

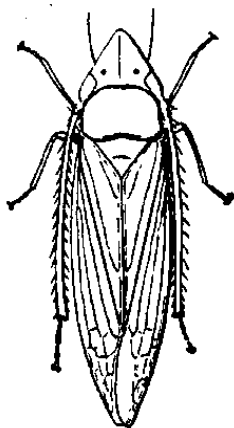
# PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

JUNE 2, 1999

## Pest Notes

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



## INSIDE

Pest Notes.....	1
New Potato Late Blight	
Fungicide Granted to NJ.....	2
Veg Crops Diseases .....	2
Strawberry Weed Control .....	3
Extension for Film Collection	
Program .....	3
Weekly Weather Summary .....	3
IPM Update .....	4
Nutrient Management/Water	
Issue Update .....	4
Vegetable Weed Control .....	6

✓ **General:** Confirm 2F has received a federal registration and New Jersey state approval for use on cole crops, leafy vegetables, and fruiting vegetables for control of various **caterpillar** ("worm") pests. This material is highly effective against beet **armyworms**, **cabbage loopers**, **fall armyworms**, **imported cabbageworms**, and **yellowstriped cabbageworms**. Crops include broccoli, Chinese broccoli, cabbage, bok choy, Chinese mustards, collards, kale, kohlrabi, mustards, arugula, celery, dandelion, endive, parsley, lettuce, fennel, spinach, eggplant, pepper and tomato. Rates range from 6 to 16 fl oz/A, depending on crop and pest. Consult label for all rates and restrictions.

✓ **Eggplant:** After the hot Memorial Day weekend, monitor fields closely for the beginning of **spider mite** population buildup. **Mites** have been reported to be a problem in several crops from North and South Carolina to Delaware. Management of **spider mites** is much more successful if control measures are used before the population reaches a high level and plant damage is easily observed. MSR, Vendex and Vydate are labeled for **spider mite** control in eggplant.

✓ **Potato:** The numbers of **European corn borer moths** caught in the blacklight traps has rapidly increased, indicating that the first generation **European corn borer** population is active and likely ovipositing. Consult the IPM section for trap counts of **borers** near your area. Also see page 165 of the *1999 Commercial Vegetable Production Recommendations* for suggested spray materials and timing of applications for **corn borer** control.

✓ Monitor fields closely for **potato leafhopper** population buildup. **Leafhoppers** are found in low numbers in potato plants (both by direct counts and by using a sweep net). Many materials are labeled and effective, but control is more difficult if the population is high. The threshold for **leafhoppers** is thus low, and treatments are suggested if more than 1 **leafhopper** adult per sweep or 1 nymph per 10 leaves is recorded.

✓ **Tomato:** Adult **Colorado potato beetles** and egg masses are found in moderate numbers in tomato fields throughout southern New Jersey. Data from various trials throughout the northeast show that AgriMek is effective against both **Colorado potato beetle** and **spider mites**. Growers who did not use Admire FS at transplant can still effectively control **potato beetles** with many different materials, including AgriMek, cryolite (Kryocide, Prokil Cyrolite), Raven, SpinTor, Thiodan or Vydate. □

## New Potato Late Blight Fungicide Granted to NJ

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

The U.S. EPA has granted a specific exemption under the provisions of section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, to the New Jersey Department of Environmental Protection for the use of Tattoo C to control **late blight** in potatoes. The specific exemption is subject to the following conditions and restrictions:

