RUTGERS
New Jersey Agricultural Experiment Station

Rutgers Master Gardener IPM Team Report
Report # 4, Week of May 31, 2021

WHAT'S IN THIS REPORT		
NEW PROBLEMS SEEN	**PROBLEMS LIKELY TO BE SEEN SOON**	**SPOTLIGHTS**
• Caterpillar on kale • Three lined potato beetle • Rhubarb leaf spot • Slugs	• Striped cucumber beetle	• Spiders • Ground Ivy (weed)

GENERAL OBSERVATIONS AND TIPS

It appears the unusually late cold snap is over and we are due for some good garden weather. The rain has given the gardens a good soaking and plants are beginning to flourish. Many cool season crops are ready to harvest. Warm weather lovers, such as tomatoes, peppers and squashes should start to grow vigorously soon. The warmer weather also provides ideal conditions for many garden pests, so be on the lookout for early signs of insect pests and disease. It's not too late to plant more summer crops. Tomatoes and peppers planted now will likely catch up.

REPORTS ON NEW PROBLEMS

Problem: Caterpillar on kale	**Where: Morris County Community Garden May 25**

Description: The larval form of three insects, cabbage loopers, imported cabbageworms, and diamondback moths, are important pests of cole crops in New Jersey. Cabbage, broccoli, cauliflower, kale, Brussels sprouts, and others can suffer significant damage from these pests. Since all 3 caterpillars are similar in appearance and the damage they cause, how can you tell which one you have in your garden?

The cabbage looper (*Trichoplusia ni*) gets its name from the way the caterpillar arches its back when moving. The diamondback moth (*Plutella xylostella*) larvae are small and display nervous wriggling movements when disturbed. The imported cabbageworm (*Pieris rapae*) larvae eat large irregularly shaped holes in leaves and deposit large pellets of excrement as they feed.

Left: Early instar larva of cabbage looper, Center: Larva of imported cabbageworm, Right: Larva of diamondback moth Photos: University of Florida

Caterpillar feeding on overwintered kale leaf
Photo: D. Bu Brule, NJAES

Management:

- Use row covers to prevent egg laying by cole family insect pests
- Scout frequently for caterpillars and eggs
- Because the diamondback moth and imported cabbageworm can overwinter in plant debris, clean out cole crop plants after harvest
- *Bacillus thuringiensis* can be used to treat severely infested crops (As with any pesticide follow directions carefully. This pesticide only works if the insect eats a treated leaf and needs to be re-applied after rain.)

Fact Sheet / References:

1. Rutgers IPM cabbage guidelines: https://pestmanagement.rutgers.edu/ipm/vegetable/guidelines/cabbage/
2. NJAES fact sheet 231 - cabbage loopers: https://njaes.rutgers.edu/pubs/publication.php?pid=FS231
3. NJAES fact sheet 232 – diamondback moth: https://njaes.rutgers.edu/pubs/publication.php?pid=FS232
4. NJAES fact sheet – imported cabbageworm: https://njaes.rutgers.edu/pubs/publication.php?pid=FS286

Problem: -Rhubarb R*amularia rhei*	Where: Home gardens in Morris Plains and Denville May 24 - 26

Description: : Rhubarb is usually relatively problem-free in the garden. *Ramularia rhei*, a rhubarb leaf spot disease, was found in 3 of the home gardens inspected by this team the week of May 24th. Though this leaf spot disease doesn't usually seriously impact yield, it can weaken the plants over time if left unchecked. It first appears as small red dots that gradually enlarge to form circular lesions a half-inch or more in diameter. Larger spots become white to tan with purplish halos. The larger spots can lead to sunken lesions in the stalk tissue. Stalk infections can come later, appearing as small spots that elongate as the stalk grows. White fungus can develop in the centers of spots on leaves and/or stalks, becoming brown as the tissue dies. Fungi overwinter in infected plant debris.

