RUTGERS
New Jersey Agricultural Experiment Station

Rutgers Master Gardeners of Morris County
Community Garden IPM Team Report #5
June 27, 2025

WHAT'S IN THIS REPORT		
TIPS	**NEW PROBLEMS SEEN**	**SPOTLIGHTS**
• Impact of soggy soil on plants	• Colorado potato beetle larvae • Mexican bean beetle adult • Squash vine borer adult • Bacterial leaf spot on peppers • Cross-striped cabbageworm eggs and larvae • Angular leaf spot disease on cucumber and squash plants	• Assassin bugs (beneficial) • Creeping buttercup (weed)

IPM TEAM REPORTS

The Morris County Rutgers Master Gardener Integrated Pest Management (IPM) Team scouts one or more community gardens each week. Every other week the team provides IPM Team reports on problems first observed during the two-week period. These reports contain summary descriptions, management methods, and research-based references for more information.

Refer to Rutgers Fact Sheet 1123 and 1124 for all recommended controls or insect and disease pests. They are valuable resources throughout the growing season:
Rutgers Fact Sheet on Vegetable Insect Control: https://njaes.rutgers.edu/fs1123
Rutgers Fact Sheet on Vegetable Disease Control: https://njaes.rutgers.edu/pubs/publication.php?pid=fs1124

The gardens scouted by the IPM Team include the Morris County Park Commission Community Garden, the Morris Township Ted Largman Community Garden, the Madison Community Garden, the Wick Garden in Jockey Hollow National Park, and the Randolph Community Garden. The team also reports on sightings in the Pequannock Community Garden and their own vegetable gardens.

GENERAL OBSERVATIONS AND TIPS

Weather here in New Jersey has been quite variable this spring. Interspersed between some bouts of hot, sunny weather there has been quite a lot of cool, wet weather that caused more cautious gardeners to delay planting their warm-season crops. Almost everyone finally got their tomatoes, peppers, beans, squash and cucumbers in the ground only to have the cooler rainy weather return and linger. There seem to have been many days of heavy cloud cover and drizzly, rainy weather. Be cautious about watering your garden when there has been a recent rainfall and the soil is already wet. Soggy soil can adversely affect plants.

What happens when the soil stays wet for too long?

Too much rain or heavy watering can cause conditions that make it difficult for your vegetable plants to thrive.

- Consistently soggy soil is low in oxygen. Roots need oxygen to survive. Soil that is drenched with water and remains very wet for an extended period can starve your plants of oxygen at the root level.
- A heavy downpour of rain can flush nitrogen so deeply into the soil that your plants' roots can't reach it. Instead of a healthy, dark green color, leaves can begin to look pale green or yellowish.

- Soil that is cool and wet is an ideal medium for the growth of fungal disease spores. The spores of Verticillium *(Verticillium alboatrum)* readily germinate in cool weather and soil that has been saturated for 24 hours. Once a tomato plant is infected, it is only a matter of time until it succumbs.
- Septoria and Powdery mildew are both air-borne fungal diseases. Their spores require only standing water on the leaf surface to germinate.
- A variety of stem, root and seed rots get started in soil that doesn't drain well, remaining soggy for too long. Did you plant your bean seeds too early and are wondering why they haven't come up? If weather has been cool and wet, they probably rotted in the ground. You'll have to replant.

We can't control the weather but there are steps gardeners can take to mitigate the dangers of too much rain.

- If you have a heavy, clay-type soil that doesn't drain well, incorporate organic matter into your garden to lighten the soil and improve drainage.
- Don't plant in low-lying areas where water puddles. If this is unavoidable, consider installing a raised bed or plant in pots which will allow the soil to drain more quickly.
- Use mulch to help prevent splash back when heavy rainfall strikes the soil.
- Check the soil before watering. It may look dry on the surface but still be quite moist underneath. Most plants don't need more than one inch of water per week.
- Water the root area of your plants rather than sprinkling the tops to help deter the air-borne fungal diseases.

Keep a close eye on the plant and soil conditions in your garden and deal with issues sooner rather than later. Your plants will reward you with a bountiful harvest if you do.

