



UMass  
Extension

# Vegetable Notes

For Vegetable Farmers in Massachusetts since 1975



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## CROP CONDITIONS

Happy orkahearts, tomatolove and delecata-tines day *Vegetable Notes* readers! We have really been feeling the love these past few weeks, with donations and sponsorships pouring in from our readers! Thanks so much for supporting this resource and the work our program does to keep it going—we couldn't do it without you. You can also help our program by [completing our survey](#), which helps us set priorities for new research and education projects—we want to hear from you! We've started receiving the first hot water seed treatment orders of the year—see our website linked here for information about our [Hot Water Seed Treatment Service](#) and feel free to call us at 413-577-3976 with questions.

When not tending to crops in tunnels, growers are busy this time of year placing seed orders, making crop plans and generally gearing up for the season to come. We think about preparation a little differently, focusing on how we will scout, monitor, and manage the myriad of pests out there. Over the years we have been asked by farmers for a calendar to tell you when to scout for which pests, and we've finally developed a [Pest Scouting Calendar](#), that we hope will be helpful. This resource lists pests to scout for by the week they are typically first observed. We have found in our beta-testing that if you enter this info into your digital-calendar you will have a simple weekly scouting list always on hand! The calendar was developed from scouting observations on farms across MA over the last several years—dates may be different on your farm or in your region, so be sure to make notes this year about when you saw pests of interest, and use our template as a jumping off place to create your very own digital pest scouting calendar!

Our educational program calendar is chock-full of trainings and workshops for the next few months! Here are some important notes—more information on all can be found in the Events section at the end of this issue.

- **Last chance to register for our [Insect Biology & Management workshop](#), February 19!** Registration deadline TOMORROW, Friday, February 15, 12noon.
- **Registration re-opened for our [Disease Biology & Management workshop](#)**, which was rescheduled to Tuesday, March 19 due to snow.
- Inimidated by soil tests? Want to save money on fertilizers? Come to our [Soil Testing & Nutrient Management Planning workshop](#) on February 26.
- **PSA Grower Safety Trainings:** The [Westborough](#) training on February 20 is filling up fast, but there is still room in the [Beverly](#) and [Stockbridge](#) trainings in March.
- Two [Worker Protection Standards Train-the-Trainer workshops](#) have been scheduled for March - read about

Worker Protection Standards and regulatory requirements for farms in this issue.

Want to show us your love this orkahearts, tomatolove and delecata-tines day? Fill out our Vegetable program survey, sponsor us, or give a donation with the buttons below.

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Sponsor Veg Notes

Take the Vegetable Program Survey

## PEST ALERTS

Those with crops growing in tunnels and greenhouses are reporting that aphids are starting to build up—see the article in this issue about managing aphids now and planning ahead to protect your next tunnel crop from future aphid outbreaks.

The UMass Plant Diagnostic Lab has also identified crown rot caused by *Botrytis cinerea* on lettuce. Symptoms include water-soaked, gray to brown or orange wet rot that occurs on the older leaves at the soil line, which can spread to the inner healthy parts of the crown—similar to symptoms of lettuce drop caused by *Rhizoctonia solani*. *B. cinerea* is a weak pathogen but is ubiquitous in the environment and can affect many crops under cool and wet conditions. Remove row covers when possible to reduce moisture and promote leaf drying.

**If you have lettuce or spinach downy mildew in your high tunnel or greenhouse, let us know!** Look for fuzzy sporulation on the undersides of spinach and lettuce leaves—spinach downy mildew is gray-brown and lettuce downy mildew is pure white. We're currently collecting samples to understand more the two pathogens in New England. Call or email us at 413-577-3976 or [umassveg@umass.edu](mailto:umassveg@umass.edu) to report.



