Vegetable Crops IPM Update, Week Ending 9/18/13

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Sweet Corn

European corn borer (ECB) adult activity has increased in the Mercer-southern Hunterdon County area (see ECB map). Infestations above 12% have been found in the few remaining plantings not yet in silk. 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:

Lawrenceville	4	Cedarville	1	Matawan	1
Sergeantsville	3	Crosswicks	1	New Egypt	1
Allentown	2	Indian Mills	1	Phillipsburg	1
Califon	1	Little York	1	Princeton	1

Fall armyworm (FAW) infestations are present throughout the state, although they have declined in severity with cooler temperatures. 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.

Several warm evenings over the past week have resulted in increased **corn earworm moth (CEW)** numbers. This activity will rise and fall with fluctuations in temperature, and cooler temps of the last two evenings will have dropped activity significantly. Overall, New Jersey is experiencing a moderate late season population at this time, and it is high enough to cause extreme damage if not managed properly.

Blacklight: The highest **blacklight** catches continue to be from Middlesex County southward (see CEW Blacklight Map), although there was increased activity through Hunterdon and Warren counties this week. In this blacklight-based map, the blue area relates to a 4-5-day silk spray schedule and green areas represent a 3 day silk spray schedule. In general, where 3 day zones exist within larger 4-5 day areas, it is advisable to defer to the more conservative schedule.

Pheromone: The number of CEW pheromone traps in southern NJ has declined to a number too low from which to generate a meaningful map image. The few remaining pheromone traps have registered CEW numbers consistent with the 3-day schedule indicated by the blacklight network.

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

Downer	4	Clinton	2	New Egypt	2
Medford	4	Crosswicks	2	Sergeantsville	2
RAREC	3	Matawan	2	Griggstown	1
Allamuchy	2	Milltown	2	Hackettstown	1

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

Tomatoes

Late blight has been appearing on tomatoes in northern and central counties recently. These occurrences remain isolated, but all growers should include fungicides with specific activity against late blight (if not already doing so) with their regular protectant program immediately. Consult the *2013 Commercial Vegetable Production Recommendations* for labeled materials.

Peppers

Beet armyworm (BAW) numbers in southern NJ pheromone traps remain fairly high, and fields from Hammonton on south should be scouted weekly. These caterpillars generally feed on young pepper foliage before entering fruit. 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. YSAW is now impacting pepper some pepper fields in central NJ, and may be controlled with materials that are effective against BAW.

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

Hammonton	59	Green Creek	27
Elm	32	Cedarville	16
East Vineland	32	Folsom	11

Pepper weevil:

Weevil counts are down substantially, with just over one thousand weevils caught in the past week. Only one new location has become infested. This is one of the pepper plots at Rutgers Agricultural Research and Extension Farm in Upper Deerfield. Otherwise, many locations across southern New Jersey are infested (See last week's IPM Update). The East Vineland area, Cedarville area, and the Hammonton area generally remain lightly infested (weevils are caught on traps but there is no sign of infested, fallen fruit).

If fields have not been infested as of yet, farmers should have little concern for pepper weevil in finishing out the season. The cool weather of the last several days has slowed the development of the weevils so that it will take four weeks from the egg stage to the next reproductive adult.

For fields that are infested, farmers have to consider the market price for peppers and how much longer they will be picking versus the cost of insecticides. If the intent is to harvest until frost then smaller fruit need to be protected.

Brown Marmorated Stinkbug (BMSB)

BMSB adult catches increased sharply in northwestern NJ during the warm nights of the previous week. Since last Friday night, catches have declined, but weekly averages reflect the overall increase in activity. Dr. George Hamilton reports that there have been significant pheromone trap captures at test sites. This is consistent with past seasons. BMSB become more receptive to pheromone cues late in the season. **This pest continues to be a threat to host crops!** BMSB adults and nymphs have been found in high numbers in peppers in Warren County this week. 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 active on pumpkins and winter squash throughout the state. ***Fungicides that specifically target CDM must be included in with the regular protectant fungicide program.*** Where untreated**,** DM will quickly defoliate host crops. DM infections result in sharp yellow lesions on the upper leaf surface. On the lower surface, dark sporulation 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/

Be aware that the use of synthetic pyrethroid insecticides for cucumber beetle control may result in dramatic increases in **melon aphid** populations. In fact, many fields have large populations of melon aphid now, despite not having been treated for other pests. These aphids generally do not do extensive damage to plants (except under extreme infestation pressure), but their presence on the underside of leaves results in the deposition of sticky droppings on the surface of fruit. This can become an economic issue should fruit need to be cleaned prior to sale, or if affected fields are to be opened for U-pick. Materials that specifically target aphids (pymetrozine) and neonicotinoid insecticides are effective against melon aphid. Consult the *2013 Commercial Vegetable Production Recommendations* for specific materials and rates.

Cole Crops

Diamondback moth (DBM) infestations are now common and **imported cabbage worm (ICW),** and in some cases **BAW** and **cross striped cabbage worm** are present. 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.

Crucifer downy mildew has appeared on broccoli and collard plantings in northern NJ. This fungal infection can cause significant damage to all foliage, and is particularly problematic on leafy greens because of the direct injury to the marketable portion of the plant. Crucifer downy mildew is characterized by yellow lesions on the upper leaf surface, with pale lavender colored sporulation below. Be sure to inspect plantings weekly for the appearance of this disease. Longer periods of leaf wetness favor the development of this disease. Consult the *2013 Commercial Vegetable Production Recommendations* for fungicides and rates.

Management of over-mature plantings:

Certain vegetable crops are plagued by insects and diseases that are able to thrive on plants that are no longer viable for harvest. Tomatoes (late blight), and cole crops

(diamondback moth) are just two that can create major problems if not managed properly. Generally, it is not economical to continue to apply fungicides or insecticides to plantings that are no longer being harvested. Therefore, prompt destruction of these plantings will prevent them from serving as nurseries for further development of pest problems.