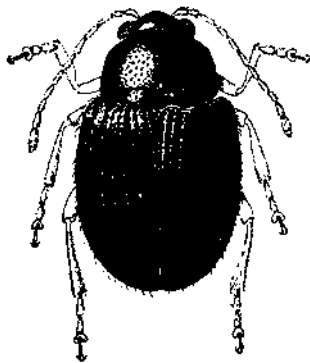


PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

JULY 30, 2003



INSIDE

Pest Notes	1
Vegetable Disease Update	2
IPM Update	4
Weekly Weather Summary	7

Pest Notes

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

✓ **Cabbage:** Population levels of **imported cabbageworm** and **cabbage looper** larvae are increasing on cabbage and other cole crops in southern New Jersey areas. Both of these pests leave large, ragged holes in leaves (**flea beetles** leave small, round holes and **diamondback moth** larvae leave a small, "window pane" hole). Because different insecticides are recommended for the different pests, refer to pages F14-F15 of the *2003 Commercial Vegetable Production Recommendations for NJ* for most effective pest control materials for each pest. A spreader-sticker is often recommended for spray application to cole crops because of the waxy surface of the leaves and the tendency of plain water to just "roll off" the leaf.

✓ **Corn, (sweet): Fall armyworm** infestations are being reported in sweet corn. Fall armyworm adults may appear in New Jersey from as early as the beginning of July, and if weather is favorable, larvae may appear in corn within 1-2 weeks. If whorls have >12% infestation, or if ears have silk and armyworm moths are active, treatments are warranted. Effective materials include Baythroid, Fury, Mustang or Mustang Max, Lannate, Larvin, or Warrior. High volume, high-pressure sprays are recommended for best control of fall armyworm larvae in sweet corn. There have been some reports of lack of control of worm pests after the use of Warrior on sweet corn in New Jersey. Thus far, no other reports of this have been received, and there have been no tests conducted demonstrating resistance of the worm pests to Warrior anywhere in the US.

Also, **sap beetles** are reported infesting sweet corn from areas where corn is being harvested. Corn that has tip damage, or corn that has exposed kernels, is significantly more attractive to sap beetle adults. Protect sweet corn ears from bird, mammal or insect damage, and use a tight-husked variety, to reduce attractiveness to **flea beetles**. Several pyrethroids are labeled for control of sap beetles, and all are effective: Asana, Capture, Fury, Mustang or Mustang Max, and Warrior. Also labeled are diazinon, Sevin and Penncap-M. Direct sprays at ear tip. Before using any pesticide, read entire label for complete information on rates, restrictions, bee dangers, etc. It is likely that growers will soon see an increase in both the **corn earworm** and the **European corn borer** population within the next 1-2 weeks, so watch the activity of these insect pests for population level changes.

SEE PEST NOTES ON PAGE 2

PEST NOTES FROM PAGE 1

✓ **Pepper: European corn borer**

moth levels are just starting to increase, and activity levels are different for various pepper-growing areas throughout the state. If moth activity has started, and pepper fruit are > 1/2 inch in diameter, sprays are recommended. Many insecticides of different chemistries are labeled for control of corn borer on peppers, and all work well if applied with enough volume and pressure to ensure adequate coverage of the fruit. Any fruit that is not covered with a protective treatment is susceptible to borer or earworm damage, and once damage has occurred to the fruit it is irreversible.

It is important to watch for **beet armyworm** larvae on pepper foliage. Larvae will likely appear in high numbers on the upper foliage of pepper plants, and damage will first appear as many small, irregular shaped holes, usually with a "window pane" appearance (holes do not go completely through the leaf). The worms themselves often appear to look like a **leafroller**, and may slightly web the leaves together. Treatment is most effective at this time, rather than when worms become large and enter fruit. Use either Avaunt, Confirm, Intrepid, Lannate or SpinTor for control of beet armyworms on pepper foliage. Reassess about 5-6 days after application to determine level of effectiveness.

