Late blight has been confirmed on potato in New Jersey. Late blight was confirmed on actively sporulating leaf lesions from an 8 acre potato field near Cookstown, NJ (Burlington County). The few infected plants were found at the end of a row were the boom sprayer was most likely turned off. The grower had preventative applications of manzate followed by chlorothalonil prior. Seed pieces were sourced from Maine. This is the first report of Late blight in NJ on potato or tomato this year. All potato (and tomato crops) are potentially at-risk. What growers should do: Control of late blight begins with regular scouting, recognizing symptoms and preventative fungicide applications. All potato and tomato growers should scout fields and begin a regular preventative fungicide program if one has not been started. Adding a late blight specific fungicide to the tank mix should also be considered. Weather this past week has been ideal for late blight development in many areas of NJ (i.e., cool, wet, high relative humidity with heavy morning fogs).

Fungicide recommendations for controlling late blight can be found in the 2012 Commercial Recommendations Guide below. Organic growers should consider applying a copper-based fungicide.

**Potato:** [http://njveg.rutgers.edu/assets/pdfs/ppg/12ppg/2012-Sect-F-WhitePotato.pdf](http://njveg.rutgers.edu/assets/pdfs/ppg/12ppg/2012-Sect-F-WhitePotato.pdf)

**Tomato:** [http://njveg.rutgers.edu/assets/pdfs/ppg/12ppg/2012-Sect-F-Tomatoes.pdf](http://njveg.rutgers.edu/assets/pdfs/ppg/12ppg/2012-Sect-F-Tomatoes.pdf)

If you suspect late blight may be present on your farm, please let me know via email at wyenandt@aesop.rutgers.edu.
Vegetable Disease Update
Andy Wyenandt, Ph.D., Specialist in Vegetable Pathology and Wesley Kline, Ph.D., Cumberland County Agricultural Agent

✔ Strawberry – Anthracnose fruit rot – Strawberry anthracnose can be extremely destructive during warm, wet weather causing significant fruit rot. Symptoms of Anthracnose include blackish-brown circular spots on maturing green fruit and soft, sunken (flat) circular lesions on ripe fruit. On ripe fruit, lesions can expand rapidly and are often covered with a pinkish-orange spore mass. Spores are spread from infected to healthy fruit with splashing water. Control of Anthracnose always begins with a 7 to 10 day preventative spray program no later than 10% bloom and/or prior to disease development. For control apply the following combinations:

#1) captan (M3) at 4.0 lb 50WP/A plus Pristine (pyraclostrobin + boscalid, 11 + 7) at 18.5 to 23.0 oz 38WG/A
#2) captan (M3) at 4.0 lb 50WP/A plus Abound (azoxystrobin, 11) at 6.0 to 15.5 fl. oz 2.08SC/A or Cabrio (pyraclostrobin, 11) at 12.0 to 14.0 oz 20EG/A
#3) Captevate (captan + fenhexamid, M3 + 17) at 3.5 to 5.25 lb 68WDG/A

For subsequent applications, alternate:
captan (M3) at 4.0 lb 50WP/A plus Abound (azoxystrobin, 11) at 6.0 to 15.5 fl oz 2.08SC/A, or Cabrio (pyraclostrobin, 11) at 12.0 to 14.0 oz 20EG/A, or Captevate (captan + fenhexamid, M3 + 17) at 3.5 to 5.25 lb 68WDG/A

To help manage fungicide resistance development, do not make more than 2 consecutive applications of either: Pristine (pyraclostrobin + boscalid, 11 + 7), Cabrio (pyraclostrobin, 11) or Abound (azoxystrobin, 11) before switching to another fungicide chemistry.

