

Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program

Vegetable News E-Alert ~ July 28, 2021

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Crop Notes

Alliums: Garlic harvest is almost entirely complete. There are above average levels of garlic anthracnose on many farms. Thrips pressure continues to be high in some locations. Storage onions are maturing slightly early in some areas, with stemphylium and other foliar diseases simultaneously ramping up.

Brassica: Brassica downy mildew has been found on cabbage transplants on several farms south of Albany. The disease should not spread or develop further once plants are in the field with more space, air flow, and lower humidity. There are several conventional and OMRI-listed fungicides to manage brassica downy mildew in the greenhouse; read more about management options [here](#). Swede midge damage seen in plantings in north. To protect fall brassicas from damage, rotate as far away as possible from infested fields and treat young plants with labeled systemic insecticides. Insect exclusion netting is the most effective option for organic growers.

Chenopods: Cercospora incidence seems to be dropping somewhat on many farms, especially those that have applied one or more fungicide spray. Leaf miner pressure remains low.

Sweet Corn: ECB pressure has increased slightly from last week in the mid-Hudson Valley since last week. Bird damage is high in the Hudson Valley, especially in plantings with significant corn earworm (CEW) infestations. Watch for tassel damage as fall armyworm trap catches have risen in much of Eastern NY over the past week, even in areas with low CEW catches.

In north, western bean cutworm (WBC) numbers have increased dramatically. Scout fields for egg masses and spray when eggs are hatching.

Cucurbit: Downy Mildew spread remains concerning in the region, and has been confirmed on two farms in the Hudson Valley this past week. Angular leaf spot, a bacterial disease of cucurbits, continues to spread with heavy rain events and high humidity; make sure to include bactericides (like labeled copper formulations) in spray programs targeting downy mildew and powdery mildew. Plectosporium blight is severe on some farms in the Hudson Valley; find more information on management options [here](#).

Viral issues in cucurbits are worse than usual in north. Managing aphids and other insect pests is critical in slowing spread. Many winged aphids observed in fields with symptoms. See Chuck Bornt's *Vine Crops Update* below for detailed downy mildew forecast, powdery mildew

recommendations, and squash bug management information.

Legumes: Leaf hoppers have been causing significant injury in some bean plantings. If plants are stunted, turn leaves over to scout for hopper nymphs. Threshold is less than one hopper per plant, so if you are seeing them, control is recommended.

Solanaceae: Tomato ripening appears delayed in some areas this is likely due to high temperatures that impede the production of the pigments lycopene and carotene. See the article in the e-alert on tomato ripening. Leaf mold and hornworms appearing around the region in high tunnels.

Other

Chlorpyrifos Phase-Out Reminder: Pesticides containing chlorpyrifos (e.g. Lorsban) are prohibited from being sold, distributed, possessed, and used in NYS after July 31st. 15 products remain registered for all labeled uses until the end of the month. See [this DEC website](#) for the product listing and guidance regarding disposal options.

Managing Bacterial Diseases in Onions

Crystal Stewart Courtens, CCE ENYCHP

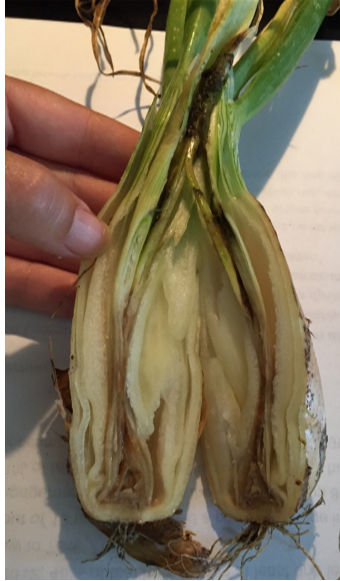
We have had excellent conditions for bacterial disease development in onions for the last month, so it's no surprise that we are seeing some bacterial diseases in nearly every planting we scout. Bacterial issues can be detected during the growing season often by looking for just one or two flagging leaves, often more towards the center of the plant. These leaves will die right into the bulb, either leaving one scale dead or spreading and causing soft rot of the bulb. There is really nothing to do about bacterial diseases at this point in the season, but we want growers to be aware if they have a problem with bacterial diseases and adopt management strategies next season. Bacterial diseases are hard to manage and require a multi-pronged approach. Christy Hoepting and Dr. Steve Beer wrote a nice article a few years ago detailing the IPM strategies for combatting bacterial diseases and reducing their spread. In order to reduce bacterial infections, plan to adopt multiple strategies from the list:

1. Choose less susceptible cultivars.
2. Limit amount of pre-plant applied nitrogen fertilizer. Many feel that 100 pounds or less N per acre is appropriate.
3. Use water free of bacterial pathogens for spraying or sprinkler irrigation.
4. Avoid sprinkler irrigation, especially late in the season.
5. Maintain effective control of thrips, especially late in the season.
6. Pull/undercut onions when at least 50% of the leaves are down and during dry weather.
7. Do not top onions until neck tissue is completely dry (not green).
8. Harvest during dry conditions.
9. Harvest and handle bulbs gently
10. Maintain dry conditions during curing.
11. Pre-grade suspect lots of onions to eliminate rotten bulbs prior to storage.
12. Store bulbs at 32 °F to 37 °F (0 °C to 2 °C).
13. Avoid condensation forming on onions by circulating warm air over cold onions.

Open the plastic around your onions

If the plastic becomes tight around onions due to small planting holes (which were of course a great weed control strategy earlier), it may be necessary to slice the plastic and increase air movement around the bulbs. The hot, moist environment under the plastic is perfect for bacterial growth, and the plastic directly contacting bulbs can cause physical damage, allowing another entry point for pathogens. Cut slits along each side of the rows, avoiding the drip, as the onions size. Another solid strategy for future years is to use biodegradable mulch on onions. It will start to break down as the onions size, automatically providing the needed ventilation. -

Source: Update on Bacterial Diseases of Onion: Detecting Bacterial Pathogens, Bacteria in Soil and Water, Suppressive Soil, Varietal Susceptibility and the Effect of Actigard® on Bacterial Decay. Steven Beer, Jo Ann Asselin, and Jean Bonasera, Plant Pathology and Plant-Microbe Biology, Cornell University and Christy Hoepting, CCE Cornell Vegetable Program.



An onion with dead center leaves (left) and internal decay (middle). This plant was also being restricted at the neck by tight plastic. The onion on the right had grown up tight with the plastic, creating a very warm little tent around it. This environment strongly contributes to rot.

Timing Onion Sprout Inhibitor Application

Ethan Grundberg, CCE ENYCHP

Properly timing the application of Royal MH-30 (*maleic hydrazide*) sprout inhibitor is especially challenging when foliar disease pressure in your onion crop is high. Here are some tips on how to make the most of your inhibitor:

- Sprout inhibitor should be sprayed once onions are fully mature (a good rule of thumb is that about 50% of onion tops should be down) on storage varieties that will be kept past November.
- Spraying inhibitor before bulbs are fully mature can result in loose and spongy bulbs that are unmarketable and more prone to mold and rot in storage.
- Onions should still have 5-8 green leaves per bulb in order to provide enough living tissue for the inhibitor to be absorbed and translocated to the bulb. If fewer than 5 leaves remain green or if plants have severe foliar disease pressure, there is a serious risk that the maleic hydrazide will not be taken up by the plant.
- If MH-30 is sprayed more than two weeks in advance of harvest and the bulbs are exposed to temperature extremes and rain in the field, bulbs may be triggered to break dormancy regardless of inhibitor application and uptake.
- Avoid applying inhibitors at temperatures above 85 degrees.
- Sprout inhibitor will not magically make a sweet onion store as well as a storage variety. Applications should only be made to varieties that are bred for long-term storage.

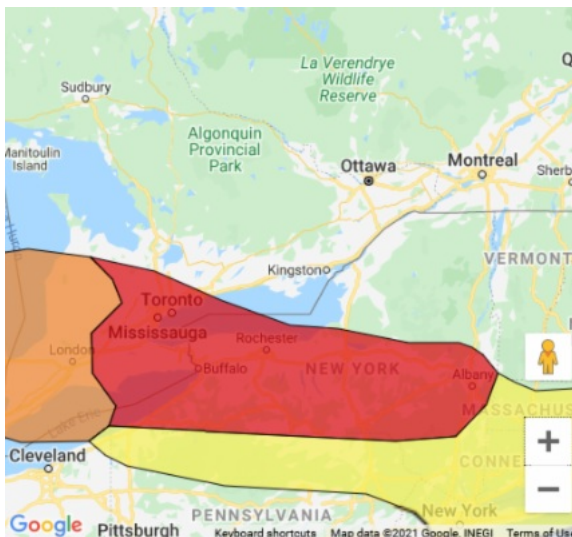
One final consideration on sprout inhibitor application timing: studies have demonstrated that bulb onions size up significantly in the last month prior to 100% falling over. One study by Davis and Jones showed that yields per acre increased by 10,500 pounds/acre in the time from 10% tops down to 100% tops down. However, other studies have shown that, in order to achieve maximum storage life, harvest should be timed around 40% lodge. So, depending upon your goals (maximum yield or maximum storage life) the timing of your inhibitor application and harvest may vary slightly.



