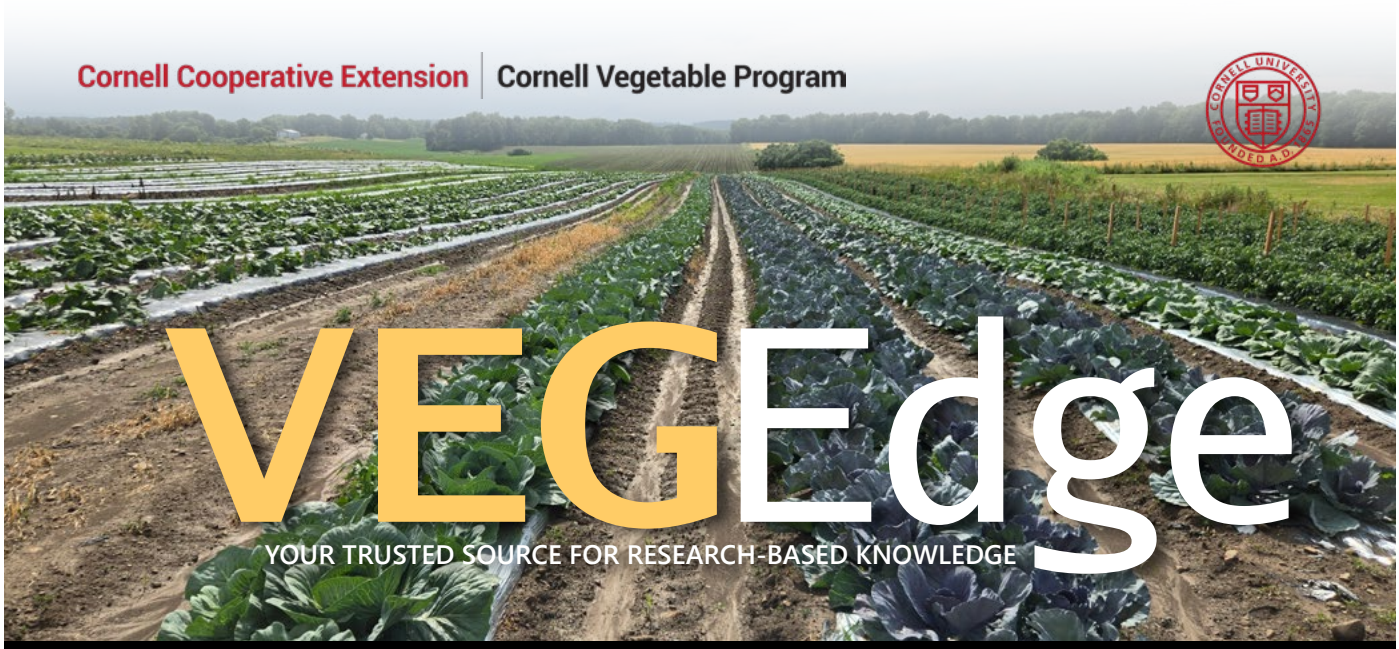
Cornell Cooperative Extension | Cornell Vegetable Program



VEGEdge

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

Volume 21 • Issue 12 • July 9, 2025

High Temperatures and Vegetables

Steve Reiners, Cornell AgriTech

Near record breaking heat will have an impact on New York vegetable crops. In general, daytime temperatures that exceed 92F and nighttime temperatures above 72F can cause problems. The longer the heat lasts, the bigger the impact. Problems include:

Pollination issues in cucurbits – Heat favors male flower production over female flowers, resulting in fewer fruits, at least temporarily. It may also lead to drop of already set fruit. Bee flights/activity is reduced in hot weather which causes poor pollination and flower drop. In some cases, fruit will be distorted and crooked due to incomplete pollination. Cucumbers are especially sensitive to this disorder.

Tomato/Pepper flower drop – Flowers on these plants have a 48-hour window to pollinate. High temperatures can cause pollen sterility and flower drop. You may not notice the impact until 5 to 6 weeks later when yields are suddenly reduced for a period that aligns with the length of the heat wave.

Sweet corn yields – Although a heat loving crop, daytime temps over 95F can result in poor tip fill, missing kernels, smaller ears, and reduced yield.

Snap bean flower drop – Beans respond by dropping flowers. As soon as temperatures cool down, flowers will develop normally. Unfortunately, this may result in a split set, where some flowers set before the heat and others after. This is a big problem for one-time mechanical harvest.

Potato crinkle and heat sprouts – Distorted, yellow leaves often look like herbicide damage as chlorophyll is reduced. High soil temps can pause tuber development. Once growth resumes, rather than continued tuber expansion, tubers may sprout, producing above ground stems or chain tubers.

Poor color development – Although a little early for ripe field grown tomatoes, high tunnel growers may experience less red and more orange colored fruit. Some varieties may show more 'yellow shoulders. Carrots and beets will also have duller colors.

Reduced sweetness – High temperatures increase respiration in plants, burning off accumulated sugars. This can result in bland tasting melons, sweet corn, and other crops. Radishes will develop a spicy flavor.

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About VegEdge

VegEdge newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension partnership between Cornell University and CCE Associations in 14 counties.

The newsletter is a service to our enrollees and is intended for educational purposes, strengthening the relationship between our enrollees, the Cornell Vegetable Program team, and Cornell University.

We're interested in your comments. Contact us at:
CCE Cornell Vegetable Program
480 North Main Street, Canandaigua, NY 14224
Email: cce-cvp@cornell.edu
Web address: cvp.cce.cornell.edu

Contributing Writers
Elizabeth Buck
Robert Hadad
Christy Hoepting
Margie Lund
Julie Kikkert
Lori Koenick
Judson Reid

Publishing Specialist/Distribution/Sponsors
Angela Ochterski

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The next issue of VegEdge will be produced on July 16, 2025.

