Disease Briefs

Andy Wyenandt, Ph.D., Specialist in Vegetable Pathology

- **Late blight** was confirmed on tomato near Lawrenceville NJ (Mercer County). This is the 3rd report of Late blight in NJ this year. Late blight has been active in isolated cases throughout the Northeast all summer. All commercial and organic tomato growers should remain diligent in scouting efforts and continue with regular fungicide maintenance programs. As we head into the fall, cooler night temperatures and longer periods of leaf wetness due to dew are favorable for late blight development.

- **Basil - Downy mildew** - All basil growers should scout on a daily basis and should add a labeled downy mildew specific fungicide to their weekly fungicide program. Phosphite fungicides (FRAC code 33) have shown the best efficacy in trials at RAREC. Both ProPhyt and K-Phite have downy mildew labels under herbs. Actinovate (OMRI-approved) is also labeled for downy mildew control. Please remember, all abandoned basil fields should be sprayed with gramoxone or worked under immediately after last harvest to kill the foliage! Abandoned fields left unattended after use will only serve as a source of inoculum for other fields.

- **Cucurbit downy mildew** has already been reported and is active in New Jersey. Please see the 2012 Commercial Vegetable Recommendations Guide for specific fungicide recommendations. To track the progress of cucurbit downy mildew please visit North Carolina State University’s Cucurbit Downy Mildew Forecasting Center at: http://www.ces.ncsu.edu/depts/pp/cucurbit.

- **Cucurbit powdery mildew** has been found in New Jersey. Cucurbit growers should adjust fungicide programs accordingly.

- **Peppers and Tomatoes - Bacterial leaf spot** has been reported on both crops.

- **Peppers - Anthracnose fruit rot** - Growers with peppers in fields with a history of pepper anthracnose should scout on a daily basis and apply fungicides preventatively. Pepper anthracnose can be very difficult to control once established in fields. Strip picking and removing all fruit from ‘hot spots’ when they first appear may help suppress disease.
spread of the pathogen. Preventative fungicide applications should begin shortly before or at flowering. Use a heavy volume of water and make sure coverage is extremely good. Apply high rates of chlorothalonil or Manzate weekly and/or rotate weekly with Quadris (azoxystrobin, 11) or Cabrio (pyraclostrobin, 11). Please see the 2012 New Jersey Commercial Vegetable Production Recommendations Guide for more information.

- **Tomato - Early blight** - Early blight is being reported on tomato. Fungicide programs which target Early blight will also help control septoria leaf spot and anthracnose fruit rot.

For the most up-to-date information fast, please sign up for the Jersey Vegetable Crop Ag Updates at:

---

**Report from the Field: Images of Hail Damage**  
*Bill Sciarappa, Monmouth County Agricultural Agent*

The extreme supercell thunderstorm that wrecked the Monmouth County Fair Saturday night on July 28 also brought hail and high winds to some local area crops. These damage photos of tomato fruit and leaves are the result of pelting hail about the size of peas that sliced through plant tissue. Growers trying to salvage some production or avoid even more problems are applying fungicides and insecticides.

---

**Great Tomato Tasting**  
*Rutgers Snyder Research and Extension Farm*  
140 Locust Grove Road, Pittstown, Hunterdon County, NJ 08867  
Wednesday – August 29, 2012 (Rain or Shine), 3pm - dusk

Rutgers New Jersey Agricultural Experiment Station and Rutgers Cooperative Extension proudly announce the Annual Snyder Farm Open House and Great Tomato Tasting!

The event includes the popular tasting of over 60 heirloom and hybrid varieties of beefsteak, plum, cherry and grape tomatoes. Also, tasting of apples and peaches from the NJAES Tree Fruit Breeding Program, basil, honey and more. The Melda C. Snyder Teaching Garden will showcase demonstration gardens of deer tolerant ornamentals; blueberries, hazelnuts, and hollies from the Rutgers breeding programs, along with a wall of fruit highlighting apple and upright growing peach trees for the home landscape.

Wagon tours of the farm's research plots will be held throughout the event. Included will be chef demonstrations featuring preparation of several tomato recipes.

Please bring a non-perishable food item to support the Rutgers Against Hunger (RAH) program; http://rah.rutgers.edu

Admission: $7.00 per person, children under 10 are free

RSVP please: 908-730-9419 x-3501 or online: https://njaes.rutgers.edu/rsvp/tomato.

