Cornell Cooperative Extension | Cornell Vegetable Program

VEGEdge

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

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Bee Nice!

Judson Reid, Cornell Cooperative Extension, Cornell Vegetable Program

A friendly reminder about our flying friends—honey bees and other pollinators. We need these insects to pollinate our produce, in particular pumpkins and peaches. But, remember bees visit other flowering plants as well, even those that don't depend on insect pollination. For example, sweet corn sheds considerable pollen and attracts honey bees even though wind is sufficient to pollinate corn. Activity in these crops can be very high in the morning!

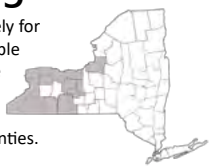
To avoid harming bees and other pollinators:

- Check insecticide labels for specific pollinator protection requirements;
- Prevent pesticide drift onto blooming crops or weeds;
- Avoid applications during the time of day when bees are most numerous.

There continues to be advancements in microbial insecticides such as those based on Bacillus species. These materials represent a lower toxicity approach to pest management, which not only is better for bees, but also the applicator!

Honey bees visiting sweet corn tassels in Monroe County. *Photo: N. Savage*

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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Help us serve you better by telling us what you think. Email us at *cce-cvp@cornell.edu* or write to us at Cornell Vegetable Program, 480 North Main Street, Canandaigua, NY 14424.

Contents

The next issue of VegEdge newsletter will be produced on August 23, 2023.

Accumulated Growing Degree Days, 8/14/23

Julie Kikkert, CCE Cornell Vegetable Program

Accumulated Growing Degree Days (AGDD)
Base 50°F: April 1 - August 14, 2023

Location**	2023	2022	2021
Albion	1808	1913	2013
Appleton	1706	1829	1828
Arkport	1502	1665	1572
Bergen	1691	1863	1812
Brocton	1698	1876	1853
Buffalo*	1825	1931	1979
Ceres	1475	1557	1626
Elba	1631	1756	1724
Fairville	1669	1792	1747
Farmington	1710	1793	1792
Fulton*	1706	1783	1748
Geneva	offline	1885	1845
Hammondsport	1639	1803	1740
Hanover	1659	1861	1833
Jamestown	1477	1607	1605
Lodi	1866	2062	1522
Lyndonville	1751	1763	1835
Niagara Falls*	1896	2013	1922
Penn Yan*	1755	1949	1934
Rochester*	1767	1920	1869
Romulus	1838	1946	1903
Sodus	1844	1957	1899
Versailles	1630	NA	NA
Waterport	1708	1828	1807
Williamson	1619	1770	1727

* Airport stations
** For other locations: http://newa.cornell.edu

CROP Insights

Observations from the Field and Research-Based Recommendations

BEETS

The risk of Cercospora leaf spot (CLS) continues to be moderate to high at several locations according to the CLS Decision Support System (see the table below). Rain splash will spread spores throughout the field. Continued leaf wetness within a canopy in areas that receive rainfall or irrigation also increase the risk of infection. – JK

Table 1. Cercospora Leaf Spot 2-Day Risk
Risk of Cercospora leaf spot on table beet from August 13 to August 18 using a forecasting model. Risk classification of CLS is based on cumulative 2-days/risk, and the forecast is based on weather data from Network for Environmental and Weather Applications (NEWA) models.

	achieved			forecast		
Location	Aug 13	Aug 14	Aug 15	Aug 16	Aug 17	Aug 18
Albion	2	**4**	**6**	**7**	**5**	**4**
Bergen	1	1	**4**	**7**	**5**	**4**
Elba	**4**	**4**	**6**	**7**	**6**	3
Geneva	2	**4**	**8**	**9**	**4**	2
Lyndonville	3	**6**	**7**	**7**	3	0
Medina	0	0	1	3	**4**	**4**
Sodus	0	0	0	0	2	**4**
Sodus (Lake)	1	1	1	3	3	3
Waterport	2	3	3	**4**	3	2

Low ≤ 3; Moderate 4 to 6; High ≥ 7.
Data from newa.cornell.edu accessed 9:00 am on 8/16/2023.

CANTALOUPES

Alternaria Leaf Blight is increasing in local melon fields. This disease, also known as Leaf Spot, is characterized by dark spots (often with target or ring appearance) surrounded by brighter yellow tissue (Fig. 1). This is the same genus of fungus that causes Early Blight of tomato, and the symptoms are similar.