*Botrytis crown rot in lettuce.*  
Photo: G. Higgins



*Lettuce downy mildew.* Photo: G. Higgins



*Spinach downy mildew*  
Photo: UMass Extension

## MANAGING APHIDS IN EARLY-SEASON TUNNELS

As some of you may already have noticed, aphids can survive in tunnels where crops were produced throughout the winter, and their populations can really start to increase at this time of year. Young seedlings and early-season tunnel crops being planted now are very susceptible to damage from aphid feeding, and must be protected. Scout now to catch problems before the population skyrockets, treat infested areas, and start thinking about how you will protect your main season crops by making a plan now to incorporate aphid biocontrols from the beginning.

If aphids are active in your tunnel crops now you can consider releasing ladybeetles (active between (62-88°F), or spraying insecticides, whether to treat harvested crops or as cleanup sprays before terminating a crop. For a list of conventional and OMRI-approved insecticides for aphid control in protected culture [please see this table](#) in the New England Vegetable Management Guide.

### Planning Ahead for Successful Aphid Biocontrol

Correctly identifying the species of aphid affecting your crop is an important first step before selecting which biocontrol organisms will be effective:

**Green peach aphid:** This aphid species can be distinguished from the melon/cotton aphid by the length and color of the cornicles (the pair of tube-like protrusions extending from the end of the abdomen). Green peach aphids have long (approximately the length of the body) cornicles and only the tips are black. In addition, the head has a distinct indentation at the base of the antennae. Hosts include peach, apricot, and over 200 species herbaceous plants including vegetables and ornamentals.

**Melon/cotton aphid:** The cornicles on melon/cotton aphid are short (approximately 1/3" or 8.0 mm, the width of the body) and vary in color from light yellow to very dark green (making them appear black). The antennae are typically shorter than the body. Melon/cotton aphids do not have a distinct indentation at the base of the antennae like that of the green peach aphid. Its host range includes hundreds of species such as pepper, eggplant, spinach, asparagus, okra, and it is particularly damaging on cucurbits.

**Foxglove aphid:** Foxglove aphids have green flecks located at the base of their cornicles. In addition, they have black markings on their leg joints and antennae. Foxglove aphids tend to fall off plants when disturbed and they can cause severe leaf distortion, more so than the green peach and melon/cotton aphid. This aphid has many hosts including foxglove, lettuce, potato, clover and bulbs.

**Potato aphid** may be difficult to identify because their sexual forms produce both green and pink aphids, however they move more quickly than the other aphids. These aphids complete 2-6 generations on their winter host of rose plants before moving on to their summer hosts such as potato and tomato. Therefore, this aphid pest is not typically seen in tunnels until later in the season but they have been reported as a growing problem among high tunnel tomato growers and keeping an eye out for them early is a good idea.

**Cabbage aphid:** Not typically considered a tunnel pest, this species has been reported recently in several tunnels where brassicas have been overwintered. Mature females are greyish green with dark heads and cornicles. They are approximately 1/12 inch long. Hosts are only the brassica species.

**Root aphid:** The primary root aphid (*Pemphigus* species) overwinters as eggs and infests plants in the spring and fall. Root aphids may be misidentified as mealybugs because they are covered with white wax although they are smaller than mealybugs. Root aphids have reduced cornicles that resemble rings, which are located on the end of the abdomen. These cornicles can be seen when magnified.

**Biological Control Using Parasitoids.** In general, parasitoids are more effective than predators (such as ladybeetles, green lacewings, and predatory midges) in reducing aphid populations, although parasitoids may fail to provide acceptable control under conditions that are too cold or too warm (outside the range of 65-77°F) or at times when aphid populations tend to increase rapidly. Parasitoids lay eggs inside aphids and when those eggs hatch, larvae feed on the aphid internally, killing it. Parasitoid larvae pupate within the dead aphid exoskeleton, which becomes a tan, dome-shaped shelter known as a "mummy." Adult parasitoids emerge from aphid mummies and continue the cycle. Aphid parasitoids are host-specific in terms of the aphid species they attack. For example, *Aphidius ervi* attacks foxglove and potato aphid,



