

Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program

Vegetable News E-Alert ~ July 7, 2021

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Crop Notes

- **Alliums:** Onion **thrips** over threshold in many locations, second generation **leek moth** caterpillars seen in onions and leeks (north).
- Garlic harvest has begun for folks on black plastic. Many folks are holding off 1-2 weeks to allow for more size, especially if growing on bare ground, white plastic, or straw mulch.
- **Brassica:** Imported cabbageworm pressure is quite high in some areas. Scout brassicas for caterpillar emergence and spray when larvae are young for maximum control.
- **Chenopods:** Cercospora pressure seems very high this season. See longer article included on management.
- **Sweet Corn:** Some early sweet corn has begun to be harvested and will swing into high gear in the next week. Few **moths** found yet in traps (North), but minor ECB feeding observed in plantings, below threshold. See sweet corn trap counts for the region posted in this e-alert. Spotty corn earworm trap catches have been reported across the region, enough in some areas to trigger silk sprays. There is also some concern about sap beetles or picnic beetles in corn this year due to high populations in berry crops so keep an eye out for them as well.
- **Cucurbit:** No **downy mildew** observed in Eastern NY Region. Striped cucumber beetle, melon aphid, and two-spotted spider mite outbreaks observed in high tunnels. **Squash bug adults** and eggs observed in field on summer squash and zucchini. Scout yellow squash hard for cucurbit powdery mildew now that we've been harvesting for a couple of weeks. Yellow summer squash tends to be a great indicator for this pathogen!
- **Legumes:** Many potato leafhoppers observed in beans.
- **Solanaceae:** Tomato growth in many tunnels is very lush and voluminous. Foliar testing to refine nutrient applications is a good idea. Hornworm larvae are still small—control now! In

peppers, bacterial leaf spot is showing up. Control now as this pathogen can lead to defoliation which often results in sun scalding as well as spotting on fruits. Copper compounds (Champ WG, Kocide 3000-O) and plant activators LifeGard (OMRI approved) or Actigard can help manage this disease if caught early. Also tarnished plant bugs are increasing, they like to feed around flower buds and may cause bud drop if feeding is heavy.

Harvesting Garlic - Timing is Key!

Crystal Stewart Courtens, CCE ENYCHP

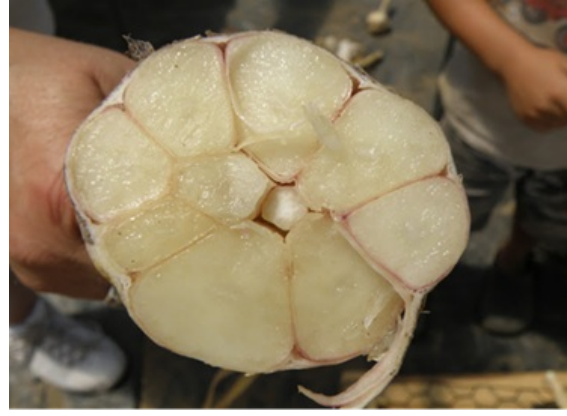
Everyone knows the balancing act that is garlic harvesting—too early and the cloves are small and don't store well, too late and the head pops, making it unmarketable and more susceptible to diseases. So, as we near harvest, how should a grower decide if the garlic is ready? The best answer is to pull a few plants, cut through the head sideways (so you cut through all the cloves), and see how well developed the cloves are. You can use the leaves as a guide to decide when to do this (lowest third or half of the leaves yellowing and dying is a good mark to start with), but looking at the cloves is the best way to know if the garlic is ready. Cloves should fill the wrappers—if they seem a little loose, the garlic has a little ways to grow. Note that in this last few weeks before harvest, it is very important to keep providing adequate moisture to the garlic! The equivalent of an inch of rain per week will optimize bulb expansion. Go ahead and stop watering a week before harvest.

When testing maturation, a little of the very outer wrapper may have started to decay at this point. That is okay—it's a normal part of the maturation process. The key is to harvest before the bulbs pop, which can happen relatively quickly, especially if we have another wet year. If you don't think you will be able to get out and harvest for a period of time, it's better to harvest bulbs a little too early than a little too late.

Cutting the tops in the field: If you find that you do not have space to bring whole plants into the drying area and maintain good air circulation, cutting the tops off the garlic is a good solution. Cutting the tops has the added benefit of leaving significant amounts of moisture in the fields rather than bringing all that lush, green growth into the drying area. Tops can be cut as close to ground level as you can get if using a sickle bar mower, or you can cut them by hand at 1.5" to 6" long. Our trials have shown that there is no increase in disease incidence even when cutting the garlic down to its final length as you bring it into the drying area.