Figure 1. Alternaria Leaf Blight is characterized by dark spots (often with target or ring appearance) surrounded by brighter yellow tissue. *Photo: Judson Reid, CCE Cornell Vegetable Program*

As the canopy dies back, fruit is exposed to sun and may burn. Defoliation can become severe and Alternaria can also infect fruit, causing it to rot. The fungus overwinters on crop residue in the soil. Our recommendation for Alternaria (and most vine crop diseases) is a minimum of 2-year rotation to non-host crops such as corn or sod. A fungicide program for Alternaria is not dissimilar to Powdery and/or Downy Mildew schedules. Given that we are in the midst of harvest season, here we list some low PHI (preharvest interval) materials:

- Cabrio EG (group 11, 0 D PHI)
- Merivon (groups 11 and 7, 0 D PHI)
- Aprovia Top (groups 3 and 9, 0 D PHI)
- Copper formulations are available for organic applications and may provide some control. – JR

CARROTS

Root-knot nematodes (*Meloidogyne* spp.) are a major pathogen of carrots, lettuce, and onions in New York. The Northern Root Knot Nematode (NRKN) has a host range of more than 550 crop and weed species. It can survive extremely low winter temperatures such as occur in New York. In carrots, take note of patchy growth in fields. Severely infected roots exhibit forking, galls, hairiness, and stubby roots. Note that forking can also be caused by other soil borne pathogens or compacted soil, however in these cases, no galls will be present on the taproot or fibrous roots. Crop rotation to non-host crops such as sweet corn and other grain crops can significantly reduce the population of NRKN in a field. Winter grain cover crops such as winter rye and oat are poor hosts for NRKN. Other grain and biofumigant cover crops may also reduce NRKN populations. A lettuce bioassay procedure is available to assess the population of NRKN in soils https://ecommons.cornell.edu/handle/1813/43295 – JK

CUCUMBERS

Continuing to see foliar diseases on cucumbers and melons, especially anthracnose and downy mildew. See the August 2, 2023 issue of VegEdge for Elizabeth's article on anthracnose in cucurbits. Anthracnose spots on cucumber leaves typically are larger circular coin-sized tan spots, not bound by veins, whereas downy mildew symptoms are more angular and bound by veins (Fig. 2, next page). On top of the leaf, downy mildew symptoms start as water-soaked lesions that turn yellow and then eventually necrotic brown as the tissue dies. It's important to also look at the underside of the leaf for a telltale sign of a downy mildew lesion is fuzzy black spore growth with a dirty or velvety appearance. The black spore growth is more noticeable in wet or morning dew conditions. – LK

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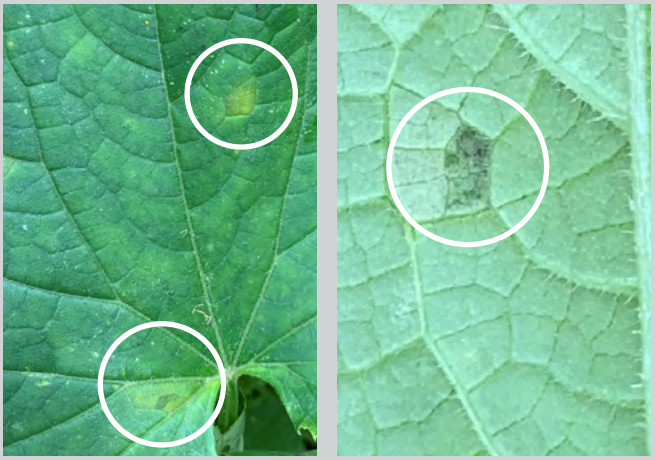

Figure 2. Downy mildew on cucumber. On top of the leaf, notice the yellow water-soaked downy mildew lesions bound by leaf veins (left). Fuzzy black spore growth on the underside of downy mildew lesion on cucumber leaf (right). *Photos: Lori Koenick, CCE Cornell Vegetable Program*

DRY BEANS

Bean pods are starting to mature, and plants are yellowing in many fields. Mexican bean beetles (MBB) continue to be a problem for some. MBB will chew on bean pods, so if they are present in high numbers they could lead to a direct loss of yield. Common bacterial blight is also starting to show up in some fields in low amounts. This can be brought in on the seed or spread through wet weather. Pesticides are not generally effective against blight in beans. – ML

Western Bean Cutworm Report

All trap locations have hit peak in the last couple of weeks, and moth numbers are now declining. We are observing minor damage to pods in multiple fields from WBC larvae. Scouting is recommended in all dry bean fields starting 7-10 days after peak flight regardless of cumulative moth numbers. *[See the July 26, 2023 issue of VegEdge (page 6) or the August 2, 2023 issue (page 5) for tips on how to scout for WBC. ed. A. Ochterski, CVP]*

Table 2. Western bean cutworm adult moth numbers by date for each dry bean trap location.