✓ **Tomato:** Southern states report high numbers of **thrips** on tomato leaves (adults and larvae), many of which are probably migrating from nearby harvested grain crops to the tomato crop. Be aware of field and grain crops near the tomato fields, and closely monitor for thrips in tomatoes shortly after those crops are harvested. If numbers of thrips increases, or if damage to tomato fruit is increasing, treat with either Guthion, Monitor, Provado or SpinTor. These materials are the most effective treatments available for thrips control. Obtain thorough coverage of both foliage and flowers (thrips may hide in any protected area, such as stem branches and in flowers). □

Vegetable Disease Update

Edited by Joe Ingerson-Mahar, Vegetable IPM Coordinator

Report from Michelle Infante-Casella, Gloucester County Agricultural Agent

Cucurbits - Powdery mildew is spreading in fields of pumpkin and squash; adjust fungicide applications to control this disease according to disease pressure.

Tomato - Blossom end rot continues to be a problem. Be sure to apply adequate irrigation, especially now that there is a large crop load on many fields.

Pepper - Blossom end rot is also showing up in pepper fields that are not irrigated enough. Be sure to apply proper amounts of water to peppers, especially when conditions are hot and crop load begins.

Phytophthora is a concern and has been found in cucurbit and pepper fields. This week's thunderstorms may increase the incidence of this disease. Be sure to apply protective fungicides to lessen the infection of the foliar phase of this disease. Cucurbits - Powdery mildew is spreading in fields of pumpkin and squash; adjust fungicide applications to control this disease according to disease pressure.

Report from Rick VanVranken, Atlantic County Agricultural Agent

Disease Notes from the Northeast

New Labels/Tolerances Established (from Pest Management Office, Rutgers Cooperative Extension, <http://www.pestmanagement.rutgers.edu>).

Thiophanate methyl - EPA has established a time-limited tolerance for residues of thiophanate methyl and its metabolite methyl 2-benzimidazolyl carbamate (MBC) in or on fruiting vegetables.

Background: EPA provides: "...Benomyl has historically been used to control the disease caused by *Sclerotinia sclerotiorum*, more commonly known as **white mold, timber rot, or sclerotinia stem rot**, in fruiting vegetables, including tomatoes. The recent cancellation of benomyl has left fruiting vegetable producers in Florida, and tomato producers in New Jersey and Virginia without sufficient means to control this disease, and the applicants claim that there are no other registered fungicides or alternative control practices which are effective to control this disease.

Thiophanate methyl is related to benomyl, and degrades to the same active compound as benomyl. Field trial data also shows thiophanate methyl to be significantly effective at controlling white mold. It is expected that a similar level of control would be achieved with thiophanate methyl as that achieved in the past with benomyl. Significant economic losses are expected without the requested use of thiophanate methyl. EPA has authorized under *FIFRA section 18* the use of thiophanate methyl on fruiting vegetables in Florida, and *tomatoes only in New Jersey and Virginia*, for control of white mold, also known as timber rot, or sclerotinia stem rot (*sclerotinia sclerotiorum*)..."

Famoxadone - EPA has established the first food tolerances for residues of the fungicide famoxadone in or on:

- vegetables, fruiting, group 8 (except tomato);
- tomato;
- vegetables cucurbit, group 9;
- lettuce, head;
- potato

SEE DISEASE UPDATE ON PAGE 3

DISEASE UPDATE FROM PAGE 2

Dupont requested these tolerances under the Federal Food, Drug, and Cosmetic Act (FFDCA), as amended by the Food Quality Protection Act of 1996 (FQPA). These reflect the first food tolerances for this fungicide in the United States.

Background: There is very little information available on this. Names include: DPX-JE 874, Famoxadon, Famoxadone, Tanos (Dupont's product). It is a conventional fungicide for use on Cucurbit Vegetables, Fruiting Vegetables, Grape (import), Head Lettuce, Potato, Tomato (import) slated for registration in the third quarter of 2003.

Fludioxonil - EPA has established tolerances for residues of fludioxonil in or on:

- Brassica, head and stem, subgroup 5A;
- Brassica, leafy greens, subgroup 5B;
- Carrot; herb, fresh, subgroup 19A;
- Herb, dried, subgroup 19A;
- Turnip, greens; and
- Longan; lychee; pulasan; rambutan; Spanish lime.