Field grading: Hopefully you have been removing sick and damaged plants each time you weeded the garlic, so there won't be many left. Harvest is one last chance to clean up your crop before you bring it into tight quarters where disease can spread like wildfire. Remove any garlic that doesn't look great and set it aside rather than bringing it in and finding it later. You might also consider selecting your seed garlic at the same time. Save out the best garlic as your own seed to maximize next year's crop. You also don't need to clean your own seed of dirt or remove roots, which will save you labor if you set it aside now.

Move your garlic from the field into the drying area relatively quickly—most people harvest during the morning and have garlic in the barn, high-tunnel, or shed by mid-day. Garlic can be dried in a variety of ways, as long as a few fundamental ideas are followed. First, you want to have good airflow over the garlic to move moisture away. This means not having garlic packed too tightly into the drying area. Each layer of garlic should have good air movement, whether hanging in rafters or sitting on benches. If there are parts of the drying area that are stagnant and wet, you need to remove some top growth and throw it away, reduce density of plants in the area, or increase air movement. Next, you want to choose an area that gets hot, but not too hot. Garlic will dry well at 110 degrees, but we try not to go much above that because at 120 degrees waxy breakdown, a physiological disorder, starts to occur. This temperature can be reached in a barn, shed, or high tunnel. Make sure you have the temperature in your drying area well controlled, so that you do not overshoot that target.



Knowing when to harvest garlic can be tricky. Use the leaves as a first indicator, but also feel and look at the bulb. You want the bulb to be very firm in its skins, and when you cut it in half perpendicular to the scape you want to see a small gap around the scape. The garlic on the left isn't quite ready; the garlic on the right is. Photos: C. Stewart Courtenis

Onion Fungicides for Managing Stemphylium Leaf Blight

Ethan Grundberg, CCE ENYCHP

High heat and too little rain have led to a surge in tip burn in onions in Orange County. Stemphylium leaf blight (SLB) has been observed colonizing dry leaf tips in the past week and the forecasted warm weather and long periods of leaf wetness and/or high relative humidity are ideal for the pathogen to spread.

Research conducted by Dr. Frank Hay and extension specialist Christy Hoepting has demonstrated that SLB populations in the state are now resistant to varying degrees to fungicides in FRAC groups 2,7,9, and 11. The only remaining FRAC group with good activity on SLB are the group 3 products like propiconazole (Tilt, OLF), difenaconazole (found in the pre-mix products Inspire Super and Quadris Top), and tebuconazole (found in the pre-mix product Viathon).

The biggest change to SLB management in 2021 is that the FRAC 7 products, including Luna Tranquility, are no longer performing as well due to resistance development. Luna Tranquility can still reduce SLB sporulation and should be used to space out FRAC 3 product applications since growers should not make more than two sequential applications of FRAC 3 products.



Onion leaf exhibiting excessive premature dieback and sporulation from Stemphylium leaf blight. Photo: E. Grundberg

Miravis Prime (FRAC 7 + 12) performed better than Luna Tranquility in Hoepting's 2020 trials. Under lower SLB pressure conditions (next two weeks), products like Gavel (FRAC 22+ M3) and Oso (FRAC 19) can be used to save the most effective fungicides for later in the season. Hoepting found that mixing two FRAC 3 products together (i.e. Tilt plus Quadris Top, Viathon plus Tilt, etc) provided the best protection from SLB in her trials in Elba and Oswego.

Given the increasing complexity of developing onion fungicide programs, please do not hesitate to reach out to me to discuss the specific circumstances of your situation in more detail; I can be reached at eg572@cornell.edu or 617-455-1893.