Dry Bean Location	July 17	July 26	Aug 2	Aug 8	Aug 15	Cumulative Moths[1]
Avoca Hill (Steuben Co.)	8	47	78	83	24	**247**
Avoca Valley (Steuben Co.)	12	58	58	91	22	**242**
Avon (Livingston Co.)	6	23	22	55	21	**128**
Caledonia (Livingston Co.)	8	46	68	79	38	**240**
Churchville (Monroe Co.)	11	30	42	43	18	**145**
LeRoy (Genesee Co.)	31	83	112	106	36	**369**
Penfield (Monroe Co.)	11	51	60	84	48	**257**
Penn Yan (Yates Co.)	2	19	60	62	22	**166**
Scottsville (Monroe Co.)	6	6	18	18	9	**57**
Wayland Hill (Steuben Co.)	11	47	78	56	24	**217**
Wayland Valley (Steuben Co.)	14	30	50	28	11	**140**
Wyoming Hill (Wyoming Co.)	24	72	73	69	57	**297**
Wyoming Valley (Wyoming Co.)	18	41	28	32	24	**144**

Peak flight is indicated by numbers in red.

1 Cumulative moth numbers began July 3, 2023

ONIONS

It has been disease weather – see article on page 6 for more details. Of the main season crop, most fields have at least started to lodge and a few have completed their pesticide spray programs with the last big sprays going on at 50% lodging (Fig. 3). Some growers apply sprout inhibitor with this spray and some in the following week. Thrips pressure is generally low for this time of year, but it can be highly variable so always scout for thrips before you make your weekly spray decisions. With all the rain, the crop has been bulbing very nicely and there is still a lot of top growth that will feed into the bulbs. – CH

Figure 3. Onions beginning to lodge, which signals that the last pesticide spray of the season is near. Most growers put on their last pesticide spray at 50% lodging and sprout stop at this time or the following week. If onions have less than 10% leaf dieback at the time of lodging, this is excellent for maximum yield potential. *Photo: Christy Hoepting, CCE Cornell Vegetable Program*

POTATOES

Most potatoes vines are falling. Early blight and grey mold are present in many fields, and late blight continues to be a concern with the rainy cool weather we keep seeing in WNY. Continue to stay on top of your fungicide programs.

Arkport, Buffalo, Ceres, Dansville, Fairville, Fulton, Niagara Falls, Penn Yan, Rochester, and Wellsville have reached the 30 blight units (BU) needed to trigger a spray for late blight (see Table 3, next page). However, with wet weather this week, all locations should consider their fungicide programs. If the weather station closest to you has not yet reached 30 BU and the forecast indicates that it will in the next 2-3 days, a spray is still recommended. The chart assumes use of a susceptible potato variety Reba, and an application of chlorothalonil on August 9. 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. On a state and national level, late blight was

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reported in North Carolina last week on tomato. Past reports include on potato in Ontario Canada, and on tomato in Yates County NY. – ML

Table 3. Late Blight Risk Chart, 8/16/23

Location	Blight Units 8/9-8/15[1]	Predicted Blight Units 8/16-8/18[2]
Albion	21	39
Arkport	30	49
Baldwinsville	19	37
Bergen	10	29
Brant	24	43
Buffalo	45	66
Burt	-	-
Ceres	39	57
Dansville	38	58
Elba	23	42
Fairville	49	68
Farmington	23	40
Fulton	42	63
Geneva	11	23
Hammondsport	28	46
Knowlesville	17	35
Lyndonville	24	43
Medina	5	23
Niagara Falls	38	59
Penn Yan	39	60
Rochester	39	60
Sodus	5	23
Versailles	16	33
Wellsville	51	72
Williamson	22	40

Calculated using a May 31 crop emergence date. Last fungicide application August 9 on susceptible cultivar Reba. Numbers in red indicate locations that have or will surpass the 30 BUs needed to trigger a fungicide application.

1 Past week Simcast Blight Units (BU)

2 Three-day predicted Simcast Blight Units (BU)

SWEET CORN

Bird pressure has increased significantly in the past week in both fresh market and processing sweet corn (Fig. 4).

Figure 4. Bird peck in processing sweet corn. *Photo: Julie Kikkert, CCE Cornell Vegetable Program*

It is important to set out bird deterrents before the birds start feeding in a planting. Birds can quickly become habituated to many of the devices, so they need to be moved frequently. It is also best to use more than one method of management, for instance combine visual and auditory controls. After harvest, scare devices can be moved to the next ripening block of corn. Some growers leave the harvested block and try to keep birds feeding there instead of in the new corn. A video and final report of control measures (Air dancers, Avian Control, Scare Eye Balloons, and Detasseling) that were tested previously by our team is available on our website at CVP.CCE.CORNELL.EDU under Sweet Corn.

