Cornell Cooperative Extension Eastern NY Commercial Horticulture Program

Vegetable News E-Alert ~ May 12, 2021

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Allium Leafminer Still Active

by Teresa Rusinek, CCE ENYCHP

This spring, Allium Leafminer (ALM) activity was first detected on April 11 in the mid-Hudson Valley. Typically, the spring generation of ALM is active for about 6 weeks. Over the past three weeks, growers have been reporting significant activity and adult feeding/oviposition scars in allium crops, especially in scallions, green onions and chives. If you are transplanting alliums over the next few weeks, you will want to cover right after you finish planting and keep the cover on until the spring flight is over in your region. It doesn't take ALM long to find a host crop. Keep in mind that exclusion will not work if infested alliums, including wild onion grass, grew in the same plot the previous season.

Over the past four seasons that we've been tracking this new pest, we have generally observed a lower intensity of damage to allium crops from the spring ALM flight compared to the fall flight. Most susceptible in the spring are scallions, green onions and chives, particularly because of mining and cosmetic damage to tops. Damage in transplanted bulbing onions and garlic is less common, but pupae and larvae have been found in the bulb area at harvest at low numbers. In leek crops, we often see high levels of ALM



damage at harvest but the majority of damage usually happens later in the season, over the fall ALM flight. However, if you have leeks transplanted now they may have ALM damage from this spring flight, especially if you didn't cover the plants with row cover immediately after transplanting. Carefully inspect leeks now for signs of ALM.

Growers have been asking about damage thresholds for insecticide applications. Your action threshold will vary by allium crop susceptibility, economics, and your market. One strategy might be to target susceptible allium crops and base the need for an insecticide application on ALM damage impact from previous years in light of current observations of ALM activity in the field. Look for the distinctive ovipostion marks before you set out to spray. Low levels of ALM may not warrant a spray

based on the crop you are growing. Keep in mind that there are seasonal limits on applications of some pesticides, so you want to use these judiciously.

Research we've conducted over the past three seasons has shown that planting alliums on metalized reflective plastic mulch consistently reduced ALM damage between 22% to 36% compared to alliums planted on either black or white plastic. Combining the use of metalized reflective plastic mulch with two carefully timed applications of Entrust at the 6 fl.oz/acre rate mixed with M-Pede at 1.5% v/v concentration either 2 and 4 weeks or 3 and 4 weeks after the beginning of the adult ALM flight can be an effective strategy for managing ALM for organic growers. Adding the adjuvant Nu-Film P to Entrust significantly DECREASED the efficacy of the insecticide at managing ALM when compared to combining M-Pede with Entrust.

Several conventional insecticides already labeled for use on bulb crops in New York are effective at reducing damage from ALM, including Exirel (cyantraniliprole, IRAC Group 28, 2(ee) label required and available on the https://www.dec.ny.gov/nyspad/products?3website) at 13.5 fl oz/acre, Radiant (spinetoram, IRAC Group 5) at 8 fl oz/acre, and Warrior II with Zeon Technology(lambda-Cyhalothrin, IRAC Group 3A) at 1.6 floz/acre.

More information on ALM can be found on our website <u>https://enych.cce.cornell.edu/</u> including a recent podcast: <u>https://soundcloud.com/easternnewyorkvegnews/allium-leafminer-alm-update</u>. Northeast SARE Progress Report: <u>projects.sare.org/project-reports/one19-336/</u> details the findings from Rusinek and Grundberg's research to evaluate row cover and insect netting compared to two applications of Entrust and M-Pede to manage ALM. University of Massachusetts 2020 Pests of the Year ALM Presentation: <u>www.youtube.com/watch?v=ladfeJ1dWVo</u> for the recording and <u>cornell.box.com/s/wbtigjuuc82ufktu1ghfb0b2dh166mk5</u> for the slides in PDF. ALM Lookalikes and Visual Lifecycle PDF: <u>cornell.box.com/s/q2rdq3vuih5xzoy8dwfu63mm5q980drn</u>.

