

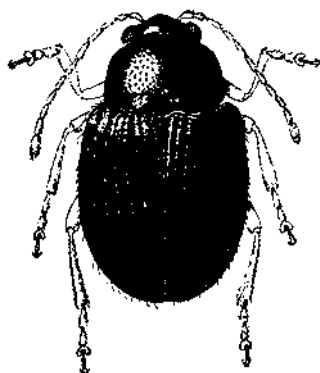
# PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

MAY 12, 2004

## IPM Update

*Kristian Holmstrom, Program Associate in Vegetable IPM*



### Sweet Corn

Recent warm weather has been ideal for the germination and growth of sweet corn. It has also been conducive to **flea beetle** infestations. The corn flea beetle is a potential problem because it is capable of vectoring **Stewart's wilt**, a bacterial infection of early season sweet corn. However, an ample selection of varieties with resistance to this disease, the use of in-furrow systemic insecticides, and seed treated by the producer with Gaucho (imidacloprid) result in fewer cases of significant Stewart's wilt infections. In cases where none of these control measures are in place, it is important to scout for flea beetles and treat if necessary to minimize disease transmission in the first few plantings of the season. Walk the field and look at 10 consecutive seedlings each in 10 random locations. Count the number of flea beetles at each site. If there are greater than 6 flea beetles on 100 plants, and none of the above controls have been taken, then consider an insecticide application to minimize Stewart's wilt. As the season progresses, consistently warmer weather causes the plants to grow quickly, reducing the possibility that Stewart's wilt will overtake the vascular system of the seedlings.

There have been a few sporadic catches of **European corn borer (ECB)** in Hunterdon and southern Warren County blacklight traps this past week. This pest is not a threat to sweet corn at this time, as the earliest plantings are still in the seedling stage. However, these catches represent the beginning of the first adult generation of the season. As the first plantings enter the whorl stage, ECB will deposit egg masses on the leaves. "Shot-hole" type feeding will soon follow. Adult population maps will be published in this newsletter and at the Pest Management Office website: <http://www.pestmanagement.rutgers.edu/IPM/Vegetable/Pest%20Maps/maparchive.htm> as soon as significant ECB catches occur.

### Cole Crops

The first plantings of cabbage, broccoli, cauliflower, collards and kale are now targets for egg laying by **imported cabbage butterfly (ICW)**. Recently scouted plantings in Hunterdon County had multiple eggs per transplant, and lots of adult activity in and around the fields. In addition, a low level infestation of **diamondback moth larvae (DBM)** was discovered in the same planting. Within 1-2 weeks, these early plantings should require control as eggs hatch, and larvae begin feeding on foliage. To assess infestation levels, check 5 consecutive plants each

SEE IPM ON PAGE 2

## INSIDE

IPM Update .....	1
Finding Pesticide Labels...Fast ..	2
Pest Notes .....	3
Vegetable Weed Control .....	3
Rutgers EcoComplex Hosts Northeastern Branch Agronomy- Soils Meeting .....	4
Netting to Protect Small Trees and Shrub from Cicadas .....	5
Weekly Weather Summary .....	6

# Finding Pesticide Labels...Fast

Scott Guiser, Extension Educator,  
Penn State Cooperative Extension

*Reprinted from The Vegetable and Small Fruit Gazette, Vol. 8, No. 4- April 2004, Horticulture Department, The Pennsylvania State University.*

Heard about a new insecticide, fungicide or herbicide and want to look over a label ... fast? Give [cdms.net](http://cdms.net) a try. This site lists more than 1600 pesticide labels from more than 90 manufacturers. Just select US-Ag Crop from the home page and then type in the brand name of the product that you're interested in. It will take you quickly to options where you can print out labels and MSDS sheets along with a link to the manufacturer. All of the supplemental labels are also available.

Say you heard that Stinger will control Canada thistle in strawberries and want to know the rates, timing and whether it's OK to use in Pennsylvania. Yep, the supplemental label with complete directions is there. What's more, as you browse through the listing, you see that Stinger also has a supplemental label in cole crops, spinach and peaches!

How about that new fungicide, Pristine, mentioned at winter meetings? Yep it's there. And in addition to the label, the manufacturer has posted additional technical information.