Leaf spot on underside of rhubarb leaf, Morris Plains Home Garden, May 26, 2021
Photo J. Basile, NJAES

Leaf spot on top of rhubarb leaf, Morris Plains Home Garden, May 26, 2021
Photo J. Basile, NJAES

Minor leaf spot on top of rhubarb leaf, Denville Home Garden, May 24, 2021
Photo M. Sample, NJAES

Management:

- Remove and discard all leaves after hard frost
- Don't add infected leaves to compost
- When harvesting, remove stalks with infected leaves first
- Don't over-water and avoid overhead watering as much as possible
- Provide sufficient air flow by using adequate spacing

Problem: Three-lined Potato Beetles	Where: Morris Twp. Comm. Garden, 5/26/21

Description: : Three-lined Potato Beetle adults and eggs were seen in the Morris Twp Community Garden. Three-lined Potato Beetles are found on plants in the family Solanaceae. Both adults and larvae feed on leaves including tomatillo, potato, and sometimes tomato and eggplant. Damage to tomatillos can be severe. Eggs are yellow and often found on the underside of leaves. Both adults and larvae feed on leaves. Gardeners sometimes mistake three-lined potato beetle adults for striped cucumber beetles.

Three lined Potato Beetle – Morris Twp Comm Garden, May 2021
Photo M. Albright, NJAES

Eggs of Three-lined Potato Beetle. Morris Twp Comm Garden, May 2021
Photo M. Albright, NJAES

Three-lined Potato Beetle larvae, (UNH Cooperative Ext.)

Management:

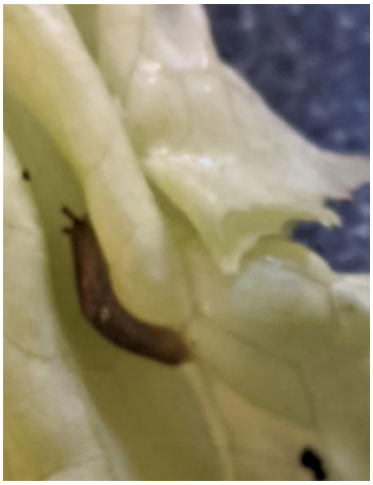
- The eggs, larvae, and adults can be handpicked.
- Floating row covers are an effective barrier to the beetles while the plants are small.
- Neem and pyrethrins can be used. As with any pesticide, be sure the plant and pest is listed on the label and use according to instructions.

More Information: Fact Sheet / References

1. Rutgers NJAES, Three-lined Potato Beetle, FS242: https://njaes.rutgers.edu/pubs/publication.php?pid=FS242
2. UNH Cooperative Ext. Three-lined Potato Beetle: https://extension.unh.edu/resources/files/Resource001192_Rep1517.pdf

Problem: Slugs or snails	Where: Denville Home Garden, 5/24/21

Description: : Slugs and snails are both members of the mollusk phylum and are similar in biology. A key difference is that snails have a shell. Both can damage plants, especially small ones, if present in sufficient numbers. They prefer moist environments and are more numerous where favorable habitat exists. Weedy areas, dense ground cover, boards, or even mulch provide ideal hiding places for them. Predators, such as toads, garter snakes, and some birds, can be helpful at managing their numbers.



Slug on lettuce – Denville Home Garden, May 24, 2021
Photo M. Sample, NJAES

Tawny slug on strawberry, University of California

Slug – Photo P. Nitzsche, NJAES

Management:

- Eliminate, as much as possible, hiding areas such as weeds and debris
- Provide adequate air flow around plants
- Water in the morning and avoid overhead watering
- Pull back mulch if problem is severe
- Try pitfall traps or bait such as beer
- If problem is severe try a commercial molluscicide, perhaps with the newly available active ingredient ferric sodium EDTA (Be certain to follow label directions carefully and keep product away from children and pets.)

More Information: Fact Sheet / References

1. Rutgers NJAES, Slugs and snails in the vegetable garden, FS397: https://njaes.rutgers.edu/pubs/publication.php?pid=FS397
2. University of California article on snails and slugs: http://ipm.ucanr.edu/PMG/PESTNOTES/pn7427.html
3. UC article on new molluscicide: https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=13838
4. Oregon State slug portal: https://agsci.oregonstate.edu/slug-portal

LIKELY TO BE SEEN SOON

Pest: Striped Cucumber Beetle - Adults	Where: Likely to be seen soon

Description: Cucurbits (cucumbers, squash and pumpkins) should be inspected regularly for these destructive pests. Striped cucumber beetles cause feeding damage on foliage and fruit. Importantly, striped cucumber beetles carry the bacterial wilt pathogen that can cause plants, especially cucumbers, to wilt and die. Curcurbits are broadly susceptible. These beetles become active in late May or early June and feed on the blossoms of early flowering plants, such as dandelions, apples, and hawthorn, until their host crops are available.

