



UMass
Extension

Vegetable Notes

For Vegetable Farmers in Massachusetts since 1975



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High tunnel reconstruction underway at Four Town Farm in Seekonk, MA after snow and wind collapsed the tunnel a few weeks ago. Photo: Four Town Farm

CROP CONDITIONS

It's been a weather whirlwind over the last few weeks, with some significant snowfall, followed by highs near 70 degrees, and back to snow again. Most of the snow out our windows in the Pioneer Valley has melted now – the ground is thawing and mud season has officially begun. Spring in New England has always been unpredictable. Rising average temperatures in the Northeast mean an earlier start to the growing season, but also even more variability in temperature and wider temperature and water-availability extremes. See the article in this issue on adapting spring planting schedules with climate change in mind.

There still seem to be supply chain issues that may affect product availability and prices for production materials, and growers are concerned about material price increases. Some suppliers are putting out notices to reassure customers that they do have products available, although higher gas prices may mean steeper delivery charges in some cases.

Farms are hiring and getting their crews together. Greenhouses are up and running and starting to fill up with seed trays. And in high tunnels, growers are finishing up their winter greens and getting ready for the next crop. Grafting is happening now where the next tunnel crop is grafted tomatoes. On some farms, the first harvest of 2022 was planted last year—spring-dug parsnips are being harvested now that the ground has thawed, and overwintered onions are almost ready to harvest!

TIMING SPRING VEGETABLE PLANTING IN A CHANGING CLIMATE

--Written by Emmalea Ernest, Scientist, Delaware Extension Vegetable & Fruit Program. Originally published March 4, 2022, in [Delaware Weekly Crop Update 30:1](#). Adapted for Massachusetts by G. Higgins, UMass Extension Vegetable Program.

Success with spring planted vegetables depends on getting seeds or transplants into the field at the right time. Timing plantings correctly is getting trickier since the [average growing season length for Massachusetts](#)

has increased by 11 days since 1895 (and the range of increases for New England states ranging from 11 to 27 days), with most of the increase occurring since 1990. On average, the last spring frost is occurring 3.5 days earlier and the first fall frost is occurring 7 days later, in MA. Throughout New England, the last spring frost is occurring 2-13 days earlier and the first fall frost is occurring 7-13 days later. However, the spring weather conditions in any given year are unpredictable which can make the season stressful or downright discouraging. Plantings can be damaged by cold weather, or on the other end of the spectrum, unseasonable hot weather can stress cool season crops. Here are some tips to increase your chance for success with spring planted vegetables in a changing climate.

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

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

Know Likely Frost/Freeze Free Dates for Your Site

Frost can begin to form when air temperatures drop close to 32 °F. A freeze occurs when temperatures reach 32 °F or lower and a hard freeze occurs with sustained temperatures of 28 °F or lower. Some crops will tolerate a frost or freeze, some will tolerate a hard freeze and some will not tolerate either. The likelihood of frost or freeze after a certain date can be estimated based on past years' temperatures.

You should also consider conditions that are specific to your location. Urban sites retain more heat creating a microclimate, termed a "heat island", with a longer frost-free period. Areas near large bodies of water or with topography that allows cold air to settle into lower elevation areas will be protected from freezes when temperatures near 32 °F. Conversely, low areas where cold air collects or flat areas where cold air cannot drain will be more at risk of late spring freezes. Knowing how your site deviates from the average for your area will help you decide if you can plant cold sensitive crops earlier in the season or if you should be more cautious. Even though the average growing season length has increased in Massachusetts the degree of increase may vary by location in the state.

Use Historically Recommended Planting Dates as a Guide

Planting dates are often recommended by seed companies, and growers often have their own set of historic planting dates to start from. These planting dates are based not only on a crop's tolerance of cold weather but also on their time to maturity and desired harvest window. For example, Brussels sprouts are cold tolerant, but they are transplanted in June for fall harvest because they require a long growing season. To adapt to warmer spring conditions and a longer growing season, choose dates earlier in the planting window for cool season crops, especially those that are prone to quality problems when exposed to heat (i.e. lettuce, cauliflower, broccoli). In many years, warm season crops can be planted early in their recommended window to achieve earlier harvest.

Variety Selection

For cool season crops that might be impacted by unseasonably hot conditions in April, May and June, choose

UMass Extension Vegetable Program

HOT WATER SEED TREATMENT SERVICE



WHAT IS HOT WATER SEED TREATMENT?