For more information visit: http://snyderfarm.rutgers.edu/tomatoes.html.
Sweet Corn

European corn borer (ECB) adult catches are still very low across much of the state. The highest average catches at this time are in northern Burlington and Salem counties (see ECB Map), and this increase may signify the onset of a new flight. ECB injury may be found in whorl and pre-tassel stage sweet corn at this time, as larvae have hatched from eggs and are feeding on corn. Consider treating if 12% or more plants exhibit the characteristic “shot-hole” type feeding on leaves and/or droppings or ECB larvae in emerging tassels. Remember to make a full-tassel application to control ECB larvae as they leave the tassel and travel down the stalk to re-enter the plant near the ear shank. This last application is often critical to controlling ear infestations from ECB. Consider weekly applications through the silk stage unless local corn earworm catches dictate a tighter schedule. This will help prevent ear infestations resulting from eggs laid on or near the developing ear.

The highest nightly ECB catches for the previous week are as follows:

- Burlington: 3
- Shirley: 2
- Woodstown: 2
- Blairstown: 1
- East Vineland: 1
- Hammonton: 1
- Lawrenceville: 1
- Princeton: 1

Corn earworm moth (CEW) catches remain moderate-to-high in much of the state. Highest catches may be found in parts of Cape May, Cumberland and Gloucester counties (see CEW Map). Moth activity has declined slightly in response to cooler night temperatures, but may rebound with warmer weather forecast as the weekend approaches. Crosshatch areas on the map (green on the web version at: http://www.pestmanagement.rutgers.edu/IPM/Vegetable/Pest%20Maps/maparchive.htm) represent a 3-day spray schedule on silking corn. These moths are a serious threat to the sweet corn plantings now in the silk stage. As silks begin to appear, pay close attention to CEW catches in local blacklight traps, and treat silking plantings accordingly. Begin silk spray schedules as close to first silk as possible.

The highest nightly CEW catches for the previous week are as follows:

- East Vineland: 14
- Downer: 11
- Pedricktown: 10
- Green Creek: 9

Silking Spray Schedules*:

- South – 3 days
- Central – 3 days
- North – 3 days

Fall armyworm (FAW) infestations are increasing in occurrence and severity throughout the state. As yet, this population is not as heavy as we have experienced in recent years, but the situation may change. This pest favors whorl stage corn, and will even infest seedlings, causing significant injury to small plants. While scouting for ECB, note the presence of larger holes than are typically caused by ECB. These may be accompanied by large amounts of droppings in the whorl. FAW larvae are green with a pale stripe on each side when very small. As they grow, they take on a tan and brown color with a prominent upside-down “Y” on the head capsule. This pest may be difficult to control with commonly used pyrethroid insecticides. Newer materials generally provide better control. See the 2012 Commercial Vegetable Production Recommendations for newer materials useful in controlling FAW. Consider treating if 12% or more plants are infested with FAW either alone, or in combination with ECB.

Peppers

Larval ECB infestations continue in some pepper fields at this time, although most of these are not new. An infestation is sometimes indicated by an increase in soft rotted fruit. New egg laying should not be occurring at significant levels now, but may increase again with the onset of a late season flight. If 2 or more eggmasses are found in a 50 plant sample (2 leaves/plant), a foliar insecticide application should be considered. Generally, where blacklight trap catches average one or more ECB per night (shaded and crosshatched areas on the map, and blue and green areas on the web version, found at: http://www.pestmanagement.rutgers.edu/IPM/Vegetable/Pest%20Maps/maparchive.htm) and fruit are greater than ½” in diameter, insecticides are warranted. See the 2012 Commercial Vegetable Production Recommendations for materials useful in controlling ECB. There has been a further decrease in beet armyworm (BAW) moth catches in southern NJ pheromone traps over the past week (see BAW map), with higher catches now concentrated in western Gloucester and Salem counties. This pest is typically a threat to peppers, and growers should intensify scouting efforts at this time. BAW larvae feed on leaves near the growing points on plants, resulting in noticeable foliar injury in the upper canopy prior to fruit damage occurring. BAW larvae are typically green in color, with a prominent black spot behind the head on either side of the body. In recent years, BAW infestations have occurred on peppers as far north as Warren County. Like FAW, BAW can be difficult to control with older materials. See the 2012 Commercial Vegetable Production Recommendations for newer materials useful in controlling BAW.