Striped Cucumber Beetle Adult (M. Albright, 6/8/20)

Damage Caused by Striped Cucumber Beetle on Zucchini Plant (M. Olin, 6/6/20)

Management:

- Check for cucumber beetles early in the season, especially in the cotyledon and first to third true-leaf stage, when the plants can suffer defoliation and bacterial wilt. Once beetles are present, monitor more frequently (every couple of days).
- Keep your garden clean. Remove weeds in and around your garden, as they may be potential hosts for adults. If a plant is showing signs of bacterial wilt, remove the infested plant before more beetles can feed on the plant and spread the bacterium.
- Use a physical barrier, such as a floating row cover, during early to mid-June to keep the Striped Cucumber Beetles away from your plants. Be sure to remove the barrier when cucurbits start to flower unless you are growing a parthenocarpic variety (one that doesn't require insect pollination).
- Choose a pesticide that has a low impact on beneficial insects, such as lady beetles and pollinators. Neem is a plant-based pesticide that prevents insects from feeding, which eventually kills them. Pyrethrins should come in contact with the beetles to be effective.

More Information: Fact Sheet / References

1. Rutgers NJAES Cucumber Beetles FS225: https://njaes.rutgers.edu/pubs/publication.php?pid=FS225
2. UMN Extension Cucumber Beetles in Home Gardens: https://extension.umn.edu/yard-and-garden-insects/cucumber-beetles
3. Rutgers Fact Sheet 1123 Vegetable Insect Control Recommendations for Home Gardens: https://njaes.rutgers.edu/fs1123/

BENEFICIAL SPOTLIGHT

Spiders
(Family Carabidae)

Description: When you think of beneficials in the garden you may not think of spiders, but perhaps you should. Many spiders eat garden pests, including fleas, lacebugs and Japanese beetle eggs. Spiders are arachnids that feast on a large variety of insects. In North America, only the widow spiders in the genus *Latrodectus* and the recluse spiders, in the genus *Loxosceles*, are dangerous to humans. The brown recluse spider (photo below) is one that is found in New Jersey that is poisonous.

Brown recluse spider – NJAES fact sheet 1121

Most other spiders found in New Jersey are actually helpful. Some capture many common garden pests in their webs. Some hunt without webs. If you see these helpful arachnids or their webs in your garden patch, think twice before trying to get rid of them.

Yellow garden spider
Photo: Clemson University

Wolf spider
Photo: University of California

References

- Rutgers fact sheet 930: https://njaes.rutgers.edu/pubs/publication.php?pid=FS930
- Rutgers fact sheet 1121: njaes.rutgers.edu/FS1121/

WEED SPOTLIGHT

Ground Ivy (*Glechoma hederaceae*)	**Where: Morris Plains home garden**

Description: Ground Ivy, aka Creeping Charlie, is a small perennial plant that can be found trailing along in turf, gardens, and wood edges. Since this plant belongs within the mint family, and can tolerate a wide variety of growing conditions, its growth can escalate rapidly by stolons that reach up to 30" in length. Characteristics include square stems, kidney shaped leaves with scalloped edges, and violet-blue tubular flowers that bloom from spring to early summer. The leaves emit a minty fragrance upon crushing. Be mindful, as it is highly toxic to horses.

Management:
Hand pulling.
Goes dormant in summer.
Eradicate in area of issue and replace with mulch or groundcover that will outperform the ground ivy.

Ground Ivy
Photos: J. Basile, NJAES)

References

- Rutgers University Fact Sheet 1219: https://njaes.rutgers.edu/fs1219/
- North Carolina State University: https://plants.ces.ncsu.edu/plants/glechoma-hederacea/

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/

PEST MONITORING APPROACH FOR 2020/21

During 2018 and 2019, teams of Rutgers Master Gardeners conducted regular inspections of two community gardens: the Morris County and Madison Community Gardens.
Due to Covid-19 restrictions during 2020/21, the team is reporting on problems observed in their own vegetable garden plots rather than inspecting all the plots in the community gardens. The team's plots are in six locations in Morris County including the Madison Community Garden, Morris Township ValleVue Community Garden, Morris County Community Garden, as well as home gardens in Denville, Kinnelon, Morris Plains, and Morris Township.

Report Editor: Margot Sample

Weed Spotlight: Jennifer Basile

Sightings Reported by: Mary Albright, Diane DeBrule, Jennifer Basile, and Margot Sample