Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program

April 25, 2019 Volume 7, Issue 1

Vegetable News

Attention Allium Growers: The Spring Flight of the New Invasive Insect Pest, the Allium Leafminer, Has Begun

Teresa Rusinek, ENYCHP, Cornell Cooperative Extension

A new invasive insect pest in the Northeast known as the Allium Leafminer (ALM), *Phytomyza gymnostoma*, damages crops in the *Allium* genus (eg: onion, garlic, leek, scallions, shallots, and chives) and is considered a major economic threat to *Allium* growers. Originally from Europe, ALM was first detected in Lancaster County, Pennsylvania in December of 2015 and in New Jersey and New York in 2016. To date, ALM activity and damage to commercially grown crops has been observed and confirmed in 14 counties in NYS, throughout eastern Pennsylvania, all of New Jersey, western Massachusetts, and Delaware. It is like that this pest will continue to migrate and threaten other major *Allium* production areas in Western New York.



Adults are gradually emerging from pupae in the soil and in cull piles. They feed and lay eggs on allium leaves. The diagnostic sign of ALM is a vertical line of dots often found near the tip of host crop leaves. These oviposition scars are sometimes accompanied by faint, mostly vertical lines that run down the leaf blade toward the soil. These "mines" are caused by ALM maggots feeding on the interior leaf tissue.

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Allium leafminer (ALM) activity was detected in Central New Jersey on 4/10/19, confirmed activity in multiple locations in PA this past week, and low level activity in Ulster and Dutchess counties in the Hudson Valley, NY as of 4/23/19. I expect significant ALM emergence to begin in the next few days in the Hudson Valley. Growers in eastern and central New York, especially Orange, Ulster, Dutchess, Columbia, Sullivan, and Schoharie who have alliums growing in the field or in high tunnels should consider protective measures. If you have small plantings that can be covered with row cover or insect netting to exclude emerging ALM flies, now is the time to do so as long as you didn't have infested alliums (including wild onion grass) in the same space last season.



Growers with larger plantings may consider applications of insecticides if and when significant ALM activity is observed in the allium crop. We have not yet established action thresholds for ALM in allium crops; however, at this time we believe that ALM activity is at an overall low level based on our observations of sentinel allium plots in the Hudson Valley. We anticipate adults will continue to emerge, mate, and lay eggs on allium crops through the month of May. As the larvae feed on tissue inside of the leaf, they can cause considerable damage to crops like scallions and chives that are marketed with green tops. The physical damage caused by adult oviposition and larval feeding also opens wounds in the leaf tissue that can serve as entry points for other pathogens that cause botrytis leaf blight and soft rot. Take a close look at your allium crops regularly over the next few weeks.

There are both organic and conventional insecticides labeled for allium crops to control this type of leafminer. Results from

our fall leek timing trial suggest that focusing two applications of Entrust SC (spinosad) at the 6 oz/acre rate mixed with M-Pede (potassium salts of fatty acids, not classified) at a 1.5% v/v dilution in the third and fourth weeks after first observed activity provides significant control of ALM. These results are based on one year's data taken over the fall flight of ALM on leeks. Please keep in mind that the progression of the spring ALM flight may be different due to temperature influence or other factors that can shift optimal spray periods with Entrust + M-Pede.

Radiant SC (active ingredient: spinetoram) is a semi-synthetic derivative of spinosad, the active ingredient in Entrust SC. **Radiant SC is not OMRI approved for organic production, but may be used in conventional production**. Both Radiant SC and Entrust SC are labeled for control of dipterous leafminers (such as ALM) in bulbing crops such as onions, leeks, chives, and garlic. Both materials are Group 5 mode of action. Please read and follow label instructions carefully.

Resistance Management: Do not make more than two consecutive applications of Group 5 insecticides (spinetoram and spinosad). If additional treatments are required after two consecutive applications of Group 5 insecticides, rotate to another class of effective insecticides for at least one application.

Please call or email Teresa Rusinek or Ethan Grundberg if you see evidence of ALM feeding in areas outside of those already confirmed or if you have any questions about management.

For more information, visit these Links to the ENYCHP website and our ALM podcast:

https://enych.cce.cornell.edu/

https://soundcloud.com/easternnewyorkvegnews/episode-3allium-leaf-miner



Row cover or insect netting provides a physical barrier between the allium crop and the Allium Leafminer pest.

