

# PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

AUGUST 29, 2007



## Pest Notes

*Gerald M. Ghidui, Ph.D., Specialist in Vegetable Entomology*

✓ **Corn, Lettuce:** The **corn earworm moth** catches in the blacklight traps in southern NJ have been very high recently, and have remained at a high level for the past several weeks. The warm days/warm nights have been beneficial to moth activity, resulting in continual egg deposition in various crops (beans, corn, tomatoes, lettuce). The most effective materials for corn earworm control include a variety of pyrethroids (Asana, Baythroid, Capture, Danitol, Mustang MAX, Proaxis, Warrior and various generics of these). Lannate, SpinTor, Entrust, Confirm, Avaunt, Proclaim, and Monitor have also been effective in field and lab trials. Not all of these are labeled on all vegetable crops, so thoroughly read and understand the label of each material before use. Thorough coverage of the foliage and fruit is important proper for earworm management.

✓ **Cucurbits:** **Aphid** populations are high in many cucurbit crops, transmitting virus and causing leaf curling. Effective materials include Actara, Fulfill, MSR, Thionex and Venom. Thorough coverage of both leaf surfaces is important for control of aphids. Best results are obtained if treatments are applied before the aphid population reaches a high level.

✓ **Pepper:** High numbers of **beet armyworm moths** are still being caught in blacklight traps at RAREC. These pests readily attack most vegetable crops, but can be very damaging in peppers as one worm enters several pepper fruits. Monitor fields closely and control these pests before they reach maturity: use Avaunt, Confirm, Entrust/SpinTor, Intrepid, Lannate, or Proclaim for effective control of beet armyworms.

✓ **Tomato:** **Stink bug** damage has been increasing in tomatoes, becoming noticeable as the fruit turn red. Both adults and nymphs cause the whitish-yellow or bright yellow blotching by injecting their mouth parts into the fruit tissue, sucking the tomato juices. Both the brown and the green stink bugs are common pests of tomatoes (and other crops). The brown marmorated stink bug has been appearing in our black light traps at RAREC on a regular basis, indicating that this pest now established in southern NJ. All these stink bugs cause similar damage to the tomato fruit. The best controls for stink bugs in tomatoes in NJ include the pyrethroids Baythroid, Danitol, Mustang MAX, Proaxis, or Warrior. For non-pyrethroids, Monitor and Thionex have been effective against stink bug adults and nymphs. □

## INSIDE

Pest Notes .....	1
IPM Update .....	2
Farmers' Market Establishment Guide: Target Area Functional Survey.....	4
Growing Your Business: Farmers' Marketing and Business Planning for Value- Added Agriculture.....	5
Salem County Offers Recycling Program for Pesticide Containers .....	5
Weekly Weather Summary...	6

# IPM Update

Kristian Holmstrom, Research Project Coordinator II, Vegetable IPM Program

## Sweet Corn

**European corn borer (ECB)** adult numbers continue to decline throughout much of the state. The exception to this is in the Cumberland/Salem County region, where catches are quite high (see ECB map). Larval feeding is present in late sweet corn plantings in many areas now. For sweet corn in the whorl stage, check 5 consecutive plants each in 10 random locations throughout the planting. Look for the presence of "shot-hole" type feeding that is characteristic of ECB larvae. On pre-tassel stage plants, look for discoloration or actual caterpillars in the emerging tassels. Consider treating if fresh damage is found on 12% or more plants. Be sure to treat again at the full tassel to first silk stage to protect the forming ears from ECB larvae that are leaving the tassel and traveling down the stalk.

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

Seeley Lake	7	Centerton	4	Woodstown	2
Mannington	6	Shiloh	3	East Vineland	1
Shirley	6	Cinnaminson	2	Hammonton	1
Elmer	4	RAREC	2	Pedricktown	1

**Fall armyworm (FAW)** feeding in seedling, whorl, and pre-tassel stage plantings is common at this time. FAW is capable of causing significant injury to sweet corn plants and will feed on all stages, including seedlings. For this reason it is necessary to check all pre-silking fields for signs of FAW feeding. Look for large, ragged holes and lots of caterpillar droppings in the whorl. Consider treating if 12% or more FAW injury is found alone, or in combination with ECB injury in a planting.

Higher **Corn earworm (CEW)** catches have moved northward over the past week (see CEW population map). The area of highest activity in the southern counties has contracted somewhat since last week, but statewide numbers overall are on the increase. CEW adults pose a significant threat to silking sweet corn. The shaded area on the map (blue on the web version, found at: [www.pestmanagement.rutgers.edu/IPM/Vegetable/Pest%20Maps/maparchive.htm](http://www.pestmanagement.rutgers.edu/IPM/Vegetable/Pest%20Maps/maparchive.htm)) corresponds to a 5-day silk spray schedule. The cross-hatched area (green on the web) corresponds to a 3-4 day silk spray schedule.

