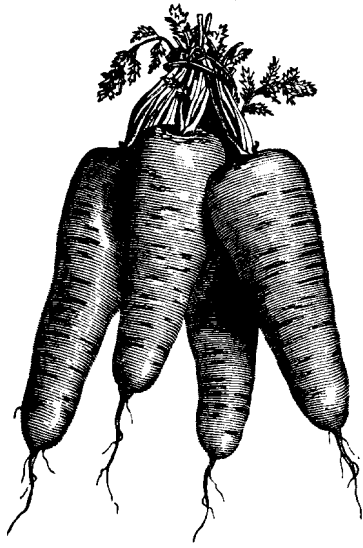


# PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

AUGUST 20, 1997



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## Vegetable Crops Diseases

*Stephen A. Johnston, Ph.D., Plant Pathology*

✓ **Bean:** Observe fields of snap beans for the presence of **rust**. The upper surface of infected leaves will have small, circular, yellow lesions with a reddish-orange, powdery spore mass present in the center. Undersides of infected leaves have numerous masses of reddish-orange spores beneath the lesions. Once observed, apply a foliar spray of Bravo and repeat every 7 days. For fields of snaps and limas where the soil has been wet for 6-10 days prior to bloom, apply Benlate, Ronilan, Rovral or Topsin M when 70-80% of the plants have at least one open blossom, and repeat in 5-6 days for the control of **white mold (Sclerotinia)**. Add a spreader sticker with both fungicide applications. For lima beans, weather conditions resulting in 1.2 inches or more of rain within a 7 day period and when the average daily temperature during this period is 78°F will result in the development of **downy mildew**. Periods of fog or heavy dew can lower the amount of rain necessary for infection to occur. If a period of 90°F occurs during this period, the disease will not develop. When conditions have been favorable for the development of **downy mildew**, apply Tri-Basic Copper Sulfate as a foliar spray.

✓ **Carrot: Cercospora leaf blight** is present in some fields at this time. Infected leaves contain numerous, small, brown lesions on leaflets and petioles. A yellow halo is present on many of the lesions on leaflets. Maintain applications of Bravo or Benlate every 10 days for control.

✓ **Cole crops: Yellows** is present in some fields of red cabbage. Infected plants are stunted and twisted in growth. Cross section of the lower stem reveals a brown discoloration of the vascular ring. No control measures are available at this time. In future plantings use **yellows** resistant varieties, and practice long crop rotations away from cole crops. Maintain applications of Bravo every 7-10 days for the control of **downy mildew** and **Alternaria leaf spot**.

✓ **Cucumber:** Maintain applications of Bravo + Benlate for control of **foliar diseases** every 7 days once the vines begin to run. Observe fields for the presence of **powdery mildew** lesions on the underside of leaves. Once observed, add Bayleton as a foliar spray and repeat once in 14 days. In fields with a history of **Phytophthora blight**, add a copper fungicide with each fungicide application.

✓ **Eggplant:** Maintain applications of a copper fungicide + maneb plus a spreader sticker every 7-10 days for the control of **Phomopsis** and **Phytophthora fruit rots**.

SEE DISEASES ON PAGE 2

✓ **Leeks:** Maintain applications of Bravo every 10 days for the control of **purple blotch**.

✓ **Lettuce:** Shortly after thinning, apply Ronilan or Rovral as a directed spray to the base of plants and surrounding soil for control of **drop**. Repeat in 10 and 20 days.

✓ **Pepper:** Maintain applications of a copper fungicide + maneb with a spreader sticker every 7-10 days for control of **Phytophthora blight**.

✓ **Pumpkins & Winter Squash:** Maintain applications of Bravo + Benlate + a copper fungicide every 7-10 days for the control of **foliar and fruit diseases**. Observe the undersides of leaves for the presence of **powdery mildew**. Once observed, add Bayleton and repeat once in 14 days for control.

✓ **Spinach:** Be sure to plant fall fields in areas that have not had a spinach crop for at least 1-2 years, and immediately after seeding, apply Ridomil Gold as a preemergence spray application for control of **damping-off** and early season control of **blue mold** and **white rust**.