1. Tattoo C may be applied by ground or air at a maximum rate of 2.3 pints/A.
2. A maximum of 11.5 pints/A may be applied/season.
3. A 14 day PHI (pre harvest interval) will be observed.
4. If the maximum applications of Tattoo C are made/season, a maximum of 4.5 pounds of chlorothalonil will be used.
5. Tattoo C should only be used in situations when the registered fungicides may not provide suitable disease control (e.g., when plants are actively growing and the threat of moderate to severe disease pressure exists or infections are known or suspected to have occurred).
6. Prior to use in the following counties, the regional office of the U.S. Fish and Wildlife Service must be contacted in order to assess the potential exposure to the indicated species:
  - ❖ Atlantic, Burlington, Cumberland, Gloucester, Middlesex, Monmouth, Morris, Ocean and Salem: Swamp pink
  - Atlantic, Burlington, Monmouth and Ocean: Knieskern's Beaked Rush
  - ❖ Burlington: American Chaffseed
  - ❖ Burlington and Cumberland: Sensitive Joint-Vetch
  - ❖ Sussex: Small Whorled Pogonia
7. The following rotational crop guidelines must be followed in fields where Tattoo C is used:
  - ❖ Any time: potatoes and tomatoes
  - ❖ 30 days: winter wheat
  - ❖ 4 months: all other crops

## Vegetable Crops Diseases

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

✓ **Asparagus:** Only cut production beds for a total of 8 weeks to reduce cutting pressure stress on the planting. The stress from over-cutting (cutting longer than 8 weeks) will result in an increased incidence of **Fusarium root & crown rot**.

✓ **Bean (snap & lima):** To reduce incidence of **root rots** be sure to completely plow down previous crop debris, and have as clean a seed bed as possible. Apply Ridomil Gold 4E in a 7-inch band over the row after seeding, or apply Ridomil Gold PC 11G as an in-furrow treatment at seeding. Ridomil Gold PC will not only control **root rot** caused by **Pythium spp.**, but also, **root rots** caused by **Rhizoctonia** as well.

✓ **Cucumber:** For broad spectrum disease control apply Bravo + Benlate or Topsin M as a foliar spray once the vines begin to run, and repeat every 7-10 days.

✓ **Eggplant:** Maintain applications of mefenoxam (Ridomil Gold or Ultra Flourish) shortly after transplanting, 21 and 42 days later for control of **Phytophthora blight**.

✓ **Leeks:** **Pythium root rot** is causing a number of fields to have short, stunted plants present. Improve the drainage in the field to reduce high soil moisture conditions.

✓ **Muskmelons:** Once vines begin to run, apply Bravo or mancozeb as a foliar spray to control **Alternaria leaf blight**, and repeat every 7-10 days. For fields with **angular leaf spot**, apply a copper fungicide + the full labeled rate of mancozeb.

✓ **Parsley:** **Damping-off** caused by **Pythium** is resulting in reduced stands. Be sure to apply Ridomil Gold 4E just prior to emergence for control. **Bacterial leaf spot** is present in some fields at this time also. Infected leaves have numerous, brown, small lesions present. Avoid working in fields while the foliage is wet, and apply a copper fungicide as a foliar spray for control.

✓ **Pepper:** **Phytophthora blight** is present in some fields that received excessive rainfalls recently. Infected plants should be removed from the field to prevent spread of the aerial phase of the disease. Apply mefenoxam (Ridomil Gold or Ultra Flourish) shortly after transplanting, 21 and 42 days later to assist in control.

✓ **Potato (white):** Tattoo C recently received a specific exemption for use to control **late blight**. Refer to *New Late Blight Fungicide* article in this issue of the Plant & Pest Advisory for specific use pattern.

✓ **Squash (summer):** Maintain applications of Ridomil Gold/Bravo as a foliar spray every 14 days for control of **Phytophthora blight**.

✓ **Tomato:** On recently transplanted fields, apply a copper fungicide + mancozeb as a foliar spray, and repeat in 7 days for control of **bacterial diseases**. Once fields have crown fruit 1/3 their final size, apply Bravo as a foliar spray, and then apply Quadris 7-10 days later. Repeat this schedule for the rest of the season for control of **foliar and fruit diseases**. □

## Strawberry Weed Control

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

A **Special Local Needs** label for Sinbar use on established strawberries is available in New Jersey and certain other states. The rates have been reduced compared to the old label, and are now in line with Rutgers' original recommendations. The label limits application to plants established for a minimum of 6 months, and limits the total rate per acre to 8 ounces per year.