HWST is a process of soaking seeds in hot water in order to kill certain seed-borne fungal, bacterial, and viral pathogens.

WHAT SEEDS CAN BE TREATED?

There are set protocols for many vegetable crops, including most brassica, nightshade, chenopod (beets, spinach, chard), allium, and umbelliferous (carrot, celery, parsley, cilantro) crops.

WHY SHOULD I TREAT MY SEEDS?

HWST can remove plant pathogens from seed, eliminating one potential source of disease on your farm. HWST will not protect against pathogens originating from other sources, such as infested crop residues, soil, or wind-blown spores.

UMASS HWST SERVICE:

Mail us your seeds, payment, and a liability waiver, and we'll treat the seeds and mail them back!

Fees: \$6 for up to 1 oz, per variety, +shipping (see link below for more info)

LEARN MORE AT
AG.UMASS.EDU/SERVICES/HOT-WATER-SEED-TREATMENT

varieties with [heat tolerance](#). Heat tolerant lettuce varieties will be less prone to bolting and turning bitter tasting. Heat tolerant broccoli and [cauliflower](#) are less prone to quality reducing [physiological disorders](#). Another strategy to avoid damage from heat stress is to plant several varieties with different days to maturity. Planting several varieties makes it less likely that all the plants will be at the heat susceptible growth state during a period of hot weather. A similar approach is to make sequential plantings of the same variety during the entire planting window.

Use Season Extension Aids for Very Early Plantings

Many growers use added inputs to modify the environment for seedlings and increase the chance of success with early season plantings. This includes plastic mulch, floating row covers, low tunnels, and rye windbreaks. See the past WCU article by Gordon Johnson “[Transplanting Warm Season Crops in April](#)” for a detailed discussion of these practices.

Check the Forecast Before Planting

Before deciding on an early planting date, check the weather forecast to determine if predicted conditions will support plant growth. This is especially important if you are planting cold sensitive crops early. If you are in a freeze prone site, note any predicted clear nights which could result in frost even if temperatures are not forecast to drop to 32 °F. Try to plant at a time when temperatures are expected to be warm for a few days afterward. When direct seeding, warm temperatures promote faster germination resulting in less exposure to insects and diseases that impact seeds. Transplanting at the beginning of a warm period allows plants to quickly root into the soil, improving their stress tolerance. Also avoid transplanting right before forecasted strong winds which can quickly dry out transplants that have not yet rooted into the soil.

Acclimate Transplants

Make sure that transplants have the best chance of survival by acclimating them to higher light and lower humidity conditions before planting. Transplants should be moved from the greenhouse to an outdoor location in partial sun and protected from excessive wind. Maintain transplants in these conditions for a week before planting to the field. Move or cover transplants if very cold or windy conditions are expected.

Be Ready to Frost Protect

Even though some recent spring seasons have been warm we have still had years with very late frosts ([such as in 2020](#)) so be prepared to protect sensitive plants if freezing conditions are predicted. Some crops like potatoes and sweet corn will regrow if the plants are still small when frost damaged. Other crops like tomatoes, peppers and melons, will not regrow if plants are frozen. Row covers can be used to protect frost sensitive vegetables that have already been planted in the field. Covers should be applied in late afternoon before air temperatures fall to retain heat accumulated in the soil.

ECONOMICS OF WINTER SPINACH: THREE CASE STUDIES

Local winter greens have become staples in farm stores, farmers’ markets, and grocery stores throughout New England over the past several years, and demand from consumers seems to be nearly limitless. Growers producing winter greens in high tunnels have adopted a wide range of production systems – from low-tech hand-powered systems to highly mechanized and specialized operations. With the amount of winter high tunnel production on farms increasing every year, we realized that growers might benefit from seeing the range of production systems, and how profitable they might be.

