UMass Extension
Vegetable Notes
For Vegetable Farmers in Massachusetts since 1975

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In this issue:

We are starting to monitor for allium leafminer in fall leek crops, which are sizing up nicely – we'll keep you posted!

Crop conditions

Temperatures are dropping and it's starting to feel like fall is around the corner. It's been a relief to have a dry, relatively cool, smoke-less week, and then of course there is rain forecast for tonight and tomorrow. Last plantings of brassicas and greens are going in the ground now, and tomatoes, peppers, and sweet corn are continuing to roll in. We're of course still seeing effects of the wet year, with lots of diseases out there, gaps in sweet corn where folks couldn't get into fields to plant, and some growers wondering if their winter squash will ever size up (remember last year when it was so hot and dry that folks had pumpkins ready in August?!). Fall crops that have made it through the summer are on their way, and growers are making plans for fall markets.

Pest alerts

Alliums

Bacterial diseases like slippery skin and fungal diseases like Botrytis neck rot and purple blotch are being reported as onions come in. If an onion crop has significant bacterial disease symptoms – 1-2 leaves that have died back amidst otherwise healthy leaves, water-soaked lesions on foliage, any soft, watery rot in the foliage – don't plan to store them for a long time, as disease will progress into the bulb and cause rot in storage. If you are storing, make sure you have good curing conditions (75-80°F, 70-80% relative humidity, and good air flow) that will allow the onions to dry down well.

Allium leafminer: The fall flight of allium leafminer will begin in the next 2-4 weeks. If you plan to cover your fall alliums to prevent egg-laying, get covers on now. See the article in this issue for more information and management recommendations.

Wilting and dieback of onion foliage caused by sour skin, a bacterial disease. Photo: R. M. Davis

Brassicas

Alternaria leaf spot and head rot is continuing to spread in untreated fields and infect newly planted brassicas. Characteristic symptoms of Alternaria are leaf spots with concentric rings, yellow halos, and fuzzy black sporulation. There are no bras-

sica cultivars that are resistant to Alternaria. Fungicides can control this disease if applied early and often—see this info from Cornell Cooperative Extension. Till under infected crops promptly after harvest this year to reduce the amount of inoculum overwintering in the field, and rotate next spring's brassica crops far from this fall's crops.

Black rot on cabbage

Cutworm damage and the culprit. Photo: A. Eaton

Black rot is also present in brassica fields now. This bacterial pathogen enters leaves through the hydathodes (the open ends of the xylem vessels at the edges of leaves), creating characteristic V-shaped yellowing. It can also be spread by rainsplash, workers and equipment in the field, and flea beetles. Copper may provide some control of black rot if it is applied before a crop becomes infected and with continued sprays at 7–10-day intervals after symptoms develop. As with Alternaria, till under infected crops immediately after harvest and practice 3-year crop rotations out of brassicas.

Cutworms are actively feeding on foliage and snipping off younger transplants at the base. Cutworms feed at night, often pulling entire snipped plants under the soil to feed, and hide in the soil during the day, resulting in mysterious plant disappearances. Digging up a handful of soil around a cut plant often reveals a thick, gray cutworm caterpillar curled into a tight "C" shape. See our article in the June 29, 2023 issue of Veg Notes for management recommendations.

Spray injury has been reported in brassicas where copper was applied along with a spreader adjuvant. Phytotoxicity from copper fungicides can occur when ionic copper moves into plant tissue and reaches a level that the plant cannot tolerate. Adjuvants are commonly included in brassica sprays to help materials stick to the waxy leaves but should not be included when applying copper as it increases the likelihood of this phytotoxicity.

Swede midge is likely to be active in brassica crops now. This is a tiny fly pest that lays eggs in the growing point of brassica plants. Larval feeding causes distortion or death of the growing point, sometimes leading to multiple heads forming, twisting of petioles and leaves, and scarring on stems and petioles. See more pictures in our article in the February 20, 2020 issue of Veg Notes. Once widespread symptoms develop, the larvae have dropped to the soil to pupate, so effective chemical control depends on applying as soon as adults are caught in pheromone traps or symptoms start developing. Systemic materials are most effective as larvae are protected within the growing points. This is a new pest in the region that we are tracking—let us know at umassveg@umass.edu if you see symptoms in your crops and we can advise on management for next year.

Blind head (left) and petiole scarring (right) caused by swede midge larval feeding in broccoli. Photos: Cornell Cooperative Extension

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

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

Chenopods

Cercospora leaf spot is present in beets and Swiss chard. This fungal disease causes round leaf spots, surrounded by red halos on red varieties. In severe infections, the spots coalesce into large, blighted areas. There are no resistant varieties available. Fungicide applications, started as soon as symptoms develop, can control Cercospora. Tilt (FRAC Group 3) is most effective and should be used first, then rotated with other materials, including Fontelis (7), and Merivon (7 + 11) for resistance management. Resistance to Group 11 fungicides (e.g. Quadris, Cabrio, Flint) has been recorded and so it is not recommended to use these materials alone. Organic growers can tank mix Double Nickel with copper to reduce Cercospora incidence.

