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Extension

# Vegetable Notes

For Vegetable Farmers in Massachusetts since 1975



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*Weeding our high tunnel spinach variety trial on Tuesday at the UMass Research Farm. Photo: M. Ng*

## CROP CONDITIONS

It certainly feels like fall these days. The temperature has been dropping, and the leaves have turned brilliant shades of red, orange, and yellow. At the Vegetable Program, the season is winding down, and we've been busy seeding and weeding spinach for our winter high tunnel variety trial. We've also recently rebooted our Instagram account, thanks to our new program assistant Maggie Ng (you can follow us [here](#)).

We're also eagerly preparing for the **New England Vegetable and Fruit Conference** this winter, which will be in-person for the first time since 2019! You can now [register here](#). Be sure to check out the [schedule](#) and read about all the upcoming events and workshops at the conference. There are also a few spots still left for our upcoming in-person [Produce Safety Alliance Grower Training](#) on November 2 in N. Grafton, MA. Find more details and registration info at the link. Finally, we're co-sponsoring a virtual event next week—join CISA, NRCS, and UMass to learn more about **Ditch Use, Maintenance, and Management on Commercial Farms**; details and registration info [here](#).

Many farmers are preparing to shut down for the winter and are cranking out the last of their fall crops. Folks are harvesting cabbage, cauliflower, Romanesco, kale, radishes, scallions, leeks, Brussels sprouts, and more! Customers are excited about buying locally and stocking up before the holidays. Check to see if your farm is on MDAR's [MassGrown Map](#), a resource for consumers to locate their

nearest farm, farmer's market, or CSA. And be sure to connect with the [Buy Local Group](#) that serves your area.

## PEST ALERTS

As we mentioned last week, stay on the lookout for spotted lanternfly, which is a new pest in Massachusetts. You can report sightings using [this reporting form](#). Reporters are asked to take photos and collect specimens if possible. Follow [this link](#) for Spotted Lanternfly ID information.



*Spotted lanternfly at rest. Photo Mass NRC*

## CLEANING & DISINFECTING THE GREENHOUSE

If you've had reoccurring problems with diseases such as damping off or insects such as fungus gnats or aphids, perhaps your greenhouse and potting areas need a good cleaning. Vegetable growers are now mostly done using their greenhouses for planting, and if they are not being used to cure or store fall crops, or for winter greens, now is a good time to clean the houses well before next season's big rush. Some growers wait until the week before opening a greenhouse before cleaning debris from the previous growing season, but it's better to clean up as early as possible to eliminate over-wintering sites

## **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 *We are currently working remotely but checking these messages daily, so please leave us a message!* **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).

for pests and to reduce their populations prior to the spring growing season—pests are much easier to prevent than to cure.

**Cleaning.** Cleaning involves physically removing weeds, debris and soil, and is the first step prior to disinfecting greenhouse surfaces and equipment. Soil and organic residues from plants and growing media reduce the effectiveness of disinfectants. There are some cleaners specifically developed for greenhouse use, for example Strip-It, which is a combination of sulfuric acid and wetting agents formulated to remove algae, dirt, and hard water deposits. Some growers use a wet/dry vacuum on concrete and covered floors to remove debris. High-pressure power washing with soap and water is also an option. Soap is especially useful in removing greasy deposits. Thorough rinsing is needed because soap residues can inactivate certain disinfectants such as the Q-salts.

Begin at the top and work your way down. Sweep down walls and internal structures and clean the floor of soil, organic matter and weeds. Disease-causing organisms can be lodged on rafters, window ledges, tops of overhead piping and folds in plastic. Extra care is needed to clean these areas as well as textured surfaces such as concrete and wood, which can hide many kinds of pests.

Install physical weed mat barriers if floors are bare dirt or gravel and repair existing mats to prevent weeds and make it easier to manage algae. Avoid using stone on top of the weed mat, as soil and moisture will then get trapped, creating an ideal environment for weeds, diseases, insects and algae.

Irrigation filters should also be cleaned to remove dirt and microbial buildup (or biofilm) at the end of the growing season. Growers often use products labeled for cleaning irrigation systems such as sulfuric acid plus wetting agent (e.g. Strip-It) or sanitizers containing hydrogen peroxide and peroxyacetic acid (e.g. SaniDate) to flush out slime and debris.