Use 2 to 6 ounces per acre per application at renovation, in late fall, and/or in early spring before the berries break winter dormancy. Do *not* exceed 8 ounces per year. Consult your Cooperative Extension Office and the new product label for additional information. □

## Extension for Greenhouse & Nursery Film Collection Program

The 1999 Greenhouse and Nursery Film Collection Program was scheduled to expire on June 1, 1999. In order to accommodate growers who will not be able to remove their greenhouse or nursery film by June 1<sup>st</sup>, the NJ Department of Agriculture announced that the collection program has been extended. Film from New Jersey growers will be accepted until June 15, 1999. If you have any questions on the program, film bundling guidelines or information on the collection sites, contact Karen Kritz at (609) 984-2506. □

## Weekly Weather Summary

*Keith Arnesen, Ph.D., Agricultural Meteorologist*

Temperatures averaged near normal. Extremes were 93 degrees at Pemberton on the 31st and 40 degrees at Long Branch on the 25th. Weekly rainfall averaged 0.65 inches north, 1.26 inches central, and 0.48 inches south. The heaviest 24 hour total was 2.55 inches at Trenton on the 24th to the 25th. Estimated soil moisture, in percent of field capacity, this past week averaged 93 percent north, 83 percent central and 70 percent south. Four inch soil temperatures averaged 61 degrees north, 64 degrees central and 66 degrees south.

### Weather Summary for the Week Ending 8 am Monday 5/31/99

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.38	9.72	-1.66	89	43	62.	-2	347	13	81
CANOE BROOK	1.00	9.50	-3.08	92	47	65.	1	444	137	85
CHARLOTTEBURG	.74	11.40	-.99	88	41	59.	-2	253	42	85
FLEMINGTON	.61	7.96	-3.94	90	43	63.	-1	383	59	86
LONG VALLEY	.52	8.85	-3.98	84	44	60.	-2	283	34	84
FREEHOLD	.17	9.29	-2.59	93	47	66.	1	453	66	74
LONG BRANCH	.82	9.88	-2.38	87	40	65.	1	401	61	66
NEW BRUNSWICK	2.40	10.57	-1.14	90	47	65.	-1	425	6	85
PEMBERTON	1.05	10.71	-.58	93	44	66.	0	496	82	63
TOMS RIVER	.57	5.12	-6.72	89	46	65.	2	373	13	56
TRENTON	2.55	11.35	.60	87	44	63.	-4	357	-104	69
CAPE MAY COURT HOUSE	.16	6.85	-3.56	88	52	68.	3	464	54	41
DOWNSTOWN	1.12	10.08	-.60	89	46	66.	-1	473	-2	69
HAMMONTON	.44	8.77	-2.30	92	47	67.	1	470	22	62
POMONA	.41	9.14	-1.17	89	45	66.	1	434	49	56
SEABROOK	.61	9.84	.03	90	50	68.	1	558	78	67
ATLANTIC CITY MARINA	.12	7.43	-2.31	85	55	69.	5	482	117	37
WOODSTOWN	1.94	11.18	-0.01	92	46	67	NA	546	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
Last Week	171	(Ending 5/24/99)								
This Week	181	(Ending 5/31/99)								

## Vegetable IPM Update

Kristian Holmstrom and Sarah Walker, Program Associates in Vegetable IPM

### Peppers

Scout fields for the presence of **aphids**. Usually **aphids** are found on the undersides of the lower leaves, but in a field in Camden County **aphids** were found colonizing the newly emerging leaves within the growing tip. Another sign of **aphid** infestation is the shiny spots of honeydew on the black plastic around the bottom of the plant. Although **aphid** levels are increasing, parasitism (aphids turning into light brown mummies) was evident at levels that should control the population.

### White Potato

The first **European corn borer (ECB)** egg mass was found at the end of last week in a field in Salem County, indicating that egg laying is occurring in potatoes in the southern counties. With the warmer temperatures, the adult counts have increased above threshold levels (8-10 per night) in the southern potato area. Check all early fields for signs of **corn borer** infestation and treat if 10-25% of the stems or terminal tips have entry holes. If you are relying on the blacklight trap to time treatments, the first application should occur by the end of this week with a second treatment 7-10 days later.