Cercospora on beet leaves.

Leafminers are mining in spinach now. These larvae will fall to the soil to pupate and will overwinter as pupae, emerging from the same fields in the spring to find host crops. So, plan to rotate spring chenopods far from infested fall fields. If mining has just begun, chemical control can be effective. Use translaminar or systemic materials to target larvae within the leaf. For organic growers, Entrust has some translaminar activity, especially if applied with a spreader-sticker. Infested leaves can be picked and destroyed (feed to chickens, throw in trash, squish, but don't put in the cull pile!). Till in infested crops as soon as harvest is complete.

Cucurbits

Cucurbit downy mildew (CDM) was confirmed on cantaloupe in Franklin Co., MA this week. CDM is spreading through New England in cucumbers and was also reported on butternut in PA. Growers should continue to spray cucumbers, cantaloupe, and also butternut and other winter squash with targeted + broad-spectrum fungicides regularly. Rotate between targeted materials for resistance management. Chlorothalonil and copper are the best broad-spectrum options at this point in the season, as they are also effective protectants against powdery mildew.

Cucurbit powdery mildew: We are seeing less powdery mildew than usual this year because it has actually been *too wet* for the disease—the pathogen requires high humidity to infect leaves but is inhibited by leaf wetness.

Cucurbit powdery mildew

We are working on identifying **viruses** present in winter squash crops now. Some cucurbit viruses can have alternative or weed hosts, and can be transmitted by aphids and can be carried within the aphids for varying amounts of time, affecting whether chemical control of the aphids is an effective management strategy. So, identifying the specific viruses present will help us formulate management recommendations. Let us know at umassveg@umass.edu if you are seeing virus symptoms in your winter squash crops now! See our article in the August 11, 2022 issue of Veg Notes for lots of photos of virus symptoms.

Nightshades

Broad mite damage is occurring in tunnel peppers now. Broad mites feed in growing points and inject a toxin as they feed, causing distortion and cell death. In severe infestations, they will feed on fruit, causing russeting on the skin of the fruit. Predatory mites (*Phytoseiulus persimilis* and *Amblyseius fallicis*) can be used to control broad mites if infestations are caught early on. Early or preventative control is also essential for effective chemical control. Use mite-selective materials wherever possible to conserve beneficial insects and prevent aphid outbreaks. Materials include Agri-Mek (IRAC Group 6), Acramite (25), Movento (23), Oberon (23), Kanemite (20B), and Portal XLO (21A). Organic growers can use M-Pede and horticultural oils (e.g. Trilogy, Suffoil X, Golden Pest Spray Oil).

Broad mite damage on pepper. Photo: S. B. Scheufele

Verticillium wilt in eggplant. Photo: G. Higgins

Verticillium wilt is present in eggplant crops now. Characteristic symptoms are leaves that have yellowed and wilted on just one side of the plant, resulting from this vascular fungus infecting only some of the leaf's water-conducting vessels. Verticillium is a soil-borne fungus and chemical controls are largely not effective. Practice long rotations out of solanaceous crops to reduce the amount of inoculum surviving in the soil. Some varieties are more tolerant to the disease and produce good yields despite the infection.

Late blight was reported in Tomkins and Onondaga Cos., NY this week (slightly more east than the previous report), on both potato and tomato. Lots of tomato crops are already looking pretty rough with widespread early blight, Septoria leaf spot, leaf mold, and Stemphylium leaf spot, but regular fungicide sprays can protect the crop when used preventatively. Switch from broad-spectrum or targeted fungicides to oomycete-targeted materials once late-blight is present in the area. The most effective targeted materials in potato are Curzate (FRAC Group 27), Tanos (11 + 27), and Previcur Flex (28). Those materials are also effective for tomato, as are Ridomil (4), Presidio (43), Revus Top (40 + 3) and Forum (40). See the article in the August 3, 2017 (the last time we had late blight in MA!) issue of Veg Notes for more info on chemical control.

Sweet Corn

Corn earworm numbers are up again from last week, while European corn borer and fall armyworm trap counts remain low. These CEW trap counts are starting to look more like the mid-summer numbers we'd expect, putting most growers on 4-day spray schedules.

Northern corn leaf blight was reported in NY. This disease typically starts in older corn and moves to younger corn. Plan to use resistant varieties later in the season. Till in successions promptly after harvest to reduce the amount of inoculum floating around. This is usually not an economically important disease, but in a wet year like this one, it may cause some significant damage.