References:

South Dakota State Univ. Extension https://extension.sdstate.edu/plant-problems-cool-wet-soil

REPORTS ON NEW PROBLEMS

Problem: Colorado Potato Beetles *(Leptinotarsa decemlineata)*	**First Sighting: Randolph Community Garden - June 16 (Larvae)**

Description: Adult Colorado potato beetles overwinter in the soil and emerge in early spring, laying bright, orange-yellow eggs in small clusters on the undersides of the leaves of host plants in the *Solanaceae* family. Both adults and their larvae will feed on the foliage of potatoes, eggplants, tomatoes, peppers, groundcherries, and other nightshade plants. The Colorado potato beetle is approximately 3/8th of an inch long and has a black and yellow striped body with an orange head. A second generation will emerge in late summer and then overwinter in the soil. If not controlled, they can reproduce rapidly and defoliate plants. Monitor and destroy to disrupt any future infestations.

Colorado potato adult with yellow eggs on the underside of leaf.

Photo: Rutgers University

Newly hatched red-orange larvae of Colorado potato beetle eating leaves. Shows whole leaf damage happens quickly.

Photo: Rutgers University

Adult Colorado potato beetle sitting on potato leaf.

Photo: M. Olin, NJAES

Management:

- Colorado potato beetle adults and larvae can be effectively hand-picked.
- Destroy beetles and their larvae by crushing or placing them in a can of water with a few drops of dish detergent. Be sure to scout under leaves for their yellow eggs and remove/crush them.
- Row covers can protect young plants and prevent the beetles from reaching crops.
- Rotate crops each year and plant Solanaceae family as far as possible from previously infected areas.
- A biological insecticide, *Bacillus thuringiensis var. tenebrionis*, is available (Novodor). This biopesticide uses a bacterium that kills small potato beetle larvae when used according to label directions.

References:

- Rutgers University https://njaes.rutgers.edu/pubs/publication.php?pid=FS224
- University of Maryland https://extension.umd.edu/resource/colorado-potato-beetle-vegetables

Problem: Mexican bean beetles ***(Epilachna varivestis)***	**First Sighting: Morris Twp Community Garden – May 26** **Randolph Community Garden – June 16**

Description: Mexican bean beetle (MBB) adults are round-to-oval, hard-bodied insects, about 1/3 inch in length, yellow to coppery brown, with 16 black spots. Females lay clusters of yellow eggs on the undersides of leaves. The adults and eggs resemble lady bird beetles (also known as ladybug) adults and eggs. Mexican bean beetles are, in fact, in the same family. Mexican bean beetle larvae are yellow, cylindrical but tapered towards the rear, with branched spines. Pupae are also yellow and are on the undersides of leaves. These beetles and their larvae remove leaf tissue between the veins, resulting in a skeleton-like or lacy appearance. Severe defoliation may affect the harvest.

Mexican bean beetle adults are 1/3 inch in length and yellow to coppery brown with 16 black spots.
Photo: M. Albright, NJAES

Mexican bean beetle eggs on the underside of a leaf.
Photo: M. Albright, NJAES

Newly hatched Mexican bean beetle larvae.
Photo: M. Albright, NJAES

Mexican bean beetle larvae feeding on the undersides of leaves.
Photo: M. Albright, NJAES

Mexican bean beetle pupa.
Photo: M. Albright, NJAES

Extensive leaf damage from Mexican bean beetle feeding.
Photo: M. Sample, NJAES

Management:

- Inspect plants and handpick adults, eggs, larvae and pupae. The eggs, larvae, and pupae are usually found on the undersides of leaves. Handpicking is effective but time consuming.

- The New Jersey Department of Agriculture (NJDA) has a program to breed a tiny beneficial wasp that is helpful in the control of MBBs. The adult wasps or their mummies are available to farmers and the public for release in fields where MBBs are a problem. The adults are 2 – 3.5 mm in size and do not bite or sting humans or other animals. This parasitic wasp lays its eggs in MBB larvae. Wasp larvae feed inside the MBB larvae, kill it, and pupate inside it. forming a case called a mummy. More information can be found: The Mexican Bean Beetle Outreach Project (nj.gov)
- Insecticides (*Beauvaria bassiana*, neem, pyrethrins) can be used. Be sure to target both tops and bottoms of leaves. The first application should be made when eggs begin to hatch because small Mexican bean beetle larvae are easier to control with pesticides than large larvae or adults.
- Clean up and remove all plant debris after harvest.
- Try growing fast maturing varieties of beans.

