

<b>WHAT'S IN THIS REPORT</b>			
<b>TIPS</b>	<b>NEW PROBLEMS SEEN</b>	<b>NOTABLE NEW LIFECYCLE PHASES OF PESTS PREVIOUSLY SEEN</b>	<b>SPOTLIGHTS</b>
<ul style="list-style-type: none"> <li>• Choosing varieties of tomatoes to grow</li> </ul>	<ul style="list-style-type: none"> <li>• Onion maggots in leek plants</li> <li>• Spider mites on bean plants</li> <li>• Sunscald on raspberries</li> <li>• Lacebugs on quince tree</li> </ul>	<ul style="list-style-type: none"> <li>• Squash vine borers causing squash and pumpkin plants to wilt</li> </ul>	<ul style="list-style-type: none"> <li>• Yellow nutsedge weed</li> </ul>

*GARDENS SCOUTED: The Morris County Rutgers Master Gardener IPM Team scouts one of four community gardens each week: the Morris County Park Commission Community Garden, The Morris Township Ted Largman Community Garden, the Madison Community Garden, and the Wick Garden in Jockey Hollow National Park. The team also reports on sightings in the Pequannock Community Garden and their own vegetable garden plots in Morris Township, Denville, and Blairstown.*

**GENERAL OBSERVATIONS**

Summer crops are in full production now, the vegetable gardens look beautiful, and gardeners are enjoying their harvests of warm season crops like tomatoes, summer squash, beans, cucumbers, basil and many others. Most gardens have done well despite the relentless 90+ degree heat and generally dry conditions. Gardeners were relieved to have a break with highs only in the 80s for a week in mid-July.



Photo: Two of the Editors of the IPM Team reports with their tomato harvest: Jennifer Basile left, Margot Sample right

**TIPS**

**Tomato Varieties**

There is nothing like the taste of garden grown tomatoes. Many – if not most - gardeners grow tomatoes and they eagerly look forward to their first tomato of the season and their ongoing harvest. With thousands of varieties of tomatoes that look and taste different, how do you choose which ones to grow? Rutgers has two resources to help:

**The Annual Great Tomato Tasting**, where visitors can see and taste up to 50 varieties of heirloom and hybrid tomatoes. This year's tasting is August 28<sup>th</sup> from 1pm to 7pm at the Rutgers Snyder Research Farm in Pittstown. The photo on the right below shows just two of the many varieties attendees can taste. More information about the event can be found at: <https://snyderfarm.rutgers.edu/open-house/>

**Save The Date**  
**SNYDER RESEARCH & EXTENSION FARM'S**  
**OPEN HOUSE**  
**& TOMATO TASTING**

**AUGUST 28, 2024**  
**1:00 PM - 7:00 PM**

Take a wagon tour of the farm to learn about the research and extension programs being conducted. **Taste over 50 tomato varieties!**

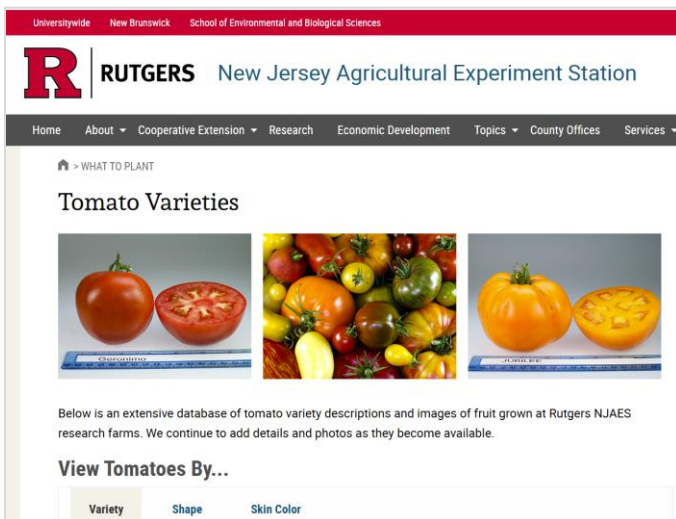
**R** | RUTGERS UNIVERSITY  
 New Jersey Agricultural  
 Experiment Station



