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Veg IPM Update: Week Ending 9/17/14

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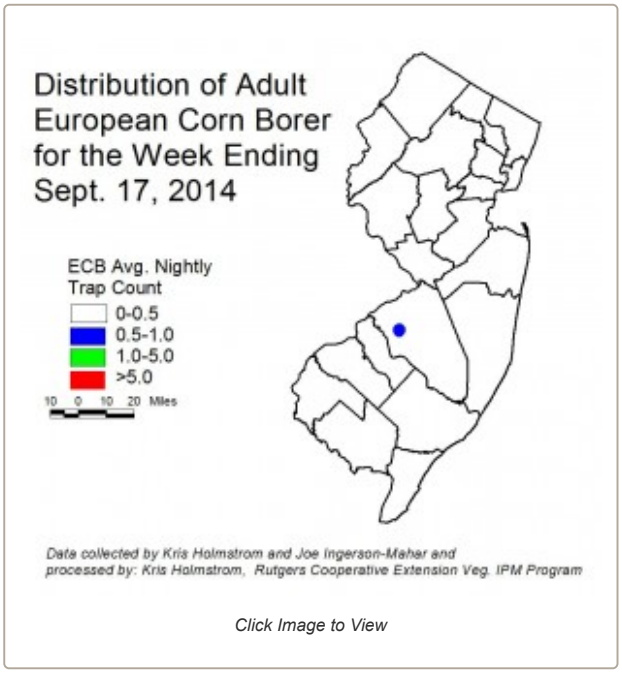
September 17, 2014

Topics for the Week

- *Sweet Corn*
- *Peppers*
- *Tomatoes*
- *BMSB*
- *Pumpkins and Winter Squash*
- *Cole Crops*

Maps for the Week
-European Corn Borer Map
-Corn Earworm Moth Blacklight Trap Map
-Corn Earworm Moth Pheromone Trap Map
-Pepper Weevil Trap Map



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Sweet Corn

European Corn Borer (ECB) adult activity has stabilized at very low levels. This week's map has changed little from last week's (see ECB map). Larvae are active in plants, but feeding is largely overwhelmed by more dominant fall armyworm (FAW) feeding. As always, consider treating if 12% or more plants exhibit ECB feeding alone, or in combination with FAW (see below) injury. **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.

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

Allentown	1	Clinton	1	Sparta	1
Belvidere	1	Lawrenceville	1	Tabernacle	1
Centerton	1	Medford	1		
Cinnaminson	1	Pedricktown	1		

Blacklight Trap: Corn earworm moth (CEW) activity has declined over the past week, with cooler nighttime temperatures. CEW moth numbers are generally higher in southwestern counties and in Burlington and Ocean counties, but activity is very patchy now (see CEW blacklight map). North of Trenton catches are lower, but there are a few traps catching 1+ per night. This decreased activity likely to continue as long as nighttime temperatures are in the low 50°F range or lower. Along the Delaware Bay shore, where evening temperatures may remain in the low 60°F range, moth activity will be higher. At these levels, CEW are still capable of significant damage most sweet corn ears if not controlled.

The highest nightly CEW trap catches are as follows:

Medford	4	Newton	2	Califon	1
East Vineland	2	Pedricktown	2	Hackettstown	1
Georgetown	2	Woodstown	2	Little York	1
New Egypt	2	Belvidere	1	Milltown	1

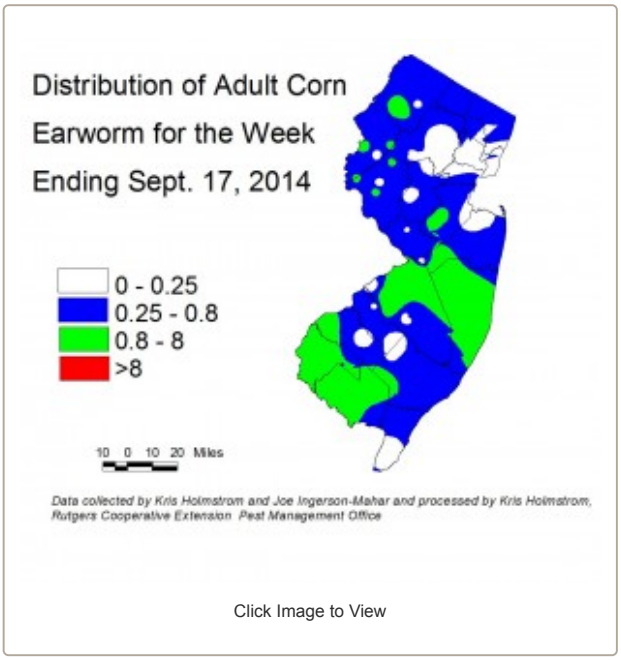
Pheromone Trap: CEW pheromone trap catches have also decreased over the past week, along with blacklight catch numbers. Greatest activity is in Cape May County (see CEW pheromone trap map. The red area on the map roughly corresponds to a 3-day silk spray schedule, while the green area should be considered in the 3-4 day range. Low spots within the broader colored areas are outliers, and grower near those areas should defer to the more conservative schedule. Sweet corn plantings now in silk in southern NJ are at risk for ear infestation if CEW is not properly controlled.

