

# PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

SEPTEMBER 10, 2008



Angular yellow lesions on the upper leaf are often the first observed symptom of downy mildew on pumpkin. Source: Purdue Extension.

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## IPM Update

*Kristian Holmstrom, Research Project Coordinator II, Vegetable IPM Program*

### Sweet Corn

**European corn borer (ECB)** adult catches are still low in most areas except where a late flight extends from Cape May County up through lower Burlington County (see ECB map). This is a third flight, and represents a threat to late season sweet corn as well as other crops. For whorl stage sweet corn, consider treating for ECB when 12% or more plants show signs of the “shot-hole” type feeding on newer leaves. Remember to treat plantings as the tassels open and begin a silking stage spray program from that time forward. A silk spray program as dictated by local corn earworm (CEW) counts will also help prevent ear infestations from ECB. Consult the *2008 Commercial Vegetable Production Recommendations* for materials and rates.

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

RAREC	3	Beckett	1	Hackettstown	1
Jones Island	2	Denville	1	Little York	1
Seeley Lake	2	Downer	1	Shirley	1
Springdale	2	Elm	1	Tabernacle	1

High adult **corn earworm (CEW)** catches have become more common over the past week, even through the northern counties. Several traps are catching very high numbers, particularly in parts of Burlington, Camden, Cumberland, and northern Ocean counties (see CEW map). We have had a few warmer nights, especially preceding the weekend’s tropical storm. Moth catches were higher at that time, and have been suppressed somewhat with cooler evening temperatures. It is likely that a return of warmer nights will cause further increases in CEW adult activity. See below for the recommended silk spray schedule. This population is a serious threat to silking sweet corn. Growers should access information on CEW populations from this publication or from population maps posted on the RCE Vegetable IPM Program website: <http://www.pestmanagement.rutgers.edu/IPM/Vegetable/Pest%20Maps/maparchive.htm>

Cross-hatched areas (green on the web) represent a 3-day silking spray schedule.

**SEE IPM ON PAGE 2**

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

New Egypt	18	Milltown	10	Tabernacle	7
Elm	15	Mannington	9	Denville	6
RAREC	13	Crosswicks	7	Jones Island	6
East Vineland	10	Hammonton	7	Shirley	6

**Fall armyworm (FAW)** are actively feeding on corn throughout the state. Feeding is increasing and damage in the field is becoming less random. 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.

**Note:** B.t. sweet corn still needs to be treated during the silk stage! While this corn effectively eliminates ECB and CEW, some FAW will still infest ears. In general, when a 3-day schedule is required for CEW control, B.t. corn should be treated on a 7-day schedule through the silk period.

### Silking Spray Schedules\*:

- North – 3 days
- Central – 3 days
- South – 2-3 days

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

### Pumpkins and winter squash

Many pumpkins plantings in the northern counties appear to have matured early, and despite good control of foliar diseases, the vines are in decline. Observations of fruit show good quality with solid handles in most cases.

**Powdery mildew (PM)** is present on all plantings of pumpkin and winter squash now. 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. Do not wait until PM is present throughout the field to initiate your fungicide program.

Be alert for the possibility of **downy mildew (DM) infections**. DM has been detected on cucumbers in many counties, and is spreading to other cucurbit crops in parts of southern NJ. *Today DM was discovered on pumpkins at the Rutgers Snyder Research Farm in Hunterdon County.* The Cucurbit Downy Mildew Forecast website (<http://www.ces.ncsu.edu/depts/pp/cucurbit/forecasts/c080714.php>) has New Jersey at strongly moderate to high risk of new infection as a result of yesterday's

frontal system. Check the Cucurbit Downy Mildew Forecast website for details on the latest forecast and spore trajectories. 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 *2008 Commercial Vegetable Production Recommendations*.

Be sure to look at the surface of pumpkin fruit while scouting plants. **Cucumber beetles** often feed on the rinds late in the season, resulting in scarring or even holes in fruit. In some cases, these wounds result in a fruit rot. Consider treating if cucumber beetles are found at 2 or more of the 10 sample sites, and injury is found on any fruit.

### Tomatoes

As **CEW** trap catches increase, the potential for fruitworm injury increases. Be sure to check fruit near the upper part of the canopy for feeding. CEW will enter the fruit around the shoulder, leaving one or more holes in fruit. Often, larvae may be seen half-way in the fruit as they feed. If this damage is increasing to a point where it is present in more than two sites in ten, consider treating to limit injury. Consult the *2008 Commercial Vegetable Production Recommendations* for materials and rates.

**Mite** infestations have become more frequent lately, with prolonged dry conditions. Check for whitish pin-spots on the upper surface of leaves. **Two-spotted spider mites (TSSM)** will be underneath these leaves. When TSSM increases, feeding will result in yellow areas on leaves, and an increase in webbing on affected areas. Finally, leaves will turn brown and dry. Treat as soon as TSSM are found, as small infestations may be handled with spot treatments. Large infestations become difficult to manage.

