



UMass  
Extension

# Vegetable Notes

For Vegetable Farmers in Massachusetts since 1975



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## CROP CONDITIONS

Greenhouses are buzzing with activity, albeit under a thick blanket of snow in much of the state! Brassicas and onions are popping, early tomatoes are being planted into heated greenhouses, and clean-up projects and tractor maintenance are underway as folks are getting ready for spring. There's still a lot of planning and paper pushing to do, finishing taxes, H2A paperwork, grant applications, and crop planning. It looks like there are fewer supply chain issues this spring compared to the last three years, though prices are still up and labor is still in high demand. Growers are evaluating next steps after seeing huge direct-to-consumer sales increases in deep COVID, which then dipped somewhat in 2021 and 2022. The last few seasons have been a real lesson in the new normal of unpredictable and extreme weather, but growers are more prepared than ever for unusually dry or wet weather, investing in new wells, ponds, and irrigation equipment. We are hopeful as always that 2023 will be a good year for growing veggies and that some of the stresses felt over the last few seasons will continue to abate.

We have a couple early-season workshops coming up, including in-person Produce Safety Alliance trainings in Eastern and Western MA, and a workshop on FSA enrollment and NRCS technical and financial assistance programs coming up on March 30, virtually. And we hope some of you can make it to Parlee Farm on March 31 for the Blueberry Pruning workshop that the Fruit Program is hosting. Check the event section for details and registration!



*Sure signs of spring at Ward's Berry Farm, Sharon, MA*

## PEST ALERTS

**Allium leafminer (ALM)** is active in mid-Atlantic states currently, indicating that it is emerging earlier this year due to the mild winter. MA growers should begin scouting allium crops (overwintered onions, perennial chives, early scallions and onions, emerging garlic) for the characteristic lines of oviposition marks the 1<sup>st</sup> week of April this year. ALM adults will be emerging from fields that were infested last fall, probably where leeks were planted. Plan to cover early allium plantings with row cover or insect netting in April, or plan to scout alliums beginning in April and spray no later than 2 weeks after finding oviposition marks. Effective control can be achieved with applications of dinotefuran (e.g. Scorpion, Venom), cyantraniliprole (e.g. Exirel), and spinetoram (e.g. Radiant). Include a surfactant to prevent material runoff. Organic growers can use Entrust (6 oz/A) + M-Pede (1-1.5% v/v solution), applied 2 times, 2-4 weeks after detection. See the article in this issue for more information about ALM.

## **CONTACT US:**

Contact the UMass Extension Vegetable Program with your farm-related questions, any time of the year. We always do our best to respond to all inquiries. **Office phone:** (413) 577-3976 **Email:** [umassveg@umass.edu](mailto:umassveg@umass.edu)

**Home Gardeners:** Please contact the UMass GreenInfo Help Line with home gardening and homesteading questions, at [greeninfo@umext.umass.edu](mailto:greeninfo@umext.umass.edu).

**Spinach crown mites** were found in greenhouse spinach in Hampshire Co. last week. These almost-microscopic mites feed and lay eggs in the center of spinach plants, causing deformed, crinkly growth. They thrive in cool environments when spinach is growing slowly, making winter greenhouse spinach crops their ideal host. Because they are so hard to see, they are often not found until populations are very high and difficult to control. The mites also feed on organic matter in soil and can therefore persist in soils in the absence of spinach plants. There has been little research conducted on managing spinach crown mites. Infested crops should be tilled in promptly to prevent spread; rotating previously infested tunnels out of spinach for as long as possible is ideal. Few or no pesticides are labeled specifically for spinach crown mite. Miticides that are labeled for use on spinach include: Brigade and Capture (IRAC group 3A), and Prev-AM (Group 25), abamectin materials (Group 6 – check labels to see if greenhouse use is allowed!), Oberon (Group 23 – not allowed for greenhouse use). For organic growers, azadirachtin and/or pyrethrin products may provide some control. Any materials need to be applied to the crown of the plants.