The highest nightly CEW pheromone trap catches are as follows:

Green Creek	38	East Vineland	5	Beckett	3
Eldora	11	Pedricktown	5	Woodstown	2

Silking Spray Schedules*
South: 3-4 days
Central: 3-4 days
North: 4 days

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



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Fall armyworm (FAW) infestations are occurring throughout the state. In some cases, FAW moths make up the bulk of the moth catch in blacklight samples. Re-infestation of treated plantings is common. It is important that all plantings be scouted regularly for this pest. FAW will also infest ears, although the silk spray schedule for CEW usually eliminates them from the plants at that time. Consider treating if the number of plants infested with FAW either alone, or in combination with ECB exceeds 12%. **FAW may be difficult to control with pyrethroid insecticides.** Newer materials, including spinosad-based insecticides, as well as those including active ingredients chlorantraniliprole and flubendiamide are effective against BAW.

Foliar Diseases of Sweet Corn are common now, and will remain with us for the duration of this season. These include corn leaf rust (CR) and northern corn leaf blight (NCLB). Both CR and NCLB can negatively impact ear development if they become heavy on foliage. CR causes ruptures in the leaf surface, resulting in moisture loss that stresses the plant. NCLB reduces the amount of photosynthetic surface available to the plant. Both are more serious the earlier they develop on corn plants. Generally, if the first signs of disease occur after the pre-tassel stage, damage will likely be confined to cosmetic blemishes on the husk. If infections first appear in the whorl stage, the possibility exists for ear size to be reduced as the plants struggle to compensate for water loss and reduced leaf surface. Consult the 2014 Commercial Vegetable Production Recommendations for specific fungicide recommendations, but be aware that the strobilurin class (FRAC Grp. 11) has provided poor results on NCLB in the northern parts of the state.

Peppers

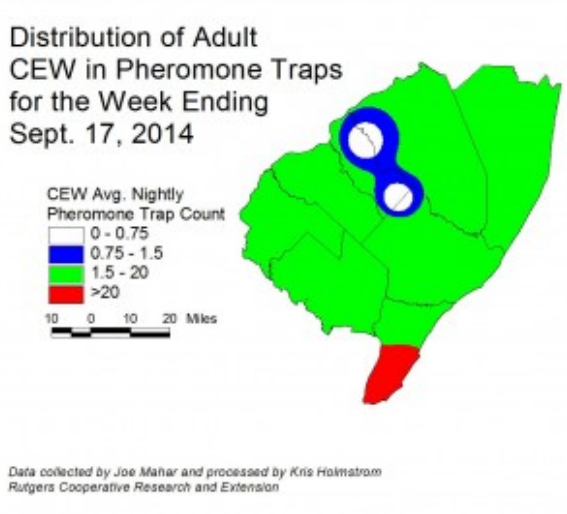
Beet armyworm (BAW) have been captured in southern counties. Most traps are catching just a few moths, although the trap in the Woodstown area has captured 15/night for the past week. BAW larvae will feed on leaves near the growing terminals of the plants, resulting in shredded foliage at the top. As the larvae molt and grow larger, they will begin feeding on fruit. BAW, like FAW is difficult to manage with pyrethroid insecticides. Materials that are recommended for FAW control (see the FAW paragraph above), will also be

effective against BAW.

Pepper Weevil Report: Pepper weevil numbers have declined at traps near produce handling facilities (see pepper weevil trap catch map), however the counts of weevils at two fields have increased significantly, and another infested field has been found in the Hammonton area.

None of these new situations are causing serious concern. Many fields will be taken out over the next two weeks and there is too little time for the weevils to have an impact. In addition, the air temperatures are roughly 20 degrees below the optimal range for the best development of the weevil so that one generation will take at least 3 1/2 weeks or longer. Still, farmers who intend on continuing pepper production in high tunnels and greenhouses, or using row covers should be alert to possible infestations.

A summary of the 2014 PW situation will be provided soon. This is the last Pepper Weevil Report for this growing season. Thanks to McConnell Agronomics for helping to provide information through the season.



