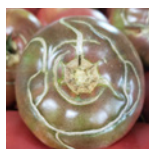




# VEGE<sup>dge</sup>

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

Volume 16 • Issue 18 • August 5, 2020



Tomato Fruit  
Quality Updates

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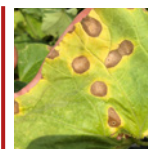
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Stop the Rot: NY  
Part of Ambitious  
Multi-State, Multi-  
Disciplinary, Multi-  
Year, Multi-Million  
Dollar USDA  
Project to Combat  
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What Plague Doth  
Spot These Vine  
Crop Leaves?

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## Tomato Fruit Quality Updates

Judson Reid, Cornell Cooperative Extension, Cornell Vegetable Program

A couple of common fruit quality issues this week:  
Yellow Shoulders and Cracking

### YELLOW SHOULDER

Prevent Yellow Shoulder with these 5 Crazy Tips:

1. **Variety** – Seek out seeds with ‘uniform ripening gene’.
2. **Transplant Wellbeing** – Seedlings go in the ground prior to flowering.
3. **Adequate Potassium** – Maintain adequate potassium levels in the foliage with balanced soil fertility; avoid excess calcium and magnesium.
4. **Healthy foliage for fruit shade** – Control for disease, provide adequate fertility and water.
5. **Check your Nitrogen** – Sometimes more is too much.

### CRACKING UP?

A similar line of thought here; adequate foliage keeps fruit in the shade. This prevents the temperature swings created by direct sunlight that can crack the tomato skin. Transplants that are potbound will set fruit too early creating an im-



Variety, excess sun, low potassium and high nitrogen rates all contribute to yellow shoulders (top). Note the purple tinge to these tomato leaflets, located on mid-to-newer foliage, indicative of potassium deficiency (bottom). *Photos: J. Reid, CVP*

*continued on page 3*

## 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:  
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*The next issue of VegEdge newsletter will be produced on August 12, 2020.*

## Save the Date: Wayne County Fresh Market Potato and Onion Twilight Meeting

CCE Wayne County is hosting the Wayne County Fresh Market Potato and Onion Twilight Meeting on Thursday, September 3, 2020 from 6:00-8:00pm in Marion. DEC recertification credits will be available. The exact location and event details will be released soon. ●



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balance in fruit load and canopy. Growing heirlooms? These are already crack-prone, so don't prune too much foliage. Harvest at breaker stage. How often do you water? More frequent, shorter irrigation episodes are less likely to crack fruit. As plants pass their peak fruit load, water demand decreases, irrigation should also decrease.



Looks aren't everything; these heirlooms taste great but are prone to cracks.  
Photo: J. Reid, Cornell Vegetable Program ●

## NY Sweet Corn Trap Network Report, 8/4/2020

Marion Zuefle, NYS IPM Program; from <http://sweetcorn.nysipm.cornell.edu>

Statewide, only twenty-seven sites reported this week. Nine of the sites had European corn borer (ECB)-E and eight sites had ECB-Z. Fifteen sites reported corn earworm (CEW) with thirteen high enough to be on a 4, 5 or 6 day spray interval (see table at bottom of post). Fall armyworm (FAW) was caught at fourteen sites and Western bean cutworm (WBC) was caught at twenty-six sites with a high count of 316 in Plattsburgh. The hybrid ECB moth was caught at three of the six reporting sites.

Based on the table below some sites are still near 15% estimated flight completion for WBC while others are near 90% flight completion based on Hanson et al. model.

WBC are most attracted to pretassel corn. Make sure to scout all pretassel fields for egg masses and larvae. After the eggs hatch larvae will first feed in the tassel before making their way to the ears. Be sure to scout fields that are in whorl or early tassel stage for WBC egg masses, with a 4% threshold for processing sweet corn and a 1% threshold for fresh market sweet corn. It takes between 5-7 days WBC eggs to hatch. It is critical that sprays are timed before the larvae have a chance to enter the ear. The egg mass will become purple in color approximately 24 hours before egg hatch. Here is a [video from Purdue on scouting for WBC egg masses and larvae](#)

**NEWA Western Bean Cutworm Flight Emergence Lookup Table**

| Est. Flight Completion     | Hanson method (2015) <sup>1,2</sup> |           |
|----------------------------|-------------------------------------|-----------|
|                            | Base 3.3°C                          | Base 38°F |
| 1%                         | 1230                                | 2200      |
| 5%                         | 1320                                | 2390      |
| 10%                        | 1365                                | 2460      |
| 15%                        | 1390                                | 2540      |
| 20%                        | 1415                                | 2585      |
| 25% (scout for egg masses) | 1430                                | 2615      |
| 30%                        | 1450                                | 2655      |
| 40%                        | 1475                                | 2690      |
| 50%                        | 1500                                | 2735      |
| 60%                        | 1530                                | 2800      |
| 70%                        | 1560                                | 2845      |
| 80%                        | 1600                                | 2919      |
| 90%                        | 1660                                | 3030      |
| 100%                       | 2110                                | 3825      |

<sup>1</sup> Hanson, A.A., R.D. Moon, R.J. Wright, T.E. Hunt, and W.D. Hutchinson. 2015. Degree-Day Prediction Models for the Flight Phenology of Western Bean Cutworm (Lepidoptera: Noctuidae) Assessed with the Concordance Correlation Coefficient. J. Econ. Entomol. 108:1728-1738. DOI: 10.1093/jee/108/110

<sup>2</sup> Model uses lower and upper thresholds of 3.3°C (38°F) and 23.9°C (75°F), respectively