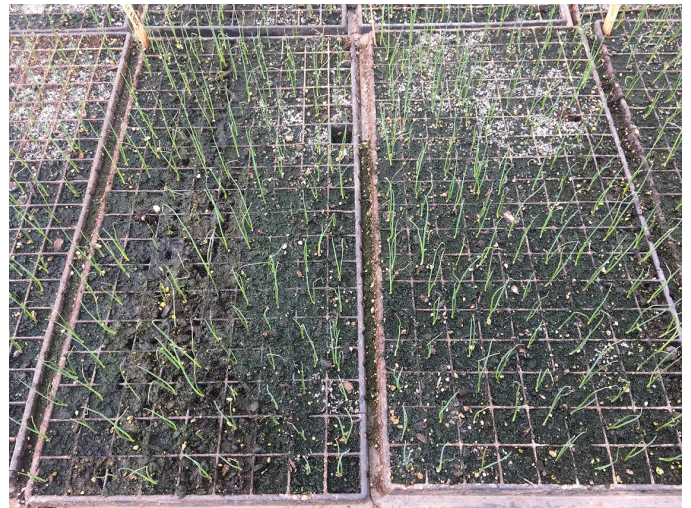


*Spinach crown mite. Photo: A Radin*

## **PREVENT ALGAE IN TRANSPLANTS**

Onions and leeks are some of the earliest crops to be seeded in the greenhouse. Every year we get calls about poor stands and green growth or crust forming on soil in transplant trays. The green growth is algae, which can grow on any greenhouse surface and comes in on dust or irrigation water. Algae thrives in sunny, wet areas with high organic matter, e.g. an overwatered tray full of potting media, especially if the media is compost-based or contains a lot of peat. Algae do not harm plants directly, but can slow gas exchange through media, thereby slowing root growth. Algae also attracts fungus gnats and shore flies, which not only feed on algae and other fungal growth in the growing medium, but also on plant roots, creating wounds where pathogens might gain entry into plant roots. Once you have algae it is hard to get rid of, so how can you prevent algae from growing?

Pre-season cleaning and managing moisture are key in preventing algae in greenhouses. Algae doesn't need potting soil to grow in a greenhouse – it can grow on any moist surface – so thoroughly cleaning and sanitizing your greenhouse benches, floors, trays, and any other surfaces in your greenhouse can help reduce algal “inoculum.” Several algicides are currently registered for algae control in the greenhouse. Disinfectants can be used as part of pre-crop cleanup program and during the cropping cycle for routine algae management. Green-Shield, Physan 20, Triathlon (Quaternary ammonium compounds) can be applied to floors, walls, benches, tools, pots and flats as disinfectants. ZeroTol (Hydrogen Dioxide), is a sanitizer also labeled for use on greenhouse surfaces. Read and



*Plant onions and leeks into small-celled trays to prevent algae from growing on constantly wet soil. Photo: S. Scheufele*

follow directions on these products.

Manage moisture and make sure that your transplants are able to quickly take up all the water you apply when irrigating. Avoid overwatering, especially on cloudy days. Leeks and onions start out so small that if they are planted in a large cell their roots can't access all the water and the soil stays wet and algae begins to grow. Leeks and onions don't need big cells—you can use as small as 288-celled trays!—and they should transplant out well since they have big root systems. You can also achieve faster drying of soil by using lighter media and/or mixing in extra perlite to improve drainage.

## **2023 ALLIUM LEAFMINER EMERGING EARLIER THAN RECENT YEARS**

*-- Written by Karly Regan, Timothy Elkner, and Shelby Fleisher, Penn State University*

*Editors' Note: This article originally appeared in Penn State's Vegetable and Small Fruit Gazette, published March 10, 2023. Where appropriate, we have added information relevant for MA in brackets. [Click here to view the original article.](#)*

The unusually mild weather we've had throughout this winter is leading to earlier emergence than we have seen in recent years. Evidence of leafminer activity has been seen in Maryland and southern New Jersey recently, which indicates it will not be much longer until this pest is seen in Pennsylvania. [In Massachusetts, in recent years, we've started seeing this pest at the end of April in overwintered or early planted onions but expect it might be earlier this year, ~April 15<sup>th</sup>, based on what our neighbors to the south are seeing].



*Allium leafminer adult on scallion leaf.  
Photo: T. Elkner and B. Lingbeek*

Allium leafminer (ALM) is an invasive fly from Poland first detected in Lancaster Co., Pennsylvania, in December 2015 (Fig. 1). [ALM has been established in the Northeast since 2016. It has caused crop damage as far north as Washington County, NY, as far east as central Connecticut, and as far west as the Finger Lakes region of NY.] ALM attacks plants in the Allium genus, including onion, garlic, leek, scallions, shallots, and chives. It overwinters as a pupa in leaf tissue or adjacent soil, emerges in the spring, and adult flight occurs over a 5- to 7-week period. Females puncture leaves with their ovipositor, and both males and females feed on leaf sap. Oviposition results in a characteristic linear series of round wounds (Fig. 2). Larval development progresses to the pupal stage but is then delayed as the pupa undergoes summer aestivation, and they do not emerge again until September for another 5- to 7-week flight.

Knowing when adults start flying helps with management. You can protect crops by applying netting prior to flight and removing it after a flight period ends. In most of PA, now would be the time to get the netting put on. [For MA growers, think about having netting in place by early-April]. If you're in the warmer portions of southeast PA, initial flight may have started, but netting would still protect the plants during the time most of the flight occurs. In past years, flight occurred over about 6–8 weeks. The flight period may be stretched out this year if we keep having intermixing of warm and cool (or near normal) weather.



