RUTGERS
New Jersey Agricultural Experiment Station

Rutgers Master Gardeners of Morris County Community Garden IPM Team Report #6 June 30, 2023

WHAT'S IN THIS REPORT		
TIPS	**NEW PROBLEMS SEEN**	**SPOTLIGHTS**
• Harvest garlic scapes	• Angular leaf spot on squash • Bacterial leaf spot on peppers • Squash bugs • Four-lined plant bugs	• Purslane (weed) • Poison ivy (weed)

GARDENS SCOUTED FOR THIS REPORT: Morris County Park Commission's Community Garden in Morristown, ValleVue Preserve Community Garden in Morris Township, and Madison Community Garden.

GENERAL OBSERVATIONS AND TIPS

After an extended period with little or no rain, we are finally enjoying fairly regular rainfall that helps to keep the garden soil moist and plants well hydrated. An advantage is freedom from spending time doing frequent watering. The downside is an increase in humidity, rain-splash and other conditions that create an environment favoring the development and spread of plant diseases. Although we have no control over the weather, we can be cautious about working in our gardens shortly after a rainfall. When plants are wet, we may inadvertently help disease organisms to spread by brushing against or disturbing them before they have a chance to dry naturally.

Harvest garlic scapes before they flower

This is the time of year when the hardneck garlic planted last autumn begins to send up its flowering scapes. You will recognize the scape because its stem is round unlike the flat leaves of the garlic plant. In addition, it has a white, pointy structure at the tip which will become a flower. This is the garlic plant's attempt to produce bulblets (called bulbils). Common practice is to remove the scape when it has curled once or twice but before the flower head opens. If scapes remain too long on the plant, they can also become woody. Removing the scape will ensure the plant's energy will go into making a nice, full head of garlic underground. Failure to remove the scape can reduce the eventual size of the garlic head by as much as 48%.

The scapes have a garlicky flavor and can be used both raw in salads or gently sauteed in cooked dishes. It is not unusual to find them for sale at local farmers' markets this time of year.

Hardneck garlic scapes ready to be harvested
Photo: M. Olin, NJAES

References:

- Rutgers University: https://njaes.rutgers.edu/fs1233/
- University of Maine: https://extension.umaine.edu/publications/wp-content/uploads/sites/52/2022/11/2063-Growing-Garlic-in-Maine.pdf

REPORTS ON NEW PROBLEMS

Angular Leaf Spot on squash plants *(Pseudomonas syringae)*	**Where: Madison Community Garden (6/12)**

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: J. Basile, 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 disease is widespread.
- Dispose of infected plants and diseased leaves responsibly, away from the garden. Do not compost.
- 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

Problem: Bacterial leaf spot on peppers *(Xanthomonas campestris spp.)*	**Where: Madison Community Garden (6/12)**

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.

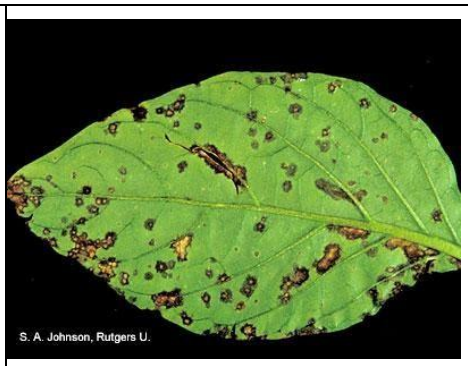
Symptoms appear on the lower surface of older pepper leaves as small pimples and on the upper leaf surface as small water-soaked spots. As the disease progresses, the spots develop gray to tan centers with darker borders. Lesions may enlarge during warm, humid weather with leaves turning yellow or brown 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 U

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

References:

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

Problem: Squash Bug Eggs ***(Anasa tristis)***	**Where: Morris Township Community Garden (6/21)**

Description: Squash bug eggs have been found on various zucchini plants in the Morris Township Community Garden. The adults are flying, mating and egg laying has begun. These eggs will soon hatch and their nymphs will suck the sap from leaves, stems and vines of squash, pumpkins, gourds and melons. Leaves become speckled, later turning yellow to brown. Plants can wilt and small plants can be killed completely, while larger plants begin to lose runners. During the feeding process, squash bugs inject a poisonous substance causing a wilting known as *Anasa* wilt of cucurbits, closely resembling a disease called bacterial wilt. Squash bugs can also transmit Yellow Vine Disease of Cucurbits that causes vines to turn yellow and die.

Squash bug eggs close up. Females lay clusters of eggs on underside of leaf. These will hatch in ten days and nymphs mature in just over a month.
Photo: M. Albright, NJAES

Squash bug adult on leaf. Squash bugs are 5/8th inch long and resemble stink bugs. Adults can overwinter in leaf debris.
Photo: M. Albright, NJAES

Squash bug egg cluster with newly hatched nymphs.
Photo: M. Albright, NJAES

Management:

- Gardeners should inspect their plants and hand-pick (remove and crush or drop in a jar of soapy water) adults, eggs and nymphs. The eggs and nymphs are often found on the undersides of leaves.
- Flat boards can be placed on the ground since adults like to hide under them. Gardeners can lift the boards in the morning and destroy the squash bugs found.
- Sanitation is very important. Remove trash, old vines, dead leaves and plant residue to help prevent buildup of the pest and remove overwintering protection for squash bugs.
- The insecticide Neem can be applied for adults and nymphs. As with any insecticide, make sure the product label includes the plant and pest, and follow the instructions on the label.

