



UMass  
Extension

# Vegetable Notes

For Vegetable Farmers in Massachusetts since 1975



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## IN THIS ISSUE:

Crop Conditions

Prevent Greenhouse Collapse

Choose Resistant Varieties

Top 5 Irrigation Tips for 2017

Changes to EPA Worker Protection Standards

Events

Sponsors

## CROP CONDITIONS

As winter truly arrived last week, growers were out removing snow from their greenhouses and high tunnels. See article this issue for tips on keeping these structures sound through winter storms. Those with plowing side businesses are thankful for the work this year though they may be missing out on meetings and social activities. Other work being done now includes bulk fertilizer and seed orders, but to get those orders in, crop plans need to be finished! Those of you with winter growing operations have been producing some amazingly turgid and delicious greens. Meanwhile, educational programs (Vegetable Winter School, SEMAP, Harvest New England) and meetings (New England Vegetable and Berry Growers, Farm Bureau, etc.) abound. Many of the educational programs offered this winter are focused on employee management and regulatory updates which means that

these topics must be on the minds of many farmers. Just this week at the UMass Extension Vegetable Winter School Employee Management and Labor Laws class, we learned about three executive orders enacted in January of this year that will have an effect on migrant farm workers. Law enforcement agencies are now able to pursue and remove all undocumented immigrants as opposed to prioritizing the removal of those who have been convicted of crimes. If you work with undocumented employees or other immigrant farm workers, Kristen Wilmer of Community Involved in Sustaining Agriculture (CISA) highlighted several resources you may use to support these workers:

### **Language Services:**

[Mass Legal Services Interactive Interpreter & Translator Skills Training](#): This class can help build bilingual crew members' skills and provide professional development to them as interpreters or translators at the farm.

[American Translators Association](#): Maintains a searchable online directory of translators and interpreters.

[The Language Bank at Ascentria Care Alliance](#): Offers on-site and phone-based interpretation and translation for a fee.

### **Community Services:**

[Massachusetts Immigrant and Refugee Advocacy Coalition](#): Promotes the rights and integration of immigrants and refugees with a list of statewide resources on immigration enforcement, citizenship, access to healthcare, legal services, ESOL and more.

[Immigration Advocates Network](#): maintains a national directory of more than 950 free or low-cost nonprofit immigration legal service providers.

[Mass Legal Services](#): offers information about free or low cost legal aid programs, nonprofits, government agencies and court programs to help workers with immigration or other legal concerns.



*Students at the UMass Vegetable Winter School class spread out resources while they made their IPM plans for the season with Extension Educator Sue Scheufele.*

[MA Justice Project](#): has an online application for free legal help available to some residents of Hamden, Hampshire, Franklin, Berkshire and Worcester counties.

[Connecticut River Valley Farmworker Health Program](#): a project of the Massachusetts League of Community Health Centers that pay for some primary health care services to qualified migrant and seasonal farmworkers and their dependents. The program is offered through participating health centers and health care providers in CT and MA.

In general, make sure employees have transportation with a licensed driver (undocumented workers are not able to get valid drivers' licenses in MA though they are in VT). Let your workers know that they can discuss concerns with you to create a safe and supportive working environment.

As we deviated from "crop conditions" this week to focus on "employee conditions", I am reminded of a Wendell Berry quote from his poem *XIII. Prayers and Sayings of the Mad Farmer*: "The finest growth that farmland can produce is a careful farmer".

## **PREVENT GREENHOUSE COLLAPSE**

Recent back-to-back snowstorms in the Northeast helped to make it really feel like winter again, with many towns seeing well over a foot of snow in the first storm alone. While this precipitation is welcome in a long drought (the United States Drought Monitor says that recent precipitation in the region has been 200-400% of average, though most of Massachusetts remains in either moderate or severe drought conditions as of February 14) these heavy loads can be too much for greenhouses. Farmers, of course, are used to dealing with snow, but might be out of practice maintaining their more vulnerable structures after last winter's mild conditions! Below are some tips on preventing greenhouses from collapsing from Vermont Extension's Vern Grubinger, who credits John Bartok Jr., agricultural engineer and University of Connecticut Professor Emeritus, for much of the information, along with some advice from Ed Person of Ledgewood Farm Greenhouse Frames. –*VN editors*



*Snow load collapsing a greenhouse.  
Credit Cornell Vegetable Program*

Greenhouses, high tunnels and hoop-houses warrant some advanced planning to keep them from collapsing in winter storms.