AI-Guided Pest Management Recommendations May Not Be Legal and/or Safe

Lynn Sosnoskie, Cornell AgriTech

Anyone who has heard me speak knows that I see great promise in the integration of artificial intelligence (AI) with advanced weed control technologies like laser weeding and vision-guided spraying. These tools offer the precision needed to reduce herbicide use while maintaining effective weed suppression. AI-driven platforms can distinguish between crops and weeds in real time, enabling site-specific management that minimizes crop injury potential and environmental impact. I'm particularly excited about using these technologies to address herbicide-resistant weeds and other difficult-to-control species through novel means.

But AI has its drawbacks. The information it provides is not always accurate. For example, my initial experiences with the Carbon Robotics Laser Weeder and the Verdant Robotics Sharp Shooter in New York were marked by poor control of common ragweed, a species not commonly found in the western US and therefore not represented in the machines' training algorithms. In another instance, I asked ChatGPT to generate a description of Palmer amaranth, and the output incorrectly stated that the species has wind-dispersed seed. Palmer amaranth seed lacks a pappus, the umbrella- or parachute-like structure found on dandelions that enable long-distance transport on wind currents. This highlights the importance of reviewing AI-generated content for accuracy.

A recent article in Farm Progress by Dr. Eric Prostko (University of Georgia) highlights the risks of relying on AI recommendations for pest management, using real-world examples where such advice could have caused problems for the producers. Specifically, AI tools suggested the use of herbicides that are not legally registered for use on the target crops, leading to regulatory violations as well as the potential for severe crop injury (e.g., an atrazine recommendation in peanuts).

While AI tools may seem convenient, they lack the local agronomic knowledge and judgment that trained professionals bring to pest management decisions. Cornell Cooperative Extension has an extensive network of specialists deployed across the state to assist growers with their weed control needs. They are here to help you, so please take advantage of their experience when it comes to developing pest management plans. And, as always, CONSULT THE LABEL before making any pesticide applications. The label provides critical information for safe and effective use. Applying a pesticide in a manner inconsistent with its labeling can result in crop injury, environmental harm, and potential health risks to applicators or bystanders.

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Premature flowering in greens – Spinach and lettuce will quickly bolt and develop bitter flavors prior to seeing the flower stalk.

Sunscald – Usually a problem with late season heat waves when loss of foliage is more prevalent, but any fruit exposed to direct sunlight can experience bleaching and browning of the exposed parts.

Recommendations

The most important thing to do during a heat wave is maintain an effective irrigation schedule. Unmulched fields can lose more than 5,000 gallons of water per day through evapotranspiration. Water stressed plants will close their leaf pores (stomata) and go into survival mode, resulting in reduced yield and quality. If using overhead watering, try to irrigate first thing in the morning as evening or night irrigation can increase plant disease. ●

Post-Harvest Strawberry Care: Renovation and Summer Spray Schedule

Anya Stansell, Small Fruit Specialist, CCE Harvest NY

Most strawberry patches have completed fruiting by mid-July, aside from 'Malwina' and everbearing varieties. This article will review options for disease control for the remainder of the growing season, to support the 2026 crop.

Determining Whether to Keep the Patch

As a rule of thumb, weed and root rot issues become worse every year. If the patch was choked out by thick mats of weeds or had over a third of its plants dying back and collapsing, it is usually not worth keeping for next year. On the other hand, fruit rots and leaf spots are easier to treat. Most invertebrate pests are manageable too, apart from grubs that burrow into the crown of the strawberry plant.

Controlling Weeds

Tilling to narrow rows and tarping row middles after renovation can help reduce the weed population. A classic, conventional way to control broadleaf weeds is to apply 2,4-D roughly 5 days before renovation. A preemergent herbicide such as Sinbar (terbacil) can be applied to row middles at this too, before new leaves emerge from the mowed crowns.

Fruit Rots

A cover spray of fungicide can help reduce any lingering gray mold that is present on dropped berries and rotting leaves. This spray will have most efficacy if applied after renovation. For conventional growers, Captan would be a good choice, because it has low risk of developing resistance in the pathogen.

Alternatively, a biological product such as one of the formulations of Double Nickel (Bacilus amyloliquefaciens str. D747) can be applied either alone, or immediately following an application of an aggressive sanitizer such as Oxidate 2.0 (hydrogen peroxide, peroxyacetic acid). This approach will also offer control of anthracnose fruit rot.

Captan will not control anthracnose, and it should generally not be tank mixed due to high risk of burn. Conventional products that control anthracnose include OSO 5% SC Fungicide (polyoxin D zinc salt), Kenja (isofetamid), Inspire Super (difenoconazole, cypronidil), and Pristine (pyraclostrobin, fluxapyroxad). Rotating chemistries for anthracnose control is very important due to frequent development of resistance.

Leaf Spots

Renovation is our primary way to reduce leaf spot inoculum from the field. Copper-based products have the broadest spectrum and will control fungal and bacterial leaf spots; due to high risk of burn, these should be applied during long stretches of cool weather.

Invertebrate Management

Controlling weeds around the planting will help reduce insect pest pressure. A product targeting slugs can be applied in mid-September to reduce egg laying. Sluggo (iron phosphate) is organic, effective, and relatively mild environmentally.