Symptoms of northern corn leaf blight in the field. Photo: R. L. Wick

Multiple Crops

We've seen several cases of "**inside out" fruit** in tomato, eggplant, and zucchini this year. We're not entirely sure what's causing this, but suspect genetic mutants--it sure looks weird, but is

usually only affecting a few fruit here and there. Let us know if you're seeing it in your crops!

Phytophthora blight is on the top of lots of growers' minds, as the earliest squash harvests start. If this year's rainy weather resulted in newly infested fields, or revealed previous infestations that you weren't aware of, plan ahead for next year's crop rotations and/or fungicide sprays. See the article in the July 13, 2023 issue of Veg Notes for cultural control recommendations and in-season management tips.

An "inside out" eggplant. Photo: S. Ghimire

Table 2. Corn earworm spray intervals based on Heliothis trap moth captures

Moths per night	Moths per week	Spray interval
0 - 0.2	0 - 1.4	no spray
0.2 - 0.5	1.4 - 3.5	6 days
0.5 - 1	3.5 - 7	5 days
1 - 13	7 - 91	4 days
Over 13	Over 91	3 days

Table 3. Sweetcorn pest trap captures for week ending August 23

Location	GDD* (base 50°F)	ECB NY	ECB IA	FAW	CEW	CEW Spray Interval
Western MA						
Feeding Hills	2078	1	0	2	45	4 days
Southwick		0	0	5	14	4 days
Granby	1994	14	0	4	23	4 days
Whately	2079	0	1	0	37	4 days
Central MA						
Leominster	2140	5	0	2	147	3 days
Lancaster		0	0	1	12	4 days
North Grafton	1835	-	-	-	-	-
Spencer	1933	0	0	0	12	4 days
Eastern MA						
Bolton	1974	0	0	0	10	4 days
Concord	1947	10	0	0	42	4 days
Haverhill*	2020	27	0	0	55	4 days
Ipswich*	1925	17	0	0	70	4 days
Millis	-	4	2	n/a	82	4 days
North Easton	2062	0	0	0	19	4 days
Sharon		1	0	3	38	4 days
Sherborn	2063	12	0	0	25	4 days
Seekonk	1991	0	0	0	178	3 days
Swansea		0	0	0	42	4 days

- no numbers reported for this trap
N/A this site does not trap for this pest

*GDDs are reported from the nearest weather station to the trapping site

Harvesting & Curing Potatoes

Potatoes harvest is happening now across the state. As our colleagues at University of Vermont Extension like to say, "storage is a hotel, not a hospital," meaning that storage cannot improve the quality of tubers, it can only maintain quality at best. So, harvest when environmental conditions are as ideal as possible and pay careful attention to pre-harvest preparation to ensure that the highest quality potatoes come out of the field.

Optimum Environmental Conditions for Harvest

As cooler weather approaches, conditions become favorable for harvest and curing potatoes for long-term storage. Optimum environmental conditions for harvest are soil temperatures of 45-65°F, tuber temperatures of 50-50°F, and soil moisture at 60% and 80% of field capacity for loam and sandy soils, respectively. This level of soil moisture ensures that soil clods are not so hard that they damage skins during harvest and not so moist that they remain stuck to potatoes as they are brought into storage. Temperatures below 45°F will increase tuber bruising and temperatures above 60°F can increase transpiration and drying of potatoes or development of disease in storage. **Vine-kill should take place about 2-3 weeks before these environmental conditions are expected.**

Pre-Harvest Preparation

Vine killing stops tuber growth at the desired size after bulking, stabilizes the tuber solids, controls hollow heart disorder, promotes skin set, and allows for easier digging and harvesting. Vines may have died down naturally but if they are still green, mow or use a vine desiccant to kill the plants once tubers are mature (see "Maturity" below to know when tubers are ready). Killing vines also reduces the risk of late blight that can cause tuber infections, as the pathogen requires a living host to grow and produce spores.

Skin set is achieved by allowing 2-3 weeks for tuber skins to mature in the field after vine kill. During bulking, the outermost layer of potato skin is only loosely attached to underlying tissues, to allow for rapid growth of the tuber without the skin cracking. The cells in this layer are soft and easily damaged. Vine kill on mature potatoes will initiate "skin set"—the outermost layer of skin cells will begin to bind tightly to the underlying tissues and produce suberin, creating a tough, durable skin that is resistant to infection and dehydration. Good skin set greatly reduces the amount of wounding at harvest and increases the storability of tubers.

Maturity is achieved when the tuber skins are fully developed and are difficult to remove. Periodically dig a few plants to see how easily the skins peel. Sugar content is another index of maturity for processing potatoes, with both immaturity and over-maturity resulting in higher sugar levels. Mature potatoes resist bruising and have lower respiration rates than immature potatoes.

