



UMass
Extension

Vegetable Notes

For Vegetable Farmers in Massachusetts since 1975



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FARM CREDIT EAST



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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.

CROP CONDITIONS

It's off to the races! Spring has been warm and dry so folks have been able to get into fields early--subsoiling, plowing, disking, and even planting! The earliest corn is planted under plastic and we've seen some early onions already transplanted into plastic beds. Potato growers are getting ready to start planting any day now. Greenhouses are brimming with brassicas, onions, tomatoes, peppers, cucurbits and all the rest. We often see folks jumping at the first chance to get planting, especially when you have a stretch of 80 degree days like this, but when temps return to 50's and 60's those early-planted crops may sit for a long time growing slowly or not at all, negating any benefit of planting early and putting plants at risk for disease. But when the greenhouse is full to the brim and you've got to make room for the next successions we understand the temptation!



A yellow sticky card placed amongst a covered row of overwintered onions... These cards are used to trap and monitor pests, in this case allium leafminer.

Photo: Maggie Ng

Our team at UMass Extension is excited to share that we are hiring several new educator positions this spring! These positions will serve the Vegetable and Fruit Programs, as well as the soil lab and beyond, bringing much needed expertise in areas like soil health, weed management, and fruit production. There are 5 positions open now with two more on the way. Funding for four of these positions came directly from the state, a reflection of the growing understanding of the importance of our local food system, and the need to support local farmers like you who produce a year-round supply of healthy fruits and vegetables to sustain the Commonwealth through good and bad times. These positions will dramatically increase our capacity to provide technical assistance, education, and applied research (not to mention new newsletter articles!) and we couldn't be more excited, stay tuned!

PEST ALERTS

Allium leafminer: We began scouting for this new invasive pest this week but so far have not seen any flies or signs of their activity (white oviposition scars in a neat row on leaves). We are right at peak emergence (250 GDD base 1°C) for this pest in many areas so start scouting early onions, scallions, or chives now.

Damping Off: This disease is very common in early greenhouse seedlings. Soil-dwelling pathogens including *Rhizoctonia solani*, *Pythium* spp., and *Phytophthora* spp. take advantage of weak or slow-growing plants, infecting roots and cutting off the supply of water and nutrients leading to death of seedlings before they emerge, or weak stems and wilting. Sanitization (floors, benches, trays) is a key first step in removing sources of inoculum. Next in the line of cultural practices is moisture management—choose the right size cell for your plant, something small enough that the plant uses up available moisture quickly and is not sitting in wet soil.

- Large cell sizes such as 32, 50 or 72 are often used for vine crops and early harvests. Plants are less stressed in larger cells if it is necessary to hold plants for several days before transplanting in the field.
- Mid-size cell sizes such as 72 and 128 are suitable for tomatoes, peppers, eggplant, and brassicas, though tomatoes and peppers are often started in smaller cells and “potted up” into 24’s or 3” pots.

- Small cells such as 128, 200 or 288 may be used for lettuce or onions.

Fungus gnats: continue to flit around greenhouses while their larvae feed on plant roots. Reducing wet soil can also help reduce populations and minimize damage from this pest. Use of beneficial nematodes (*Steinernema feltiae*), *Bacillus thuringiensis* subsp. *israelensis* products e.g. ‘Gnatrol’, and neonicotinoids e.g. ‘Tristar’ or ‘Marathon’ can also help control larvae when populations are high.

Imported cabbageworm: adult butterflies have already been spotted in greenhouses being used for brassica seedling production—no eggs were found or expected at this time of year, but insect pests are starting to emerge. Flea beetles are just around the corner...

IMPROVING POLLINATOR HABITAT ON THE FARM

Most of us are aware that pollinator populations are in decline. We also know that wild bees, butterflies, wasps, and flies provide critical pollination services for both food crops and native plants. (You can read more about pollinator declines in the [February 2022 issue of Veg Notes](#)). Through decades of research, we now know that the number one cause of pollinator decline is habitat loss – that is, not enough flowering plants for pollinators to eat and too few undisturbed areas where they can nest. It may seem like this problem is so sweeping and complex that there’s nothing we can do to help, but the good news is that preserving or establishing pollinator habitat is the most effective thing that individuals can do to support pollinators. There are several ways to do this on your farm.