*Oviposition and feeding scars. Photos: B. Lingbeek*

Another option is to apply insecticides during the flight period, targeting adults and developing larvae. Systemics tend to work best because the larvae are mining inside the leaf tissue. Since Allium leaves are very waxy, a nonionic surfactant is recommended whenever applying insecticides to allium crops. In trials conducted by researchers at Cornell University and Penn State, the highest and most consistent control of ALM occurred using foliar applications of dinotefuran (Scorpion), cyantraniliprole (Exirel), and spinetoram (Radiant). For OMRI-listed options, Spinosad (Entrust) was the best performer. Those trials used weekly applications starting as soon as oviposition/feeding marks are detected. More recent trials suggest that very good control can be achieved by waiting about 2 weeks after the first detection.

That said, knowing when to start is an important question! With the support of PVGA and USDA, we developed a degree-day model. **We estimate that ALM first emerge in the spring after 350° Celsius degree days above a threshold of 1°C, starting from January 1.** This is a bit rougher than most phenology models, but it's the best we have and gives us a general idea of when to begin scouting (see Lingbeek et al 2021). In State College, PA, this tended to coincide with when daffodils and forsythia had been blooming for a week, and ornamental pear was in bloom in urban areas.

You can use the [Northeast Weather Associate](#) to estimate when this occurs for select weather stations. Go to [the NEWA website](#), click 'Weather Tools,' click 'Degree Day Calculator,' choose a site, set the start date to Jan 1 and end date to today, and select base of 1°C as the degree day type. This is important because you must accumulate in °C instead of °F for the 350° threshold. If you use °F, the conversion would mean we need ~650° GDD. Once you make your model selections, the NEWA website will give you a table of accumulated GDD and forecasted predictions for the next week, as well as a cumulative graph to help visualize the trend. In years with warm winters, we have seen some exceptionally early initial emergence, about 10 days before our prediction, but most of the population emerged much closer to our prediction. [Using this GDD baseline, as of March 16, locations in MA are in the 50s in the Berkshires, 80s in the Pioneer Valley, and 140-160 in Eastern MA. In Amherst, we usually reach 350° GDD in late-April. In 2022, we first detected ALM on alliums on April 28, at 367 GDDs – right in line with the model!]

Now (in far southeast PA), and within a few weeks in cooler areas, is the time to start scouting your Allium crops and prepare for management. [In MA, start scouting in early-April]. Finding adults is easiest in the cool temperatures of early morning and by looking at the tops of the leaves. Finding the feeding scars on leaves is often easier than finding adults, especially on onions and when scouting during windy conditions. Most of our first detections were in wild garlic or other weedy alliums along fence lines or forested borders of farms. Among Allium species, we tend to find more ALM in early spring scallions and green onions, so that is also a great place to search.

#### Citations:

- Lingbeek, B., D. Roberts, T. Elkner, M. Gates, and S. J. Fleischer. 2021. Phenology, development, and parasitism of Allium Leafminer (Diptera: Agromyzidae), a recent invasive species in the US. *Environmental Entomology* 50(4): 878-887.
- Nault, B. A., L. E. Iglesias, R. S. Harding, E. A. Grundberg, T. Rusinek, T. Elkner, B. Lingbeek and S. J. Fleischer. 2020. Managing Allium leafminer (Diptera: Agromyzidae): an emerging pest of allium crops in North America. *J. Econ. Entomol.* 113 (5): 2300-2309.
- Nault, B. A., K. R. Sandhi, R. S. Harding, E. A. Grundberg, and T. Rusinek. 2022. Optimizing Spinosyn Insecticide Applications for Allium Leafminer (Diptera: Agromyzidae) Management in Allium Crops. *J. Econ. Entomol.* doi.org/10.1093/jee/toac016

#### Other useful ALM resources for MA growers:

- [Information about ALM in the New England Vegetable Management Guide](#)
- [Preparing for the Fall Flight of Allium Leafminer – September 1, 2022 Veg Notes](#)

## MANAGING FUNGUS GNATS AND SHOREFLIES

**Identification.** Fungus gnat adults are mosquito-like in body shape, about 1/8 inch long, with long legs, a clear pair of wings, and long antennae. Fungus gnats are weak fliers and are frequently observed resting on the media in the pot or running over the foliage or other surfaces. We see them often in spring when gray cool conditions lead to a lot of wet soil as plants are just starting to get going. Their larvae (*Bradysia* spp.) are white and legless, about 1/4 inch long when mature,

and have a shiny black head (Figure 1). Larvae feed on plant roots, sometimes causing damage to seedlings directly when populations are very high, or by allowing for pathogens to attack weakened roots.

The adult fungus gnat is sometimes confused with another small dark-bodied fly called the shore fly, *Scatella stagnalis*. Shore flies have more robust bodies than fungus gnats and their antennae are very short. Their most distinguishing characteristic is the presence of five light-colored spots on each of their dark wings. Shore flies are also stronger, faster fliers than fungus gnats. In the larval stage shore flies can be distinguished by the opaque, tannish-brown color of the body and the absence of a head capsule.