Many growers have learned the hard way that these investments are vulnerable to failure due to some combination of ice, rain, snow, and wind.

**Move stuff out of harm's way.** Tidy up ahead of storms, so that in the event of high winds items such as trash bins, pots and trays, supplies and the like will not be blown into, or through, your greenhouses. To prepare for snow removal, move all of the accumulated equipment and supplies out of the way along the sides and around ends of your greenhouses and tunnels.

**Know snow.** Snow can vary in consistency and weight. When light and fluffy, a foot of snow may only contain as much water as one inch of rain. But when heavy and wet, it only takes 3 to 4 inches of snow to equal to 1 inch of rain. For each inch of rainwater that snow is equivalent to it will load a structure with 5.2 pounds per square foot. This amounts to about 6.5 tons on a 25 by 96 foot greenhouse!

An uneven snow load makes a structure more likely to collapse because the pressure is not distributed evenly on the bows. This can happen if wind lifts snow and deposits it more heavily on one side of a greenhouse. The weight of snow may bend the side of a greenhouse frame if greenhouses are so close together that snow builds up between houses when it slides off the roof. If there is not enough space to get in with a plow or bucket loader to remove the snow, then cutting the plastic to let the snow fall into the greenhouse can relieve the pressure.

**Consider the frame.** Check bolts, screws and clamps on the frame for tightness. Note that holes and screws in tubing cre-

ate weakness, especially at the bottom of frame members, and this is where greenhouses often fail when a heavy load is applied. If lacking, install diagonal braces from near the peak at the endwall to the baseboard, about 16 to 20 feet from the endwall, on all four corners. This provides stability and keeps the frames vertical. Frames lose considerable strength when they are not vertical. Install tubing or a 1- by 4-inch board and secure with a U-bolt at each hoop. Check for weak welds that are not continuous or that have burned through the metal. Examine truss braces, welds between sections of gutters and tubing sections that are welded together without an insert.

Different shaped frames have different weaknesses in a storm. The weakest point of a Quonset-shaped frame is at the ridge, so extra support (2x4, etc.) should be placed under the ridge pole and secured in place. A Gothic/peaked frame's weak point is mid-rafter, so place supports under purlins or at the end of crossties.

**Plan for wind.** When heavy wind is expected, keep the plastic tight by increasing inflation; open the blower's intake valve. Make sure any holes or rips are taped. Make sure the inflation fan intake won't get blocked by snow. The effective force of the wind is doubled when it is allowed inside a greenhouse. Secure doors, vents and shutters so that they cannot open. Roll up sides should be completely closed and tightly secured.

**Melt the snow.** If your greenhouse has heat, turn it on when heavy snow is predicted. Set the thermostat at 70F or higher. The extra fuel you burn is less expensive than replacing a collapsed greenhouse. A portable propane heater (no power needed) is a good item to have on hand for unheated tunnels or if a furnace fails. They are pretty inexpensive and can run for a few hours off a small gas tank.

**Snow removal.** A greenhouse is most stable when the snow is balanced on each side. Since houses are not as strong in the middle (because they do not have end wall construction for support) it makes sense to start at the middle and work in both directions if you are removing a lot of heavy snow. In this case it is also important to unload the snow from each side as you go. If you clear one side and the other side is still loaded up this causes uneven stresses in one direction on the bows.

**Ice removal.** Sometimes ice accumulates on the plastic. The best way to deal with it is to melt it with a heat source. If you have double poly and it is not windy, shut off the inflation fan and the heat from inside will be more effective. If you break the ice free mechanically there is always the risk of the sharp edges of the ice cutting the plastic. Also, every time ice slides or you use a device on the outside of the plastic to pull snow or ice off the tunnel you run the risk of abrasion which makes the poly rough, so the snow won't slide off as well in the future.

**Check your insurance policy.** I have heard from growers after a greenhouse collapse that their policy did not cover greenhouse structures, or that only part of the structure was covered (plastic vs. frame) or that only the content of the greenhouse (a crop) was covered. You might want to check your insurance coverage before it is needed.