Because farmers often manage large tracts of land, their actions are especially impactful. Protecting habitat on farms can not only help pollinators, but also boost pollination services to crops, support natural enemies that consume crop pests, and increase a farm’s environmental services and aesthetic value.

Here are some ways to improve pollinator habitat on your farm. They are ordered from easiest to hardest in terms of time and expense. We know that farming is already a lot of work. The good news is that “easier” habitat-improvement methods are not less impactful – ALL of these are valuable ways to support pollinators. So, if you’re inspired, do whatever is most feasible for you on your farm! At the end of the article, we’ve also included some key resources to help you get started.

Protect existing pollinator habitat...

- 1) **Identify and preserve existing resources.** Many diversified New England farms already contain pollinator habitat on field edges or marginal/riparian areas. Any native flowering plants, shrubs or trees are excellent sources of food for pollinators, and any undisturbed soil provides a good location for nesting. By preserving these areas and protecting them from pesticide drift you are supporting many native pollinators and other beneficial insects. If you want to be

methodical about assessing existing pollinator habitat on your land, you can use this [Pollinator Habitat Assessment Form and Guide for Farms](#).

- 2) **Turn marginal areas into pollinator gardens.** You know those spots by the high tunnel, or beside the barn, that always grow into a weedy mess? If they are already colonized with flowering native plants, celebrate them! If not, consider turning them into micro-pollinator-gardens. As a bonus, if these spots are close to your farm stand or CSA pick-up location, they will look great to customers. Check out this list of [Pollinator Plants for the Northeast](#) from the Xerces society for recommended native plants and planting tips. Or take a look at the Massachusetts Department of Agriculture's list of [Locally Available Pollinator-Friendly Native Plants](#).



*A field of flowering buckwheat.
Photo: UMass Vegetable Extension*

Make pollinator habitat a part of your cropping plan...

- 3) **Plant pollinator-friendly cover crops.** Many flowering cover crops provide excellent food for bees and other beneficial insects. These include buckwheat, clovers, peas, phacelia, sunflower, alfalfa, and mustards. Many of these cover crops are multi-functional – for instance, buckwheat is also great at suppressing weeds, and clovers help to fix nitrogen. However, it is important to note that cover crops provide bees with a burst of resources during flowering, but not season-long food or nesting locations. You can read more about cover cropping for pollinators in SARE's [Cover Cropping for Pollinators and Beneficial Insects](#). You can also search for pollinator-friendly cover crops using the Northeast Cover Crop Council's [species selector tool](#).

- 4) **Consider adding cut flowers to your operation, and/or allow crops to flower.** Many cut flowers, especially native perennial ones, provide excellent resources for pollinators. Some good examples are sunflower (and other asters), purple coneflower, foxglove, and yarrow. Food crops like brassicas, cilantro or dill are also great sources of nectar and pollen if left to flower.



*A few rows of cut flowers on a farm in Hampden County.
Photo: H Whitehead*

- 5) **Practice IPM and bee-friendly pesticide use.** It is not only important to preserve and/or establish flowering plants, but also to protect those flowers from pesticides. Reduce pesticide use through Integrated Pest Management (we know that most of you are already doing this!), choose pesticides with a lower bee hazard rating, and always apply pesticides in ways that reduce harm to beneficial insects (e.g. in the evening and when plants are not in full bloom). Read more about pollinator-friendly pesticide practices [here in the New England Vegetable Management Guide](#). You can also check the toxicity of pesticides for bees using this [University of California IPM tool](#).

Establish new perennial pollinator habitat...

(Note: you can often receive NRCS funding to install pollinator habitat - [contact your local NRCS office](#) to learn more)

- 6) **Plant a hedgerow.** Flowering shrubs and trees provide amazing early-season resources for bees and other beneficial insects. They can also serve as a wind break or organic buffer, reduce erosion, or shield crops from a busy road. You can also consider boosting your hedgerow with native perennial herbaceous plants, which often flower later than trees and shrubs, providing pollinators with resources throughout the season. Check out this list of [MA Native Trees and Shrubs for Pollinator Conservation](#) as well as [Estimated Costs to Establish Pollinator Hedgerows](#) to get started.