References and Further Reading

2025 Cornell Pest Management Guidelines for Berry Crops | Marvin Pritts, Kerik Cox, Michael Helms, Greg Loeb, Anna Wallis, Lynn Sosnoskie ●

2025 Onion Fungicide Recommendations for Managing Botrytis Leaf Blight (BLB) Necrotic Spots and Stemphylium Leaf Blight (SLB) and 2024 Research Highlights

Christy Hoepting, CCE Cornell Vegetable Program, and Frank Hay, Cornell AgriTech, Plant Pathology and Plant Microbe-Biology

2025 Fungicide Recommendations for BLB and SLB in Onion

- Start BLB necrotic spot/SLB fungicide spray program with treatments that have at least "Fair" to "Good" activity (as opposed to "Poor" activity) at early bulb swell/0.5" bulbs (e.g. with 2nd Movento in last week of June).
  - Oso/Bravo + FRAC P07
  - Miravis Prime + FRAC P07
  - Luna Tranquility + Switch
- Use the "best" treatment: Viathon 3 pt/A+ Tilt 8 fl oz/A + Bravo 3 pt/A (FRAC 3c + P07, 3a, M5)
  - 1st app: ~1.5" bulbs, just before tipburn begins, especially if weather is favorable for disease.
  - 2nd app: 2nd-last or last fungicide spray (often at 50% lodging) to finish as strong as possible.
  - No more than 2 apps of FRAC 3 per fungicide spray program
  - See Table 1 for best treatments from 2024 onion fungicide trial, and 2025 Cornell Onion Fungicide "Cheat Sheet" on the CVP website.
- Include FRAC P07 fungicide in at least each of the last four sprays to keep foliage as healthy as possible.
  - Additional earlier use should improve disease control and plant health (and yield).
  - FRAC rated risk for fungicide resistance to P07 as low, but SLB is notorious for developing resistance… we will not know the answer until/if we "break" it.
- Strive for no more than 10-12 pt/A of Bravo, if possible, to avoid yield drag.
- Strive for these maximum numbers of applications per season for managing fungicide resistance:
  - FRAC 3 & 19 – no more than 2 apps.
  - FRAC 7 – no more than 3 apps. Ideally, no more than 2 apps.
  - FRAC P07 - ?? (see above).
- No more than 2 apps per FRAC 2, 3, 7, 9, 11 and 19 before rotating to different FRAC group(s).

Once you sit down and plan out a 6-8 week fungicide spray program for BLB necrotic spots and SLB, you will see that there are several options and "interchangeable parts". For example, Bravo/Oso + Rampart vs. Bravo + Oso + Rampart, depending on disease target(s) and pressure.

- For BLB necrotic spots, we will mostly be relying on Bravo and FRAC 7 fungicides. Although Viathon + Tilt (3c + P07 + 3a) also has very good activity on BLB necrotic spots, it is improved with addition of Bravo (of course!).
- Bravo will be used mostly when insecticides Movento, Radiant, Exirel and AgriMek/Minecto Pro are not being used, because Bravo can interfere with their efficacy, while FRAC 7 fungicides will be used in tank mixes with these insecticides.
- It will likely be challenging to use only 2 apps of FRAC 7.
- It will be tempting to use FRAC P07 almost every week, because it is the perfect tank mix partner to make poor products mediocre and mediocre products fair-to-good.
- Unfortunately, with SLB having developed fungicide resistance (of varying degrees) to five FRAC groups, it is impossible to apply a fungicide spray every week that is as good as weekly sprays of Proline or Viathon + Tilt + Bravo. But hopefully, with the tools and knowledge we have, we will be able to come in a solid 2nd-place! Just hope that we are not borrowing from our future…

2024 Research Highlights

On-farm Fungicide Trial in Elba

- 'Bradley' variety, **BLB pressure was low** and **SLB pressure was moderate-severe**.
- **Main objective:** To find a tank mix composed of products that individually have poor/mediocre efficacy on SLB which have low-to-medium risk for fungicide resistance that may be rotated with Viathon + Tilt (FRAC 3 + 3 + P07).
  - **Sub-objective:** To determine how many applications of FRAC P07 was adequate for BLB and SLB control and plant health in a season-long fungicide program.

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- The **STRONGEST CORRELATION WITH YIELD WAS leaf dieback** per plot on Aug 8 (5 days post 6th spray) when onions were at 50% lodging.
  - **Leaf dieback was most strongly correlated with BLB NECROTIC SPOTS** (for the 2nd year in a row) and was moderately correlated with several SLB variables.
  - **As BLB necrotic spots increased, leaf dieback increased, and yield decreased.**

- **BLB necrotic spot control summary:**
  - **BEST:** Proline (FRAC 3g)*, Viathon + Tilt + Bravo (FRAC 3c + P07, 3a, M5)
  - **Very Good:** Viathon/Rampart + Tilt (FRAC 3 +/- 3 + P07)
  - **Good:** Bravo (FRAC M5), FRAC 7 (Miravis Prime, Luna Tranquility)
  - **Moderate:** Tilt (3a), FRAC P07
  - **No activity:** Oso (FRAC 19), Omega (29), FRAC M3 (mancozeb)

  ***Proline is not labeled on onion.**

- **SLB control summary:**
  - **BEST:** Proline* (FRAC 3g) for targets, but no activity on SLB sporulation of necrotic leaf tissue, Viathon + Tilt + Bravo (FRAC 3c + P07, 3a, M5)
  - **Viathon + Tilt same as Tilt + FRAC P07 (3c in Viathon had no activity)** – There are no longer two FRAC 3 active ingredients to tank mix.
  - **Some (poor-fair) activity:** Oso (19)/Bravo (M5) + FRAC P07, Luna Tranquility + FRAC 12 (especially for SLB sporulation on necrotic leaf tissue), Miravis Prime + FRAC P07/Oso (19)
  - **No activity:** FRAC 7, P07 and Miravis Prime (7(4) + 12)

  ***Proline is not labeled on onion.**

- **SLB was very difficult to control.** Proline 5.7 fl oz/A (FRAC 3g) and Viathon 3 pt/A + Tilt 8 fl oz/A + Bravo 3 pt/A (FRAC 3c + P07, 3a, M5) were the only treatments that had significantly fewer primary SLB target spots (= on green leaf tissue) than the nontreated, out of 24 treatments.