Organic and Conventional Management Strategies for Cucurbit Powdery Mildew

Dr. Meg McGrath, Cornell University

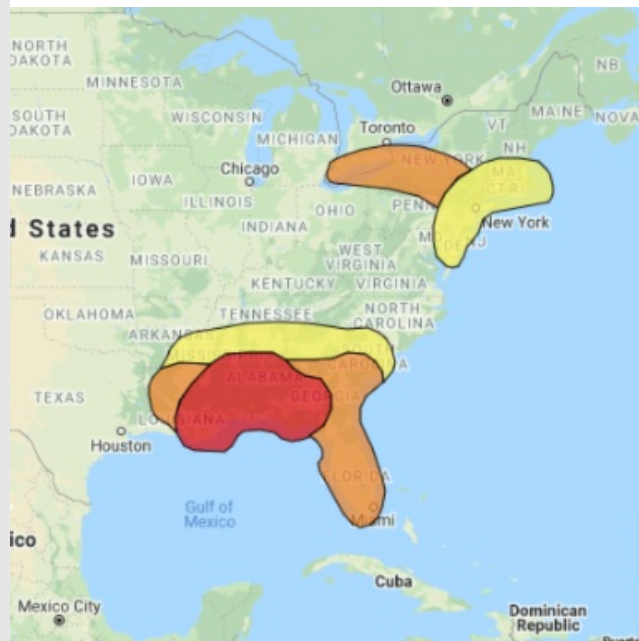
Growers ask: since powdery mildew is a foliar disease of a fruiting crop, is it really necessary to manage it? It may appear not to be as fruit generally are mature in the vining cucurbits when leaves die due to powdery mildew. However, this disease causes leaves to die prematurely which in some crops can lead to fruit maturing early (cantaloupes). Winter squashes, in particular acorn, appear mature long before they are ready to harvest. Leaves need to remain healthy until fruit matures so they develop full flavor and sugar content.

When powdery mildew is not managed, melons in particular lack flavor due to low sugar content and taste bland. Winter squashes also won't store as well and loss of protective leaves renders fruit prone to sunscald. Pumpkin fruit color may not be as deep orange in the absence of powdery mildew control, and their handles usually are not an attractive green. Powdery mildew can develop on pumpkin stems, causing them to turn brown and shrivel, so that they cannot be used to pick up the fruit when their vine dies prematurely because of powdery mildew. Additionally, powdery mildew can increase plant susceptibility to other diseases, notably gummy stem blight (aka black rot). Fruit production declines and ends prematurely when powdery mildew is not managed in bush type cucurbits (zucchini and summer squashes). While very rare, occasionally powdery mildew can develop directly on immature cucurbit fruit.

Read more about conventional management options [HERE](#) and organic management options [HERE](#).

Cucurbit Downy Mildew Outlook

Chuck Bornt, CCE ENYCHP



Map view of the risk levels for the spread of Cucurbit Downy Mildew for Tuesday, July 6, 2021 according to the Cucurbit Downy Mildew Forecasting website (<https://cdm.ipmpipe.org/forecasting/>). Red indicates a high risk, yellow a moderate risk.

No reports yet of Cucurbit Downy Mildew (CDM) in the region yet... "yet" being the key word! Over the last week, CDM has been confirmed in cucumbers in Lancaster County, Pennsylvania and Chatham-Kent County, Ontario, Canada. This and the fact that new reports are in Delaware and more in New Jersey, pretty much means we are bracketed nearly on all sides with CDM confirmations. Couple that with Tropical Storm Elsa turning up the eastern coast and more reports in NJ, means it is only a matter of time before we confirm it here in NY. Please maintain a protective program for your cucurbits, especially cucumbers and melons at this time! Remember that all stages of cucumbers and melons are at risk, not just certain plantings. Destroy old plantings as soon as you are done with them by plowing under, burning off with a herbicide, or maintain a fungicide program on them until such time that you can destroy them, as these are great sources of inoculum. The constant on-off showers and heavy dews are perfect for the disease to spread once it gets here. According to this week's CDM forecasting system:

OUTLOOK: Epidemic spread likely near the Gulf Coast, possible across the South and in the Northeast. In the North ... conditions were

unfavorable but became somewhat more favorable on Tuesday as the front neared, producing Moderate Risk for the ON event and lesser risk for the upper mid-Atlantic source events.

Forecast for Tuesday, 2021-07-06: Moderate Risk for the FL peninsula, southeast and central GA, southern SC, western and northern LA, southern ON, **western and central NY, and northern PA.** Low Risk for cucurbits in eastern MD, DE, eastern PA, NJ, **Long Island, southeast NY, southern New England,** southeast AR, northern sections of MS / AL / GA, and SC except the south. Minimal risk otherwise.



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Early symptoms of Cucurbit Downy Mildew – note the yellowing spots on the topside of a cucumber leaf, defined by the leaf veins. Photo courtesy of the CDM Forecasting website (<https://cdm.ipmpipe.org/forecasting/>).