Harvest practices to prevent wounding and bruising

Check harvesting and transporting equipment before harvest begins to make sure it is working properly and does not bruise or wound tubers, and continue to inspect during harvest to determine injury points. Potatoes should not drop more than 4-6" and all equipment surfaces should be padded. Replace bare chains with rubberized links where possible, except for the primary chain. Adjust chain and ground speed so that chains are loaded to full capacity during harvest, and potatoes will "flow" rather than drop from one chain to another. In many cases, increasing ground speed helps to achieve this. Adjust the digger blade so that potatoes flow onto the upper surface of the chain rather than bumping into the front. Ensure that digger blades will cut cleanly through the soil – control weeds prior to harvest to avoid tangling and sharpen blades before harvesting.

Potato harvest

Curing: During the first 2-3 weeks of storage, wounds and bruises from harvest are suberized (meaning that suberin develops to convert cell walls to cork tissue) to prevent invasion of pathogens. This process is called curing, and it is essential for completing skin set.

Maintain temperatures at 50-60°F. Harvesting when pulp temperatures are already in this range is ideal. The ability to move from field to curing temperatures will depend on storage ventilation systems, varieties, availability of cooling air, and humidity controls. If potatoes are harvested during hot weather and cool off slowly, the likelihood of storage rot is increased. If active refrigeration is available, potatoes can be harvested at 62-65°F pulp temperature and cooled effectively. Storage areas with no refrigeration should not be loaded with potatoes with a pulp temperature above 60°F.

Maintain relative humidity at 85-95%. Low relative humidity will result in poor suberization. During the curing phase, tubers will lose moisture through cuts and bruises and incompletely suberized skin. As much as 2-4% of the tuber weight can be lost in the form of water during the first month in storage. If managed properly, this water loss can be minimized and, if captured, this lost moisture can be used to maintain the high relative humidity needed during curing for 3-6 hours per day. A humidifier can also be used to maintain proper humidity.

Uniform air movement is necessary during curing to remove heat from the field and from respiring tubers, to supply oxygen, and to prevent condensation within the pile. Monitor temperatures within the tuber bins or pile to avoid heat buildup, which increases the incidence of tuber rot. In a through-the-pile forced air ventilation system, fans should be operated minimally—usually 1-2 hours per day provides sufficient oxygen but minimizes moisture loss.

Curing and storage must take place in the dark since even low light levels can cause development of chlorophyll

(greening) and solanine, a toxic, bitter compound, in tuber skins, rendering tubers unmarketable. 1-2 weeks in low light can result in greening, and higher light levels cause faster greening.

Curing infrastructure: Curing may be accomplished within the space that will be used for storage, or in a different location. Diversified farms and those who are in the process of building up their fall/winter storage infrastructure may find it more challenging to provide the appropriate conditions for curing. On a small scale (up to about 1100 cubic feet), curing can be accomplished using a Cool-bot and humidifier in an insulated space. A combination of vents and fans to exhaust warm air and bring in cool air, controlled with relative humidity and temperature sensors, can make best use of outdoor conditions to manage the indoor environment. Good environmental control is very difficult in an open barn situation.

When tuber quality is poor: Potatoes affected by freezing injury, Pythium leak, late blight, or soft rot will break down at normal curing temperatures. If this is the case, eliminate the curing period – grade out the rot and sell immediately, or cool rapidly to 45°F with low to medium relative humidity. Questionable potato lots should be harvested closer to 55° F if they must be stored. Chilling injury is cumulative and is worse the longer the tubers are in chilling temperatures. Freezing occurs at 30°F, but chilling injury can occur after a few weeks at 32°F.

Disease Management

Late blight is present in NY and it is possible that it will arrive in MA before potato harvest is complete. When late blight is around, spores can be carried by rainwater onto tubers and cause problems in storage. The pathogen can only survive on living tissue, so vine kill is key in disease management if late blight is present on the foliage. If black scurf (*Rhizoctonia* spp.) or silver scurf (*Helminthosporium solani*) are present, they will increase in severity as long as tubers remain in the soil. Wireworms can also cause tuber damage. If markets are ready or suitable storage space is available, minimize the effects of these diseases and pests by starting harvest as soon as skins are set.