*Green peach aphid winged and wingless forms.*

*Photo: D. Cappaert, Bugwood.org*



*Melon aphids. Note the range in coloration and size.*

*Photo: M. El Damir, Bugwood.org*



*Potato aphids.*

*Photo: J. Berger, Bugwood.org*



while *Aphidius colemani* attacks both green peach and melon aphids. Currently no parasitoids are commercially available for cabbage and root aphids. Mixtures of different parasitoid species are commercially available and should be used when multiple aphid species are present. Parasitoids are shipped either as adults or ‘aphid mummies’ from which parasitoid adults soon emerge. To increase the parasitoids’ effectiveness, place small groups of the aphid mummies in cups near aphid colonies. Do not let these aphid mummies get wet. Release rates may vary depending on the parasitoid species. Containers often contain approximately 250 aphid mummies, which can treat 5,000 ft<sup>2</sup> at the high release rate (for high aphid populations) or 25,000 ft<sup>2</sup> at the low release rate (for less severe outbreaks).



*Brown shell of a mummified aphid with an exit hole. Photo: W. Cranshaw, Colorado State University, Bugwood.org*

Greenhouse temperatures should be 65-77°F, with 70-85% relative humidity. Aphid parasitoids must be applied preventively to suppress aphid populations. They are less effective when aphid populations are high and already causing plant damage. Release parasitoids on a regular basis to sustain their populations during the growing season. Avoid releasing parasitoids near sticky cards to prevent capturing the released parasitoids. When scouting, look for aphid mummies that have circular holes on one end. These are the exit holes created by adult parasitoids during emergence. Aphid parasitoids are sensitive to pest control materials. Release parasitoids preventively on crops you know are susceptible to aphids, so that the parasitoids will be present when aphids are first noticed.

**Banker Plant Systems.** One of the challenges associated with trying to build up parasitoid populations before the pest aphids emerge are that they may leave the tunnel in search of food, however, there is a way to keep the parasitoid in your tunnels by giving them an alternate food source. Banker plant systems may be useful in controlling aphids and reducing the costs associated with applying pest control materials. Aphid banker plants are containers with winter barley, common rye, or oats on which colonies of grass-feeding aphid species such as bird-cherry oat aphid (*Rhopalosiphum padi*) are established. Banker plants are primarily used to rear prey or hosts, in order to have a sufficient population of continually reproducing natural enemies. The bird-cherry oat aphid, is too small for *Aphidius ervi* to develop but can support *A. colemani*. *A. ervi* parasitizes larger aphids such as the foxglove or potato aphid. If foxglove or potato aphids are your predominant species, one option is to use the predatory midge, *Aphidoletes aphidimyza* for release onto your banker plants. If using predatory midges, placing the pots in trays with moist sand will help provide pupation sites for the predatory midges, which pupate in soil.



*Barley banker plants inoculated with bird-cherry oat aphid attract *Aphidius colemani* released to control green peach and melon aphids. Photo: UMass Extension*

Banker plants need to be placed along walkways and at the end of benches. It is essential to evenly distribute them throughout a greenhouse. Some growers will place the banker plants in hanging baskets with drip irrigation to ensure that the banker plants will remain irrigated without inadvertently washing the parasitized aphids off of the plant. Distribute containers of rye or barley, with the grass-feeding aphid, among the main crop at a rate of one banker plant per 1,000 ft<sup>2</sup> even before aphids are detected. It should be noted that existing recommended rates may vary since limited research has been conducted; start with this rate and adjust in succeeding years based on your experience. Research with aphid banker plants in greenhouse pepper production in the Netherlands showed that when 4 banker plants per acre were introduced every two weeks, aphid pests were kept below threshold. With this rate and frequency of introduction of banker plants, the average number of *Aphidius* caught per sticky card (3.9” by 9.75”) per week was 10 per card per week. Banker plants may have to be placed closer together or placed in greater frequency within a given area in order to allow parasitoids such as *Aphidius colemani* to find prey on plants, since research has found that this parasitoid migrates just 3.2 - 6.5 feet from the point of release. Occasionally, the banker plant aphids may be found on your main crop; this should not cause alarm, as they only feed on grasses, and it may be a sign that the pot of barley oats or rye has been fed on too heavily needs to be replaced. It is helpful to start fresh pots of banker grass every 2 weeks to keep the aphids well fed.