Also check fields for **potato leafhopper** activity, especially those that have not been treated with Admire (imidacloprid). **Leafhopper** adults were easily found in a field in Salem, and with the hot and dry conditions the population can quickly increase. Using a sweep net, take 10 sweeps in 5 random sites in the field. The threshold level is 25 adults per 50 sweeps. Check also for **leafhopper** nymphs on 5 leaves in 10 random locations and treat if levels exceed 5 nymphs per 50 leaves. Populations can be very localized, so make sure to check all fields.

### Green Onions

Second generation **onion maggot flies** are emerging in the southern counties, indicating that control measures should be started at this time.

### Sweet Corn

**ECB** adult catches are increasing steadily throughout the state with the onset of warmer weather. Catches continue to be heaviest in the southwestern portion of the state. Adult females have been spotted flying in whorl stage corn plantings as far north as Morris County. Feeding should occur on whorl stage corn (primarily plantings started through plastic) within the next week in the northern counties. Frank Spiecker of Garden State Pest Management has encountered feeding as high as 4% of whorl stage plants infested in Burlington County. Feeding should

## Nutrient Management/ Water Issue Update

Raymond J. Samulis, Burlington County Agricultural Agent

Both County Agent Bill Bamka and I have been "preaching" the past two years about the seriousness of what is occurring with farm nutrient management and water quality issues. Many of the meetings are also attended by various special interest groups that are quite effective in convincing the groups that they are not the causes of water quality degradation and quick to point the finger at agriculture. These vocal groups are well represented with professional consultants and lawyers to present their cases. From working in agriculture for 20 years, I understand the time constraints farmers have; however, in my opinion, we are at a very critical stage with these issues. If you are still not convinced of the urgency, I would like to describe a very small part of the recently released draft of the *Maryland Nutrient Management Plan*. I would like to reiterate this is only a draft; however, I feel that it graphically portrays what is being talked about and could represent a trickle down effect to our area in the future. The agricultural areas in Maryland are highly influenced by issues regarding the Chesapeake Bay's water situation.

SEE NUTRIENT MANAGEMENT ON PAGE 5

increase quickly on corn in the southern counties. Scout 5 plants each in 10 random locations for signs of **ECB** feeding. Consider treatment when 12% or more plants are infested. The pre-tassel stage is a critical one for control of **ECB**, as well as full tassel to first silk. The highest average nightly **ECB** blacklight trap catches are:

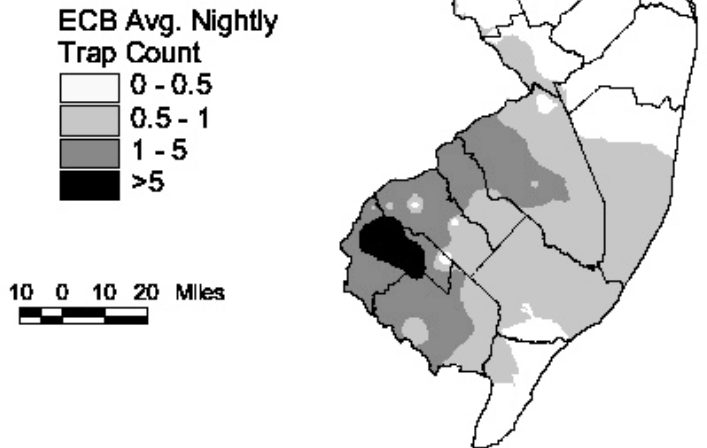
Laurel Hills	15	Shiloh	8	Medford	5
Shirley	15	Centerton	7	Indian Mills	4
Woodstown	11	Chapel Heights	6	Denville	3
Cohansey	9	Little York	6	Springdale	3

Adult **corn earworm (CEW)** catches are increasing in frequency, but are still very low throughout the state. Catches as far north as Sussex County indicate that **CEW** overwintering was successful even in the northernmost areas. Silk stage corn in the southern counties should be on a 6-7 day spray schedule at this time. The highest average nightly **CEW** blacklight trap catches are:

