

Vegetable Crops IPM Update, Week Ending 6/26/13

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Sweet Corn

European corn borer (ECB) adult catches are very low in much of the state. The first flight is nearly over, but feeding percentages remain high as eggs hatch. The highest catches continue to be in the central counties (see ECB Map). At present, ECB damage on untreated whorl and pre-tassel stage sweet corn throughout the state ranges to well above 50%. These numbers drop with treatment, although a single treatment is unlikely to be sufficient to manage ECB at this time of the season. Infestation percentages may remain high over the next week. 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:

Griggstown	3	Eldora	1	Little York	1
Clinton	1	Farmingdale	1	Pennington	1
Denville	1	Indian Mills	1	Princeton	1
Egg Harbor	1	Lawrenceville	1	Sergeantsville	1

Low level infestations of **fall armyworm (FAW)** are becoming more common in coastal counties. At present, infestation percentages do not exceed 12% in any scouted field, but this situation may worsen over the next several weeks. 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%.

Corn earworm moths (CEW) have been captured with slightly higher frequency in central NJ blacklight traps over the past week, but numbers declined somewhat in the southwest. Numbers are generally low, but it is common for New Jersey to experience a brief burst of CEW moth activity during mid-June. There are numerous early sweet corn plantings now in silk which may be heavily impacted by these moths. At this time of the year, pheromone traps catch a disproportionately higher number of moths than the blacklights. Therefore, data from both trap networks are present in this update.

Blacklight: At this time, the highest **blacklight** catches are still occurring in western Gloucester and Salem counties (see CEW Blacklight Map), but moth captures have

increased slightly in northern Burlington and Mercer counties. In this blacklight-based map, the green area relates to a 3-day silk spray schedule and blue is a 4-5 day schedule.

Pheromone: CEW **pheromone** catches have declined since last week, but numbers still suggest a strong threat to silking sweet corn. Because there are few pheromone traps deployed relative to blacklights, the CEW Pheromone map gives a much less defined image. However, given the threat to these early plantings, it is recommended that for the present, growers in southern NJ defer to the more conservative schedule suggested by the pheromone map (see CEW Pheromone Map). Green areas on the **pheromone** map correspond to a 4-day spray schedule, while blue areas correspond to a 5-day schedule.

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

Pedricktown	2	New Egypt	1
Allentown	1	Pennington	1
Crosswicks	1	Tabernacle	1
Hammonton	1	Woodstown	1

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

East Vineland	10	Pedricktown	3
Beckett	4	Woodstown	2
Elm	4	Cinnaminson	1
Eldora	3	Springdale	1

Silking Spray Schedules*:

South –4-5 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.

Cole Crops

Heavy egg laying by **imported cabbage butterflies (ICW)**, and **diamondback moth (DBM)** continues. **Cabbage looper (CL)** larvae are now increasing significantly. Scout plantings weekly. Check 5 consecutive plants each in 10 random locations throughout the planting, paying particular attention to the innermost leaves where ICW often feed. Consider treating if caterpillars are found on 10% or more plants that are in the 0-9 true leaf stage. From 9-leaf to the early head stage (in broccoli, cauliflower and cabbage) infestations up to 20% may be tolerated. Once heads begin to form, a 5% threshold should be observed to protect the marketable portion of the plant. For leafy greens such as collards and kale, 10% plants infested is the threshold throughout.

Tomatoes

Bacterial leaf spot (BLS) infections have erupted in many tomato plantings this week. In all cases, fields have a history of the disease. Rotations away from tomatoes

and peppers have generally been a minimum of 3 years, but this has evidently not been sufficient. Heavy rains (and in a few cases, hail) have created ideal conditions for appearance and spread of these diseases. Be aware that the practices of pruning and tying tomato plants in the field can spread bacterial pathogens if they are present on any of the plants. It is advisable to use latex gloves while pruning, and discard them at the end of each row. Using new gloves with each new row will help limit spread in the field. Additionally, tying wands may be dipped in a bleach solution at row end as well for the same reason. Bacterial infections (speck, spot and canker) typically appear first as very dark lesions on leaf edges or interior tissue. Foliage of any age may be affected. Be sure to work in younger plantings before older, potentially infected ones if tying or other activities are necessary in multiple plantings. This will lower the risk of spreading the pathogen to younger plants. Various chemical applications may also be used to help suppress bacterial infections in both tomatoes and peppers (see the *2013 Commercial Vegetable Production Recommendations*), and these should be considered even in the absence of symptoms.