### Peppers

**Beet armyworm (BAW)** pheromone traps are in place throughout southern New Jersey. Most catches are very low, but there have been further increases in parts of Salem and Cumberland counties (see BAW map). Catches in the 5-10/night range (shaded on the map) indicate that regular scouting should occur in that area. Cross-hatched areas (10-20/night) mean there is an increase threat of egg-laying. Black areas (>20/night) indicate a significant threat for infestation. Scouting should commence immediately in those areas. When 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

SEE PEPPERS ON PAGE 3

where this feeding occurs. Later, as they enlarge, BAW will begin feeding on fruit.

With higher **ECB** adult catches in parts of southern NJ, peppers in those areas are at risk of infestation. When local blacklight catches average one or more ECB per night (shaded or cross-hatched areas on the map), it is time to commence weekly insecticide applications. Choice of materials is important. Repeated use of synthetic pyrethroid materials will result in **aphid** and possible **two-spotted spider mite (TSSM)** outbreaks. Spinosad based materials or insect growth regulators (IGR) will not have this effect. For choice of materials, check the *2008 Commercial Vegetable Production Recommendations*.

### Cole Crops

As late season plantings emerge, be sure to check at least weekly for the presence of **flea beetles**. This pests can damage seedlings quite badly if not controlled. Check 5 consecutive plants each in 10 random locations. Consider treating if flea beetles are present on 50% or more plants and damage is visible on leaves.

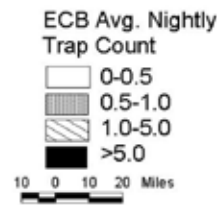
**Cabbage looper (CL)**, **imported cabbage worm (ICW)**, and **diamondback moth larvae (DBM)** are all present on cole crops at this time. Scout plantings weekly, paying particular attention to the innermost leaves where ICW often feed. Consider treating if caterpillars are found on 10% or more plants 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.

### Greens

Last September and October, a number of spinach, chard, and beet fields suffered from infestations of **Hawaiian beet webworms (HBWW)**. The adult (a small gray moth with white spots on the wings) is frequently found in low numbers late in the season, but does not usually result in the type of infestations we had last year. In an effort to provide advance warning of such an event, Joe Ingerson-Mahar and southern IPM technicians are monitoring blacklight traps for increases in this pest. As yet, only scattered individuals have been captured. Increases in HBWW adult catches will be reported in this publication.

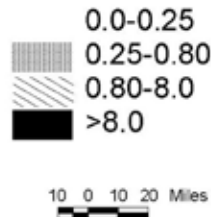
Note: Activities of the Vegetable IPM Program in northern New Jersey are supported and funded in part by the New Jersey Highlands Council.

### Distribution of Adult European Corn Borer for the Week Ending September 10, 2008



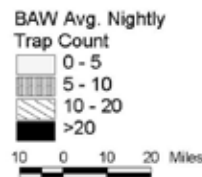
Data collected and processed by: Kris Holmstrom, Marilyn Hughes  
Rutgers Cooperative Extension & Center for Remote Sensing

### Distribution of Adult Corn Earworm for the Week Ending September 10, 2008



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

### Distribution of Adult Beet Armyworm for the Week Ending September 10, 2008



Data collected by Joe Mahar and processed by Kris Holmstrom  
Rutgers Cooperative Research and Extension

# Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much above normal, averaging 73 degrees north, 74 degrees central and 75 degrees south. Extremes were 95 degrees at Canoe Brook and Downtown on the 5th, and 52 degrees at Charlotteburg and Newton on the 2nd. Weekly rainfall averaged 3.26 inches north, 2.89 inches central, and 2.05 inches south. The heaviest 24 hour total reported was 4.70 inches at Canoe Brook on the 6th to 7th. Estimated soil moisture, in percent of field capacity, this past week averaged 83 percent north, 75 percent central and 65 percent south. Four inch soil temperatures averaged 72 degrees north, 73 degrees central and 74 degrees south.

## Weather Summary for the Week Ending 8 am Monday 9/ 8/ 8

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	1.87	21.06	-4.42	94	57	75.	10	2581	262	96
CANOE BROOK	4.82	24.94	-1.78	95	53	72.	6	2520	179	98
CHARLOTTEBURG	3.32	27.71	.72	91	52	72.	9	2379	518	97
FLEMINGTON	3.45	22.49	-3.17	94	56	74.	8	2508	106	98
NEWTON	2.85	23.08	-1.84	92	52	73.	10	2667	555	97
FREEHOLD *	2.13	17.26	-7.74	91	55	73.	5	2364	-175	97
LONG BRANCH	1.94	19.58	-5.76	86	60	72.	4	2511	30	94
NEW BRUNSWICK	4.09	28.96	3.65	93	57	75.	6	2851	174	98
TOMS RIVER	3.27	23.04	-2.85	93	55	73.	3	2761	285	93
TRENTON	3.02	23.99	.01	94	59	76.	7	2967	194	94
CAPE MAY COURT HOUSE	1.77	16.94	-5.46	87	58	74.	3	2912	437	94
DOWNTOWN	1.60	20.57	-3.06	95	55	74.	5	2944	163	94
GLASSBORO	2.45	20.63	-4.07	94	62	76.	7	2968	209	94
HAMMONTON	1.69	18.89	-5.80	94	55	76.	7	3072	311	93
POMONA	2.89	22.91	.25	92	58	75.	7	3048	473	93
SEABROOK	1.91	19.12	-3.52	93	60	76.	7	3139	343	94
SOUTH HARRISON	1.90	22.14	-2.16	93	61	76	NA	2949	NA	NA
WES KLINE -- GDD BASE 40 PINEY HOLLOW										
LAST WEEK 224 (Ending 9/1/08)										
THIS WEEK 240 (Ending 9/8/08)										
* SOME DATA IS MISSING AND THEREFORE CUMULATIVE AND AVERAGE VALUES WILL BE OFF FOR THIS STATION ESPECIALLY FOR PRECIPITATION SINCE SIGNIFICANT RAINFALL OCCURRED DURING THAT PERIOD.										