Scan for details or visit  
<https://snyderfarm.rutgers.edu/open-house>



**Rutgers also has an extensive tomato website** that provides information on hundreds of tomato varieties: [Tomato Varieties \(Rutgers NJAES\)](#)



The Rutgers tomato variety website search page



Part of the information on one tomato variety

## REPORTS ON NEW PROBLEMS

**Problem: Onion Maggots**  
*Delia antiqua* (Meigen)

**Where: Wick Garden (7/15)**

**Description:** Onion maggots feed on allium plants including onions, leeks, garlic, scallions, shallots and chives. The maggots are yellow/white, about 1/3 inch long at maturity, and pointed at the head end. Adults are flies that are slender, grayish-bodied, large-winged, and slightly smaller than houseflies, about 1/4 inch long. The adult flies lay eggs at the base of the plants. Eggs are white, elongate, and about 1/25 inch in length. Onion maggots overwinter as pupae that are chestnut-brown and about 1/3 inch long. There are 3 generations per year.



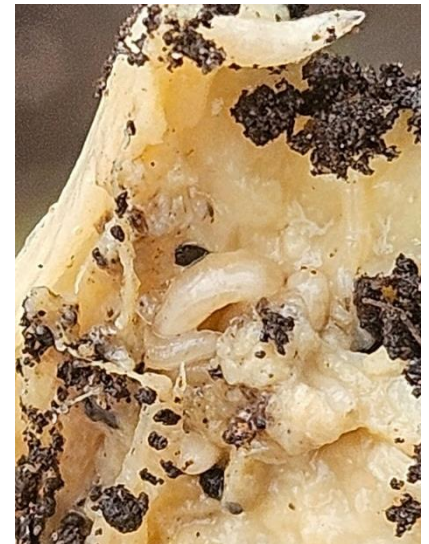
A leek plant collapsed due to onion maggot damage. A healthy leek plant is behind it.

Photo: M. Albright, NJAES



Onion maggots have eaten a large cavity in the base of this leek plant.

Photo: J. Basile, NJAES



Closeup of part of the damage in the photo to the left. Multiple onion maggots can be seen in the photo.

Photo: J. Basile, NJAES



Closeup of one of the onion maggots in the photos above (after the maggot moved onto a leaf).

Onion maggots are 1/3 inch long at maturity.

Photo: J. Basile, NJAES



An adult onion maggot fly, about 1/4 inch long, seen on a nearby plant.

Photo: J. Basile, NJAES

### Management:

- Delay planting until late May, if possible, to reduce exposure to the first generation onion maggot flies that overwintered in the soil during the previous year. Generally, fly activity peaks between May 9 and May 16 in New Jersey, depending on weather conditions.

- Avoid damaging the plants during the season. Any physical damage to the onion attracts onion maggot flies.
- Destroy any plant residue after harvest or removing damaged plants since plant residue and cull piles attract flies and provide a source of food for maggot populations.

**References:**

- Rutgers Fact Sheet: [Onion Maggot \(Rutgers NJAES\)](#)

**Problem: Spider mites on bean plants**  
*(Tetranychus urticae)*

**Where: Wick garden (7/15)**  
**Morris Township home garden (7/1)**  
**Morris Township Community Garden (7/20)**

**Description:** Spider mites are tiny eight-legged mites that feed on the underside of leaves, causing yellow/whiteish stippling. Spider mites are difficult to see without a hand lens. They primarily infest bean, tomato, and cucurbit (cucumber, squash, melons) plants. They are also found on numerous other vegetables such as beet, carrot, corn, eggplant, parsley, pea, pepper, and sweet potato, as well as strawberry, blackberry, and other fruits. Their puncture-and-suck feeding produces yellow or white stippling and can lead to reddish or pale discoloration of leaves. Plants heavily infested with spider mites may become stunted and drop leaves. Spider mites also spin fine webbing giving them their name. The webbing may be seen when heavy infestations occur. Populations of spider mites develop and increase rapidly in hot, dry conditions. Spider mites have multiple generations per year and their life cycles can be as short as 8 days. Adults overwinter in plant debris or under bark.



