

Vegetable Crops IPM Update, Week Ending 7/31/13

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Sweet Corn

European corn borer (ECB) adult activity has leveled off, with numbers in the low-to moderate range. At this time, central parts of the state are seeing the most activity (see ECB map). Egg hatch is now be occurring in all counties, and infestations above 12% have been found in Middlesex County. Infestations may increase over the next 1 - 2 weeks. 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:

Allentown	1	Griggstown	1	Matawan	1
Cinnaminson	1	Indian Mills	1	Medford	1
Downer	1	Lawrenceville	1	Sergeantsville	1
Farmingdale	1	Long Valley	1	South Branch	1

Fall armyworm (FAW) infestations are present throughout the state. Infestation percentages are rising, with particular emphasis on coastal 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 declined slightly, and catches are low-to moderate throughout southern and central NJ. Catches in the north are non-existent. This is the time of year when we generally see gradual increase in CEW numbers, but this activity has been slow to develop thus far. It is noteworthy that CEW catches from North Carolina, Virginia and Delaware remain fairly low at this time although a few NC sites are showing moderate increases. When these states begin to catch large numbers, we should see similar increases in NJ within a week, provided that cold fronts do not disrupt CEW migration.

Blacklight: At this time, the highest **blacklight** catches are occurring from Somerset County southward (see CEW Blacklight Map). 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 decreased over the past week (see CEW pheromone map) although there is still a significant threat to silking sweet corn. 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:

Folsom	2	Cinnaminson	1	Hillsborough	1
Tabernacle	2	East Vineland	1	Indian Mills	1
Woodstown	2	Eldora	1	Mullica Hill	1
Allentown	1	Hammonton	1	Pedricktown	1

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

East Vineland	9	Pedricktown	4
Hammonton	7	Springdale	3
Elm	6		
Woodstown	6		

Silking Spray Schedules*:

South –3-4 days

Central – 5-6 days

North – 6-7 days

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

Two-spotted spider mites (TSSM) are occurring in some silking sweet corn plantings at this time. This is the result of last weeks' high temperatures and repeated use of synthetic pyrethroid insecticides for worm control. Look for a bronze color to older foliage. Inspect the underside of these leaves for the presence of mites. If the infestation is late in the silk stage, it may be possible to harvest without mites in the husks. However, it may be necessary to include a miticide to reduce numbers if more than a week is left between detection of the mites and harvest. It is also wise to switch chemistries for worm management during the silk stage. Newer products including the active ingredients chlorantraniliprole, spinetoram, and flubendiamide will not have the negative impact on many beneficial insects that may help keep TSSM in check.

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.

In recent years, **tomato pinworm** infestations have occurred sporadically throughout the state. At present, field scouts have detected low level infestations in Morris and Hunterdon County tomato plantings. This pest appears to be overwintering in NJ, as infestations are on locally produced plants. Pinworms initially mine leaves, creating a large dry area on the leaf rather than a thin, serpentine mine as is typical of vegetable leaf miner (see figure A). As the caterpillars get too big to feed within the leaf surfaces, they will enter fruit at the point of attachment with the calyx. The pest is fairly easy to manage with a number of insecticides both as foliar sprays or soil-applied. Consult the *2013 Commercial Vegetable Production Recommendations* for specific insecticide recommendations.



A. Pinworm injury on leaf (left), and fruit (right).

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. 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:

Hammonton	12	Elm	3
Woodstown	12		
Mullica Hill	10		
Cedarville	6		

Pepper weevil:

For the period of July 25 to 30, **pepper weevils** were caught only in Woolwich Township. Only one weevil was caught on a non-farm trap, the remaining 2 weevils were caught at farm fields.

Woolwich Township – 3 pepper weevils

At one infested field in Woolwich Township where we are attempting to control the weevil by using pheromone traps, 83 weevils were caught – 17 on 7/25 and 66 on 7/30. The bump in numbers on 7/30 may indicate a new generation of adults appearing.

Brown Marmorated Stinkbug (BMSB)

BMSB adult catches in blacklights have decreased dramatically throughout the state. At the present time, no trap site has averaged more than 5/night for the week. Therefore no BMSB map will appear this time. **It is important that this decline in adult catch not be interpreted as reduced threat to host crops!** BMSB adults and nymphs are being found by scouts with increasing frequency in peppers throughout northern and central NJ. Field numbers have been rising, and the presence of nymphs is alarming because it indicates that BMSB has been resident long enough to deposit eggs. It is also 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

A sentinel plot containing susceptible and resistant cucumber varieties, as well as muskmelons, watermelons, acorn and butternut squash and pumpkins is now established at the Snyder Research and Extension Farm in Hunterdon County. The purpose of this plot is to detect the presence of **downy mildew (DM)** in northern NJ. **DM is infecting cucumbers in this sentinel plot and throughout the state.** Where untreated, DM is quickly defoliating cucumbers. DM infections require specific fungicides be added to the protectant fungicide program. Consult the *2013 Commercial Vegetable Production Recommendations* for specific fungicide recommendations and rotations to minimize the

threat of resistance. As yet, no infections have occurred on winter squash, melons or pumpkins. 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.