

Vegetable Crops IPM Update, Week Ending 8/07/13

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Sweet Corn

European corn borer (ECB) adult activity continues at low-to moderate levels, with slightly increased catches in the northern counties. At this time, south-western parts of the state are seeing the most activity (see ECB map). At this time of the year, flights become less distinct, and activity typically continues at low levels until mid-September. Egg hatch is now occurring in all counties, and infestations above 12% have been found in numerous areas. Consider treating if 12% or more plants exhibit the characteristic “shot-hole” type feeding on leaves and/or droppings or ECB larvae in emerging tassels. **Remember to make a full-tassel application to control ECB larvae as they leave the tassel and travel down the stalk to re-enter the plant near the ear shank.** This last application is often critical to controlling ear infestations from ECB. Consider weekly applications through the silk stage unless local corn earworm catches dictate a tighter schedule. This will help prevent ear infestations resulting from eggs laid on or near the developing ear.

The highest nightly ECB catches for the previous week are as follows:

Denville	2	Centerton	1	Mullica Hill	1
Lawrenceville	2	Chester	1	Newton	1
Allentown	1	Crosswicks	1	Princeton	1
Blairstown	1	Hillsborough	1	RAREC	1

Fall armyworm (FAW) infestations are present throughout the state. Infestation percentages moderate, with particular emphasis on coastal and southern areas. FAW caterpillars consume corn foliage, and produce large quantities of feces that pile up within the whorl. FAW larvae typically have light and dark brown bands, and the head capsule has a distinctive upside-down “Y” pattern on it. Unlike ECB, FAW will feed on corn plantings in the seedling stage, although whorl stage is usually the first to be affected. Consider treating if the number of plants infested with FAW either alone, or in combination with ECB exceeds 12%. *As in recent years, FAW has proven to be difficult to control with some pyrethroid insecticides.* Newer materials, including spinosad-based insecticides, as well as those including active ingredients chlorantraniliprole and flubendiamide are effective against FAW.

Corn earworm moth (CEW) numbers have increased slightly, and catches are moderate throughout southern and central NJ. Catches in the north have also increased, but only in a few of the western traps. This is the time of year when we generally see gradual increase in CEW numbers. CEW catches from a number of North Carolina light traps have risen sharply through the last days of July, while increases in Virginia and Delaware have been moderate. This is the first indication that we should prepare for significant increases in CEW numbers here if storms or approaching frontal systems permit consistent southerly wind flow.

Blacklight: At this time, the most consistent **blacklight** catches are occurring from Mercer County southward (see CEW Blacklight Map), although there has been a spike in western Warren County recently. In this blacklight-based map, the blue area relates to a 4-5-day silk spray schedule and green areas represent a 3-4 day silk spray schedule.

Pheromone: CEW **pheromone** catches have increased in southern NJ over the past week (see CEW pheromone map). The CEW pheromone map is indicating a somewhat tighter silk spray schedule (3-4 vs. 4-5) than the blacklight map, although the 3-4 day zone (green) on the pheromone map is expanded primarily due to the few number of pheromone sites relative to blacklight sites.

The highest nightly CEW **blacklight** catches for the previous week are as follows:

Centerton	2	Cinnaminson	1	Milltown	1
Phillipsburg	2	East Vineland	1	New Egypt	1
Tabernacle	2	Hammonton	1	Pedricktown	1
Allentown	1	Medford	1	Woodstown	1

The highest nightly CEW **pheromone** catches for the previous week are as follows:

Green Creek	22	Springdale	3
Woodstown	14	Beckett	2
Hammonton	12		
Eldora	7		

Silking Spray Schedules*:

South – 3-4 days

Central – 4-5 days

North – 5 days

* Note: These are general recommendations. Local trap catches may indicate some variation in the frequency of insecticide applications to silking corn.

Cooler evening temperatures and longer dew periods through August result in favorable conditions for **northern corn leaf blight (NCLB)**. This foliar disease of corn causes elongated, gray lesions on older leaves. As the infection progresses, lesions occur higher on the plant, and can result in unattractive or even under sized ears. **Corn leaf rust**, which can also reduce marketable yield, may also be present at this time. These diseases may require fungicide applications if they appear prior to tassel development. Infections that first appear in the whorl stage may be particularly destructive. Consult the *2013 Commercial Vegetable Production Recommendations* for labeled materials.



Northern corn leaf blight (top) and corn leaf rust (bottom).

Tomatoes

New **two-spotted spider mite (TSSM)** infestations continue to be found in tomatoes at this time. Check 2 complete leaves each on 5 consecutive plants in 10 random locations in the planting. Look for the presence of whitish “pin-spots” on the upper surface of leaves. These spots appear in response to TSSM feeding on the lower surface. As TSSM increase, spots will coalesce to form a yellow area on the leaf surface. If not managed, TSSM will cause leaves to become bronze in color and may kill the plants. Make sure some samples are from field edges or where the tomato crop borders other favored hosts like eggplant and watermelon. Spot treat, if possible. Do not wait until TSSM is widespread throughout the field, as it will become more difficult to manage. Consult the *2013 Commercial Vegetable Production Recommendations* for labeled materials.