**WNY Pheromone Trap Catches: August 4, 2020**

| Location                | ECB-E | ECB-Z | ECB Hybrid | CEW | FAW | WBC | DD to Date |
|-------------------------|-------|-------|------------|-----|-----|-----|------------|
| Batavia (Genesee)       | 0     | 1     | NA         | 8   | 0   | 41  | 2922       |
| Bellona (Yates)         | 0     | 2     | 2          | 1   | 3   | 72  | 2948       |
| Brockport (Monroe)      | 0     | 0     | NA         | 0   | 0   | 5   | 2887       |
| Eden (Erie)             | 0     | 0     | NA         | 11  | 37  | 52  | 2929       |
| Farmington (Ontario)    | NA    | NA    | 0          | 0   | 0   | 1   | 3022       |
| Geneva (Ontario)        | 0     | 3     | 2          | 8   | 35  | 14  | 2956       |
| Hamlin (Monroe)         | 0     | 1     | NA         | 5   | 0   | 9   | 2920       |
| Kennedy (Chautauqua)    | NA    | NA    | NA         | NA  | NA  | NA  | 2776       |
| Leroy (Genesee)         | 7     | 3     | NA         | 5   | 4   | 7   | 2905       |
| Lyndonville (Orleans)   | 0     | 0     | NA         | 0   | 2   | 129 | 2845       |
| Oswego (Oswego)         | 0     | 0     | NA         | 0   | 0   | 62  | 2743       |
| Panama (Chautauqua)     | 0     | 13    | NA         | 3   | 0   | 0   | 2605       |
| Penn Yan (Yates)        | 0     | 0     | 0          | 2   | 3   | 4   | 2854       |
| Portville (Cattaraugus) | 0     | 0     | NA         | 0   | 0   | 6   | 2578       |
| Ransomville (Niagara)   | 0     | 0     | NA         | 4   | 9   | 11  | 2957       |
| Seneca Castle (Ontario) | 1     | 0     | 2          | 0   | 0   | 5   | 2894       |
| Williamson (Wayne)      | NA    | NA    | NA         | NA  | NA  | NA  | 2745       |

ECB: European Corn Borer; CEW: Corn Earworm; FAW: Fall Armyworm; WBC: Western Bean Cutworm; NA: not available; DD: Degree Day (mod. base 50F) accumulation

| Average Corn Earworm Catch |               |          | Days Between Sprays |
|----------------------------|---------------|----------|---------------------|
| Per Day                    | Per Five Days | Per Week |                     |
| <0.2                       | <1.0          | <1.4     | No spray (for CEW)  |
| 0.2-0.5                    | 1.0-2.5       | 1.4-3.5  | 6 days              |
| 0.5-1.0                    | 2.5-5.0       | 3.5-7.0  | 5 days              |
| 1-13                       | 5-65          | 7-91     | 4 days              |
| over 13                    | over 65       | over 91  | 3 days              |

Add one day to the recommended spray interval if daily maximum temperatures are less than 80F for the previous 2-3 days. ●

## Western Bean Cutworm Report, 8/4/20

Margie Lund, Cornell Cooperative Extension, Cornell Vegetable Program

This week, all Western bean cutworm (WBC) traps in dry beans across the region have surpassed 50 cumulative moths. Riga and Stafford are starting to see a reduction in moth numbers while all other locations are still seeing an increase in WBC in beans. Historically, peak flight for WBC is in the last week of July to first week of August. Both the trap reports and scouting corn in fields near dry beans can help determine the risk. Growers should scout adjacent corn fields when cumulative WBC have reached >50 moths per trap. Dry bean pod scouting should begin 7 to 10 days after peak emergence, regardless of cumulative WBC trap catch, and especially where WBC has been found in bean pods/seeds in recent years. This scouting should continue for three weeks.

See [last week's issue of VegEdge](#), page 4, for scouting guidelines.

Western bean cutworm (WBC) trap set date and WBC adult numbers by date for each dry bean trap location.

| Dry Bean Location             | 7/7/20 | 7/14/20 | 7/21/20 | 7/28/20 | 8/4/20 | Cumulative WBC |
|-------------------------------|--------|---------|---------|---------|--------|----------------|
| Avoca Hill (Steuben Co.)      | 0      | 0       | 23      | 67      | 80     | 170            |
| Avoca Valley (Steuben Co.)    | 1      | 0       | 6       | 44      | 94     | 145            |
| Caledonia S (Livingston Co.)  | 0      | 0       | 6       | 54      | 58     | 118            |
| Caledonia SW (Livingston Co.) | 0      | 0       | 8       | 100     | 101    | 209            |
| Geneva (Ontario Co.)          | 0      | 2       | 13      | 38      | 42     | 95             |
| Riga (Monroe Co.)             | 0      | 1       | 24      | 49      | 28     | 102            |
| Stafford (Genesee Co.)        | 1      | 1       | 18      | 41      | 34     | 95             |
| Wayland (Steuben Co.)         | 0      | 2       | 4       | 24      | 92     | 122            |

Project funded by the NYS Dry Bean Endowment ●

## Interim Guidance for the Operation of Farmers' Markets – Updated August 3, 2020

New York State Department of Agriculture and Markets

[Here is the latest guidance for farmers selling at farmers markets released by NYSDAM. They have strongly stated that **face coverings MUST be worn, social distancing as much as possible, and plenty of hand washing!** ed. R. Hadad, CCE CVP]

### FACE COVERINGS

Face coverings must be worn at the market. Anyone who is over age two and able to medically tolerate a face-covering must cover their nose and mouth with a mask or cloth face covering when in a public in accordance with Executive Orders 202.17 and 202.18, and any successor thereof.

