WWW.PAVEGGIES.ORG PVMRP@EMBARQMAIL.COM

PENNSYLVANIA VEGETABLE MARKETING & RESEARCH PROGRAM

2301 NORTH CAMERON STREET, HARRISBURG, PENNSYLVANIA 17110-9405 717.694.3596

Pennsylvania Vegetable IPM Update

June 19, 2019

This is the first Update of the 2019 season.

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

From Penn State Extension Specialists and Educators

General conditions: The past few days have been cool and wet, and the limited sun is leading to issues with poor fruit set in some crops. In addition to the wet conditions, portions of the state have been experiencing more persistent winds making it challenging to get timely and sufficient spray application coverage without drift issues. Be on the look out for increased weed pressure especially if timely cultivations have been missed due to the wet weather.

INSECT PEST UPDATE

Striped cucumber beetles continue to be active in cucurbit fields across the state. They can be especially damaging to young cucurbit plants through either root feeding or transmission of the bacterial pathogen that causes bacterial wilt. Be prepared to manage striped cucumber beetles through either chemical or cultural means. **Corn earworm** adult captures in some locations have been high for this early in the season. Remember to be scouting for **mites** especially in high tunnels. They are most commonly found on the underside of the leaves near the leaf veins and are most easily seen using a hand-lens. Look out for potato leaf hoppers in potatoes and other crops. **Cabbage moths** are being seen flying in cabbage fields. **Slug** damage has been observed on green beans and cabbage in some locations.

TOMATO HIGH TUNNEL ISSUES

Botrytis and **leaf mold** continue to be prevalent in high tunnel tomatoes due to the persistent wet weather and high humidity as well as **timber rot**. Pith necrosis is a bacterial disease that unlike other bacterial diseases typically only affects a few plants. It is favored by cool nights, high humidity, cloudy weather and excessive nitrogen. As the plants are setting fruit, **magnesium deficiency** can commonly be observed in the older lower leaves and is characterized by yellowing between the leaf veins which becomes necrotic. In some tunnels, growers are also observing poor fruit set related to the cloudy weather.

Dark brown to black streaks on the tomato stems characteristic of tomato pith necrosis (left). Internal onion leaf collapsing due to bacteria decay from center rot disease. Photo credit: Beth Gugino.

ONIONS

Bacterial soft rot and **center rot** are causing problems in some fields especially those planted earlier in the season. The bacteria are easily spread between plants via rain splash and enter the plant through natural openings as well as wounds created from storm damage or thrips feeding injury. Although frequent rain events can knock back **thrips** populations, it is important to maintain a regular scouting program. Thrips larvae are most commonly found in the leaf axil at the base of the plant. Increased thrips feeding damage has been correlated to increased foliar fungal disease problems such as **Stemphylium leaf blight** and **purple blotch**.

CUCURBIT DOWNY MILDEW

Although not detected yet in Pennsylvania, downy mildew was confirmed on cucumber in a commercial field in eastern North Carolina this past week. The current weather patterns are placing the very southeastern corner of PA at a slight risk and are spreading it locally around known sources in NC, SC, GA and FL.