*--by Vern Grubinger, Vegetable and Berry Specialist, University of Vermont Extension. December 2014.*

## **CHOOSE RESISTANT VARIETIES**

While many of you will have already purchased the bulk of your seed for this coming season, maybe you are still looking for some new varieties to try, or new ways to improve yield and quality in certain crops. We'd like to encourage all of you to consider filling out your crop plans with resistant varieties! Often growers are hesitant to try these unknown varieties because "what if they're ugly or don't taste as good?!" Or "maybe they'll be harder to grow or consumers won't like them because they are unfamiliar names?!" Try planting just one bed with a resistant variety so you can try out the new variety side-by-side and see a) how much better it grows and b) how it looks and tastes.

Host resistance is one of the cheapest, easiest, and most effective ways to control plant diseases. Actually, I can't think of an easier or more cost-effective way! Disease resistance is bred into plants using classical breeding techniques or through genetic engineering, and can incorporate one or several resistance genes. Plants with more than one resistance gene will hold up longer against the disease than those with just one. Many resistant varieties will have some resistance against multiple diseases, for example, 'Defiant' is a mid-size slicing, determinate tomato with multiple genes for resistance to late blight and also has resistance to early blight, Fusarium wilt (Races 1 and 2) and Verticillium wilt. There are some situations where using a resistant variety is the best option: when there are not effective fungicides available (especially true in organic systems); when the disease is vectored by a hard to control insect (like viruses in cucurbits vectored by aphids)

; where the environment is always conducive to disease (e.g. Fulvia leaf mold in high tunnel tomatoes); when the pathogen can't live outside of its living host (e.g. all the downy and powdery mildews).

New resistant varieties are being developed all the time, so check seed catalogs, talk to your seed reps, talk to your neighbors, or check out [this extensive list of resistant varieties](#) of many, many crops, maintained by Dr. Meg McGrath, Associate professor of Plant Pathology, Cornell University, NY. Below are a few examples of where host resistance should definitely be incorporated into your pest management programs. Have fun experimenting!

**Viruses in cucurbits:** There are several viruses that regularly affect cucurbit crops which are vectored by aphids, including Cucumber mosaic virus (CMV), Watermelon mosaic virus (WMV), Zucchini yellow mosaic virus (ZYMV) and Papaya ringspot virus (PRSV-watermelon). All four of these viruses are spread by aphids in a nonpersistent manner, meaning that transmission occurs so quickly that even if insecticides are used, they do not prevent transmission from occurring. The varieties listed in Table 1 below are resistant to at least CMV, WMV, and ZYMV.

**Fulvia leaf mold in high tunnel tomatoes:** This is a fungal disease which thrives under warm, humid conditions. If you have ever seen this disease in your high tunnel, you will likely see it every year. It covers leaf surfaces so quickly and thoroughly that fungicides are not effective in controlling it, and it is not possible to reduce humidity enough in the tunnel environment to avoid this disease. Luckily, plant breeders have developed many varieties with resistance to this pathogen! (Table 2.)

**Downy mildews:** These pathogens are aggressive, host specific, and can really take plants down quickly when the environment is conducive (Table 3). Cucurbit and basil downy mildew tends to blow into the region later in the season so plant resistant varieties for later successions. Brassica and spinach downy mildew can be seed-borne, so start the season with resistant varieties.

--by S. Scheufele, UMass Extension Vegetable Program, 2017

Slicing Cucumber*	Yellow Summer Squash	Zucchini
Cobra (RS, SI, ST, SW)	Lioness F1 (HM, HO, HS, SW)	Dividend F1 (HO)
Cutter F1 (HS, ST)	Conqueror III (HO, SI, SW)	Emerald Desire (C)
Darlington F1 (HO, RS, RU, ST, SW)	XP 1832 (RS, RU, SI, SW)	Judgement III F1 (HO, SI, SW)
Diomede F1 (C, RU, ST, SW)	Destiny III (RU)	Justice III (RS, RU, SI)
Perfect 10 (C, G)	Cougar F1 (HM, HO, HS, RS)	
Perseus (G, ST)		
Senor (SI, SW)		
Sweet Slice F1 (HO, HS, RHS, ST, TT)		
*This is a very incomplete list, there are SO many slicing cukes with resistance, please consult <a href="#">this table</a> for complete listing		
Seed suppliers: C=Clifton; G=Gurney's Seeds; HM=Harris Moran; HO=Holmes; HS=Harris Seeds; RHS= R.H. Shumways; RS=Rispen's Seed; RU=Rupp; SI=Siegers; ST=Stokes; SW=Seedway; TT=Totally Tomatoes.		

