UMass Extension
Vegetable Notes
For Vegetable Farmers in Massachusetts since 1975

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In this issue:

Crop conditions

Two hard frosts in the last few weeks have pretty much shut down field production for our warm season annual vegetable crops in Massachusetts. However, some leeks, cabbage, carrots, parsnips, potatoes, and even some sweet corn remain unharvested to be picked and delivered to markets as needed over the coming months. With a dry fall, growers have complained about having trouble establishing cover crops and have had to irrigate to get decent stands. With warmer weather in the 70's this week during the day, cover crops could establish, but they need moisture! Several growers in NH are trying a late cover crop cocktail developed by NRCS (photo). More and more farmers are experimenting with reduced and no-till in Massachusetts. Want to grow 2 ft. carrots? One grower has been able to achieve this by using reduced tillage and an Unverferth Deep Zone Tiller to subsoil before planting carrots. Another grower was very pleased with his no-till sweet corn planted into a recently mowed and herbicide-killed haycrop. While the goal is to provide 365-day/yr ground cover, some shy away from adding clover to no-till cover crop mixes because they are difficult to kill with herbicides. Other barriers to no-till still exist for growers who prefer not using herbicide-- they need to find other ways of managing their above ground residues such as using silage tarps or rolling with a rollercrimper. Barriers to no-till for all growers include a lack of experience or successful models to follow, or the high cost of specialized equipment. Come to the No-Till Conference on October 30th to hear from growers (small to large scale) who have had success with reduced and no-till and learn about ways to set up a no-till planter! See events section for more information.

In this Great Plains no-till grain drill feeding cup is a cover crop cocktail made up of Dwarf Essex Rape (a cold hardy mustrard!) (1lb/a) hairy vetch (6lb/a), winter pea 29lb/a), winter rye (36lb/a), and wheat (36lb/a) being seeded now. Photo, K. Campbell-Nelson

Pest alerts

Spinach downy mildew has been confirmed on 'Gazelle' spinach in Hampshire Co., MA. Spinach downy mildew affects only spinach, causing leaf yellowing and brown fuzzy sporulation on the undersides of leaves, much like basil downy mildew. Spinach downy mildew occurs as races, strains of the pathogen that have overcome various sources of resistance in spinach varieties. Samples have been submitted for race analysis and we are awaiting those results—last year races 12 and 14 were confirmed in the Northeast. This disease is not common in the Northeastern US so we are interested in hearing from growers who suspect this disease on their farms. Please contact us by phone or email at 413-577-3976 or umassvegetable@umext.umnass.edu. The pathogen is spread long distances by wind but is not believed to overwinter here. Disease is favored by cool, wet conditions so removing row covers in tunnels may reduce disease severity by decreasing leaf wetness. See article this issue for more information.

Lettuce downy mildew was confirmed on a salad mix variety. The disease causes vein-limited sections of leaf to turn yellow or brown or to become water-soaked. Under favorable conditions white sporulation occurs within these patches. The

pathogen is spread long distances by wind, and may overwinter in the soil, unlike other downy mildews. Disease is favored by cool, wet conditions so removing row covers in tunnels may reduce disease severity by decreasing leaf wetness. Resistant varieties are the most important tool for controling this disease. Many fungicides are also available (New England Vegetable Management Guide), be sure to start spraying before symptoms occur and maintain regular sprays if the pathogen is reported in your area or you have had the disease in past years.

ALM adult next to characteristic vertical "stippling" feeding and oviposition damage. Photo: E. Grundberg

Allium leafminer has been reported across southeastern NY. Damage was widespread in allium crops this past spring in the Mid-Hudson Valley, and this fall ALM pressure is intensifying in the capital district area. All allium crops are susceptible to attack including garlic during the spring ALM flight and leeks during the fall ALM flight . Growers in Western MA and the Berkshires should inspect leek crops and report outbreaks by calling the Vegetable Program office at 413-577-3976 or by emailing umassvegetable@umext.umnass.edu.

GRAFTING EGGPLANT AND OKRA

Why? Verticillium wilt, that's why. While eggplant and okra may be minor crops, I often scout fields where eggplant and okra have dropped their leaves and stopped producing marketable fruit due to Verticillium wilt, caused by the fungi *Verticillium dahliae* and *V. albo-atru*m. It is difficult to manage this disease through crop rotation because the pathogens have broad host ranges, they evolve quickly to develop virulence to new hosts, and they have the ability to survive in the soil for many months without a host. For all these reasons, this season I decided to graft eggplant to tomato rootstock and okra to hibiscus and resistant okra rootstocks.