References:

- Rutgers University: https://njaes.rutgers.edu/pubs/publication.php?pid=FS228
- University of California: http://ipm.ucanr.edu/PMG/PESTNOTES/pn74144.html

Problem: Four-lined Plant Bug *(Poecilocapsus lineatus)*	**Where: Morris Township Home Garden (6/21) on potato plant**

Description: The adult four-lined plant bug is a 1⁄2 inch long, yellowish to yellowish-green true bug with four longitudinal black lines down the wing covers and black antennae. This plant bug looks somewhat like a striped cucumber beetle. Nymphs of the insect are wingless and bright yellow to red with rows of black spots on the abdomen. Older nymphs are yellowish-green with a yellow stripe on each wing pad.

These bugs feed on a variety of plants, including herbs (especially members of the mint family and basil), peppers, currants and gooseberries, and many ornamentals. The damage inflicted by their sucking mouth parts can at first appear to be a fungus or other sooty disease, but close inspection reveals mechanical damage, with the injury going all the way through the leaf, not just resting on one surface. In great numbers, they can disfigure the plant and reduce its vitality. Their damage makes herbs appear unappetizing.

Feeding damage penetrates through oregano leaves
Photos: D. DuBrule, NJAES

Adult (top) and nymph Four-lined plant bugs
Photos: Ohio State University

Management:

- Begin monitoring in early May for signs of feeding (leaf damage).
- Hand-pick (although bugs are fast).
- Insecticidal soap can be used on edible plants and ornamentals.

References:

- University of Wisconsin-Madison: Four-Lined Plant Bug – Wisconsin Horticulture
- Ohio State University: Four-lined Plant Bug Crushing Oregano (and other plants) | BYGL (osu.edu)
- University of Minnesota: Fourlined plant bugs | UMN Extension

WEED SPOTLIGHT

Common Purslane
(Portulaca oleracea)

Description: Common purslane is a weedy plant in the Portulacaceae family. It is widely distributed and is naturalized in many parts of the world. In some countries, it is considered a popular green and used in many ethnic foods.

Purslane is a succulent, growing from a single taproot and generally spreading outward in a mat-like formation. If there is ample moisture, it can grow upward as well, attaining heights of as much as 16 inches. Purslane enjoys full sun and can grow in almost any type of soil. Although it grows most vigorously in warm weather with sufficient moisture, it can also tolerate drought. It is frost-tender.

When weeding purslane in your garden, be careful to remove the entire plant without breaking off any of the branches. Use caution if hoeing this plant as its cut stems will re-root very readily at the nodes. If there are pieces, it is best to rake or hand remove them. It is also wise to remove this plant before it flowers. Purslane is self-pollinating and, even if the plant has been uprooted and left upside down in the garden, the seed pods will continue to mature and release their seeds. Seeds can remain viable in the soil for several decades.

Purslane
Photo: P. Nitzsche, NJAES

Purslane growing in mat-like formation
Photo: M. Olin, NJAES

References:

- University of Wisconsin-Madison Extension: https://hort.extension.wisc.edu/articles/common-purslane-portulaca-oleracea/
- University of Maryland Extension: https://extension.umd.edu/resource/purslane

Poison Ivy
(Toxicodendron radicans)

Description: "Leaves of three, let it be" is an old saying that is wise to keep in mind. It refers directly to the fact that more than one plant having compound leaves composed of three leaflets bears the cognomen of "poison". The other is poison oak. Poison ivy is commonly found in wooded areas where its vining habit allows it to climb tree trunks. It also flourishes along roadside verges and in urban green spaces where it climbs fences or runs along the ground, periodically sending out roots.

Urushiol is an oily compound found in all parts of poison ivy. This oil is responsible for an unpleasant skin reaction in people who are allergic to it. Symptoms include swelling, redness and itchy blisters at the site of exposure. Urushiol resists breaking down, clinging to clothing and tools and can lead to exposure from these secondary sources.

If you must be in the vicinity of poison ivy, protect yourself by wearing clothing that covers your arms and legs and closed-toe shoes. Wash exposed clothing separately and clean any tools used thoroughly. Wear gloves! Dispose of any poison ivy plants you remove responsibly and never, under any circumstances, burn them. Burning can cause allergen particles to become airborne, allowing them to be inhaled and causing a serious internal reaction.

Poison ivy
Photo: Alabama A&M and Auburn Universities Extension

Poison ivy in a community garden raised bed planted with garlic
Photo: N. Gardner, NJAES

References:

- Rutgers University: https://njaes.rutgers.edu/pubs/publication.php?pid=FS1019
- Alabama A&M and Auburn Universities Extension: https://www.aces.edu/blog/topics/forestry/touch-me-nots-poison-ivy-poison-oak-and-poison-sumac/

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

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