See IPM on page 4
Brown Marmorated Stinkbug (BMSB)

BMSB adult catches continue to decline throughout the state. Adult trap catches have fallen below 5/night in all areas, and no map appears in this issue. BMSB injury on peppers and tomatoes continues at low levels in Hunterdon and Warren counties, although growers report minimal losses to this pest at present. Nymphs and adults have been found on crops in these areas. Stinkbug feeding has the appearance of a large, diffuse blotch on pepper and tomato fruit. The blotch, called “cloudy spot”, has scalloped edges, and is pale on green fruit, but turns bright yellow as fruit ripen. BMSB has shown a preference for peppers in the past. It would be wise to maintain a strict field scouting program at this time. The bugs are difficult to detect in the field, however, and first signs of increase may appear in harvested fruit. If injury to fruit is appearing with greater frequency, consider treating for stinkbugs. For materials useful against stinkbugs, see the 2012 Commercial Vegetable Production Recommendations.

The highest nightly BMSB catches for the previous week are as follows:

<table>
<thead>
<tr>
<th>Location</th>
<th>Catches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snyder Farm</td>
<td>4</td>
</tr>
<tr>
<td>Little York</td>
<td>1</td>
</tr>
<tr>
<td>Phillipsburg</td>
<td>1</td>
</tr>
<tr>
<td>Clinton</td>
<td>1</td>
</tr>
<tr>
<td>Milford</td>
<td>1</td>
</tr>
<tr>
<td>Sergeantsville</td>
<td>1</td>
</tr>
<tr>
<td>Folsom</td>
<td>1</td>
</tr>
<tr>
<td>Oldwick</td>
<td>1</td>
</tr>
<tr>
<td>Springdale</td>
<td>1</td>
</tr>
<tr>
<td>Jones Island</td>
<td>1</td>
</tr>
<tr>
<td>Pedricktown</td>
<td>1</td>
</tr>
<tr>
<td>Woodstown</td>
<td>1</td>
</tr>
</tbody>
</table>

Tomatoes – LATE BLIGHT CONFIRMED IN NEW JERSEY!

Late blight (LB) was recently confirmed from farms in Burlington and Mercer counties. Growers in all areas of the state should respond immediately by adding fungicides specific to LB to their regular protectant program. See Dr. Andy Wyenandt’s pathology column as well as the recent Pest Alert for details. Consult the 2012 Commercial Vegetable Production Recommendations for effective materials.

Recent rain events have increased the incidence of bacterial infections in tomatoes. Wind-driven rain spreads the cells of bacterial leaf spot (BLS) and related pathogens. It is wise to apply a copper product to affected plantings as soon as conditions permit. Watch plants for signs BLS, including dark lesions on all foliage (even the youngest leaves) and fruit. Consult the 2012 Commercial Vegetable Production Recommendations for anti-bacterial materials and application schedules.

Tomato pinworm infestations continue to appear sporadically. This pest is a very small caterpillar that initially mines the leaves. As they grow larger, the larvae leave the leaves and penetrate tomato fruit underneath the calyx. Initial infestations may be identified by leaf mines that are much more extensive than individual mines caused by the vegetable leaf miner. It is quite unusual for us to have this pest in New Jersey, as it is commonly found well to our south. The action threshold for this pest is 0.5 mines per complete leaf, and so far, our infestations are not close to this threshold. Growers who have used Coragen through the drip for management of other caterpillar pests will not see injury from pinworm.

Pumpkins and Winter Squash – DOWNY MILDEW NOW PRESENT!

Downy mildew (DM) has been found on pumpkins from Middlesex County northward through Hunterdon County. This disease can defoliate fields rapidly under wet conditions. Symptoms include pale areas, sharply bordered by leaf veins on the upper leaf surface. Below these areas (lower leaf surface), dark spores are produced. Without control, particularly if conditions are moist, the lesions will coalesce, resulting in total defoliation of the plants in a period of several days. For more information on the regional presence of DM as well as comprehensive, weekly forecasts, see the following website: http://cdm.ipmpipe.org. DM requires the addition of specific fungicide products to the regular protectant program. See the 2012 Commercial Vegetable Production Recommendations for newer materials useful in managing DM.