Farmer's markets, farmers, vendors, and those authorized on their behalf shall deny admittance to any person who fails to comply and must comply with all requirements of Department of Health regulation Subpart 66-3 and any applicable guidance. Provided, however, that this shall be applied in a manner consistent with the federal American with Disabilities Act, New York State or New York City Human Rights Law, and any other applicable provision of law. See: [https://regs.health.ny.gov/sites/default/files/pdf/emergency\\_regulations/Enforcement%20of%20Social%20Distancing%20Measures.pdf](https://regs.health.ny.gov/sites/default/files/pdf/emergency_regulations/Enforcement%20of%20Social%20Distancing%20Measures.pdf).

### NEW YORK FORWARD GUIDANCE

- Farmers' markets, farmers, and vendors must also thoroughly review the [guidance documents on the NY Forward](#). Farmers' markets must have a NY Forward Business Opening Safety Plan, also referred to as a Market

Health Safety Plan, in place and on the premises. The plan must be made available to the State or local health or safety authorities in the event of an inspection.

- Farmers/vendors must have a business safety plan in place and on premises in order to participate in the farmers' market. The plan must be made available to the farmers' market operators, the State, or local health or safety authorities in the event of an inspection. Farmers/vendors must complete the business safety plan most applicable to the goods or food being sold.
- Farmers' markets, farmers, and vendors should consult the appropriate guidance documents set forth by [NYS Department of Health](https://coronavirus.health.ny.gov/home), <https://coronavirus.health.ny.gov/home>, [NYS Department of Agriculture and Markets](https://agriculture.ny.gov/coronavirus), <https://agriculture.ny.gov/coronavirus>, and any other state or local governments.
- Guidance is subject to frequent revision as NY continues its measured and phased re-opening through NY Forward. Farmers' markets, farmers, and vendors should regularly check the guidance documents set forth by NYS Department of Health, NYS Department of Agriculture and Markets, on the NY Forward webpage.

### FARMERS' MARKETS

To promote the health and safety of our farmers' market vendors and patrons, it is important that farmers' markets meet the following requirements for the duration of the Executive Order. These requirements are meant to maintain outlets for healthy local foods, while safeguarding our farmers, consumers, and communities from the spread of COVID-19. Farmers' markets must:

- Space out vendors as much as possible.
- Minimize the food customers may directly access, and instead serve patrons.
- Increase the number of handwashing stations and make hand

*continued on next page*

sanitizer, containing at least 60% alcohol, available to vendors and customers.

- Manage customer traffic within the market to eliminate congregating and to promote social distancing (i.e., maintaining a distance of at least 6 feet between customers).
- Know and understand the Food Safety at Farmers' Markets Guidelines.
- Frequently check the Department of Agriculture and Market's website for updates and additional resources.
- Entertainment offered at the farmer's market must be ancillary to the market activity, and must be in compliance with all NY Forward Guidance, including but not limited to Low-Risk Outdoor Arts & Entertainment and/or Low-Risk Indoor Arts & Entertainment, and must be consistent with the regions current phase or requirements of re-opening.

Farmers' markets may consider allowing only seniors or those with compromised immune systems to shop during the first hour the market opens, or prior to opening the market to the general public.

### FARMERS/VENDORS

In addition to food safety protocols that are taken by farmers on the farm, farmers' market operators should implement their own sanitary protocols. While the CDC and FDA have stated that COVID-19 is not known to be transmitted in food or food packaging, farmers/vendors shall adhere to the following:

- Do not permit customers to spend an excessive amount of time near the booth or table.
- Off-site consumption or at designated dining areas that conform to NY Forward food services guidance.
- Limit the number of customers permitted at the table at one time, allowing for proper social distancing. Set up display tables in a manner that allows for social distancing between consumers (e.g. do not create close or confined spaces with displays in a manner where social distancing cannot be maintained).
- Frequently clean and sanitize surfaces and other frequently touched points of contact, including point of sale terminals.
- Frequently wash hands with soap and water or use hand sanitizer containing at least 60% alcohol, if soap and water are not available
- Pre-package raw agricultural products, such as apple, potatoes, onions, etc. to the greatest extent possible. All other foods, such as breads and baked goods, must be sold pre-packaged. Please refer to existing food labeling laws.
- Be knowledgeable about the Food Safety at Farmers Markets Guidelines.
- Frequently check the Department of Agriculture and Market's website for updates and additional resources.
- Do not allow customers to place personal objects, such as reusable bags, money, purses, or cell phones, on vendor tables.

- Employers must provide essential workers with masks free of charge to wear when interacting with the public in accordance with Executive Order 202.16. Additional information is available at Interim Guidance on Executive Order 202.16.

### CONSIDER OTHER APPROACHES TO FACILITATE THE DIRECT SALE OF FARM MARKETS

Alternative options may include:

- Online ordering, or other creative purchasing solutions, with pick up at the market. This is to help reduce crowds and the handling of cash or other currencies.
- A market-wide, community supported agriculture (CSA) or food box for pick up.

### CLEANING/SANITIZING AND HAND HYGIENE

Clean and disinfect buildings and equipment following the New York State Department of Health's (DOH) and Department of Agriculture and Markets' Interim Guidance for Cleaning and Disinfection of Food Manufacturing Facilities or Food Retail Stores for COVID-19.

This signage providing guidance to STOP the SPREAD of COVID-19 should be posted in prominent locations. Alternative languages for the signage are also available. Regular hand washing with soap and water for at least 20 seconds should be done:

- Before and after eating.
- After sneezing, coughing, or nose blowing.
- After touching face, hair, cellphone and/or clothing.
- After using the restroom.
- Before handling food.
- After touching or cleaning surfaces that may be contaminated.
- After using shared equipment and supplies.