Cherry/Grape Type	Salad/Slicers
Favorita (J)	Bellini (Sa)
Golden Sweet (J)	Beorange (orange) (J)
Pareso (J)	Caramba (Se)
Picus (determinate, Roma) (Se)	Clermon (truss type) (J)
Sakura (J)	Rebelski (J)
Sunpeach (pink) (J)	Geronimo (J)
Sweet Chelsea (Sa)	Panzer (H)
Sweet Elite (grape) (Sa)	Pink Cupcake (Sa)
Sweet Gold (yellow) (Sa)	Pink Wonder (J)
Sweet Hearts (Sa)	Primo Red (determinate) (H)
Sweet Treats (pink) (Sa)	Poseiden (pink) (Se)
Viva Italia (determinate, pear) (Se)	Rally (determinate) (EZ)
	Rebelski (J)
	Red Deuce (H)
	Rossini (Sa)
	Tomimaru Muchoo (pink) (J)
	Trust (J)
Sources are included for grower reference, no endorsement is expressed or implied for these seed companies. Key to abbreviations: EZ-Enza Zaden, H-Harris, J-Johnny's, Sa-Sakata, Se-Seminis)	

Table 3. Downy Mildew Resistant Varieties		
Slicing Cucumbers*	Basil	Spinach*
Bristol F1 (HO, RS, RU, SI, ST, SW)	Eleonora (JO, SW)*	Carmel 1-11, 13 (SW)
DMR401 (SWI, CW)		Corvair, 1-11, 13 (HS, JO)
Green Bowl (KY)		Gaxzelle (JO)
DMR264 (SWI, CW)		Kooaburra 1-13, 15 (JO, SI)
SV3462CS (SE, SW, ST)		Space, 1, 2, 3, 5, 6, 8, 11, 12 (JO)
SV4719CS (SE, JO, SI, HS, ST)		Woodpecker 1-15 (JO)
*There are many varieties with resistance to old DM strains (e.g. Marketmore). These will hold up better than non-resistant types but are not as strong as the newer generation resistance listed above.	*This variety is “tolerant,” adding about two weeks to harvest time in the presence of disease. Look for more basil varieties with resistance to DM in future.	*Pathogen exists as races which are listed after variety name. Look for resistance to 14, 15.
Seed suppliers: CW= Commonwealth Seeds; HS=Harris Seeds; JO=Johnny’s; SE=Seminis; SI=Siegers; ST=Stokes; SW=Seedway; SWI=Seedwise.		

## TOP 5 IRRIGATION TIPS FOR 2017

Trevor Hardy from Brookdale Fruit Farm in Hollis, NH gave a couple of great talks at this winter’s joint Extension/New England Vegetable & Berry Growers’ Association meetings in Portsmouth, NH and Hadley, MA on managing irrigation during and after a drought year. Trevor knows his way around an irrigation system, and he had many recommendations for tools, tricks, and supplies. As you start to gear up for the 2017 growing season (is it that time already?!), here are the 5 main things that Trevor recommends for helping your equipment recover from last summer’s high demand and for getting the most from your water supply in the growing season to come.

- 1. Winter Repairs.** Growers who had water last year were certainly using it—pumps had little down time. Consult manufacturers’ specifications for proper maintenance. Replace seals, fix leaks, tighten mounting bolts, lubricate engine parts and change oil. Here is a publication from the National Center for Appropriate Technology on [Maintaining Irrigation Pumps, Motors, and Engines](#).
- 2. Clean or replace filters.** Change media on sand filters and clean screen and disc filters; discs can be cleaned with a medium-pressure hose.