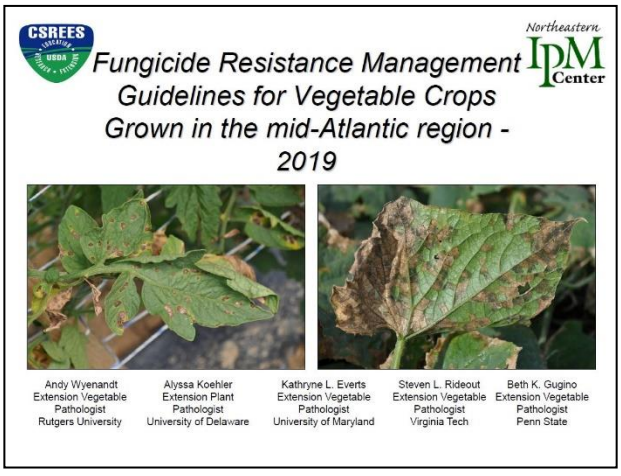
BERRIES

Fruit anthracnose continues to be problematic on strawberry, and is widespread in plasticulture plantings, but is appearing less consistently in matted-row plantings. This could be due in part to differences in the varieties grown in each of these production systems; there is a broad range of susceptibilities among varieties grown in each system, though no variety is immune. In addition, there are reports of **common leaf spot** and leaf **scorch** as well as **Botrytis** and **broad mites** on strawberry. **Root rots** have been reported in blueberry and raspberry plantings due to the wet weather, and cane blight in raspberries and various fungal leaf spots have been reported in blueberries. Finally, there is a report of significant damage from **periodical cicada** egg-laying in blueberries in southwestern PA and a bit north, and where Brood VII is emerging this year, resulting in twigs being weakened and snapping off under the blueberry crop load. Pruning and removal of shoots with oviposition wounds within 4 weeks of the time that damage appears will remove eggs and prevent larval emergence, and thus root-feeding on the blueberry plants. Insecticides in the pyrethroid class can be applied to protect the plants and are probably most likely to be needed in young blueberry plantings that may suffer proportionately greater damage than older plants.

Damage from periodical cicada egg-laying on blueberry. Photo credit: Kathy Demchak.

UPDATED 2019 FUNGICIDE RESISTANCE MANAGEMENT GUIDE FOR VEG CROPS NOW AVAILABLE

Managing to prevent the development of fungicide resistance is an important component of every vegetable disease management program. This guide was developed to help growers make decisions on the selection of in-season vegetable disease management products and to manage for the development of resistance through selection and rotation of products in different FRAC grouping. This guide should be used as a supplement to the 2019 Mid-Atlantic Commercial Vegetable Production Recommendations and is composed of a series of tables organized by crop group and contains a list of recommended products for select diseases along with the fungicide resistance action committee code information.



Sweet Corn Insect Pest Monitoring

Shelby Fleischer, Extension Vegetable Entomologist, Penn State University

PestWatch Report on June 19, 2019

Corn earworm (CEW) captures are scattered and low. The captures are below thresholds in PA. Captures are higher in DE, they decreased from last week, suggesting that emergence of overwintered adults is tapering off. Taseling and silking corn will be very attractive. Moths will also lay eggs on many, many host plants, especially when corn is not available. Tomatoes make a good host (CEW is also known as "tomato fruitworm").

Corn Earworm is present throughout the state.

European corn borer (ECB) counts are scattered, but a localized hot spot exists in Drum, PA. Scout for feeding damage in vegetative corn.