Methods: All seeds were started in 50-cell trays on April 18, 2017 (Table). Rootstock seed was donated by Vitalis Organic Seeds. 130 rootstock and scions were started, resulting in 55 transplants ready for the field; a 42% success rate. (That sounds better than a 58% failure rate, right?) Plants were grafted one month after seeding (May 16, 2017) and transplanted into the field seven weeks after seeding (June 8, 2017). Weekly okra and eggplant harvests began August 3 and ended September 15.

	% that survived grafting	% that survived in the field	Scions[1]	Rootstock[2]
Okra	60	40	Clemson Okra	"Love-in-a-mist" Hibiscus
	80	80	Burghandy and Clemson Okra	Zara Okra
Eggplant	65	0	Black Beauty, Long Purple	Estamino
	15	0	Classic, Nadia	40842
	70	0	Classic	40842 (cleft graft)
	20	0	Long Purple	Mt. Fresh
	20	0	Black Beauty, Long Purple, Nadia	Briomino

1. While we aimed to have every scion on every rootstock, we ended up grafting the plants most similar in diameter.
2. Top grafted unless otherwise stated.

Grafting: The night before grafting, transplants were moved into a mist chamber to reduce their rates of transpiration and prepare them for the shock of getting their heads chopped off! The mist chamber consisted of benches with 1" PVC pipe running down the middle, with fogging or 'wobble' nozzles sticking up about 2 feet in the air at 3-foot intervals. Mist was emitted from these nozzles for 20 seconds every 14 minutes. Humidity was maintained at 80%, and temperature at 80F, and a shade cloth was put over the plants. Prior to grafting, the mist chamber was cleaned and organized as much as possible so that the transplants could be grafted efficiently in a clean environment. Razors were sanitized with 70% ethanol between transplant trays. Most plants were top-grafted for speed, but some were cleft-grafted (see figure 1 for details). The grafted transplants were moved quickly into the 'healing chamber' – a section of

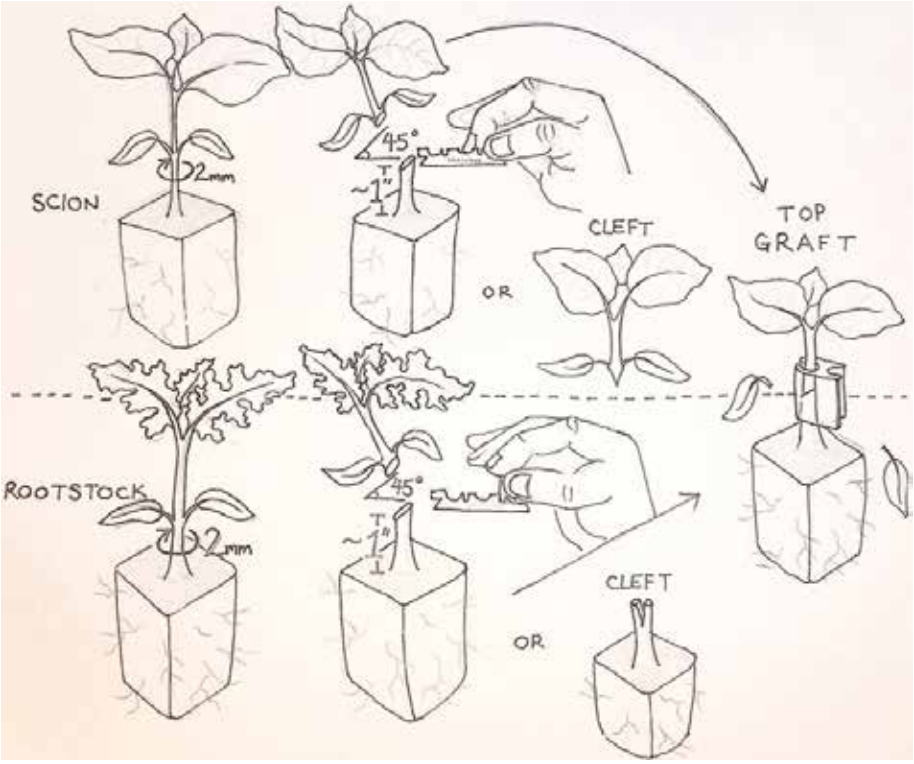


Figure 1. Grafting eggplant scion to tomato rootstock. by: K. Campbell-Nelson

the mist chamber covered in black plastic to block all light – so as to avoid as much shock as possible. Plants were left in the healing chamber for 48 hours, after which the black plastic was replaced with shade cloth for another 48 hours. The grafted transplants were then returned to regular greenhouse conditions, with grow lights positioned above them for 12 hours per day to reduce legginess. The plants remained in normal greenhouse conditions for 2 weeks before being transplanted into the field.