✔ Spinach (White Rust and Downy Mildew) – Prior to symptom development, apply the following on a 7 to 10 day preventative spray program no later than 10% bloom and/or prior to disease development. For control apply:

Application #1: Pristine (pyraclostrobin + boscalid, 11 + 7) at 18.5 to 23.0 oz. 38WG/A
Application #2: captan (M3) at 4.0 lb 50WP/A, Captevate (captan + fenhexamid, M3 + 17) at 3.5 to 5.25 lb 68WDG/A, or Switch (cyprodinil, 9) at 11.0 to 14.0 oz 62.5WG/A

Application #3: Pristine (pyraclostrobin + boscalid, 11 + 7) at 18.5 to 23.0 oz. 38WG/A
For subsequent applications, rotate between two or more of the following fungicides:
- Captan (M3) at 4.0 lb 50WP/A, or Cabrio (pyraclostrobin, 11) at 12.0 - 14.0 oz 20EG/A,
- or Switch (cyprodinil + fludioxonil, 9 + 12) at 11.0 to 14.0 oz. 62.5WG/A, or Pristine (pyraclostrobin + boscalid, 11 + 7) at 18.5 to 23.0 oz 38WG/A, or Switch (cyprodinil + fludioxonil, 9 + 12) at 11.0 - 14.0 oz 62.5WG + Abound (azoxystrobin, 11), or Switch (cyprodinil + fludioxonil, 9 + 12) at 11.0 - 14.0 oz 62.5WG + Cabrio (pyraclostrobin, 11) at 12.0 - 14.0 oz 20EG/A.

✔ Tomato – Bacterial spot and speck – Tomato transplants with suspected symptoms can be treated with streptomycin (Agri-Mycin 17, Agri-Strep, 25) at 1 lb/100 gallons, or 1.25 teaspoon per gallon every 4 to 5 days prior to transplanting. Additionally, Kocide 3000 (copper hydroxide, FRAC code M1) has a greenhouse label for speck and spot control in the greenhouse. Apply ½ to 1.5 TBSP per 1000 sq ft. every 5 to 10 days. Remember, phytoxicity is an important issue when apply copper in enclosed structures, see label for cautions, restrictions and liabilities. After transplanting, apply Actigard at 0.33 oz 50WG/A (see label for use), or fixed copper (M1) at 1 lb a.i./A plus a mancozeb (Dithane, Manzate, Penncozeb, M3) at 1.5 lb 75DF or OLF, or ManKocide (M1 + M3) at 2.5 to 5.0 lb 61WP/A on a 7 day schedule.
IPM Update
Kristian Holmstrom, Research Project Coordinator II, Vegetable IPM Program

Sweet Corn
European corn borer (ECB) adults are increasing in blacklight traps steadily in southern and central NJ now. The most consistent catches continue to be in the Mercer/Burlington and Cumberland/Salem County areas (see ECB Map). We should expect higher catches as drier weather becomes dominant. Adult females have been seen flying in whorl stage fields throughout central counties this past week. As of Tuesday, feeding has occurred upwards of 20% in some of the more advanced plantings in Middlesex County. These plantings are currently in the pre-to-full tassel stage, having been grown under plastic. 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.

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

- Shiloh 7
- Pedricktown 2
- Milford 1
- Crosswicks 3
- Port Colden 2
- Milltown 1
- Pennington 3
- Cedarville 1
- Princeton 1
- Lawrenceville 2
- Denville 1
- Woodstown 1

Scattered individual corn earworm moths (CEW) have been captured in blacklight around the state, but more consistent catches have occurred in Cumberland County this past week (see CEW Map). In addition, low but consistent numbers have appeared in pheromone traps in the Camden-Burlington County area. These moths represent overwintered individuals. There may be a heavier early population of this pest due to the mild winter. At present, the population in Cumberland County is a threat to silking sweet corn. As silks begin to appear, pay close attention to CEW catches in local blacklight traps, and treat silking plantings accordingly.

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

- Cedarville 1
- Green Creek 1
- Shiloh 1
- Chester 1
- Pedricktown 1
- Tabernacle 1
- East Vineland 1
- Princeton 1
- Eldora 1
- RAREC 1

Silking Spray Schedules*:
South – 5-6 days
Central –6 days

* Note: These are general recommendations. Local trap catches may indicate some variation in the frequency of insecticide applications to silking corn.