- 7) **Sow a pollinator meadow.** Another powerful way to support bees and other beneficial insects is to install a pollinator meadow. Depending on meadow size, it usually is most economical to start a meadow from seed. However, it is important to follow instructions carefully, and be ready to invest significant time and energy into this endeavor. Meadows can be tricky and often become overrun with weeds. They can also take a significant amount of land out of

production. But if done right, they can become a beautiful asset to your farm, and your local pollinators! To learn more about establishing a pollinator meadow, check out [Establishing Pollinator Meadows from Seed](#) and [Organic Site Preparation for Wildflower Establishment from the Xerces Society](#), as well as [Wildflower Meadows – Plant Selection and Establishment](#) from the University of New Hampshire. Also check out these videos on creating [Habitat for Bees](#) from Project Integrated Crop Pollination.



*A beneficial syrphid fly foraging on a buckwheat flower;
Photo: UMass Extension*

Pollinator habitat resources

General resources:

- Xerces Society:
 - [Farming for Bees](#)
 - [Pollinator Conservation Resources – Northeast Region](#)
 - [Pollinator Habitat Assessment Form and Guide for Farms](#)

Habitat installation guides (incl. hedgerows, meadows, and cover crops):

- Project Integrated Crop Pollination:
 - Videos about creating [Habitat for Bees](#)
- Xerces Society:
 - [Estimated Costs to Establish Pollinator Hedgerows](#)
 - [Establishing Pollinator Meadows from Seed](#)
 - [Organic Site Preparation for Wildflower Establishment](#)
- University of New Hampshire: [Wildflower Meadows – Plant Selection and Establishment](#)
- USDA SARE: [Cover Cropping for Pollinators and Beneficial Insects](#)

Pollinator Plants for MA and New England:

- UNH Extension: [Seed Sources for New England Meadows](#)
- MDAR: [Creating Pollinator-Friendly Gardens with Native Plants - Locally available options](#)
- Xerces Society:
 - [Pollinator Plants – Northeast Region](#)
 - [Native trees and shrubs for pollinator conservation in MA](#)

--Written by Hannah Whitehead Shell, UMass Vegetable Program

VEGETABLE SEED GERMINATION IN DIRECT SEEDING

--Written by Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu

Many vegetables are commonly direct seeded in the field. There are many factors that affect seed germination but soil temperature and moisture are the most critical. Other factors include seed quality (age, conditioning, handling), seed treatments, and seeding depth.

Early Spring Planted Crops. The table below shows the average days to germination for cold season crops. For example, peas will take over a month to germinate with soil temperatures at 41°F, two weeks with soil temperature of 50°F, and one week with soil temperature in the 70s. Spinach, onions, and radish will germinate at the lowest temperatures. Some crops (celery, lettuce, and spinach) stop germination at high soil temperatures.

Warm Season Crops. Most warm season crops will not germinate until soil temperature is above 50°F. Sweet corn will take over 3 weeks to germinate at 50°F but less than a week at 68°F. Snap beans will take over 2 weeks at 59°F but only one week at 77°F. Cucumbers are similar.

Early Spring Planted Crops: Average Days to Germination								
Crop	32°F	41°F	50°F	59°F	68°F	77°F	86°F	95°F
Beets	—	42	17	10	6	5	5	5
Cabbage	—	—	15	9	6	5	4	—
Collards	—	—	15	9	6	5	4	—
Carrots	None	51	17	10	7	6	6	9
Cauliflower	—	—	20	10	6	5	5	—
Celery	None	41	16	12	7	None	None	None
Kale	—	—	15	9	6	5	4	—
Lettuce	49	15	7	4	3	3	3	None
Onions	136	31	13	7	5	4	4	13
Parsley	—	—	29	17	14	13	12	—
Parsnips	172	57	27	19	14	15	32	none
Peas	—	36	14	9	8	6	6	—
Radishes	None	29	11	6	4	4	3	—
Spinach	63	23	12	7	6	5	6	none
Turnips	None	None	5	3	2	1	1	1

Warm Season Crops: Average Days to Germination								
Crop	32°F	41°F	50°F	59°F	68°F	77°F	86°F	95°F
Lima beans	None	None	None	31	18	7	7	None
Snap beans	None	None	None	16	11	8	6	6
Sweet corn	None	None	22	12	7	4	4	3
Cucumbers	None	None	None	13	6	4	3	3
Eggplant	None	None	None	None	13	8	5	5
Melons	None	None	None	None	8	4	3	3
Okra	None	None	None	27	17	13	7	6
Peppers	None	None	None	25	13	8	8	9
Tomatoes	None	None	43	14	8	6	6	9
Watermelons	None	None	None	None	12	5	4	3

This information came from UC Davis research over 60 years ago. Since that time, some crops have been bred for better cold germination such as sweet corn.