Interregional Research Project Number 4 (IR-4) requested these tolerances under the Federal Food, Drug, and Cosmetic Act (FFDCA), as amended by the Food Quality Protection Act.

Background: Fludioxonil is a reduced risk fungicide first registered for use on corn in 1995; later registrations have included potato in 1997, and Brassica leafy veg., bulb veg., cereal grains, cotton, cucurbit veg., foliage of legume veg., fruiting veg., grass, herbs and spices, leafy veg., leaves and roots of tuber veg., legume veg., non-grass animal feeds, peanuts, rape seed, root and tuber veg., sunflower seed in 1998; and assorted stone fruit post-application uses in 2002. Names include Fludiexonil, Fludioxinil, Fludioxonil, Fludioxonyl, Scholar, Medallion, Switch, and Maxim. In addition to crop uses, there is product labeled for ornamental and greenhouse use.

Tomatoes - (from Ohio State University Extension Veg-Net Vol. 10, No. 11. July 23, 2003)

Septoria Leaf Spot is developing rapidly now on lower leaves of process and fresh market tomatoes. Weather conditions in the last couple of weeks have been perfect for disease development. This fungal disease will only affect leaves. But if defoliation is more than 50% before the fruit sizes it can cause significant loss. Strobiluron fungicides are very effective for control of this disease. Chlorothalonil fungicides, for example Bravo, which are commonly used in rotation with Strobiluron fungicides is less effective. See [the Commercial] Vegetable Production [Recommendations] for materials (hard copy or online edition). For pictures to help in diagnosis of this disease, go to the following link: <http://www.ag.ohio-state.edu/~vegnet/tomcats/tomdis/sept.htm>

One picture shows the difference between *early blight* and *septoria* lesions on tomato leaves.

Pumpkins - (from Ohio State University Extension Veg-Net newsletters)

Bacterial Wilt - In a field trial with 6 replicates of 20 varieties of pumpkins under heavy pressure from **striped cucumber beetle** at Columbus, we are seeing consistent differences in occurrence of bacterial wilt symptoms. Preliminary data shows that varieties with the least sign of bacterial wilt are: Autumn King, Gold Bullion, Hybrid Pam, and Lil Ironsides. Varieties with the most severe bacterial wilt symptoms are Wee-B-Little, Jack-B-Little, Magic Lantern, and Baby Pam.

Anthracnose - The warm, moist, rainy weather in early July has led to an outbreak of anthracnose in pumpkins. Lesions appear near or on leaf veins especially on the underside of the leaf. They are roughly circular and are light brown in color. The leaves may be distorted and the centers of the lesions may crack or drop out creating a shot hole appearance. Portions of the leaf may become necrotic beyond the location of the lesion on the leaf vein. Pictures are available at the VegNet website: <http://vegnet.osu.edu>. Click on the 'Problem of the Week' in the left hand menu bar to see pictures of Anthracnose and some hail damage. Pictures provided by Andy Wyenandt, Plant Pathology. Growers should check their fields for symptoms. Chemical control may be obtained through the use of protectant or eradicant fungicides. See page 213 of the 2003 OH Vegetable Production Guide for recommended materials (hard copy or online edition).

Report from Wes Kline, Ph.D., Cumberland County Agricultural Agent

Late Blight has been reported in Northwestern Pennsylvania. Dr. Alan MacNab, Pennsylvania State University reported July 22 that late blight had been confirmed in three commercial fields of potatoes in northwestern Pennsylvania, one in Crawford Co. and two in Erie Co. There is no evidence pointing to a single source. Growers were suspicious about a week before and have been on aggressive spray programs, alternating some of the best fungicides. The spray program appears to be quite effective. Weather conditions will be a major factor in future control. □