*Algae accumulation on disc filter  
photo: T. Hardy*



*Disc filters after cleaning.  
photo: T. Hardy*

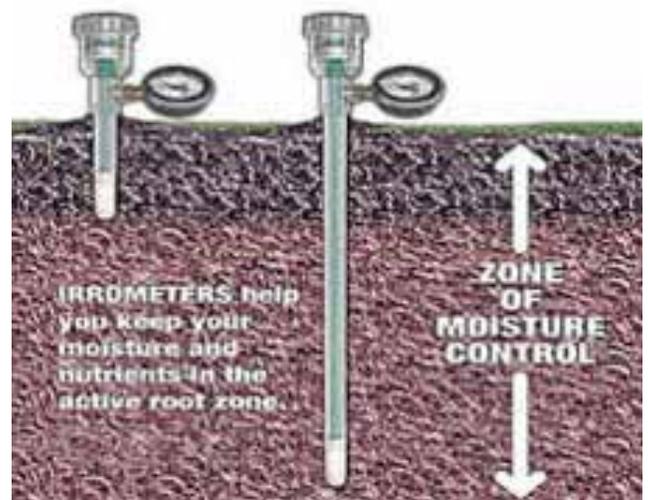


*Too much suction destroys a clogged filter.  
photo: T. Hardy*

- 3. Clean and flush lines.** Trevor recommends a peroxide-based product like Green Clean or TerraClean to prevent accumulation or remove build-up of bacterial slime and organic matter. Apply products according to the label, then return

in 8-10 hours to flush out materials with clean water. [Here](#) is a link to a manufacturer's handbook on maintaining a drip irrigation system, for reference.

4. **Use pressure gauges.** Not using a pressure gauge is “like driving a car without a speedometer”, says Trevor. Place gauges before regulators or point of application.
5. **Irrigate using soil moisture sensors also known as tensiometers or irrometers.** As important as knowing how much water you're putting out is knowing how much water your soil needs. When you don't have much water left in your supply, it's important not to irrigate more than you need to, or to know when is the best time to apply.



These two irrometers are available from: [www.irrometer.com/](http://www.irrometer.com/)

Other tips for making use of scarce supplies are to plant crops that have the same rooting depth and water needs together, prioritize high value crops, and time watering to avoid the hottest part of the day but avoid irrigating overnight.

--by Lisa McKeag, UMass Extension Vegetable Program 2017

## CHANGES TO EPA WORKER PROTECTION STANDARDS

The Environmental Protection Agency (EPA) has revised the 1992 Agricultural Worker Protection Standard (WPS) regulation to increase protection from pesticide exposure for the nation's two million agricultural workers and their families.

The WPS are designed to reduce pesticide poisoning and injuries among agricultural workers and pesticide handlers. WPS contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific information about personal protective equipment and restricted-entry intervals (REIs). All horticultural employers who use pesticides (including organic pesticides) and who have one or more employees must comply with all of the provisions of the WPS. Owners of agricultural establishments and members of their immediate family are exempt from some WPS requirements. However, they must still observe the appropriate REIs and must use the proper personal protective equipment listed on the pesticide label. Every vegetable grower should have access to the following publications to explain responsibilities and comply with WPS, including the training of employees.

The majority of the rule revisions were effective on January 2, 2017.

Here is a comparison chart of new vs old rules.

[www.epa.gov/pesticide-worker-safety/worker-protection-standard-wps-comparison-chart](http://www.epa.gov/pesticide-worker-safety/worker-protection-standard-wps-comparison-chart)

For detailed information on the changes see:

Pesticide Worker Protection Standard “How to Comply Manual”

[www.epa.gov/pesticide-worker-safety/pesticide-worker-protection-standard-how-comply-manual](http://www.epa.gov/pesticide-worker-safety/pesticide-worker-protection-standard-how-comply-manual)

(This contains the manual separated into chapters, PDF)

Manual: How to Comply with the Worker Protection Standard for Agriculture  
[www.epa.gov/sites/production/files/2016-09/documents/htcmanual\\_final.pdf](http://www.epa.gov/sites/production/files/2016-09/documents/htcmanual_final.pdf)  
(This is the complete manual, PDF)

Revisions to the Worker Protection Standard  
[www.epa.gov/pesticide-worker-safety/revisions-worker-protection-standard](http://www.epa.gov/pesticide-worker-safety/revisions-worker-protection-standard)