**Disinfecting.** Many pathogens can be managed to some degree, using disinfectants. For example, dust particles from fallen growing medium or pots can contain bacteria or fungi such as *Rhizoctonia* or *Pythium*. Disinfectants will help control these pathogens. In addition to plant pathogens, some disinfectants are also labeled for managing algae, which is a breeding ground for fungus gnats and shore flies.

**Greenhouse Benches and Work Tables.** If possible, use benches made of wire or other non-porous materials such as a laminate that can be easily disinfected. Wood benches can be a source for root rot diseases and insect infestations. Algae tend to grow on the surface of the wood creating an ideal environment for fungus gnats and shore flies, and plant pathogens can grow within the wood. Plants rooting through containers into the wood will develop root rot if conditions are favorable for pathogen activity. Disinfect benches between crop cycles with one of the labeled products listed below. Keep in mind that disinfectants are not protectants—they may destroy certain pathogens, but will have little residual activity.

**Cleaning Containers.** Plant pathogens such as *Pythium*, *Rhizoctonia*, and *Thielaviopsis* can survive in root debris or soil particles on greenhouse surfaces. If a crop had a disease problem, then avoid re-using containers. Containers to be re-used should be washed thoroughly to remove soil particles and plant debris before being treated with a disinfectant, even if there is no evidence



*Greenhouse benches made of non-porous materials are easier to disinfect. Photo: UMass Floriculture*

of disease in the crop. Debris and organic matter can protect pathogens from contacting the disinfectant solution and can also reduce efficacy of certain disinfectants.

**Disinfectants for Greenhouses.** If possible, disinfectants should be used on a routine basis both as part of a pre-crop clean-up program and during the cropping cycle. There are several different types of disinfectants that are currently used in the greenhouse for plant pathogen and algae control listed below. Remember that sanitizers and disinfectants are pesticides and may have serious health consequences if not used according to their labels. Be sure to use an appropriate product for the pathogen and for the surface material you are trying to disinfect and use good ventilation and proper personal protective equipment.

**Quaternary ammonium chloride salts (Green-Shield II®, Physan 20®, KleenGrow™).** Q-salt products, commonly used by growers, are quite stable and work well when used according to label instructions. Q-salts are labeled for fungal, bacterial, and viral plant pathogens, as well as algae. They can be applied to floors, walls, benches, tools, pots, and flats as disinfectants. Physan 20® is also labeled for use on seeds, cut flowers, and plants. Carefully read and follow label instructions. Use directions may vary according to the intended use of the product. For example, the Green-Shield II® label states that objects to be disinfected should remain wet with the product for 10 minutes, and walkways for an hour or more. Instructions allow that surfaces can be wiped or air-dried after treatment. For cutting tools that are being dipped between uses, one way to allow them to remain wet for the appropriate amount of time is by having two cutting tools, one pair to use while the other is soaking.

**Q-salts are not protectants.** They will kill the pathogens for which they are labeled on contact but will have little residual activity. Presence of organic matter will inactivate them, so pre-clean objects to dislodge organic matter prior to application. KleenGrow™ does have a higher organic matter tolerance and longer residual activity on hard surfaces. Because it is difficult to tell when the product becomes inactive, prepare fresh solutions frequently (twice a day if in constant use). The products tend to foam a bit when they are active; when foaming stops, it is a sign they are no longer effective. No rinsing with water is needed.

**Hydrogen dioxide and peroxyacetic acid (ZeroTol® 2.0, OxiDate® 2.0, SaniDate®12.0).** Hydrogen dioxide kills bacteria, fungi, algae, and their spores immediately on contact. It is labeled as a disinfectant for use on greenhouse surfaces, equipment, benches, pots, trays, and tools, and for use on plants. Label recommendations state that all surfaces should be wetted thoroughly before treatment. Several precautions are noted. Hydrogen dioxide has strong oxidizing action and should not be mixed with any other pesticides or fertilizers. When applied directly to plants, phytotoxicity may occur for some crops, especially if applied above labeled rates or if plants are under stress. Hydrogen dioxide can be applied through an irrigation system. As a concentrate, it is corrosive and causes eye and skin damage or irritation. Carefully read and follow label precautions. Note that OxiDate® and SaniDate® are OMRI-approved for organic production.

**Sodium carbonate peroxyhydrate (GreenClean Pro Granular Algaecide®)** is a granular and is activated with water. Upon activation, sodium carbonate peroxyhydrate breaks down into sodium carbonate and hydrogen peroxide. GreenClean is labeled for managing algae in any non-food water or surfaces. Non-target plants suffer contact burn if undiluted granules are accidentally spilled on them.