## Silking Spray Schedules\*:

North – 3 days

Central – 3 days

South – 3 days

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

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

Cedarville	23	Denville	12	Centerton	9
Indian Mills	18	Jones Island	12	Clinton	9
Elmer	13	Shirley	11	Pedricktown	9
RAREC	13	Springdale	11	Seeley Lake	9

## Cole Crops

**Cabbage looper (CL)**, **imported cabbage worm (ICW)**, and **diamondback moth larvae (DBM)** are all being found on the cole crops at this time. Additionally, an infestation of **yellow-striped armyworm (YSAW)** was found the New Egypt area this week. While YSAW is an occasional pest of cole crops, it is no more difficult to control than the other pests and should be included in the "% plants infested" figure. In heading type cole crops like cabbage and broccoli, check 5 consecutive plants each in 10 random locations. Look on the undersides of leaves and on the youngest leaves at the center of the plant. Consider treating if 10% or more plants are infested while in the 0-9 true leaf stage. The threshold may increase to 20% from 9 true leaves to the early head stage. Once heads form, the threshold becomes a more conservative 5%, in order to protect the marketable portion of the plant. For leafy greens like collards, use a 10% threshold throughout the life of the crop to minimize injury to the leaves.

While scouting for caterpillar pests, note the presence of **crucifer flea beetle**, especially on new transplants or recently emerged plants. This pest can be very destructive, particularly to newly emerged seedlings. Consider treating if 50% or more plants have flea beetles on them, and damage is visible. It is important to check these young fields at least weekly, as reinfestation can occur quickly after a foliar insecticide application.

## Peppers

With a late **ECB** flight now occurring in the southern counties, it is important to check peppers weekly for the presence of ECB eggmasses, as well as **aphids** and **TSSM**. ECB eggmasses are flat and waxy looking, having the appearance of fish scales on the underside of the pepper leaf. As the larvae emerge, they will bore into the fruit where the cap meets the shoulder of the pepper. Uncontrolled infestations will result in many fruit developing soft rot. Check 5 consecutive plants each in 10 random field locations. Look at the underside of 2 leaves per plant. If 2 or more ECB eggmasses are found in the total sample, consider an insecticide application to minimize plant injury. Additionally, a weekly spray schedule is warranted on fruiting plants when ECB adult numbers reach 1 or more per night in local blacklight traps. At present, adult ECB activity at this level exists in all southern and central counties. All shaded and cross-hatched areas on the ECB map (blue and green on the web version) correspond to a weekly spray schedule on fruiting peppers.

SEE IPM ON PAGE 3

**Beet armyworm (BAW)** adult catches remain very low in the pheromone network in the southern counties. Numbers are averaging well below 5 per night in all areas. As a result, no BAW map will appear in this edition. These adult numbers are below those considered potentially damaging at this time. While checking for other insect pests, look for leaves exhibiting heavy feeding near the upper portion of the plant. Often, small BAW larvae will be found near the buds where this feeding occurs. Later, as they enlarge, BAW will begin feeding on fruit.

With **CEW** numbers high, this pest may begin to infest peppers. Areas on the map that are black (red on the web version) may require weekly insecticide applications to limit injury. Treatments used for ECB control should also control CEW. For recommended insecticides, consult the *2007 Commercial Vegetable Production Recommendations*.

### Pumpkins and Winter Squash

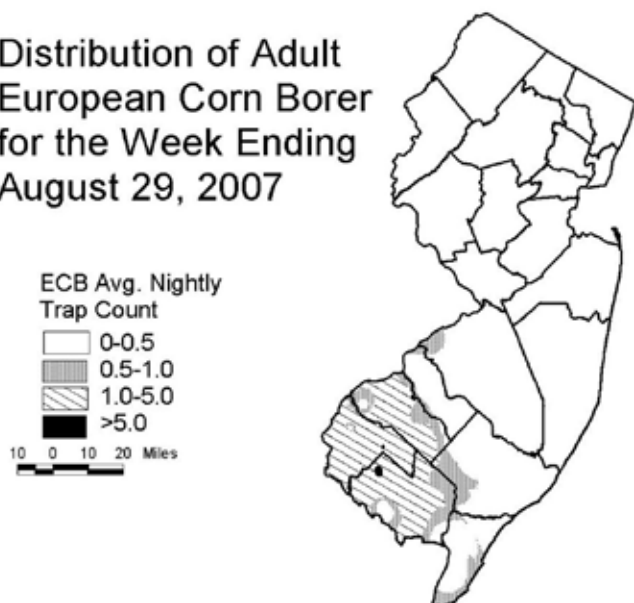
It is very important to scout fields weekly, for the presence of pests including **aphids**. Check 10 mature leaves per site in 10 random sites throughout the field. Consider treating if leaves with an average of approximately 25 aphids are found in each of 10 sample sites. Populations this high can result in deposition of droppings onto the surface of maturing fruit, as well as overall stress to the plants. **Melon aphids** have been found on some northern pumpkin plantings this week. **Cucumber beetles** can increase in fields at this time, causing injury to the rinds of maturing fruit. While scouting,