State agencies generally have primary jurisdiction for enforcing WPS misuse violations. The Pesticide Program enforces all pesticide Regulations in the Commonwealth of Massachusetts. The Pesticide Program is a part of the Division of Crop & Pest Services of the Massachusetts Department of Agricultural Resources (MDAR). Here is information on the Pesticide Program: <http://www.mass.gov/eea/agencies/agr/pesticides/>

UMass Extension Pesticide Education Program provides education to help growers and farmers come into compliance: <http://www.umass.edu/pested/index.htm> or use the EPA website [www.epa.gov/pesticides/health/worker.htm](http://www.epa.gov/pesticides/health/worker.htm).

WPS Updates and Train-the-trainer workshops will be held this spring (2017) by the UMass Extension Pesticide Education Program. <http://www.umass.edu/pested/index.htm>

### What are the Major Changes for Farmers and Farmworkers in 2017?

The revisions to the Worker Protection Standard cover many different areas. The major revisions are:

- Annual mandatory training to inform farmworkers on the required protections afforded to them. Previously, training was only required once every 5 years.
- A record of the training including:
  - Worker's name and signature
  - Trainer's name and qualification
  - Date of training
  - Employer name
  - How the training was given
- Expanded training includes instructions to reduce take-home exposure from pesticides on work clothing and other safety topics.
- First-time ever minimum age requirement: Children under 18 are prohibited from handling pesticides.
- Expanded mandatory posting of no-entry signs for the most hazardous pesticides. Sites treated with pesticides which have a REI greater than 48 hours must be posted. The signs prohibit entry into pesticide-treated fields until residues decline to a safe level.
- New no-entry application-exclusion zones up to 100 feet surrounding pesticide application equipment will protect workers and others from exposure to pesticide overspray and drift.
- Requirement to provide more than one way for workers and their representatives to gain access to pesticide application information and safety data sheets – centrally-posted, or by requesting records.
- Safety Data Sheets (SDS) of pesticides must be posted in the Central Information Display area. MSDS as well as the most current pesticide labels can be found here: <http://www.cdms.net/Label-Database>
- Mandatory record-keeping to improve states' ability to follow up on pesticide violations and enforce compliance. Records of application-specific pesticide information, as well as farmworker training, must be kept for two years.
- Anti-retaliation provisions are comparable to the Department of Labor's (DOL).
- Changes in personal protective equipment will be consistent with DOL's standards for ensuring respirators are effective, including fit test, medical evaluation and training. For specific information about the respirator WPS see this chapter beginning on page 68: <https://www.epa.gov/sites/production/files/2016-10/documents/htcmanual-chapter4-oct16.pdf>



*PPE required to mix 'Actinovate'.*

- Specific amounts of water available for routine washing, emergency eye flushing and other decontamination, including eye wash systems for handlers during pesticide mixing, loading, AND applying. This means creative retrofitting of tractors to accommodate 9 gallons of water and PPE when sprayers are driving farther than ¼ mile from a decontamination area.
- Continue the exemption for farm owners and their immediate families with an expanded definition of immediate family.

Reference: [www.epa.gov/pesticide-worker-safety/revisions-worker-protection-standard](http://www.epa.gov/pesticide-worker-safety/revisions-worker-protection-standard)

### **Pesticide Certification**

In Massachusetts growers who apply restricted pesticides are required to have a valid pesticide certification issued by the Massachusetts Department of agriculture. This pesticide certification also fulfills the requirement for EPA WPS pesticide handler training.

Growers are not required to be certified if they apply “general use” and/or OMRI approved pesticides. However if ANY type of pesticide is used on the farm, employees need to be trained as a pesticide handler to comply with the EPA Worker Protection Standard (WPS). Pesticide handlers either must have a private pesticide certification, or be trained annually as a handler. The person who conducts handler training must: currently be a certified applicator of restricted-use pesticides (in any category of certification), or currently be designated as an EPA WPS trainer of pesticide handlers by having completed an EPA WPS pesticide safety train-the-trainer program, which was offered to growers at UMass Extension Vegetable Winter School on January 31st, 2017. Stay tuned for future trainings here: [http://www.umass.edu/pested/training\\_workshops/2017\\_EPA\\_WPS\\_Workshops.htm](http://www.umass.edu/pested/training_workshops/2017_EPA_WPS_Workshops.htm).