To this end, over the winter of 2020-21, we asked three farms to track their winter high tunnel spinach yields and associated labor for one tunnel on their farm. We used the labor and yield data, along with growing practice information, to compile a case study of each farm and compare production across the three farms. This report will briefly outline production on these farms, as well as some take-home spinach production tips that we have learned from this project. **We’d like to say a huge thank you to our case study farms, for all of the work they put in tracking labor and yields!**

Farm 1

Farm 1 was the least mechanized of the three case study farms. They turn over their soil by hand or with a walk-behind BCS, seed with a walk-behind Planet Junior Seeder, and harvest by hand, leaf-by-leaf. They market their spinach solely through a \$50 spinach add-on to their winter CSA. Farm 1 used chicken manure and other OMRI-listed blended fertilizers for a fairly simple fertility plan, and did not cover their spinach with row cover. Given all of these factors, Farm 1 had the lowest production material costs, but the highest labor costs of all three farms, and because their spinach was marketed through a CSA, Farm 1 also had the lowest price per pound of all three farms.



Farm 1's tunnel on November 16, 2020 (left), and harvesting leaf-by-leaf at Farm 1 (right). Photos: G. Higgins

Farm 2

Farm 2 was significantly more mechanized than Farm 1 – their tunnel allows for tractor access, and beds are prepped using a disc harrow. Notably, this was the only farm out of our three case studies that transplants spinach, in order to keep their summer tunnel crops going as late as possible and still have spinach to harvest in November. Farm 2 had high production materials costs, as they applied compost in the tunnel prior to planting, used row cover, and had significant costs associated with producing the spinach transplants. This farm also harvested by hand, harvesting off the larger leaves of each plant with a knife and leaving the smaller leaves untouched. Unfortunately, one variety of spinach at this farm developed spinach downy mildew in late fall, and the disease later spread to second variety. However, because of their selective harvesting method, they were able to continue harvesting around the affected leaves through March. Farm 2 ended up being the most profitable of the three farms, partially because of yield losses at Farm 3 but also because they are able to sell their spinach at a high price per pound through wholesale and retail markets.



Farm 2's tunnel on March 3, 2021 (left), and row cover covering spinach and lettuce in Farm 2's tunnel. Photos: G. Higgins

Farm 3

Farm 3 is highly mechanized and specializes in growing winter greens. All of the tunnel preparation, weed management, and harvesting is done by tractor. Because of this, Farm 3 had significantly higher equipment costs than the other two farms, but had very low labor costs. This production system would have been the most profitable of the three, but several disease outbreaks reduced their yield by about half. In the fall, a nearby field of 'Auroch' spinach developed downy mildew, prompting the farm to till in the case study tunnel which was also seeded with 'Auroch' and reseed with 'Kolibri', which later developed significant Cladosporium leaf spot.



Farm 3: Seeding with the tractor-mounted seeder (left), the case study tunnel on March 3, 2021 (center) and harvesting with the mechanical harvester (right). Photos: G. Higgins

	Farm 1	Farm 2	Farm 3
Marketing	CSA	75% wholesale, 25% retail	Mostly wholesale
Seeding date	September 21	Seeded early September Transplanted early October	October 12 Re-seeded October 25
Harvest period	December 3 – April 16 (19 weeks)	November 2 – March 22 (20 weeks)	January 24 – March 13 (7 weeks)
Tunnel size	1,350 ft ²	3,000 ft ²	6,000 ft ²
Equipment cost*	\$0	\$55,350	\$75,140
Plant density	80 plants /ft ²	2.8 plants /ft ²	140 plants /ft ²
Planting speed	45 ft ² /min	0.26 ft ² /min	100 ft ² /min
Harvest speed	0.08 lbs/min	0.375 lbs/min	11.67 lbs/min
Total labor time	89.5 hrs	63.4 hrs	18.5 hrs
Total labor cost	\$1,745 (\$1.29/ft ²)	\$1,267 (\$0.42/ft ²)	\$286 (\$0.05/ft ²)
Yield from tunnel	468 lbs (0.34 lbs/ft ²)	805 lbs (0.27 lbs/ft ²)	1,150 lbs (0.19 lbs/ft ²)
Sales from tunnel	\$3,000 (\$2.22/ft ²)	\$8,251 (\$2.75/ft ²)	\$9,200 (\$1.53/ft ²)
Average price per pound	\$6.41	\$10.25	\$9.75
Production materials cost	\$68 (\$0.05/ft ²)	\$2,298 (\$0.77/ft ²)	\$484 (\$0.08/ft ²)
Profit per ft²*	\$0.88	\$1.56	\$1.40
*This value does not include the cost of production equipment or post-harvest equipment, labor, or materials			

