cucurbit downy mildew was confirmed on cucumber in southern New Jersey last week. There have been no other reports across the region. At the very least, using a protectant spray program on cucumber and cantaloupe is recommended and inclusion of downy mildew specific fungicides is encouraged. See the Disease Alert last week for more information. (2023 PA Vegetable Disease Alert: Downy Mildew Confirmed on Cucumber in Southern New Jersey (psu.edu)

Bacterial diseases are starting to show up in some onion fields. Foliar lesions are initially small and tan in color before extending the length of the leaf causing it to eventually collapse. The application of copper-based fungicides tank mixed with mancozeb is recommended. Also managing onion thrips populations can reduce potential spread by the insect as well as reduce thrips feeding damage that can serve as entry points for the bacterial pathogens. With the lack of rain and increasing temperatures, thrips populations can increase rapidly. Regular rains will aid in physically washing off some of the thrips population from the plants.

Single bacterial lesion on an onion leaf (left) and multiple bleached and flagged leaves as the disease progresses (right). Photo: B.K. Gugino.

With hay being cut across the state, be on the lookout for **thrips** and **leafhoppers** moving into vegetable fields. Thrips can vector tospoviruses such as tomato spotted wilt or impatiens necrotic spot quickly spreading them through the field. Other sightings include **striped cucumber beetles, aphids,** and **wildlife feeding damage**. **Sweet corn insect counts are on the increase**. It was recently asked why Penn State Extension has not been monitoring for European Corn Borer (ECB) as it had in the past. In part, this is because ECB populations have been very low due to the prevalent use of *Bt* in field corn in the agricultural landscape. Be on the lookout for possible **spongy moth feeding damage** in vegetables especially in more wooded areas that have not been aerially treated. Last year, caterpillar feeding damage was reported in crops like onion.

As a general reminder, it is **important to thoroughly read all pesticide labels before applying products** to make sure that they are being used legally. In the past, there have been numerous reports of crop injury or at times complete crop failure as a result of misapplication. This is particularly true for herbicides that can have multi-year plant back restrictions. Also, for some herbicides, applying them over the plastic and counting on the rain to wash them off can also be risky. If not thoroughly washed off, residual herbicide can wash into the planting holes causing plant injury. Herbicide injury can look very similar to virus infection, but rather than a few scattered symptomatic plants showing symptoms, a greater proportion of plants in an area or across the field may be affected.



Strawberry fruit affected by thrips, cyclamen mites, and rain causing bronzing and splitting. Photo: K. Demchak.

BERRY CROPS

Strawberry harvest is either finished, wrapping up, or nearing its peak, depending on where in the state you are located. Most growers have been reporting a reduced crop load or small berries compared to most years. **Thrips** continue to cause surface scarring and bronzing on the fruit. In some cases, **cyclamen mite** adults, which can cause the same symptoms, were present on the same berries at the same time, and sometimes a large number of cyclamen mite eggs were nestled under the berry caps. Once rain was added to the mix, **berry splitting and cracking** occurred. The typical symptoms of emerging leaf distortion and discoloration associated with cyclamen mites were minimal, and often 'Galletta' was the variety most severely affected. The cracking seems to be less of a problem in fields where substantial irrigation was maintained throughout the dry spell. Seeds are raised and easily rubbed off the fruit – this also happens when powdery mildew is present, which we have seen very little of so far. Radiant or Assail could be applied to control thrips, and a miticide may be applied right after mowing at renovation if a planting is being carried over for another year. Predatory mites will assist in obtaining control.

Leaf purpling from **copper phytotoxicity** was noted when copper was applied when we experienced some very hot days in early June on the strawberry variety Earliglow.

As often happens at this time of the year, blueberry cane death is being reported. This can have a wide variety of causes ranging from actual disease to borers or voles girdling canes. Cut some canes and look for any browning of the pith in the cane center or wedge-shaped tan or brown areas. Dead and dying canes should be pruned out now to prevent sporulation and further spread of diseases during the summer. Canes with wilting tips should be cut crosswise to check for a brown pith as freeze-damaged tender tissue is more susceptible to **Phomopsis cane blight** infection. **Botryosphaeria stem blight** is also common. Continue to cut canes lower until the wood is light green all the way across. This may require cutting canes all the way to the crown.

Ripening strawberry with cyclamen mite and eggs. The point where the cap attaches to the berry runs top to bottom through the center of the photo. Eggs are clear to translucent and oval-shaped. A peach-colored adult can be seen just to the right of the topmost egg in the black circle. Photo: K. Demchak.

Spotted wing drosophila has not yet been detected in samplings, but numbers will begin to increase during July. We will continue to monitor for both the pest, and for naturally occurring and released parasitoids.

Sections of blueberry cane showing dead tips and brown center to pith in lower section of affected cane. Photo: K. Demchak.

Wedge-shaped tan area caused by Botryosphaeria invading tissue. Photo: K. Demchak.

PestWatch Report - June 21, 2023

MOTH CATCH INCREASING THROUGH PENNSYLVANIA

As more sites have begun reporting throughout Pennsylvania, corn earworm numbers are beginning to reach spray thresholds around the state. Sites in in Franklin and Lancaster counties are experiencing catches warranting weekly spray intevals. for corn that's tasseling or silking in those areas. Corn that is tasseling or silking is very attractive to corn earworm, as eggs are laid on silks, and control must be achieved while larvae are recently hatched before they've entered the ear.

Fig 1. Corn earworm begin feeding at the ear tip and leave moist frass behind.

Fig 2. Fall armyworm feeding damage, including shredded leaves and sawdust like frasss.

Once the spray threshold is reached, you can consider products from the pyrethroid class, diamide class, or spinosyn class for effective control. We tend to see the best efficacy from non-pyrethroid products such as Coragen, Blackhawk, and Radiant, as pyrethroid resistance has increased in migrating corn earworm populations. However, we tend to see more resistance later in the season than now, as moths migrate from further south in the United States up to our region. Diamides and spinosyns do not provide effective control of other pests such as sap beetles, brown marmorated stink bug, Japanese beetles, or adult corn rootworms. If you're seeing these pests as you scout your corn, consider adding a pyrethroid, or the premix Besiege to control those.

So far, no fall armyworm have been caught for this season in Pennsylvania. However, scout for fall armyworm damage pictured in Figure 2.

Our program is not monitoring for European corn borer this season, as area-wide numbers have been low for many seasons. Insecticides targeting corn earworm will provide control of any European corn borer that may be feeding on sweet corn, as well.

Average weekly catch – If no data exist for that week, null is reported.

Corn Earworm

COUNTY	SITENAME	13-Jun	21-Jun
Bucks	Delaware Valley University	--	4
Centre	Harner Farm	0	--
Erie	Mason Farms 1	18.2	--
Erie	Mason Farms 2	4.2	--
Franklin	Waynesboro	8.5	25
Indiana	Yarnick's Farm	3	16
Juniata	Happy Breeze	0	7
Lancaster	New Danville	11	30
Lancaster	Landisville	4	--
Lancaster	Neffsville	5	9
Luzerne	Burger's Farm	--	0
Mifflin	Streamside	--	18
Washington	Bebout Farm	--	14
York	York	0	0

THRESHOLDS Reproductive (tassel/silk) and late vegetative corn attract moths. Shorten spray schedules when populations increase.

Threshold based on CEW	Catch per week	Spray Frequency
Almost Absent	1-13	7+
Very low	14-35	5-6
Low	36-70	4-5
Moderate	71-349	3-4
High	>350	2-3