

# PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

AUGUST 23, 2006

## Pest Notes

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



✓ **General:** Moth flights of all the important 'worm' pests are high throughout the mid-Atlantic region. The **European corn borer**, **corn earworm (tomato fruitworm)**, **fall armyworm**, and the **beet armyworm** are being caught in black light traps throughout the region, and the trap numbers are increasing. The cabbage pests, including **imported cabbageworm**, **cabbage looper** and the **diamondback moth**, have also been present in the fields or will soon be present. Corn, tomatoes, peppers, cabbage, cole crops, snap beans and other crops are at risk when the populations of these moths is high and the weather is favorable for their development. The weather has been very favorable for these pests, with lots of warm, dry days on record for the past several weeks, with more to come.

The table below is a listing of the 'worm' pests that we find in New Jersey on vegetable crops at this time of the year and a Mid-Atlantic regional rating of the effectiveness of labeled insecticides against these pests. Use this table as a reference to help assist you in a pest management program on various crops. You will still have to check the product label for each crop to ensure that the material you intend to use is labeled on that crop.

The 'worm' pests on the table include ICW (imported cabbage-worm), CL (cabbage looper), DBM (diamondback moth larvae), BAW (beet armyworm), CEW (corn earworm), FAW (fall armyworm), and ECB (European corn borer). A 1-star rating denotes poor control, and a 3-star rating denotes excellent control. A blank indicates that the material is not labeled for that pest, is not effective against that pest, or its effectiveness is unknown.

Proper identification of the pest is critical to the success of your pest management program. Use pest or damage thresholds (if available) listed in the *2006 Commercial Vegetable Production Recommendations for New Jersey* for best results. For specific pests including the cabbage looper, beet armyworm and fall armyworm, control of the small (early instar) larvae is easier to obtain than that of large (late instar) larvae, so timing of sprays is important and will impact your management results. Refer to product label for all rates, restrictions and directions for use of any product before you use it.

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MATERIAL		ICW	small CL	large CL	DBM	BAW	CEW	FAW	ECB
SpinTor	2SC	xxx	xxx	xx	xxx	xxx	xx	xxx	xxx
Proclaim	5G	xxx	xxx	xxx	xxx	xxx	xx	xxx	
Avaunt	30WG	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Confirm	2F	xxx	xxx	xx	x	xx	xx	xx	xx
Asana	XL	xxx	xx	x			xxx	xx	xx
permethrin	EC	xxx	xx	x			xx	xx	xx
Warrior	1T	xxx	xxx	xx		x	xxx	xx	xxx
Ammo	2.5EC	xxx	xx	x			xx	xx	
bifenthrin	2EC	xxx	xx	xx		x	xxx	xx	xxx
Lorsban	50W	xxx			x	x		x	xx
Lannate	LV	xxx	x	x	x		xx	xxx	x
Larvin	3.2F	xxx	x	x	x	xxx	xx	xxx	xx
Danitol	2.4EC	xxx	xx	xx			xx	xx	xx
Orthene	90S	xxx	xx	xx	xx			xx	xxx
Mustang	.8EC	xxx	xx	xx			xx	xx	xx
Intrepid	2F	xxx	xxx	xxx	x	xx			
Baythroid	2EC	xxx	xx	xx			xxx	xx	xxx
Bt kurstaki	see label	xxx	xx	x	x	x	x	x	x
Bt aizawai	see label	xxx	x	x	xx	x	x	x	x

*\*\* information compiled by the Mid-Atlantic Vegetable Recommendation Group, entomology subcommittee*

## Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much above normal, averaging 73 degrees north, 75 degrees central and 77 degrees south. Extremes were near 94 degrees at Hammonton and Pomona on the 21st, and 52 degrees at Andover on the 15th. Weekly rainfall averaged 0.55 inches north, 0.05 inches central, and 0.00 inches south. The heaviest 24 hour total reported was 1.14 inches at Andover on the 15th to 16th. Estimated soil moisture, in percent of field capacity, this past week averaged 82 percent north, 60 percent central and 44 percent south. Four inch soil temperatures averaged 70 degrees north, 72 degrees central and 73 degrees south.