Recommendations for Improving Winter High Tunnel Spinach Production

- Variety Selection:
 - **Plant varieties with the latest, broadest downy mildew resistance (1-19):** In [our most recent variety trial](#), Dallas, Crosstrek, Nembus (all 1-17 varieties), Patton (1-15, 17), and Responder (1-12, 14-16) all performed well. Races 18 and 19 are newly identified as of spring 2021, and while varieties with resistance to these two varieties do exist, they may not yet be available in Northeast markets.
 - **Plant multiple varieties** so that all gaps in resistance are covered, and to maximize protection against novel strains.
- Bed and Tunnel Preparation:
 - **Keep soil pH above 6.**
 - **Prepare uniform beds:** We have found that spinach stand is very sensitive to soil compaction and moisture, so efforts to make uniform, slightly raised beds can improve stand.
 - **Set up uniform irrigation:** Spinach seedlings are sensitive to damping off in cold soil, so ensuring that there are no wet spots in your tunnel can help reduce damping off and improve stand.
- Seeding & Production:
 - **Increase planting density:** We use a rate of 69 seeds/ft²; growers we've surveyed have used up to 140 seeds/ft².
 - **Use PSNTs to time sidedressing:** Pre-sidedress nitrate tests measure the available nitrate in the soil at the time of sampling. Nitrate moves quickly through soil, and it's not fully known how it behaves in cold high tunnel soil in

the winter months when the crop is growing slowly. When nitrate levels drop below 30ppm, it's recommended to sidedress. In our research trials, we sidedress through overhead irrigation, using OMRI-listed water-soluble calcium nitrate. PSNTs can be taken monthly to monitor soil nitrate levels. PSNTs are available through the [UMass Soil Lab](#) for \$15 each.

- **Use row cover to speed up growth but not to keep plants alive:** Spinach is very cold-tolerant and won't be harmed by cold temperatures as long as the leaves aren't disturbed while frozen. Row cover may speed up growth slightly but also adds labor, and can increase leaf wetness and disease, so don't use it to simply keep the plants alive.

- **Harvesting & Sales:**

- **Harvest by clear cutting:** From what we have seen, winter markets tend to be forgiving of the cut leaves that can occur in regrowth after clear cutting. Clear cutting, either mechanically or by hand, is a huge time/labor saver. We have seen different varieties respond differently to clear cutting as well – some varieties have a growth habit where the developing leaves remain uncut within the growing point. In our trials, Patton, Responder, and Cross-trek all had “uncut” regrowth after being clearcut.
- **Harvest larger than babyleaf:** If your markets will allow it, this is an easy way to increase yields.
- **Increase price/lb:** Get a fair price! We've seen people charge anywhere from \$5-14/lb and customers seem willing to pay premium prices for winter greens.

This material is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, through the Northeast Sustainable Agriculture Research and Education program under subaward number LNE20-402.

--Written by Genevieve Higgins, UMass Extension Vegetable Program

CORNELL COOPERATIVE EXTENSION MESOTUNNEL POLLINATION TRIAL, 2021

--Written by Kellie Damann and Sarah Pethybridge, Cornell AgriTech Geneva, NY

Editor's Note: Mesotunnels are a new crop production system being looked at by researchers in the eastern half of the U.S. Mesotunnels are similar to low tunnels, in that they are temporary structures installed and taken down within one growing season. Low tunnels are usually in place for part of a season, and are covered with spunbonded row cover that traps heat and excludes insects, like Remay. Mesotunnels are meant to stay in place for a full season, and are covered by mesh row cover that does not trap heat, like ProtekNet or ExcludeNet. The goal of mesotunnels is insect pest exclusion, and they also may provide some protection from high winds and hail.

Current research from Cornell University, Iowa State University, and the University of Kentucky is evaluating the use of mesotunnels in cucurbit production. Research has shown that mesotunnels do effectively exclude insect pests of cucurbits, including striped cucumber beetle and squash bug, and subsequently reduce incidence of the diseases that those insects can vector (bacterial wilt and cucurbit yellow vine decline, respectively). Their research also showed that using landscape fabric between plastic-mulched beds under a mesotunnel effectively controls weeds.

The researchers doing these studies are conducting a survey to learn about grower experiences using row covers and their willingness



A mesotunnel over young seedlings, with straw mulch between beds. Photo: Iowa State University.

