RUTGERS
New Jersey Agricultural Experiment Station

Rutgers Master Gardeners of Morris County Community Garden IPM Team Report 11 September 7, 2023

WHAT'S IN THIS REPORT		
TIP	**NEW PROBLEMS SEEN**	**SPOTLIGHT**
• Cover crops	• Anthracnose on Tomato and Pepper Fruit • Catfacing and Cracking on Tomatoes • Plectosporium blight on Pumpkin and Zucchini Plants	• Spiders

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

Garden production is slowing down for many summer crops. You may be growing weary of harvesting and maintaining your garden, but we will soon be wishing for all the fresh produce. Continue to pick your produce frequently so you can enjoy it at its peak. If overripe fruit is left on vegetable plants, the plants will slow down producing new fruit. Rotting fruits can also be attractive to pests. If you are lucky enough to have more than you and your friends can use or preserve, consider donating to one of the many food pantries in Morris County. Their clients would love the fresh produce and it is almost guaranteed to make you feel good as well.

Left: Some summer produce, Right: Overripe tomatoes showing signs of cracking and rotting
Photos: M. Sample, NJAES

Now is also a good time to start thinking about next year's garden. As you pull spent plants, keep track of what worked well for you and what wasn't worth the effort and garden space. Of course, every year has variables beyond our control, but good record keeping can help fine-tune your garden over the years.

Cover Crops – Can they benefit your garden?

What's a cover crop?

Cover crops help your garden by improving the soil and preventing erosion. Some cover crops that are planted and then tilled or turned under into the soil are called green manure.

Why should I use a cover crop?

Cover crops have many benefits that vary depending on the cover crop planted. These can include:

- Replacing or increasing soil organic matter – Non-legumes or a mixture of grasses and legumes are good for this.
- Supplying nitrogen – Legume cover crops such as alfalfa, clover and hairy vetch can increase the amount of nitrogen in the soil, thus reducing fertilizer costs.
- Preventing erosion – Plants that quickly establish such as rye, hairy vetch and crimson or sweet clover have fibrous root systems and help prevent erosion.
- Breaking up compacted soil – A deep rooted cover crop – usually one with a tap root like forage radishes - that is allowed to grow for a season can help break up compacted soil.
- Controlling weeds – Cover crops compete with and even smother weeds.
- Retaining moisture by acting as a mulch
- Replacing nutrients as they decompose
- Attracting beneficial insects, especially when flowering
- Reducing disease and nematodes

You can plant a mixture of cover crops to increase the benefit to your garden. Just know they do need management.

When and where are they planted?

Cover crops are usually planted in the fall for the next spring. Results are best when the seeds are sown four weeks before the first frost. Cover crops are typically planted after other crops are harvested so they can be planted throughout a bed.

What plants make good cover crops?

Choose a cover crop based on what you are trying to achieve. The Rutgers fact sheet on cover crops noted below provides detailed information on how to choose a cover crop. The Madison Community Garden had success planting spring oats in a 200 square foot area. Seed coverage is normally indicated on the packaging. Spring oats should be planted in the early fall after the tomatoes have stopped producing fruit. Spring oats are affordable, readily available, fast-growing and die with the first frost so by the spring they will have disintegrated, and you can plant over them. They help manage weeds and improve the soil. Deer like spring oats so they need to be protected from them. Tall fescue (*Festuca arundina*) was also used as a cover crop at the Madison Community Garden, but it can be time consuming to till or turn under.

	
Red clover, a nitrogen fixer, used as a cover crop	Mixture of cover crops
Photo: S. Brighouse, NJAES	Photo: M. Albright, NJAES

References:

1. Rutgers fact sheet FS849 Cover Crops: https://njaes.rutgers.edu/pubs/publication.php?pid=FS849
2. Cornell University Blog: https://bpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/3/1229/files/2015/05/Garden-Profs-Cover-Crop-Series-1ivs0n9.pdf

REPORTS ON NEW PROBLEMS

Problem: Anthracnose on Tomato and Pepper Fruit (Genus *Colletotrichum*)	**Where: Peppers Morris Township home garden 9/1 Tomatoes Denville home garden 8/29**

Description: Anthracnose fruit rot is a soil-borne disease that affects ripe tomato and pepper fruit. Infections go unnoticed on green fruit and as fruit ripens depressed circular water-soaked spots appear on red fruit. These spots may slowly enlarge and produce black fungal structures (microsclerotia) in the center of the lesion just below the skin surface. Microsclerotia can overwinter in the soil and infect tomatoes in the next growing season.

Anthracnose on tomato fruit.
Photo: P. Nitzsche, NJAES

Advanced anthracnose on tomato fruit
Photo: M. Sample, NJAES

Anthracnose on pepper fruit,
Photo: M. Albright, NJAES

Management:

- Remove old plant debris, including fruits on the ground, since fungal spores can overwinter in infected plant material.
- At the end of the growing season remove and discard all tomato and pepper refuse.
- Each year plant tomatoes and peppers in a new location away from areas where tomatoes, eggplant, potatoes or peppers were grown in the past three years.
- Make sure plants have good air circulation to dry the leaves. Staking or caging tomatoes brings the plants up off the soil and allows more rapid drying of the plant.
- Mulch to create a barrier between the pathogen in the soil and plants
- Control weeds and volunteer tomato and/or pepper plants
- Water at the base of plants to keep leaves from getting wet

References:

- Rutgers University FS547: FS547: Diagnosing and Controlling Fungal Diseases of Tomato in the Home Garden (Rutgers NJAES)
- Cornell University: Anthracnose on tomatoes | Vegetable Pathology – Long Island Horticultural Research & Extension Center (cornell.edu)
- NC State: https://content.ces.ncsu.edu/anthracnose-of-pepper

Problem: Catfacing and Cracking on Tomato Fruit	Morris County Community Garden August 28

Description: Catfacing is a physiological tomato disorder which presents with crevices and cracks that result in distorted, misshapen fruit at the blossom end. Cool temperatures can reduce pollination. Indeterminate varieties are more at risk when they are significantly pruned. Heavy pruning reduces the plants' hormone auxin. Heirloom varieties with large fruits are inclined to encounter problems with catfacing.