WATER QUALITY FOR CROP PRODUCTION - PH, ALKALINITY, AND SOLUBLE SALTS

Irrigation water quality is a critical aspect of greenhouse crop production. Poor quality water can be responsible for slow growth, poor aesthetic quality of the crop, and in some cases can result in the gradual death of the plants. There are many factors which determine water quality. Among the most important are alkalinity, pH and soluble salts. High soluble salts can directly injure roots, interfering with water and nutrient uptake. Salts can accumulate in plant leaf margins, causing burning of the edges. Water with high alkalinity can adversely affect the pH of the growing medium, interfering with nutrient uptake and causing nutrient deficiencies which compromise plant health. To determine whether any of these conditions are occurring, water must be tested at a laboratory that is equipped to test water for agricultural irrigation purposes.

There are several other factors to consider, including whether your water contains hard water salts such as calcium and magnesium; heavy metals that can clog irrigation systems; or individual toxic ions. To read more about these contributors to water quality, see the full-length fact sheet [Water Quality for Crop Production](#). Additionally, if greenhouse irrigation water will contact the harvestable portion of a crop (e.g., if you're growing microgreens or herbs that will be harvested rather than planted into the field), consider adding a microbial water quality test for generic *E. coli*, and indicator of fecal contamination. For more on water testing for food safety, see the page on [Agricultural Water](#) on the 'UMass Food Safety for Farmers' webpage.

General recommendations:

- **Get water tested** to ensure it is acceptable for plant growth and to minimize the risk of discharging pollutants to surface or ground water. Irrigation water tests should always include **pH and alkalinity**.
- Reclaimed water, runoff water, or recycled water may require reconditioning before use for irrigation since disease organisms, soluble salts and traces of organic chemicals may be present.
- **Use filters** to remove suspended solids from water to prevent clogging of piping, valves, nozzles and emitters in an irrigation system. Suspended solids include sand, soil, leaves, organic matter, algae and weeds. Screen or disk filters work well for most applications. A 200-mesh filter is usually recommended for micro-irrigation. The filter should be sized so that the flow rate is large enough to handle the peak demand.
- **Maintain filters:** Install pressure gauges on both sides of the filter to monitor for clogs. When the pressure variation between the two gauges exceeds about 10%, the filter should be cleaned.
- **Adjust water pH** if needed before using for mixing some pesticides, floral preservatives, and growth regulators.
- **Adjust alkalinity** if needed using an appropriate acid in order to treat irrigation water and also to help manage pH of irrigated high tunnel soils.

pH and Alkalinity

Alkalinity and pH are two important factors in determining the suitability of water for irrigating plants. *pH is a measure of the concentration of hydrogen ions (H⁺) in water or other liquids. Alkalinity is a measure of the water's ability to neutralize acidity.* In general, water for irrigation should have a pH between 5.0 and 7.0. Water with pH below 7.0 is termed "acidic" and water with pH above 7.0 is termed "basic"; pH 7.0 is "neutral". (Sometimes the term "alkaline" is used instead of "basic" and often "alkaline" is confused with "alkalinity".)

An alkalinity test measures the level of bicarbonates, carbonates, and hydroxides in water, and describes the ability of water to buffer against changes in pH. Water that helps to buffer against pH changes is excellent, but too-high alkalinity will increase the incidence of dripper clogging and increase root zone pH over time. Test results are generally expressed as "ppm of calcium carbonate (CaCO₃)". The desirable range for irrigation water is 0 to 100 ppm calcium carbonate. Levels between 30 and 60 ppm are considered optimum for most plants.

Irrigation water tests should always include both pH and alkalinity tests. *A pH test by itself is not an indication of alkalinity.* Water with high alkalinity (i.e., high levels of bicarbonates or carbonates) often has a pH value of 7 or above, but water with high pH does not always have high alkalinity. This is important because high alkalinity, not pH, exerts the most significant effects on growing medium fertility and plant nutrition.

A UMass Extension greenhouse water study found that pH in the range of 7-8 is common in most water sources found in Massachusetts. These higher pH levels are typically not a problem unless the alkalinity exceeds the acceptable range.

High pH/high alkalinity water is common in Berkshire County and sometimes is found in other parts of the state.