Onions about 15% down and still not ready for inhibitor (left). Onions about 60% down, but still with adequate green foliage for a well-timed inhibitor application (right).

Vine Crops Update

Chuck Bornt, CCE ENYCHP



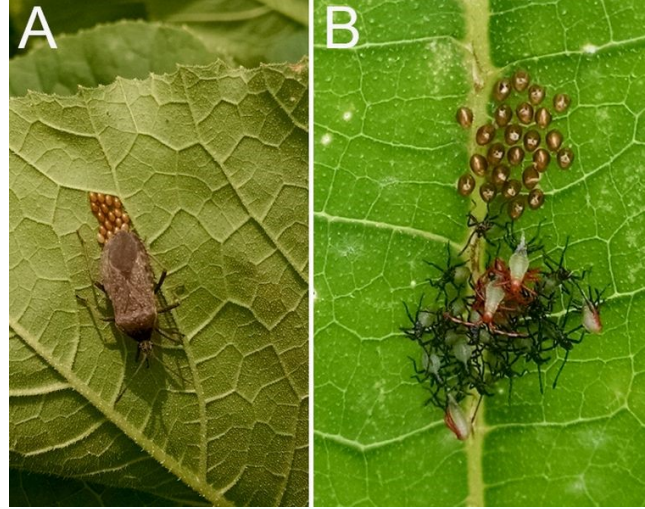
Cucurbit Downy Mildew forecast for July 27, 2021. Source: <https://cdm.ipmpipe.org/forecasting/>

Cucurbit Downy Mildew is also still a concern, especially with the current weather patterns of frequent rains, heavy dews, and fog prolonging leaf wetness. The current forecast issued July 27th from the CDM Forecasting System indicates a “HIGH Risk” for cucurbits in western NY, the immediate Capital District, the western and southern counties of the Eastern NY Commercial Horticulture Program region (Fulton, Montgomery, Schohaire, Orange, Dutchess, Ulster, Sullivan etc.). Orondis Opti or Ultra, Zampro, Ranman and Zing are all good choices for helping control CDM. For organic growers, maintain protectant applications of copper plus Regalia.

Squash Bugs: Adult Squash bugs have been observed for several weeks now and the gray spiderish shaped nymphs or the immature stage

Powdery mildew can easily be found in older plantings of yellow squash, which is what I tend to use as my indicator crop – that means powdery mildew applications on pumpkins and winter squash should be underway. Refer to last week’s article for current recommended spray programs. Please note that Torino is no longer recommended due to high levels of resistance. Our colleagues on Long Island have also seen a reduction of effectiveness with Quintec, which has been very effective. It can still be used but limit applications. Vivando, Gatten, Proline, Procure, and Luna Experience are all good choices. In addition, remember to rotate through the different classes of chemicals using the FRAC codes given on the labels and in the table from last week’s newsletter article.

of these insects can be found all over the place. This immature stage likes to feed on the undersides of the leaves and the damage usually occurs as a leaf margin/tip burning and can be confused with drought stress or with the weather we've had, excessive water damage. Thresholds are 1 - 1.5 egg masses/ plant in squash. Egg masses look like copper colored BB's laid in groups on the undersides of the leaves. The damage results in the wilting or collapsing of plants which then results in the loss of fruit production. Use Assail or a pyrethroid (Asana, Brigade 2EC, permethrin, Mustang Max, Warrior or generic version like Grizzly Too, Lamcap etc.) as soon as eggs start to hatch. Azadirachtin materials (e.g., Azatin O, Aza-Direct, Molt-X, AzaGuard, Ecozin, Azasol – some for organic growers) can be used when small nymphs are present.