If the soil is wet during harvest, soil may adhere to the tubers and promote infection by soft rot organisms. Potato fields that have been saturated with water will be especially prone to post-harvest diseases. Bacterial soft rot (*Erwinia* spp.), Fusarium dry rot, pink rot (*Phytophthora erythroseptica*), and Pythium leak are four serious tuber rotting pathogens that cause the most significant losses in storage (see "Potato Tuber Diseases" in the August 5, 2021 Vegetable Notes). A good online resource on tuber diseases can be found at https://www.vegetables.cornell.edu/pest-management/disease-factsheets/detection-of-potato-tuber-diseases-defects/. However, finding a photo online that looks like your problem is not the same as having a plant pathologist confirm what is on YOUR tubers! Send samples to the UMass Plant Diagnostic Lab to get an accurate diagnosis. Proper identification is key as different tuber blights require different management techniques. Grade out diseased tubers before storage as much as possible, as some diseases can spread in storage.

Cooling and Storage

After the curing period, cool tubers as soon as possible, but do so gradually and steadily to reach the holding temperature. Ideal holding conditions are as follows: 80-90% relative humidity and 38-40°F for tablestock and seed potatoes, 45-50°F for chipping, and 50-55°F for French fry stock.

Sterilizing Storage

An important aspect of potato disease control in storage is providing a pathogen-free environment. All storage and potato handling surfaces should be thoroughly cleaned and disinfected prior to putting the crop in storage. Surfaces should be well-moistened with disinfectant spray. Spray bin walls until there is slight runoff. Recommended disinfectants are quaternary ammonium compounds such as Hyamine 2389. Bins or equipment treated with quaternary compounds must be rinsed with clean water before coming into contact with potatoes intended for human consumption. Read disinfectant labels carefully regarding use on walls or floors versus use on food-contact surfaces and to determine suitability for your needs. Organic produce may not come in contact with surfaces that have been treated with quaternary ammonium compounds. Chlorine, ozone, and peroxyacetic acid are approved disinfectants for organic produce. See the fact sheet Introduction to Selecting an EPA-Labeled Sanitizer by the Produce Safety Alliance for more information on choosing an appropriate sanitizing agent.

Sprout inhibitors may be needed depending on storage goals, storage conditions, and cultivar. Potatoes harvested in warm temperatures will be more likely to sprout in storage. Later maturity varieties usually have a longer period of dormancy (2-3 months).

--Written by K. Campbell-Nelson, M.B. Dicklow, and R. Hazzard

Preparing for the Fall Flight of the Allium Leafminer

--Written by Ethan Grundberg, Cornel Cooperative Extension. Adapted for Massachusetts growers.

The invasive fly pest, allium leafminer (*Phytomyza gymnostoma*), has been established in the Northeast since 2016 and 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 (see map on next page for known distribution). In research trials, the fall flight has caused damage to over 98% of leeks that were not covered or managed with insecticides. Now is the time to plan for managing allium leafminer (ALM) in the coming weeks.

Top: ALM pupae in a leek. Note the soft rot in the larval mines. Photo T. Rusinek.
Bottom: ALM oviposition marks on a scallion leaf. Photo: M. Ng

Lifecycle: Researchers at Penn State recently developed a growing degree day model for the spring flight of ALM, but we do not have an accurate model to allow us to predict the emergence of the *fall* flight. Over the last several years, fall ALM adult activity has begun in early- to-mid-September, so we anticipate a similar emergence time this year. Adults are active for approximately 7 weeks, or through the end of October. Emerged 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 winter and early spring. The spring generation typically emerges in mid-April (at 350 GDDs base 1°C starting January 1) and is active for about 5-6 weeks.

Damage: Since there are typically fewer cultivated and wild alliums in the environment in the fall, growers have experienced a "concentration effect" with their fall-grown alliums, which are mostly leeks. Leeks that were not treated with insecticides averaged over 40 maggots and pupae per plant, with a high of 160, in research trials conducted by Teresa Rusinek and Ethan Grundberg of Cornell Cooperative Extension in the fall of 2020. Much smaller populations of allium leafminer can still be problematic, causing cosmetic damage to scallion foliage and opening physical wounds in leeks where soft rot bacteria can ruin the crop.

Cultural Controls: Growers relying on row cover to exclude adult flies from host crops should install the covers before the flight begins. Field trials funded by Northeast SARE in 2020-21 demonstrated that waiting until two weeks after the fall flight had begun to cover leeks resulted in much higher densities of ALM larvae and pupae in the plants (see more information from the trials here). Growers have had success using insect netting, like Protek-Net, to reduce the risk of heat stress associated with spunbound covers. Both spunbound row cover and insect netting must be well-anchored to prevent gaps between the ground and the crop in order to be effective.