Weather Summary for the Week Ending 8 AM Monday 8/21/ 6										
WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
CANOE BROOK	.34	20.81	-3.17	90	59	75.	5	2574	558	72
CHARLOTTEBURG	.45	21.33	-2.87	85	56	72.	5	2185	592	67
FLEMINGTON	.16	26.89	3.76	88	57	73.	2	2452	384	77
NEWTON*	1.24	22.77	.44	86	52	71.	3	1949	116	86
FREEHOLD	.00	20.20	-2.33	91	59	75.	3	2511	307	66
LONG BRANCH	.21	20.18	-2.54	91	60	73.	1	2430	305	55
NEW BRUNSWICK	.03	20.17	-2.51	91	61	76.	3	2617	325	65
TOMS RIVER	.00	16.86	-6.41	91	56	74.	3	2520	412	35
TRENTON	.03	21.33	-.24	90	58	76.	3	2664	268	38
CAPE MAY COURT HOUSE	.00	13.19	-6.90	90	63	76.	2	2560	486	37
DOWNSTOWN	.00	16.90	-4.35	89	59	75.	2	2420	19	39
GLASSBORO	.02	17.58	-4.63	90	66	78.	5	2845	466	35
HAMMONTON	.00	16.12	-6.11	94	60	76.	3	2749	367	31
POMONA	.00	17.70	-2.73	94	60	76.	4	2624	402	31
SEABROOK	.00	23.69	3.32	93	63	79.	6	3021	607	36
SOUTH HARRISON	.00	21.69	.91	90	63	77	NA	2799	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW LAST WEEK 229 (Ending 8/14/06) THIS WEEK 248 (Ending 8/21/06)										
* SOME CUMULATIVE VALUES ESTIMATED DUE TO EARLIER MISSING DATA										

# IPM Update

Kristian Holmstrom, Research Project Coordinator II, Vegetable IPM Program

## Sweet Corn

Catches of **European corn borer (ECB)** adults are at low levels in central and northern counties, but have increased dramatically in many southern areas (see ECB map). Particularly high counts have been recorded in parts of Cumberland and Salem Counties. ECB larval feeding is present on whorl stage corn at this time. Scouting should still be undertaken at least weekly. Check 5 consecutive plants in each of 10 random locations in the planting. Look for the "shot-hole" type feeding on the leaves that indicates larval ECB infestation, or discolored sections in emerging tassels. Consider treating when feeding signs are present on 12% or more of the plants. Where plantings are approaching full tassel/first silk, consider that an insecticide treatment at this stage is very useful in eliminating any ECB larvae that may be moving from the opening tassel down to the area where the ear and stalk meet. The highest nightly ECB catches for the previous week have occurred at:

Shirley	32	Allentown	2	East Vineland	2
Seeley Lake	8	Beemerville	2	Eldora	2
Mannington	7	Centerton	2	Elmer	2
Woodstown	4	Cohansey	2	Georgetown	2

**Corn Earworm Alert!:** Adult **corn earworm (CEW)** adult catches increased dramatically over the past week. These adults represent a migratory population, and will cause considerable damage to corn if not managed appropriately. Areas of very high activity may be found in several areas of the state, with no particular geographic trend (see CEW map). Silk spray schedules must be strictly observed to prevent CEW damage. On the CEW map, the shaded area (blue on the web version) represents a population that translates to a 4-5 day silk spray schedule, and the crosshatched area (green on the web version) represents a 3-day 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 have occurred at:

East Vineland	35	Woodstown	15	Denville	8
Eldora	22	Beemerville	13	Green Creek	8
Wall	20	Seeley Lake	12	New Egypt	7
Shirley	18	Cedarville	8	Sergeantsville	7

The occurrence of **fall armyworm (FAW)** larval feeding is high everywhere in whorl and pretassel stage

sweet corn. This week, feeding continues to exceed 30% in whorl stage corn in many areas, with rapid reinfestation following treatment. All counties have damaging populations. In southern and coastal areas, this feeding will be especially heavy now. Seedling stage sweet corn is at particular risk of FAW infestation. FAW often attack young plants, so these must be scouted at least weekly. For those growing B.t. modified sweet corn varieties, remember that FAW is less affected by this toxin than are ECB and CEW. Some FAW injury will occur on these varieties. Look for damage that is initially similar to heavy ECB injury. As the larvae grow, damage becomes more severe, with ragged holes appearing in the whorl and lots of visible caterpillar droppings. This pest can kill small plants if untreated. Consider treating when 12% or more plants are infested with FAW alone or in combination with ECB.