Amending the alkalinity of your irrigation water is an important step in producing healthy transplants, and if you are also using this water to irrigate high tunnel soils, amending alkalinity is the fastest and most cost-effective method to manage high tunnel soil pH. This is accomplished by acid injection into irrigation water. A few sources of acid are available on the market: sulfuric acid (very affordable, also adds sulfur); phosphoric acid (can potentially add a lot of phosphorus); nitric acid (adds nitrate, is very acidic and has harmful fumes); and citric acid (approved for organic growers and the only acid source that does not supply additional nutrients). Exercise caution when handling and using any acids.

A handy tool to calculate how much acid is needed is [ALKCALC](#). All you need to complete the form is the water's pH and alkalinity content, the type of acid you want to use, and your target alkalinity level.

Soluble Salts

Excess soluble salts impair root function, which can lead to reduced water uptake and nutrient deficiencies. These include calcium and magnesium (described as water "hardness"); sodium and chloride; potassium and phosphate; sulfate; and ammonium and nitrate. Soluble salts in water are measured by electrical conductivity (EC_w) expressed as millimhos per centimeter (mmhos/cm), which is equivalent to milliSiemens per centimeter (mS/cm). Electrical conductivity is also referred to as specific conductance or salinity.

EC (electrical conductivity) measures the levels of natural salinity and salinity caused by fertilizer residues in water and soils. In Massachusetts, high EC water is not a common problem. However, high EC may occur in water from containment ponds rich in fertilizer residues, certain wastewaters used for irrigation, water contaminated by road salt, and, rarely, from saltwater intrusion in coastal wells. Irrigation water to which water-soluble fertilizer has been added has an EC of about 1.5-2.5 mS/cm, so, to avoid plant injury, the untreated water should have an EC no higher than the acceptable range of 0-1.5 mS/cm, although values of less than 1 are recommended for plugs.

Correcting Water Quality Problems

Alkalinity can be neutralized by addition of acids described in the alkalinity section above. Total dissolved solids, the soluble salts measured together as EC and individually in ppm of the element, can be removed by several water purification systems. Individual elements can be removed from the water if total dissolved solids are not high enough to warrant total salts removal. Before investing in any treatment system, however, it may be advisable to investigate the possibility of switching to an alternate water source, or mixing water sources, if it is an economical alternative for solving a water quality problem. Water purification methods are available and are summarized in table 5 of the full-length fact sheet on [Water Quality for Crop Production](#).

--Adapted from the UMass Extension Greenhouse Crops and Floriculture Program

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- Cox, D.A [UMass Extension Floriculture Water Quality Project: I. Salinity, Sodium and Chloride](#)
- Cox, D.A [UMass Extension Floriculture Water Quality Project: II. pH, Alkalinity, Calcium, Magnesium, and Other Elements](#)
- Smith, T.M. 2004. [Effects of pH on Pesticides and Growth Regulators](#)

UMASS EXTENSION IS HIRING!

UMass Extension is pleased to announce that we are now accepting applications for **five Extension Educator positions!** If you or someone you know wants to join our team of educators providing science-based information for Massachusetts growers, please see the job summaries listed below. The default location for all positions is the UMass Amherst campus, with opportunities for hybrid work arrangements. Candidates who wish to be considered for more than one of the positions below need to **apply for each position individually**. Positions will remain open until filled. For priority consideration please apply by **April 24th**.

- The **UMass Extension Fruit Team** is currently hiring one **Extension Educator III (MS-level)** and one **Extension Educator II (BS-level)**. The successful candidate for the Educator III position will have expertise in tree or small fruit crop and pest management and will work with other members of the Fruit Team to provide science-based educational programming and technical assistance to commercial fruit growers in MA and conduct applied research on relevant crop and pest management topics. Special consideration will be given to candidates with expertise in plant pathology and/or small fruit production. The Extension Educator II, which is a 24-month appointment that may be extended pending funding availability, will provide program support for the Fruit Team, assisting with educational programming, organizing grower meetings, contributing to publication of newsletters, and assisting with applied research trials. For more details please see the full position descriptions linked below.