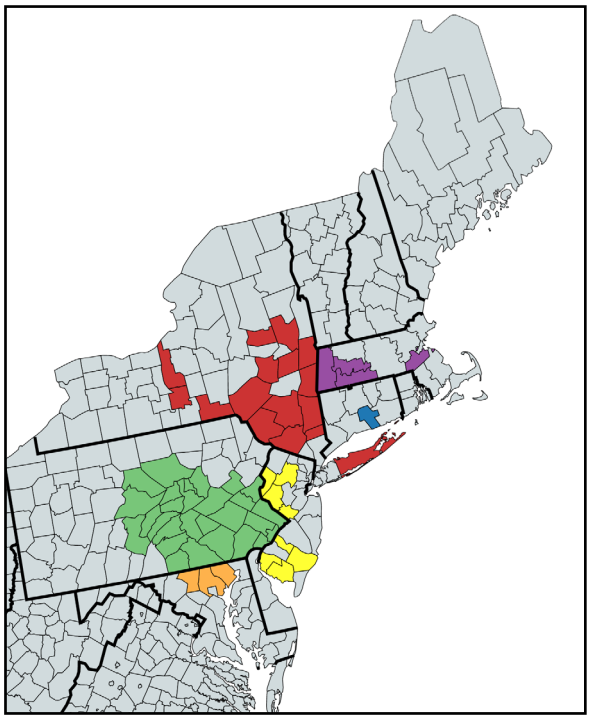
Rusinek and Grundberg have also found that ALM severity was reduced by about 33% in both spring and fall scallions as well as fall leeks when those alliums were planted on reflective plastic mulch compared to either black or white plastic. However, unsprayed fall leeks on reflective mulch in 2019 still had, on average, over 30 ALM maggots and pupae per plant, so using reflective mulch alone does not appear to provide sufficient suppression. Rusinek and Grundberg have found that combining reflective plastic mulch with two carefully timed applications of Entrust with M-Pede (see chemical controls below) has resulted in up to a 92% reduction in the number of ALM maggots and pupae in leeks compared to unsprayed leeks on white plastic mulch.

Chemical Controls: Cornell entomologist Dr. Brian Nault has been conducting insecticide efficacy trials for ALM management since fall 2017. Based on preliminary findings from those trials, it appears as if a number of conventional chem-

istries are effective at reducing damage from ALM on transplanted onions and scallions.

- **Scorpion 35 SL** (dinotefuran, IRAC Group 4A) has been the most effective at reducing damage from ALM in both NY trials and in Pennsylvania. It is registered for use in all New England states but is *not* registered for use in New York State. Scorpion is labeled for foliar and soil applications, but foliar applications at 7 fl oz/acre were found to be significantly more effective than drip applications.
- **Exirel** (cyantraniliprole, IRAC Group 28). 2(ee) label required for NY growers -- available here: https://www.dec.ny.gov/nyspad/products?3. 13.5 fl oz/acre
- **Radiant** (spinetoram, IRAC Group 5) at 8 fl oz/acre
- **Warrior II with Zeon Technology** (lambda-Cyhalothrin, IRAC Group 3A) at 1.6 fl oz/acre

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 Radiant and Exirel (cyantraniliprole, the active ingredient, is also in the pre-mix product Minecto Pro and counts toward maximum active ingredient application rates).



ALM distribution map, updated spring 2023.

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. Given the resistance management restrictions on the Entrust label, growers are only able to make 2 sequential applications of spinosad before rotating to an insecticide in a different IRAC group. Given these restrictions, Rusinek and Grundberg designed trials in 2018 and 2019 to identify the most effective timing of 2 applications of Entrust plus M-Pede on leeks. This research found that **focusing those 2 sprays 2 to 4 weeks after first detected ALM emergence provided the best control in fall leeks**. As mentioned above, combining those two insecticide applications with reflective plastic mulch provided the largest numeric decrease in ALM maggots and pupae per leek in trials in 2019 (see graph). Pyganic, Surround, and Aza-Direct did not provide any statistically significant reduction in ALM damage in trials conducted by Dr. Nault. Dr. Nault also compared the efficacy of Entrust with Nu-Film P to the performance of Entrust with M-Pede in at least one of his trials and found that adding Nu-Film, an aggressive sticker, resulted in more allium leafminer damage.

We suspect that the current geographic distribution of ALM in MA is wider than reported, so growers across MA and CT, in the Hudson Valley, and north of the Capital District in NY should be on the lookout for signs of activity. 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 beginning the first week of September until activity is observed. If you have any questions about what you are seeing in your fall alliums, please contact your state Extension specialists. For MA growers, the UMass Extension Vegetable Program can be reached at umassveg@umass.edu or (413) 577-3976.

Additional Resources:

- Eastern New York Vegetable News Podcast Allium Leafminer Update
- UMass Pest of the Year Allium Leafminer Presentation

News

MA Farm Resiliency Fund Applications are Now Open: Register by August 25

If your farm has gross sales of $10K or more and has been impacted by the July rains and flooding, please fill out this application to request grant funding. Registration for this first round of funding is due **August 25.**

Please note that this private fund is distinct from the state Agricultural Disaster Fund, details about which have yet to be announced.