- **3-product vs. 2-product tank mixes:**
  - The only single-product treatment that was effective was Proline, a new FRAC 3g that SLB has not developed fungicide resistance to – YET!
  - Viathon + Tilt + Bravo was significantly better than Viathon + Tilt, because Bravo helped with control of BLB necrotic spots, which resulted in improved plant health/green foliage and yield.
  - Miravis Prime + FRAC P07 was significantly better than its counterparts for BLB necrotic spots and SLB variables.
  - Miravis Prime (MP) + Oso + FRAC P07 was better than MP + Oso (weak for plant health/green foliage) and Oso + FRAC P07 (weak on BLB necrotic spots), but not different than MP + FRAC P07.
  - **Generally, as the number of products increased from one to three, the more effective it was for controlling BLB necrotic spots and SLB and improving plant health.**

  ***Proline is not labeled on onion.**

Table 1. Best treatments in onion fungicide trial, Elba, 2024.

Treatment Product and Rate/A	FRAC Group	BLB halo lesions	BLB necrotic spots	SLB target spots	SLB sporulation on necrotic leaf tissue	Preventing leaf dieback	Yield
Proline 5.7 fl oz**	3g	Fail	**BEST! Excellent**	**BEST! Excellent**	Fail	**BEST! Excellent**	**BEST! Excellent**
Viathon 3 pt + Tilt 8 fl oz + Bravo 3 pt	3c + P07b 3a M5	Fair	**BEST! Excellent**	**BEST! Excellent**	**BEST!** Fair	**BEST! Excellent**	Mediocre*
Miravis Prime 11.4 fl oz + Rampart 3 qt	12(4) + 12 P07a	**BEST! VG**	**2nd-BEST VG**	Fair-Poor	Fair	**Good**	**2nd-BEST**
Luna Tranquility 16 fl oz + Cannonball 7 oz***	7(1) + 9a 12	Fair	**2nd-BEST VG**	**2nd-BEST VG**	**BEST!** Fair	Poor	**2nd-BEST**
Bravo 3 pt + Oso 10 fl oz + Rampart 3 qt	M5 19 P07a	**BEST! VG**	**2nd-BEST VG**	Fair	Fair	**Good**	Fair-Poor*

*Due to yield drag from Bravo 21 pt/A total (3 pt/spray, 7 sprays).
**Proline is not labeled on onion.
***Cannonball is not labeled for foliar use in onion. Instead, Switch (FRAC 9b + 12) may be used.

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- **Heavy Bravo use resulted in yield drag.** Despite having some of the best BLB and SLB control and greenest/healthiest foliage in the trial, treatments with Bravo resulted in yields that were 13-18% lower than the best treatment in the trial.
  - Specifically, Viathon + Tilt + Bravo (62.5% green foliage, 706 cwt/A) had significantly 6.5% (= 49 cwt/A) lower yield than Viathon + Tilt (41.3% green foliage; 755 cwt/A).
  - In these treatments, 7 weekly applications of Bravo 3 pt/A totaled 21 pt/A.
  - Comparatively, fields in the CVP onion scouting program in 2024 averaged a total of 9 pt/A (Elba, 6 fields) and 7.5 pt/A (Wayne & Oswego, 6 fields) with a range of 1.5 to 14.5 pt/A.
  - Comparatively, in a Texas study (1982), Bravo 2 pt/A applied 10 times weekly (20 pt/A total) and bi-weekly (10 pt/A total) reduced yield by 44% and 27%, respectively.
- **Programs with FRAC P07 fungicide: In a 7-week fungicide program…**
  - 5 applications was adequate
  - 3 applications during the last 3 weeks was inadequate
  - 7 applications was better than 5
  - Essentially for every 2 additional applications of FRAC P07 fungicide (which were also progressively applied earlier in the season), an additional ~10% of green foliage was observed 2 weeks after the 7th spray on August 26.
- **There was no difference between 2 applications of Proline or Viathon + Tilt when used in a 7-week fungicide program** for BLB and SLB control and yield.
- Trial results suggested **that starting the application of treatments with at least "fair" to "good" activity on BLB necrotic spots and SLB (as opposed to those with "poor" activity) at early bulb swell/0.5" bulbs (e.g. with 2nd Movento) may improve plant health and yield.**
  - In the fungicide programs evaluated in the trial the first three sprays were:
    1. Manzate Max 2 qt/A + Bravo 1.5 pt (Jun 28: 7-leaf, early bulb swell) = poor
    2. Bravo 3 pt/A (Jul 5: 8-9 leaf, 0.5" bulb) = Very Good on BLB, poor on SLB
    3. Oso 10 fl oz/A (Jul 13: 7-9 leaf, 1" bulbs, tipburn starts) = No activity on BLB, poor on SLB
  - When disease control was evaluated after these sprays were applied, the programs had more disease than the best treatments (Table 1).
  - Even though best/2nd-best treatments were applied in the next four sprays and BLB and SLB were controlled as good as the best treatments, yield was significantly lower in the programs which started with "poor" treatments.

SLB Fungicide Sensitivity Testing for FRAC 3a (Tilt) and FRAC 2 (Rovral)

After the final fungicide spray was made, from each of 17 muck onion fields in Elba (6), Wayne (5) and Oswego (6) 25 leaves with SLB target spots were collected, from which ~50 isolates per region were tested in the laboratory for their relative fungicide sensitivity.

- **FRAC 3a (Tilt):** In all regions, the proportion of moderately insensitive isolates (= fungicides may work at a higher rate or when 2 active ingredients from same FRAC group are tank mixed) was about 84%, which dropped about 10% since 2020 (in 4 years).
  - **Good news:** There was a resurgence of sensitive isolates (= fungicides work normally, no resistance) in 2024, which had not been detected since 2018. It is hoped that this is a result of no more than 2 apps of FRAC 3 per season.
  - **Bad news:** The proportion of insensitive isolates (= fungicide do not work no matter the rate, resistant) was 9-14%, which has also increased since 2020. On one farm, where 7 applications of FRAC 3 fungicides were made in 2024, highly insensitive isolates were detected.
  - **Tilt (3a) is the only functioning FRAC 3 left for SLB**, although the other FRAC 3s (and Tilt) still have activity on BLB necrotic spots with double FRAC 3-product tank mixes out-performing single FRAC 3-product tank mixes.
- **FRAC 2 (Rovral):** Even though there was variability among regions and among fields within a region (except in Elba), for fungicide sensitivity to Rovral, the **proportion of insensitive/highly insensitive SLB isolates was generally too high for Rovral to have much use for SLB:** Elba and Wayne - ~ 40%, Oswego - 71%.
  - Rovral may have some functionality for BLB, however.