Peppers

Pepper plantings are now established in many areas. ECB egg-laying will be nearly over at this point. For the next week, existing eggs may still hatch. Be sure to scout fields regularly for the presence of ECB egg masses. If two or more egg masses are found in a 50 plant (two leaves/plant) sample, consider treating even if no fruit are present. In the absence of fruit, ECB larvae will bore into the central stem, topping the plant. This will result in the loss of crown fruit on infested plants. Generally, where blacklight trap catches average one or more ECB per night (colored areas on the ECB map) and fruit are greater than ½” in diameter, insecticides are warranted. See the *2013 Commercial Vegetable Production Recommendations* for materials useful in controlling ECB. These include both materials that may be sprayed and those used as drip applications. If it is necessary to apply a foliar insecticide for ECB management, synthetic pyrethroid materials should be avoided. The use of these materials frequently results in aphid flare-ups.

Reports of **beet armyworm (BAW)** in peppers are coming from the Vineland area. These caterpillars generally feed on young foliage before entering fruit. Early infestations may be identified 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.

Pepper weevil: For the time period of June 19 to 25, the number of weevils caught in pheromone traps declined. Only 3 non-farm sites had pepper weevils, while 4 farm sites had weevils, including 3 fields in Gloucester County and 1 field in Camden County. There are no known field infestations at this time.

Pepper Weevil Counts for the period of June 12 and 18, 2013:

Woolwich	9
Elm Twp.	7
Hammonton	1

Brown Marmorated Stinkbug (BMSB)

BMSB adult catches in blacklights are steady at low levels throughout the state. Individual BMSB have been caught throughout the state, but rarely more than one per site for the past week. BMSB has shown a preference for peppers in the past. Growers should pay close attention to activity from local traps to determine when to initiate field monitoring of this pest. As a result of the extremely low activity, no map will appear in this update.

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

These crops are now emerging in many areas. It is important to monitor frequently for the presence of **striped and spotted cucumber beetles** at this time, particularly if the seed was not purchased pre-treated with an insecticide for cucumber beetle. Check 5 consecutive plants each in 10 random locations. Examine upper and lower surface of seed leaves for the presence of beetles. Consider treating if beetles are found at 5 or more sites. Heavy, but local infestations may be spot treated. Management of these pests will limit the loss of plants to the bacterial wilt disease that the beetles transmit.

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. Any occurrence will be reported in this newsletter and will also generate an alert to all subscribers. For more information on the regional presence of DM as well as comprehensive, weekly forecasts, see the following website: <http://cdm.ipmpipe.org/> At present, DM has been found on cucumbers in Delaware (See Dr. Wyenandt's recent post).

Snap Beans

Potato leafhopper (PLH) adults have appeared in snap beans in the northern counties this week, and should be considered present in all areas. So far, only adults have been present. This pest is a particular problem because it often goes unnoticed until foliar distortion and burn occurs. Once this damage appears, yields have already been compromised. It is critical that beans be monitored regularly for the presence of PLH. If a sweep net is available, consider treating if more than 100 nymphs and adults are present in 20 sweeps of pre-bloom stage plants. This threshold increases to 250 during bloom and to 500 per 20 sweeps during pod development. If no sweep net is available, check plants in 10 random field locations and consider treating if adults and nymphs are found throughout. Adults are pale green, and will fly out from foliage when disturbed and immediately fly back into the plant canopy. Nymphs are wingless and bright green and may be found on the underside of leaves.