Bean plants with stippling from feeding by spider mites

Photos:

Left: L. Terraneo, NJAES

Right: M. Olin, NJAES



Left photo: Two spotted spider mites, John A. Weidhass, Virginia Polytechnic Institute

Right photo: Spider mites (whitish specs) on webbing and the plant, M. Albright, NJAES



**Management:**

- Hose water on the undersides of leaves to help dislodge the mites.
- Reduce plant stress through good watering and fertilizing practices. Avoid excessive nitrogen fertilizer since it can increase mite populations.
- Pull up and dispose of badly infested plants. Clean up bean plant debris.
- Canola oil, insecticidal soap, and pyrethrin insecticides can be used. Horticultural oil and insecticidal soap are most effective on mite eggs. Use them when damage is first observed. Spray in the early morning when it's cool. Caution: Spraying badly damaged leaves can cause further injury.
- You can purchase predatory mites and release them into your garden to help control pest mites. A caution: insecticides can also kill these beneficial mites.
- Since mites can overwinter in nearby weeds and migrate to the garden, keep weeds under control.
- Row covers can be used to exclude mites. Row covers must be put up before mites are on the plants.

**References:**

- University of Maryland: [Spider Mites on Vegetables | University of Maryland Extension \(umd.edu\)](https://extension.umd.edu/hort/articles/spider-mites-on-vegetables)

**Problem: Raspberry sunscald / white drupelet disorder****Where: Morris Township home garden (7/1)**

**Description:** Hot summer days with strong sunlight can cause parts (drupelets) of raspberries to become white or colorless. Drupelets are the segments surrounding individual seeds. White raspberry drupelets are a physiological disorder caused by sun exposure (sunscald) and excessive temperatures. They are not caused by a disease or by insect feeding. Berries with full exposure to afternoon sun are most susceptible. However, high temperatures also appear to be involved as berries shaded by the leaf canopy may also develop white drupelets. The white drupelets will be flavorless, but there is no harm in eating them.



Sunscald on raspberry

Photo: M. Albright, NJAES

**Management:**

- Sunscald / white drupelet disorder should become less of a problem when temperatures are more moderate.
- In hot, dry weather, watering raspberry plants once a week may help.
- Raspberries with white drupelets are edible. Berries with brown or rotting drupelets, should be picked and discarded.

**References:**

- Iowa State University: [Parts of the berries on my red raspberries are white in color. Why? | Yard and Garden \(iastate.edu\)](https://www.extension.iastate.edu/garden/article/Parts-of-the-berries-on-my-red-raspberries-are-white-in-color-Why/)

**Problem: Hawthorn lacebugs  
(*Corythucha cydoniae*)**

**Where: Wick Garden (7/15)**

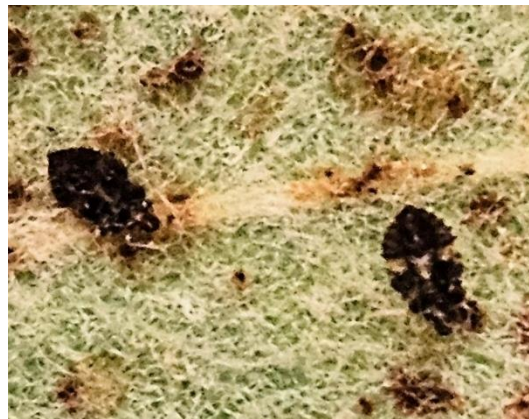
**Description:** Lacebugs are small insects that are named for the transparent texture of the wings of the adults. Hawthorn lacebugs feed on hawthorn, quince and a number of other trees. A prior IPM Team report (report 9, 2023) discussed eggplant lacebugs which feed on eggplant, tomato, potato, sunflower, sage, cotton and horsenettle. Lacebugs are 1/8 to 1/4 inch long, with lacy wings held flat on the back. Immature lace bugs (nymphs) are oval and colorless at birth, but soon turn black and spiny. Nymphs do not have wings. Both adults and their nymphs can be seen with the naked eye. They are found on the underside of leaves. One to three generations are produced throughout the summer, depending on the weather. Eggs or adults may overwinter, depending on the lace bug species.

Lacebugs and their nymphs pierce and suck leaves, causing the upper leaf surface to appear stippled. Light feeding produces a yellowish stippling while heavier feeding causes leaves to appear white before they dry completely and fall off. Plants are more susceptible to lacebugs if they are planted in full sun and have drought stress.