**Chlorine bleach.** There are more stable products than bleach to use for disinfecting greenhouse surfaces, but when used properly, it is an effective disinfectant; it has been used for many years by growers. Chlorine bleach may be used for pots or flats, but is not recommended for application to walls, benches, or flooring. A solution of chlorine bleach and water is short-lived and the half-life (time required for a 50% reduction in strength) of a chlorine solution is only two hours. After two hours, only ½ as much chlorine is present as was present initially. After four hours, only ¼ is there, and so on. To ensure the effectiveness of chlorine solutions, it should be prepared fresh just before each use. The concentration normally used is one part of household bleach (5.25% sodium hypochlorite) to nine parts of water, giving a final strength of 0.5%. Some bleach products are more concentrated—check the percent active ingredient for the product you are using and see the label for the recommended dilution rate. Chlorine is corrosive. Repeated use of chlorine solutions may be harmful to plastics or metals. Soak objects to be sanitized for 30 minutes and then rinse with water. It should also be noted that bleach is phytotoxic to some plants, such as poinsettias. Chlorine can also irritate the respiratory system and so should only be used in well-ventilated areas.

**Alcohol (70%)** is a very effective sanitizer that acts almost immediately upon contact. It is not practical as a soaking material because of its flammability. However, it can be used as a dip or swipe treatment on knives or cutting tools.

No rinsing with water is needed. Alcohol, although not used as a general disinfectant is mentioned here because it is used by growers to disinfect propagation tools.

**OMRI-listed organic disinfectants** include OxiDate 2.0, SaniDate 12.0, ZeroTol and others. Ethyl or isopropyl alcohol is used to disinfect tools. Organic growers should always check with their certifying organization before using any material new in their growing practices. For list of products, visit the [OMRI website](#).

*This information is supplied with the understanding that no discrimination is intended and no endorsement of any particular product is implied. Due to constantly changing regulations, we assume no liability for suggestions. If any information in this article is inconsistent with the label, follow the label.*

**Managing Algae.** Algae are a diverse grouping of plants that occur in a wide range of environments. Algae growth on walks, water pipes, equipment, greenhouse coverings, on or under benches, and in pots is an ongoing problem for growers. Algae form an impermeable layer on the media surface that prevents wetting of the media below and can clog irrigation misting lines and emitters. Algae are a food source for insect pests like shore flies and cause slippery walkways that can be a liability risk for workers and customers. Recent studies have shown that algae are brought into the greenhouse through water supplies and from peat in growing media. In a warm, moist environment with fertilizer, the algae flourish.

Proper water management and fertilizing can help to slow algal growth. Avoid over-watering slow-growing plants, especially early in the production cycle. Allow the surface of the media to dry out between watering. Avoid excessive fertilizer runoff and puddling water on floors, benches, and greenhouse surfaces. The greenhouse floor should be level and drain properly to prevent the pooling of water prior to installing a physical weed mat barrier. Algae management involves an integrated approach involving sanitation, environmental modification, and frequent use of disinfectants.

*--Prepared by Tina Smith, UMass Extension Educator, Greenhouse Crops and Floriculture Program (retired). Updated for 2020 by L. McKeag. For references and resources, see the online version of this article [here](#).*

## **POSTHARVEST HANDLING AND STORAGE**

Harvested vegetables are living things that carry on the process of respiration and other biological and chemical processes. How produce is handled after harvest will directly affect quality characteristics such as appearance, flavor, texture, and nutritional value. Attention to postharvest quality can increase repeat sales and support higher prices.

Control of postharvest quality essentially comes down to limiting respiration rate (lowering temperature), controlling water loss (maintaining proper relative humidity), minimizing physical damage to the product (harvesting and handling with care), and avoiding contamination (handling, washing, and storing appropriately).

### **Limiting Respiration**

Respiration is a temperature dependent biochemical process that converts carbon in plant tissue (mainly sugars) to carbon dioxide (CO<sub>2</sub>) and water (H<sub>2</sub>O) while producing some heat. Rates of respiration vary by crop (see [Gross 2016](#), table p. 7 and text pp. 68-75) and should be considered when sizing cooling equipment. Fortunately, we can significantly reduce respiration, and therefore maintain high product quality, by reducing product temperature (precooling) and keeping it low (holding or storage cooling). This concept is known as establishing the “cold chain”; a chain of reduced temperature that connects the field to the consumer ensuring the highest quality produce possible by minimizing respiration.