References:

- Rutgers University https://njaes.rutgers.edu/pubs/publication.php?pid=FS227
- Rutgers University https://njaes.rutgers.edu/fs1123/

Problem: Squash vine borers ***(Melittia satyriniformis synonym M. cucurbitae)***	**First Sighting: Randolph Comm. Garden – June 16** **Morris Twp Community Garden – June 23**

Description: The squash vine borer, *Melittia satyriniformis or Melittia cucurbitae*, is a significant pest of squashes and pumpkins and a lesser pest of cucurbits and melons. Frass, which is greenish yellow excrement, indicates that borers are feeding and tunneling inside the stems of the plants. If the borers are not removed, they will cause the plant to wilt and die.

Squash vine borer inside a stem

Photo: P. Nitzsche, NJAES

Frass (excrement) from Squash vine borer

Photo: M. Albright, NJAES

Squash vine borer adult
Photo: R. Terry, NJAES

Squash vine borer eggs

Photo: B. Werling, MSU Extension

Management:

- Watch for and destroy adults.
- Inspect plants for eggs. They can be anywhere on the plant. Most often they are at the base of the plant, on the stems, or on leafstalks. They can be removed with the sticky side of tape.
- If frass is seen, cut a longitudinal slit halfway through the vine above the frass to find and remove the borer.
- If there are multiple locations with frass, there may be multiple borers.
- Remove infested vines that cannot be saved to prevent the borers from overwintering, and remove all vines once the plants have stopped producing fruit.
- Floating row covers can be used early in the season to keep adults from laying eggs on the plants. The covers need to be removed when the plant flowers to allow for pollination. If row covers are used, don't plant near locations that had borers the previous year, since adults could emerge from the soil under the row cover.
- Spinosad (Captain Jack's Dead Bug Brew and Monterey Garden Insect Spray) or *Bacillus thuringiensis var. kurstaki* can be applied to kill the young larvae as they hatch from the eggs before they bore into the stem. The pesticides will not work once the larvae enter the stem. Be sure to read and follow all pesticide label instructions.

References:

- Rutgers University https://njaes.rutgers.edu/pubs/publication.php?pid=FS229
- University of Connecticut Squash-Vine-Borer.pdf

Problem: Bacterial leaf spot disease on peppers *(Xanthomonas campestris spp.)*	**First Sighting: Randolph Community Garden – June 16**

Description: Bacterial leaf spot damage is caused by a variety of different bacteria in the *Xanthomonas* family for which favorable conditions include high humidity, heat waves, and extended periods of leaf wetness. Rain splash or the gardener handling infected plants while they are wet can spread the disease. Alternatively, hot, dry weather can slow the spread of this disease.

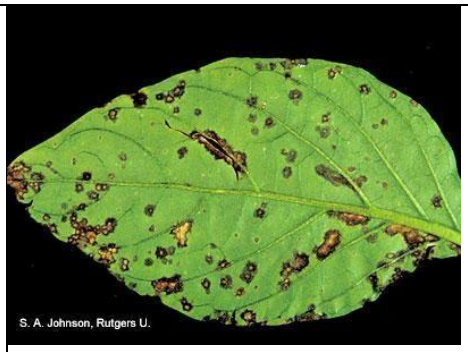
Symptoms appear on the lower surface of older pepper leaves as small pimples and on the upper leaf surface as small water-soaked spots. As the disease progresses, the spots develop gray to tan centers with darker borders. Lesions may enlarge during warm, humid weather with leaves turning yellow or brown and, finally, dropping off. Lesions can develop on stems and may also present as small, raised rough spots on fruits that affect appearance but not eating quality. If leaf drop is extensive, it can result in sunscald of the fruit and reduced yield.

This disease also occasionally attacks tomatoes.

Management:

- Select disease resistant varieties (Strains or Races 1 through 10 in New Jersey). A list can be found at: Disease Resistant Vegetable Varieties | Cornell Vegetables
- Check transplants to make sure they don't have any symptoms of possible disease before purchasing them.
- If you grow your own transplants from seed, do not save seeds from plants that have disease.
- Mulch plants deeply with a thick, organic material.
- Avoid overhead watering.
- Remove and discard badly infected plant parts, as necessary.
- Plant peppers in a different garden location next season, if possible.