### ADDITIONAL INFORMATION

[New York State Department of Health's Novel Coronavirus \(COVID-19\) Website](https://coronavirus.health.ny.gov/home): <https://coronavirus.health.ny.gov/home>

[United States Centers for Disease Control and Prevention Coronavirus \(COVID-19\) Website](https://www.cdc.gov/coronavirus/2019-ncov/index.html):

<https://www.cdc.gov/coronavirus/2019-ncov/index.html> ●

# Stop the Rot: New York Part of Ambitious Multi-State, Multi-Disciplinary, Multi-Year, Multi-Million Dollar USDA Project to Combat Bacterial Diseases of Onion

Christy Hoepting, Cornell Cooperative Extension, Cornell Vegetable Program

Bacterial bulb rot has plagued the New York onion industry for decades, despite many attempts to find solutions. In hopes of making a breakthrough, New York has joined a national team to combat bacterial bulb rot of onion through the 'Stop the Rot' project, which seeks to develop practical, economically-sound strategies for pathogen detection and management.

Consider this as a supplement to the article about the 'Stop the Rot' project that appears in [July/August issue of Onion World magazine](#) that emphasizes the activities underway in New York.

## MULTI-, MULTI-, MULTI-, MULTI-

The 'Stop the Rot' project, officially titled "Combating onion bacterial diseases with pathogenomic tools and enhanced management strategies", is funded by a \$4M grant from the USDA National Institute of Food and Agriculture (NIFA) – Specialty Crops Research Initiative (SCRI) with an additional \$4.2M in matching funds from stakeholders and collaborating universities for a whopping **total \$8.2M budget for 4 years. The project organizes 24 scientists in 10 diverse disciplines across 7 onion growing regions in 12 states**, as well as an international phytobacteriologist from South Africa, **and 13 stakeholder advisory panel members**. Onion growers and seed company representatives make up the Stakeholder advisory panel (SAP) and are integrated into all aspects of the project to ensure a grass roots approach to developing economically feasible strategies to manage onion bacterial diseases effectively in the real 'onion' world.

## NEW YORK 'STOP THE ROT' TEAM MEMBERS:

- *Christy Hoepting*, CCE Cornell Vegetable Program: Co-PI, Extension Lead and Researcher
- *Maxwell Torrey*, Big O Farms, Elba, NY: Stakeholder Advisory Panel Member, trial host
- *Joe DiSalvo III*, DiSalvo Farms, Inc, Phoenix, NY: Stakeholder Advisory Panel Member, trial host
- *Rick Minkus*, Minkus Family Farms, New Hampton, NY: Stakeholder Advisory Panel Member
- *Steven Beer and Jean Bonasera*, Dept. of Plant Pathology, Cornell: Collaborators

## PROJECT OBJECTIVES

### 1. Characterizing bacterial pathogens of onion – "know your enemy"

- a. Conduct a national onion bacterial disease survey and develop the National Onion Bacterial Strain Collection (NOBSC).
- b. Evaluate onion bacterial pathogenomics (sort out which strains of bacteria cause disease from those that are harmless based on the genetic fingerprints of the strains).
- c. Develop rapid and accurate onion bacterial disease molecular detection tools including DNA fingerprinting.
- d. Develop onion screening protocols for evaluating resistance to bacterial pathogens.

The NOBSC and the phenotypic resistance screening methods developed in this project will, ultimately provide effective tools for breeders to screen and develop onion cultivars with resistance to bacterial diseases.

### 2. Developing effective management strategies for onion growers

- a. Irrigation management (amount and frequency, tapering and ceasing irrigation)
- b. Fertility management with an emphasis on nitrogen (amount and timing, interaction with irrigation)
- c. Pesticide programs (efficacy of copper bactericides, sanitizers, biologicals, plant defense activators, etc.)
- d. Cultural management (undercutting, rolling tops, and timing of topping for field curing)
- e. Post-harvest management (efficacy of postharvest curing and desiccants or sanitizers injected into storage units)
- f. Bacterial disease modeling

Specific aspects of managing onion bacterial diseases investigated across the U.S. are being prioritized based on regional practices and constraints and on stakeholder priorities. Trial design and research protocols will be refined each year based on stakeholder feedback. With field trials carried out in seven regions on common objectives and treatments each year for three seasons, the most important practices that help to control bacterial pathogens will be identified and integrated into effective regional management programs for bacterial rots. Economic assessments will be made every step of the way to ensure that growers have practical and cost-effective tools to solve bacterial diseases in onion production.

## 2020 NEW YORK 'STOP THE ROT' PROJECTS

### 1a. Onion bacterial disease survey

Ten plant samples will be collected from five fields in New York (Elba muck (2), Wayne, Oswego and Orange Cos.) twice during growing season (1st samples being collected now, 2nd set prior to harvest), and from bulbs out of storage. All samples collected across the country are being analyzed using identical standardized procedures to ensure consistent and accurate identification of the causes of bacterial disease.

### 2b. Nitrogen rate trial

Piggy-back with Brian Nault/Karly Regan on "fertility mile" project where growers treat large blocks with zero, half and standard rates of NPK. Eight

*continued on next page*



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"fertility miles" have been set up in Elba, Wayne and Oswego counties. **Nitrogen timing trial.** Three rates of total nitrogen (60, 90 and 120 lb/A) were applied at three timings: i) 100% at planting PPI; ii) 75% at planting, 25% side-dressed at 3-4 leaf stage (mid-June); and iii) 75% at planting, 25% side-dressed at 1" bulb (mid-July). Hosted by project SAP member DiSalvo (Oswego Co.).