From the moment of harvest, product quality will deteriorate. Intentional precooling of produce directly after harvest helps quickly reduce the rate of respiration and initiates the cold chain. Examples of precooling include scheduling harvest activities at cooler times of day, shading harvested product in the field prior to transport, forced air cooling through



*Bins of squash. Photo: Umass Veg Program*

the packed product with refrigeration, hydrocooling with cool water, and vacuum cooling via evaporation. Once cooled to storage temperature, reliable, refrigerated storage is necessary to maintain high quality.

It is important to note that not all crops can be cooled to the same temperature without resulting in cold or freeze injury and some crops are sensitive to the method of cooling. Crops have different susceptibility to chilling or freeze injury depending on their physiology. Good guidance is available (see [Gross 2016](#), pp. 62-67) and is summarized in [Table 16 of the New England Vegetable Management Guide](#). Common precooling methods are also noted in Table 16. Additionally, a computer-based crop storage planner is available for determining appropriate grouping of your crops and estimating overall respiration load (see [Callahan 2016](#)). Chilling injury is also an important consideration when considering particularly sensitive fall-harvested crops and the possibility of lower nighttime temperatures, e.g., winter squash.

### Controlling Water Loss

The control of water loss requires careful attention to the relative humidity (RH) of the air surrounding stored product in addition to temperature. RH is a measure of the amount of water vapor in air compared to the maximum amount that can be saturated in that air at a given temperature. Most, but not all, crops are ideally stored at higher RH to prevent water evaporation into the air leading to water loss. The loss of water reduces the weight of the crop and can lead to lower quality and poor appearance.

Some crops, such as onions, garlic, and winter squash, are purposefully “cured” or dried resulting in drier outer skin and curing harvest wounds to allow long term storage. Because this results in a paper-like layer, these crops are generally stored at lower RH to prevent development of postharvest disease such as molds and fungi on this outer skin. Other than these examples, most crops are best stored at 90%-95% RH with specific guidance provided in [Table 16](#), in the crop storage planner noted above, and in the literature (see Gross 2016).

*[Ed. note: Some storage crops are also particularly sensitive to injury from exposure to ethylene, a plant hormone released by fruits and vegetables. Avoid storing ethylene-sensitive crops with crops that produce significant amounts of ethylene. See the UMass Vegetable Program fact sheet, [Optimal Storage Conditions and Ethylene Sensitivity of Fall Storage Crops](#).]*

### Minimizing Physical Damage

Generally speaking, produce crops live a very gentle life until harvested. Starting with harvest, produce is moved and handled for the first time and, typically, many times after. With each movement there is a risk of physical damage. Even if the damage is not obvious, it can result in bruising or other damage that becomes evident later and can lead to postharvest disease and pathogens which are encouraged by damaged cell tissue. Even during harvest, crops can suffer “harvester blight.” For the majority of crops, gentle handling, crates with smooth and clean surfaces, and conveyance with elastic and soft belts and rollers should be used.

### Avoiding Contamination

Sorting and culling are also important practices at this stage. As the saying goes, “one bad apple can spoil the bunch”. Sorting allows for different sizes and grades of product to be stored and sold separately and culling can separate damaged or lower quality product from the main lot. Culls can be used for sale, rescue donation, or compost depending on the defect. The removal of obviously damaged product from the lot helps minimize cross-contamination with postharvest pathogens to a larger portion of the stored product.

Produce can be rinsed to remove soil and debris, and often a sanitizer is added to the rinse water to prevent cross-contamination with plant and human pathogens from one item of produce to another in the same batch (see the following references: [LaBorde, Samuels and Stivers 2016](#), [Bihn et al. 2014](#)).

Once packed and ready for storage or transport, care should be taken to avoid contamination of product with other contaminants such as foreign matter and unintentional water such as condensate from refrigeration systems.



*Ethylene-induced yellowing in cabbage. Photo: Don Edwards, UC Davis*

## References

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--Written by Chris Callahan, UVM Extension Ag Engineering. Excerpted from the upcoming 2023-2024 New England Vegetable Management Guide

## NEWS

### UMASS EXTENSION 2023 GARDEN CALENDAR IS NOW

#### AVAILABLE!

Each month features an inspiring garden image, daily gardening tips for Northeast growing conditions, sunrise and sunset times, phases of the moon, and room for notes. Cost: \$14.50, with special pricing available on order of 10 copies or more. Shipping is FREE on orders of 9 or fewer calendar (Free shipping ends Nov. 1!).