✓ **Squash (Summer):** **Powdery mildew** is severe in fields close to the end of the harvest period at this time. Observe young fields for the presence of **powdery mildew** on the undersides of leaves. Once observed, apply Bayleton and repeat once in 14 days. Once the canopy develops on young fields, apply Ridomil/Bravo every 14 days for control of **Phytophthora blight**.

✓ **Tomato:** **Bacterial canker** is present in several fields of staked tomatoes at this time. Infected plants have a marginal necrosis present, and the necrosis extends in a V-shaped pattern towards the center of the leaf. Avoid working in fields while the foliage is wet, and apply Bravo C/M every 7 days to assist in control. **Powdery mildew** is present in research plots at the Rutgers Agricultural R&E Center in Upper Deerfield. Infected leaves are chlorotic, and a white, talcum powder-like growth (mildew) is present on the upper surface of leaves. The full impact of this disease on tomatoes in the field is unknown at this time. **Powdery mildew** can defoliate tomatoes in greenhouse production systems. Bravo provides control of **powdery mildew** if complete coverage is obtained; therefore, growers applying Bravo for other diseases should not experience **powdery mildew** in production fields. □

## Pest Notes

Gerald M. Ghidui, Ph.D. Vegetable Entomology

✓ **Eggplant:** Tobacco and tomato **hornworms** have been causing much defoliation in several eggplant fields. For more information on control of these pests, refer to the tomato section.

✓ **Pepper:** The **European corn borer** activity has declined because of the cool night weather. **Moth** counts in the black light trap at the RAR&EC have gone from more than 15 **moths** per night to just 2 or 3 per night. **Moths** are still present in the area, but their evening activity has nearly stopped. If the evening temperatures increase again in the near future, **moth** activity may also increase. If the evening temperatures stay cool, the **moth** population may peak and activity will remain low.

Gloucester County Agricultural Agent, Michelle, Infante reports that **pepper maggot flies** have been attacking pepper fruit. Eggs are deposited in the fruit, and **maggots** then tunnel within the fruit, causing fruit to rot and drop off the plant. Control is obtained only by applying pesticides to the fruit before the fly oviposits within the fruit. Use either dimethoate or Thiodan for control of **pepper maggots**. One of the most effective **pepper maggot** control materials is Orthene, and use of Orthene to control **corn borers** or **aphids** will also control **pepper maggot**. Consult page 112 of the [1997 Commercial Vegetable Production Recommendations for New Jersey](#) for more information concerning **pepper maggot** control.

✓ **Tomato:** Tomato and tobacco **hornworms** are found in tomato fields. **Worms** are between 1" and 3" long at this time, but will grow to be much larger. As the **worms** grow larger, they are more difficult to kill than smaller larvae. Also, the larger **worms** eat much more foliage than the smaller **worms**. There is no reported resistance to insecticides, so any of the materials listed in the [Commercial Vegetable Production Recommendation for New Jersey](#) will effectively control these pests, including the biological insecticides (the B.t.'s).

**Stink bugs** are present in many fields, and damage is occurring to both green and yellow fruit. For the past several years, either Warrior EC and Baythroid EC can be used for effective control of **stink bugs**. Thorough coverage is necessary, and sprays should be applied early in the morning or late in the evening when temperatures are cooler and the bugs are less active.

**Corn earworm** damage is being reported on tomato fruit. Effective insecticides for **corn earworm** control include Asana, Baythroid, Danitol, Guthion, Lannate and Penncap-M. Thorough coverage is necessary to maximize control of these pests. □

# Horticultural Research Twilight Meeting

August 27, 1997

6:00-8:30 pm (rain or shine)

Rutgers Snyder Research and Extension Farm  
Pittstown, NJ

- ❖ Participate in informal tours and discussions of the following research projects:

<b>Vegetable</b>	Fresh market tomato cultivar trial Fresh market tomato fertilization trial Tomato disease forecasting trial Cole crop cultivar trial Specialty potato cultivar trial
<b>Fruit</b>	Peach cultivar trial Apple cultivar trial

- ❖ Recent Developments in Pesticide Application Technology by Dr. John Grande, Director, Rutgers Snyder Research and Extension Farm
- ❖ Participate in a discussion of small scale postharvest grading and handling of fresh market tomatoes, and recirculation tanks on pesticide sprayers.