IPM Update

Kristian Holmstrom, Program Associate in Vegetable IPM

Sweet Corn

European corn borer (ECB) adults have increased significantly over the past week. Trap catches in parts of Atlantic, Burlington, Cumberland and Salem Counties are higher than those elsewhere (see ECB map). Trap catches remain low in much of the northern half of the state. ECB adult activity will increase northward over the next two weeks. These adults will lay eggs on whorl through silking stage corn. Feeding signs will increase in sweet corn plantings through much of August. Check fields weekly, and consider treating if greater than 12% of plants are infested with ECB alone or in combination with **fall armyworm (FAW)**. After the full tassel treatment, follow up with weekly insecticide applications unless local **corn earworm (CEW)** catches require a tighter schedule. The highest average nightly ECB blacklight trap catches are:

Shirley	21	Hammonton	12	Seeley Lake	7
Indian Mills	19	Burlington	9	Allentown	5
Elmer	15	Cinnaminson	7	Cranbury	5
Cohansey	13	Fishing Creek	7	Crosswicks	4

Corn earworm (CEW) adult activity has increased over the past week, although not to the extreme levels we sometimes see around this time. At this time, the highest CEW catches are in Atlantic, Burlington, and Ocean Counties (see CEW map). This pattern of gradual increase should continue unless a cold front decreases activity, or moth emergence to our south coincides with southerly breezes. The latter situation would likely cause dramatic CEW increases in our area. We will continue to monitor populations and weather conditions throughout the region to try to provide advance warning of CEW populations. In areas where CEW are being caught, spray schedules are necessary to protect developing ears. The cross-hatched area on the map represents a population requiring a 3-4 day silk spray schedule. Lightly shaded areas represent populations requiring a 5-6 day silk spray schedule. The highest average nightly CEW blacklight trap catches are:

Indian Mills	6	Egg Harbor	2	Eldora	1
Hammonton	3	Folsom	2	Elmer	1
Sewell	3	Wall	2	Medford	1
Burlington	2	Dayton	1	Sykesville	1

General Sweet Corn Spray Schedule

Silking Corn:	North	6 - 7 days
	Central	3-5 days
	South	3-5 days

Fall armyworm (FAW) infestations have increased in whorl and seedling stage sweet corn plantings this week throughout New Jersey. Adult FAW were likely brought

to our area on strong southerly breezes associated with last week's frontal system. FAW will often feed on seedling and short whorl stage sweet corn. For this reason, it is critical to scout even the youngest plantings for the rest of the season. Look for feeding that initially looks like ECB damage, but rapidly progresses to ragged holes in the leaves with large amounts of droppings in the whorl. FAW can be tough to control because penetration by the insecticide through the layer of droppings is sometimes difficult. Scout fields weekly and consider treating when 12% or more plants are infested with FAW alone or in combination with ECB. Increased spray volume and pressure often assist in control of FAW.

Sap beetles continue to be found in corn tassels in all areas. These pests will infest corn ears following insect or bird damage. In varieties where the ear grows to the end and through the husk, sap beetles may infest without previous damage. If sap beetle is observed in pre-tassel corn plantings, a silk spray schedule should be initiated even in the absence of CEW. Weekly treatments should minimize sap beetle damage.

Corn leaf aphids may be found in some plantings. These blue-gray aphids are often present in the tassels beginning in mid-Summer, and can become a nuisance to consumers as they move down the plant and get between husk layers on the ears. Their populations may be enhanced by repeated use of pyrethroid insecticides in the silk spray program. It is wise to make at least one application of methomyl or other non-pyrethroid insecticide in the silk spray program to minimize ear infestations of corn leaf aphid.

Corn leaf rust has been observed in at low levels in northern counties recently. This disease is probably present in other areas as well. While scouting, look for pustules on the oldest leaves of plants. Pustules rupture, emitting reddish, powdery spores. There is a wide range of host resistance to this disease, but some varieties can be adversely affected. Check the seed source for resistance in your varieties. If the variety is susceptible to leaf rust, pustules will increase on the plant until moisture stress causes a reduction in ear size. The potential for loss is greatest if the infection begins when susceptible plants are in the whorl or seedling stages. Later infections may not reduce yield, but can cause pustules on the husks, which may make ears less marketable. Consider using chlorothalonil or mancozeb (7 day schedule), or Tilt (7-14 day schedule) if rust is found in the seedling or whorl stages.