Adult Squash Bug laying eggs (A) and nymphs just hatching(B). Photos: A.L. Buchanan, Michigan State University

Anthracnose in Vegetables

Teresa Rusinek, CCE ENYCHP

Warm, moist conditions favor the development of Anthracnose on ripe fruiting vegetables such as pepper, tomato, eggplant, cucumber, melons, and pumpkin. Symptoms were found this past week on eggplant and cucumber. In cucurbits leaf lesions begin as water-soaked spots that become yellow-tan and circular. Cucumber anthracnose can be managed by growing resistant varieties. The following is an excerpt from a newsletter article written by Dr. Margaret McGrath from LI CCE, Suffolk County. Rain provides favorable conditions for splash dispersing the pathogen as well as for infection, and harvest delays due to rain increase opportunity for anthracnose to develop. Ripe and overripe fruit are especially susceptible but this pathogen can infect green tomato fruit with symptoms not developing until fruit begin to ripen. Spots on fruit initially are small, circular, and depressed. They can enlarge considerably over time with masses of pink to orange colored spores developing. Eventually the entire fruit will rot. Fruit nearest to the ground are most likely to be affected. The fungus can also infect roots. To manage anthracnose, do not grow these or other Solanaceous plants (especially potato) in the same area for 3 to 4 years, plant treated seed that was tested for the pathogen, cover the ground with black plastic mulch or other material to provide a barrier between the pathogen in the soil and fruit, trellise plants, use drip irrigation, apply fungicides, and pick fruit as soon as it is ripe. The pathogen can be seedborne, so managing volunteer tomato plants is important. Fungicide applications are recommended starting at first fruit set and are most important as the fruit ripens. Targeted fungicides labeled for anthracnose in these and other fruiting vegetables include Aprovia Top (FRAC code 3 + 7), Inspire Super (3 + 9), Mettle (3), Cabrio (11), Flint Extra (11), Quadris (11), Quadris Top (3+11), and Tanos (11+27). PHI is 3 days for Flint Extra and Tanos, 0 days for others. As with all diseases, select targeted fungicides to use in alternation or combination based on their FRAC code so that products with different code numbers are applied together and in alternation. Label use restrictions state how many consecutive applications are permitted before a product with a different code must be used. Contact, protectant fungicides with chlorothalonil, mancozeb, and copper are also labeled.



Top Left: Anthracnose lesions on eggplant fruit. Photo T. Rusinek

Top Right: Anthracnose on Pepper fruit. Photo Crystal Stewart-Courtens

Bottom Left: Anthracnose lesions on cucumber fruit. Photo: S. B. Scheufele

Bottom Right: Foliar symptoms of on Cucumber. Photo T. Rusinek

Why Aren't my Tomatoes Ripening?

Steve Reiners, Cornell University



With all of the hot weather we have experienced this summer, growers were expecting their tomatoes to ripen very quickly. Unfortunately, just the opposite is happening. Ripening seems very slow, almost like what we see in the autumn when temperatures are much cooler.

So what's happening? It takes six to eight weeks from the time of pollination until tomato fruit reach full maturity. The length of time depends on the variety grown and of course, the weather conditions. The optimum temperature for ripening tomatoes is 70 to 75F. When temperatures exceed 85 to 90 F, the ripening process slows significantly or even stops. At these temperatures,

lycopene and carotene, pigments responsible for giving the fruit their typical orange to red appearance cannot be produced. As a result, the fruit can stay in a mature green phase for quite some time.

Light conditions have very little to do with ripening. Tomatoes do not require light to ripen and in fact, fruit exposed to direct sunlight will heat to levels that inhibit pigment synthesis. Direct sun can also lead to sunscald of fruit. Do not remove leaves in an effort to ripen fruit. Also, soil fertility doesn't

play much of a role. We do know that high levels of magnesium and low levels of potassium can lead to conditions like blotchy or uneven ripening or yellow shoulder disorder. But the slowness to ripen is not likely due to soil conditions and adding additional fertilizer will do nothing to quicken ripening. If you absolutely cannot wait, some growers will remove fruit that are showing the first color changes. These fruit, in the mature green or later phase, could be stored at room temperature (70-75F) in the dark. A more enclosed environment would be best as ethylene gas, released from fruit as they ripen, will stimulate other fruit to ripen. If temperatures remain high outdoors, these picked fruit will ripen more quickly, perhaps by as much as five days. As far as flavor, the greener fruit should develop flavor and color similar to what you would get if field ripened. The key is picking them when they are showing the first signs of ripening (no earlier) and keeping them at room temperature. Do not refrigerate, as this will absolutely destroy their flavor.