**For more information contact:** Peter Nitzsche (201) 285-8300  
Win Cowgill (908) 788-1339  
William Tietjen (908) 475-6505

DIRECTIONS TO SNYDER RESEARCH AND EXTENSION FARM (908) 730-9419

**From North** - Take I-78 to Exit 15. Turn left 9 South) at bottom of ramp (Rt. 513/Pittstown Rd). Go 4 miles into Pittstown - Do not turn on Rt. 513 or 579. Stay right for 1.5 mile on Pittstown Rd. (Rt. 615). Turn left on Locust Grove Rd. Farm on left.

**From South** (Trenton Area) - Take Rt. 202 & 31 North to Flemington traffic circle. Take Rt. 12 West at circle. Go 8 miles to Pittstown Road (airport sign). Turn North (right), and go 3.5 miles to Locust Grove Road. Turn right. Farm on left.



# Vegetable IPM Update

Kristian E. Holmstrom, Vegetable IPM Program Associate and Sally Walker, Vegetable IPM Program Associate

## ◆ Pepper

**Beet armyworms (BAW)** were found early this week in a late planting of Cuban peppers in East Vineland. In the southern counties, scout all plantings for this pest, with particular attention to the late plantings. **BAW** larvae are voracious feeders and can be found throughout the plant feeding on both leaves and fruit. Initial infestations can usually be found in the new growth. Larvae are typically abundant where found and are a greenish-gray color with a prominent dark spot on the sides just behind the head.

**Pepper maggots** were found in an unsprayed test plot in Salem County last week. Sprays for **European corn borer (ECB)** should control this pest.

Insecticides should target the main fruit pests at this time: **European corn borer, Fall armyworm,** and in the south, **Beet armyworm.**

## ◆ Sweet Corn

**Corn earworm (CEW)** adult activity continues to increase slowly throughout the state. Blacklight trap catches indicate moderate populations in the southern

and central counties. Many traps are averaging one to two **CEW** per night with a few registering locally higher numbers. Pheromone trap catches are light to moderate except in southern Burlington County where **CEW** activity is higher. Activity in the northern counties is increasing although many traps still are not catching **CEW**. Pheromone traps in Morris and Warren Counties have registered higher catches within the week, but still are indicating only a light population. The highest nightly **CEW** blacklight trap catches are as follows:

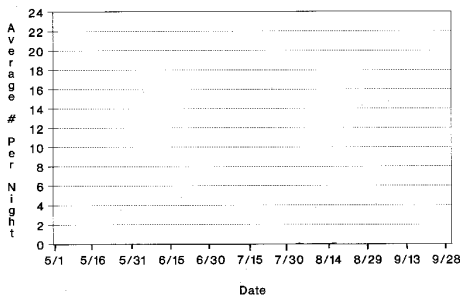
East Vineland	7	Dayton	2	Jamesburg	2
Rosenhayn	3	Elm	2	Medford	2
Cedarville	3	Holmdel	2	Morristown	2
Chapel Heights	2	Indian Mills	2	Woodstown	2

Although recent cooler nights have suppressed **European corn borer (ECB)** blacklight trap catches, high activity continues throughout the state. Plantings should be monitored weekly for signs of feeding. The highest nightly **ECB** blacklight trap catches are as follows:

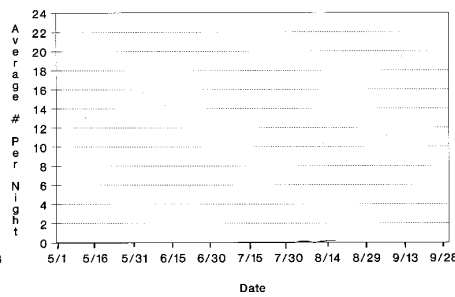
Little York	27	Ellisdale	14	Hackettstown	10
Cranbury	24	Elmer	11	Holmdel	9
Shirley	19	Allentown	10	Jamesburg	9
Cohansey	14	Burlington	10	Dayton	8