Native **brown stink bugs** are active in tomatoes at this time, and stinkbug damage has increased. This injury is particularly common in high tunnels. While it is not clear whether natives or the BMSB were responsible for this injury, native species have a distinct preference for tomatoes. Typically this injury increases with drier weather. Be sure to monitor fruit for this damage (known as cloudy spot). If cloudy spot is increasing in harvested fruit, consider an insecticide application to limit further damage. Consult the *2013 Commercial Vegetable Production Recommendations* for specific insecticide recommendations.

Tomato fruitworm (corn earworm - CEW) is injuring tomato fruit in some local areas. Particularly hard hit at this time, are individual fields in Somerset County. CEW moths lay eggs around blossoms in the upper canopy of plants. Infested fruit are typically in the same area. Consider treating if fresh injury is present in more than two sample sites out of ten. This injury may increase with late-season increases in CEW adults.

Peppers

Beet armyworm (BAW) is a pest that could occur in peppers at any time, and fields from Hammonton on south should be scouted weekly. Catches have declined somewhat with cooler evening temperatures, but should rise again with warmer weather. These caterpillars generally feed on young foliage before entering fruit. Early infestations may be identified by foliar feeding near growing points. BAW is resistant to a number of synthetic pyrethroid insecticides. Newer materials, including spinosad-based insecticides, as well as those including chlorantraniliprole and flubendiamide are effective against BAW.

The highest nightly BAW pheromone trap catches in southern NJ are as follows:

Cedarville	20	Mullica Hill	3
Green Creek	4	Woodstown	3
Elm	3		

Pepper weevil:

For the period of August 2 – 6, forty weevils were caught in Woolwich Township on both farm and non-farm traps. No weevils have been caught in any of the other traps around South Jersey. We still have confirmed only two infested fields.

Woolwich Township – 40 weevils

A total of 172 weevils were caught for the same time period in one infested field where we are attempting to control the weevil through the use of pheromone traps. More weevils are being caught on traps where lures are present than traps with only the yellow card and no lures.

Brown Marmorated Stinkbug (BMSB)

BMSB adult catches in blacklights remain fairly low with cooler evening temperatures. At the present time, only the RAREC trap has averaged more than 5/night for the week (See BMSB map). **It is important that this decline in adult catch not be interpreted as reduced threat to host crops!** BMSB adults and nymphs continue to be found in peppers by scouts throughout northern and central NJ. It is important to note that the nymphs cannot fly, and will feed continuously on plants and fruit. BMSB has shown a preference for peppers (especially taller plants like frying peppers) in the past. Growers in areas of higher activity who grow tree fruit, or other preferred crops like peppers and legumes should scout crops frequently for signs of infestation or damage. Adult BMSB are very difficult to detect in crops due to their ability to detect movement. They will hide or drop to the ground if the plant they are on is disturbed. One good way to spot adults is to slowly walk pepper fields before mid-morning. Observe plants approximately 10-15 feet in front of you as you walk. Adults frequently bask in the upper portion of the canopy at this time of day. Consider treating if damage on harvested fruit is increasing, nymph groups are found in the field, or adults are present in multiple sites within a planting. Pepper plants too young to have fruit will not be affected.

The link for the Vegetable IPM Map Archive is:
<http://www.pestmanagement.rutgers.edu/IPM/Vegetable/Pest%20Maps/maparchive.htm>
This site contains all current pest maps as well as those from previous years, back to 1999.

Pumpkins and Winter Squash

Cucurbit downy mildew (CDM) is now infecting pumpkins in New Jersey.

CDM was discovered in several Morris County pumpkin fields on August 6. The infections were minimal, indicating that this was a recent event. This situation will deteriorate rapidly throughout the state, with wet weather forecast for the remainder of the work week. ***Fungicides that specifically target CDM must be included in with the regular protectant fungicide program immediately.*** Where untreated, DM can quickly defoliate host crops. DM infections result in sharp yellow lesions on the upper leaf surface (upper photo). On the lower surface, dark sporulation (lower photo) will be apparent as long as conditions are moist. Consult the *2013 Commercial Vegetable Production Recommendations* for specific fungicide recommendations and rotations to

minimize the threat of resistance. For more information on the regional presence of DM as well as comprehensive, weekly forecasts, see the following website:

<http://cdm.ipmpipe.org/>

Most pumpkin and gourd fields now have enlarging fruit. These plantings are beginning to develop **powdery mildew (PM)** infections. When scouting for other pests, be sure to look at 2 older leaves per plant on each of 5 consecutive plants. Do this at 10 sites throughout the planting for a total of 100 leaves. If 2 or more PM lesions are found in this sample, it is time to begin the regular protectant fungicide program. Consult the *2013 Commercial Vegetable Production Recommendations* for specific fungicide recommendations and rotations to minimize the threat of resistance.



Cucurbit downy mildew lesions on upper leaf surface (**top**) and sporulation on lower leaf surface (**bottom**).