Pumpkins

As vines run, check plantings for the presence of **powdery mildew (PM)**. Look for powdery lesions on either surface of older leaves. A fungicide schedule may be initiated after 1 or more lesion is found per 50 older leaves. The recommended fungicide program is for chlorothalonil +Nova to be alternated with a strobilurin

SEE IPM ON PAGE 5

type fungicide at 7-10 day intervals. It is important to remember that Quadris (a strobilurin type) is effective on PM, but is highly phytotoxic to some apple types. For this reason, Flint is a good substitute if apples are to be sprayed with the same apparatus used for spraying pumpkins and winter squash.

As yet, cucurbit **downy mildew (DM)** has not been reported in New Jersey. The most recent report from NC State University's Cucurbit Downy Mildew Forecast System <http://www.ces.ncsu.edu/depts/pp/cucurbit/> does not place New Jersey at risk for infection. This report predates last week's weather system on the east coast, however. Given the southerly winds accompanied by frequent, heavy rains, it is wise to check all cucurbit fields regularly for the presence of DM. Look for diffuse yellow blotches on the upper surface of leaves with dark, felt-like sporulation on the lower surface. The sporulation frequently occurs along the leaf veins. If this disease is found in any field, immediately treat all cucurbit crops with fungicides on a 7-day protectant schedule, and report the occurrence to your county agricultural agent. Consult the *2003 Commercial Vegetable Production Recommendations* for spray materials.

Tomatoes

Maintain regular fungicide applications for **foliar diseases** on tomatoes, and monitor fields for aphid buildup. Often, the first sign of significant **aphid** populations is cast skins on leaves below the colonies. If this condition exists in the field, and fruit are sizing up, consider treating. Aphid populations that are present prior to fruit enlargement are often controlled adequately by natural predators and parasites.

Tomato hornworm (THW) feeding is increasing in some tomato plantings throughout the state. This pest will often strip all the leaflets from a stem prior to feeding on green fruit. Hornworms can become an economic problem, particularly on smaller plantings. Consider treating if recent fruit feeding is found at more than one site in the field. Extensive defoliation in the field may warrant a treatment as well. Another foliar pest of tomatoes that is now active is the **cabbage looper (CL)**. CL feeding looks like that caused by smaller THW, but is confined to the foliage. CL is rarely an economic problem in New Jersey. Consult the *2003 Commercial Vegetable Production Recommendations* for spray materials.

This is the time of the season when **stinkbug** injury generally begins to increase significantly in tomato plantings. Stinkbug pressure in tomatoes tends to be heavier during dry seasons, and thus far, our season has not been too droughty. Still, some adults in the *Euschistus* genus (larger, brown stinkbugs) have been captured recently in light and pheromone traps throughout the state. The adults will move into tomato plantings when surrounding host vegetation is too dry or is mowed. Adults, and emerging nymphs will feed on green and

ripening fruit, causing the large, yellow "cloudy-spot" injury. If this feeding is found to be increasing in samples, consider protectant sprays for stinkbug. Consult the *2003 Commercial Vegetable Production Recommendations* for spray materials.

Bacterial canker has appeared in several northern NJ tomato plantings. This disease is characterized by marginal necrosis on infected leaves, followed by stem lesions and the "birds-eye spot" or white-rimmed blister on the surface of affected fruit. Recent hail events over the past few days will dramatically increase the incidence of bacterial infections in affected fields. As with all bacterial infections, avoid working in fields when the plants are wet. Surface sterilize pruning and tying tools between rows, and always work in infected plantings last. Copper with mancozeb may help minimize impact, although copper sprays can cause spotting on fruit. Actigard at the lowest recommended rate may also help. Actigard should be used weekly for a total of 6 applications.