Fruit cracking appears as either concentric cracks around the stem end of the fruit or as radial cracks radiating from the stem scar. Cracking usually occurs after a heavy rainfall following dry conditions.

Cracked Tomato Fruit

Photo: M. Sample, NJAES

A variety of tomatoes with minor cracks and crevices. Catfaced tomatoes are safe to eat. Simply trim off lightly blemished area, but avoid heavily damaged fruits.
Photo: Peter Nitzsche, NJAES

Management:

- Avoid cooler temps, refrain from setting transplants out too early.
- Avoid heavy pruning of plants.
- Plant less prone varieties.
- Cull severely damaged fruit. It burdens the plants' vigor and detracts from developing fruits.

Fact Sheet / References

- Rutgers University Fact Sheet FS678: https://njaes.rutgers.edu/fs678/
- University of Maryland: https://extension.umd.edu/resource/catfacing-problems-tomato

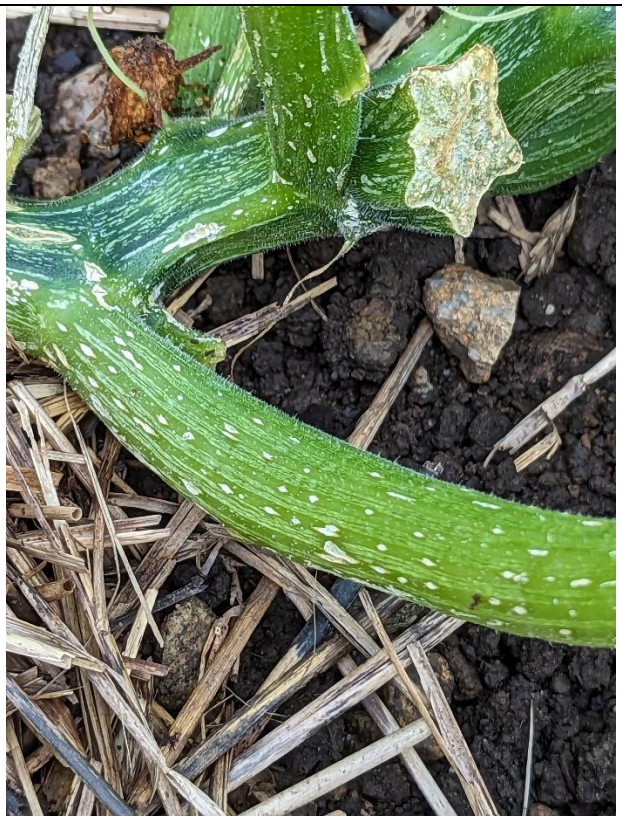
Problem: Plectosporium Blight *(Plectosporium tabacinum)*	**Where: Morris County Community Garden (8/28) Morris Township Community Garden (9/4)**

Description: Plectosporium blight is caused by the fungus *Plectosporium tabacinum*. This disease of cucurbits is relatively new to the Northeast. It was first seen in the US in the 1980s. The strain present in the US primarily affects pumpkins, zucchini, and summer squash. Rainy weather provides ideal conditions for disease growth. The fungus can persist in soil for years. It is spread by wind and rain splash.

Characteristic symptoms are small, white, elliptical to diamond-shaped spots. They form on stems, petioles, fruit stems, fruit, and most distinctively on leaf veins, especially evident on the leaf underside.

Vine borer frass, squash bugs, and powdery mildew were also present on most of the plants which showed evidence of Plectosporium, so it's hard to tell which pest was causing the most damage.

Plectosporium lesions on underside of zucchini stem
Photo: J. Basile, NJAES



Plectosporium blight lesions on pumpkin plant stem
Photo: M. Sample, NJAES

Management:

- Plant cucurbits in sunny, well-drained location.
- Rotate away from pumpkins and summer squash for 2 years if blight is evident.
- Avoid over-fertilization.
- Avoid overhead watering.

References:

- Rutgers University: Avoiding Plectosporium blight in cucurbit fields in 2022 — Plant & Pest Advisory (rutgers.edu)
- Cornell University: Plectosporium blight on cucurbits | Vegetable Pathology – Long Island Horticultural Research & Extension Center (cornell.edu)
- UMASS: Vegetable: Cucurbits, Plectosporium | Center for Agriculture, Food, and the Environment at UMass Amherst

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, Japanese beetle eggs, and even spotted lantern flies. 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. Adults are about 7 to 12 mm in length but can appear larger due to their long legs.

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

Spotted Lantern Fly in spider web
Photo: M. Sample NJAES

References

- Rutgers fact sheet 930: https://njaes.rutgers.edu/pubs/publication.php?pid=FS930
- Rutgers fact sheet 1121: https://njaes.rutgers.edu/FS1121/
- Univ. of CA: https://ipm.ucanr.edu/QT/commongardenspiderscard.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

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