## Tomatoes

**Brown stinkbugs** remain active in many areas now. Adults are regularly appearing in blacklight catches. This is the time of year when adults are present and moving around in search of food and egg laying sites, and stinkbugs have been observed in many tomato fields over the past week. Feeding is increasing in field tomatoes in all counties, although not as high in northern areas. Now is the time to pay attention to fruit in the field for signs of feeding. Stinkbug feeding on tomatoes first appears as a diffuse whitish blotch on green fruit. The spot changes to bright yellow as the fruit matures. If this feeding is on the increase in the field or in harvested fruit, consider treating to suppress the population.

Check fields for **aphids** and **two-spotted spider mites (TSSM)**. Look at 2 complete leaves each on 5 consecutive plants in 10 random locations. Note the presence of aphid colonies on the undersides of the leaves, as well as the presence of TSSM. Increasing aphid populations are often detected by the presence of their cast skins, which adhere to the sticky droppings they produce. If colonies are increasing over several scouting visits, especially if aphid droppings are accumulating on fruit, consider an insecticide to reduce the population. TSSM feeding results in a whitish pin spot, or stipple, on the upper surface of the leaflet. The mites will be on the underside of the leaf until colonies become large. At this point, they will make webs and travel between leaves. Note the number and location of sites with TSSM. Consider spot treating to prevent further spread into the field.

With the recent influx of CEW adults, consider weekly insecticide applications to limit injury by the **tomato fruitworm** (larval CEW) where adult catches approach 10 per night. Remember that synthetic pyrethroid insecticides may increase aphid populations over time. Check the *2006 Commercial Vegetable Production Recommendations Guide* for effective materials.

SEE IPM ON PAGE 4

## Pumpkins

Dry weather has been unfavorable for **downy mildew (DM)** spread over the past week. Rigorous fungicide programs initiated by growers have also helped. Despite this, the disease should be considered present in all areas of the state, and growers should react accordingly. Should showers occur, DM incidence will increase locally. In addition to the regular protectant fungicide program for **powdery mildew (PM)**, a fungicide with specific activity against the DM organism should be used on a weekly basis. Check the *2006 Commercial Vegetable Production Recommendations Guide* for effective materials. DM first appears as sharp yellow spots on the upper surface of leaves. If conditions are wet, as with morning dew, dark spores will be produced from the lesion on the underside of the leaf. Lesions are first associated with veins, but will merge quickly to kill entire leaves. When this happens, the petioles remain erect, but the dead brown leaves hang in a "dish rag" fashion. Under conditions of high moisture, defoliation will occur rapidly.

All scouted fields in northern and central areas have surpassed the PM action threshold (2 leaves with lesions per 100 older leaves). Early stage PM infections appear as small circular areas of white powdery material on older leaves. Often the first infected leaves are on the inner part of the canopy. PM lesions may appear on either leaf surface. All fields should be on a protectant fungicide program with the addition of a systemic material for DM control.

## Snap Beans

With higher **ECB** catches, snap beans are at risk for infestation. Monitor local blacklight catches, and if regular ECB catches are occurring, treat beans at bloom and again at pin stage. Consider 5-7 day applications as pods mature if ECB adult catches average 2.5 moths or more per night.

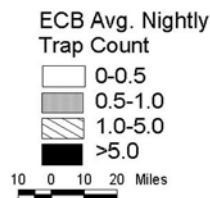
## Peppers

With the second **ECB** flight now active, it is important to monitor local moth catches to determine when to begin a protective program for ECB management. If local blacklight traps are regularly capturing at least 1 moth per night, consider a weekly insecticide application to limit fruit infestation by ECB larvae. On the ECB map, peppers in areas that are shaded or cross-hatched (blue or green on the web version) should be treated preventively for ECB. Fields should be scouted weekly. Check 5 consecutive plants each in 10 random locations. Look at the undersides of 2 leaves per plant for the presence of **aphids**, **spider mites** and ECB egg masses. Consider treating if aphids exceed approximately 120 per 100 leaves, and if spider mites are found on 10 leaves, and if 2 or more ECB egg masses are found in the sample. Observe 2 fruit per plant for the presence of larval infestation or soft rot. Dramatically increasing soft rot is an indication of a possible ECB larval infestation.