Snap beans

ECB is again a significant threat to snap beans in parts of New Jersey. Areas shaded in black on the ECB map represent adult populations capable of considerable damage to developing pods. In those areas, beans should be treated in the bloom and pin stages. Weekly protectant sprays should continue on developing pods as long as local ECB adult catches remain above 5 per night. Continue to monitor for **potato leaf hopper (PLH)** in beans. This pest is capable of severely stunting beans, and reducing yield. As populations build up in fields, and PLH reproduces in the crop, chlorosis and deformation of leaves may become apparent. When these symptoms of infestation appear, damage to the crop has already occurred. Insecticide applications directed at ECB often control PLH as well. For this reason, it is important to check regularly for PLH. Consider treating if adults and nymphs exceed 100 per 20 sweeps prior to bloom, or 250 per 20 sweeps at bloom, or 250+ during pod development. If a sweep net is not available, consider treating if nymphs are found in random samples covering all areas of the field.

Cole crops

Imported cabbageworm (ICW), diamondback moth larvae (DBM), and cabbage looper (CL) are all active now on cole crops. In addition, **flea beetle** continues to be a problem on some plantings. Check plantings at least once a week for the presence of the above pests. Consider treating if greater than 20% of plants are infested prior to head formation or if greater than 5% are infested when heads are present. For collards, kale, mustard and other leafy cole crops, consider treating when 10% or more plants are infested with any larvae. Flea beetle infestations should be treated when the pest is present on more than half the plants in the sample and damage is occurring.

SEE COLE CROPS ON PAGE 6

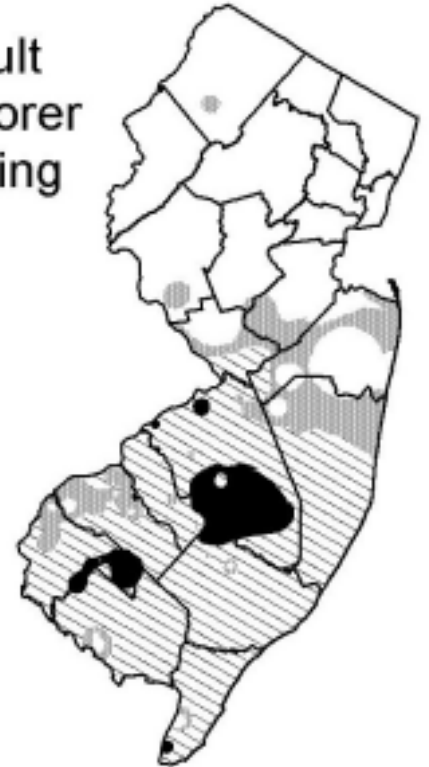
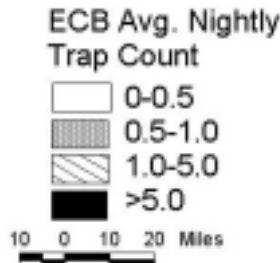
COLE CROPS FROM PAGE 5

Garden State Pest Management reports recent **alternaria** infections on cabbage in Ocean County. This disease is a threat to maturing cole crops now, and will remain so for the rest of the season. Look for necrotic lesions on older tissue. The lesions often have concentric rings of within the borders. At the first sign of disease, begin a 7-10 day fungicide program. Consult the *2003 Commercial Vegetable Production Recommendations* for effective spray materials.

Peppers

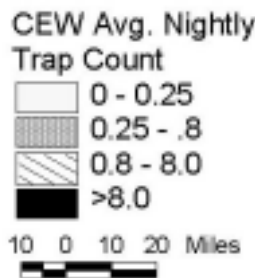
In areas where **ECB** activity is increasing, consider a weekly protectant insecticide schedule to prevent fruit injury. On the ECB map, cross-hatched and dark portions (shaded green and red on the web version) represent areas where ECB activity is a threat to pepper fruit. As eggs hatch, larvae will tunnel into the fruit around the cap. As the larvae feed in the fruit, bacteria enter and can result in a high incidence of **soft rot**. When scouting, look at two leaves and fruit on five consecutive plants in ten random locations throughout the planting. Consider treating for ECB if more than one eggmass is found in the field. Consider preventive treatments if fruit are present, and local trap catches are greater than one moth per night on average. Consult the *2003 Commercial Vegetable Production Recommendations* for spray materials.