Field: 2-5 intact plants of each rootstock and scion variety were planted in the field along with the grafted plants for comparison. All transplants were planted in a single row on black plastic with double row of drip tape at 24" spacing so that plants could be easily observed. Rows were 6 feet on center. Crops were fertigated using a Venturi fertilizer injector. We applied 50lbs N-P-K in the form of 20-20-20 soluble fertilizer two weeks after transplant and again at fruit set in mid-July. Before staking tomatoes at the end of June, a Multivator was used to weed between the beds (I love that tool!).

Failures: Shortly after germination in the greenhouse, a serious western flower thrips infestation caused significant damage to the young leaves and cotyledons of the plants. This certainly affected their survival rates after grafting.

In late July, I noticed problems with the grafted eggplant in the field. The plants exhibited stem cracking and oozing near the graft at the base of the plant (photo). I also noticed that the grafted eggplant was displaying virus-like symptoms (photo) and more leaf gutation than the non-grafted scions, suggesting that the grafted plants were struggling to transpire. I came in one morning in August to find grafted eggplant scions toppled over left and right, ejected from the tomato rootstocks like pilots from a crashing plane. Samples were submitted to the UMass Plant Diagnostic lab to determine if a virus or bacterium was causing the symptoms, however, using microscopy, the diagnosis came back clean with no causal organisms found. I hypothesize that the tomato rootstocks rejected the eggplant grafts because most of the rootstock varieties

This tomato rootstock is rejecting the eggplant scion. photo: K. Campbell

Unhealthy grafted eggplant (front). Healthy non-grafted eggplant (back). Photo, K, Campbell-Nelson

Katie is excited to talk about okra grafted to hibiscus. Photo: H. Godoy

were indeterminate (except for Mt. Fresh Plus) while eggplant is a determinate crop. The grafted plants were healthy until flowering/fruiting. After that point, the rootstock continued to signal for vegetative growth even though it was time for the eggplant to stop vegetative growth and produce fruit. Other studies conducted at PennState successfully used determinate Mt. Fresh Plus tomato as a rootstock, but I found no improvements in yield from grafted eggplant using any rootstock. Estamino is a generative (energy for fruit production) rootstock rather than a vegetative rootstock, but it also failed in this trial.

Successes: While all the grafted eggplant died by September, they never dveloped Verticillium wilt; meanwhile the non-grafted eggplant did by early August. Non-grafted Long Purple was the most susceptible variety to Verticillium wilt, and the variety Classic was most resistant. In fact, yields of Classic were excellent, and the benefits of grafting may not be worth the effort in this variety.

Verticillium wilt on non-grafted eggplant, August 3rd, 2017.
photo: K. Campbell-Nelson

All grafted okra performed better than the non-grafted okra. While the grafted plants developed symptoms of Verticillium wilt, it was not until mid-September and the crop remained productive. The grafted okra plants also had a much higher survival rate than the grafted eggplant.Growers have many reasons to graft different crops. While this trial had mixed results, I will graft again in the future to gain confidence and experience in other crops. Here are some **tips and lessons learned:**

- Start plants 2 weeks earlier than normal to allow for the extra time needed for grafted plants to heal and harden off for the field.
- Plant smaller-stemmed crops and slower-growing crops, such as eggplant or hibiscus, 1-2 weeks prior to seeding the tomato and okra so that the stem diameters of scion and rootstocks are equal at the time of grafting. Another approach is to seed several batches one week apart for 3 weeks.
- Have multiple sized grafting clips on hand to fit the variable stem diameters that naturally occur with young transplants. Grafting clips are available in 1.5-3mm sizes. I used 2mm clips in this trial.
- Use Ellepots, soil blocks, or cut trays into strips containing about 6 cells so that plants can be easily handled during grafting without disturbing the root ball.
- Do not allow plants to wilt during the grafting process. Keep them in humid conditions (80-90%), out of direct sunlight, and at 70-80F.
- Keep the grafting joint above the soil line when transplanting into the field to avoid the scion sending out adventitious roots.

Interested in grafting any vegetables on your farm? Would you like to attend a grafting workshop in early spring 2018 at the UMass greenhouses where you can experiment risk-free? Let me know if you are interested in a workshop and let me know what crops (tomato, eggplant, okra, pepper, cucurbits, other!?) you'd like to try: kcampbel@umass.edu

Resources:

Mefferd, A. The Greenhouse and Hoophouse Growers Handbook. (pp. 113-139) Chelsea Green Publishing, 2017.

Johnny's Selected Seeds. 'Top Grafting Tomatoes'. 2016.

By Katie Campbell-Nelson, 2017. With thanks to UMass Staff Genevieve Higgins, Chris Joyner, Michele Meder, and David O'Neal for their help on this project.