Workers must also be trained to comply with WPS. Untrained workers must be provided with basic pesticide safety information before they enter a pesticide-treated area. Information must be provided in a manner that the untrained workers can understand and must be able to verify that this training was provided.

WPS training materials for both handlers and workers are available as videos, flip charts, etc. from companies such as Gempler’s and may be accessed directly here: <http://www.pesticideresources.org/wps/temp/training/index.html>

-- by Tina Smith, UMass Extension Greenhouse and Floriculture Program 2017

## **WEBINARS**

### **Pollinator Protection Webinar Series**

The majority of U.S. specialty crop growers depend on bees for pollination of their crops. Growers know that without adequate pollination, they would not be profitable. But what are the best pollination strategies for fruit, vegetable, and nut crops? These webinars will all be 45-60 minutes long, with time for questions and discussion with the presenter afterwards. Registered attendees will receive a link to the slides and a recording afterwards. The webinar series will be hosted by eXtension.org, an on-line co-operative extension network, and can be accessed by anyone with an internet connection.

**February 28, 2017**, 2pm EST: On-farm pollinator benefits for watermelon pollination. *Neal Williams, University of California, Davis*

**March 21, 2017**, 2pm EST: Ensuring pumpkin pollination. *Shelby Fleischer, Pennsylvania State University*

**March 28, 2017**, 2pm EST: How to manage solitary orchard bees for crop pollination. *Theresa Pitts-Singer, USDA-ARS and Utah State University*

### **Use of High Glucosinolate Mustard as an Organic Biofumigant in Vegetable Crops Webinar**

**When:** Tuesday, April 11, 2017 at 2pm EST

Brassica plants, including mustards, contain glucosinolates that, when broken down, produce compounds that can reduce weed pressure, insect pests, populations of parasitic nematodes, and soil-borne pathogens such as Pythium, Rhizoctonia, Sclerotinia, Verticillium, and Phytophthora. In this webinar, we’ll address the use of mustard cover crops that have been bred specifically to have high glucosinolate concentrations and act as a biofumigant in crops like pota-

toes, peppers, carrots, black beans, and strawberries.

Presenters: Katie Campbell-Nelson, University of Massachusetts and Heather Darby and Abha Gupta, University of Vermont Extension

## **EVENTS**

### **New Hampshire Vegetable & Berry Growers' Association Annual Meeting**

**When:** Saturday, February 18, 2017 from 9am to 3pm

**Where:** Radisson Hotel Manchester, Frost/Hawthorne Room, 700 Elm St, Manchester, NH 03101

As part of the New Hampshire Farm and Forest Expo the NH Vegetable and Berry Growers are holding their annual meeting. Find the full program agenda [here](#).

No need to pre-register. To inquire about NHVBGA membership, please contact: Chip Hardy, 603-465-2241, Brookdale Fruit Farm, PO Box 389, Hollis NH 03049

### **10th Annual SEMAP Ag & Food Conference**

**When:** Sunday, February 26th, 2017 from 9am – 3:30pm

**Where:** Bristol County Agricultural High School, 135 Center St., Dighton, MA

Whether you're a professional farmer, a backyard gardener, or just curious about locally grown food, this is the event for you! Each year, the lineup includes workshops for the general public as well as info-packed sessions for farmers and gardeners of all experience levels.

Registration includes a locally-sourced lunch and at the Resource Fair you'll learn about local organizations and businesses that provide services and products to help you grow, whether you've got a hundred acres or a couple of window boxes.

\*Sue Scheufele, UMass Extension staff will be giving a talk on Cucurbit IPM.