**Beet armyworm (BAW)** pheromone traps have been deployed from Cape May northward through Burlington County. BAW adult catches in a several areas have increased significantly over the past week. Highest catches have occurred near Hammonton, Cohansey and Shirley. A few infestations in peppers have occurred recently in southern counties. It is advisable to scout fields regularly for BAW at this time. First signs of infestation will include foliar damage and droppings near terminal growth. As larvae enlarge, they will attack fruit. Larvae are greenish, with a prominent dark spot on each side behind the head capsule.

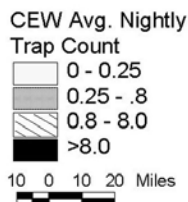
SEE ECB, CEW AND BAW MAPS ON PAGE 5

## Distribution of Adult European Corn Borer for the Week Ending August 23, 2006



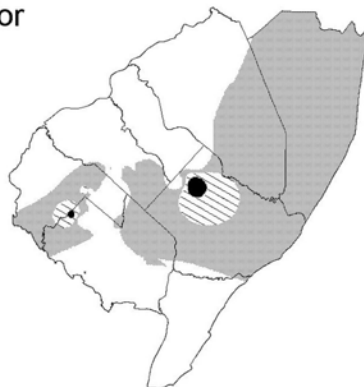
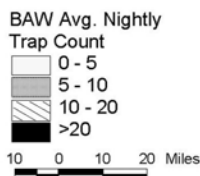
Data collected and processed by: Kris Holmstrom, Marilyn Hughes  
Rutgers Cooperative Extension & Center for Remote Sensing

## Distribution of Adult Corn Earworm for the Week Ending August 23, 2006



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

## Distribution of Adult Beet Armyworm for the Week Ending August 23, 2006



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

## Agricultural Plastics Recycling – The ‘Dirty’ Stuff

In 2005, farmers who participated in New Jersey’s pilot program to recycle agricultural plastics reduced their solid waste disposal costs by about \$28 per ton, almost a 45% savings. The program will continue to run throughout 2006 and is open to all New Jersey farmers. Last year more than 674,000 pounds was collected saving growers more than \$9,000 in landfill tipping fees. Now the ‘dirty’ plastics generated by farmers can be recycled at the Cumberland County Improvement Authority’s (CCIA) regional collection site. This program is open to all New Jersey farmers and runs year-round.

- In 2006 we are requesting that participants keep the mulch film separate from the drip tape by either placing the material in separate containers or placing the mulch film in the bottom of the container followed by the drip tape on top. These ‘dirty’ agricultural plastics are a challenge to market to recyclers and by keeping the mulch and drip tape somewhat separate we can more quickly move them in the markets.
- In order to maintain the highest quality of material collected through this program and reduce contaminants such as excessive soil and plant material, and eliminate twine, wood and trash, guidelines were developed for the farmers and their workers to follow. A laminated card entitled “Guidelines for Recycling Agricultural Plastics” is available to program participants. The laminated card, written in English and Spanish, includes both pictorial and written guidelines that must be followed. We hope farmers will post it in an area visible to their farm workers.
- The cost to participate in the program is \$30 per ton.
- The vehicle used to transport the agricultural plastics is not required to be licensed by the NJDEP so long as the plastic is transported directly to the collection site.
- Prior to delivery of the agricultural plastics, all growers must call the CCIA to establish an account. Growers using a licensed solid waste hauler must inform the CCIA prior to delivery in order to maintain proper billing and documentation.

The ag plastics recycled through this pilot project include:

- Mulch film (any color)
- Drip irrigation tape
- Row covers
- Low tunnel film
- High tunnel film
- Silage bags
- Peat moss bags
- Hay bale wraps

SEE RECYCLING ON PAGE 6

**ADDITIONAL QUESTIONS ON RECYCLING  
PLASTICS GENERATED BY FARMERS OR COPIES OF  
THE LAMINATED CARD CONTACT:**

Karen Kritz  
New Jersey Department of Agriculture  
PO Box 330  
Trenton, NJ 08625-0330  
Phone: (609) 984-2506  
E-mail: [Karen.Kritz@ag.state.nj.us](mailto:Karen.Kritz@ag.state.nj.us)

**Tips for Recycling Your Ag Plastics**

Quality control of the agricultural plastics is probably the most important variable to a successful recycling program. Agricultural plastics can be either High-density Polyethylene (HDPE #2) or Low Density Polyethylene (LDPE #4) and these materials cannot be co-mingled. Please do not co-mingle these plastics. If you are unsure of the type of plastic you have, contact the CCIA for guidance.