## 2c. Pesticide evaluation

Small-plot trial in Elba 'rot farm' donated to project by SAP member, Torrey. 12 treatments including copper-based products Kocide 3000, Badge, Cuprofix Ultra 40 Disperss, Nordox, MasterCop and Mankocide (pre-mix of Kocide + mancozeb); plant defense activators Lifegard and Actigard, and Lifegard + Kocide 3000; sanitizer Oxidate; and antibiotic Harbour. Each treatment will be evaluated under natural conditions and artificial inoculation.

## 2f. Bacterial disease modelling

Provide data on crop production, microclimate and bacterial rots to project computer scientist and data modeler to mine data for predictive model. In New York where onions are at the mercy of mother-nature, a rot problem may come down to a critical temperature and rainfall combination at a critical crop development stage. If this could accurately be predicted, then this could help a grower decide whether to sell a crop immediately if there is a high risk of bulb rot or hold the crop for longer-term storage and a higher market price, if there's a low risk of bulb rot. Five fields have been set up in Elba, Wayne and Oswego for intense data collection that will be fed into the database for disease modelling.

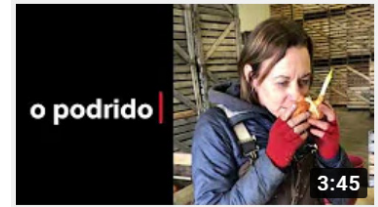
## EXTENSION AND OUTREACH

### Diagnostic Bulb Rot Video Available Now

Check out the first product of the 'Stop the Rot' project produced by the Cornell Vegetable Program's Christy Hoepting and Sarah Vande Brake – available in both English and Spanish. It is a 4-minute video that distinguishes bacterial bulb rot from other look-alikes.



How to Diagnose Onion Bacterial Bulb Rot



Cómo diagnosticar La putrefacción Bacteriana de I...

Click the video images above to watch the videos now.

Or find them on the Cornell Vegetable Program YouTube channel: [youtube.com/user/ccecvp](https://youtube.com/user/ccecvp)

## HELP STOP THE ROT

Please complete a 10-minute grower survey to share your perspective and needs.

[Complete the survey online at](https://bit.ly/3gaZwDH)  
<https://bit.ly/3gaZwDH>

Or, contact Christy Hoepting at 585-721-6953 for a print version of the survey to be mailed to you.

Thank you!! ●

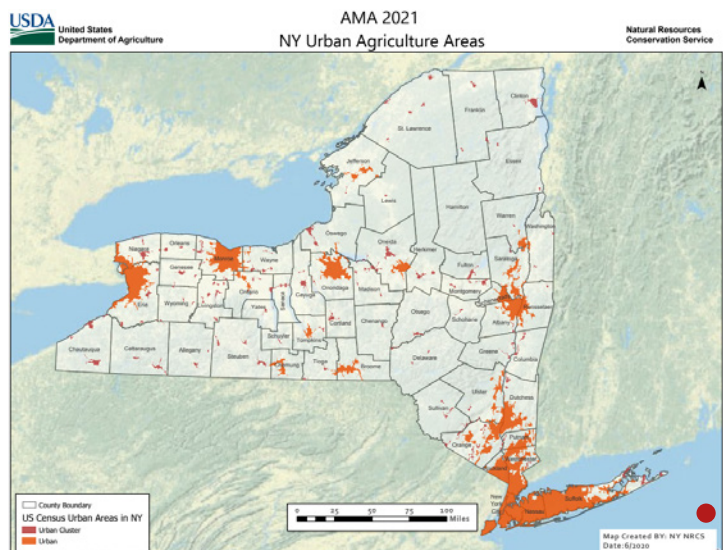


## Technical and Financial Assistance for Urban Agriculture Producers

The New York Natural Resources Conservation Service (NRCS) is announcing a sign-up for technical and financial assistance for agricultural producers in areas identified to be in urban areas. This special program offers an exciting opportunity for urban farmers to compete for funding in a program developed to meet their needs. The application **deadline is August 21, 2020.**

Producers whose land is located within the Urban Priority Area will be eligible to apply for consideration in 2021. See [The Urban Priority Area map](#). All applications are competitive and are ranked based on national, state and locally identified resource priorities and the overall benefit to the environment.

General information regarding NRCS New York Conservation Programs can be found at: <http://www.ny.nrcs.usda.gov/programs/>.





## BEETS

Cercospora leaf spot (CLS) is increasing in fields where leaves are touching within the rows and have had adequate rainfall or irrigation. According to the CLS forecast system, many weather stations in our area recorded several days of moderate to high risk over the past two weeks. Wednesday through Friday this week are low risk, but we are back to moderate risk on Saturday. For conventional fields, the first fungicide application of either Tilt or Miravis Prime should occur when there is 15 to 20% incidence (number of leaves with at least one CLS lesion). Use the following sampling strategy in the field to evaluate the action threshold: 1. Select an area within the field which may be of highest risk (e.g. adjacent to another beet field or field with a history of beets; low-lying area, thick canopy, etc); 2. Evaluate 6 randomly selected leaves along a row at 1 foot intervals and record if the leaf has at least one lesion (you do not have to count the number of lesions); 3. Continue until you have evaluated at least 15 sampling locations for a total of 90 leaves; 4. If at least 18 leaves have at least 1 CLS lesion per leaf, the average action threshold to consider the first fungicide application has been reached. During periods of high risk, it is suggested to evaluate fields twice per week. In fields we were scouting for a research project, within one week's time a field with 1.1% incidence increased to 68% and four fields went from 0% to between 6% and 34%. - JK