Starter aphid banker plants are available from several biological control suppliers including BioBest and IPM Labs. One starter kit is enough to get your banker plant system started for the season, as long as you're growing your own pots of oat, rye or barley.

### Tips for using Banker Plants:

- Place orders for banker plants up to 6 weeks before aphids are expected in your greenhouse.
- Transplant the plugs or seed directly into larger-sized pots (10 inch) so that the grass plants have plenty of room to grow.
- Wait one or two weeks for grass feeding aphid populations to grow.
- Lightly release the “aphid mummies” or *Aphidius colemani* adults onto the starter banker plants. For example, 100 hundred *Aphidius* per banker plant before it is divided and repotted. *Aphidius colemani* attacks the grass-feeding aphid, which is not an aphid pest of most greenhouse-grown crops except monocots such as ornamental grasses.
- Check banker plants weekly and look for newly parasitized aphids (“aphid mummies”), which indicate that the parasitoids are establishing on the banker plants.
- Start new banker plants every 2 weeks because they will decline from aphid feeding within a few weeks.
- Inoculate new banker plants by physically transferring aphids from old banker plants onto new ones every 2 weeks. This can easily be done by gently rubbing the aphid infested grass plants over the fresh banker plants.
- It may be necessary to “protect” or isolate your replacement banker plants from natural enemies (either established in your greenhouse or naturally occurring natural enemies that may enter the greenhouse from outdoors during warmer weather). If so, place banker plants in “starter cages” so you can build up your population of grass feeding aphids before releasing *A. colemani*.

For more detailed instructions please read [this factsheet](#) from UVM and BioBest.

**Entomopathogenic fungus:** The entomopathogenic fungus, *Beauveria bassiana*, is commercially available for use against aphids. However, because aphids have high reproductive rates and molt rapidly, especially during the summer, repeat applications are typically required. *Beauveria bassiana* is most effective when aphid populations are low. This fungus may not be compatible with the convergent ladybird beetle (*Hippodamia convergens*) depending on the concentration of spores applied.

### Compiled from the following resources:

- [Aphids on Greenhouse Crops](#), by Tina Smith, UMass Extension
- [Managing Aphids in the Greenhouse](#), by Leanne Pundt, UConn Extension.
- [Aphid Banker Plants](#), by Leanne Pundt, UConn Extension

### Other helpful resources:

- [Aphid Banker Plant System for Greenhouse IPM: Step-by-Step](#), by Margaret Skinner & Cheryl Frank, UVM Entomology Research Lab and Ronald Valentin, BioBest
- [Scheduling Biologicals](#), by Linda Taranto, D&D Farms and Tina Smith, UMass Extension

--Compiled by Susan Scheufele, UMass Extension Vegetable Team

## **WORKER PROTECTION STANDARDS APPLY TO ALL FARM WORKERS**

The Worker Protection Standards (WPS) are federal regulations designed to reduce poisonings and injuries among agricultural workers and pesticide handlers. The WPS require that farm owners and employers provide protection from potential pesticide exposure to workers and handlers, train them about pesticide safety, and provide mitigations in case exposures occur. These regulations apply to all farm workers on farms that use any kind of pesticide: restricted- or general-use, synthetic or organic—**all farms need to be in compliance with these laws.** (Some exemptions apply to farm owners and their immediate family members). Luckily, the regulations are straightforward and relatively easy to implement.