Consider Adding a Sanitizer to Your Produce Wash Water

Elisabeth Hodgdon, CCE ENYCHP

This time of year, wash/pack facilities on farms are kicking into high gear. For those not currently using sanitizers in wash water, you may consider adopting this practice. When a contaminated piece of produce (for example, a lettuce head with bird feces) is taken into a wash/pack area to be washed, there is potential for pathogens to spread via wash water. Adding a sanitizer to produce wash water, such as chlorine, peracetic acid, or hydrogen peroxide, has multiple benefits:

- In dump tanks, sanitizers prevent the spread of pathogens between produce items in the water
- In single-pass water, sanitizers reduce the formation of biofilms that harbor pathogens
- Sanitizers can improve storage and shelf life of produce by reducing spoilage organism growth

Selecting a sanitizer that is appropriate for your operation involves reading the product label and understanding its intended use. Labels will specify whether the product can be used for washing fruits and vegetables, sanitizing food contact surfaces, or both.

The Produce Safety Alliance has two excellent resources to assist growers with choosing a sanitizer, including an introductory sanitizer fact sheet and an Excel spreadsheet with sanitizer options for washing produce. The table includes information on whether the products are OMRI-listed and has links to labels:

[Introduction to Selecting an EPA-Labeled Sanitizer](#), by Donna Pahl Clements, Gretchen Wall, Don Stoeckel, Connie Fisk, Kristin Woods, and Betsy Binh, Cornell Produce Safety Alliance.

[Cornell Produce Safety Alliance General Resource Listing](#) which includes a link to download the sanitizer Excel spreadsheet.

In addition to the PSA resources, the Cornell Vegetable Program has two resources on how to use peracetic acid and bleach to wash vegetables:

[How to Wash Produce Using a Peracetic Acid Solution](#), by Robert Hadad, Cornell Vegetable Program.

[Produce Washing Stations—How to Use a Germicidal Bleach](#), video directed by Robert Hadad, Cornell Vegetable Program.

NY HERO Act Airborne Infectious Disease Prevention Plans are Due August 5th

Elisabeth Higgins, CCE ENYCHP

The New York legislature passed, and the governor signed the New York HERO Act on May 5, 2021. This legislation requires ALL employers to adopt an airborne infectious disease safety plan and

requires employers with 10 or more employees to “permit employees to establish and administer a joint labor-management workplace safety committee.” All types of private employers are included in the new requirements and “farmworkers” are specifically identified as included employees in the legal text. The HERO Act defines the worksite as “any physical space, including a vehicle, that has been designated as the location where work is performed.” It goes on to include in the worksite definition “employer-provided housing and employer-provided transportation at, to or from the work site...”

The NY State Department of Labor (NYSDOL), in consultation with NYS Department of Health, is responsible for implementing the new law. They created model safety plans with ready-to-use templates for many industries including agriculture. Employers have the option of simply adopting NYSDOL’s model standard or developing a plan of their own that meets or exceeds all of the law’s requirements. The law requires the plans to specifically address the following items: employee health screenings, face coverings, personal protective equipment (PPE), workplace hand hygiene, cleaning and disinfecting of share equipment, social distancing, compliance with quarantine or isolation orders, engineering controls such as ventilation, designation of supervisors to enforce the plan, compliance with regulations, and the verbal review with employees of all related employer policies.

To get into compliance with the plan, farm employers can download the agriculture template developed by NYS DOL and NYS DOH and add information specific for your farm. The link to the template is provided below. There are 9 places in the template where you can add farm-specific information. Note that this template is in “fillable PDF” so you should be able to type right in the specially provided boxes and lines on the form.

The text of the HERO act says employers must provide their plans to employees, in writing, in English and in their native language. Further, it says the plan must be posted prominently in the workplace, included in the employee handbook if the employer has one, and made available upon request to contractors, employees, and government representatives. The HERO Act website states that “Employers are required to provide a copy of the adopted airborne infectious disease exposure prevention plan and post the same in a visible and prominent location within each worksite.” Translations of the template are not available on the website at the time of this writing but the website does indicate that DOL does intend to provide a Spanish translation.

It’s important to note that, while private employers are required to have a plan for their business by August 5, 2021, the plans are not currently required to be in effect. The plans will only be activated “when an airborne infectious disease is designated by the New York State Commissioner of Health as a highly contagious communicable disease that presents a serious risk of harm to the public health.”