- Keep like items together. It is much easier to market the ag plastics if we can keep them separate.
- Once the agricultural plastic is removed, shake it to remove a majority of the contaminants (dirt, haylage, water, plant material, ice, etc.). Excessive contaminants could cause the material to be rejected at the collection site. Minimizing these contaminants will lower tipping fees for recycling. (According to growers, collection in the afternoon when there is less moisture will generate plastic with reduced contaminants thus lowering the recycling cost to growers)
- Mulch film, low tunnel film, peat moss bags and similar agricultural plastics should be rolled up and tied with ONLY the same type of film in the roll. DO NOT use twine, wire, etc. If any other material is used to tie the bundle, the load will be rejected.
- Drip irrigation should be rolled up and tied with ONLY drip tape.
- Remove any twine, string or tape from the plastic.
- Store the agricultural plastics so it is not exposed to sunlight that will further degrade the material.
- Keep the material as dry as possible because moisture will add to the weight of the material and increase the cost of recycling to the farmer. If the material cannot be stored indoors, cover it with plastic.
- Keep the plastic as clean possible - it will save money on tipping fees.

**Collection Site Information**

**Date:** Year-Round Collection  
**Location:** Cumberland County Solid Waste Complex  
169 Jesse Bridge Rd.  
Deerfield, New Jersey  
Located off Route 55 Exit 29 (Sherman Avenue - Route 552)

When entering the CCIA Solid Waste Complex, identify the material as ag plastics. This is necessary since the CCIA also has a nursery and greenhouse film collection program and the ag plastics must be stored in a separate area.


**Hours of Operation:** Mon.- Fri. 7:30 am - 3:30 pm,  
Saturday *by appointment only*

**Contact:** Dennis DeMatte, Jr.  
(856) 825-3700

[www.ccia-net.com/recycling.asp](http://www.ccia-net.com/recycling.asp)

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NJ AGRICULTURAL EXPERIMENT STATION  
**RUTGERS**  
COOPERATIVE RESEARCH & EXTENSION  
Plant & Pest Advisory  
Rutgers' Cook College  
18 College Farm Road  
New Brunswick, N.J. 08901-8551



## PLANT & PEST ADVISORY VEGETABLE CROPS EDITION CONTRIBUTORS

### **Rutgers Cooperative Research & Extension (RCRE) Specialists**

Gerald M. Ghidui, Ph.D., Vegetable Entomology

George Hamilton, Ph.D., Pest Management

Joseph R. Heckman, Ph.D., Soil Fertility

Bradley A. Majek, Ph.D., Weed Science

Andy Wyenandt, Ph.D., Vegetable Pathology

### **RCRE County Agricultural Agents**

Atlantic, Richard W. VanVranken (609-625-0056)

Burlington, Raymond J. Samulis (609-265-5050)

Cumberland, Wesley Kline, Ph.D. (856-451-2800)

Gloucester, Michelle Infante-Casella (856-307-6450)

Hunterdon, Winfred P. Cowgill, Jr. (908-788-1338)

Middlesex, William T. Hlubik (732-398-5260)

Monmouth, Bill Sciarappa, Ph.D. (732-431-7260)

Morris, Peter J. Nitzsche (973-285-8300)

Passaic, Elaine F. Barbour, Agric. Assistant (973-305-5740)

Salem, Peter R. Probasco (856-769-0090)

Warren, William H. Tietjen (908-475-6505)

### **Vegetable IPM Program (732-932-9802)**

Joseph Ingerson-Mahar, Vegetable IPM Coordinator

Kristian E. Holmstrom, Research Project Coordinator II

### **Newsletter Production**

Jack Rabin, Associate Director for Farm Services, NJAES

Cindy Rovins, Agricultural Communications Editor

**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 RCRE in your County.

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