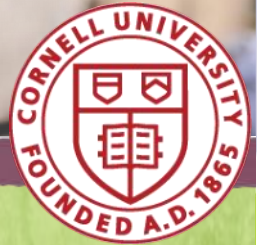


Vegetable News



Preparing for the Fall Flight of Allium Leafminer

Ethan Grundberg, CCE ENCYP

The new invasive fly pest, allium leafminer (ALM), continued to spread across the northeast this spring. Though we still do not have accurate phenology models to allow us to predict the emergence of the fall flight, fall ALM adult activity was first observed on September 19th in 2017. Adults create the diagnostic line of oviposition puncture marks on allium leaves during feeding and egg-laying. Larvae that hatch from eggs eat their way down the inside of the leaves toward the bulbs opening up physical wounds where soft rot pathogens often enter. The larvae then pupate either inside the bulb and stem or in the soil around the plants for the entire summer, or in the case of the fall brood, for the winter and early spring. We are actively scouting locations with known ALM infestations in an effort at early detection of adult activity this fall; watch for alerts from our team once we confirm the beginning of the fall flight.

Since there are typically fewer cultivated and wild alliums in the environment in the fall, growers in Pennsylvania and New York have experienced a “concentration effect” with their fall grown alliums. The spring population is spread across a wider and larger host population, but since the fall ALM flight has fewer host plants (leeks, chives, and scallions), the damage to those crops can be more severe. Most affected alliums this spring had no more than two larvae or pupae per plant when inspected. In contrast, growers with infestations in fall leeks in Ulster county in 2016 encountered well over 100 pupae per plant.

The most effective strategy for limiting damage from ALM this fall is to use row cover before the flight begins on all alliums that still have lush green growth in the field (storage onions that are still field curing are not at risk) to prevent adults from landing on host crops. Growers have had success using insect netting, like Protek-Net, if growers are concerned about heat stress associated with remay.

Dr. Brian Nault conducted insecticide efficacy trials in fall 2017 and the spring of 2018. Based on preliminary findings from those trials, it appears as if a number of conventional chemistries were effective at reducing damage from ALM on transplanted onions. Those included in the trials that are already labeled for leafminer management on leeks and green onions in New York include Trigard (cyromazine, IRAC Group 17) at 2.66 oz/acre, Exirel

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(cyantraniliprole, IRAC Group 28) at 13.5 oz/acre, Radiant (spinetoram, IRAC Group 5) at 8 oz/acre, and Agri-Mek (abamectin, IRAC Group 6) at 3.5 oz/acre (NOTE: *Liriomyza* leafminers only appear on the NY supplemental label for Agri-Mek SC). Growers who have been spraying leeks all summer for onion thrips need to make sure that they have not already reached the maximum annual application rate of products like Agri-Mek, Radiant, and Exirel (cyantraniliprole is also in the pre-mix product Minecto Pro and counts toward maximum active ingredient application rates). Please note that there is a 7-day PHI for Trigard and Agri-Mek on bulb vegetables (including leeks, chives, and green onions) whereas Exirel and Radiant have a 1-Day PHI.

Organic growers unable to use row cover are encouraged to use Entrust (spinosad, IRAC Group 5) at the 6 oz/acre

rate mixed with a 1%-1.5% v/v solution of M-Pede (potassium salts of fatty acids) for better penetration of the waxy cuticle once adult feeding has begun. As always, you must follow the instructions in the label for all pesticides!

We suspect that the geographic distribution of ALM will continue to spread this fall, so growers in the Capital District should be on the lookout for signs of activity in addition to farms in the Hudson Valley. We are recommending that growers thoroughly inspect allium leaves for the linear adult oviposition marks of at least 10 plants on each field edge on a weekly basis until activity is observed. If you have any questions about what you are seeing in your fall alliums, please contact one of the vegetable specialists on the ENYCHP team for diagnostic support.



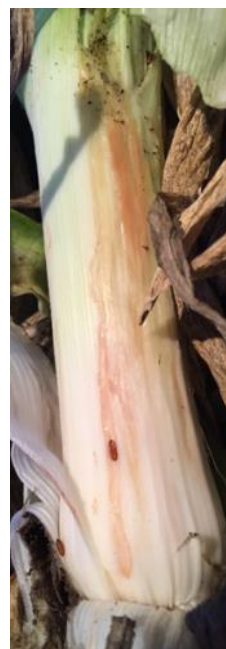
Adult ALM oviposition marks on onion leaf

Photo: E. Grundberg



ALM larval mining on scallions. Adult oviposition marks also visible on middle leaf

Photo: T. Rusinek



ALM pupae in Ulster Co. leek from fall 2016. Note the soft rot in the larval mines.

Photo: T. Rusinek

Spots on Peppers are Not Unavoidable!

Crystal Stewart, CCE ENYCHP

Ripening peppers is always risky business in the northeast, where rain and humidity provide ample opportunity for fungi and bacteria to set in during the long period taken for peppers to color. This year, because of the hot, humid weather, pepper anthracnose is one of the primary issues on ripening peppers. Pepper anthracnose is caused by the fungus *Colletotrichum*, which can survive on debris and in the soil for a couple of years. After plants are infected, additional movement occurs through splashing. Peppers may be infected at any time during the season, but spread is worst during hotter periods with evening showers.

Prevention of pepper anthracnose relies on proper rotation, good field sanitation by removing infested fruit, and fungicides. Organic growers can use copper available to suppress infection; conventional growers can use chlorothalonil and can rotate with copper for resistance management and to suppress bacterial soft rots. Fungicides should be applied during periods when the weather is conducive to infection, repeating as needed through the season.