For more details and to apply:

Fruit Extension Educator III

<https://careers.umass.edu/amherst/en-us/job/518181/fruit-extension-educator-iii-umass-extension>

Fruit Extension Educator II

<https://careers.umass.edu/amherst/en-us/job/518182/fruit-extension-educator-ii-umass-extension>

- The **UMass Extension Vegetable and Fruit Teams** are hiring an **Extension Educator III** to provide cross-commodity educational programming and technical assistance for commercial vegetable and fruit growers in MA, and conduct applied research. Special consideration will be given to candidates with expertise in weed biology and management, but other cross-cutting disciplines, for example climate change and technology, will be considered. This is a 24-month appointment that may be extended pending funding availability. For more details please see the full position descriptions linked below.

For more details and to apply:

Extension Educator III Production Agriculture

<https://careers.umass.edu/amherst/en-us/job/518183/extension-educator-iii-production-agriculture>

- The **UMass Soil and Plant Nutrient Testing Lab** is hiring a **Soil Health Educator IV** who will develop and deliver recommendations to customers and educational resources relevant to soil fertility and health, with potential for some applied research projects. They will collaborate with Extension professionals across multiple teams in production agriculture, commercial horticulture, and urban agriculture. This is a MS-level position requiring significant experience, with a preference for candidates with expertise in analytical testing and practical recommendations in soil fertility and health. This is a 24-month appointment that may be extended pending funding availability. For more details please see the full position descriptions linked below.

For more details and to apply:

Soil Health Extension Educator IV

<https://careers.umass.edu/amherst/en-us/job/518166/extension-educator-iv-soil-health-umass-extension>

- **UMass Extension** is hiring an **Urban Agriculture Educator III** to join a recently hired Urban Agriculture Educator

based in Newton and a soon-to-be hired Extension Faculty member at the Stockbridge School of Agriculture. The Educator will develop and deliver educational resources to support agricultural enterprises in urban areas of Massachusetts and maintain working relationships with organizations and professionals in urban agriculture and linked fields. Successful candidates will have at least a BA/BS and three years of relevant professional experience, in addition to strong multi-cultural competence and experience delivering fact-based information. This is a 24-month appointment that may be extended pending funding availability. Alternate UMass locations in Massachusetts can be discussed with the preferred candidate. For more details please see the full position descriptions linked below.

For more details and to apply:

Urban Agriculture Extension Educator III

<https://careers.umass.edu/amherst/en-us/job/518177/urban-agriculture-extension-educator-umass-extension>

NEW PRODUCE SAFETY RESOURCES FOR HYDROPONIC AND AQUAPONIC OPERATIONS

The Northeast Center to Advance Food Safety (NECAFS) at the University of Vermont is pleased to share this set of [resources for Produce Safety in Hydroponic and Aquaponic Operations](#). These resources, primarily written for the audience of produce safety educators and regulatory officials, guide readers through produce safety considerations specific to hydroponic and aquaponic operations. They assume a general background in the FSMA PSR and are supplementary to the content of the Produce Safety Alliance Grower Training. The factsheets cover first steps in discussing produce safety with growers and other stakeholders in hydroponics and aquaponics. There are fact sheets on:

- [Cleaning and Sanitizing](#)
- [Fish Health and Handling](#)
- [Harvest and Postharvest Handling](#)
- [Personal Health and Hygiene](#)
- [Wildlife and Domesticated Animals](#)

UFW FOUNDATION ACCEPTING APPLICATIONS FOR USDA'S FARM AND FOOD WORKER RELIEF PROGRAM

[The U.S. Department of Agriculture \(USDA\) Farm and Food Worker Relief \(FFWR\) Grant Program](#) awarded approximately \$667 million in grants to fourteen nonprofit organizations and one Tribal entity through Consolidated Appropriations Act of 2021 funds. The purpose of this program is to defray worker expenses incurred preparing for, preventing exposure to, and responding to the COVID-19 pandemic. Workers may only receive one \$600 payment per person, and they must have worked in the U.S. during the pandemic.

Farm workers across the U.S. can now apply for the \$600 COVID-19 pandemic relief payments through [UFW Foundation](#). UFW Foundation will be distributing a one-time \$600 relief payment to farm workers affected by the COVID-19 pandemic who qualify. There is no cost to apply for the program. You can only apply once; additional applications will be denied.

Relief payments are available to frontline agricultural workers who worked during the COVID-19 pandemic. For more information on the program, eligibility, and how to apply, visit: <https://www.ufwfoundation.org/ffwr>.