One shortfall of the site is that you cannot search by common chemical name. So if you want to see all of the brands names for chlorothalonil (Bravo) you're out of luck. If the common name is in the brand name, as in 2,4-D or sulfur, you'll hit pay dirt. Best of all it's free. Bookmark it.

*Submitted by Peter Nitzsche, Morris County Agricultural Agent. □*

## IPM FROM PAGE 1

in 10 random locations in the planting. Consider a foliar insecticide application if greater than 20% of cabbage, broccoli or cauliflower plants are infested prior to heading, or greater than 5% are infested and heads are present. For collards, kale and other leafy cole crops, consider treating when 12% or more plants are infested.

While scouting for caterpillar pests, keep track of **flea beetle** activity in the field. The crucifer flea beetle is capable of causing significant injury to emerging seedlings or newly transplanted cole crops. The beetles will feed heavily on warm, dry days, and can cause foliar injury and stress to the young plants. Consider treating for flea beetle when 50% or more plants are infested and injury is occurring.

## High Tunnel Vegetables

In the northern counties, high tunnels have been planted with tomatoes and peppers. Because these crops are not exposed to rains, they do not suffer from many of the fungal infections common to the field grown plantings. The warm temperatures and dry conditions are, however, favorable for **aphid** and **two-spotted spider mite (TSSM)** infestations. Aphids are often controlled naturally by the same complex of predators (syrphid fly, lacewing and ladybird beetle larvae) and parasitoids (*Aphidius* wasps) that attack them in the field. These predators and parasitoids have access to the aphids when the sides are rolled up on the tunnels. If the aphid population is heavy prior to fruit enlargement, often control occurs naturally. If, however, aphids become heavy as green fruit are enlarging, the droppings from the aphids may be deposited on the fruit within the canopy. The droppings are sticky and contain sugars that serve as a growing medium for sooty mold. If the latter situation occurs, chemical control may be warranted.

Two-spotted spider mites (TSSM) are a common pest in the tunnels and do not have naturally occurring predators that are as effective as those that attack aphids. TSSM have been found in a Warren County high tunnel this week. Regular scouting is extremely important to prevent TSSM from threatening the crops in the tunnels. It is advisable to treat TSSM at the very first signs of infestation so that the population does not become uncontrollably high. Look for the characteristic whitish pin spots or "mite-stipple" on the upper leaf surface of leaves. This is an indication that mites are feeding underneath. Often the first activity occurs on leaves that are cupped downward, as is common on tomato plants when temperatures are high. Outer rows in tunnels are often infested first. Scout tunnels weekly, and apply control when activity is first noticed. Complete control of TSSM is rarely achieved. Adequate suppression of TSSM may be obtained with miticides or targeted releases of predatory mites in conjunction with regular scouting. It is critical that the tunnels be scouted at least weekly for the presence of TSSM to insure economic control.

Recent warm weather has allowed the high tunnels to remain in the open position. This cools the house, and permits air flow sufficient to allow the foliage to dry. If cooler weather returns, it is still important to raise the sides of the tunnels as much as possible. Reducing humidity and allowing foliage to dry will prevent **leaf mold** (*Fulvia*) from becoming a problem in the tunnel. Leaf mold begins as a yellowish lesion on the upper leaf surface, with felt-like olive colored fungal growth on the lower surface. As the infection progresses, entire leaves will wilt. Improving air movement often corrects the problem. □

## Pest Notes

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

**C**olorado potato beetle adults are present in high numbers on potato plants in research plots at the Rutgers Agricultural Research and Extension Center, Upper Deerfield. Although no egg masses have been found to date, adults are mating and will be depositing eggs within the week if the weather stays hot and humid, as predicted.

For growers of eggplant, tomato and potato that did not use a preplant insecticide or seed treatment (insecticides such as Admire 2FS, Platinum 2SC, Gaucho ST, and others), monitor fields for adults. In potatoes, a general guideline is to treat if more than 50 adults are counted per 50 stems (or 1 adult per stem on average over the field). If treatment is necessary, a variety of different class of insecticides is available, including the following:

---

Actara WDG – neonicotinoid class of insecticide.