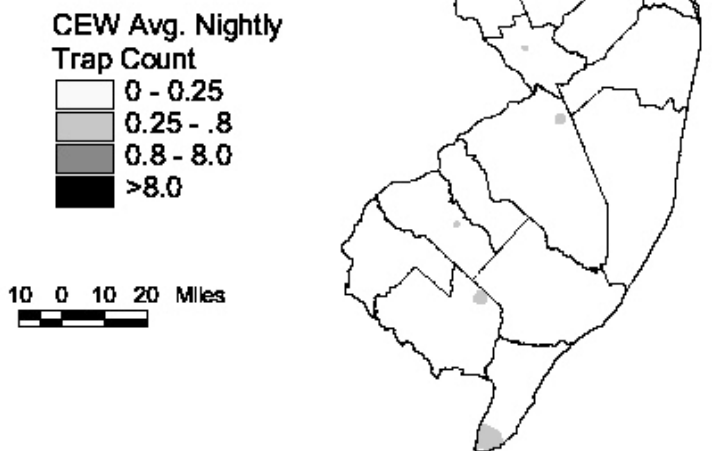
Chapel Heights	1	Farmingdale	1	Shiloh	1
Cohansey	1	Hopewell	1	Shirley	1
Eldora	1	Newton	1	Sykesville	1
Ellisdale	1	Porchtown	1		

SEE ECB AND CEW DISTRIBUTION MAPS PAGE 5

## Distribution of Adult European Corn Borer for the Week Ending June 2 1999



## Distribution of Adult Corn Earworm for the Week Ending June 2 1999



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

Although we have different conditions, we do have water bodies near, adjoining, and contiguous with almost all of our farms.

The Maryland Plan has three different areas that deal with fertilizer application, nutrient management plans and specific components of the nutrient plans. Any farmer (or others) who applies fertilizer to more than 10 acres will have the choice of being certified with a voucher themselves, or must hire a certified nutrient consultant. There is a record-keeping component required for all fertilizer applications, which looks to me much like our pesticide record-keeping systems. Of course there are penalties spelled out for farmers who do not comply.

Professionally developed nutrient management plans are the backbone of these proposed regulations. These plans will include yield goals, soil testing, and prescribed timing of fertilizer applications. Other parts of the plan dictate what amount of each nutrient can be applied as well as what types of fertilizers can be used in some instances. As with pesticide control programs, growers will be subject to unannounced inspections. Another component of the plan establishes a Phosphorous index for each farm. This index will calculate a number that will then be used to restrict or even eliminate further phosphorous fertilizer applications on that site. The elements of this plan come down even harder on container nursery growers. They are required to have as close to zero runoff as possible. Where runoff exists, they will be required to test the quality of it and submit a second sample to a certified lab for confirmation. At this point, I hope you can see the seriousness of what is happening with nutrient/water quality issues. Everyone is busy, but without adequate agricultural input into these areas, the end result can be something like the proposals of our neighbor only a few miles to the south. Stay involved! □

# Vegetable Weed Control

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

✓ **Asparagus: (end of cutting season)** Apply Solicam or Devrinol immediately after the end of the cutting season to control **annual grasses** and certain **broadleaf weeds**. Solicam also suppresses **yellow nutsedge** and certain **perennial grasses**. Use 2.5 to 5.0 lb /A of Solicam 80 DF (2.0 to 4.0 lb ai/A) per year or 4.0 to 8.0 lb/A of Devrinol (2.0 to 4.0 lb ai/A). If an application was made in early spring, supplement after the cutting season, but do not exceed the maximum-labeled rate in one year. Consult the label for additional information.

Combine with Lexone/Sencor, or Karmex to improve **broadleaf weed** control. Level ridges *before* applying herbicide if mechanical leveling is practiced. Rainfall or irrigation is needed to activate the preemergence herbicides, but the products are stable on the soil surface, and will not be lost if rainfall is delayed. Delay irrigation for 8 to 12 hours if weeds are present and postemergence herbicides are used. Consult your Cooperative Extension Office and the product label for additional information.