## The main components of WPS are:

1. All **workers** must undergo pesticide safety training that provides information on how and where pesticide injuries may occur and how to prevent them. This training must be given annually, and on a worker's first day of work.
2. Pesticide **handlers** must be given specific training before they perform any pesticide-related task or enter a treated area before the restricted entry interval (REI) is over.
3. Information about pesticides used must be made available to workers at a central posting location. The central posting area must be maintained and must include:
  - a map of the farm
  - labels and Safety Data Sheets (SDSs) for any pesticide used on the farm. SDSs as well as the most current pesticide labels can be found here: <http://www.cdms.net/Label-Database>
  - spray records including what was sprayed where and when
  - a safety poster
  - location of nearest medical facility.
4. Workers must be informed about which areas of the farm have been treated and are under a (REI) and when the REI will end. Signage may be used to keep people out until the (REI) has ended.
5. Decontamination materials (soap, water, and paper towels) must be available in the event of an accident.
6. Access to emergency assistance must be provided.

**A worker** is any farm employee who does tasks directly related to the production of plants, such as harvesting, weeding, carrying nursery stock, repotting plants, pruning or watering. A worker does not mix or apply pesticides and only handles unopened or decontaminated containers, and does not enter a treated area before the REI has passed.

**A handler** is any farm worker who applies general-use pesticides and/or performs tasks such as mixing and loading pesticides, transferring or cleaning opened pesticide containers or spray equipment, or goes into a treated area before the REI has expired.

**“Restricted-use”** is a federal EPA designation that restricts a pesticide to be used only by a certified pesticide applicator, or under the direct supervision of a certified applicator. Only about 25% of all pesticides fall into this category, with atrazine being the most common restricted-use active ingredient. Massachusetts Department of Agriculture (MDAR) requires that farmers who want to apply restricted-use pesticides on their farms have a **private certification** for pesticide application—they must pass a test to get the certification and must attend continuing educational programs throughout the year in order to maintain it.

Most pesticides fall into the **“general-use”** category. In Massachusetts\*, farmers who use only general-use pesticides are not required to be certified or licensed by the Massachusetts Department of Agricultural Resources (MDAR)—but they still must comply with WPS regulations and provide training for workers and handlers as described. There is often a misconception that pesticides used in organic systems are exempt from these regulations but this is not at all the case and **organic farms must also comply with WPS**. For example, copper formulations which are widely used on organic farms tend to have “warning” hazard labels, as opposed to the lower “caution” label, because they are corrosive, can be fatal if swallowed, and can cause blindness if gotten in the eye. They have some of the longest REI's (48 hours) and therefore, under WPS, treated areas must be posted with a no-entry sign until the REI has passed. Since organic farms don't use any restricted-use pesticides, they don't need to be certified or licensed, and so how do they get the training they need to train their workers and handlers according to WPS?

One simple way is to get and maintain a pesticide applicator license (exams held once/month, [click here for more details](#)). Another way is to attend a “train-the-trainer” course. Some of these training will be offered across the state over the next two months—see Events section this issue and check the [UMass Pesticide Education Program website](#) for future programs. The train-the-trainer courses are great because they are designed specifically to help you deliver training to your employees to comply with WPS.

Below is a detailed list of WPS requirements. More information can be found in the [Pesticide Worker Protection Standard “How to Comply” Manual](#).

- **Pesticide safety training** — for workers and handlers
- **Access to labeling information** — for pesticide handlers and early-entry workers including product labels and SDSs
- **Access to specific information** — for workers and handlers, which includes providing information about when and where on the farm pesticide applications are made, emergency information, and a pesticide safety poster at a central location
- **Keep workers out of areas being treated with pesticides**
- **Keep workers out of areas that are under a restricted-entry interval (REI)**, with a few narrow exceptions
- **Protect early-entry workers** who are doing permitted tasks in pesticide-treated areas during an REI, including special instructions and duties related to correct use of personal protective equipment
- **Notify workers about pesticide-treated areas** so they can avoid inadvertent exposures
- **Monitor handlers** using highly toxic pesticides
- **Provide required personal protective equipment** to handlers
- **Decontamination supplies** — a sufficient supply of water, soap, and towels for routine washing and emergency decontamination
- **Emergency assistance** — making transportation available to a medical care facility in case of a pesticide injury or poisoning, and providing information about the pesticide(s) to which the person may have been exposed.