Another useful resource is Bird Control in Horticultural Crops from Ontario Canada. We continue to conduct research with laser scarecrows on New York farms this year. These devices use a single rotating beam of green light (laser) to frighten birds. Look for results of our summer trials at our fall/winter outreach events and newsletters. – JK

TOMATOES

Hornworm species, including Tomato and Tobacco can be found in field tomatoes, chewing their way through the foliage and fruit. Tomato Hornworm has blue or green horn and the Tobacco Hornworm has a red horn (Fig. 5). Control options include effective lower toxicity materials such as Radiant SC (group 5, 1 day PHI) and Entrust (ORGANIC, group 5, 1 day PHI). Javelin WG is a microbial insecticide (group 11A, 0 day PHI) that infects the body of hornworm species. These pests are often parasitized by wasp species that lay white eggs on their body. Allowing these beneficials to complete their lifecycle can reduce Hornworm damage. – JR

Figure 5. Tobacco Hornworm has a red horn and can defoliate tomatoes. *Photo: Judson Reid, CCE*

Seeing a lot of foliar issues in tomatoes, especially Septoria and bacterial canker. Septoria can be treated, canker cannot. See article on page 8. – EB

WATERMELONS

Beginning to see gummy stem blight infections knocking back canopy size. Gummy is tricky to spot when it is just beginning. Look for dark spots along the leaf margins. These spots start small and circular but can quickly occupy fairly large (1/2-1") sized spots. Lesions tend to be dry and don't have a strong halo. The key diagnostic are stem cankers, which start off as pen tip sized sunken light tan to reddish lesions with water soaked margins. These expand along the vine and can be confused initially for odd scuffing or feeding. The stem lesions progress to cracking or splitting and may have black pepper flakes (spore bodies) or occasionally some reddish, gummy sap along split edges. Sometimes fruit can show red gummy sap at the stem end, but I find that more common in cantaloupe than watermelon. Treat with an effective reactive fungicide. Know that there is possible resistance to group 7 and 11 chemistries so focus on products from other groups. Sample materials include Switch, Inspire Super, Miravis Prime, Luna Flex or Experience, Aprovia Top, Omega, Rhyme, and Proline. See Cornell Guidelines or label for associated rate, PHI, and other spray information. – EB

Onion Leaf Disease Report for Second Week of August 2023: It is Disease Weather

Christy Hoepting, Cornell Cooperative Extension, Cornell Vegetable Program

It has been disease weather! Botrytis leaf blight (BLB) necrotic spots have generally increased in density and size over the past week (Fig 1.), Stemphylium leaf blight (SLB) is primary in most fields and downy mildew (DM) was detected for the first time in muck grown onions this week. On the flip side, BLB halo lesions are very low.

Figure 1. BLB necrotic spots increased in density/counts and size over the past week and, at a glance, it has become easy to spot the spotted onion foliage. *Photo: Sarah Caldwell, CCE Cornell Vegetable Program*

BLB Necrotic Spots are Different than BLB Halo Lesions

BLB halo lesions are caused by *Botrytis squamosa* and classic lesions have a tiny yellow necrotic spot that is surrounded by a silvery halo (Fig. 2). BLB necrotic spots are yellow round spots with defined borders that range in size from pin-prick to 1 mm, and sometimes even get a bit larger (Fig. 3). Cornell has not been able to isolate a pathogen from a BLB necrotic spot, so we do not actually know the cause of them. When onions are artificially inoculated with spores of *Botrytis cinerea*, they form similar spots. At this time, we suspect that BLB necrotic spots are caused by a different species of Botrytis than squamosa, probably cinerea. **We used to ignore BLB necrotic spots.** In the 2017 growing season, they were prominent in a few fields. In 2018, we collected data on them in the onion fungicide trials and observed a treatment effect. We assumed that fungicide efficacy was the same between BLB halos and BLB necrotic spots. But in 2020, we learned that **fungicides do not always have the same efficacy on BLB halos and BLB necrotic spots.** Most notably, mancozeb has very good activity on BLB halos (when pressure is less than 3.0 BLB halo spots/leaf) and no activity on BLB necrotic spots while Viathon + Tilt has excellent activity on BLB necrotic spots and no activity on BLB halo lesions.

In 2023 on-farm onion fungicide trials, BLB necrotic spot pressure has been quite high (e.g. 100 BLB necrotic spots/leaf in the untreated in early August), and unfortunately, **none of the treatments of commonly used fungicides had very good activity on them, not even Viathon + Tilt.** Sadly, it appears that as long as this rainy weather continues, BLB necrotic spots are going to increase. **It also appears that they are at least in-part contributing to leaf dieback.** Although it is tricky to separate contributions to leaf dieback from BLB necrotic spots and SLB.