**Click here to take the
cucurbit row cover survey!**

to adopt the mesotunnel approach. Please consider completing the survey, whether or not you have used mesotunnels or row cover systems in your cucurbit production! Your responses are valuable and will contribute to improving row cover innovations. Responses will be kept completely confidential, and results will be reported in a summary form only.

2021 was our second year evaluating mesotunnels in New York. This year we focused on how pollinators (naturally occurring or purchased bumblebees) behave in this system and effects on yield in muskmelon. We also evaluated how different weed suppression methods impacted insect pest populations and disease in muskmelon and acorn squash. Mesotunnels are a form of season long protection that acts as a barrier to insect pests and pathogens they can carry. Mesotunnels are about 3.5 to 4 ft. tall and covered with a breathable nylon mesh that resembles a window screen.

This trial was conducted on 150-ft beds, three rows wide, with 7 ft centers, so the whole tunnel was 21 ft by 160 ft; with cv. 'Athena' muskmelon. Three different treatments were compared.

The three treatments for this trial were (Fig. 1):

- **Full season:** the exclusion netting (ExcludeNet®) was installed at transplanting and remained in place until harvest. A purchased bumblebee hive from Koppert Inc. was used for pollination.
- **Open ends:** the netting was installed at transplanting, but the short edges were opened so natural pollinators (honeybees, squash bees, etc.) could enter the tunnel.
- **On/off/on:** the netting was installed at transplanting, but was removed completely during pollination for natural pollinators then replaced.

The pollination period was three weeks within each treatment.



Figure 1. Full season, on/off/on, and open ends mesotunnel treatments.
Photos: Cornell Cooperative Extension

Results

Disease and insects: Cucumber beetle populations and BW incidence were significantly higher in the on/off/on treatment compared to the open ends but were not significantly different between the open ends and full season treatments.

Harvest: Treatment had a significant effect on the number and weight of marketable muskmelons. The on/off/on treatment produced the most marketable fruit of all treatments (20.7% and 64% more than the open ends and full season treatments, respectively), and the full season treatment produced the least marketable fruit. The number of marketable fruit produced in the open ends treatment was 35.8% greater than the full season tunnel. Marketable fruit weight in the on/off/on treatment was 66.4% higher than tunnels with a bumblebee hive.

So, what's the takeaway from this year's pollination results? The open ends treatment may be the most feasible and cost-effective for NY muskmelon growers. However, this trial will be repeated in 2022 to see if similar trends are found.

This research is funded through the USDA-NIFA Organic Research and Extension Initiative led by Iowa State University. Sarah Pethybridge and Kellie Damann (Cornell AgriTech, Geneva) are the New York collaborators. More details on the New York research can be found by contacting Sarah (sjp277@cornell.edu) or Kellie (kcd48@cornell.edu) or visiting our projects website: <https://www.cucurbit.plantpath.iastate.edu>.

NEWS

MASSACHUSETTS FARMLAND ACTION PLAN SURVEY

You are invited to participate in a survey to inform the development of the Massachusetts Farmland Action Plan. The purpose of this plan is to develop state level goals and recommendations for increasing and improving farmland

protection, farmland access, and the long-term economic and environmental viability of farms and farmland across all regions of the state. The Massachusetts Department of Agricultural Resources (MDAR) is supporting the development of the plan, and has engaged the UMass Donahue Institute to facilitate the planning process, including gathering input from the public, including farmers and their supporters. We are partnering with the Massachusetts Food System Collaborative and American Farmland Trust New England Team in this effort.

Farmers, aspiring farmers, farm workers, and people who work to support farms and farming are all invited to complete the survey and share recommendations. **This survey will be accepting responses through April 3.**

[Click here to take the survey.](#)

Questions or comments? Contact mafarm-act-plan@donahue.umass.edu.

NORTHEAST SARE INVITES PARTNERSHIP GRANT PROPOSALS

The Northeast Sustainable Agriculture Research and Education Program (SARE) has released its 2022 call for Partnership Grant program proposals.

Applicants are invited to request up to \$30,000 in funding to address a topic related to sustainable agriculture. Proposed projects should seek innovative solutions to challenges or explore new opportunities that affect agricultural production, marketing, and/or household and community well-being in Northeast farming and food systems. They must be conducted in one of the New England States, NE, MD, NJ, NY, PA, WV, or Washington D.C. Grants may be used to conduct research, offer education and training programs, develop unique machines and tools, organize on-farm or in-market demonstrations, or explore new farm management practices. Funding may not be used to support educational programs for non-farming audiences, food donation efforts, community or school gardening initiatives, or public awareness campaigns about agriculture and nutrition. Projects typically run for 1-2 years.