SEE IPM ON PAGE 5

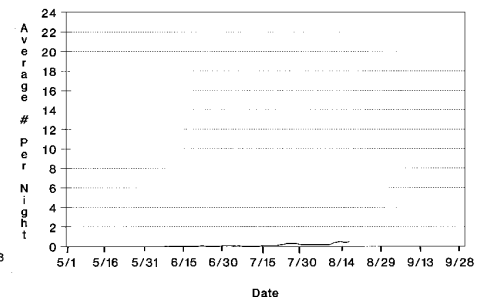
Northern NJ- CORN EARWORM (CEW)  
Blacklight Trap Catches



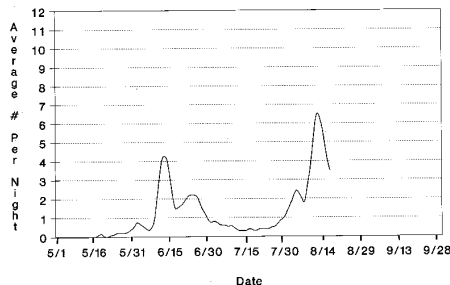
Central NJ- CORN EARWORM (CEW)  
Blacklight Trap Catches



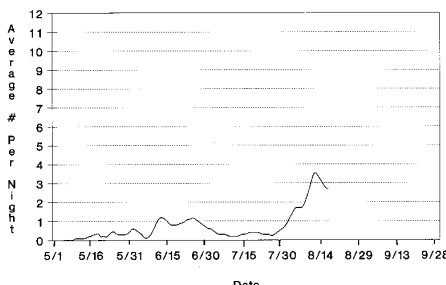
Southern NJ- CORN EARWORM (CEW)  
Blacklight Trap Catches



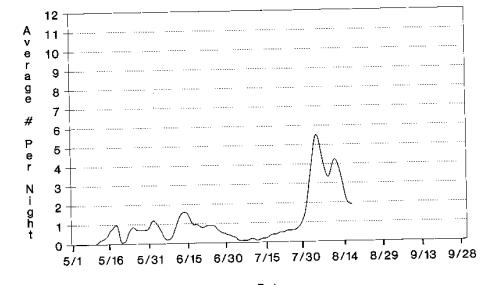
Northern NJ- EUROPEAN CORN BORER (ECB)  
Blacklight Trap Catches



Central NJ -EUROPEAN CORN BORER (ECB)  
Blacklight Trap Catches



Southern NJ -EUROPEAN CORN BORER (ECB)  
Blacklight Trap Catches



**Fall armyworm (FAW)** activity is high throughout all southern counties. Most pheromone trap catches in these counties have risen steadily over the last week. **FAW** feeding on whorl and pretassel corn may now be found in all parts of the state. In the northern counties, activity is generally lighter, but some plantings are over the 12% threshold for plants infested with either **FAW** or **FAW** and **ECB** in combination.

◆ **General Sweet Corn Spray Schedule**

Silking stage: North 5 - 6 days\*  
 Central 3 - 4 days\*  
 South 3 - 4 days\*

\*These are general spray recommendations for large areas of the state. Growers can increase or decrease the intervals based on their own local situations.

## Weekly Weather Summary

*Keith Arnesen, Agricultural Meteorologist*

Temperatures averaged much above normal. Extremes were 100 degrees at Woodstown on the 17th, and 54 degrees at Newton and Charlotteburg on the 15th. Weekly rainfall averaged 1.48 inches North, 0.86 inches Central, and 0.56 inches South. The heaviest 24 hour total was 2.27 inches at Charlotteburg on the 17th to 18th. Estimated soil moisture, in percent of field capacity, this past week averaged 74 percent North, 64 percent Central and 52 percent South. Four inch soil temperatures averaged 72 degrees North, 75 degrees Central and 76 degrees South.