APPLICATION PERIOD OPEN FOR USDA RURAL ENERGY FOR AMERICA PROGRAM (REAP)

The USDA is accepting applications for grants to help agricultural producers and rural small businesses invest in renewable energy systems and make energy-efficiency improvements. USDA is making the \$1 billion in grants available under the Rural Energy for America Program (REAP) funded under the Inflation Reduction Act. For application information, eligibility and deadlines see, [Rural Energy for America Program Renewable Energy Systems & Energy Efficiency Improvement Guaranteed Loans & Grants](#).

APPLICATION PERIOD OPEN FOR SEVERAL MDAR GRANT PROGRAMS

The Massachusetts Department of Agricultural Resources (MDAR) is accepting applications from Massachusetts farmers

who wish to participate in one of these Department programs. The Request for Responses (“RFR”)s containing program details and the application form is posted on CommBuys and can be accessed through a link on each program website below. If you would like an application mailed to you, contact the program coordinator listed.

To learn more about these programs, access this video link to the [Recorded Grants Webinar](#) held on 3/21/2023

MDAR is currently accepting applications for the following programs:

Climate Smart Agriculture Program (CSAP)

The Climate Smart Agriculture Program links MDAR’s water, energy and climate grants together into one application. This includes the Agricultural Climate Resiliency & Efficiencies (ACRE) Program, the Agricultural Environmental Enhancement Program (AEEP), and the Agricultural Energy Grant Program (ENER). By bringing these three grants under one program, MDAR is seeking to simplify the application process for applicants. This program continues the goals of the three individual grants by implementing projects that help the agricultural sector adapt to climate change, mitigate climate change, reducing or preventing impacts to natural resources that may result from agricultural practices, and that improve energy efficiency and facilitate adoption of alternative clean energy technologies.

Applications are due by 4:00pm on Friday, May 26th, 2023.

For more information, visit the [CSAP Program webpage](#) or contact Laura Maul at (617) 626-1739 or Laura.Maul@mass.gov.

Agricultural Food Safety Improvement Program (AFSIP)

This grant program is for the implementation of practices that prevent or reduce food safety risks for produce or aquaculture operations, meet regulatory requirements, and improve market access.

Applications are due by 4:00pm on Friday, May 26th, 2023.

For more information, visit the [AFSIP webpage](#) or contact Laura Maul at (617) 626-1739 or Laura.Maul@mass.gov.

Farm Viability Enhancement Program (FVEP)

FVEP provides business planning and technical assistance to help established farms identify strategies to increase farm viability. Participants selected to participate in the program may be offered grant funds of \$75,000 - \$165,000 to implement strategies identified in the planning process in return for signing an agricultural covenant on the farm property for a 10 or 15-year term.

Applications are due by 4:00pm on Monday, May 1st, 2023

For more information, visit the [FVEP webpage](#) or contact Laura Barley at 413-726-2008 or Laura.Barley@mass.gov.

APR Improvement Program (AIP)

This grant program provides business and technical assistance to farms with land that has already been protected through MDAR’s Agricultural Preservation Restriction (APR) Program. Grant funds of \$60,000 - \$125,000 may be available on a reimbursement basis with a required 20% match by participants for capital infrastructure improvements on the farm identified through the planning process.

This grant program is currently accepting applications. **Applications are due by 4:00pm on Monday, May 1st, 2023**

For more information, visit the [AIP webpage](#) or contact Diego Irizarry-Gerould at 857-248-1671 or Diego.Irizarry-Gerould@mass.gov.

Stewardship Assistance and Restoration on APRs (SARA)

This grant program funds projects to restore farmland for agricultural use on agricultural preservation restriction (APR) farms. Funding of up to \$35,000, with a 15% match, may be available on a cost reimbursement basis for approved projects.

Applications are due by 2:00pm on Friday, April 7, 2023.

For more information, visit the [SARA webpage](#) or contact Julie Weiss at 617-913-5317 or Julie.Weiss@mass.gov

Matching Enterprise Grants for Agriculture Program (MEGA)

This grant program assists beginner farmers who are between 1 and 10 years in business by providing technical assistance and business planning. Grant funds of up to \$10,000, \$20,000, or \$30,000 may be available with a 1:1 match to assist farmers whose goal is to raise agricultural products and who are developing their farms into commercially viable operations.

Applications are due by 4:00pm on Monday, May 1st, 2023.

For more information, visit the [MEGA webpage](#) or contact Jessica Camp at 617-823-0871 or Jessica.Camp@mass.gov.