Bacterial Speck and Spot of Tomato 2025

Judson Reid, Cornell Cooperative Extension, Cornell Vegetable Program

This season has been challenging for tomato (and all produce crops) with relentless soil moisture, relative humidity and temperature extremes from warm to cool. Throw in a tornado or hailstorm for good measure.

In these conditions plant diseases can thrive, in particular bacterial diseases. As a refresher, bacteria are distinct from fungi, in that they are single-cell organisms and have a different biology. Thus, they are not controlled by most fungicides, and persist and spread through the environment differently. Bacteria require moisture and particulate movement for transportation. A couple of examples of this are soil splashing and contaminated equipment (or workers).

There are 3 major bacterial disease of tomato in New York:

- Bacterial Canker (*Clavibacter michiganensis* subsp. *Michiganensis*)
- Bacterial Speck (*Pseudomonas syringae* pv. Tomato)
- Bacterial Spot (*Xanthomonas campestris* pv. *Vesicatoria*)

There are occasional occurrences of other bacterial diseases such as Necrotic Pith, but we will leave these for another discussion. Of the three diseases listed above, this author has found Spot and Speck to be more common in the Central and Western portions of NYS, and I have observed Canker more often in the eastern regions. However, all three can be found throughout the Empire State.

Spot and Speck can be difficult to distinguish in the field and many times both are present. Look for black spots with bright yellow margins. The blackness can be particularly pronounced along leaf margins. Spot as expected would have larger lesions than Speck, but again, this is not an easy diagnosis, and the treatment for the two is the same.

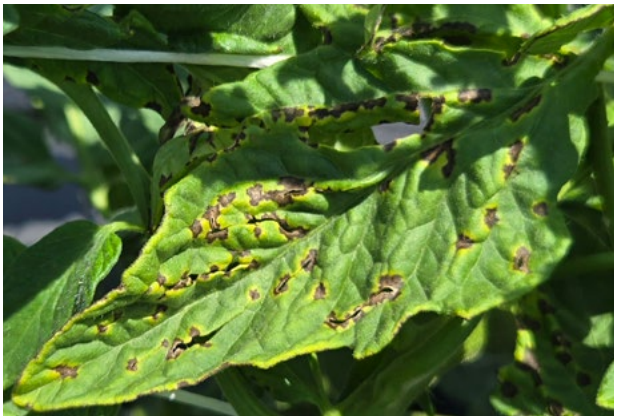
2025 promises to be a severe year for Bacterial Speck in the Finger Lakes, as infections were evident in early June! This disease is among the worst as it burns out the canopy of the crop, leaving fruit exposed to sunscald. Speck will also directly blemish fruit, beginning in the green stage with raised, black scars.

Cultural Controls

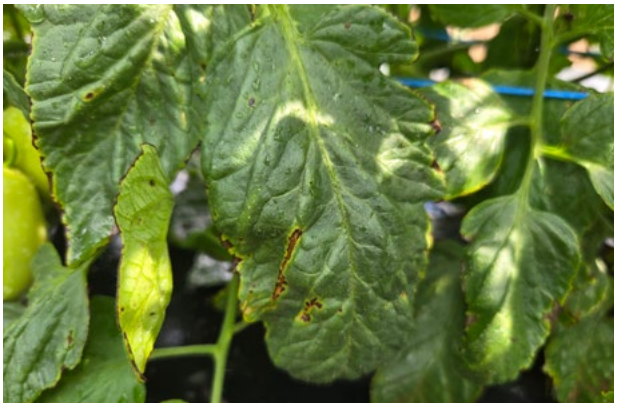
- Crop rotation-peppers and tomatoes 3 years
- Sanitation of stakes, flats and greenhouse surfaces
- Do not reuse irrigation lines
- Avoid working in tomatoes and peppers when wet.
- Reduce soil splashing with mulch between rows
- High tunnels/greenhouses can eliminate these diseases.

Chemical Control Options

- Actigard (group 21)
  - rates highly for control **14 Day PHI**
- Copper (group M1) ORGANIC AVAILABLE
  - Champ, Kocide, etc…0 Day PHI
- Tanos (group 11+27)
  - 3 Day PHI, must be tanked mixed with either copper or…
- Mancozeb (group M3)
  - increases the activity of copper, 5 Day PHI
- Agri-Mycin* (group 25)
  - * In greenhouse transplant production only



Spot and Speck can be difficult to distinguish in the field and many times both are present. *Photo: J. Reid, CCE*



Black spots with bright yellow margins are diagnostic for Bacterial Speck and Spot. The blackness can be particularly pronounced along leaf margins. Bacterial Disease are spread to tomato foliage via infected stakes and soil. Reduce risk by long crop rotations and new stakes annually. *Photo: J. Reid, CCE*

CROP Insights

Observations from the Field and Research-Based Recommendations

BEETS

Leaves that I collected from three local fields on Tuesday, July 8th with highly suspected Cercospora leaf spot (CLS) lesions were positively identified as CLS by Dr. Sarah Pethybridge at Cornell. Beet plantings with closed, dense canopies are at highest risk because they retain moisture within the canopy. Such fields should be scouted weekly. An iOS app called "Sampling by Cornell" is available for iPhone and iPad users to assist with scouting for CLS. **Fungicide applications are generally only warranted if disease is present in the field, there is moderate or high risk based on the weather conditions, and the field has a significant time until harvest** by top-pulling machines or the beets are being sold with the tops on (bunching beets). The CLS decision support system (CLS DSS), which is available for free at https://newa.cornell.edu/beet-cercospora-leaf-spot calculates the risk of infection based on temperature and relative humidity. Please see the CLS DSS support manual online for further information or contact me. – JK