Figure 2. BLB halo lesions caused by *Botrytis squamosa* are silvery spots that sometimes have a pin-prick sized yellow center. *Photo: Christy Hoepting, CCE Cornell Vegetable Program*

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SLB is Primary in Most Fields Now

Target lesions are generally easy to find and often plants with several SLB target spots per leaf and per plant can be found. Many SLB target spots are purplish in color now and some have developed dark spores (Fig. 4). Necrotic leaf tip tissue is often colonized by black or dark SLB spores. Double FRAC 3 tank mix Viathon 3 pt/A + Tilt 8 fl oz/A +/- Bravo 3 pt/A is the most effective fungicide treatment that we have for SLB control. In 2023 onion fungicide trials, its efficacy appears to have slipped or at least is not as good under the current higher disease pressure. FRAC 7 premixes (Luna Tranquility/Miravis Prime + Rovral/Oso) + Rovral/Oso are not as effective as Viathon + Tilt for either BLB necrotic spots or SLB in 2023 onion fungicide trials.

There is only so much that can be done with "broken" fungicides (due to development of fungicide resistance). Having said that, we think we are seeing evidence of growers' fungicide spray programs working in the field. Viathon + Tilt appears to have the best activity, while FRAC 7 premixes + Rovral/Oso and Bravo 3 pt/A + FRAC P07 product sprays also appear to be preventing SLB and BLB necrotic spots from progressing too aggressively. Also, adding in extra Bravo to the tank mix whenever possible also appears to be helping. If a field has 10% leaf dieback or less when it begins to lodge that is pretty good. Once a field reaches 30% leaf dieback, it can be hard to prevent it from progressing to onions "dying standing up". The good news is that onion foliage is huge and the crop is bulbing very nicely, so yields should still be pretty good despite above average pressure from leaf diseases. **If two double FRAC 3 applications have already been made, all I can recommend at this time is to include something to prevent leaf dieback such as a FRAC P07 product (such as Rampart or Reveille) or Rovral in every spray and to keep thrips pressure less than 1.0 per leaf until the spray season is finished.**

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Figure 3. BLB necrotic spots are round yellow spots with a defined border that range from pin-prick (left) in size to 2 mm or slightly larger (right). The density of BLB necrotic spots can reach over 100 per leaf when conditions for disease are favorable. *Photos: Christy Hoepting, CCE Cornell Vegetable Program*

Figure 4. SLB is primary with multiple purple (left) or tan/black (right) SLB target spots per leaf/plant. Primary SLB target spots occur on green leaf tissue. *Photos: Sarah Caldwell, Cornell Vegetable Program*

Downy Mildew Detected in Muck Grown Onions in Wayne and Oswego Counties This Week

Downy mildew (DM) affects green tissue and then kills that tissue which becomes a necrotic spot that is readily invaded by SLB. Purplish fuzzy sporulation all over the affected area and extending into the bordering green tissue is diagnostic of downy mildew (Fig. 5). **If you see a lot of black sporulation, take a closer look and look for the fuzzy spores as well as newer infection sites nearby. All fields should be using mancozeb as a protectant for DM at this time.** Note, that FRAC P07 has activity on DM by helping to fight the disease once the plant is infected, but it will not prevent a new infection. Ridomil and Orondis products are the best for fighting an active DM infection.

Figure 5. Downy mildew of onion attacks green tissue ad then kills it causing a necrotic spot (left) which is readily invaded by black spores (right). Purplish fuzzy sporulation across the DM infection site and extending into the surrounding green leaf tissue is diagnostic of downy mildew (both photos). *Photos: Sarah Caldwell, CCE Cornell Vegetable Program*

Organic Farming Transition Program

Robert Hadad, Cornell Cooperative Extension, Cornell Vegetable Program

The Northeast Organic Farming Association of NY (NOFANY) has recently posted on the USDA sponsored program called the Transition to Organic Partnership Program (TOPP). This program provides opportunities to assist farms through organic transition to reach organic certification. NOFANY will be participating in the program through organizing services to farmers that will include mentorship, technical assistance, and community building. Through this assistance, farmers receive support during and after organic transition.

NOFANY has links to applications for farmers interested in receiving technical assistance or connection with a mentor during the transitioning process. Organic farmers wishing to be mentors or sharing technical experience (which includes stipend) are encouraged to sign up, as well. Farmers interested in joining this program should submit applications as soon as possible. Applications will be reviewed and the program should begin by late September. Mentorships would start during late fall and run through the next growing season.