**WPS Farm Inspections.** All farms using restricted or general use pesticides are subject to a pesticide inspection to ensure the WPS regulations are being met. State agencies generally have primary jurisdiction for enforcing WPS misuse violations. If you are contacted by MDAR to schedule an inspection, they will be looking to see if your workers have had WPS training, if you have a WPS Central Posting Area, and if you are following all the other requirements of the WPS regulations. Please feel free to contact us if you have questions:

UMass Extension Vegetable Program: [umassveg@umass.edu](mailto:umassveg@umass.edu); 413-577-3976

UMass Extension Pesticide Education Program: [nclifton@umass.edu](mailto:nclifton@umass.edu); 413-545-1044

*--Written by Susan B. Scheufele, UMass Extension Vegetable Program*

\*Please note that other states may require pesticide certification for farmers who apply general use products. Check with your department of agriculture to determine pesticide use requirements in your state.

## **EVENTS**

### **Produce Safety Alliance Grower Training Series**

Wondering where to begin with food safety? Start here! Whether you have a farm that is fully covered by the law or a small, exempt farm and you're just looking for information, this training is for you. The PSA Grower Training Course satisfies the FSMA Produce Safety Rule requirement outlined in § 112.22(c) that requires 'At least one supervisor or responsible party for your farm must have successfully completed food safety training at least equivalent to that received under standardized curriculum recognized as adequate by the Food and Drug Administration.' The training is also required for participation in Massachusetts' Commonwealth Quality Program.

Presented by UMass Extension and the Massachusetts Department of Agricultural Resources (MDAR) and co-hosted by several different community organizations. Cost is \$40 for each program and includes the required PSA Grower Manual (\$50 value), a Certificate of Course attendance from AFDO (\$35 value), and lunch and refreshments. The training will be held in 5 locations:



### Westborough, MA

**When:** Wednesday, February 20, 2019, 8am-4pm

**Where:** MA Division of Fisheries & Wildlife Headquarters, 1 Rabbit Hill Rd., Westborough, MA 01581

**Registration:** [Click here to register for the PSA Grower Training in Westborough, MA](#)



### Beverly, MA

**When:** Friday, March 1, 2019, 9am-5pm

**Where:** Wylie Inn & Conference Center, 295 Hale St., Beverly, MA 01915

**Registration:** [Click here to register for the PSA Grower Training in Beverly, MA](#)



### Stockbridge, MA

**When:** Thursday, March 14, 9am-5pm

**Where:** Stockbridge Town Hall, 50 Main St., Stockbridge, MA 01262

**Registration:** [Click here to register for the PSA Grower Training in Stockbridge, MA](#)

Questions or problems with registration? Contact for all programs: Lisa McKeag, [lmckeag@umass.edu](mailto:lmckeag@umass.edu), 413-545-1051 (office) or 917-573-5558 (cell)

## **UMass Extension Vegetable Program Winter Workshop Series**

Each workshop in this series will involve hands-on exercises, presentations, and discussions with Extension Educators, other experts, and farmers. Attendees will leave each workshop with practical plans in each subject, tailored to their individual farm. Hope to see you there!

Pre-registration is required. **\$30 per workshop** - Soils Part 2 is free thanks to grant funding! See each event listing, linked below, for full workshop descriptions and registration information.

### Disease Biology & Management Workshop

**When:** **RESCHEDULED to Tuesday, March 19, 2019** – 10:00am to 3:00pm. Registration has been re-opened for this workshop.