## CARROTS

Continue scouting for leaf diseases until harvest. See last week's issue of VegEdge for recommendations. - JK

## COLE CROPS

Root and stem rots seen in various cole crops such as kale, broccoli raab, Asian broccoli, and cauliflower. Appears to have started after initial cabbage maggot damage. - RH

Beginning to see alternaria on lower leaves in both organic and conventional plantings of cabbage, collards, and broccoli. Incidence so far has been quite low (<1%) but it is here and weather is favorable. Swede midge damage is extensive on some organic farms where spatial-temporal rotation of cole crops is not feasible. Plantings should be destroyed once they are deemed to be no longer economically viable. - EB

## CUCURBITS

Downy spotted in Orleans County on Tuesday. Downy has been present in Chautauqua and Cattaraugus for several weeks, though we did not receive a report for quite some time after it arrived. Fully expecting it to be present in other counties in the CVP area. Please be a considerate neighbor and get rid of any cucumbers that have uncontrolled (aka sporulating) downy mildew so it doesn't continue to spread with rains and infect farms further East. Old, underperforming and under protected cucumber plantings should be removed promptly as a preventative measure to avoid the disease getting a foothold on your farm. Stay on top of your spray programs with this wet weather pattern. - EB

## DRY BEANS

Fungicide applications should be applied in fields that have reached 10-50% bloom for white mold. Fields with a history of white mold, with dense canopies, and moist conditions are at higher risk. - ML

## ONIONS

Turned another page of the calendar and suddenly the onions look different – tip burn and lodging increased this past week. The hot summer racked up heat units and many fields are lodging earlier than normal this week. Early lodging provided relief in that SLB fungicide spray programs will not “run long” and risk overuse and fungicide resistance of precious FRAC groups 3 and 7 used for Stemphylium leaf blight (SLB). But, potentially at the expense of larger bulbs and higher yields. Bulbs may continue to put on significant size after lodging and prior to pulling as the green foliage is absorbed by the bulbs. Tipburn has progressed to excessive outer leaf dieback especially in fields of red varieties where the roots are weak from pink root.

Onion thrips also jumped (e.g. from < 1.0 thrips per leaf to > 4.0) over the past week in select locations while not in others, with seemingly no explanation. Radiant is the only stand-alone insecticide option that is capable of knocking back thrips pressure > 2.0 thrips per leaf. Note that Agri-Mek and other generic abamectin products have a pre-harvest interval (PHI) of 30 days. Technically, harvest is defined by the EPA as the time when the crop is severed from its growth source, which would be onion are pulled. Radiant and Exirel have PHI of 1 day. Minecto Pro is a premix of Agri-Mek + Exirel, and no more than two applications of Agri-Mek are allowed per crop per season, so no more than two apps total among Agri-Mek and Minecto Pro.

SLB appears to be a primary pathogen in most fields now with black and purplish target spot lesions present, some of which may occur on green leaf tissue – [see last week's article about SLB progression](#), page 4. Leaf symptoms of bacterial diseases increased this week (Fig. 1). Lot's of rainfall and/or irrigation combined with high temperatures during bulbing tend to

*continued on next page*



continued from page 8

increase bacterial bulb rot of onion. Control of bacterial bulb rot has notoriously been challenging, but hopefully, more solutions to this problem will be developed in the near future – see article on ‘Stop the Rot’ project on page 6. **Onion growers are encouraged to fill out quick 10-minute [survey](#) to collect baseline data for this project** (<https://bit.ly/3gaZwDH>). - CH



Figure 1. Foliar symptoms of bacterial disease of onion, which may lead to bulb rot are characterized by inner leaf collapse and dieback which may appear “greasy” and/or water-soaked (left), pale/yellowish and necrotic (middle) or white (right). Photos: C. Hoepting, CVP

## PEPPERS

Blossom drop on peppers appearing due to heat stress and probably inadequate moisture (prior to the latest rains). - RH

## POTATOES

While there are no late blight reports anywhere near NY, we’ve had late blight spontaneously pop up in Western NY in each of the past two years. In 2018 volunteer potatoes spread the disease to tomatoes and once weather became favorable it spread to other farms. Out of an abundance of caution, please scout any areas with volunteer potatoes and your crops for signs of late blight and report any suspect plants. The Southern Tier seems particularly at risk this time of year due to frequent fogs and rain. - EB

I’ve seen three separate cases of black leg in the past week on fresh market farms. Hopper burn is severe on some plantings and is leading to premature senescence that will likely impact yield. -EB

All stations except Hammondsport went over the 30 Blight Unit (BU) threshold for triggering a late blight spray through the forecast period 8/7/20. Hammondsport was within 2 BUs of the threshold, but did surpass the 15 Fungicide Unit threshold suggesting an additional fungicide spray. The chart assumes use of a susceptible potato variety, and an application of chlorothalonil. Because weather conditions can vary depending on topography and altitude, the recent disease information and disease forecasts will be most accurate very close to the weather station used. For locations that are not close to a weather station, forecast information should only be used as a general indication of how favorable weather has been for late blight. Forecast BUs are subject to changes as the weather forecast changes, so check forecasting tools regularly to see if disease forecasts have changed. Information for

other weather stations can be found at: <http://newa.cornell.edu/index.php?page=potato-diseases>. On a national level, late blight has still only been reported in FL, AL, and NC, and all pathogens tested have been the US-23 genotype. Late blight has been reported in British Columbia, Canada this past week on potato. No late blight has yet to be reported in NYS. – ML and JG