CARROTS

Leafhopper management is important throughout the summer because these insects can transmit aster yellows. See the 2025 Cornell Vegetable Guidelines for management options. – JK

COLE CROPS

Caution: Satellite Hydrocap herbicide may cause severe injury to certain brassica varieties, as a grower recently discovered with the cabbage variety Mucsuma when Satellite was applied broadcast post-transplant. Satellite Hydrocap is labelled at 1 pt/A on coarse soils and 1.5-2.1 pt/A on medium and fine soils as a pre-transplant surface application or as post-transplant broadcast or directed spray to row middles applications 1-3 days after transplanting or to 2-leaf to 4-leaf direct seeded brassica plants. My cabbage herbicide trials have been with cabbage varieties Kaitlyn, Botran, Superstar, Cheers, Satie and Belicose, in which I have been successful in applying Satellite post-transplant broadcast. In my research, the safest 3-product combination was when Goaltender 0.5 – 1 pt/A + Satellite 1 – 2.1 pt/A were applied in a tank mix with Dual Magnum 0.5 pt/A pre-transplant GT + Sat was applied pre-transplant and followed by Dual Magnum 0.5 pt/A by itself post-transplant. DM + Sat and DM + GT post-transplant resulted in yield reduction and should be avoided. See article in May 14 issue of VegEdge. – CH.

CUCUMBERS

Protect your cukes from downy mildew NOW! Downy is present in nearby regions and expected in WNY any day. Bravo conventional, copper organic. Please report suspected cases (texts work) so we can give folks in other regions advanced warning and help you with the best management recommendations. – EB

Seeing viral symptoms on high tunnel cucumbers, many viruses can infect cucumbers and show similar symptoms. Saw two different viruses this week- plants showing dark green mosaic patterns, mottling, blisters and distortion on leaves and fruit (Fig. 1) was diagnosed by Cornell plant pathologist as squash mosaic virus (SqMV). Plants showing ringspots on fruit and chlorotic mosaic patterns on leaves (Fig. 2) was diagnosed by Cornell plant pathologist as tomato ringspot virus (TRSV). Unlike most cucurbit viruses that are spread by aphids, SqMV is mainly spread by cucumber beetles and TRSV is transmitted by the dagger nematode Xiphinema americanum. Both viruses have large host ranges and can survive on weeds and other crop families without showing symptoms. To manage both viruses, it is important to scout regularly and remove symptomatic cukes as soon as possible to reduce secondary spread. Controlling cucumber beetles will help to manage SqMV. – LK

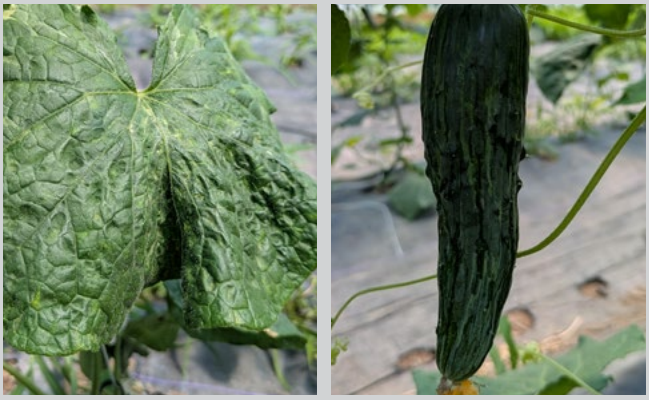


Figure 1. Dark green mosaic patterns, mottling, bumpiness, and distortion symptoms on cucumber leaves (left) and fruit (right) with squash mosaic virus. *Photos: L. Koenick CCE*

Figure 2. Ringspots on fruit (right) and chlorotic mosaic patterns on leaves (left) of cucumber with tomato ringspot virus.. *Photos: L. Koenick CCE*

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DRY BEANS

Aphids and adult leaf hoppers are being seen in dry beans this week. Seed treatments should protect newly emerged fields. Early signs of bacterial blight have also been seen in some dry beans this week. If you see blight in your fields, the use of a copper-based spray in early growth stages can help prevent further spread throughout the field but will not control what is already present. – ML

MELONS

Alternaria is starting in cantaloupe. Tis the season for gummy stem blight to begin. Watermelons are especially susceptible. As always, protective fungicide use is easy and more effective than attempting to cure gummy. – EB

ONIONS

Onions grew nicely over the past week. In Elba, the earliest-planted early varieties of transplants have 2-3 inch bulbs and are at least 50% lodged. The first of these fields will be harvested (on the early side) this week. Usually, when these fields are harvested the surrounding onion fields experience a tsunami of onion thrips influx. This Monday, these fields had a record low of only 0.03 thrips/leaf with only 16% of plants having any thrips. So, we are hoping that this will translate into a smaller wave of thrips instead of a devastating tsunami this year. We will know next week! Direct seeded fields are mostly at 7-8 leaf stage and early bulb swell to 0.5 inch bulbs in Elba, and 6-7 leaf stage in Wayne (Oswego being scouted today). In all fields the leaves are still green to their tips.

In Elba, most fields have already had their second application of Movento and are experiencing the "ride with the momentum of Movento". Small grains are also about to be harvested near Elba which usually results in influxes of onion thrips from outside of the muck. So, the thrips situation is anticipated to be interesting next week in Elba. Onion thrips pressure also increased in southern Wayne Co. this week. If you are in a situation where your field is getting its first or second Movento and the thrips are 1-2/leaf, trust that that the Movento will do its thing. In Elba, after the 90-degree weather 2 weeks ago, we saw thrips "popping" with several plants having 20 or more nymphs following the first application of Movento. The second application of Movento went on the following week, and now the thrips are less than 1 thrips/leaf and consisting of mostly adults (Movento does not control adults). If you are in a situation where thrips are 3-4/leaf or higher, then you should add another insecticide to Movento, such as Radiant, Minecto Pro or Exirel. The combined action of two insecticides will knock the thrips back to below 1 thrips/leaf.