Agri-Mek – macrocyclic lactone, a natural product of fermentation.

Assail WP – a neonicotinoid class of insecticide.

Avaunt 30WDG plus PBO 8E – a new class of insecticide that can be tank-mixed with the synergist piperonyl butoxide.

azadirachtin – a limonoid insect growth regulator derived from the neem tree, *Azadirachta indica*. (Azatin, Ecozin, Neemix). Best for small larvae.

Bt – a natural bacteria, *Bacillus thuringiensis*. (Novador, Raven). For larvae only.

Cryolite – a natural mineral, sodium fluoaluminate that can also be made synthetically.

Imidan – organic phosphate class of insecticide.

Provado 1.6F – a neonicotinoid class of insecticide.

SpinTor 2SC – a naturally occurring spinosyn class of insecticides, which is derived from fermentation of *sacharopolyspora spinosa*, an actinomycete.

Thionex 3EC – an organo-chlorine class of insecticides (previously called Thiodan).

Vydate L – a carbamate class of insecticide.

---

To avoid resistance to the neonicotinoid class of insecticides (Admire, Actara, Assail, Gaucho, Platinum, Provado) it is strongly recommended that growers **do not** use any of these products (neonicotinoid class of insecticides) after mid-June, when second generation Colorado potato beetles are present. Research trials during the 1980's and 1990's have shown that the development of resistance by the potato beetle to an insecticide significantly increases when both beetle generations are exposed to high levels of that insecticide. And as a general rule, trials have shown that the potato beetle also

**SEE PESTS ON PAGE 6**

## Vegetable Weed Control

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

✓ **Peppers:** Cold weather earlier in the season may result in abnormal growth of peppers during the next few weeks. Low temperatures can injure tiny leaves in the growing points. When these leaves grow out in a few weeks, they may exhibit a variety of epinastic responses that resemble virus or 2,4-D drift injury. Leaves may be crinkled, stretched, the midvein may be shortened, and/or the leaves may appear otherwise abnormal. The response can be very variable. Night temperatures after transplanting need not drop to freezing to cause this injury. Night temperatures in the upper thirties and even forties can affect “soft” plants just out of the greenhouse. The plant will outgrow the problem in time.

Dual Magnum has a special state label for use to control weeds in bell peppers. The label is valid only in New Jersey. The manufacturer, Novartis, requires growers to sign an indemnification agreement that must be notarized and recorded by the Vegetable Growers' Association of New Jersey for the label to be valid. Read the agreement thoroughly and fill out completely before mailing to the VGANJ for validation. Copies of the indemnification agreement are available from VGANJ or your county agent.

Use Dual Magnum to control **annual grasses** and certain **broadleaf weeds**. Weeds that Dual Magnum suppresses or controls that could not be controlled with other labeled herbicides include **yellow nutsedge**, **galinsoga**, and **nightshade**.

Apply Dual Magnum at 0.67 to 1.0 pints per acre (0.6 to 1.0 lb ai/a) pre transplant or post transplant as a basal-directed spray. Read and follow all label instructions and restrictions.

- Do **not** incorporate pre transplant applications.
- Do **not** spray posttransplant applications “over the top” of peppers.
- Do **not** apply within 60 days of harvest.
- The label, validated through the VGANJ, is effective for this growing season, and expires at the end of the year.

✓ **Cabbage:** Dual Magnum 8E has received special state labels for use to control weeds in cabbage. The manufacturer, Novartis, requires growers to sign an indemnification agreement that must be notarized and recorded by the Vegetable Growers' Association of New Jersey for the label to be valid. Read the agreement thoroughly and fill out completely before mailing to the VGANJ for validation. Copies of the indemnification agreement are available from VGANJ or your county agent.

Use Dual Magnum to control **annual grasses** and certain **broadleaf weeds**. Weeds that Dual suppresses or controls that could not be controlled with other labeled

**SEE WEEDS ON PAGE 6**

# Rutgers EcoComplex Hosts Northeastern Branch Agronomy-Soils Meeting along with Certified Crop Advisor Training Programs in Nutrient Management and in Turfgrass Science

Joseph Heckman, Ph.D., Specialist in Soil Science

You are invited to attend the 2004 Branch American Society Agronomy-Soil Science Society America meeting on July 11 - 14, 2004 at the Rutgers EcoComplex, Bordentown, NJ. The meeting features an optional pre-meeting tour and a Sunday evening lecture on renewable energy, followed by a reception.

