



PENNSYLVANIA VEGETABLE MARKETING & RESEARCH PROGRAM

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Pennsylvania Vegetable IPM Weekly Update

August 24, 2022

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.

Pest Watch Report

Karly Regan, Penn State Extension Educator

MOTH CATCH HOLDING STEADY THIS WEEK

Corn earworm numbers caught in traps reporting data this week were increasing at many sites again this week, while decreasing at others. Sites in Blair, Bucks, Franklin, Lancaster, and Montgomery Counties experienced average catch per night of 11-31 moths, which means a spray interval of 3-4 days would be suggested for corn that's tasseling or silking. Centre, Lehigh, Mifflin, and Washington Counties experienced average catch per night of 5-8 moths which means a spray interval of 4-5 days would be suggested. Sites in Bedford, Clinton, and York Counties experienced average catch per night of 2-5 moths which means a spray interval of 5-6 days is recommended. As a reminder, 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. A monitoring trap containing greater than 200 corn earworm moths



Fig. 2. Fall armyworm feeding damage on corn

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, Verimark, Blackhawk, and Radiant, as pyrethroid resistance has increased in migrating corn earworm populations. Particularly, we tend to see more resistance later in the season, 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, stink bugs, 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.

Fall armyworm catch remains low this week with 13 or fewer moths caught in Bedford, Bucks, Centre, Clinton, Franklin, Indiana, and Mifflin Counties and zero caught in all other counties reporting this week. By managing for corn earworm, fall armyworm should be adequately controlled, as well. Fall armyworm damage can occur on the ear, as well as on the foliage. Foliage feeding will leave ragged edges and waste that resembles sawdust.

Average weekly catch – 7-day moving average. The average catch per night (total catch, divided by the number of nights trapping), divided by the number of nights where data exist, multiplied by 7. If no data exist for that week, null is reported.

		CEW	CEW	CEW	FAW	FAW	FAW
County	Site	Aug 8	Aug 15	Aug 22	Aug 8	Aug 15	Aug 22
Bedford	Curryville	9.4	9.7	4.9	2.4	1.7	0.9
Blair	Sinking Valley	11	10.7	10.4	0.1	0.9	0
Bucks	Doylestown	4.6	26	25	0.1	0	0.4
Butler	Cabot	Null	Null	1.4	No trap	No trap	No trap
Centre	State College	0.7	0.5	0.6	0	0	0
Centre	Rock Springs	3	4.5	5.3	0	0.4	1.8
Clinton	Loganton	0.4	0.25	3	0	0	0.3
Franklin	Shippensburg	2	16	11	0	0	0.1
Franklin	Waynesboro	1.9	23.1	30.3	0	0	0.1
Indiana	Indiana	3.3	3.7	1.6	0	0	0.4
Juniata	Port Royal	2.3	3.4	Null	0	0.1	Null
Lancaster	Landisville	2.9	15.9	5.3	0	0	0
Lancaster	New Danville	0.7	6	12.6	0	0	0
Lancaster	Neffsville	3.6	30.2	7	0	0	0
Lehigh	Germansville	4.3	14.6	6.6	0	0	0
Luzerne	Drums	0	0	0	0	0	0
Lycoming	Linden	Null	1.5	Null	Null	0.4	Null
Lycoming	Montoursville	0.1	0.6	Null	0	1.1	Null
Mifflin	Belleville	2.3	2.7	6	0	1.7	0.1
Montgomery	Souderton	Null	24.3	31.1	0	0	0
Montour	Washingtonville	2.7	Null	Null	No trap	No trap	No trap
Northampton	Easton	Null	2.8	Null	Null	Null	Null
Washington	Venetia	Null	Null	8	No trap	No trap	No trap
York	York	4.3	12.1	5	0	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

Vegetable Disease Updates

Beth Gugino, Penn State Extension Vegetable Pathologist

GENERAL UPDATES:

- Last week **late blight was confirmed on tomato** in western North Carolina and the isolate is currently being genotyped. There was also a report on tomato in the adjacent county in eastern TN approximately a month ago that was recently entered into USAblight monitoring website. The cooler temperatures and longer dew periods are favorable for late blight development. Late blight is characterized by irregular water-soaked lesions that are initially pale green before turning grey, brown in color. Under humid conditions, the lesions on the underside of the leaf will sporulate giving them a white fuzzy appearance. The lesions will tend to develop on the upper to middle part of the plant canopy as



Foliar symptoms of early blight (upper left), late blight (upper right) and Septoria leaf spot (lower left) (Photos: Beth K. Gugino).