**Damage.** Fungus gnats and shore flies are attracted to damp locations where fungi are apt to flourish. Fungi are a major part of their diet. Studies have shown that fungus gnats develop more rapidly and have greater survival on fungal diets. In the absence of a fungal food source however, fungus gnats are capable of feeding on healthy plant tissue. Fungus gnats are general feeders and can injure a number of flower crops grown in the greenhouse. Adults are primarily a nuisance however, larvae feed on plant roots, fungi and decaying organic matter and tunnel into the crown and stems of plants. The feeding damage creates wounds that allow soilborne pathogens to enter and can kill plants. Fungus gnat larvae may also carry some soil-borne pathogens such as *Pythium*, *Thielaviopsis* and *Fusarium*. Fungus gnats are a common problem on greenhouse crops growing in media that contains a high percentage of peat moss or compost. Larvae present in infested plants or soil can lead to prolonged emergence of adults.

Shore flies are not known to feed on healthy plant tissue. Adult and larval stages of shore flies feed primarily on algae or decaying organic matter and breed in moist environments.

**Life Cycle of Fungus Gnats.** The life cycle of fungus gnats is shown in Figure 2. A female fungus gnat may lay up to 300 whitish eggs in clusters of 20 to 30 or more on the surface or in the crevices of moist soil or potting media rich in organic matter. Eggs hatch in about six days. Larvae feed for 12-14 days before changing into a pupa, which is formed inside a silken pupal chamber in the soil. The pupal stage may last 5-6 days and adults live up to 10 days. The life cycle from egg to adult requires approximately 4 weeks depending on temperature; development time decreases as temperatures increase, as is true of most insects.

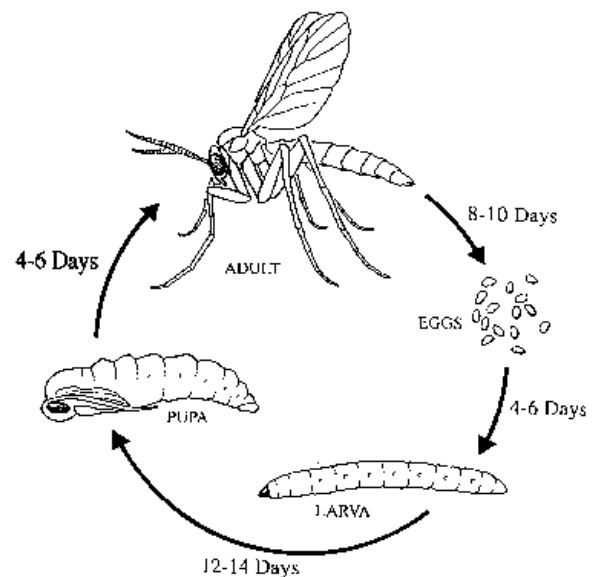
**Life Cycle of Shore Flies.** Eggs are laid singly on the surface of algae. Larvae have eight pairs of short legs and a breathing tube with two dark colored openings called spiracles at the posterior end. Pupation occurs at the edge of the algae mats. Breeding takes place in stagnant and strongly saline water found in greenhouses as a result of excessive irrigation and soil leaching. To reduce shore fly numbers, eliminate algae, avoid over watering, and limit fertilizer run-off.

### Management Strategies

- Fungus gnat and shore fly populations may be partially suppressed by sanitation practices that reduce breeding areas.
- Wet areas under benches should be eliminated if possible by controlling the use of water or changing the construction of the floor. Accumulations of soil, media, or decayed plants under benches should be avoided.
- Potting media should be pasteurized before use if possible.
- Moist potting soil high in organic matter that has been left outdoors for long periods may contain fungus gnat larvae. Fungus gnats and shore flies may also be introduced into the greenhouse in the media of infested plants purchased from other greenhouses.



Fungus gnat larva. Photo: L, Pundt



Life cycle of the fungus gnat

- Keep areas below benches free of spilled potting mix, weeds and other debris in which fungus gnats and shore flies might breed.
- Eliminate standing pools of water on solid benches, on walks, and under benches. This may be accomplished by proper grading and drainage in the greenhouse and by improving watering practices to prevent runoff.
- Eliminate algae as best you can. Several algicides are currently registered for algae control in the greenhouse. Disinfectants can be used as part of pre-crop cleanup program and during the cropping cycle for routine algae management. Green-Shield, Physan 20, Triathlon (Quaternary ammonium compounds) can be applied to floors, walls, benches, tools, pots and flats as disinfectants. ZeroTol (Hydrogen Dioxide), is a sanitizer also labeled for use on greenhouse surfaces. Read and follow directions on these products.
- Thoroughly inspect all incoming plant material and make early treatments.

It should be noted that fungus gnat problems are most serious in potting mixes amended with composts lacking in maturity (not completely composted). Microbial activity is excessively high in such mixes, and fungus gnats thrive.