Northeast SARE Farmer Grant Program Now Open

The Call for 2024 Northeast SARE Farmer Grants is now available. Approximately $800,000 has been allocated to fund projects for this grant cycle. Awards of up to $30,000 are available, depending on the complexity of a project. The online system for submitting proposals will open on September 15,2023.

Proposals are due no later than 5:00 p.m. EST on November 14, 2023.

Northeast SARE Farmer Grants provide the resources farmers need to explore new concepts in sustainable agriculture conducted through experiments, surveys, prototypes, on-farm demonstrations or other research and education techniques. Projects address issues that affect farming with long-term sustainability in mind.

Farmer Grants are designed to be a strong starting point for farmers interested in pursuing grant funding for projects. Before starting their proposals, potential candidates identify a Technical Advisor who can provide non-farming expertise in areas such as research design, troubleshooting, and promotion. The Technical Advisor acts as a go-to support person throughout the grant project, making it easier on first time grantees and forging new relationships in agricultural communities across the Northeast.

Northeast SARE funds projects in a wide variety of topics, including marketing and business, crop production, raising livestock, aquaculture, social sustainability, climate-smart agriculture practices, urban and Indigenous agriculture and more. Click here to see examples of funded Farmer Grant projects.

Northeast SARE covers the Northeast and Mid-Atlantic states of Connecticut, Delaware, Maine, Massachusetts, Maryland, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, West Virginia, Vermont, and Washington, D.C

FY2024 Agricultural Food Safety Improvement Program (AFSIP) – Round II

A second round of MDAR's AFSIP Grant has been posted with a due date of **Friday, October 6, 2023**

MDAR is now accepting applications from produce and aquaculture operations who wish to participate in the Department's Agricultural Food Safety Improvement Program (AFSIP). Interested operations are encouraged to review the Request for Response (RFR) on the AFSIP website. If interested in applying, applications must be submitted with any additional documentation by the deadline of Friday, October 6, 2023.

The purpose of the AFSIP grant is to support produce and aquaculture operations in implementing enhanced on-farm food safety measures that help reduce food safety risks and help to minimize microbial contamination and food-borne illnesses. In addition, by implementing eligible upgrades that help reduce a food safety risk, the program helps operations maintain or increase market access. AFSIP is a competitive, re-imbursement grant program that funds projects up to $50,000 or 80% of total project costs.

This round of funding has an application deadline of **Friday, October 6, 2023** and projects must be completed by **June 30, 2024.**

NOTE: For those applicants who have already submitted their applications under the first round RFR-AGR-AFSIP-FY24 you do not need to resubmit. These applications are still under review and applicants will receive notification of their status once awards are finalized.

Applications can be found here: Agricultural Food Safety Improvement Program

Events

In-Person Preventive Controls Qualified Individual Blended Training

When: Monday, September 25, 2023

Where: UMass Amherst

Registration: Register for Part 1 here ($108). Register for Part 2 here ($125).

Need to gear up for Food Safety Modernization Act regulations?

In September 2017, all manufacturers with more than $1 million in annual sales will be required to comply with the Preventive Controls for Human Food regulation of the Food Safety Modernization Act. That means you need a "quali-

fied individual" responsible for writing your Food Safety Plan.

The Food Safety Preventive Controls Alliance has developed a *blended course* that can help reduce the amount of real-time classroom instruction. Instead of taking the 3-day face-to-face course, you can take *Part 1 of the course online*, then attend *Part 2, as a one-day training session*, to complete the Qualified Individual course requirements.

UMass is offering a registration discount to attend the Part 2 program to all small processors by using the promo code **"2023PCQIP2"** for the **Monday, Sept 25, 2023 program.**

BEFORE YOU REGISTER, please ensure you understand the requirements of a blended course participant. For more information, go to: https://www.ifsh.iit.edu/sites/ifsh/files/departments/fspca/pdfs/FSPCA-Preventive-Controls-for-Human-Food-Blended-Course-Information-01-12-2017.pdf

ADDITIONAL NOTES: To attend this one-day training session, you must complete Part 1 of the course online **AHEAD OF TIME** (and bring the Part 1 Enrollment ticket to class). Visit the FSPCA site to learn how to take Part 1 of the blended course (Part 1 fee is $108): https://www.ifsh.iit.edu/fspca/fspca-preventive-controls-human-food#FPCHFBC

Instructor: This course is being taught by FSPCA Lead Instructors trained to teach the FDA-recognized standardized curriculum: Amanda Kinchla, Extension Professor/Food Safety Specialist, University of Massachusetts, Amherst, 413-545-1017, kinchla@umass.edu, http://www.umass.edu/foodsci/faculty/amanda-kinchla.