Beginnings of bacterial leaf spot on pepper leaf
Photo: M. Olin, NJAES



Lower surface of leaf with bacterial leaf spot
Photo: S. A. Johnson, Rutgers University

Pepper leaf drop due to bacterial leaf spot disease
Photo: University of Minnesota

References:

- University of Maryland Bacterial Leaf Spot on Peppers | University of Maryland Extension (umd.edu)
- University of West Virginia https://extension.wvu.edu/lawn-gardening-pests/plant-disease/fruit-vegetable-diseases/bacterial-leaf-spot-of-pepper
- University of Minnesota https://extension.umn.edu/disease-management/bacterial-spot-tomato-and-pepper

Problem: Cross-striped cabbageworms *(Evergestis rimosalis)*	**First Sighting: Morris Twp Community Garden – Eggs and Larvae – June 23**

Description: The larvae (caterpillars) of cross-striped cabbageworm moths eat brassica plants such as cabbage, broccoli, kale, cauliflower, and collards. Leaves, buds, and small heads can quickly become riddled with holes. Cross-striped cabbageworm can be a significant problem in the home or community garden, where a limited number of plants are grown, as damage is frequently severe on several consecutive plants within a row. Eggs are light yellow and deposited in flattened masses on the undersides of leaves. The newly hatched larvae is a small gray caterpillar. Mature larvae are about 3/4 inch long, bluish gray above with tiny distinct transverse black stripes. On each side of the body there is a black stripe with a yellow stripe underneath it. There are multiple generations per year.

Cross-striped cabbageworm caterpillars on broccoli rabe.
Photo: M. Albright, NJAES

Cross-striped cabbageworm egg mass on the back of a broccoli plant leaf. The egg mass is about ¼ inch wide.
Photo: M. Albright, NJAES

Management:

- Hand-pick egg masses and larvae, which is effective but time consuming.
- Cover plants with row covers after transplanting.
- The insecticide, *Bacillus thuringiensis var. kurstaki*, can be used and only affects the caterpillars. Neem, pyrethrin and Spinosad can also be used.

References:

- Rutgers University https://njaes.rutgers.edu/pubs/publication.php?pid=FS287
- University of Massachusetts https://www.umass.edu/agriculture-food-environment/vegetable/fact-sheets/cross-striped-cabbage-worm

Problem: Angular Leaf Spot Disease on cucumber and squash plants (Pseudomonas syringae)	**First sighting: Morris Two Community Garden – June 23**

Description: Angular leaf spot (ALS) is a bacterial disease that favors warm, humid conditions and affects members of the Cucurbitaceae family, notably cucumbers. It is spread via water splash, handling, garden tools, and may be seed-borne. Initial symptoms are small, white or tan-brown water-soaked spots that eventually expand until they reach the leaf veins, resulting in the angular appearance. In wet conditions, a bacterial ooze may form on these spots, causing a white deposit when it dries. Infected spots may dry and crack, giving the leaf a tattered appearance. Eventually the leaves deteriorate, reducing plant vigor. Stems and fruit can also become infected, with fruit transferring bacteria to seed.

Early stage of angular leaf spot disease on squash leaf
Photo: M. Olin, NJAES

Later stage of disease on leaf showing tattered appearance
Photo: M. Olin, NJAES

Closeup showing angularity of diseased spot
Photo: R. Terry, NJAES

Management:

- Purchase certified seed and try resistant varieties such as Calypso, Diva, Fanfare and Marketmore.
- Try growing vertically on a trellis to limit contact with soil and water splash.
- Avoid overhead watering, and don't handle plants when leaves are wet to avoid transmission.
- Prune off infected leaves and stems or remove entire plant if the disease is widespread.
- Dispose of infected plants and diseased leaves responsibly, away from the garden. Do not compost.
- If using shared garden tools, sanitize them thoroughly to avoid spreading the disease organism.
- Practice good garden cleanup as bacteria overwinters on seeds and diseased plant debris.
- Practice a 2-year crop rotation plan.

References:

- Rutgers University https://njaes.rutgers.edu/E310/
- University of Massachusetts https://ag.umass.edu/vegetable/fact-sheets/cucurbits-leaf-spots

BENEFICIAL SPOTLIGHT

Assassin Bugs
(Family: *Reduviidae,* Order: *Hemiptera*)

Description: If you notice a lack of tent caterpillars, or June beetles this year, then assassin bugs may be responsible. These bugs are generalist predators found throughout the world, with 160 species in North America. Several are present here in New Jersey and Morris County. Adult and nymph stages are common control agents of aphids, caterpillars, and other plant-eating pests. As a generalist feeder, however, they will eat some beneficials including other assassin bugs. They do not eat plants. They can be found hunting in a variety of habitats.