Applications for farmers looking to transition to organic:
https://docs.google.com/forms/d/e/1FAIpQLSf3AAvEAjkMCtIVexIzYTRj4mo7kdNgcEDmI9HzAGUDLdN6fg/viewform

Farmers interested in being a paid mentor:
https://docs.google.com/forms/d/e/1FAIpQLSezi84UnuB8x9OeR2GGIpmlkozY-b4sfIPYT0gi5UPREOiW4g/viewform

Anyone interested in providing technical assistance to transitioning farmers:
https://docs.google.com/forms/d/1SAPZwV0aQlZlZiC9DVHCJjCEUCqez8AzsshKuBjRGKI/viewform?edit_requested=true

Or for more information, call the NOFANY Farmer Helpline 607-724-9851 ext 175 or email farmerhelp@nofany.org.

Loathe to Meet You, Tomato Diseases

Elizabeth Buck, Cornell Cooperative Extension, Cornell Vegetable Program

Tomatoes. They're delicious, almost everyone agrees. And there's a whole slew of bacteria and fungi with wicked FOMO who just must be a part of the popular tomato scene. I don't really like watching my poor plants be the unwilling meal at the local pathogen party. I do rather enjoy bursting bacteria's bubble and freezing fungal fetes. But because these diseases are biologically quite different, I have to use different approaches to disrupt these disease discos. And successfully choosing the right one depends on actually knowing which nasty necrotizer needs eviction.

Late Blight Last Hurrah: An Oomycete Occasion

Late blight spores are like The Bumpus's dogs. They come into your field when you least expect it, wedging their way through the smallest opening. In a flash the whole pack descends on your tomatoes, tearing through your crop and leaving nothing but greasy, dying smears of plants behind. No tomato sandwiches, no tomato salads, no tomato sauce. Just nothing left. Leaves half of people wanting to swear a blue streak and the other half wanting to cry.

- Serious disease that we ask you report so we can track spread and help you manage it
- When blowing in, symptoms often begin in upper portions of canopy
- Early signs often appear where air is stiller or damper
- Rapidly growing and spreading grayish lesions, often with pale green leading edge
- Whitish spores on margins of lesions on undersides of leaves when humid
- Quick death of foliage
- Dark, smeary stem lesions
- Dark gray, greasy looking lesions on shoulders of fruit
- Genetic resistance available

Figure 1. Late blight caught early on tomato. *Photo: Elizabeth Buck, CCE Cornell Vegetable Program*

The Sophisticated Septoria Soiree

Septoria starts subtly, is too sophisticated to show off at the start of the party. Small, tasteful, round spots to accent the tomato leaves. As things go on it gets more comfortable in your house and starts suggesting (and making) décor changes mid event: oh! Let's do more spots here, and move them higher. And wouldn't they look just LOVELY against yellow instead of that common green! Before you know it, your prized leaves are yellow and falling off your tomatoes as Septoria reimagines your field. At last Septoria feels it has achieved a truly designer look and signs its work.

- Starts on lower leaves and moves further into canopy with splashing
- Tan to grayish, circular, < 1/8" across spots with water soaked margins
- Spots expand to about a quarter inch across, develop darker edges than centers
- Spots eventually develop tan centers and may contain small brown-black pepper flakes
- Leaves yellow and crisp, drop off plant causing "flamed" look
- Genetic resistance available

Figure 2. Septoria lesions showing tan centers with dark flecks - fungal fruiting bodies. *Photo: Elizabeth Buck, CCE*

An Evening with Alternaria

Trendy alt rocky band whose first single is kinda slow and tolerable but then the rest of their album explodes and gets real loud with lyrics just keep going round in circles. There's this darkness about their work that resonates with the emo and metal crowds but you're more into songs like "Millions of Peaches", except you change peaches to tomatoes when you sing it.

- Soil splash associated, though often starts from reusing infested tomato stakes, more rarely seed
- Spots initially small and roundish, can become irregular in shape and expand
- Dark brown lesions, developing raised ridges with age (alternating lines and flat areas)
- Early blight (alternaria) progresses upwards into canopy without flaming off leaves
- Can be worse on early maturing varieties
- Genetic resistance available

Figure 3. Leaflet with alternaria early blight. Dark, large lesions have well developed rings and are highly diagnostic. Initial lesions will be smaller with subtle ridges. *Photo: Meg McGrath, Cornell*

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The Bacterial Bash

Bacterial leaf infections in tomatoes call jock house frat boys to mind. They're obnoxious, they stick around for way too long, and their parties always spread out of the house and down the street.

Speck and Spot are a pair of sophomore offensive tackles called The Twins because they have slowly melded into one identity, right down to the hateable haircut and predictable way they dress. They're eager to move up the leaf ladder and aspire to attack full sized fruit but they still play sprint because they can only manage to mark small players.