Proposals are due online by 5pm on April 12. [Click here for more information.](#)

APPLICATION PERIOD OPEN FOR MDAR'S VIABILITY GRANT PROGRAMS

The due date for all these three applications is Tuesday, April 26, 2022.

Virtual Information Session: Tuesday, March 22, 7:00pm – [Click here to register.](#)

- **Farm Viability Enhancement Program (FVEP)** – for established farms. This program provides business planning and technical assistance to develop or update a business plan for established commercial farms that own and operate unrestricted farmland. In return for a short-term covenant to keep the land in agricultural use, operators may be eligible for grants to implement capital projects on the farm that have been identified in the business plan completed through the program. Grant levels range from \$75,000 to \$150,000, depending on the size of the farm and acreage protected, in return for a 10 or 15-year term covenant. Uses of funds will vary depending on the needs of the farm – examples include new or improved livestock barns or farm stores; purchasing delivery vehicles, tractors or haying equipment; constructing food processing or storage facilities.

For more information and a FVEP application, go to: [Farm Viability Enhancement Program](#) or contact Melissa Adams at Melissa.L.Adams@mass.gov or 413-726-2001

- **APR Improvement Program (AIP)** – for APR farms. This program helps sustain active commercial farming on land that has already been protected through the state's Agricultural Preservation Restriction (APR) Program. AIP provides business planning and technical assistance to farmers selected to participate in the program and grants may be available on a reimbursement basis to implement identified improvements on the farm to increase productivity and profitability. Grant levels are up to \$60,000; \$90,000; or \$120,000 depending on the size of the farm and acreage under APR, available on a cost reimbursement basis with a required 25% match contribution. AIP funds are used primarily for capital improvements to farm infrastructure, such as new or improved barns for equipment or hay storage or livestock housing, farm stores, processing facilities; or resource improvements for agricultural use, such as orchard renovations or fencing.

For more information and an AIP application, go to: [APR Improvement Program](#) or contact Michael Parker at Michael.Parker@mass.gov or 857-895-0023

- **Matching Enterprise Grants for Agriculture (MEGA)** – for beginning farmers, who have been in business at least

one (1) but no more than six (6) years who aspire to develop their farms into commercially viable operations. The program provides business planning and technical assistance, and grant funds of up to \$10,000 on a one-to-one matching cash reimbursement basis. Funds may be used for equipment, infrastructure, or other capital improvements identified through the business planning process that will have a positive impact on the participating farm's viability. Common uses of MEGA grant funds include greenhouses, barn renovations, tractor implements, chicken coops, farmstands, and refrigerated delivery trucks.

For more information and a MEGA application, go to: [Matching Enterprise Grants for Agriculture](#) or contact Jess Camp at Jessica.Camp@mass.gov or 617-823-0871.

PROPOSED CHANGES TO AGRICULTURAL WATER REQUIREMENTS IN THE PRODUCE SAFETY RULE - PUBLIC COMMENT PERIOD OPEN UNTIL APRIL 5

On December 2, the FDA announced the publication of new proposed requirements related to agricultural water in the FSMA Produce Safety Rule (Subpart E).

- Docket FDA-2021-N-0471
- <https://www.regulations.gov/document/FDA-2021-N-0471-0001>

The proposed revisions would significantly change the requirements related to pre-harvest water while retaining the existing standards for post-harvest water and for sprouts. The proposal would replace the microbial criteria and testing requirements for pre-harvest agricultural water with an “agricultural water assessment” of pre-harvest water systems that considers several factors in determining whether the water is likely to introduce contamination to fresh produce.

- There is a 120-day public comment period for the draft rule
- Deadline for comments to the docket is April 5, 2022
- Comments that are thoughtful and substantive, containing real-life examples and solutions will assist the FDA in creating a document that better suits the needs of fresh produce farmers across the country
- Comments can be submitted to the [docket](#).