If you have any questions meanwhile, please feel free to contact Teresa Rusinek at tr28@cornell.edu 845 389-3562.

Keep an Eye Out for Insect Pests in High Tunnels

By Crystal Stewart Courtens, CCE ENYCHP

It seems a bit early, or maybe I'm just not ready, but we are already seeing an assortment of pests in high tunnels. In the last week I've found two spotted spider mites in tomatoes, broad mites in peppers, and as an extra surprise, tarnished plant bug nymphs in tomatoes.

Most of the pests we encounter in greenhouses and high tunnels this time of year are quite small, so identifying damage is easier than identifying the pests themselves. Spider mites are most easily spotted by looking for lighter stippling (spots) on the surface of leaves. If you flip them over, you may see webbing if there are many mites present. The mites themselves are barely visible with decent vision, and easily seen with a hand lens.

Broad mites are even smaller and are not visible with the naked eye. If you are seeing puckering and distortion of new growth on transplants but are not seeing aphids broad mites may be the culprit. These are less commonly written about so I'll link to a full article <u>here</u> in case you need more information.

Tarnished plant bug nymphs can be confused with aphid nymphs at first glance, but only if the aphids drank 50 cups of coffee. They run quickly and are generally on the underside of the leaf rather than the surface. Their damage looks quite a bit like spider mite damage, though the light feeding spots are a bit bigger.



Tamished plant bug nymph

Leafhopper nymph

Aphid nymphs and adult

Photos: OMAFRA

Look Out for Arugula Bacterial Disease this Spring

By Elisabeth Hodgdon, CCE ENYCHP

This spring, we have received two reports of crop loss due to *Pseudomonas* bacterial disease in high tunnel arugula, as well as one suspected infection in radishes. *Pseudomonas* bacterial infection results in water-soaked, angular spots on both sides of brassica leaves. The lesions can be brown or black, and portions of infected leaves can turn brown. Although the source has not been confirmed, *Pseudomonas* can arise from the environment or be seedborne, and can be worsened with cool, wet conditions.

Once bacterial disease is present in a crop, it is difficult to treat. The first step to managing bacterial diseases in brassica crops is to begin with disease-free seed. Avoid overhead irrigation and other practices that cause splashing, which can allow the bacteria to spread between plants. Clean and sanitize tools and equipment that pass from infected fields into clean areas. Finally, maximize time between replanting the infected area with another brassica crop, as the disease can persist on plant debris in the soil for a couple of months.

Have you seen these symptoms in your arugula? If so, let us know. We are interested in learning more about whether this disease is widespread in our region, and hope to pursue research projects to develop management recommendations. Contact Elisabeth Hodgdon (<u>eh528@cornell.edu</u>) or Crystal Stewart-Courtens (<u>cls263@cornell.edu</u>) if you are experiencing this issue on your farm.



Seedcorn Maggot, Onion Maggot, and Asparagus Beetle

By Ethan Grundberg, CCE ENYCHP

Seedcorn Maggot: Seedcorn maggots (SCM) have been found causing significant damage to onion crops on several farms in Orange County. Once SCM damage is observed, it is typically too late to take action. The adult SCM flies emerge much earlier and reach their peak emergence around 360 GDD base 39. Adults are attracted to fields where organic matter, such as cover crop residue, compost, or manure, has been recently incorporated to lay eggs. Maggots feed on the roots and basal plate of susceptible crops. Avoiding planting into fields with recently incorporated organic matter, using row covers before SCM emergence, or delaying planting until after the peak first generation SCM flight can all help reduce damage. Several seed treatments, including both Regard (spinosad) and Cruiser 5FS (thiamethoxam), are effective at reducing SCM damage as well (both insecticides are included in the standard Farmore FI500 onion treatment package). Chlorpyrifos has historically been used as an atplant drench application as well for SCM suppression and as a post-plant drench in transplanted onions. The Lorsban 4E label recommends applying the post-plant drench at 1 quart/acre applying a total volume of 100 gallons of solution/acre to improve wetting of the soil. In general, post-plant drench applications are less effective compared to pre-plant or at-plant applications. Also, be advised that chlorpyrifos formulations containing petroleum distillates can cause serious crop injury when applied soon after certain herbicides like Chateau (flumioxazin). Please see last week's e-alert for more information on the upcoming cancellation of all chlorpyrifos products in New York State after July 31, 2021.