Reference to commercial products or trade names does not imply endorsement by Cornell University Cooperative Extension or bias against those not mentioned.

Got Swede Midge?

Elisabeth Hodgdon, ENYCHP, Cornell Cooperative Extension



fly called swede midge (*Contarinia nasturtii*) has been causing up to 100% losses of organic broccoli, kale, and brussel sprouts in the Northeast. Native to Eurasia, the midge was first found in North America in Ontario, Canada in the 1990's and was first documented in New York in 2004. It has since spread to many areas within New York, but distribution is spotty. Midges lay their eggs

In recent years, a tiny invasive

Adult swede midge (S. Ellis, USDA)

within the growing tip of Brassica vegetables. Larvae feed on the newly forming plant tissue, causing scarring and deformities of leaves, stems, and heads. In some cases, heading Brassicas never form a marketable head (see photos). Swede midge damage symptoms are sometimes mistaken for nutrient deficiencies, since midge larvae vacate the plant and enter the soil, nowhere to be seen by the time the damage is visible. A single larvae can render a cauliflower head unmarketable (Stratton et al. 2018). Swede midge is particularly troubling for organic growers because there are no OMRI-listed insecticides that are effective for this pest. Growers must rely on crop rotation and costly insect exclusion netting.

Vegetable specialists Elisabeth Hodgdon (ENYCHP) and Christy Hoepting (Cornell Vegetable Program) are currently seeking research sites to host trials of two new swede midge management strategies: **pheromone mating disruption** and **tarping**. Pheromone mating disruption involves setting up dispensers in infested fields that release large quantities of the midge's sex pheromone. Males become confused and cannot locate females, the insects do not reproduce, and the crop is protected. The second experimental strategy, tarping, involves covering infested soil to kill midges that are emerging.

If you have swede midge on your farm this season and are interested in hosting a pheromone mating disruption or tarping research trial in the future, please contact Elisabeth Hodgdon (eh528@cornell.edu). ■



Swede midge damage in broccoli

References cited:

Stratton CA, Hodgdon EA, Zuckerman SG, et al (2018) A single swede midge (Diptera: Cecidomyiidae) larva can render cauliflower unmarketable. J Insect Sci 18:1–6.

For more information on swede midge:

Swede Midge Information Center for the U.S. http://web.entomology.cornell.edu/shelton/swede-midge/ index.html

Organic Management of Swede Midge Fact Sheet: https://hdl.handle.net/1813/55087

Chlorpyrifos (Lorsban) Update

Dan Gilrein, CCE Suffolk

Chlorpyrifos Status: The Ninth Circuit Court has agreed to re-hear the case banning *chlorpyrifos* with a larger panel of judges; though no date has been set. NY State Bill A2477/S2156A banning all *chlorpyrifos* use in the state has passed through the Senate and Assembly, but has not yet been signed into law. If it is, all use of *chlorpyrifos* will be prohibited after one year. We continue to work on alternatives and while there has been some limited success, we so far don't have a drop-in replacement product that controls cabbage maggot as well. *Chlorpyrifos* is also occasionally used to control borers in tree fruit, for annual bluegrass weevil in golf course turf, and is our only labeled product for bulb mite in ornamentals.

A New Approach to Newsletters for 2019

Ethan Grundberg, ENYCHP, Cornell Cooperative Extension



We have received feedback from growers over the years that there is great content in our weekly vegetable newsletters, but that there isn't always time in the growing season to keep up with reading them. In response, we are trying something new this year: we will still send out a written newsletter every other week. On the weeks when we do not produce a written newsletter, all of the vegetable specialists will contribute to an audio newsletter or "podcast" that will be made available through a number of sources. If you have a smartphone, you can download apps like Apple Podcasts, SoundCloud, or Apple iTunes where you can subscribe to the Eastern New York Veg News. You can

also always listen to episodes that we have released right on our website at https:// enych.cce.cornell.edu/ or on our SoundCloud page at https://soundcloud.com/ easternnewyorkvegnews. Finally, we will send everyone on our vegetable newsletter list an email with both sweet corn pest trap catch numbers and a link to that week's podcast.

If you have production issues or questions that you'd like us to address on the podcast, please do send your suggestions to me at eg572@cornell.edu. We hope that this new format will allow you to receive the time sensitive production information you need while driving to market, seeding in the greenhouse, or cultivating the squash!



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