Register here: <http://semaponline.org/programs/ag-food-conference/>

### **UMass Vegetable Winter School – Financial and Technical Assistance & Risk Management Principles**

**When:** Tuesday, February 28, 2017 from 9am to 3:30pm

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

#### **Agenda includes:**

Fundamentals of Risk – Paul Russell and Tom Smiarowski, UMass Risk Management Education

Massachusetts Department of Agricultural Resources (MDAR) Programs – Craig Richov, Director, Farm Viability Programs

Sustainable Agriculture Research and Education (SARE) Grants – Katie-Campbell Nelson, UMass Extension Vegetable Program Team Leader

USDA - Natural Resources Conservation Service (NRCS) Programs – Tom Akin, NRCS State Resource Conservationist

Lunch (Opportunity to meet with the presenters to discuss individual concerns)

USDA Farm Service Agency (FSA) Loan Programs – Eric Bodzinski, FSA Farm Loan Specialist

USDA Farm Service Agency (FSA) Farm Programs – John Devine, FSA Program Specialist

MDAR Energy Programs – Gerry Palano, MDAR Alternative Energy Specialist

Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis – Paul Russell and Tom Smiarowski, UMass Risk Management Education

Registration: [www.regonline.com/vegwinterschoolriskmanagement](http://www.regonline.com/vegwinterschoolriskmanagement)

## [Harvest New England](#)

**When:** Tuesday, March 7 to Thursday, March 9, 2017

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

The theme of the 2017 conference is Turn Up the Volume on Your Farm Marketing! Attendees will experience nearly 30 workshops on topics such as retail and wholesale marketing, agri-tourism, business planning, value added product development, social media and online marketing and lots more. An all day workshop for New England Farmers' Market Managers will be held on Wednesday, March 8th. Don't forget the trade show with a large variety of agricultural suppliers and vendors! A reception will be held in the trade show for conference attendees on Wednesday at 5:00 pm.

Registration is now open. Go to [www.harvestnewengland.org/events](http://www.harvestnewengland.org/events) for more information. Program details and lodging options are also available at this site. Register early for the best rate!

Harvest New England (HNE) is a cooperative marketing program created by New England's state departments of agriculture in 1992. It has sponsored this regional conference since 2007. For more information, contact [Jaime.Smith@ct.gov](mailto:Jaime.Smith@ct.gov).

## [2017 New Hampshire Labor Management Series](#)

**When/Where:** 10am-3pm, February 27th in West Lebanon February 28th in Portsmouth

Hiring & Retaining • Finding good employees • Interviewing techniques • Hiring • Effective Training / On-boarding • Developing Effective Job Descriptions • Setting up Expectations • Whole Farm Revenue Program • Noninsured Crop Disaster Assistance Program. Presenter: Pat McCabe - Human Resource Partner, UNH

To register: \$25/person/session, lunch included.

Kilton Public Library West Lebanon, NH January 30, February 6, 13 and 27 Register here: <http://bit.ly/2dTouJx>

Urban Forestry Center Portsmouth, NH January 31, February 7, 14 and 28 Register here: <http://bit.ly/2erUmpo>

Sponsored by: NOFA VT, New Hampshire Farm Bureau. In partnership with: Northeast Extension Risk Management Education, RMA

## [CISA's Mapping Out Your Farm Future Series](#)

**When:** January-March; Eight weeks

**Where:** Holyoke Community College Kittredge Center, Room 303 Homestead Ave, Holyoke, MA

CISA invites you to join our eight-workshop series on Mapping Out Your Farm's Future: Settings Goals for the Success and Sustainability of Your Farm beginning January 2017. In order to draw a map of the future of your farm, you need a solid foundation with which to review your past and assess your present. This workshop series will support farm owners and operators in decision making for realistic long-term financial, operational, marketing, and personal goals. Examples in the workshops will be farm related, but the skills and methodology will be relevant to all businesses.

Participation in the whole series is encouraged. You will be eligible for a one-on-one consultation by attending one Business Plan workshop. Attending three workshops gives you the eligibility for an additional one-on-one consultation related to the topic of any workshop being held. Dinner will be served at each session. The cost to attend the series is \$90 for Local Hero members, or \$15 for each individual workshop. The non-member fee is \$110 for the series, or \$18 for each individual workshop. Register with the attached form or online at [buylocalfood.org](http://buylocalfood.org) or contact Stevie Schafenacker at [stevie@buylocalfood.org](mailto:stevie@buylocalfood.org) (413) 665-7100. If cost is a barrier to your participation, please feel free to contact Stevie to discuss options as we want everyone to be able to get the training they need to effectively operate their business. Scholarships may be available.

The first half hour of each workshop will be for food and socializing. Workshops will begin promptly thereafter.

## SPONSORS



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

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