Onion Maggot: Based on the NEWA onion maggot modeling tool (http://newa.cornell.edu/index.php?page=onion-maggot), adult emergence of the overwintered generation of onion maggot (OM) flies is reaching its peak (approximately 735 GDD base 40) in the southern Hudson Valley. Growers with a history of OM damage should begin scouting fields carefully in 7-10 days looking for plants that appear stunted or wilted. Maggots are creamy white colored and about the size and shape of a grain of orzo and can be found feeding on the roots and basal plate of the crop. Management options are similar to those described above for SCM; however, Cruiser (thiamethoxam) is not an effective seed treatment for OM. Growers who used Regard (spinosad) as part of a seed treatment package for OM management in 2021 are encouraged to rotate to Trigard (cyromazine) in 2022, which is available by request as an "alternative FarMore FI500" package.



Onion Maggot Degree-Days (Base 40°F) for Campbell Hall (Crist)								
	Past	Past	Current	5-Day Forecast Forecast Details				
Date	May 10	May 11	May 12	May 13	May 14	May 15	May 16	May 17
Daily Degree-Days	11	11	12	16	17	19	20	21
Seasonal Accumulation	636	647	659	674	691	710	729	750
Generation (OW=overwintering)	ow	ow	ow	ow	ow	ow	OW	ow
Red cells indicate estimated 50% emergence (peak flight).								

Asparagus beetle: Asparagus beetle adults and larvae have both been active for a couple of weeks in the southern portion of the ENYCHP region. Though the larvae, not adults, are most susceptible to insecticides, growers experiencing significant early damage (the economic threshold is suggested to be when 5%-10% of spears have adults present) may need to use an insecticide to knock down the adults before targeting larvae and later generations on ferns. Given the need to continue



harvesting every 1-2 days (a practice that also helps remove eggs from the field to slow the population growth), a short Pre-Harvest Interval (PHI) and Restricted Entry Interval (REI) are key to selecting an appropriate labeled insecticide. The standard insecticide options are pyrethroids (IRAC Group 3A), such as Pounce 25 WP and other labeled permethrin formulations (1 day PHI, 12 hour REI) or PyGanic 5.0 (OMRI, 0 day PHI, 12 hour REI). However, pyrethroids can also wipe out the populations of natural enemies like the parasitic wasp Tetrastichus asparagi, so growers should avoid using them if possible. Some neonicitnoids (IRAC Group 4A), such as Assail 70 WP and Anarchy 30 SG (both acetamiprid), are also labeled for asparagus beetle adults and larvae during harvest (1 day PHI, 12 hour REI). Lannate (methomyl, IRAC Group 1A), is also options if you are willing to equip the harvest crew with early entry PPE (1 day PHI, 48 hour REI) to continue removing egg masses on cut spears. An easier option for those looking to use an organophosphate is Sevin XLR Plus (carbaryl, 1 day PHI, 12 hour REI). Note that Lorsban (chlorpyrifos) is sometimes recommended in other states, but IS NOT allowed for use on asparagus in New York.

For heavily infested fields, continue scouting the asparagus after harvest and target second and/or third generations with any of the options listed above or with IRAC Group 5

spinosyns, such as Radiant or Entrust (OMRI), both of which have a 60 day PHI. Cleaning fields of old stalks after mowing in the fall can also help reduce the overwintering populations.