Pumpkins and winter squash vines are developing fruit at this time. Many fields with enlarging fruit are now developing powdery mildew (PM) infections on older leaves. It is possible to begin a protectant fungicide program for PM when the disease first appears, without sacrificing quality or yield. It is imperative, however, to scout for PM lesions. If the disease is caught too late, some loss of quality may result. Check 5 consecutive plants each in 10 random locations. Check 2 older leaves per plant (top and bottom) for the presence of PM lesions. These will initially be about the size of a dime, and are white, and granular in appearance. When 2 lesions are found per 50 plants, consider beginning the protectant fungicide rotation. See the 2012 Commercial Vegetable Production Recommendations for newer materials useful in managing PM.

Cole Crops

Cabbage looper (CL) infestations are now common, as well as diamondback moth (DBM) and imported cabbage worm (ICW). Scout plantings weekly. Check 5 consecutive plants each in 10 random locations throughout the planting, paying particular attention to the innermost leaves where ICW often feed. Consider treating if caterpillars are found on 10% or more plants that are in the 0-9 true leaf stage. From 9-leaf to the early head stage (in broccoli, cauliflower and cabbage) infestations up to 20% may be tolerated. Once heads begin to form, a 5% threshold should be observed to protect the marketable portion of the plant. For leafy greens such as collards and kale, 10% plants infested is the threshold throughout.

BAW larvae have been found on cabbage plantings in Hunterdon County this week. This typically southern pest will feed on cole crops as well as peppers and see BAW on page 5.
tomatoes. Feeding on cole crops is distinguished from other larvae in that extensive ‘window pane’ damage occurs while larvae are small. As they grow, they will consume all of the leaf tissue. It is important to identify this pest if it is present, because synthetic pyrethroid insecticides may not provide acceptable control.
Preparing Your Farm
Food Safety Plan
Harmonized Audit –Post Harvest Operations
Harmonized Food Safety Standard
Meredith Melendez, Mercer County Senior Program Coordinator and Wesley Kline, Ph.D., Cumberland County Agricultural Agent

As we explained previously the harmonized audit is an attempt to combine several audits from different auditing companies and will be put into effect by the USDA next year. The harmonized audit has more emphasis on risk assessment at all levels of the operation. This emphasis includes: additional questions, increased documentation and recordkeeping, corrective action procedures and a clear written recall program. In addition to these changes the operation will need to: review their food safety plan annually, conduct an annual self-audit, conduct a pre-plant assessment around production fields to determine potential animal intrusion, assess the water system, document water system preventative control procedures, document monitoring procedures and document corrective measures. The next several articles will detail the changes to the regular audit for the harmonized audit. This article will focus on the second half of the general questions portion of the Post Harvest Operations Harmonized Food Safety Standard.

This article refers to Standard Operating Procedures (SOP) and in other articles there will be references to Standard Sanitation Operating Procedures (SSOP). There is much more emphasis on SOP and SSOP in the harmonized audit than in standard GAP audits. Any place in the harmonized that mentions procedures the operation must have a SOP and SSOP written down. It must state exactly how a task is accomplished. These will be evaluated by the auditor.

GENERAL QUESTIONS – Continued from last week
Facility, Equipment and Tools
● Adequate lighting will be provided in all areas. This lighting will be sufficient to enable cleaning, sanitation, repairs etc. The lights must be covered or have shatter proof bulbs in case of breakage.

Non-product Materials Storage
● Materials will be stored away from walls and ceilings. Written procedures will be followed to guarantee the proper cleaning, inspection and monitoring for pest activity in storage areas. The auditor will review the procedure and observe the storage area to determine whether storage practices allow cleaning, inspection and the monitoring of pest activities. If building a new storage, leave 18 inches between the walls and pallets. This will allow someone to inspect behind all product. If an old storage, think about how you are going to inspect, clean and monitor for pests. Storage areas must have a pest control program just like the packing house.

Outside Grounds
● Outside equipment storage areas will be included in the pest control program.

Leaks/Lubrication
● All lubricant leaks must be fixed immediately or catch pans installed to prevent product contamination.