REMINDER: CHLORPYRIFOS AGRICULTURAL TOLERANCES EXPIRED FEBRUARY 28, 2022

On August 18, 2021, the EPA announced that it would revoke all tolerances for chlorpyrifos, which establish the amount of a pesticide that is allowed on food. This revocation went into effect on February 28, 2022. **This means that currently, chlorpyrifos cannot be used on agricultural products; any product treated with chlorpyrifos will be considered adulterated and cannot be sold. Existing stocks of chlorpyrifos products cannot be used.** This decision was made after the EPA determined that the current aggregate exposures from use of chlorpyrifos do not meet the legally required safety standard that there is a reasonable certainty that no harm will result from such exposures.

Chlorpyrifos products that were previously labeled for use in vegetable crops include Bolton, Cobalt, Hatchet, Lorsban, Match-Up, Nufos, Stallion, Vulcan, Warhawk, Whirlwind, and Yuma.

MASSACHUSETTS FARM ENERGY GRANTS: UPCOMING GRANTS & APPLICATION DEADLINES

Rural Energy for America Program (REAP): The next REAP deadline for renewable energy and energy efficiency grants and loan guarantees is **March 31, 2022**. For more information on this program and how to apply, [click here](#).

MDAR Climate Smart Agriculture Program (CSAP): The next round of CSAP will open soon, sometime in spring 2022.

Questions about either program, or need help with your application? Contact the Megan Denardo at the MA Farm Energy Program at megan.denardo@cetonline.org or 413-727-3090.

STATE RESTRICTION OF PESTICIDE PRODUCTS CONTAINING NEONICOTINOIDS

The Massachusetts Pesticide Board Subcommittee (“Subcommittee”) is the entity that registers pesticide products in Massachusetts. During a recent Subcommittee meeting, the Subcommittee determined that current uses of neonicotinoid pesticides used in outdoor non-structural uses or outdoor non-agricultural uses may pose unreasonable adverse

effects to the environment as well as pollinators, when considering the economic, social, and environmental costs and benefits of their use in the Commonwealth. Therefore, the Subcommittee voted to modify the registration classification of pesticide products containing neonicotinoids that have outdoor non-structural uses or outdoor non-agricultural uses on the label **from general use to state restricted use**. These uses include, but are not limited to, uses on lawn and turf, trees and shrubs, ornamentals, and homeowner vegetable and flower gardens. **The reclassification shall be effective on July 1, 2022.**

This reclassification is going to affect a large number of products and it is important that pesticide applicators begin planning for the upcoming changes. Anyone using a product that is classified as State Restricted Use must have a Commercial/Private Certification or have a Commercial Applicator (“Core”) License and be working under the Direct Supervision of someone with a Commercial/Private Certification License. The Department is providing this notice now so that companies can plan for the 2022 season.

We encourage you to visit [this Frequently Asked Questions document](#) for more information on this change, including which active ingredients are classified as neonicotinoids, what types of products will become restricted, and what to do with leftover product that has become restricted if you do not hold the proper license to apply the product.

LOTTA AGRICULTURAL FUND: 10-YEAR, INTEREST-FREE AGRICULTURAL ENTERPRISE LOANS FOR UMASS AMHERST GRADUATES

The Lotta Agricultural Fund was established by Charlotte “Lotta” Crabtree, who was a wealthy actress in the United States in the 1800s. The Fund was established to make interest-free loans to the MA Agricultural College, which has since grown to become the University of Massachusetts Amherst. The fund provide interest-free loans to UMass Amherst Graduates, to support their agricultural food production enterprises. Loans can be made to any graduate of UMass Amherst, but preference is given to graduates of the Stockbridge School of Agriculture.

For more information, including information about how to apply, see <https://stockbridge.cns.umass.edu/lotta-agricultural-fund> or contact Dr. Frank Mangan at fmangan@umass.edu.

EVENTS

WEBINAR: SUCCESS WITH LASER SCARECROWS IN 2022

When: Tuesday, March 22, 2022, 9-10:30am

Where: Online

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

Newly improved laser scarecrow kits will again be available for 2022 for those who wish to partner with our research. This workshop will feature a presentation by Rebecca Nelson Brown and David Brown of the University of Rhode Island about the laser scarecrow and what improvements have been made for 2022. Cornell Cooperative Extension Educators Chuck Bornt and Julie Kikkert will share their experiences testing the devices on New York farms. We will also open the floor to cooperating growers to share their tips for success on the farm.