It has also been reported that a pulse in adult emergence follows watering of pots that were previously allowed to dry down. This expected peak in adult fungus gnat populations can be used to time sprays targeting adults or subsequent drenches aimed at larvae.

Prevention and early detection are the keys to controlling this insect, thus reducing the introduction and spread of disease in the greenhouse.

**Detection and Monitoring.** As with any pest, fungus gnat and shore fly control programs are built on prevention and monitoring. To prevent infestations, establish a weekly scouting/monitoring routine for the duration of the crop.

To monitor for larvae, place raw potato chunks with peel removed on the soil surface. Larvae are attracted to the potato chunks, under which they move and congregate. Check the potato chunks daily for larvae. Potato disks cut one inch in diameter and 1/2 to 1 inch thick work well. Ten potato disks may be sufficient to monitor a 10,000 sq. ft greenhouse. Check disks after 48 hours, and count the number of larvae on each disk and any that are present on the growing medium surface. In addition, choose plants on each bench and inspect the soil surface and around the base of the plant including the stem just below the soil line. Record the location and the level of infestation. Badly infested containers of plants should be removed as they serve as a source of infestation.



*Adult fungus gnat and shore fly on sticky card. Photo: Tina Smith*

Adult flies can be monitored with yellow sticky cards placed at the base of the plant at soil line. Weekly inspections of yellow sticky cards can detect the onset of an infestation, and continued recording of the number of adults per card per week can aid in evaluating the efficacy of control efforts.

Space 3" x 5" yellow sticky cards 1-4 per 1,000 sq. ft. throughout the greenhouse. Place yellow cards in a horizontal position just above the soil surface, or lay them on the top of the pots. For early detection, position cards near doorways and vents or among new plants being placed in the house. If time permits, check the cards twice weekly particularly when temperatures warm up in the spring. Research conducted at Cornell University showed that red sticky traps captured more fungus gnat adults than yellow sticky traps. However, yellow sticky traps are commercially available and can be used for a variety of pests in the greenhouse.

Once fungus gnats and/or shore flies begin appearing on sticky cards (Figure 3) or larvae are seen under potato chunks, then it is time to make treatment decisions.

**Management.** Insect growth regulators, microbials and other pest control materials applied to the growing medium may be effective in controlling fungus gnat larvae. Most pest control materials do not affect eggs or pupae so repeat applica-

tions may be needed.

The soil-borne bacterium *Bacillus thuringiensis israelensis* (Gnatrol) may be used before fungus gnat larval populations are high since the bacterium must be ingested in order to be effective. Applications are more effective on the young larvae (1st instar) than mature (3rd and 4th instars). *Bacillus thuringiensis israelensis* should be applied until fungus gnat populations start to decline. It is not effective against shorefly larvae. Apply a drench or in irrigation system according to label directions. It is reported to be toxic to larvae for only 48 hours, so treatments must be repeated.

**Biological Control.** Several biological control organisms are available for control of fungus gnats including a predaceous mite (*Hypoaspis miles*), the parasitic nematode *Steinernema feltiae*, and the rove beetle *Atheta coriaria*.

Beneficial nematodes and predaceous mites used for fungus gnat control do not appear to work as well against shore flies because of the semi-aquatic environment in which they live. Beneficial nematodes (*S. carpocapsae*) will infect shore fly larvae but may not offer sufficient levels of control in commercial greenhouses. In unsprayed greenhouses, a tiny parasitoid of shore flies, *Hexacola neoscatellae*, occurs naturally in greenhouse and may slow the growth rate of shore fly populations.

*Atheta coriaria* (Rove beetle) (see info below) may be an option for biological control but will not work on Shore fly larvae that are in standing water. *Atheta* is a generalist predator that feeds on fungus gnat and shore fly larvae. All stages of *Atheta* actively search for prey. Because they can fly, adults can travel through a greenhouse, for distribution and faster population development. The adult beetles and the larvae will mainly search for eggs, young larvae and pupae.

***Hypoaspis miles* (Predatory mite):** This predatory mite prefers to feed on first instar fungus gnat larvae and will also feed on thrips pupae. It may also feed on debris and algae. It is important to make releases early in the growing season before fungus gnat larval populations are abundant. Applications can also be directed to the soil beneath greenhouse benches. Avoid applications into the growing media prior to planting because this decreases survival. Applications need to be initiated after planting and the growing medium should be moist but not saturated. *Hypoaspis miles* is active when growing medium temperatures are greater than 50°F.