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Early infection by pepper anthracnose



Advanced infection, note the sunken rings as compared to blossom end rot or sunscald lesions

Cooler Temps Favor Development of Brassica Downy Mildew

Teresa Rusinek, CCE ENYCHP

Downy mildew (DM) occurs in brassica crops, and under ideal conditions can move rapidly through a crop. Despite hot and dry field conditions, this disease has already been seen in the field this season. Ideal temperatures for development are 47-61°F, but DM can infect at temperatures outside that range. Prolonged leaf wetness due to fog, dew, or evening irrigation can create ideal conditions for the pathogen to develop. Looking at the extended weather forecast it appears that conditions will become more favorable for this disease to develop over the next few weeks.

Downy Mildew on brassica crops is caused by the fungus *Peronospora parasitica*. This is not the same pathogen that infects cucurbits. Many crops are susceptible including: Cabbage, Chinese cabbage (including NAPA and bok choy) broccoli, cauliflower, radish, turnips, Brussel Sprouts, mustard, collard, rutabagas, kohlrabi, kale as well as brassica weeds. DM is particularly destructive if plants are infected at the seedling stage. On more mature plants such as the radish in the picture below, it causes poor growth, reduces yield and quality. This disease can be identified by angular lesions that develop on leaves and inflorescences. The lesions enlarge and become irregular, yellow to orange necrotic patches. Under moist conditions, sporulation on the underside of the leaf may be seen as a gray to purple fuzz. Affected tissues become susceptible to attack by secondary rotting organisms. DM also attacks the taproots of turnip and radish which develop a black blotch and an internal discoloration. DM overwinters on winter-sown host crops or weeds. Sporangia are spread by wind and splashing water. Oospores, if produced, survive in crop residues and in the soil. There is some evidence that *P. parasitica* may

be seed borne.

Cultural Controls & Prevention:

- Removal of crop debris and weed hosts may reduce inoculum.
- Practice rotation with non-brassica crops.
- Plant resistant or tolerant cultivars.
- Manage Downy Mildew on transplants in the seedling bed by improving air circulation, irrigating early in the day



The following are just a few products labeled for control of Downy Mildew on labeled brassica crops. Please read the label before applying any pesticide.

- **azoxystrobin (Quadris):** 6.0 to 15.5 fl oz/A. (0 dh, REI 4h, FRAC Group 11).
- **chlorothalonil (Bravo Weather Stik):** 1.5 pt/A. (7 dh, REI 12h, FRAC Group M5). Read label for replant restrictions.
- **copper compounds (Champ F or OLP)**(FRAC Group M1)
- **mandipropamid (Revus):** 8.0 fl oz/A. (1 dh, REI 4h, FRAC Group 40). A spreading/penetrating type adjuvant must be added. -TR

References: <http://extension.umass.edu/vegetable/diseases/brassica-downy-mildew>

Corn Pest Trap Counts

| County | CEW | ECB-Z | ECB-E | FAW | WBC |
|--------------|-----|-------|-------|-----|-----|
| Albany | 50 | 1 | 0 | 4 | 3 |
| Clinton 1 | 72 | 0 | 0 | 3 | 3 |
| Clinton 2 | 35 | 0 | 0 | 5 | 2 |
| Columbia | 40 | 3 | 0 | 8 | 2 |
| Dutchess | 7 | 0 | 0 | x | x |
| Montgomery | 19 | 0 | 2 | 2 | 0 |
| Rensselaer 1 | 20 | 0 | 1 | 2 | 1 |
| Ulster 2 | 14 | 0 | 0 | x | 1 |
| Ulster 3 | 19 | 3 | 4 | x | x |
| Ulster 4 | 50 | 0 | 0 | x | 0 |
| Washington | 2 | 0 | 0 | 0 | 0 |

Upcoming Events

Cover Crops Field Day: Tuesday, October 2nd, 4:00-5:30 pm, Willsboro Farm
Join Chuck Bornt, Mike Davis and Amy Ivy to view at a variety of cover crops in both sandy and clay soil plots and discussing management strategies.

Grow a Successful Agritourism Business! Assessing and Managing Your Financial Risk from Agritourism

Bringing visitors to your farm can create new income streams but agritourism can also be a source of risk to your farm business. Five lunchtime seminars will teach how to assess and manage different risks to help develop a successful agritourism business. The seminars will be followed by a panel of successful agritourism operators. In-between each seminar, participants will build on their knowledge to develop their own risk management plan.

This 5-county program will be offered simultaneously in Delaware (the host county), and by Zoom technology in Otsego/Schoharie, Sullivan and Ulster Counties. The Ulster County site, hosted by Liz Higgins of the Eastern NY Commercial Hort Team, will be at the Hudson Valley Lab

Date/Time Topic

- Friday 9/28 Introduction to Risk Management; Assessing and Managing Your Financial Risk from Agritourism
 - Friday 10/5 Assessing and Managing Your Production/Weather Risk From Agritourism
 - Friday 10/12 Assessing and Managing Your Legal Risk From Agritourism
 - Friday 10/19 Assessing and Managing Your Marketing Risk From Agritourism
 - Friday 10/26 Assessing and Managing Your Human Resource Risk From Agritourism
- Friday 11/2 Agritourism Farmer Panel

There is no fee to attend, feel free to bring your own lunch. Snacks and beverages will be provided. Please RSVP so that we can have ensure that we have adequate room and resources.

Registration and more info at: <https://enych.cce.cornell.edu/event.php?id=990>

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