FUSARIUM MANAGEMENT IN GARLIC: FIELD AND STORAGE CONSIDERATIONS

When: Tuesday, March 22, 2022, 3-5pm

Where: Online

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

This workshop will share research results from two fusarium management studies: one focused on field management of fusarium in garlic and the other focused on post-harvest handling’s affects. Speakers Chris Callahan, Agriculture Engineer at the University of Vermont, and Crystal Stewart Courtens, ENYCHP will present on results of Fusarium management trials in the field (biological soil drenches, variety selection, and mulches) and post-harvest.

This workshop is funded through the generous support of Northeast SARE.

ADAPTING YOUR FARM TO CHANGING LOCAL PRECIPITATION

When: Tuesday, March 22, 6-7:30pm

Where: Zoom

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

Join Christine Hatch, UMass water resources and climate change extension specialist, and Joshua Faulkner, who coordinates UVM's Farming and Climate Change Program, for this webinar to kick off CISA's first annual Adapting Your Farm to Climate Change workshop series. This year's series focuses on water management in times of too much or too little water, both scenarios that are increasingly part of our regional farming system. Learn how local weather patterns, waterways, and groundwater sources are changing, and glean best practices and opportunities for adapting your farm to a changing climate.

This webinar will be followed by four on-farm workshops and a final wrap-up discussion. Stay tuned for more information about the full series soon.

Questions? Call Stephen Taranto, CISA Climate Program Coordinator, 413-665-7400 ext.17 or email stephen@buylo-calfod.org.

RODENT & WILDLIFE MANAGEMENT ON THE FARM

When: Wednesday, March 23, 2022. 1-3:15pm

Where: Online

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

Dr. Paul Curtis, Cornell University, Natural Resources & Environment – Learn the behavior and control of deer, groundhogs, raccoons, turkey, geese, and crows. He will cover problems in the field, in crop storages, and around barns and facilities.

Dr. Matt Frye, NYS IPM Specialist - Learn the behavior of different rodent species; how to inspect and evaluate a rodent problem; types of traps and how to use them; short & long-term reductions strategies. There is more to reducing rodents than a piece of cheese and a snap-trap!

Two pesticide applicator credits are available in categories 1A, 1B, 21, 22, 23, 23, 25, and 31.

SPRAY SAFE, SPRAY WELL / ROCÍA CON CUIDADO, ROCÍA BIEN:

Reducing Pesticide Use Risks for Organic and Beginning Vegetable Farmers / Reduciendo los Riesgos del Uso de Pesticidas Para los Productores de Vegetales Orgánicos

Para información en español, [hacer click aqui.](#)

When: Wednesdays, March 23 & 30, 12-1:05pm

Where: Zoom

Registration: Free! [Click here to register for these workshops.](#)

Join Cornell Cooperative Extension for this free, eight-part workshop series focused on the basics of when and how to use OMRI-listed pesticides on your vegetable farm. Participants in eastern NY will also have the opportunity to receive individual on-farm follow up support from the project team in the spring and summer of 2022.

2022 MASS AGGIE WORKSHOP SERIES: GROWING BLUEBERRIES

When: Saturday, March 26, 2022, 10:30am-12pm

Where: Zoom

Registration: \$35/workshop. [Click here for more information and to register.](#)

This is the final session of the 2022 Mass Aggie Workshop Series. Each year, UMass Extension offers workshops for homeowners and small-scale farmers to help participants gain new skills to can use in the garden or landscape.

Questions? Contact Doreen York at dyork@umext.umass.edu or 413-545-2254.

CULTIVATING A SAFE, HEALTHY, AND PRODUCTIVE CREW

When: Tuesdays, April 5 & 12, 2022, 1pm

Where: online

Registration: \$35/workshop. Scholarships available. [Click here to register.](#)

These are the final sessions remaining in the Farm Labor Workshop Series put on by UNH and UVM this winter, designed to help farmers build practical labor management knowledge and skills. The workshops are geared to produce and diversified livestock producers who are new to managing employees, and to farmers who are considering changes to how they arrange for and manage labor on their farms.

Scholarships and multi-session discounts are available, reducing the workshop fee to \$20. However, these options are only available for people who request – and receive approval for – reduced fees in advance of registration and payment. To request a discount or scholarship, please fill out this [online request form](#). Please wait to register until you hear back from us via email. Decisions are generally made within 3 business days. If you are approved, you will receive a voucher code that you will use during the registration/payment process to activate a reduced registration fee for the workshops you indicated you wish to enroll in.

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