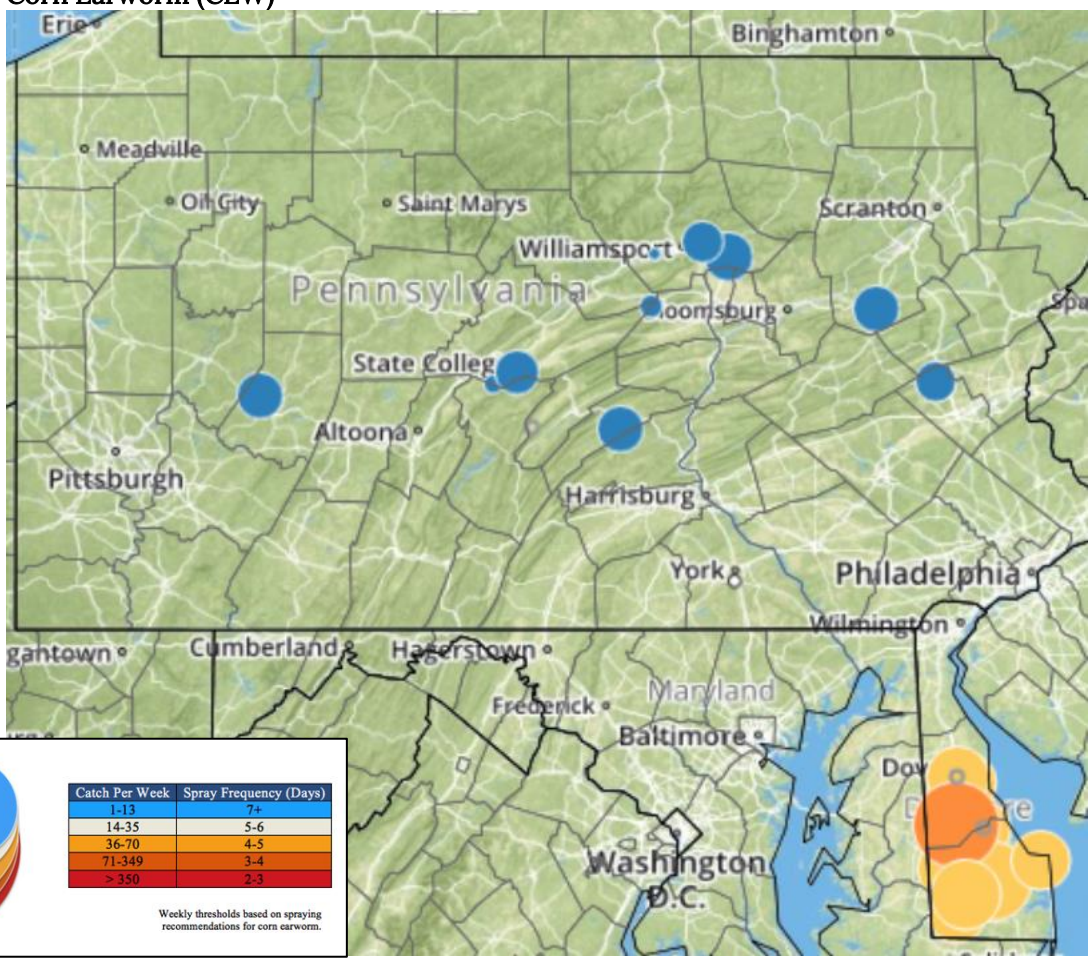
Fall armyworm (FAW) counts are low. Captures in FAW traps this time of year may also be due to non-target capture of wheathead armyworm, which is not a pest. See details here: https://ento.psu.edu/extension/factsheets/armyworm-pheromone-captures

European corn borer feeding.

Fall Armyworm in vegetative corn.

In summary, CEW is scattered and low. Taseling or silking corn is at risk. CEW eggs laid now will develop into adults in about a month. If CEW larvae are on vegetative plants, they will feed on leaf tissue, but the damage is not expected to be economically significant.

Corn Earworm (CEW)



European Corn Borer (ECB)

Average weekly catch – a moving average for the last 7 days. The average catch per night (catch, divided by the number of nights trapping), divided by the number of nights where data exist, multiplied by 7. Weeks where all the average-catch-per-night values are nulls are treated as if no data exist for that week.

County	Town/Farm	CEW		ECB		FAW	
		Jun 12	Jun 19	Jun 12	Jun 19	Jun 12	Jun 19
Centre	State College	null	10.0	null	1.5	null	0.0
Centre	Rock Springs	7.4	1.9	0.0	0.0	0.0	0.0
Clinton	Loganton	null	2.8	null	4.9		
Indiana	Creekside	87.5	11.0	0.0	0.0		
Juniata	Brummer	null	11.0				
Lehigh	Germansville	null	8.4	null	9.8	null	0.0
Luzerne	Drums	null	11.0	null	15.0		
Lycoming	Linden	null	0.9			null	2.6
Lycoming	Montoursville	null	8.8			null	4.4
Lycoming	Muncy	null	12.3			null	0.0
Mifflin	Peachey	58.3	null				
York	York	4.0	0.0	4.0	0.0	12.0	0.0

THRESHOLDS

Reproductive (tassel/silk) and late vegetative corn attracts moths. Shorten spray schedules when populations increase. If CEW is not a problem, then consider ECB.

CEW Threshold		
	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

ECB Thresholds		
	Catch Per Week	Spray Frequency
Almost absent	< 14	7+
Very low	15-35	6
Low	36-70	5
Moderate	> 70	4