New Late Blight Risk Chart, 8/4/20

| Location      | Blight Units <sup>1</sup><br>7/29-8/04 | Blight Units <sup>2</sup><br>8/05-8/07 | Location      | Blight Units <sup>1</sup><br>7/29-8/04 | Blight Units <sup>2</sup><br>8/05-8/07 |
|---------------|--|--|---------------|--|--|
| Albion        | 29                                     | 18                                     | Hammondsport  | 11                                     | 17                                     |
| Arkport       | 23                                     | 19                                     | Knowlesville  | 30                                     | 16                                     |
| Baldwinsville | 19                                     | 19                                     | Lyndonville   | 30                                     | 21                                     |
| Bergen        | 28                                     | 19                                     | Medina        | 31                                     | 17                                     |
| Buffalo       | 23                                     | 17                                     | Niagara Falls | 43                                     | 17                                     |
| Burt          | 28                                     | 10                                     | Penn Yan      | 27                                     | 17                                     |
| Ceres         | 46                                     | 20                                     | Rochester     | 37                                     | 18                                     |
| Elba          | 31                                     | 19                                     | Sodus         | NA                                     | NA                                     |
| Fairville     | 24                                     | 19                                     | Versailles    | 30                                     | 19                                     |
| Farmington    | 32                                     | 19                                     | Wellsville    | 47                                     | 20                                     |
| Fulton        | 31                                     | 19                                     | Williamson    | 24                                     | 16                                     |
| Geneva        | 23                                     | 12                                     |               |  |  |

<sup>1</sup> Past week Simcast Blight Units (BU)

<sup>2</sup> Three-day predicted Simcast Blight Units (BU)

## SNAP BEANS

The risk of white mold is high where there is a history of this disease (any history because the resting sclerotia remain viable in the soil for many years), dense plant canopies, wet soil and high humidity or wetness within the canopy. Fungicide applications should begin at 10% bloom. - JK

## SWEET CORN

The NYS IPM field crops program reports that the following corn diseases are being seen at low to moderate levels across the state (click on the name of each disease for a link to a fact sheet): [Gray Leaf Spot](#), [Northern Corn Leaf Blight](#), [Holcus Leaf Spot](#), [Common smut](#). - JK

## TOMATOES

Beginning to see septoria and early blight in the field. Receiving many reports of blossom end rot showing up now, would have been caused by inconsistent or insufficient water several weeks ago. - EB

# What Plague Doth Spot These Vine Crop Leaves?

Elizabeth Buck, Cornell Cooperative Extension, Cornell Vegetable Program

“Help Help!” shout the vine crops  
so sad in the field.  
So many foliar diseases  
diminishing nice yield.

Scouting is smart  
but how much can you do  
if you look at diseases  
not knowing who’s who?  
So I’ve written this poem  
you can hang in your home  
to know which disease  
you need to bring to its knees.

Using this tool you can go  
and ID your dear crop.  
For now you will know  
which disease you must stop.

## Alternaria

First one spot, then two spots,  
next three spots, and four.  
I’ll bet you’re about  
to see a lot more.

Alternaria moves outward  
from leaves near the crown.  
Spots a quarter inch big  
will soon grow and get brown.

Lighter centers can cause targets in melon,  
where this disease hits most often.  
Soon the foliage goes down  
and in the sun fruits will soften.

Now in watermelon,  
on the other hand,  
darkish lesions occur  
with targets less grand.

## Anthracnose

Anthracnose will change  
its look with each crop.  
After a water soaked start  
the similarities drop.

When on muskmelons  
and cucumbers, too,

Medium brown pea sized lesions  
or leaf distortion is in view.

Now switch to watermelon  
and there you will find  
dark irregular marks  
covering leaves all along vine.

Most other cucurbits,  
give less away.  
Look for yellow circular spots  
and fruit decay.

Fruit is the real target  
of anthracnose’s game.  
Dark or black sunken lesions  
no other disease can claim.

## Bacteria

Bacterial diseases?  
They’re a real bummer.  
Seriously, though, these two  
can ruin your summer.

Both will start as little water soaked spots  
and turn into shot holes from small little dots.  
Both these lesions can ooze and dry to a crust.  
If there’s a halo, further investigation is a must.

Angular stays confined by the veins  
Bacterial really is more of a pain.  
The first is darker, from yellow to brown  
the second is lighter, from white to light brown.

Beware of the fruit spots.  
Xanthomonas causes a lot.  
Those little white dots  
will get secondary rots.

Copper is the treatment for either one.  
And just for an extra measure of fun  
Both bacteria are very hard to stop  
if wet weather puts them over the top.

## Gummy Stem Blight

Foliar symptoms of gummy  
are not very yummy.  
I’d be willing to bargain  
your lesions start on leaf margins.

Moving from water soaked  
to tan and dark brown  
Pepper-fleck centered lesions  
send spores all around.

And on the stems you will see  
bleeding cankers, ugly as can be.  
On water and plain melons it is the worse.  
In all crops it is very hard to reverse.

## Plectosporium

If you try to ignore plecto  
your field’ll get wrecked-o  
This fungus likes summer squash and zucchini  
along with pumpkins, but certainly not tahini.

Small sunken tan spindles  
first show up on the stem.  
Leaf veins and the handles  
will be next to get them.

Plecto doesn’t skip over the fruit.  
Small spindle to round lesions  
will make you shout “shoot!”

## Scab

Odd shaped and everywhere  
scab lesions really don’t care.  
They’re on leaves and stalks.  
Even the fruit can show pox.

More water-soaking to start?  
Well, well, what a surprise.  
At least it’s pale green and not yellow  
As scab first grows in size.