Botrytis leaf blight (BLB) halo lesions have been subsiding in Elba, and increasing in Wayne and Oswego, while BLB necrotic spots remain very low in all regions. BLB halos are best controlled with Omega 1 pt/A and Bravo 3 pt/A, while FRAC 7 fungicides also have decent activity. Mancozeb 3 lb/A can handle BLB halos up to 3 lesions/leaf and works best when applied when BLB halo lesions are less than 1/leaf. We saw primary target spots (on green tissue) of Stemphylium leaf blight (SLB) on lower frame leaves 2 weeks ago in Elba, but the majority of SLB has been secondary coming in necrotic tissue caused by herbicide injury and on necrotic leaf tips. Generally, SLB is creeping up. Last week, several fields in Elba began their first application of fungicides with fair or good activity on SLB (as opposed to poor) and at least good activity on BLB necrotic spots with the second application of Movento, with very good results. Tank mixes included Luna Tranquility + Switch/Rampart. The weather was also not as conducive to disease last week so it is hard to tell if the under-control BLB and SLB was due to the great fungicides or the weather, likely a combination of the two. The new research-based fungicide recommendations for 2025 include beginning fungicide sprays for BLB necrotic spots and SLB with at least fair activity (as opposed to poor) at early bulb swell/0.5 inch bulbs (e.g. with second Movento), just like was done in Elba last week – see full article on page 4. Also, new **2025 Cornell Onion Fungicide "Cheat Sheet" for Control of Leaf Diseases in New York** is now available (https://rvpadmin.cce.cornell.edu/uploads/doc_1216.pdf). Note, updates have been made since the version handed out at the twilight meeting.

Thank you to the almost 70 muck onion growers, crop consultants, Cornell researchers and Extension personnel, and private industry representatives from local distribution, seed and pesticide industries **who participated in the Muck Onion Twilight Meeting in Oswego** 2 weeks ago. Also, a **special thank you to John Dunsmoor for hosting** yet another information-rich and successful meeting. Contact Christy if you would like the **handouts from the meeting**.

PEAS

Due to crazy weather issues, some snap pea stands are still in production. The high heat has limited production for some, while other plantings that have a bit of shade on them have done fairly well, until now. Some vines are starting to wilt out. The first symptoms are leaves curling down. Stems and leaves then start to become brittle. In a short time, stems can have an orange discoloration if sliced lengthwise. There are no treatments for this disease. – RH

Some processing pea fields are being sprayed with fungicides for downy mildew. Harvest is nearing the halfway point. Yields are average at this time over the number of acres harvested. – JK

PEPPERS

Bacterial issues beginning to take off. Scout and apply copper as warranted. Avoid working in pepper fields with bacterial is-

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sues when foliage is wet as bacteria will spread on clothes, hands, and equipment. Also seeing broadmite damage appearing in the field; looks like striking levels of leaf distortion that makes you think herbicide damage but no clear herbicide cause. Broadmites are poorly controlled with smothering agents (oils, soaps) and really do call for the use of a specific miticide. – EB

POTATOES

Colorado potato beetle eggs have been hatching, and larvae are now active in fields. Insecticides sprayed at planting are helping control small larvae in many fields, but populations should be monitored for resistance. Early blight is being found in some regions mostly on older leaves. Maintaining a regular fungicide program will help keep early blight spread low. Late blight spores have been found in spore traps in Maine and Ontario, Canada over recent weeks. Currently, there is no active late blight reported on plants. – ML

SNAP BEANS

Rain showers stimulate weed seed germination. Make sure to scout fields and manage weed escapes when they are tiny. Snap beans are sensitive to herbicides which may cause stunting or poor growth. Leaves may be spotted, yellow or curly. Potential causes are carry-over herbicides from previous crops, unusual weather during the current year affecting pre-emergence herbicides, from post-emergent products used on the current crop or from field drift. These situations can be difficult to diagnose.

Potato leaf hoppers (PLH) are active across the region. They often go undetected until the typical feeding damage called "hopperburn" shows up. These tiny insects (up to 1/8 inch long) do not overwinter in NY but migrate from southern states. The leafhopper is a sucking insect. In removing sap from the plant, leafhoppers leave a toxic salivary secretion in the plant that causes injury. The first sign of feeding is whitening of the leaf veins. These areas then become flaccid and yellow, then dry up and turn brown. Curling of the leaves is also common. Bean fields should be scouted regularly for PLH for the remainder of the season. Fields planted with seeds that were treated with Cruiser insecticide generally do not need a foliar treatment before bloom. However, they may need treatment after bloom if PLH pressure is high. In general, Cruiser seed treatments are working if you do not see the presence of nymphs on the plants. While adults may be seen on plants early in the season, they rarely feed because ingestion of Cruiser causes a cessation in feeding. In non-Cruiser treated fields, during pre-bloom, treat when more than one nymph per trifoliate leaf is found or when the number of adults exceeds 100 per 20 sweeps with a sweep net. On newly emerging beans, lower densities of PLH than those mentioned above may be damaging. Several foliar insecticides are labeled and work very well. Refer to the 2025 Cornell Guidelines for product selection. Multiple applications may be needed. – JK

SQUASH

Squash bug eggs are plentiful. Not seeing hatch yet, will be very soon. Squash bugs kill best when small, so be ready and be timely with controls. – EB

SWEET CORN

Japanese beetles are starting to aggregate on many plants and one of their many favorites is sweet corn. Tassels, silks, and even leaves can be attacked. For chemical treatments, check the 2025 Cornell Integrated & Pest Management Guide for Vegetables. – RH

Processing sweet corn planting finished up this past week with all acres being planted. Early planted corn is growing well with no problems observed at this time. – JK

$1 Million Available for Farm and Food Organizations to Upgrade Equipment – Equipment-only Grants Open Now

Robert Hadad, Cornell Cooperative Extension, Cornell Vegetable Program

Funding is available for NY farmers and other food businesses for purchasing equipment such as refrigeration, processing, storing, distribution, and aggregating NY grown or produced food. The funding is the second of two grant programs announced in 2024 through NY State and USDA Agricultural Marketing Service to enhance the food supply chain through the Resilient Food Systems Infrastructure (RFSI) Grant Program.