- opposed to early blight and Septoria leaf spot (tomato only) that start on the lower leaves and progress upward. In comparison, early blight lesions are initially small dark spots that develop characteristic concentric rings and are often surrounded by chlorotic leaf tissue while Septoria leaf spot lesions are very circular with a tan center surrounded by a dark margin. With the aid of a hand lens, small black pycnidia (spore producing structures) can be seen in the center of the lesions. Septoria leaf spot does not cause fruit lesions. If you suspect late blight on your farm, please let me know either by email at bkgugino@psu.edu or by phone at 814-865-7328 or contact your local Extension Office.
- **Bacterial soft rots** are becoming more common in vegetable fields that have experienced some of the strong storms passing across PA this past week. Any type of injury whether due to wind, hail, insect damage creates wounds that soft rotting bacteria can enter and cause degradation of the tissue in the form of a soft rot. Once observed there is no effective treatment other than to rogue out the symptomatic plants. Efforts to reduce damage and minimize soil splashing onto the plants and fruit will help in subsequent growing season.
 - **Downy mildew continues to spread on cucumber** across the region and within the past week there have now been **reports on butternut squash** in MA and on **jack-o-lantern pumpkin** in northwest OH against the MI border as well as in western and southeastern VA. Continue to scout all cucurbit crops and burn down or disk under fields that no longer being harvested to reduce inoculum. In PA, downy mildew was most recently confirmed in Adams Co. and previously on cucumber in Centre, Mifflin, Dauphin, and Lehigh, Juniata, Snyder, Lancaster, Berks, and Bucks Co. If you suspect cucurbit downy mildew on your farm, please let me know either by email at bkgugino@psu.edu or by phone at 814-865-7328 or contact your local Extension Office. For the latest reports and forecasts check out <https://cdms.ipmpipe.org>.



Chlorotic lesions and purplish sporulation cause by downy mildew on the upper and lower side of a pumpkin leaf (Photos: Beth K. Gugino).

Clinic Corner: Findings from the Penn State Plant Disease Clinic

Jennie Mazzone Penn State Research Technologist and Assistant Diagnostician

ALTERNARIA HEAD ROT AND BACTERIAL SOFT ROT ON BROCCOLI

The [Penn State Plant Disease Clinic](#) received a broccoli sample from a commercial field in Columbia County, PA in August with head rot symptoms. The heads showed varying degrees of brown, necrotic tissue. Severely necrotic areas were accompanied by water-soaking and soft rot. The soft rot symptoms made the sample quite odoriferous. Two diseases were identified on these broccoli heads, *Alternaria* head rot and bacterial soft rot.

The *Alternaria* fungus can cause a leaf spot and head rot on broccoli. Leaf spots caused by this disease are brown, circular spots, usually with concentric rings, and surrounded by a yellow halo. Early stages of this disease on the head appear as small spots of necrosis. As the disease progresses, head rot develops, and signs of the fungus may appear on affected tissue as a dark brown sporulation. Follow the [2022-23 Mid-Atlantic Commercial Vegetable Recommendations](#) for *Alternaria* leaf spot to manage this disease.

Bacterial soft rot typically occurs on already damaged tissue. In this case, the tissue already damaged by the *Alternaria* may have been the entry point for the soft rot bacteria. Several species of bacteria can cause this disease. Warm, wet weather favors soft rot development. Avoid conditions that keep heads wet for extended periods of time. Select resistant varieties. Varieties that have tight, dome-shaped heads with small buds are less susceptible to this disease as water can more easily roll off the head instead of collecting on the head. Minimize injury to avoid this disease.



Broccoli sample showing head necrosis and bacterial soft rot (Photos: Jennie Mazzone).

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