note the presence of striped or spotted cucumber beetles in samples. Consider treating if beetles are found in 2 or more sites, particularly if any feeding (scarring on the rind) is discovered.

**Powdery mildew (PM)** infections are now common in most plantings. This fungal pathogen first appears as a dime-sized lesion that looks like white powder. They can develop on either leaf surface as well as the petioles. While scouting, look on mature leaves, particularly those within the canopy for PM lesions. When the threshold of 1 lesion per 50 older leaves is reached, begin the regular, weekly protectant fungicide program.

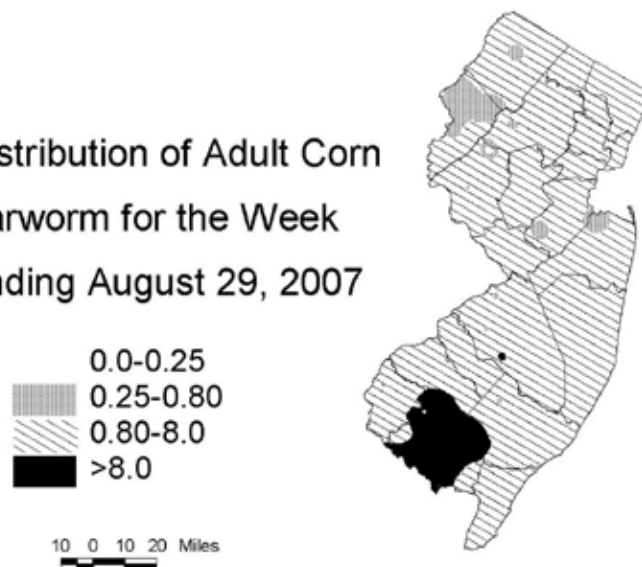
Be alert for the possibility of **downy mildew (DM) infections**. DM has been detected in Cumberland County, as well as in states to our north, west and south. As yet, infections have not been detected in any IPM scouted fields in the central or northern counties. However, due to the proximity of known infection sites, growers should be checking frequently for the appearance of this disease. DM first appears as sharp yellow lesions on the upper surface of leaves. Veins are yellow and constricted on the lower leaf surface. Shortly after this, dark sporulation occurs along veins on the lower surface beneath the lesion. This sporulation will be present when conditions are wet or very humid. In a matter of several days, significant defoliation can occur. Fungicides specific to DM and related fungi are required for good control of this pathogen. For recommended fungicide rotations for DM and PM, consult the *2007 Commercial Vegetable Production Recommendations*.

Distribution of Adult European Corn Borer for the Week Ending August 29, 2007



Data collected and processed by: Kris Holmstrom, Marilyn Hughes  
Rutgers Cooperative Extension & Center for Remote Sensing

Distribution of Adult Corn Earworm for the Week Ending August 29, 2007



Data collected and processed by: Kris Holmstrom,  
Rutgers Cooperative Extension Pest Management Office

# Farmers' Market Establishment Guide: Target Area Functional Survey

*Jhilson Ortiz, Senior Program Coordinator - Agriculture*

Every marketer will say that location is key to business success; hence the famous quote: "Location, location, location". But, how do you define a good location from a bad one?

A good location can be differentiated from a bad one with the simple question: *How much the location will help you attain your business goals.*

Business goals (in terms of location) can be measured by sales amount and store visits. Note that store visit numbers are included with the sales amount. This is done so the business can isolate other performance factors, such as product competitiveness and customer service, both of them directly related to sales as well.