**Weather Summary for the Week Ending 8 a.m. Monday 8/18/97**

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
BELVIDERE BRIDGE	1.63	20.33	-2.04	94	54	74.	4	1803	-145	99
CANOE BROOK	.64	21.75	-1.75	96	59	77.	6	2164	209	70
CHARLOTTEBURG	3.16	22.84	-.88	92	54	73.	5	1702	161	100
FLEMINGTON	.49	21.56	-1.12	94	58	75.	4	1872	-133	77
LONG VALLEY	1.40	22.50	-1.95	90	55	73.	5	1665	-69	90
NEWTON	1.57	18.78	-3.09	90	54	72.	3	1563	-216	87
FREEHOLD	missing									
LONG BRANCH	.69	19.67	-2.56	95	67	77.	5	2059	0	55
NEW BRUNSWICK	.38	27.44	5.23	95	61	77.	4	2072	-151	74
PEMBERTON	1.64	20.74	-1.75	98	71	82.	9	2359	177	75
TOMS RIVER	.70	19.18	-3.61	95	65	78.	7	2098	53	50
TRENTON	.87	22.74	1.60	96	60	76.	2	2051	-275	70
CAPE MAY COURT HOUSE	.10	16.05	-3.62	98	63	78.	4	2184	-18	28
DOWNSTOWN	.22	17.62	-3.18	98	60	78.	5	2189	-143	40
GLASSBORO	1.69	21.99	.23	95	67	79.	5	2343	34	70
HAMMONTON	.98	19.68	-2.11	97	60	78.	4	2172	-140	61
POMONA	.59	22.04	2.06	98	65	79.	7	2190	34	53
SEABROOK	.07	18.94	-1.02	99	67	80.	6	2341	-3	27
ATLANTIC CITY MARINA	.28	19.18	.03	97	71	79.	6	2196	118	36
WOODSTOWN	.00	17.98	-3.69	100	60	80	NA	2363	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
	Last Week	226 (Ending 08/11/97)								
	This Week	266 (Ending 08/18/97)								

Rutgers Cooperative Extension - NJAES  
U.S. DEPARTMENT OF AGRICULTURE  
Rutgers - The State University of New Jersey  
P.O. Box 231  
Cook College  
New Brunswick, N.J. 08903-0231

## PLANT & PEST ADVISORY

### VEGETABLE CROPS EDITION CONTRIBUTORS

#### Rutgers Cooperative Extension Specialists

Joseph A. Fiola, Ph.D., Small Fruit & Viticulture  
Stephen A. Garrison, Ph.D. Vegetable Crops  
Gerald M. Ghidui, Ph.D. Vegetable Entomology  
Joseph R. Heckman, Ph.D., Soil Fertility  
Stephen A. Johnston, Ph.D. Plant Pathology  
Bradley A. Majek, Ph.D. Weed Science  
Craig A. Storlie, Ph.D. Agricultural Engineering  
Rutgers Cooperative Extension County Agricultural Agents  
and Program Associates

Atlantic, Richard W. VanVranken (609-625-0056)  
Burlington, Raymond J. Samulis (609-265-5050)  
Cape May, Larry E. Newbold (609-465-5115)  
Cumberland, Wesley Kline, Ph.D. (609-451-2800)  
Gloucester, Michelle Infante (609-863-0110)  
Hunterdon, Winfred P. Cowgill, Jr. (908-788-1338)  
Mercer, Daniel Kluchinski (609-989-6830)  
Middlesex, William T. Hlubik (908-745-3443)  
Monmouth, Richard G. Obal (908-431-7260)  
Morris, Peter J. Nitzsche (201-285-8300)  
Salem, Peter R. Probasco (609-769-0090)  
Somerset, Clare S. Liptak (908-526-6293)  
Warren, William H. Tietjen (908-475-6505)  
Kristian E. Holmstrom, IPM Program Associate  
Sarah Walker, IPM Program Associate  
Newsletter Production  
Jack Rabin, Assistant Director, NJAES  
Cindy Rovins, Editor and Designer

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

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