***Steinernema feltiae*:** This beneficial nematode attacks fungus gnat larvae. Nematodes are applied as a drench to containers or flats and they can also be applied through drip irrigation systems, however filters must be removed. Apply nematodes two to three days after inserting cuttings, planting plugs, or starting seeds. To assess the viability of shipments prior to application, place a small quantity of the product in a shallow container with a few drops of tepid water. After a few minutes, look for active nematodes which have a slight 'J' curve at the ends of their bodies. Repeat applications are usually needed. Growing medium temperatures must be 50-80°F with optimum temperatures of 60-70°F. Irrigate the growing medium before and after applying nematodes. The nematodes require moisture in order to move within the pores of the growing medium. Apply nematodes in the evening or on cloudy days because the nematodes are extremely sensitive to ultraviolet light desiccation. In general, beneficial nematodes are compatible with most pest control materials except for carbamate and organophosphate pesticides.

***Atheta coriaria* (Rove beetle):** The rove beetle is a generalist predator that feeds on fungus gnat and shore fly larvae and reportedly thrips pupae, in the growing medium. Adults are slender, dark brown to black and covered with hairs. The adults are 1/8 inch long with very short wing covers. They fly throughout the greenhouse from original release sites. Larvae are cream to brown in color, depending on age. Both stages inhabit cracks and crevices in the growing medium. Once established in a greenhouse, rove beetles may be present year-round although populations may fluctuate depending on fungus gnat populations. Because they are generalist feeders, they consume other natural enemies including *H. miles*. In addition, young rove beetle larvae may be fed upon by soil-dwelling predatory mites. Rove beetles are commercially available as adults from most biological control suppliers. Optimum temperatures are 65-80°F and relative humidity of 50-85%. Both adults and larvae are difficult to detect by scouting since they



Fungus gnat larvae in soil. Photo: L. Pundt

tend to hide in the cracks and crevices of growing medium. Rove beetles are compatible with beneficial nematodes.

**Hunter Flies:** Yellow sticky cards may trap hunter flies (*Coenosia attenuata*) adults, which either fly into unsprayed greenhouses during the growing season or are introduced on new plant material. Hunter fly adults resemble the common house fly adults. In addition to fungus gnat adults, hunter fly adults attack and feed on shore fly, whitefly and leafminer adults. Adult hunter flies only attack prey that are flying. The soil-dwelling larvae are also predaceous and feed on fungus gnat larvae and other insects in the growing medium.

***Synacra paupera*:** This parasitoid may also be captured on sticky cards especially in unsprayed greenhouses. Females insert eggs into fungus gnat larvae which hatch and feed on the fungus gnat larvae. Parasitized fungus gnat larvae live until pupation, after which an adult *Synacra paupera* emerges. Their maximum rate of increase is higher than fungus gnat larvae at 73°F.

**Pesticide Treatments.** If insecticides are used for treatment, soil treatments (pot drenches and sprays) directed toward the larval stage at the first sign of insect activity are best used to manage fungus gnats. Make sure material is applied to a depth of 1" or more. Materials are most effective when they are retained in the media. Keep this in mind when fertilizers, fungicides and water all need to be applied to plants. For example, if a fungicide and an insecticide is necessary, apply the fungicide first, then water it in with the insecticide. The fungicide will be moved into the root zone where it is needed and the insecticide will stay in the top where it is needed. Some insecticides are labeled for use on greenhouse floors and under benches in addition to treatments to pots. Carefully read and follow all label directions.

Fungus gnats are common pests on plants such as geraniums, poinsettia, begonias and bulbs, especially if soilless mixes high in peat moss or immature compost are used. Insecticides may not affect eggs or pupae, and repeated applications may be necessary.

For a list of pesticides and more information on using biological control to manage fungus gnats see the current issue of the [New England Greenhouse Floriculture Recommendation Guide](#).

### Further Reading

- The University of California's factsheet on [Fungus Gnats, Shore Flies, etc.](#)
- [Using Beneficial Nematodes to Manage Pests in Greenhouses \(video\)](#)

-- Written by Tina Smith, UMass Extension Greenhouse Crops and Floriculture Program Emeritus

## NEWS

### NATIONAL COVER CROP SURVEY

Share your thoughts on cover crops! This is the seventh national survey conducted by the USDA-NIFA Sustainable Agriculture Research and Education (SARE) program, Conservation Technology Information Center (CTIC) and the American Seed Trade Association (ASTA), with the help of Informa/Farm Progress. It helps to guide research and educational priorities. [Click here to take the survey!](#)

### NORTHEAST FOODS FOR SCHOOLS – OPPORTUNITY FOR LOCAL AND SOCIALLY DISADVANTAGED FARMERS AND PRODUCERS

The U.S. Department of Agriculture's Agricultural Marketing Service recently signed a [cooperative agreement](#) with the Massachusetts Department of Elementary and Secondary Education for more than \$3.5 million to improve child nutrition and build new relationships between schools and local farmers. [Massachusetts Farm to School](#) is collaborating with local producers to support connections with schools that are receiving the funds. Farmers interested in selling to schools are encouraged to reach out to Simca Horwitz ([simca@massfarmtoschool.org](mailto:simca@massfarmtoschool.org)) for more information or with any questions.