✓ **Cucumber:** Command 4EC has received a 24C Special Local Needs label for use in New Jersey to control weeds in direct-seeded cucumbers. Apply 4 to 6 fluid ounces of Command 4EC (0.125 to 1.88 lb ai/A) preemergence (after seeding) and incorporate between the rows immediately after application. Use rolling basket cultivators or other cultivation equipment, or preplant incorporate 6 to 8 fluid ounces (0.188 to 0.25 lb ai/A) shallowly before seeding. Use the lower rate on coarse-textured soils low in organic matter and when cool wet growing conditions prevail. Use the higher rates on fine texture soils.

The purpose of the incorporation or cultivation is to reduce the risk of vapor drift after application. Incorporation must be shallow, only one-quarter to one-half inch deep. Do *not* preplant incorporate or cultivate deeply. Deep incorporation reduces weed control by diluting the herbicide and increases the risk of crop injury by placing the herbicide into the root zone of the crop.

The weeds controlled by Command include most **annual grasses** and many **broadleaf weeds**. Common weeds that escape control when Command is applied at rates safe for use in cucumbers include **carpetweed, smooth pigweed, morningglory species, common cocklebur**, and most **perennial weeds**. Use Command in combination with other herbicides labeled for use in cucumbers, or plan alternate control measures to control these weeds.

Observe the 45-day preharvest interval (PHI) when Command is used on summer squash. Read

and follow all label warnings and restrictions that pertain to Command 4EC spray and vapor drift.

✓ **Squash, (Summer):** Command 4EC has received a 24C Special Local Needs label for use in New Jersey to control weeds in direct-seeded summer squash, including yellow and zucchini varieties. Apply 4 to 6 fluid ounces of Command 4EC (0.125 to 1.88 lb ai/A) preemergence (after seeding) and incorporate between the rows immediately after application. Use rolling basket cultivators or other cultivation equipment, or preplant incorporate 6 to 8 fluid ounces (0.188 to 0.25 lb ai/A) shallowly before seeding. Use the lower rate on coarse-textured soils low in organic matter and when cool wet growing conditions prevail. Use the higher rates on fine texture soils.

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✓ **Potato (Sweet):** Use Devrinol 50DF to control weeds in sweet potatoes. Apply 2 to 4 pounds of Devrinol 50DF per acre posttransplant before the first cultivation has filled the planter wheel track. Incorporate within one day (24 hours) of application with a minimum of one-half inch of irrigation, or by cultivation. Devrinol primarily controls **annual grasses**. Certain **broadleaf weeds**, including **carpetweed, common lambsquarter, pigweed** and **common purslane** are also controlled or suppressed.

Combine Devrinol with Command 4EC (clomazone) applied at 1.0 pints per acre (0.5 lb ai/A) to increase the species of **broadleaf weeds** controlled where Command can be used. Read and follow all label warnings and restrictions that pertain to Command 4EC spray and vapor drift. Do *not* use Command 4EC where drift may damage sensitive crops or ornamentals. □

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

Joseph A. Fiola, Ph.D., Small Fruit & Viticulture  
Stephen A. Garrison, Ph.D. Vegetable Crops  
Gerald M. Ghidui, Ph.D. Vegetable Entomology  
George Hamilton, Ph.D., Pest Management  
Joseph R. Heckman, Ph.D., Soil Fertility  
Stephen A. Johnston, Ph.D. Plant Pathology  
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)  
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 (732-745-3443)  
Monmouth, Bill Sciarappa, Ph.D. (732-431-7260)  
Morris, Peter J. Nitzsche (973-285-8300)  
Salem, Peter R. Probasco (609-769-0090)  
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  
Sarah Walker, IPM Program Associate

#### Newsletter Production

Jack Rabin, Assistant Director, NJAES  
Cindy Rovins, Editor and Designer  
Mary Ann Hughes, Assistant Editor

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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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