Organic and Conventional Management of Cercospora in Beets

Crystal Stewart Courtens, CCE ENYCHP

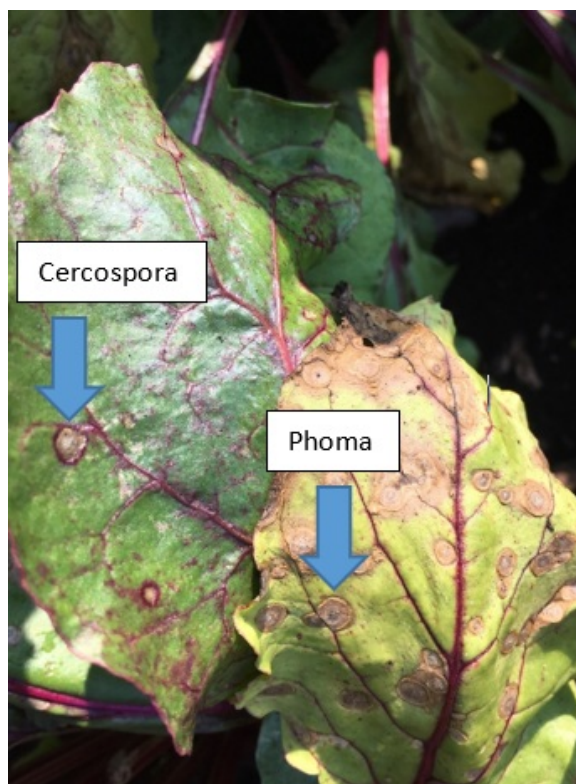
Growers throughout Eastern NY are experiencing quickly escalating levels of Cercospora leaf spot in table beets. Often growers think of leaf spot as unavoidable, especially in red beets, but there have been some advancements in available controls and in resistant varieties to combat this disease.

First, let's note that **there are actually a couple of foliar diseases which affect beets.** Cercospora leaf spot has a light tan lesion with a red ring around the outside. Another less common but also potentially damaging disease affecting beets is phoma, which lacks the red ring around the lesions and has concentric rings within the center. Both are illustrated in the image shown at the right (photo credit Ethan Grundberg). A third, newer disease which is emerging is a bacterial leaf spot, which we'll learn more about as the year unfolds.

Second, let's note that in recent trials it has been demonstrated that these **foliar diseases may not affect total yield of marketable roots.** However, the lesions make mechanical cultivation difficult and make marketing bunches with tops on challenging. If you need the tops, management is a priority. If you don't, it's probably not worth controlling these foliar diseases.

Third, remember that **any control program is going to work best if proper rotations are employed.** Cercospora can live in the soil for 22 months, so a minimum of two years rotations (along with control of susceptible weeds—lambsquarter and pigweed) is needed.

These points noted, let's focus on Cercospora management for today. We are fortunate to have a wonderful subterranean crops specialist at Cornell, Dr. Sarah Pethybridge. She recently completed efficacy trials on organic and conventional products for Cercospora management, so we have research-based information about which recent chemical and biological controls work.



For organic control of Cercospora, the most effective combination of products is copper octanoate + Bacillus amyloliquefaciens strain D747. Note, this is using both products tank mixed—the two used separately as a rotation were not as effective. The trial used **Cueva and Double Nickel**, but other formulations of copper and B. amyloliquefaciens may also be effective. For conventional control of Cercospora, it is first important to note that strobilurins are no longer effective. The most effective controls now are benzovindiflupyr + difenoconazole (**Aprovia Top**) or propiconazole (**Tilt**).

If you are not planning to do any chemical or biological control of Cercospora but value the beet leaves, you might consider looking into some different beet varieties. As a general rule, the lighter a beet is, the more Cercospora resistance is present. Chioggia, yellow, and white beets all have nicer foliage than most red beets. Beyond that, look for varietal resistance. Old favorites like Red Ace and Ruby Queen are still largely unrivaled for root yield, but there is improvement in foliage with maintenance of nice roots. Look for a few new varieties and trial them on your farm this coming year.

Gold Fleck on Tomatoes

Teresa Rusinek, CCE ENYCHP

High temperatures, especially in high tunnels, may exacerbate an abiotic disorder in tomatoes often called “gold fleck.” The visible flecks are a deposit of calcium oxalate under the skin of mature tomato fruit. Though this disorder has been reported for some time, southern production areas have noticed a sharp increase of gold fleck since the late 90’s and lately, growers in our region have noticed more of it as well.