When planning a business location and testing its fitness to help you accomplish your business goals; please delineate the following information:

- A clear statement of your business goals for the location
- Who are the clients that will most likely buy (consumer profiles)
- How does location influence their purchasing decision

## Example:

- Five thousand store visits a month, 90% of clients should be mothers purchasing the weekly produce needs for their families
- Households with children, willing and able to pay a premium price for the fruits & vegetables I offer, and that reside close to the market (15 miles)
- There are 3 different access roads leading to my market and no competitor in the same road that offers the same product, product mix or services

## How this information helps:

- Set of goals helps us measure how close those goals can be achieved with the prospective location
- Consumer profile expected and how it should match the residents in that location
- Ensuring other factors do not affect business performance when all other parameters have been checked

## Functional survey example based on the previously defined goals

*Five thousand store visits a month, 90% of clients should be mothers purchasing the weekly produce needs for their families*

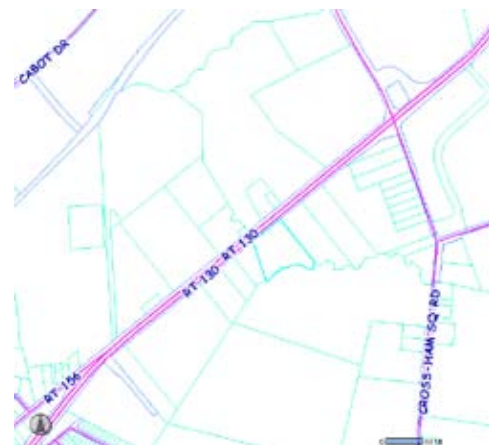
- Use state and local government statistics for the township where the market will be located
- Use Google Earth program to pinpoint consumer clusters such as churches, schools, business parks, community centers, retirement homes, etc.
- Spend a good time visiting the surrounding businesses at peak business hours to sample consumer profiles for the area

*Households with children, willing and able to pay a premium price for the fruits & vegetables I offer, and that reside close to the market (15 miles)*

- Use Yahoo Neighborhood profile information to find out resident profile for the town
- Interview business owners in the neighborhood, ask them how is business going, what time and day is their busiest
- Visit local food stores; it is a good place to find the population makeup

*There are 3 different access roads leading to my market and no competitor in the same road that offers the same product, product mix or services*

- Use Yahoo or Google maps to survey traffic conditions when the market plans to be open and make sure all signs are visible from the road
- Forecast what promotional/sign materials you will need to attract some of that flow of clients



## Growing Your Business: Farmers' Marketing and Business Planning for Value-Added Agriculture

The Rutgers Food Innovation Center is proud to introduce this exciting series of five workshops designed for farmers who want to gain that important edge over the larger-scale competition, with the "four factors" educational model only Rutgers can provide:

These five seminars cover the five major skill areas required to make a profitable move from selling produce at the wholesale level to selling processed foods for retail distribution. Those skills include:

- Session One—Trends in the Marketplace (Sept. 19, 1pm—4pm). Speaker Ron Tanner, National Association for Specialty Food Trade, on understanding trends in natural foods, ethnic and specialty produce and in the specialty foods industry.
- Session Two—Competitors & Competition (Oct. 2, 1pm—4pm). Speaker Jim Prevor, Perishable Pundit, on understanding branding, competitive positioning strategies, and buy local initiatives.
- Session Three—Distributors & Distribution (Oct. 17, 1pm—4pm). Speaker Bob Burke, Natural Products Consulting Institute, on understanding the roles of brokers, agents and distributors.
- Session Four—Product Development Process (Oct. 30, 1pm—4pm). Speaker Allen Samson, ESCA Enterprises, on understanding recipe formulation, quality control and packaging issues.
- Session Five—Business & Marketing Plans (Nov. 14, 1pm—4pm)

Speakers: Joe Molineaux, Small Business Development Center on understanding your need for a business plan and the tools available to assist in its development.

Adam Borden, Bradmer Foods, on understanding an equity investor's perspective on business plans and business valuation.

Steve Marekavich, First Pioneer Farm Credit, on understanding a lender's needs for a business plan and debt financing.

All workshops held from 1pm – 4pm at the Rutgers EcoComplex in Bordentown, NJ. Workshops are \$45 each; \$195 for all five (a \$30 discount). Course Code: AP0201CA08.

Scholarships are available, but limited – call (732) 932-9271 or email [ocpe@njaes.rutgers.edu](mailto:ocpe@njaes.rutgers.edu) for details on scholarships and registration.

For more information on the workshops and course content, please call Dianne Carbonetta at (856) 459-1125 or email [carbonetta@njaes.rutgers.edu](mailto:carbonetta@njaes.rutgers.edu). □

## Salem County Offers Free Recycling Program for Pesticide Containers

The Salem County Utilities Authority has partnered with Helena Chemical, of Woodstown, NJ to promote a free program, recycling plastic pesticide containers. This new and innovative recycling program will start this September on the following scheduled dates: Friday, September 14<sup>th</sup>, Friday, October 12<sup>th</sup> and Friday, November 9<sup>th</sup>. Collection times are 9am to 3pm at Helena Chemical, 440 North Main Street in Woodstown.