Equipment and Utensil Construction
● Product contact tools, utensils and equipment must be made of materials that can be cleaned and sanitized. The auditor will observe the food contact surfaces for design and materials that can be easily cleaned. The auditor will review the cleaning, sanitizing, storage and handling procedures.
● Cooling, packing and other food contact equipment must be installed away from walls and otherwise positioned so as not to inhibit access for proper cleaning.

Temporary Repairs
● Any temporary repairs on food contact surfaces must be constructed of food-grade material. Operation must have has a procedure to ensure that permanent repairs are implemented in a timely manner.

Worker Health/Hygiene and Toilet/Handwashing Facilities
● When employees wear protective clothing, such as aprons and gloves, the operation must have a policy that the clothing not be left on product, work surfaces, equipment or packaging material, but hung on an apron and glove racks as provided. The racks are to be located so as to avoid potential contamination. In addition, storage containers or designated storage areas should be provided to ensure tools used by employees are properly stored prior to entering the toilet facility.
● The operation will have a policy that employee clothing will be clean and appropriate for the operation.
● The operation must have a policy regarding whether protective clothing can be taken home.
● The jewelry policy must be in compliance with current industry practices or regulatory requirements for that commodity.

Packing and Handling
● If applicable, the operation will have a written Allergen Control Program.
● Specifications for all packaging materials that impact on finished product safety and quality must be provided and comply with prevailing regulations. The methods and responsibility for developing and approving detailed specifications and labels for all packaging must be documented. A register of pack-
Weekly Weather Summary
Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged near normal north and central and above normal south, averaging 70 degrees north, 73 degrees central and 74 degrees south. Extremes were 90 degrees at Downstown on the 18th, and 51 degrees at Charlotteburg on the 19th. Weekly rainfall averaged 0.76 inches north, 1.28 inches central, and 1.17 inches south. The heaviest 24 hour total reported was 1.92 inches at Long Branch on the 15th to 16th. Estimated soil moisture, in percent of field capacity, this past week averaged 88 percent north, 82 percent central, and 83 percent south. Four inch soil temperatures averaged 72 degrees north, 75 degrees central and 75 degrees south.