[Click here for images in the calendar, details, and ordering info.](#)



### FREE SOILBORNE DISEASE TESTING FOR HIGH TUNNEL

#### VEGETABLE GROWERS

If you grow high tunnel veggies and have been experiencing disease issues or are wondering if there are soilborne pathogens present, here's an opportunity to find out for free! Samples are wanted for a multi-state USDA funded project on soilborne diseases occurring in high tunnel vegetable crops. Samples accepted through February 2023. [Click here for instructions.](#)

Questions? Contact Anna Testen (Plant Pathologist, USDA ARS) at [Anna.Testen@usda.gov](mailto:Anna.Testen@usda.gov) or 330-641-2862.

### SEEKING COMMERCIAL FARMERS TO TRIAL ADVANCED KIWIBERRY SELECTIONS

The University of New Hampshire Kiwiberry Research and Breeding Program is now 10 years old, and we have nearly 20 advanced breeding lines ready for multi-locational testing. We're looking for 25 farmers across the northeast who are interested in participating in a grant-funded project that will support participatory evaluation of these potential new varieties, starting Spring 2023. If you are a current or aspiring kiwiberry producer, have an interest in new varieties, wish to receive more technical training, and have room for at least 12 vines, please complete this short questionnaire\*.

To be eligible to participate, you must be a commercial producer, either with kiwiberries currently as one of your enterprises or as an enterprise you are interested in integrating into your system. Specific experience with kiwiberries

is not required, as one of the goals of the program is to train farmers in their production. Participating growers will be compensated for their time.

If you would like to learn more about kiwiberry, a production guide developed by our program is available online at: <http://www.noreastkiwiberries.com/>

\* Questionnaire link: [https://unh.az1.qualtrics.com/jfe/form/SV\\_3aSbLzVNjJ1R3Se](https://unh.az1.qualtrics.com/jfe/form/SV_3aSbLzVNjJ1R3Se)

## CORNELL COOPERATIVE EXTENSION SEEKING DOWNY MILDEW SAMPLES ON BRASSICAS

Late summer into fall is when conditions are most favorable for downy mildew to develop on brassica (cruciferous) crops. Meg McGrath from Cornell University is very interested in hearing if you are growing any of these crops and you see symptoms, especially on collards and arugula. Knowing about on farm occurrences will help in determining degree of host specialization in the pathogen causing DM on all the brassica crops. She'd also be interested to hear at season end if you don't see any symptoms of DM on your brassica crops to provide perspective for how widespread the disease occurs. **Samples are needed for research, so if you see DM and can make the time to collect and box up some leaves, she would love to receive them. Pre-paid label will be provided. Email [mtm3@cornell.edu](mailto:mtm3@cornell.edu) to report disease, and to get more information on shipping.** If you don't know what downy mildew in brassicas looks like, check out some photos at <https://blogs.cornell.edu/livegpath/gallery/>.

## NORTHEAST SUSTAINABLE AGRICULTURE RESEARCH AND EDUCATION (SARE) CALLING FOR 2023 FARMER GRANT PROPOSALS

The Call for 2023 Northeast SARE Farmer Grants is now available. Awards typically range from \$5,000 to \$30,000, depending upon a project's complexity and duration. 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. 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. The Northeast region includes Connecticut, Delaware, Maine, Massachusetts, Maryland, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, West Virginia, Vermont, and Washington, D.C.

The online system for submitting proposals will open on Oct 1, 2022. Proposals are due no later than **5:00 p.m. EST on November 15, 2022**. An [informational webinar](#) featuring multiple Farmer Grant recipient Tommye Lou Rafees will take place at 12:00 p.m. on October 4, 2022.

- Learn more about Farmer Grants – [northeast.sare.org/farmer](https://northeast.sare.org/farmer)
- View the full call for proposals – [northeast.sare.org/farmergrantcall](https://northeast.sare.org/farmergrantcall)
- Register for the webinar – [northeast.sare.org/farmergrantwebinar](https://northeast.sare.org/farmergrantwebinar)
- View previous SARE Projects – <https://projects.sare.org/search-projects/>

## EVENTS

### PRODUCE SAFETY ALLIANCE GROWER TRAINING

**When:** Wednesday, November 2, 2022 from 9 am to 5 pm

**Where:** Brigham Hill Community Barn, 37 Wheeler Road, North Grafton, MA 01536

**Registration:** Details and registration [here](#).

**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 3<sup>rd</sup>-party audit program. Presented by UMass Extension and the Massachusetts Department of Agricultural Resources (MDAR).