The meeting also features a symposium on Monday morning, and volunteered oral and poster presentations on Tuesday and Wednesday. Each afternoon is a choice of tours highlighting New Jersey crops and soils.

On Wednesday, there will be special sessions for certified professionals, including Certified Crop Advisers on nutrient management and turf grass science. Continuing Education Units for Nutrient Management and Soil and Water Management have been submitted.

## Renewable Energy Symposium

The "Harvesting Renewable Energy from Agriculture" symposium will feature several guest lectures on various aspects of renewable energy. Topics will include Producing Methane and Energy from Manure, On-Farm Wind Energy, Soil Electric Energy, and Energy Crops in the form of Ethanol, Bio-diesel, and Biomass.

Rounding out the event is Paper/Poster Sessions, Graduate Student Paper Competition and a Branch Directors Business Meeting.

## New Jersey Area Tours

Participants at this year's meeting have a choice of several tours including field research projects related to vegetables, tree fruit, and field crops; soil conservation, nutrient management, and cultural practices related to production of nursery crops; Rutgers Cranberry and Blueberry Research Station; soil pits and road cuts to allow participants the opportunity to examine several soils; Rutgers Adelpia Research Farm Tour for turfgrass breeding and management, soil fertility research plots, and underutilized perennial food crops. Visit the tour picture gallery on the web site: [www.ecocomplex.rutgers.edu/nebasa/](http://www.ecocomplex.rutgers.edu/nebasa/).

For registration and accommodations information, go to the meeting website: [www.ecocomplex.rutgers.edu/nebasa/](http://www.ecocomplex.rutgers.edu/nebasa/). Registration can be done online. To receive a registration form by fax or mail, contact Joseph Heckman at Cook College at 732-932-9711, ext. 119.

## Nutrient Management - Certified Crop Advisor Training Program July 14, 2004

Sponsored by Northeast Branch, American Society of Agronomy & Northeast Branch, Soil Science Society of America  
CCA - CEU credits: NM = 2.5; SW = 1.0

- |               |                                                                                                                                                                                                 |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12:25 PM      | <i>Welcome</i> – Dr. Stephanie Murphy, Director of Rutgers Soil Test Laboratory                                                                                                                 |
| 12:30-1:00 PM | <i>Water and Nutrient Management for Nursery Operations</i><br>Dr. Gladis Zinati, Extension Specialist in Nursery Management<br>Department of Plant Biology and Pathology, Rutgers University   |
| 1:00-1:30 PM  | <i>The Need for In-season Application of Nitrogen</i><br>Dr. Tom Morris, Extension Agronomist<br>Department of Plant Science, University of Connecticut                                         |
| 1:30-2:00 PM  | <i>Optimum Nitrogen Fertilization of Cool-season Grasses</i><br>Dr. Doug Beegle, Professor of Agronomy, Department of Crop and Soil Sciences, Pennsylvania State University                     |
| 2:00-2:30 PM  | Discussion and Coffee Break                                                                                                                                                                     |
| 2:30-3:00 PM  | <i>Phosphorus Management for Dairy Farms</i><br>Dr. Quirine Ketterings, Extension Soil Scientist, Department of Crop and Soil Sciences, Cornell University                                      |
| 3:00-3:30 PM  | <i>Manure Management</i><br>Dr. Bill Jokela, Professor of Agronomy<br>Department of Plant and Soil Science, University of Vermont                                                               |
| 3:30-4:00 PM  | <i>Climate Change Impacts on Soil Fertility and Soil Quality</i><br>Dr. John Jemison, Extension Soil Scientist, University of Maine                                                             |
| 4:00-4:30 PM  | <i>The Phosphorus Index for Agronomic and Environmental Nutrient Management Planning</i><br>Dr. Frank Coale, Professor of Soil Science, Department Natural Resources and Landscape Architecture |
| 4:30-5:00 PM  | Discussion and Concluding Remarks                                                                                                                                                               |