Cost: Registration for Part 2 is $125.00 per person before Aug 31 for small processors using promo code "2023PCQIP2". The course tuition is traditionally $275. Registration includes course instruction, program exercises, a light continental breakfast, 2 coffee breaks, and lunch. For more information, go to Registration Details for UMass Part 2 Blended Preventive Controls Program, Sept 25, 2023

Twilight Meeting at Heart Beets Farm: Sweet potato production and fall pest management

When: Thursday, September 21, 4-6pm

Where: Heart Beets Farm, 181 Bayview Ave, Berkley, MA 02779

Join UMass Extension to hear about sweet potato production at Heart Beets Farm, and to learn timely info about fall pest management.

1.5 pesticide credits available.

Eastern MA CRAFT Meeting: Geothermal Water Use and Good Agricultural Practices at Farmer Dave's

When: Saturday, October 21, 4-6pm

Where: Farmer Dave's, Dracut, MA

We will take a tour of their solar and geothermal systems and the reuse of the geothermal water for hoop house irrigation. Lisa McKeag from UMass Extension will share about a project the farm is involved in to assess pre- and post-harvest agricultural water quality for food safety. She'll talk about the results of water samples taken at the farm in 2022-23 and give an update on current food safety regulations related to agricultural water.

MDAR Growing Your Farm Business Planning Course

When: Tuesdays, January 9 – March 5, 2024, 6-8:30pm

Where: MDAR office in West Springfield, or alternate western MA location dependent upon interest

Registration: Applications are accepted on a rolling basis. $150 per farm. If interested, please complete the brief Growing Your Farm application and email it to Diego.Irizarry-Gerould@mass.gov, or mail a hard copy to: MDAR, Attn: Diego Irizarry-Gerould, 138 Memorial Ave, Suite 42, West Springfield, MA 01089.

A hands-on course to help established farmers develop a business plan and financial projections for their farm business. This course covers topics including resource assessment, marketing strategy, financial management, risk management, quality of life, and goal setting. The course is taught by a professional business planner with years of experience working with Massachusetts farms and guest speakers on topics such as succession planning and online

marketing. Enrollment is open to farmers who have been operating a farm business in Massachusetts for at least the three prior years, but participating farmers could also have 20-30 years of experience and utilize the course to plan for growth or adding a new enterprise. Eight weekly classes will be held in person in West Springfield on Tuesday evenings from January 9th through March 5th, (no class February 20th). The Growing Your Farm course has been approved as a certified USDA Farm Service Agency (FSA) borrower training for financial management.

For more information, see ABTP program webpage or contact Diego at 857-248-1671. It is important to us that course fees do not create a barrier to participation. If the fee would prevent you from participating, please contact Diego at the number or email above and we can discuss waiving the fee.

MDAR Exploring the Small Farm Dream Course

When & Where: Tentative plans are to offer a fall session and/or a winter session. Final determinations for each course session are dependent on sufficient numbers of interested participants.

Fall Session: Wednesdays, November 1 – December 6, 2023, 6-9pm, tentative Western Mass location.

Winter Session: Wednesdays, January 17 – February 14, 2024, 6-9pm, location tbd based on interest.

Registration: $100 for up to two participants per enterprise, as space allows, not due until course location has been confirmed. If interested, please complete the brief application found here: Exploring the Small Farm Dream and email it to Jessica.Camp@mass.gov, or mail a hard copy to: MDAR, Attn: Jessica Camp, 138 Memorial Ave, Suite 42, West Springfield, MA 01089.

This 5-session course provides guidance to aspiring farmers through the decision-making process of whether to start a farm business. Participants will learn about the many aspects of starting a farm business, assess their own skills and knowledge, and get help finding resources for support, including marketing, financing, and regulations. The course utilizes the Exploring the Small Farm Dream curriculum and workbook developed by the New England Small Farm Institute. Through four guided group sessions and a farmer panel session, participants will analyze the feasibility of their small farm dream and clarify their vision together with other class participants.

For more information, see ABTP program webpage or contact Jess at 617-823-0871. If the course fee would prevent you from participating, please contact Jess at the number or email above and we can discuss waiving the fee.

Land for Good's Succession School

Are you thinking about the next steps for the future of your farm? MDAR and Land for Good are planning the next Farm Succession School and want to hear from you!

This three-session course provides farmers and partners with structured support to make decisions, engage their families, and organize the next steps for transitioning the farm business to the next owner. It is an opportunity for senior generation farm owners, with OR without identified successors, to talk with peers, learn from advisors, and get support on the process of farm succession and transfer planning.

If interested, fill out Succession School Interest form to help us understand your needs and determine the next course location. Questions, contact Laura Barley at 857-507-5548, Laura.Barley@mass.gov

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

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