## Family Business Webinars

Beginning September 10, eXtension launches a new series of monthly webinars for small business owners, farmers, business coaches and mentors. Grab your calendar right now and mark off the 2nd Wednesday of every month from 2:00pm – 3:00pm Eastern Time.

Our topic for September 10, 2008 will be \*10 Tools for Talking about Tough Issues in the Family Business. \*Conflict is a normal part of family business, especially with succession planning. A Virginia Tech study of 400 farms found that farm family businesses that could communicate effectively were 21% more profitable.

Elaine Froese, author of *Planting the Seed of Hope*, will lead this presentation designed for farmers, business owners, business coaches and mentors. She delivers tips that can be implemented immediately. She challenges family business owners to get “unstuck” and not accept the high anxiety and stress of poor decision making. Her tools are grounded in years of working with farm succession planning and coaching.

Froese and her husband farm in southwestern Manitoba and run a certified seed business. Elaine started encouraging farm families more than 20 years ago as a professional home economist. She has spent many hours with families at kitchen tables. *Seeds of Encouragement* is the name of her business as well as the name of her monthly column in *Grainews*, a Canadian farm publication that reaches 50,000 readers. As a columnist and speaker, Elaine’s practical and from-the-heart style have inspired many families to revitalize their relationships and farm businesses. Her Web site is: <http://www.elainefroese.com>.

No pre-registration is required and there is no fee to participate.

About 10 minutes prior to the start time simply go the Adobe Connect Pro meeting room at: <http://connect.extension.iastate.edu/ecop/>. You will be presented with a login screen that has an “Enter as Guest” option. Enter your first name, last name and state, then click “Enter Room” to join the conference. To hear the audio of the workshop and participate in the Q&A portion of the workshop we will be using a built-in teleconferencing capability of Adobe’s Connect Pro conferencing software. Once you log into the meeting you will be presented with the option to enter your call-back number OR there will be a toll-free number for you to call. If you are calling from a telephone extension (i.e. a caller cannot dial your direct line) then you will need to call in. After entering your number you will be automatically called and joined into the audio portion of the Web conference on your phone.

Newcomers to online learning are welcome!

*Submitted by Rick Van Vranken, Agricultural Agent, Atlantic County.* □

## Rutgers Plant Diagnostic Laboratory Services

The Rutgers Plant Diagnostic Laboratory & Nematode Detection Service is a full-service plant health diagnostic facility sponsored by Rutgers New Jersey Agricultural Experiment Station. The Lab’s mission is to provide accurate and timely diagnoses of plant health problems for the residents of New Jersey.

Located on the George H. Cook campus in New Brunswick, NJ, the Lab provides plant health diagnostic services in cooperation with Extension faculty, staff, and other university personnel. The Lab serves residential and commercial clientele.

The Rutgers Plant Diagnostic Laboratory provides the following services:

- ✓ Disease and Insect Pest Diagnosis
- ✓ Plant and Weed Identification
- ✓ Insect Identification
- ✓ Fungus and Mold Identification
- ✓ Nematode Assays
- ✓ Screening for Acremonium Endophytes
- ✓ Fungicide Resistance Screening
- ✓ Other Services Available by Contract

For fees and instructions on how to submit samples, go to the web at: <http://njaes.rutgers.edu/services> or call the lab at 732-932-9140, fax 732-932-1270 or e-mail [clinic@njaes.rutgers.edu](mailto:clinic@njaes.rutgers.edu). □

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## Rutgers Soil Testing Laboratory Services

The Rutgers Soil Testing Laboratory is a part of Rutgers New Jersey Agricultural Experiment Station outreach component. Located on the George H. Cook campus, the Rutgers Soil Testing Laboratory is a service unit that performs chemical and mechanical analyses of soils for the residents of New Jersey and for University research personnel. The mission of the Laboratory is to provide accurate and timely soil and water test reports to meet the increasing agricultural and environmental needs of the state.

For testing and fees provided for landscape, greenhouse and sports turf, go to the web at: <http://njaes.rutgers.edu/services> or call the Lab at 732-932-7000, ext. 4231 or e-mail [soiltest@rce.rutgers.edu](mailto:soiltest@rce.rutgers.edu). Soil test kits are available through your county Rutgers Cooperative Extension office. □

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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.

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