- Difficult to accurately distinguish foliar symptoms. Leaves covered with small black lesions.
- Speck lesions smaller with heavy yellow halo.
- Spot lesions bigger, slightly raised, may look slightly greasy, may grow together and yellow leaf.
- Fruit develop water soaked areas that progress to dark, raised lesions

Canker plays rugby now because football wasn't hard hitting enough. His preferred strategy is to be out on the field all game, just kinda lurking around to the point where you overlook him, then coming up on your blindside and smashing the snot outta you just as you're about to cross the goal line. Insidious jerk.

- First symptoms often overlooked—scorching along leaf edges, can include wilt or curl of leaflets
- Leaf spots follow and initially easily confused with other bacterial diseases, early blight
- Diagnostic whitish, roundish cankers develop on stem tissues, most easily found first on fruiting trusses
- Fruit develop bird's eye spots – raised white rings that develop darker centers
- Systemic disease – can cause fruit quality to drop before noticing fruit lesions.

Figure 4. Left: Speck/Spot on tomato foliage. Right: Bacterial canker. Note stem cankers, bird's eye spot under calyx of bottom fruit and early lesion extreme right of right fruit. *Photos: Elizabeth Buck, CCE Cornell Vegetable Program*

Sweet Corn Pheromone Trap Network Report, 8/15/23

Marion Zuefle, NYS Integrated Pest Management Program, Cornell; https://sweetcorn.nysipm.cornell.edu/

Statewide, 27 sites reported this week. European corn borer (ECB)-E was caught at 8 sites, while ECB-Z was caught at 4 sites. Corn earworm was caught at 13 sites, with 12 sites showing counts high enough to warrant a 4, 5, or 6-day spray schedule (see table below). Fall armyworm (FAW) was caught at 8 sites, and Western bean cutworm (WBC) was caught at 25 sites.

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 80°F for the previous 2-3 days.

It is important to correctly identify the larval pests in your corn so that management practices can be altered when needed. To help with larval identification, please also see the Sweet Corn Larval Pest Identification fact sheet (https://hdl.handle.net/1813/57328).

WNY Pheromone Trap Catches: August 15, 2023

Location	ECB-E	ECB-Z	ECB Hybrid	CEW	FAW	WBC
Batavia (Genesee)	0	0	NA	0	0	1
Bellona (Yates)	0	0	0	2	0	24
Eden (Erie)	0	0	NA	2	0	20
Geneva (Ontario)	0	0	0	3	7	2
Hamlin (Monroe)	NA	NA	NA	NA	NA	NA
Leroy (Genesee)	NA	NA	NA	NA	NA	NA
Lyndonville (Orleans)	0	0	NA	1	14	87
Oswego (Oswego)	0	0	NA	0	0	7
Panama (Chautauqua)	3	0	NA	0	0	13
Penn Yan (Yates)	0	3	0	0	0	13
Portville (Cattaraugus)	NA	NA	NA	NA	NA	NA
Ransomville (Niagara)	0	0	NA	0	0	28
Stanley (Ontario)	1	3	0	0	0	1
Williamson (Wayne)	0	0	NA	0	14	44

ECB: European Corn Borer; CEW: Corn Earworm; FAW: Fall Armyworm; WBC: Western Bean Cutworm

Blueberry Mulching and Water Management

Anya Osatuke, Cornell Cooperative Extension, Harvest NY

Mulching blueberries is recommended for a number of reasons:

- Blueberries have shallow roots. A layer of mulch retains soil moisture in the root zone.
- Mulch can prevent weed seeds from germinating or smother weeds after germination.
- Pests can be deterred by removing weedy habitat and increasing airflow.
- Fungi can be smothered by a springtime application of mulch.

There are three main sorts of mulch used by blueberry growers: woody mulch, fabric mulch, and living mulch. **Woody mulch and fabric mulch are recommended over living mulches**; living mulches compete with blueberries.

Wood chips are a common mulch choice for blueberries in New York. *Photo: Anya Osatuke, CCE Harvest NY*

Woody Mulches

Woody mulches were historically the standard amongst blueberry growers. Many areas have wood chips, corn silage, or sawdust freely available as these are byproducts of other local industries. Coniferous mulches are most preferred because of their lower pH. However, any mulch that wasn't treated with dyes or herbicides will improve planting health by suppressing weeds, retaining soil moisture, increasing soil organic matter, and, if applied in early spring, smothering fungal fruiting bodies. Three inches of mulch per season is optimal. A mulch or manure spreader will help speed the task.

Woody mulches can help retain soil moisture, but prolonged droughts are becoming more common: irrigation is helpful between May and July. Blueberries need at least 1 inch of water a week. If using a plastic dripline, avoid sawdust as rodents will tunnel through and nibble on ~~it~~ the irrigation lines.