Sanitizing Used Tomato Stakes

By Charles Bornt, CCE ENYCHP

With the drab weather the last week or so and a fair amount of field work slowed, it might be a good time to have your crew sanitize those tomato stakes from last year so you're ready to go when the time comes for staking. I know many of you already have plants started in the greenhouse, but this sanitation note is still not a waste of your time. The bulk of this message is meant for those of you with used tomato stakes that may be you didn't get around to cleaning and sanitizing last fall. There are several disinfectants that can be used for disinfecting tomato stakes and each one has pro's and con's., but first things first:

The cleaner you start, the better job your disinfectant will do! Start by:

- "Pre-cleaning" is important because organic matter, dirt and other particulates tie up the active ingredients in our disinfects and reduce their effectiveness!
- There are lots of ways to do this but I think the most effective is to use a power washer or a hose and scrub brush. Yes, it is time consuming, but well worth it otherwise the rest of the sanitation could be worthless!
- In the case of tomato stakes, do not pack stakes too tightly in washing container—allow solution to distribute evenly and contact all surfaces of the stake. Surfaces of stakes in the middle of a tightly packed group may not completely be soaked.

Clorox/Bleach (5.25% sodium hypochlorite)

- Use rate of 1 part bleach to 9 parts of water (or 10% solution).
- Completely submerge stakes and allow to soak for at least 30 minutes before removing and rinsing.

- If possible, lower water pH to 6.5 5.8 to obtain the most activity from bleach.
- Add bleach or change water frequently when it becomes visibly dirty.
- Bleach is also short-lived after mixing in water, with a half-life of only 2 hours so replenishing often will be critical for the best activity.

Green-Shield (quaternary ammonium chloride salt)

- Recommended use rate is 1.5 fluid ounces per 5 gallons of clean water.
- Allow surfaces to remain wet for 10 minutes before rinsing off with clean water.
- For stakes, trays and inserts, use the same rate as above and fully submerge and allow to soak for 10 minutes and rinse thoroughly.
- Very effective and economical: 1 gallon of Green-Shield is equal to 28 gallons of Clorox.

ZeroTol 2.0 (hydrogen peroxide + ethaneperoxoic acid)(OMRI Listed)

- Use a dilution of 1:300 or 0.5 fluid ounces per gallon of clean water and spray until runoff on greenhouse surfaces etc.
- Use a dilution of 1:50 or 2½ fluid ounces of ZeroTol 2.0 per gallon of clean water **if surfaces** have not been pre-cleaned.
- For stakes, trays and inserts, use a 1:100 1:300 or 1¼ fl. oz. ½ fl. oz. per gallon of clean water and spray until runoff (according to label). However, I would recommend submerging these items for at least 5 minutes before rinsing with clean water.

Other materials: Hydrogen dioxide, hydrogen peroxide and peroxyacetic acid products such as an OxiDate or SaniDate can also be used to disinfect stakes (some are organic certified). Rates will depend on the formulation you choose.

Sulfur and Vegetable Crops

By Gordon Johnson, University of Delaware

(Source: University of Delaware Weekly Crop Update, Volume 29, Issue 4, April 16, 2021)

Editor's note: In the last 10 years or so, I've diagnosed lots of brassica crops with sulfur deficiencies, especially on light textured soils like sands and gravel. I also suspect that there are a lot more crops out there that would benefit from some additional sulfur, not just the brassicas! I highly recommend that you talk with your fertilizer supplier to see if they might be able to add a little bit of sulfur to your dry granular mix that you are using. Additionally, some crops like tomatoes that are planted on plastic with drip irrigation could use fertilizer products that contain some sulfur in their fertigation programs. (Chuck Bornt, CCE ENYCHP)

Sulfur is considered one of the secondary macronutrients that vegetable crops require for growth. Sulfur is a component of four amino acids and is therefore critical for protein formation. It is also a component of certain glycosides that give pungency to mustard family crops (greens, cole crops) and allium crops (onions, garlic).

In the last 30 years, as industrial air pollution has been reduced (especially pollution from coal fired power plants) we have had less sulfur deposition from rainfall. Sulfur deficiencies are more common and sulfur additions in fertilizers or manures is being required for many crops to produce high yields.

Most of the sulfur in the upper part of the soil is held in organic matter. Upon mineralization, sulfur is found in the soil as the sulfate ion (SO42-) which has two negative charges. The sulfate ion is subject

to leaching, especially in sandy textured soils (loamy sands, sandy loams). It does accumulate in the subsoil but may not be available for shallow rooted vegetables.