Quince leaf with feeding damage from lacebugs. The upper side of the leaf (left photo) shows stippling from lacebugs feeding on the lower side (right photo).

Photos: L. Terraneo, NJAES



Lacebug adult (left) seen on the leaf above. Adults are 1/8 to 1/4 inch long. Left photo: L. Terraneo, NJAES

Lacebug nymphs (right) seen on the leaf above. Right photo: J. Basile, NJAES

**Management:**



- Keep plants watered during dry periods and mulch lightly to conserve moisture.
- Insecticidal soap and horticultural oil will help control lace bugs, but to be effective, must contact them directly on the underside of the foliage.

**References:**

- Rutgers fact sheet FS783 Lacebugs: <https://njaes.rutgers.edu/pubs/publication.php?pid=FS783>

## NOTABLE NEW LIFECYCLE PHASES OF PESTS PREVIOUSLY SEEN

IPM Team Report #5 (June 28<sup>th</sup>) included sightings of squash vine borer adults and their eggs. Since then, entry holes made by the borers and their frass (excrement) have been seen, and some of the infected plants have wilted due to damage from the borers feeding inside the plants. The report below has been updated and includes a photo of a plant that suddenly wilted due to borer damage.

<p><b>Problem: Squash vine borers</b>  <i>(Melittia satyriniformis synonym M. cucurbitae)</i></p>	<p><b>Morris Township Community Garden: adult (6/20)</b>  <b>Morris Township home garden: eggs (6/22)</b>  <b>Morris Township Community Garden: borer entry holes (7/16)</b></p>
<p><b>Description:</b> The squash vine borer, <i>Melittia satyriniformis</i> or <i>Melittia cucurbitae</i>, 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 borer(s) are not removed, they will cause the plant to wilt and die.</p>	
	<p>Left: A squash plant that suddenly wilted in the sun due to damage from squash vine borers feeding inside its stem. The plant looked fine the day before. The plant may initially appear to recover in the evening and early morning, but will eventually collapse. When plants collapse they should be removed to prevent the borers from exiting the plant, pupating in the soil, and coming back as adults.</p> <p>Photo: M. Albright, NJAES</p>
	<p>Squash vine borer inside a stem that was cut open</p> <p>Photo: P. Nitzsche, NJAES</p>
	<p>Frass (excrement) from Squash vine borer</p> <p>Photo: M. Albright, NJAES</p>



Squash vine borer adult

Photo: L. Voo,  
Gardener at Morris  
Township Community  
Garden



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 Deadbug Brew and Monterey Garden Insect Spray) or *Bacillus thuringiensis* 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.

\*\*\*Read and follow all pesticide label instructions. Be cautious - read the label.

### References:

- Rutgers Fact Sheet: <https://njaes.rutgers.edu/pubs/publication.php?pid=FS229>
- University of Connecticut Fact Sheet: <https://homegarden-cahnr.media.uconn.edu/wp-content/uploads/sites/3479/2022/08/Squash-Vine-Borer.pdf>



## WEED SPOTLIGHT

### Yellow Nutsedge (*Cyperus esculentus*)

**Description:** Yellow Nutsedge (*Cyperus esculentus*) is an invasive, aggressive perennial weed that spreads rapidly and should be dug up when it is first spotted. They are difficult to control once they have spread. Yellow nutsedge can grow through weed cloth and penetrate potato tubers.

Nutsedges can be identified by their triangular-shaped stems. The yellow nutsedge shallow, fibrous root system includes rhizomes and nut-like tubers. These tubers spread rapidly. One plant can produce several hundred to several thousand tubers within one growing season.



Above left: Yellow nutsedge plant  
Photo: Aaron Paxton, Purdue University

Above right: Yellow nutsedge flower head  
Photo: M. Albright, NJAES

Left: The root system of a yellow nutsedge including rhizomes and nut-like tuber.  
Photo: Dr. John Meade, Rutgers NJAES Cooperative Extension

#### References:

- Rutgers New Jersey Weed Gallery: [Nutsedge \(Yellow\) \(Rutgers NJAES\)](#)
- Rutgers University: <https://burlington.njaes.rutgers.edu/2022/04/28/yellow-nutsedge/>

## ***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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