**Recent Advances in Turfgrass Science  
Certified Advisor Training Program  
July 14, 2004**

A Turfgrass Management Workshop Sponsored by  
Northeast Branch - American Society of Agronomy &  
Northeast Branch - Soil Science Society of America &  
Rutgers Center for Turfgrass Science  
CCA – CEU credits: CM = 1.0; SW = 0.5; PM = 1.5

- 12:30 PM Welcome - Bruce B. Clarke, Director, Rutgers Center for Turfgrass Science
- 12:35-1:00 PM *Current perspectives in turfgrass management*  
Dr. James Murphy, Associate Extension Specialist in Turfgrass Management, Department of Plant Biology and Pathology, Rutgers University
- 1:00-1:25 PM *Soil fertility and disease suppression*  
Dr. Joseph Heckman, Extension Specialist in Soil Fertility, Department of Plant Biology and Pathology, Rutgers University
- 1:25–1:50 PM *New and emerging diseases of cool- and warm-season turf*  
Dr. Bruce Clarke, Extension Specialist in Turfgrass Pathology, Department of Plant Biology and Pathology, Rutgers University
- 1:50 –2:15 PM *Controlling Poa annua and Poa trivialis with Bispyribac: A new era in golf and sports turf weed control*  
Dr. Steve Hart, Assistant Extension Specialist in Turf and Ornamental Weed Science, Department of Plant Biology and Pathology, Rutgers University
- 2:15–2:45 PM Discussion and Coffee Break
- 2:45-3:10 PM *New developments in the management of turfgrass insects*  
Dr. Albrecht Koppenhofer, Associate Extension Specialist in Turfgrass Entomology, Department of Entomology, Rutgers University
- 3:10-3:35 PM *Breeding turfgrasses for pest and stress tolerance*  
Dr. Bill Meyer, Professor Turfgrass Breeding Department of Plant Biology and Pathology, Rutgers University
- 3:35–4:05 PM *Water conservation and irrigation management in cool-season turf*  
Dr. Bingru Huang, Associate Professor in Turfgrass Physiology, Department of Plant Biology and Pathology, Rutgers University
- 4:05-4:30 PM Discussion and Concluding Remarks

**Netting to Protect  
Small Trees and Shrub  
from Cicadas**

A source for tubular netting that can be used to cover small trees and shrubs is available on the Rutgers Cooperative Extension web site at:

<http://www.pestmanagement.rutgers.edu/NJinPAS/postings/netall.pdf>

*Submitted by Peter Shearer,  
Specialist in Entomology. □*

# Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged below normal, averaging 55 degrees north, 57 degrees central and 59 degrees south. Extremes were 85 degrees at Toms River on the 8th, and 33 degrees at Charlotteburg on the 5th. Weekly rainfall averaged 1.07 inches north, 0.97 inches central, and 0.68 inches south. The heaviest 24 hour total reported was 0.72 inches at Trenton on the 3rd to 4th. Estimated soil moisture in percent of field capacity this past week averaged 98 percent north, 94 percent central and 78 percent south. Four inch soil temperatures averaged 57 degrees north, 58 degrees central and 59 degrees south.