Sulfur can be added by using sulfate containing fertilizers such as ammonium sulfate, potassium sulfate, and K-mag (sulfate of potassium and magnesium). It is also a component of gypsum (calcium sulfate). In liquid solutions, ammonium thiosulfate is often used as the sulfur source. Sulfur is also found in manures and composts. For example, broiler litter has about 12-15 lbs of sulfur per ton.

In vegetable crops, sulfur removal is generally in the 10-25 lb/A range. Mustard family crops (cole crops such as cabbage and broccoli, mustard and turnip greens, radishes) remove between 30 and 45 lbs/A of sulfur. Research in our region has shown response to added sulfur for sweet corn and for watermelons. In Florida research it was shown that adding 25 pounds of sulfur per acre boosted yields by 1.7 tons per acre in tomatoes. Similar results were found with strawberries.

Our general recommendations are to apply 20-40 lbs of sulfur per acre on sandy soils for most vegetable crops. Remember to take credit for any sulfur being added with fertilizer sources such as ammonium sulfate (24% sulfur).

One vegetable where we want to limit sulfur is with sweet onions. Because sulfur increases onion pungency, and sweet onions are sold based on their low pungency, we limit sulfur applications to this crop.

Currently, all individuals, working and/or living in NYS, aged 16 and over are eligible to receive the COVID-19 vaccine in New York State. To support the health and safety of our essential migrant worker communities, the Capital Region Vaccine Network, in partnership with local health departments, the New York State Department of Health, and New York State Department of Labor, encourages employers to assist workers with pre-registration, appointment booking and/or onsite vaccine clinics, where possible.

As a reminder, the COVID-19 vaccine is free and available to anyone 16 years and older *living or working in New York State – regardless of immigration or health insurance status.* For information on how to pre-register for the vaccine or to find locations currently offering appointments, please see below.

• To **pre-register** workers for the COVID-19 vaccine, please visit <u>https://alb.518c19.com/</u> where you may pre-register your employees or encourage them to do so themselves. You (or your employee) will be contacted by call or text when an appointment or local clinic opportunity becomes available. Pages are available in English and Spanish. Note: Employers, please select "Helper" option to indicate that you are enrolling others.

To **search for locations** carrying COVID-19 vaccines, visit <u>https://vaccinefinder.org</u> to find clinics, pharmacies, health departments and other regional locations currently offering appointments.

· If you are interested in hosting an **onsite vaccine clinic for your workforce**, please contact the County health department where your place of business is based:

- · Albany County: 518-447-4670
- · Columbia County: 518-697-5560
- · Greene County: publichealth@discovergreene.com
- · Rensselaer County: 518-270-0450
- Saratoga County: 518-693-1075
- Schenectady County: <u>Tatiana.Alcantara@schenectadycounty.com</u>
- Warren County: 518-761-6580
- Washington County: 518-746-2400

Note: County Health Departments will determine minimum number of persons needed for an onsite vaccine clinic.

The Capital Region Vaccine Network, County health departments and the New York State Department of Labor are committed to supporting our most vulnerable and underserved populations. For general inquiries about the Capital Region Vaccine Network or local resources available to you and your employees, please contact Ruth Leslie at <u>leslier@amc.edu</u> or at 518-262-4009.

Save the Date for your next Respirator Fit Test -Lower Hudson Valley

Fit tests will take place on: Wednesday, May 26 and Thursday, May 27 at the Alamo Community Center, 890 Pulaski Highway, Goshen, NY

Call now to reserve your spot!

Scheduling appointments now through May 25th, 2021. To schedule an appointment please call the NYCAMH office at 607-547-7014 Monday-Friday, 8:00 AM-4:30 PM and ask to speak with farm respirator clinic scheduler or choose option #7. You can also email your request to <u>fittest@bassett.org</u>. When calling or emailing 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

The New York Center for Agricultural Medicine and Health (NYCAMH) and HealthWorks is pleased to provide this respirator fit testing clinic at the Alamo Community Center in Goshen, NY. 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.

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.

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