There is one pest to be aware of when sourcing wood chips: The jumping worm (multiple species of worms in the genus *Amynthas*). This worm is likely to live in the upper surface of any mulch pile exposed to the soil. The worms are almost invisible until hatch in late April or early May. Inspect mulch piles in summer or fall before buying and transporting to your farm.

Fabric Mulches

Fabric groundcovers do not contribute organic matter, but their impermeable surface helps retain moisture. **The fabric groundcover is typically installed with a dripline**. A tarp cart system or other means of holding tensile strength on the mulch as it is installed and removed can be very helpful.

Fabric mulches work best when applied and removed every growing season. Over the years, weeds break down the mulch and new blueberry canes may be suppressed. By using two overlapping sheets of mulch per row, growers can make space for blueberry bushes in the middle of the two sheets. Annual maintenance of the fabric mulch allows for easy inspection of the dripline. The final benefit of this system is the ease of making ground applications of granular fertilizers and amendments, such as sulfur, compost, and other fertilizers. Compared to fertigating through the dripline, granular amendments are cheaper and less likely to contribute to wear and tear of the irrigation system.

Living Mulches

Various species of turfgrass are commonly used as living mulch, but sweet woodruff (*Gallium odoratum*) and creeping buttercup (*Ranunculus arvensis*) have also been evaluated. **Living mulches were not found to support blueberry growth as well as fabric or woody mulches.**

Citations

Costs of Establishing Northern Highbush Blueberry: Impacts of Planting Method, Fertilization and Mulch Type | James W. Julian, Bernadine C. Strik, Handell O. Larco, David R. Bryla, and Dan M. Sullivan | 2012

Determining the Effect of Biodegradable and Living Mulches on Annual Weeds and Growth of Newly-Planted Blueberry | T. Miller, L. Wasko-DeVetter, D. Harteveld | 2018

Jumping Worm (Amynthas spp). | Cornell Cooperative Extension Columbia and Greene Counties | 2021

Upcoming Events

Chipping Potato Twilight Meeting

August 24, 2023 (Thursday) | 6:00 pm - 7:00pm with dinner to follow
Mahany Farms, 10046 NY-36, Dansville, NY 14437

Learn about updates in insect pest control in potatoes and view this year's chipping potato variety trial! 1.0 DEC credit available.

2023 Soil Health & Climate Resiliency Field Days

Join the New York Soil Health team and partner organizations at a soil health field day! The statewide event series takes place through September 2023. Register at https://fielddays.newyorksoilhealth.org

August 24, 2023 (Thursday) | 10:00 am - 3:00 pm
Martens Farm, 1443 Ridge Rd, Penn Yan, NY

Learn about organic no-till systems and discuss adaptive management strategies for improving resilience on the farm. The afternoon session will include equipment demos, a grain cleaning facility tour and the NY Soil Health Trailer demonstration. Registration required: $10. Lunch provided. CCA credits available. Register online or by call the CCE Yates County office at 315-536-5123.

August 31, 2023 (Thursday) | 9:00 am - 3:00 pm
Branton Farms, 6536 Main St, Stafford, NY 14143

Hear practical, field-tested results of advanced soil regenerative practices targeted to dairy, field and specialty crop farmers.

- Carbon Market and Biochar Research in New York
- Weed Management
- Minimal Disturbance Manure Drag Lining
- Research Updates from the Planting Green Field Trials
- Use of Biologicals from Pivot Bio

CCA credits available. FREE and lunch provided. Register by August 25. Read more information and register online or call Aaron Ristow, American Farmland Trust, at 315-748-5029.

Tree Fruit and Small Fruit Twilight Meeting

August 31, 2023 (Thursday) | 7:00 pm - 8:30 pm
Reality Research, 4739 Preemption Rd, Lyons, NY 14489

Join Specialists Janet Van Zoeren (tree fruit), Anya Osatuke (small fruit) and Anna Wallis (fruit IPM) for a conversation about fruit and berry phenology and pest management. We will examine seasonal changes in tree fruit and berry crops, demonstrate scouting techniques, and discuss integrative pest management solutions to maximize the health and productivity of berry and fruit plantings.

Attendees are encouraged to bring pictures or descriptions of pests they are concerned about on their farm. This is the last meeting of the series for 2023.

1.5 DEC credits will be offered in categories 1a, 10, and 22. Please arrive at 6:45 pm to sign-in for DEC credits.

This event is free to attend, and no pre-registration is required. Questions? Please email Anya Osatuke at aco56@cornell.edu

Cornell Cooperative Extension
Cornell Vegetable Program

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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 frequency increasing leading up to and during the growing season.

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