Distribution of Adult European Corn Borer for the Week Ending July 30, 2003



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 July 30, 2003



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

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged near normal. Extremes were 91 degrees at several locations, and 52 degrees at Charlotteburg on the 26th. Weekly rainfall averaged 3.23 inches north, 1.72 inches central, and 0.66 inches south. The heaviest 24 hour total reported was 2.20 inches at Cape May Courthouse on the 21st to 22nd. Estimated soil moisture, in percent of field capacity, this past week averaged 94 percent north, 83 percent central and 51 percent south. Four inch soil temperatures averaged 74 degrees north, 76 degrees central and 76 degrees south.

Weather Summary for the Week Ending 8 am Monday 7/28/03

WEATHER STATIONS	R A I N F A L L			TEMPERATURE				GDD BASE50		MON
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
BELVIDERE BRIDGE	2.73	25.64	6.49	90	59	74.	0	1549	67	81
CANOE BROOK	1.90	25.65	5.41	91	60	77.	2	1605	133	84
CHARLOTTEBURG	2.51	26.53	6.13	87	52	71.	-2	1186	65	88
FLEMINGTON	5.93	27.63	8.04	89	59	75.	1	1503	-17	91
LONG VALLEY	3.90	23.16	2.19	82	58	71.	-2	1131	-168	91
NEWTON	2.43	22.74	4.05	87	59	73.	-1	1383	52	90
FREEHOLD	1.36	21.94	2.94	91	62	78.	2	1650	17	74
LONG BRANCH	1.63	23.69	4.81	89	65	75.	0	1503	-52	64
NEW BRUNSWICK	3.25	25.37	6.43	91	62	77.	1	1601	-120	90
TOMS RIVER	.57	22.28	2.83	89	63	77.	2	1619	57	55
TRENTON	1.78	21.37	3.26	89	62	77.	0	1577	-212	72
CAPE MAY COURT HOUSE	.15	18.81	2.03	89	65	76.	-1	1574	-90	33
DOWNSTOWN	.68	21.50	3.81	89	64	77.	0	1673	-128	48
GLASSBORO	1.41	22.55	3.87	90	66	77.	0	1789	12	65
HAMMONTON	.47	18.97	.26	90	65	78.	1	1754	-21	35
POMONA	.24	19.90	3.06	91	64	78.	2	1625	-29	33
SEABROOK	.99	22.71	5.60	89	66	79.	2	1842	34	53
ATLANTIC CITY MARINA	MISSING									
SOUTH HARRISON	1.07	21.68	2.78	89	65	78	NA	1773	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
Last Week	233 (Ending 7/21/03)									
This Week	263 (Ending 7/28/03)									

FIRST CLASS
POSTAGE PAID
PERMIT #576
MILLTOWN, NJ 08850

Rutgers Cooperative Extension - NJAES
U.S. DEPARTMENT OF AGRICULTURE
Rutgers - The State University of New Jersey
Plant & Pest Advisory
18 College Farm Road
Cook College
New Brunswick, N.J. 08901-8551

PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION CONTRIBUTORS

Rutgers Cooperative Extension 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

Rutgers Cooperative Extension County Agricultural Agents

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

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

Cape May, Russell Blair (609-465-5115)

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

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

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

Mercer, Daniel Kluchinski (609-989-6830)

Middlesex, William T. Hlubik (732-745-3443)

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

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

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, IPM Program Associate

NJAES Sustainable Agriculture Coordinator

Olga Wickerhauser

Newsletter Production

Jack Rabin, Associate Director for Farm Services, NJAES

Cindy Rovins, Crop Management Communications Editor

Rutgers Cooperative Extension (RCE) provides information and educational services to all people without regard to sex, race, color, national origin, disability, or age. RCE is an Equal Opportunity Employer.

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.

Reproduction of Articles: RCE invites reproduction of individual articles, source cited with complete article name, author name, followed by Rutgers Cooperative Extension, Plant & Pest Advisory Newsletter.

For back issues, visit our web site at: www.rce.rutgers.edu/pubs/plantandpestadvisory.