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)).

This is an in-person event. Registration is limited to 40 participants. In the event that the course fills up, registration priority will be given to farms that are required to receive training to comply with federal and state produce safety regulations.

Contact Lisa McKeag, [lmckeag@umass.edu](mailto:lmckeag@umass.edu), 413-658-8631 with questions

## FALL 2022 VIRTUAL GREENHOUSE EDUCATION PROGRAM

**When:** Thursday, November 17, 2022, 8:30 AM – 12:00 PM

**Where:** Online

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

Join the UMass Extension Floriculture team online on November 17, 2022 for this virtual education program that will feature presentations on greenhouse sanitation, PGRs, and control of insects and mites. [Click here for complete info and registration instructions](#). Gracious support from the Massachusetts Flower Growers Association has reduced participation fees for this event as a benefit to the industry. Sign up today to get a head start on preparations for the 2023 growing season!

Topics include greenhouse sanitation, PGRs (knowing the tools & how to use them effectively), best management practices for greenhouse insect and mite control. *Three (3) pesticide credits in Massachusetts categories 26, 29, 31 and 000 (Licensed Applicator) have been approved for this program. Credits are valid for equivalent categories in all New England states.*

Questions? Contact Geoffrey Njue at [gnjue@umass.edu](mailto:gnjue@umass.edu) or 617-243-1932.

## [NEW ENGLAND VEGETABLE AND FRUIT CONFERENCE 2022](#) - REGISTRATION OPEN!

**When:** December 13, 14 & 15, 2022

**Where:** DoubleTree Hotel and Conference Center, 700 Elm Street, Manchester, New Hampshire

The New England Vegetable & Fruit Conference Steering Committee is excited to announce that the conference will return **in person** this December! The NEVF Conference includes more than 25 educational sessions over three days, covering major vegetable, berry and tree fruit crops as well as various special topics. A Farmer to Farmer meeting after each morning and afternoon session will bring speakers and farmers together for informal, in-depth discussion on certain issues.

For more information on session, accommodations, and registration: <https://newenglandvfc.org/>

## GROWING YOUR FARM BUSINESS PLANNING COURSE

**When:** January 17th – March 14th, 2023 - Tuesday evenings 5:30 – 8:30pm

**Where:** MDAR office in Southborough, MA

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 two prior years. Eight weekly classes will be held in person in Southborough on Tuesday evenings starting January 17th and ending March 14th, (no class February 21st). The course fee, subsidized by MDAR, is \$150 per farm. The Growing Your Farm business planning course has been approved as a certified USDA Farm Service Agency (FSA) borrower training for financial management.

If interested, please complete the brief Growing Your Farm [application](#) and email it to [Diego.Irizarry-Gerould@mass.gov](mailto: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. For more information, see [ABTP program webpage](#) or contact Diego Irizarry-Gerould at 857-248-1671.



## EXPLORING THE SMALL FARM DREAM COURSE

**When:** January 12 – February 9, 2023 - Thursday evenings 6:00pm – 9:00pm

**Where:** MDAR office in Southborough, MA

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. This course is sponsored and financially supported by the Massachusetts Department of Agricultural Resources and is intended for new agricultural entrepreneurs planning to start their farm business in Massachusetts. The course fee is \$100 for up to two participants per enterprise, as space allows.

If interested, please complete the brief application found here: [Exploring the Small Farm Dream](#) and email it to [Jessica.Camp@mass.gov](mailto:Jessica.Camp@mass.gov), or mail a hard copy to: MDAR, Attn: Jessica Camp, 138 Memorial Ave, Suite 42, West Springfield, MA 01089. For more information, see [ABTP program webpage](#) or contact Jess Camp at 617-823-0871.

Applications for these winter courses will be accepted until December 2, or until each course is full. \*Applications are accepted on a rolling basis, with course session locations selected based on interest from those on the waitlist. If you are interested, but unable to attend the current session, please consider submitting an application in order to be placed on the waitlist for an upcoming session.

## THANK YOU TO OUR 2022 SPONSORS!



**Become a sponsor!**

*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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