NY food entities, such as farms, processors, etc. for post-harvest equipment and can apply for funds with amounts ranging from $30,000 - $100,000. The total grant program has $1,000,000 earmarked for the proposals. NY Dept. of Ag is partnering with Farm and Food Growth Fund Inc to administer the funding. All applications must be submitted through the Farm and Food Growth Fund Application Portal: http://ffgf.smapply.us/

Important!!! Deadline for applications is July 23, 2025, USDA funded programs now have very short turnaround times.

For more information on applying is available on the RFSI website: https://www.ffgrowthfund.org/equipment-only-grants and Department website: https://agriculture.ny.gov/resilient-food-systems-infrastructure-program.

Upcoming Events

Vegetable Pest and Cultural Management Field Meeting for Auction Growers – Ontario Produce Auction

July 15, 2025 (Tuesday) | 7:00 PM - 9:00 PM
Andrew Leid farm, 2919 Rt 245, Stanley, NY 14561

This evening meeting will demonstrate pest management in fresh market vegetables in both field and greenhouse (high tunnel) vegetables. FREE to attend. No pre-registration required. Contact Judson Reid with questions, 585-313-8912.

Orleans Summer Vegetable Meeting

July 16, 2025 (Wednesday) | 5:45 PM sign-in, 6:00 PM - 8:00 PM meeting
Orchard View Farm, 2112 Yates-Carlton Townline Rd, Waterport, NY 14571

Meeting themes are pest management in a wide array of produce and best practices for pesticide use. Professor Brian Nault will cover allium leaf miner and thrips in onions, garlic and leeks and discuss insect challenges in other crops. Bring your questions! We'll also have a field walk that includes high tunnel tomato and cucumber.

DEC credits available: 0.5 in CORE plus either 1.25 in 1a & 23, or 0.75 in 24.

This event is FREE! Pre-registration requested to CCE Orleans by 4pm on July 15: 585-798-4265. (Please leave message with name, number attending, and number seeking DEC credits.)

Vegetable Pest and Cultural Management Field Meeting for Auction Growers – Finger Lakes Produce Auction

July 18, 2025 (Friday) | 7:00 PM - 9:00 PM
936 Lovejoy Rd, Penn Yan, NY 14527

This evening meeting will include a hands-on demonstration of weed, insect and disease identification in vegetables including management options such as inter-row cover crops, grafting and where appropriate, spray options will be used to educate growers. Judson Reid, CCE Cornell Vegetable Program, along with CCE staff will instruct participants and facilitate peer-based learning. Details on each topic will focus on field observations at these farms.

FREE to attend. No pre-registration required. Contact Judson Reid with questions, 585-313-8912.

Lake Erie Summer Produce Meeting

July 24, 2025 (Thursday) | 5:30 PM - 8:00 PM
MCR Farms, 11086 Brant Reservation Rd, Brant, NY 14027

This meeting will feature a mixed fresh market field walk, potatoes, sprayer calibration, and disease control in table and wine grapes. We'll cover organic and conventional controls and present information for growers of all scales of production.

2.0 DEC (0.5 CORE, 1.0 Veg, 0.5 Fruit). Cost - FREE! Pre-registration requested to CCE Erie at 716-652-5400 by noon on 7/23.

Cornell Cooperative Extension
Cornell Vegetable Program

480 North Main Street
Canandaigua, NY 14424

VEGEdge
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VegEdge is the highly regarded newsletter produced by the Cornell Vegetable Program. It provides readers with information on upcoming meetings, pesticide updates, pest management strategies, cultural practices, marketing ideas, and research results from Cornell University and Cornell Cooperative Extension. VegEdge is produced every few weeks, with increased frequency leading up to and during the growing season.

Contact Us

VEGETABLE SPECIALISTS

Elizabeth Buck | 585-406-3419 cell | emb273@cornell.edu
fresh market vegetables, weed management, soil health

Robert Hadad | 585-739-4065 cell | rgh26@cornell.edu
farm food safety, organic, business & marketing, fresh market vegetables

Christy Hoepting | 585-721-6953 cell | cah59@cornell.edu
onions, cabbage, broccoli, garlic, pesticide management

Julie Kikkert, Team Leader | 585-313-8160 cell | jrk2@cornell.edu
processing crops (table beets, carrots, peas, snap beans, sweet corn)

Lori Koenick | 585-469-5798 cell | lbk75@cornell.edu
fresh market vegetables, mushrooms, urban agriculture

Margie Lund | 607-377-9109 cell | mel296@cornell.edu
potatoes, dry beans, post-harvest handling and storage

Judson Reid | 585-313-8912 cell | jer11@cornell.edu
greenhouses/high tunnels, small farming operations, fresh market vegs

PROGRAM ASSISTANTS & SUPPORT

Camila Ichazo | lichazo@cornell.edu

Angela Ochterski | aep63@cornell.edu

Destiney Schultz | ds2422@cornell.edu

Kaitlyn Stearn | ks2545@cornell.edu

ADMINISTRATION

Peter Landre | ptl2@cornell.edu

Steve Reiners | sr43@cornell.edu

Cornell Cooperative Extension
Cornell Vegetable Program

For more information about our program, email cce-cvp@cornell.edu or visit CVP.CCE.CORNELL.EDU