This program is offered to agricultural, professional and commercial pesticide applicators, along with Helena Chemical customers who hold NJDEP pesticide licenses. Also, state, county and municipal government agencies may also participate. One core credit will be given to pesticide license holders who follow the few simple processing steps below and bring their license with them at time of collection.

Here's how the program will work. Helena Chemical will accept non-refillable, high-density polyethylene #2 (HDPE) containers that are no larger than 55 gallons and that have been *triple rinsed*. You must make sure containers are dry inside after they are rinsed out and either cut a 6-inch slit in the bottom, or drill a ¼ inch hole in the bottom of the container to insure it will not hold liquids. Lids must be removed. Foil seal must also be removed. Containers that are 30 gallon size must be cut up into 4 pieces using a sawsall, chainsaw, circular saw, etc. 55 gallon containers must be cut up into 8 pieces accordingly. Non-waxy cardboard will also be accepted during this collection program, since most of these products are sold in cardboard boxes.

Helena Chemical will not accept containers if they have held any type of petroleum oil product or antifreeze. Pesticide containers with any liquid or dried residue will not be accepted. No mini-bulk, saddle tanks or nurse tanks will be accepted, as they may be made of fiberglass. Karen Kritz, Recycling Program Manager from the New Jersey Department of Agriculture will be on-site at each collection to insure containers are prepared properly and to issue one core credit to those who qualify.

For more information contact the following: Karen Kritz, NJDA Recycling Program Manager, 609-984-2506; Helena Chemical, 856-769-0147 or SCUA, 935-7900. □

# Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged below normal, averaging 67 degrees north 69 degrees central and 71 degrees south. Extremes were 94 degrees at Piney Hollow on the 26th, and 53 degrees at Charlotteburg and Freehold on the 22nd. Weekly rainfall averaged 1.72 inches north, 1.65 inches central, and 1.65 inches south. The heaviest 24 hour total reported was 1.53 inches at Canoe Brook on the 21st to 22nd. Estimated soil moisture, in percent of field capacity, this past week averaged 93 percent north, 92 percent central and 90 percent south. Four inch soil temperatures averaged 66 degrees north, 69 degrees central and 71 degrees south.

Weather Summary for the Week Ending 8 am Monday 8/27/ 7										
WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
CANOE BROOK	2.16	42.53	17.60	92	55	69.	0	2562	429	86
CHARLOTTEBURG	1.33	30.60	5.43	90	53	66.	0	2224	533	87
FLEMINGTON	1.88	32.69	8.67	93	55	67.	-2	2423	235	90
NEWTON	1.51	27.36	4.11	89	54	66.	0	2201	266	93
FREEHOLD	1.33	31.79	8.37	92	53	68.	-2	2647	318	83
LONG BRANCH	1.26	31.12	7.41	86	59	69.	-2	2420	168	72
NEW BRUNSWICK	1.99	37.47	13.84	90	55	69.	-3	2575	150	89
TOMS RIVER	2.15	26.25	2.01	93	60	70.	-1	2491	257	72
TRENTON	1.50	26.98	4.54	93	56	69.	-3	2692	162	72
CAPE MAY COURT HOUSE	1.43	16.51	-4.43	87	63	71.	-2	2594	380	71
DOWNSTOWN	1.55	19.87	-2.28	94	58	71.	-1	2713	178	72
GLASSBORO	1.42	23.71	.61	93	57	70.	-2	2966	453	70
HAMMONTON	1.66	20.14	-2.97	94	60	71.	-1	2791	274	69
POMONA	2.29	20.89	-.46	91	63	72.	2	2734	387	74
SEABROOK	1.55	21.16	-.03	93	58	71.	-1	2983	434	70
SOUTH HARRISON	1.61	23.99	1.15	92	57	70	NA	2870	NA	NA
WES KLINE -- GDD BASE 40 PINEY HOLLOW										
LAST WEEK 239 (Ending 8/20/07)										
THIS WEEK 215 (Ending 8/27/07)										

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**Pesticide User Responsibility:** Use pesticides safely and follow instructions on labels. The pesticide user is responsible for proper use, storage and disposal, residues on crops, and damage caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact RCE in your County.

**Use of Trade Names:** No discrimination or endorsement is intended in the use of trade names in this publication. In some instances a compound may be sold under different trade names and may vary as to label clearances.

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