Once they are older,  
the lesions turn brown  
with a nice yellow halo  
running around.

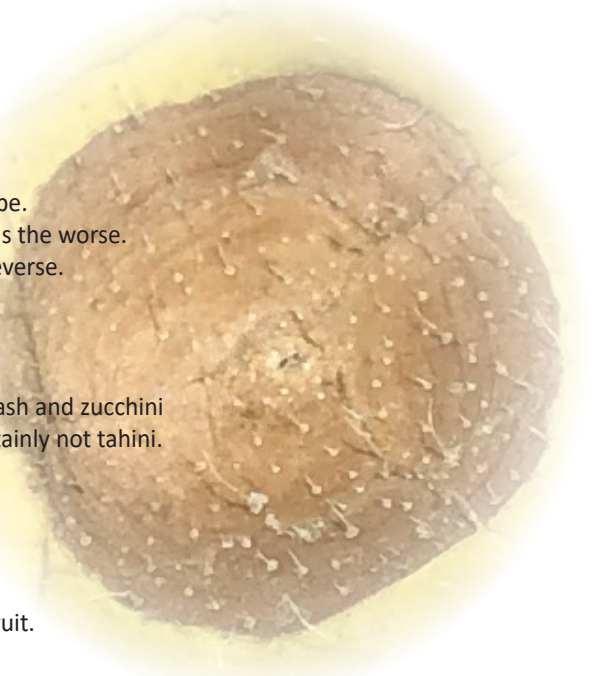
And then for a change  
a diagnostic trait,  
lesion centers drop out  
leaves shot-holed – just great.

## Septoria

Septoria, Septoria  
you bring me euphoria.  
I see you so much more  
when temps hang near 64.

A cool night disease,  
I identify you with ease.  
Round tiny marks of beige-white  
with a thin brown border in sight.

And best of all,  
when you occur in the fall,  
black specks mark your middle  
making this an easily solved riddle. ●



## Weather Charts

John Gibbons, CCE Cornell Vegetable Program

### WEEKLY WEATHER SUMMARY: 7/28/20 - 8/03/2020

| Location**     | Rainfall (inch) |              | Temperature (°F) |     |
|----------------|-----------------|--------------|------------------|-----|
|                | Week            | Month August | Max              | Min |
| Albion         | 0.71            | 0.67         | 85               | 60  |
| Arkport        | 0.30            | 0.02         | 82               | 54  |
| Bergen         | 1.03            | 0.37         | 86               | 56  |
| Brocton        | 0.68            | 0.63         | 80               | 61  |
| Buffalo*       | 0.59            | 0.37         | 87               | 63  |
| Burt           | 0.50            | 0.47         | 89               | 58  |
| Ceres          | 0.44            | 0.16         | 83               | 57  |
| Elba           | 0.78            | 0.20         | 86               | 57  |
| Fairville      | 1.28            | 0.95         | 87               | 56  |
| Farmington     | 0.46            | 0.10         | 86               | 56  |
| Fulton*        | 0.52            | 0.41         | 91               | 57  |
| Geneva         | 1.22            | 0.09         | 87               | 60  |
| Hammondsport   | 0.11            | 0.00         | 87               | 57  |
| Hanover        | 1.17            | 0.62         | 83               | 59  |
| Lodi           | 0.16            | 0.00         | 87               | 60  |
| Niagara Falls* | 0.71            | 0.67         | 86               | 60  |
| Penn Yan*      | 0.48            | 0.03         | 89               | 60  |
| Rochester*     | 1.33            | 1.18         | 85               | 60  |
| Sodus          | 1.47            | 1.22         | 92               | 60  |
| South Bristol  | 2.25            | 0.06         | 84               | 58  |
| Varick         | NA              | 0.02         | 87               | 62  |
| Versailles     | 1.19            | 0.65         | 85               | 57  |
| Williamson     | 1.26            | 0.60         | 88               | 58  |

### ACCUMULATED GROWING DEGREE DAYS (AGDD) BASE 50°F: APRIL 1 - AUGUST 3, 2020

| Location**     | 2020 | 2019 | 2018 |
|----------------|------|------|------|
| Albion         | 1692 | 1493 | 1755 |
| Arkport        | 1460 | 1370 | 1729 |
| Bergen         | 1654 | 1443 | 1659 |
| Brocton        | 1625 | 1470 | NA   |
| Buffalo*       | 1730 | 1495 | 1829 |
| Burt           | 1594 | 1346 | 1598 |
| Ceres          | 1416 | 1432 | 1521 |
| Elba           | 1589 | 1386 | 1659 |
| Fairville      | 1612 | 1377 | 1605 |
| Farmington     | 1633 | 1405 | 1649 |
| Fulton*        | 1655 | 1368 | 1654 |
| Geneva         | 1681 | 1485 | 1690 |
| Hammondsport   | 1614 | 1416 | 1607 |
| Hanover        | 1620 | 1454 | NA   |
| Lodi           | 1697 | 1520 | 1725 |
| Niagara Falls* | 1659 | 1440 | 1872 |
| Penn Yan*      | 1740 | 1554 | 1757 |
| Rochester*     | 1693 | 1591 | 1871 |
| Sodus          | NA   | 1348 | 1592 |
| South Bristol  | 1605 | 1401 | 1615 |
| Varick         | 1764 | 1566 | 1756 |
| Versailles     | 1581 | 1440 | 1674 |
| Williamson     | 1580 | 1333 | 1565 |

\*Airport stations

\*\* For other locations: <http://newa.cornell.edu>

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# Cornell Cooperative Extension Cornell Vegetable Program

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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 frequency increasing leading up to and during the growing season.

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