<table>
<thead>
<tr>
<th>WEATHER STATIONS</th>
<th>RAINFALL WEEK</th>
<th>RAINFALL TOTAL</th>
<th>DEP</th>
<th>TEMPERATURE MX</th>
<th>TEMPERATURE MN</th>
<th>TEMPERATURE AVG</th>
<th>DEP</th>
<th>GDD BASE50 TOT</th>
<th>GDD BASE50 DEP</th>
<th>GDD BASE50 %FC</th>
</tr>
</thead>
<tbody>
<tr>
<td>BELVIDERE BRIDGE</td>
<td>.23</td>
<td>23.59</td>
<td>.90</td>
<td>85</td>
<td>52</td>
<td>70.0</td>
<td>0</td>
<td>2374</td>
<td>386</td>
<td>76</td>
</tr>
<tr>
<td>CANOE BROOK</td>
<td>.75</td>
<td>19.03</td>
<td>-4.79</td>
<td>89</td>
<td>56</td>
<td>72.0</td>
<td>2</td>
<td>2653</td>
<td>657</td>
<td>90</td>
</tr>
<tr>
<td>CHARLOTTEBURG</td>
<td>1.06</td>
<td>17.28</td>
<td>-6.76</td>
<td>86</td>
<td>51</td>
<td>69.0</td>
<td>2</td>
<td>2350</td>
<td>774</td>
<td>88</td>
</tr>
<tr>
<td>FLEMINGTON</td>
<td>1.44</td>
<td>22.90</td>
<td>-.08</td>
<td>89</td>
<td>53</td>
<td>71.0</td>
<td>0</td>
<td>2594</td>
<td>547</td>
<td>96</td>
</tr>
<tr>
<td>NEWTON</td>
<td>.32</td>
<td>26.50</td>
<td>4.33</td>
<td>84</td>
<td>53</td>
<td>70.0</td>
<td>2</td>
<td>2423</td>
<td>608</td>
<td>73</td>
</tr>
<tr>
<td>FREEHOLD</td>
<td>1.08</td>
<td>20.81</td>
<td>-1.57</td>
<td>89</td>
<td>55</td>
<td>73.0</td>
<td>1</td>
<td>2705</td>
<td>523</td>
<td>80</td>
</tr>
<tr>
<td>LONG BRANCH</td>
<td>2.06</td>
<td>25.83</td>
<td>3.27</td>
<td>88</td>
<td>60</td>
<td>73.0</td>
<td>1</td>
<td>2537</td>
<td>434</td>
<td>79</td>
</tr>
<tr>
<td>NEW BRUNSWICK</td>
<td>1.11</td>
<td>21.21</td>
<td>-1.31</td>
<td>89</td>
<td>54</td>
<td>73.0</td>
<td>0</td>
<td>2770</td>
<td>501</td>
<td>92</td>
</tr>
<tr>
<td>TOMS RIVER</td>
<td>.65</td>
<td>18.20</td>
<td>-4.91</td>
<td>89</td>
<td>57</td>
<td>74.0</td>
<td>3</td>
<td>2502</td>
<td>415</td>
<td>54</td>
</tr>
<tr>
<td>TRENTON</td>
<td>1.48</td>
<td>20.30</td>
<td>-1.13</td>
<td>87</td>
<td>57</td>
<td>73.0</td>
<td>0</td>
<td>2903</td>
<td>530</td>
<td>95</td>
</tr>
<tr>
<td>CAPE MAY COURT HOUSE</td>
<td>.42</td>
<td>18.09</td>
<td>-1.86</td>
<td>88</td>
<td>56</td>
<td>72.0</td>
<td>.2</td>
<td>2329</td>
<td>279</td>
<td>73</td>
</tr>
<tr>
<td>DOWNSTOWN</td>
<td>1.18</td>
<td>16.62</td>
<td>-4.48</td>
<td>90</td>
<td>57</td>
<td>75.0</td>
<td>2</td>
<td>2812</td>
<td>434</td>
<td>77</td>
</tr>
<tr>
<td>HAMMONTON</td>
<td>1.37</td>
<td>20.43</td>
<td>-1.66</td>
<td>89</td>
<td>59</td>
<td>75.0</td>
<td>2</td>
<td>2841</td>
<td>482</td>
<td>80</td>
</tr>
<tr>
<td>POMONA</td>
<td>1.72</td>
<td>22.42</td>
<td>2.14</td>
<td>89</td>
<td>63</td>
<td>76.0</td>
<td>4</td>
<td>2724</td>
<td>524</td>
<td>77</td>
</tr>
<tr>
<td>SEABROOK</td>
<td>MISSING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOUTH HARRISON</td>
<td>1.46</td>
<td>15.46</td>
<td>-6.47</td>
<td>89</td>
<td>60</td>
<td>76.0</td>
<td>NA</td>
<td>2927</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

*PRECIPITATION TOTALS FOR THE SEASON AT NEWTON ARE TOO HIGH DUE TO A PROBLEM WITH THE AUTOMATIC RAIN GAUGE FOR A FEW WEEKS, THE PROBLEM HAS BEEN CORRECTED

WES KLINE -- GDD BASE 40 PINHEY HOLLOW
LAST WEEK 262 (Ending 8/13/12)
THIS WEEK 247 (Ending 8/20/12)
TOTAL UNITS BASE 40 FOR FEBRUARY = 55
PLANT & PEST ADVISORY
VEGETABLE CROPS EDITION CONTRIBUTORS

Rutgers NJAES Cooperative Extension Specialists
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

Rutgers NJAES-CE County Agricultural Agents
Atlantic, Richard W. VanVranken (609-625-0056)
Burlington, Raymond J. Samulis (609-265-5050)
Cape May, Jenny Carleo (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)
Middlesex, William T. Hlubik (732-431-7260)
Monmouth, Lisa V. Maguire (732-431-7260)
Morris, Peter J. Nitzsche (973-285-8300)
Passaic, Elaine Fogerty, Agric. Assistant (973-305-5740)
Salem (856-769-0090)
Warren (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 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.

The Vegetable Crops On-Line Resource Center website is a dedicated source for information on production, insect, weed and disease management, food safety, marketing and more: www.njveg.rutgers.edu

For back issues of the Plant & Pest Advisory: www.rce.rutgers.edu/pubs/plantandpestadvisory

Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and County Boards of Chosen Freeholders. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.