Massachusetts Food Ventures Program

This grant program funds projects that support food ventures in low or moderate income communities. This includes Gateway Cities and rural communities. Participants selected by the program will be reimbursed up to \$500,000, and the minimum award is \$100,000.

Applications are due by June 13, 2023.

For more information, visit the [Food Ventures Grant Program webpage](#) or contact Rose Arruda at 617-626-1849 or Rose.Arruda@mass.gov.

Urban Agriculture Program

This grant program advances agricultural goals and objectives of Massachusetts. The program funds infrastructure needs, innovative food production, zoning ordinances, technical assistance, land acquisition, and youth leadership development.

Applications are due by May 22, 2023.

For more information, visit the [Urban Agriculture Program webpage](#) or contact Rose Arruda at 617-626-1849 or Rose.Arruda@mass.gov.

Cranberry Bog Renovation Grant Program

Funding to implement cranberry bog renovations that promote more efficient bogs both in design and production while enhancing the business and environmental sustainability of the cranberry operation.

Applications are due by 4:00pm on Friday, May 26th, 2023.

For more information visit the [Cranberry Bog Renovation Grant Program webpage](#) or contact Laura Maul at (617) 626-1739 or Laura.Maul@mass.gov.

SBA LOW-INTEREST DISASTER LOANS REMINDER

The [U.S. Small Business Administration \(SBA\)](#) is reminding small businesses, small agricultural cooperatives, small businesses engaged in aquaculture, and most private nonprofit organizations that April 17 is the filing deadline for federal working capital loans in Massachusetts due to drought that began Aug. 9, 2022.

Low-interest disaster loans are available in the counties of **Barnstable, Bristol, Dukes, Essex, Franklin, Hampden, Hampshire, Middlesex, Norfolk, Plymouth, Suffolk and Worcester in Massachusetts**; Tolland and Windham in Connecticut; Cheshire, Hillsborough and Rockingham in New Hampshire; and Bristol, Newport and Providence in Rhode Island. Under this declaration, the SBA's Economic Injury Disaster Loan (EIDL) program is available to eligible farm-related and nonfarm-related entities that suffered financial losses as a direct result of this disaster. Apart from aquaculture enterprises, SBA cannot provide disaster loans to agricultural producers, farmers and ranchers. Nurseries are eligible to apply for economic injury disaster loans for losses caused by drought conditions.

The loan amount can be up to \$2 million with interest rates of 3.04 percent for small businesses and 1.875 percent for private nonprofit organizations, with terms up to 30 years. Applicants may apply online using the Electronic Loan Application (ELA) via the SBA's secure website at DisasterLoanAssistance.sba.gov/ela/s/ and should apply under SBA declaration # 17589. If you have questions, please contact the FOCE Communications Department at 404-331-0333.

EVENTS

AGRICULTURAL PRESERVATION RESTRICTION (APR) LISTENING SESSIONS 2023

In April and May, MDAR will be conducting a series of 5 in-person listening sessions across the state as part of its triennial (every three years) review of the APR program.

MDAR would like to hear your thoughts on what works well and your concerns or challenges with the program, including: dwellings on APRs, your ability to conduct non-agricultural commercial activities on APRs (Special Permits), alternative energy on APRs, the sale and transfer of APRs, APR eligibility and ranking, the use of ACEP ALE program to leverage APR funding and other APR related issues.

Your participation in the meeting is encouraged and welcomed. If you would like to pre-register follow [this link](#).

The specific dates and locations which are detailed in the program flyer are:

APR Program Events in Spring 2023 - Evenings 6-8pm (Registration starts at 5:30 p.m.)

- **April 11 - Dighton** - Bristol County Agricultural High School - Student Commons 212, Gilbert Hall 135 Center Street, Dighton
- **April 13 - Stockbridge** - Stockbridge Town Hall, 50 Main St, Stockbridge
- **May 2 - Amherst** - Red Barn at Hampshire College, 893 West Street, Amherst
- **May 3 - Danvers** - Essex North Shore Agricultural & Tech School, Media Center, 565 Maple Street, Danvers, MA
- **May 4 - Leominster** - Fidelity Bank - Community Room, 9 Leominster Connector, Leominster

A link to existing guidance, policies, procedures and regulations relative to the management and oversight of the Program of APR policies is available on the [APR website](#). For questions, please email: events@discoverasg.com.

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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