Resources

Agriculture Model Safety Plan Template [NY Hero Act, Model Airborne Infectious Disease Exposure Prevention Plan](#)

NYS HERO Act Website [NY HERO Act | Department of Labor](#)



Upcoming Events

Field Day at Philia Farm

Thursday, August 5 from 4-6 pm

Philia Farm

134 Miller Rd, Johnstown, NY

Cost: FREE

Join Cornell Cooperative Extension's Eastern NY Commercial Horticulture Program for a field day at Philia Farm in Johnstown, NY from 4-6 pm on August 5th. The meeting will showcase a variety of research projects, including:

- High tunnel pea variety trial
- Storage onion trial
- Leek trial
- Biofungicide trial on beets
- Mesotunnel insect netting trial
- Reduced tillage trial for fall vegetable crops

DEC Pesticide Recertification Credits: 2 in category 23

This meeting is now FREE to attend. Please pre-register at <https://enych.cce.cornell.edu/event.php?id=1553> by August 3rd so that we can order refreshments!

Questions: Contact Crystal Stewart-Courtens (518-775-0018).

Cornell 2021 Hemp Field Day

Thursday, August 12, 2021

Cornell AgriTech, Geneva, NY AND Virtually

Cornell's 2021 Hemp Field Day will be offered in-person in Geneva, at the Agri-Tech Station and virtually. Keep an eye on this site for more information and registration coming soon:

<https://hemp.cals.cornell.edu/2021/05/26/upcoming-event-2021-cornell-hemp-field-day/>

Respirator Fit Testing Clinic

Wednesday, August 11, 2021

Appointment scheduling window: July 19 - August 10

CCE Warren County, 377 Schroon River Rd, Warrensburg, NY 12885

Wednesday, August 18, 2021

Appointment scheduling window: July 29 – August 17

Cornell Hudson Valley Lab, 3357 U.S. Hwy 9W, Highland, NY

The New York Center for Agricultural Medicine and Health (NYCAMH) and HealthWorks is pleased to provide respirator fit testing clinics in your region in 2021. During the clinics NYCAMH will provide medical evaluations; respirator fit tests; and WPS compliant trainings on how to properly inspect, put on, take off, fit, seal check, use, clean, maintain, and store respirators.

Clinic appointments are one hour long, and groups of 4 workers can be seen at a time. Medical evaluations, fit tests, and trainings are available in both English and Spanish.

If you are unable to attend the clinic in your area you may schedule an appointment at another clinic location. To schedule an appointment please have the following information available:

- Total number of people attending from your farm
- Name of each person being scheduled
- Language spoken by each attendee
- Make and model of each respirator to be tested

To schedule an appointment please call the NYCAMH office during the date ranges listed above and ask to speak with farm respirator clinic scheduler.

We can be reached at 607-547-7014 #7 or Email fittest@bassett.org Monday-Friday, 8:00 AM-4:30 PM

A respirator fit test ensures that a particular make, model, and size of respirator fits the wearer's face and will meet the wearer's needs. A fit test is specific to the make, model, and size of respirator. If a worker wears more than one style of respirator, including filtering facepieces, they must be fit tested for each one. Please keep in mind while determining who will come to the clinic that a clean-shaven face is a necessity for masks to be effective and for fit testing to be possible. It is important to us that your workers be protected from any respiratory hazards. It is important to us that you be protected from potential OSHA or DEC fines. If you have any questions, please call us.

**Have you seen this disease in your
arugula?**

Do you grow brassica salad greens?

If so, please help inform our new project aiming to better understand pests and diseases in these crops. The survey will only take a few minutes of your time.

The **Northeast Arugula Team (NEAT)** was formed in response to grower inquiries about bacterial diseases of arugula plaguing their high tunnel and field grown arugula and other Brassica salad crops. Rather than working only to mitigate bacterial diseases of arugula, we are taking a holistic approach to first survey growers about their interests and needs related to arugula and other Brassica salad crop production and then systematically work to solve those needs. Please fill out this brief survey to help us meet your needs. Responses provided before July 30 will be especially helpful.



[Click Here to Take the Survey](#)

Corn Trap Counts

County	ECB-E	ECB-Z	FAW	WBC	CEW
Albany	0	0	6	15	2
Clinton 1	0	0	0	185	0
Clinton 2	0	0	1	47	0
Columbia	1	0	10	31	11
Dutchess	6	2	0	7	3
Essex	0	0	0	19	0
Orange	1	0	47	14	16
Ulster 1	11	4	0	1	0
Ulster 2	2	0	1	40	5
Ulster 3	35	3	0	0	0
Washington	0	0	5	33	6

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