A key goal of the [Northeast Foods For Schools](#) is to create new procurement relationships between schools and Socially Disadvantaged farmers and small businesses. To that end, MDAR is supporting this effort by establishing a database of Socially Disadvantaged farmers to ensure that self-identified farmers are kept informed of the process. The more



individuals we can reach, the more effective our work will be in the future.

Please complete [this form](#) to self-identify as a Socially Disadvantaged farmer or producer. If you have any questions about how your information will be used, please contact [Rebecca.Davidson@mass.gov](mailto:Rebecca.Davidson@mass.gov).

## **EVENTS**

### **FARMER CLIMATE FORUMS**

**When:** Thursdays, March 16 (TONIGHT!) and 23, 5:00-6:30pm

**Where:** Virtual

**Registration:** [Click here to register.](#)

MOFGA and NOFA-VT invite you to join other farmers from Maine and Vermont for a series of forums focused on water, including management, systems, and adaptation strategies for making it through times of drought and excess precipitation. Each session will begin with a short 30 minute presentation by a guest speaker from UVM Extension. We will then move into a facilitated farmer-to-farmer discussion on the topic.

See the links below for more information on each session.

- **March 16:** [Grassland Water Management with Heather Darby, UVM Extension](#)
- **March 23:** [Whole-Farm Water Management with Joshua Faulkner, UVM Extension](#)

### **HIRING AND RETENTION SERIES FROM PENN STATE EXTENSION (IN SPANISH)**

**When:** Fridays, March 17 (TOMORROW!), 24 and 31, 2:30pm-4:00pm

**Where:** Virtual

**Registration:** Webinars are free, but please register in advance. See individual events below for registration links.

Who are these events for? Anyone responsible for leading a diverse group or team, including farmer owners, managers, and leads, employers, supervisors, aspiring supervisors, team members, human resource managers and recruiters.

- **March 17: Creating Your Workplace Culture and Negotiating Across Diversity.** Cultural groups teach members values, accompanying behaviors, and communication preferences. This webinar will explore the importance of establishing and fostering a healthy culture that promotes the mission and vision of the group. [Learn more and register here.](#)
- **March 24: Building and Preserving Team Trust.** This webinar explores the stages of team development and ways to develop and maintain trust within a collaborative group by setting expectations and building trust. [Learn more and register here.](#)
- **March 31: Empowering Workers and Reducing Stress.** This webinar addresses stress resiliency and employee motivation strategies to build performance and enhance the work environment. [Learn more and register here.](#)

### **MDAR'S VIABILITY PROGRAMS, FOOD SAFETY, & ENVIRONMENTAL GRANT PROGRAMS**

**When:** Tuesday, March 21, 2023, 4-5:30pm

**Where:** Zoom

**Registration:** Free! [Click here to register.](#)

MDAR will be hosting a free one-hour webinar on available funding opportunities for farmers for Fiscal Year 2024 (July 1, 2023 - June 30, 2024). Staff will cover the programs listed below, followed by 30 minutes for Q&A. Join to learn when the upcoming grants will be available, eligibility requirements, project examples, and tips for how to apply. Programs to be covered:

- Ag Food Safety Improvement Program (AFSIP)
- Climate Smart for Agriculture Program (CSAP)
- Farm Viability Enhancement Program (FVEP)

- Matching Enterprise Grant for Agriculture (MEGA)
- APR Improvement Program (AIP)

**Questions?** Contact Laura Barley, [laura.barley@mass.gov](mailto:laura.barley@mass.gov), (857) 507-5548.

### UMASS EXTENSION SOIL MINI-SCHOOL

**When:** Friday, March 24, 2023, 10am-2pm

**Where:** Online and in-person options available. The workshop will consist of 2 hands-on demonstrations that are available to in-person attendees only, and 2 presentations which are available to both in-person and virtual attendees.

**Registration:** [Click here to register.](#)

The UMass Extension Crop, Dairy, Livestock and Equine Program will be hosting a soil health mini school on March 24, 2023. A perfect way to celebrate the first week of spring! Our core audience is agriculture professionals and technical service providers; farmers and researchers are always welcome also.

We'll hear from the director of Indiana's Urban Soil Health program on the unique needs of urban growers, the director of the West Virginia University Soil Testing Lab on soil health testing fact and fiction, and have two hands-on demonstrations in composting and comparing popular aggregate stability tests.

Can't make it in person for the hands on workshops? You can sign up to only attend the two presentations virtually - you won't want to miss them! For a full agenda and more information, [visit the program website here.](#)

**Questions?** Contact Sam Corcoran, [sglazecorcor@umass.edu](mailto:sglazecorcor@umass.edu).

### INTRODUCTION TO FSA AND NRCS ASSISTANCE PROGRAMS

**When:** Thursday, March 30, 12-1pm

**Where:** Online

**Registration:** Free! [Please register in advance here.](#)

This workshop is intended for beginning growers who have never worked with these organizations before and for producers who are familiar with FSA and NRCS Programs but have questions about the process and/or programs.