With recent wet weather, garden slug injury has begun to appear in seedling stage sweet corn plantings. This damage appears as irregular holes (not neat, circular holes) within the margins of leaves. Often, the dried slime-trail of the slug is noticeable. Garden slugs may be found underneath small soil clods or debris. Generally, this is not a pest that requires management. Drier weather will limit their mobility, and cultivation disrupts them in the field. Warm weather permits rapid plant growth, outpacing slug injury.

Cole Crops
Heavy egg laying by imported cabbage butterflies (ICW), and diamondback moth (DBM) is occurring at this time, and will continue as warm weather permits their activity. In addition, cabbage looper (CL) larvae have been discovered as far north as Hunterdon County and constitute up to 6% of larval infestations in southern NJ according to private consultants. This is quite early for this pest to be active in our area. Infestations of both pests have been found in the central counties, and are certainly present further south. 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.

Crucifer flea beetle is active on many plantings, particularly when conditions are warm. When scouting cole crops for caterpillar pests, check for the presence of flea beetles. Consider treating if flea beetles are present on 50% or more plants, and feeding injury is evident on the plants. Be sure to monitor newly emerged or transplanted fields for the presence of this pest. In general, plants like arugula and mustard (those with a “hotter” flavor) are more favorable to flea beetles.

Peppers
Pepper transplants are now going into fields. At the same time, the first ECB flight is increasing. Be sure to scout fields regularly for the presence of ECB egg masses. If two or more egg masses are found in a 50 plant (two leaves/plant) sample, consider treating even if no fruit are present. In the absence of fruit, ECB larvae will bore into the central stem, topping the plant. This will result in the loss of crown fruit on infested plants. 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

See IPM on page 4
greater than ½” in diameter, insecticides are warranted. See the 2012 Commercial Vegetable Production Recommendations for materials useful in controlling ECB.

Brown Marmorated Stinkbug (BMSB)

Only a few BMSB adults have been captured in blacklight traps this. As adult captures increase, maps will be produced to show where activity is highest. Information on scouting, crop injury and control will also be included.

Tomatoes

Late blight has been confirmed on potatoes in Burlington County. As this pathogen has strong potential to infect tomatoes as well, all growers should immediately begin a fungicide program geared at protecting against late blight. See Dr. Andy Wyenandt’s Disease Briefs on page 1 for more specifics on this infection. See the 2012 Commercial Vegetable Production Recommendations for materials useful in controlling late blight.
Preparing Your Farm Food Safety Plan
Part 6: Creating Logs to Document Compliance - Harvest

Meredith Melendez, Mercer County Senior Program Coordinator and Wesley Kline, Ph.D., Cumberland County Agricultural Agent

The USDA Good Agricultural Practices audit requires that certain activities on the farm be documented. These logs should accurately reflect what you have done on the farm to ensure food safety. If you do not write your activities down the auditor will assume that the activity never happened. This documentation may be new for many growers, so making it as easy as possible for you to comply will ensure that the documenting happens in a manner that is acceptable to an auditor. What harvest logs will you need to have as a part of your farm food safety plan?

Hand Harvesting Implements (knives, pruners, etc.) Cleaning Log

The cleaning log documents that harvest implements are cleaned and disinfected on a regular basis, reducing the risk of cross-contamination. The cleaning log should include:

- ✔ Date
- ✔ Number of knives cleaned
- ✔ Number of knives disinfected
- ✔ Comments
- ✔ Initials

Pre-Harvest Assessment Log

The pre-harvest assessment log is written documentation that preventative measures were taken prior to harvest to reduce the potential of product contamination. Each column should be marked with a yes, no, or N/A (not applicable). If corrective actions are needed the actions taken should be written down and initialed by the employee responsible for those actions. Examples of questions on a pre-harvest assessment log include:

- ✔ Are toilet and wash facilities properly located?
- ✔ Is potable water available for workers?
- ✔ Is harvest equipment available and in good condition?
- ✔ Are disinfection containers for knives available?
- ✔ Is there evidence of unauthorized entry in the crop area and if so, has it been investigated?
- ✔ Is there evidence of domestic or wild animal crop damage?
- ✔ Is there evidence of physical contamination in the crop area?
- ✔ Are fuel and chemicals which might contaminate crop areas isolated?
- ✔ If areas are contaminated are they isolated for “no-harvest”?
- ✔ Are there any other notable sources of biological or physical contamination such as dump sites, manure, burning debris, water that may affect food safety?

Field Harvesting Equipment and Transportation Sanitization

This log documents the cleaning and sanitization of field harvesting equipment. This equipment should be cleaned at the beginning of each season and as needed throughout the season. The field harvesting equipment and transportation sanitization log should include:

- ✔ Date
- ✔ Equipment type
- ✔ Checked (check mark)
- ✔ Cleaned (check mark)
- ✔ Sanitized (check mark)
- ✔ Sanitizer used and rate of use
- ✔ Employee’s initials

Harvesting Container Sanitation Log

Single use containers will not need a regularly scheduled cleaning since they are used only once. Containers that have been previously used should be washed, rinsed, and/or sanitized on a scheduled basis determined by farm management. Size and shape can complicate the washing of these containers and thought should be given to this process when purchasing new equipment. High power washers and commercial washers are commonly used to clean harvest containers. The harvesting container sanitation log should include:

- ✔ Date
- ✔ Number of containers
- ✔ Containers – Checked, Cleaned, Sanitized, Sanitizer used and usage rate
- ✔ Pallets – Checked, Repaired, Sanitized, Sanitizer used and usage rate
- ✔ Employee’s initials

Next week: Logs - Packinghouse

Source: hort.cornell.edu
Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged above normal north and near normal central and south, averaging 64 degrees north, 64 degrees central, and 64 degrees south. Extremes were 84 degrees at Charlotteburg on the 20th and 41 degrees at Charlotteburg on the 19th. Weekly rainfall averaged 1.15 inches north, 1.17 inches central, and 0.62 inches south. The heaviest 24 hour total reported was 1.02 inches at Belvidere on the 15th to 16th and Freehold on the 20th to 21st. Estimated soil moisture, in percent of field capacity, this past week averaged 94 percent north, 86 percent central and 80 percent south. Four inch soil temperatures averaged 63 degrees north, 64 degrees central and 64 degrees south.

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WES KLINE -- GDD BASE 40 PINEY HOLLOW

*LAST WEEK  145 (Ending 5/14/12)
THIS WEEK  177 (Ending 5/21/12)
* FEBRUARY GROWING DEGREE DAY TOTALS 59
PLANT & PEST ADVISORY
VEGETABLE CROPS EDITION CONTRIBUTORS

Rutgers NJAES Cooperative Extension Specialists
Gerald M. Ghidiu, Ph.D., Vegetable Entomology
George Hamilton, Ph.D., Pest Management
Joseph R. Heckman, Ph.D., Soil Fertility
Bradley A. Majek, Ph.D., Weed Science
Andy Wyenandt, Ph.D., Vegetable Pathology

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 (732-398-5260)
Monmouth, Bill Sciarrappa, Ph.D. (732-431-7260)
Morris, Peter J. Nitzsche (973-285-8300)
Passaic, Elaine Fogerty, Agric. Assistant (973-305-5740)
Salem (856-769-0090)
Warren, William H. Tietjen (908-475-6505)
Vegetable IPM Program (732-932-9802)
Joseph Ingerson-Mahar, Vegetable IPM Coordinator
Kristian E. Holmstrom, Research Project Coordinator II

Newsletter Production
Jack Rabin, Associate Director for Farm Services, NJAES
Cindy Rovins, Agricultural Communications Editor

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