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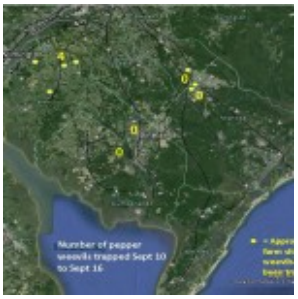
Tomatoes

Longer dew periods and older plants result in higher incidence of foliar disease in tomatoes. **Early blight**, and **septoria** are familiar occurrences in tomato plantings now. Some heirloom varieties (green striped varieties in particular) express early blight symptoms that are more extreme than those found on more typical commercial varieties. In some cases, these early blight lesions are reminiscent of late blight, in that they can appear on younger foliage, and infected tissue may be dry and gray rather than tan with concentric rings. Early blight lesions will not develop whitish sporulation that is characteristic of late blight lesions. It is critical that thorough coverage be achieved when applying fungicides. Consult the 2014 Commercial Vegetable Production Recommendations for specific fungicide rotations.



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Late blight was confirmed in Mercer County last week. However, IPM personnel have discovered no other infections on commercial fields in the area, and no further occurrence of the disease has been reported. Despite this, all growers in surrounding areas should be applying fungicides that specifically target late blight in addition to their normal protectant fungicide program. For organic growers, fixed copper formulations should be applied preventively and at frequent, regular intervals to provide coverage to new growth. Individual plants showing late blight symptoms should be rogued.

Brown Marmorated Stinkbug (BMSB)

BMSB activity has declined to extremely low levels, with no trap in the state capturing more than 1/night. Adult activity continues to be well behind previous years. Although unlikely, if adult captures increase to 5/night for a full week, maps will be produced to show where activity is highest. Information on scouting, crop injury and control will also be included. It is noteworthy that August and September BMSB infestations in pepper fields in Warren County required treatment last year. This year, no BMSB have been sighted on the same crop fields.

Pumpkins and Winter Squash

Cucurbit downy mildew (CDM) is active on cucumbers in New Jersey. Recently, CDM has also been found on cantaloupe in Cumberland County. Reports from PA and NY indicate that DM is impacting cucumbers there. As of Tuesday, IPM personnel have detected no other cucurbit crops with DM infections. However, given the virulence of CDM, it is advisable that pumpkin growers begin to add fungicides that specifically target CDM to their regular protectant program for **powdery mildew (PM)**.

The CDM website http://cdm.ipmpipe.org/ indicates high risk of spread into New Jersey from infection sites to our north or northwest for the first part of this week. It is important to note that other infection sites in neighboring states are cucumber infections. Heavy dew periods will cause existing field infections to worsen unless excellent coverage with proper fungicides is achieved. The CDM website should be a “favorite” on every grower’s web browser. It is advisable that all growers scout crops at least twice a week. Any further occurrence will be reported in this newsletter and will also generate an alert to all subscribers.

Powdery mildew (PM) is active on vine crops in all areas. Check upper and lower surfaces of 2 mature leaves per plant on 5 consecutive plants each, in 10 locations throughout the field. When PM lesions are found on 2 or more leaves, begin a weekly protectant fungicide program. See the 2014 Commercial Vegetable Production Recommendations for materials useful in managing CDM and PM. It is critical

that recommended fungicides be rotated to reduce the possibility of the organism developing resistance to effective materials.

Many fields of pumpkins and winter squash are now mature (fruit rinds are hardened off with color, and handles are solid). Inspect fields and determine whether it is necessary to continue spraying fungicides. If fruit are mature, and are to be removed from fields with increasing regularity, it is acceptable to discontinue the program. IPM personnel have noted that as foliage declines, exposing fruit to deer, more injury from these animals occurs. Prompt removal of fruit from the field may be the best response as foliage declines.

Cole Crops

The pest situation for cole crops remains unchanged. **Cabbage looper (CL)** infestations are fairly common, as well as **diamondback moth (DBM), imported cabbage worm (ICW)**. In central NJ, a few beet armyworm (BAW) larvae have begun to turn up in samples. 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. It is important to identify DBM and BAW correctly, because if it present, synthetic pyrethroid insecticides may not provide acceptable control. DBM larvae are small, and taper toward both ends. They thrash vigorously when disturbed. BAW are green with a pale stripe down each side and a prominent dark spot on each side of the second segment behind the head.

In parts of central NJ, new broccoli and collard plantings are developing **crucifer downy mildew (CrDM)** infections. CrDM caused necrotic spots to develop on the upper surface of older leaves. Inspection of the lower leaf surfaces will show pale purple sporulation (see photo at right) erupting from the infected tissue. This disease can be especially hard on broccoli and collard greens, so growers should actively scout plantings at least weekly. Cole crops should be treated with appropriate fungicides at the first occurrence of this disease. Consult the 2014 Commercial Vegetable Production Recommendations for specific fungicide recommendations.

All current and archived Vegetable IPM Maps including European corn borer, corn earworm and brown marmorated stink bug population maps are available for viewing @ http://tinyurl.com/njaes-ipm-maps