Weather Summary for the Week Ending 8 am Monday 5/10/ 4										
WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
BELVIDERE BRIDGE	1.21	8.60	-.35	82	36	57.	-1	221	121	95
CANOE BROOK	.91	10.10	.24	81	37	57.	0	229	145	95
CHARLOTTEBURG	1.21	9.30	-.41	79	33	55.	0	204	164	96
FLEMINGTON	.92	10.72	1.31	79	38	56.	-2	223	131	95
LONG VALLEY	.94	8.77	-1.30	78	36	53.	-3	176	118	94
NEWTON	1.22	8.25	-.40	76	37	53.	-3	179	122	99
FREEHOLD	.78	11.07	1.73	82	38	57.	-2	278	151	92
LONG BRANCH	.71	11.03	1.38	82	41	55.	-3	179	75	86
NEW BRUNSWICK	1.25	9.57	.50	81	38	57.	-3	243	93	96
TOMS RIVER	.81	11.29	1.90	85	39	58.	-1	286	174	83
TRENTON	1.30	10.39	1.93	81	39	57.	-3	259	87	90
CAPE MAY COURT HOUSE	.34	8.97	.76	78	40	57.	-2	237	88	52
DOWNSTOWN	.70	9.23	.78	81	40	58.	-3	314	132	74
GLASSBORO	1.33	12.44	3.50	81	45	59.	-1	328	156	99
HAMMONTON	.55	9.80	1.11	84	41	59.	-1	330	164	62
POMONA	.35	8.00	-.23	84	39	59.	0	281	151	62
SEABROOK	.83	10.21	2.59	82	44	60.	-1	361	176	90
SOUTH HARRISON	1.00	11.79	3.18	81	40	59	NA	342	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW Last Week 153 (Ending 5/3/04) This Week 129 (Ending 5/10/04)										

### WEEDS FROM PAGE 3

herbicides include **yellow nutsedge**, **galinsoga**, and **nightshade**.

In transplanted cabbage, apply Dual at 0.5 to 1.33 pints per acre (0.48 to 1.27 lb ai/a) pre transplant or post transplant within 48 hours of planting. Do **not** incorporate pre transplant applications. Use Dual Magnum with caution. Some temporary stunting may occur that could delay maturity.

In direct seeded cabbage, do **not** apply Dual at planting. Use other labeled herbicides to control weeds as the cabbage emerges. Apply Dual at 0.5 to 1.33 pints per acre (0.48 to 1.27 lb ai/a) after the cabbage has developed 3 to 4 leaves to control weeds for the remainder of the season. Control emerged weeds by cultivation and hoeing or with post-emergence herbicides before applying Dual Magnum. Use Dual Magnum with caution. Some temporary stunting may occur that could delay maturity.

The label, validated through the VGANJ, is effective for this growing season, and expires at the end of the year.

✓ **Potato, Sweet:** Command 4EC has received a 24C **Special Local Needs** label for weed control in sweet potatoes. Apply 0.75 to 1.5 pints per acre (0.375 to .75 lb ai/a) and incorporate immediately to prevent vapor drift from damaging adjacent vegetation. Command will suppress or control many **annual grass** and **broadleaf weeds**, but will not control **pigweed**, **carpetweed** or **yellow nutsedge**.

Apply Command 4EC when the humidity is low, winds are light, and blowing in a safe direction (away from sensitive vegetation). Do **not** spray in windy weather to avoid spray drift injury, or during calm periods when the humidity is high. Incorporate before a period of calm wind and near 100% humidity occurs to reduce the risk of vapor drift. **Read and Follow all Label Warnings and Restrictions.** ☐

### PEST NOTES FROM PAGE 3

can develop cross-resistance, where exposure to one particular insecticide may cause the potato beetle to develop resistance to other insecticides belonging to that same class of insecticide chemistry.

After early June, use only insecticides that belong to non-neonicotinoid classes of insecticides. Potato growers should consider an insecticide treatment that also controls **European corn borers** (late May through early June), or **potato leafhoppers** (mid-June through July) as well as **potato beetles**. Eggplant growers should consider an insecticide treatment that also controls **flea beetles** and **spider mites**, and tomato growers should consider an insecticide that also controls **aphids**, spider mites or **worms (corn earworms)** as well as potato beetles.

In all cases, *rotate* the class of insecticide with each use to prevent or reduce the potential of development of insecticide resistance by the Colorado potato beetle. Use the labeled rate, and monitor the crop 3-6 days after application (depending on type of insecticide applied) to determine effectiveness of the material. ☐

FIRST CLASS  
POSTAGE PAID  
PERMIT #576  
MILLTOWN, NJ 08850

## 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

#### Newsletter Production

Jack Rabin, Associate Director for Farm Services, NJAES  
Cindy Rovins, Crop Management Communications Editor

For back issues, visit our web site at: [www.rce.rutgers.edu/pubs/plantandpestadvisory](http://www.rce.rutgers.edu/pubs/plantandpestadvisory).

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

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.