We will hear from Bailey Albert and Jack Loomis, Farm Service Agency (FSA) and Natural Resource Conservation Service (NRCS) Outreach Coordinators, respectively, as well as from Stephen Taranto, Climate Program Coordinator at Community Involved in Sustaining Agriculture (CISA) and Shannon Hickey, Program Manager at Southeastern MA Ag Partnership (SEMAP)—Buy-Local groups based in Western and Eastern MA, respectively—that offer assistance to growers interested in participating in FSA and NRCS programs. [For more information, click here.](#)

The presentation will cover:

- An overview of FSA and NRCS technical and financial assistance programs
- How to connect with your local service centers to receive tailored support
- Important things to know about the process and realistic timelines
- Assistance available from certain Buy-Local groups

*This event is co-sponsored by the UMass Extension Vegetable Program, Community Involved in Sustaining Agriculture (CISA), Southeastern Massachusetts Agricultural Partnership (SEMAP), Sustainable Business Network of Greater Boston (SBN), and Sustainable Nantucket.*

### NEVBGA BLUEBERRY PRUNING MEETING

**When:** Friday, March 31, 2023, 10am-12pm

**Where:** Parlee Farm, 95 Farwell Rd., Tyngsborough, MA 01879

**Registration:** Free for NEVBGA members and MA Fruit Growers Association members. Non-members \$20. RSVP to Chris Grant by March 29 at [nevbga@gmail.com](mailto:nevbga@gmail.com) or 978-423-6694.

This hands-on blueberry pruning meeting will demonstrate pruning techniques for experienced and new commercial

growers. Instructors: Mary Concklin, UConn Emeritus and small fruit grower, along with Evan Lentz of UConn will discuss assessing and managing new and old plantings, pruning for high yields, canopy management, and aisle and weed control considerations.

[Click here for more information](#)

*\*1 pesticide recertification credit has been approved for this meeting.*

## **UPCOMING UMASS PRODUCE SAFETY ALLIANCE GROWER TRAININGS**

**When:** March 29 (Amherst) and April 12 (Bridgewater), 8:30am-5:00pm

**Where:** See details below.

**Registration:** Cost is \$50 for each program and includes the required PSA Grower Manual (\$60 value), a Certificate of Course attendance from AFDO (\$35 value), and lunch and refreshments. See below for individual registration links.

**Who Should Attend:** Fruit and vegetable growers and others interested in learning about produce safety, the Food Safety Modernization Act (FSMA) Produce Safety Rule, Good Agricultural Practices (GAPs), and co-management of natural resources and food safety. This course will also cover the Massachusetts Commonwealth Quality Program (CQP), a voluntary 3rd-party audit program. This training satisfies the FSMA Produce Safety Rule requirement for covered farms that “at least one supervisor or responsible party” completes “food safety training ... recognized as adequate” by FDA (21 C.F.R. §112.22(c)). [For more information on the Produce Safety Alliance and the Grower Training Course, click here.](#)

### **Amherst**

**When:** Wednesday, March 29, 2023 - 8:30am to 5:00pm

**Where:** Hampshire College, 893 West St., Franklin Patterson Hall Faculty Lounge, Amherst, MA, 01002

**Registration:** [Click here to register](#)

### **Bridgewater**

**When:** Wednesday, April 12, 2023 - 8:30am to 5:00pm

**Where:** Bridgewater State University, 351 Great Hill Drive, Weygand Hall Room 1047, Bridgewater, MA, 02324

**Registration:** [Click here to register](#)

*This program is co-hosted by UMass Extension and the MDAR Produce Safety Program. Questions? Contact Lisa McKeag, [lmkeag@umass.edu](mailto:lmkeag@umass.edu), 413-658-8631*

## **AG DAY AT THE STATE HOUSE SET FOR APRIL 12, 2023!**

Agriculture Day at the State House will take place on Wednesday, April 12, 2023 from 10AM to 2PM. MDAR is excited to have the opportunity for farmers and growers to return to Beacon Hill to meet with lawmakers to promote and discuss all the issues impacting the agricultural industry in Massachusetts. Thanks to those who have already replied expressing interest in serving on the planning committee. If you would like to be involved in the planning of Ag Day, please email Phu Mai at [Phu.Mai@mass.gov](mailto:Phu.Mai@mass.gov) with your contact information and agricultural affiliation. MDAR hopes to convene a meeting of the committee sometime this month before Thanksgiving. As one of the marquee days of the year at the State House, MDAR is looking forward to working with stakeholder groups to make Ag Day 2023 one to remember!

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*Vegetable Notes. Genevieve Higgins, Lisa McKeag, Susan Scheufele, Hannah Whitehead, Maggie Ng co-editors. All photos in this publication are credited to the UMass Extension Vegetable Program unless otherwise noted.*

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