There are several situations that may result in gold fleck. Often the cause is a combination of environmental conditions where day temperatures are over 88° F and night temps over 68° F, with high humidity. Studies conducted in University of Florida in the early 1970’s found that cultivar genetics play a role in the expression of gold fleck. Nutrient balance may also play a role as excessive levels of calcium and phosphorous have induced symptoms. Thrips and/or mite feeding damage, common in high tunnel production, can also result in a gold flecking as well as a rough skin.

Because gold fleck weakens the fruit peel, the quality and shelf life of fruit may be affected, especially if there is a lot of flecking. To minimize the occurrence of this disorder, provide a balanced nutritional program, especially between potassium and calcium, keep high tunnels well vented, avoid direct sunlight on fruit which will encourage flecking, and watch for cultivars that are less susceptible to flecking.



Gold Fleck on skin of mature tomato fruit. Photo: T. Rusinek

New Video Resource: Cleaning Tools for Produce Farms

Elisabeth Hodgdon, CCE ENYCHP

As activity ramps up in wash/pack sheds, it's a good idea to reassess your cleaning tool inventory. Having the right tools helps ensure that cleaning gets done in the first place, can make your wash/pack more efficient, and improve postharvest food safety. When purchasing new tools, opt for those that are made from materials that can be easily cleaned. Smooth-bonded plastic tools, such as brushes, are ideal because they can be more easily cleaned and sanitized. Grime and bacteria can hide in the groove between the head and bristles in normal brushes. In their new video, Andy Chamberlin from UVM Extension's Ag Engineering team reviews Vikan and Remco tools for wash/pack, including:

- **Brushes:** Brushes can be used to clean food contact surfaces, scrub floors, and other cleaning tasks. Some companies offer brushes in different colors. Take advantage of color coding systems to separate tools by task (counters versus floors, for example). Use a long handled brush to reach deep into equipment.
- **Putty knife:** Use a putty knife to clean between foam rollers.
- **Squeegees:** Puddles and standing water on floors serve as hosts for *Listeria* and other pathogens. Keep a squeegee on hand to push water in drains or outdoors to facilitate faster drying. At a minimum, this should be done at the end of each day.
- **Tool racks:** Hang a tool rack on your wash/pack wall to keep tools up off the floor, organized, dry, and ready to use.
- **Food hoes and shovels:** Use these for moving roots out of a barrel washer, or use a slotted shovel to scoop greens from a tank.

Check out UVM Extension Ag Engineering's video here: <https://www.youtube.com/watch?v=tY7o9F1bC5w>



NYSDEC PESTICIDE
RECERTIFICATION CREDITS
HAVE BEEN APPLIED FOR IN:
1A, 3A, 10, 21, 22, 23, 25



PALMER AMARANTH & OTHER WEEDS TO WATCH

FIELD MEETING WITH
DR. LYNN SOSNOSKIE, CORNELL WEED ECOLOGIST

Two Dates & Locations

TUESDAY, JULY 13, 2021
6:00PM- 7:30PM
Wagon Wheel Farm
363 Sarah Wells Trail
Goshen, NY 10924

WEDNESDAY, JULY 14, 2021
10:30AM-12:00 noon
Stanton's Feura Farm
210 Onesquethaw Creek Rd.
Fuerea Bush, NY 12067

Fees:

\$15/Farm before 7/9.
\$25/Farm after & at the door.
Cash or check only at the door.
Credit card only for on-line
pre registration.

Registration Link:

[HTTP://WEBLINK.DONORPERFECT.COM](http://weblink.donorperfect.com/weedstowatch2021)
[/WEEDSTOWATCH2021](http://weblink.donorperfect.com/weedstowatch2021)

*on meeting date, all in-effect NYSDOH COVID safety protocols will be followed

Cornell Cooperative Extension | **Orange County**

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Corn Trap Counts

County	ECB-E	ECB-Z	FAW	WBC	CEW
Albany	0	0	0	2	0
Columbia	1	0	0	7	4
Dutchess	1	0	0	N/A	3
Orange	0	0	N/A	N/A	N/A
Ulster 1	1	0	N/A	N/A	N/A
Washington	0	0	0	0	0
Essex	0	0	0	0	0
Clinton 1	0	0	0	1	0
Clinton 2	0	0	0	0	0

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