**Where:** UMass Amherst, 270 Stockbridge Rd., Fernald Hall room 107, Amherst, MA 01002

*\*4 pesticide recertification credits are available for this workshop.*

### Insect Biology & Management Workshop

**When:** Tuesday, February 19, 2019 – 10:00am to 3:00pm

**Where:** UMass Amherst, 270 Stockbridge Rd., Fernald Hall room 107, Amherst, MA 01002

*\*4 pesticide recertification credits are available for this workshop.*

**REGISTRATION DEADLINE:** Friday, February 15, 12:00noon

### Soils Part 1. Soil Testing & Nutrient Management Planning

**When:** Tuesday, February 26, 2019 - 10am - 3pm

**Where:** UMass Amherst, 161 Holdsworth Way, Paige Laboratory, Amherst, MA 01002

### Soils Part 2. Soil Health, Cover Cropping, and Nutrient Management Planning

**When:** Thursday, February 28, 2019 - 9am-2pm

**Where:** Brattleboro, VT

### Funding Opportunities for Your Farm

**When:** Tuesday, March 5, 2019 - 10am - 3pm

**Where:** MA Division of Fisheries & Wildlife Headquarters, 1 Rabbit Hill Rd., Westborough, MA 01581



## Food Safety Planning

**When:** Tuesday, March 12, 2019, 10am - 3pm

**Where:** MA Division of Fisheries & Wildlife Headquarters, 1 Rabbit Hill Rd., Westborough, MA 01581

*These workshops are partially funded by the National Institute of Food and Agriculture and the U.S. Department of Agriculture.*

## 7th Biennial New England Agricultural Marketing Conference & Trade Show

The Harvest New England Agricultural Marketing Conference and Trade Show is New England's premier agricultural marketing conference. Sponsored by the six New England State Departments of Agriculture, this biennial conference began in 2007. With nearly 30 workshops, about 800 people in attendance, and a trade show of almost 100 exhibitors, this is New England's largest agricultural conference solely dedicated to agricultural marketing. Farmers of all types and sizes, new and established, from throughout New England, attend to enhance their marketing and business skills.

**When:** February 27-28, 2019

**Where:** Sturbridge Host Hotel, 366 Main St., Sturbridge, MA 01566

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

**Agenda:** [Click here to see the full schedule for this event.](#)

## Worker Protection Standard Train-the-Trainer

FIFRA 40 CFR Part 170, requires farmers who use pesticides (organic or traditional), are required to follow the Worker Protection Standard (WPS). WPS contains requirements that allow for the protection of farm workers who either work in areas that pesticides are used in or workers that apply pesticides as part of their employment. One of the main requirements of WPS is for workers to be trained in WPS. This can be done by either holding a Private Certification Pesticide License or by having taken the "Train-the-Trainer" course.

MDAR, along with EPA Region I, is offering two opportunities for individuals to take the WPS "Train the Trainer" course in order to train agricultural workers and be in compliance with WPS. This course is free of charge and will offer three (3) Continuing Education Units.

The training will be held in two locations:

- **East Wareham, MA**

**When:** Wednesday, March 6, 2019, 9am-12pm

**Where:** UMass Cranberry Station, 1 State Bog Rd., East Wareham, MA

- **Springfield, MA**

**When:** Monday, March 11, 2019, 9am-12pm

**Where:** Springfield Technical Community College, 1 Amory St., Building 2, Shibeli Hall, 7th Floor, Room 107, Springfield, MA

**REGISTRATION:** Fill out [this registration form](#) and submit no later than March 1, 2019. Contact: Lauri Rocco, [rocco@mass.gov](mailto:rocco@mass.gov)

## **Planning for the Next Successor on your Farm**

Massachusetts Department of Agricultural Resources is offering this workshop for farmers to better understand what is involved in succession planning. Experts from Land for Good and MDAR will provide tools and resources - including the state's Agricultural Preservation Restriction (APR) Program- to help you identify the next owner of the farm and take steps towards making the transition. *Sponsored by MDAR's Agricultural Business Training Program.*

**When:** Thursday, March 7, 2019, 5-7pm (snow date 3/25)

**Where:** Fidelity Bank, 9 Leominster Connector, Leominster

To register for a workshop session email Dorothy Du at [Dorothy.Du@mass.gov](mailto:Dorothy.Du@mass.gov)

**THANK YOU TO OUR SPONSORS:**



**Sponsor Veg Notes**

*Vegetable Notes. Katie Campbell-Nelson, Genevieve Higgins, Lisa McKeag, Susan Scheufele, co-editors.*

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