Adults range from about a third to over an inch in length, with the wheel bug representing the largest species. They have long, gangly legs, long antennae, and a narrow head with beady, round eyes for spotting prey. Assassin bugs come in several designs and colors, organized by their robust piercing mouthpart and feeding technique. They will use their front legs to hold prey, swing beaks up from a groove between their front legs to insert into prey and inject enzymes rendering prey immobile so their insides can be digested. **Beware that, if handled, they have a painful bite! Best to let them be.**

Their eggs, with a flask-like shape and ornate, spined caps, are glued together in tight clumps or rows of up to 200 eggs on leaves or bark or in soil. There is usually one generation a year. With exceptions, assassin bugs will overwinter as adults in leaf litter and bark.

Being a true bug, Assassin bug nymphs go through an incomplete metamorphosis. They look like wingless adults giving them a spider-like appearance. They will go through 5 molts developing wings with the final molt. They do not pupate. Nymphs can be confused with leaf-footed bug.

Orange assassin bug
(Pselliopus barberi)
Photo: L. Terraneo, NJAES

Spiny assassin bug nymph
(Sinea spinipes)
Photo: L Terraneo, NJAES

Pale green assassin bug adult
(Zelus luridous)
Photo: K Redmond, Univ of Wisconsin

Pale green assassin bug nymph
(Zelus luridous)
Photo: L Terraneo, NJAES

Wheel bug eggs on tree trunk
Egg mass can contain from 42 to 182 eggs
(Arilus cristatus)
Photo: D Roos, NCS Univ.

Zelus sp. eggs
Egg masses contain up to 24 eggs
Photo: N Walton, MSU Extension

Wheel bug adult – can reach up to 1-3/8 inches
(Arilus cristatus)
Photo: Mississippi State Univ. Extension

References:

- North Carolina State State Univ: https://entomology.ces.ncsu.edu/biological-control-information-center/beneficial-predators/assassin-bug/
- University of Maryland: https://extension.umd.edu/resource/assassin-bugs
- Clemson University Fact Sheet: https://hgic.clemson.edu/factsheet/assassin-bugs/

WEED SPOTLIGHT

Creeping Buttercup
(Ranunculus repens)

Description: Creeping buttercup is a perennial weed. Its bright yellow flowers have five to seven overlapping petals which appear in May and June on upright stems up to two inches long. Its dark green leaves, often spotty, are formed in either three leaflets or simple leaves with three lobes. Plant shape is a spreading mound, growing to a height of one to two feet and a spread of two to six feet. It is often confused with native buttercups.

Although self-seeding, creeping buttercup's stems are also capable of growing along the ground and producing shoots and roots at nodes (stoloniferous).

Although non-invasive, this native of Europe and Asia is aggressive in the garden. It should be controlled by deadheading, which prevents seeding, or removed in its entirety by hand. Its ability to regrow from pieces of stem and root demands diligence and consistency to eliminate it.

Closeup of flower
Photo: P. Landschoot, Penn State

Creeping Buttercup plant
Photo: P. Landschoot, Penn State

Creeping Buttercup plant in community garden plot in June
Photo: J. Burdette, NJAES

References:

- Penn State Extension: https://extension.psu.edu/lawn-and-turfgrass-weeds-creeping-buttercup
- Cornell University: http://www.gardening.cornell.edu/homegardening/scene3757.html

ADDITIONAL RESOURCES

All Rutgers Gardening and Landscaping Fact Sheets & Bulletins
https://njaes.rutgers.edu/pubs/subcategory.php?cat=5&sub=1001

Rutgers Master Gardener Program https://njaes.rutgers.edu/master-gardeners/
Rutgers Soil Testing Laboratory https://njaes.rutgers.edu/soil-testing-lab/
Community Gardening Series https://njaes.rutgers.edu/community-garden/
Office of the New Jersey State Climatologist https://climate.rutgers.edu/stateclim/
Rutgers New Jersey Weather Network https://www.njweather.org/
Ticks and Tick-borne Disease https://njaes.rutgers.edu/tick/
Rutgers NJAES You Tube Channel https://www.youtube.com/user/RutgersNJAES

Report Editor: Mary Olin
Beneficial and Weed Sections: Donna Tyson and Loretta Terraneo (Beneficial spotlight) and Joy Burdette (Weed spotlight)