DOWNY MILDEW DEVELOPING IN NORTHEAST SPINACH

-- by M.T. McGrath, April 2017

***On October 5, 2017** we received our first fall report of downy mildew in winter spinach in the northeast. Please report promptly if you see it so pathogen race can be determined.* Downy mildew has been found in spinach at a few farms in the northeastern U.S. since 2014. Prior to this there were no reports for about 15 years. This disease has been a major produc-

tion constraint in California and Arizona. Pathogens causing downy mildew are Oomycetes and thus are related to the late blight pathogen. They are all similar in ability to produce an abundance of wind-dispersed spores capable of moving long distances and to not need leaves to be wet to infect (high humidity is sufficient), plus ability to devastate crops.

All growers with spinach should examine their plants routinely for symptoms of downy mildew. Inspect at least once a week or when row covers are removed with winter crops. There have been cases of symptoms being first observed during spring in high tunnels due either to conditions not being favorable until then for symptoms to develop or recent infection by wind-dispersed spores. There can be a long delay between infection and symptom appearance when conditions are unfavorable following infection. Downy mildew can seem to explode overnight when conditions become favorable again. If downy mildew is suspected, please contact your local extension specialist and send an e-mail to mtm3@cornell.edu. Knowledge about occurrences is critical for a regional approach to management based on all having a general awareness of occurrence in the region (as done with late blight), and knowledge about a disease is the foundation of a management program.

Symptoms. Purplish-gray, fuzzy growth of the pathogen, which is usually on the underside of leaves, is diagnostic. Early morning is the best time to see as the growth (which is spores and the structures holding them) is produced overnight, and during the day spores are dispersed by air currents. On the top side of leaves, opposite where the growth develops, the leaf tissue will be yellow, initially dull becoming brighter and larger with time. Subsequently affected tissue will become dry and tan. If only leaf yellowing is seen, which could occur when humidity is low, put suspect leaves upside down on wet paper towel in a closed ziplock bag for a day. Keep the bag in the dark, such as inside a box, to further promote the pathogen if present to develop.

Downy mildew affecting spinach in high tunnel (Left-top view, Right -bottom view) Photo: Teresa Rusinek

Management. Resistant varieties have been an important management practice due to the high level of control provided, but the pathogen has proven adept at developing new races able to overcome host resistance. The most recent race described is 16 in 2015. Races 12 and 14 were identified associated with recent cases in the northeast that were tested. Minimize leaf wetness. Irrigate early in day when foliage will have ample time to dry before night. Use drip irrigation where feasible. When using row covers, do not place over wet plants. Some occurrences of downy mildew in high tunnels have been associated with covering spinach when leaves were wet from watering.

To maximize success of control with fungicides, start early in disease development (preventive best), and apply weekly. Conventional fungicides for this disease include: Actigard, Aliette, Merivon, Quadris and other QoI fungicides, ProPhyt and other phosphorous acid fungicides, Ranman, Reason, Revus, Ridomil Gold, and Tanos. Downy mildew is difficult to manage with organic fungicides based on experience of researchers and growers in AZ and CA (see report). Labeled products include copper, Actinovate, Double Nickel, Regalia, Oxidate, Trilogy, and Zonix. Copper is considered most effective but based on few evaluations of organic products. Check REI and PHI when selecting conventional or organic fungicides to make sure fits production schedule.

Note that while leaves are held in plastic bag after harvest, affected leaves may rot and new symptoms may develop, especially if there is residual moisture from washing.

Promptly destroy spinach crop if symptoms continue to develop despite management practices or right after final harvest even if no downy mildew seen as infection could occur subsequently. It is important to control the amount of inoculum in

the region to minimize opportunities for spread and keep downy mildew impact low.
Rotate out of land where spinach was grown for at least 2-3 years. The pathogen can survive a few years in soil as oospores. Oospores can be produced when both mating types (equivalent of gender) of the pathogen are present together infecting a leaf. This spore type is the result of sexual reproduction. Oospores are not dispersed by wind as occurs with sporangia, which are the asexually-produced spores on the underside of leaves. Oospores also could be left behind in soil after planting contaminated seed.

Other Susceptible Plants. The pathogen, *Peronospora farinosa f. sp. spinaciae*, is only known to infect spinach. It is possible some related (*Chenopodium*) weed species are susceptible to some races. However, cross infection experiments conducted to date have not been successful: pathogen taken from spinach did not infect any weeds and pathogen from weeds did not infect spinach.

Pathogen Sources. Possible initial sources of the pathogen for the northeast region are wind-dispersed spores (sporangia) from affected crops outside the region, infected spinach produce from outside the region, or oospores on contaminated seed. Spinach with downy mildew has been observed for retail sale.

Favorable Conditions. Cool with long periods of leaf wetness or high humidity. Wet foliage is especially favorable. Optimal temperature range for this pathogen is 59 – 70 F. However, spores of the downy mildew pathogen have been observed on plants over a very wide temperature range, from freezing (frozen plants) to 118 F!

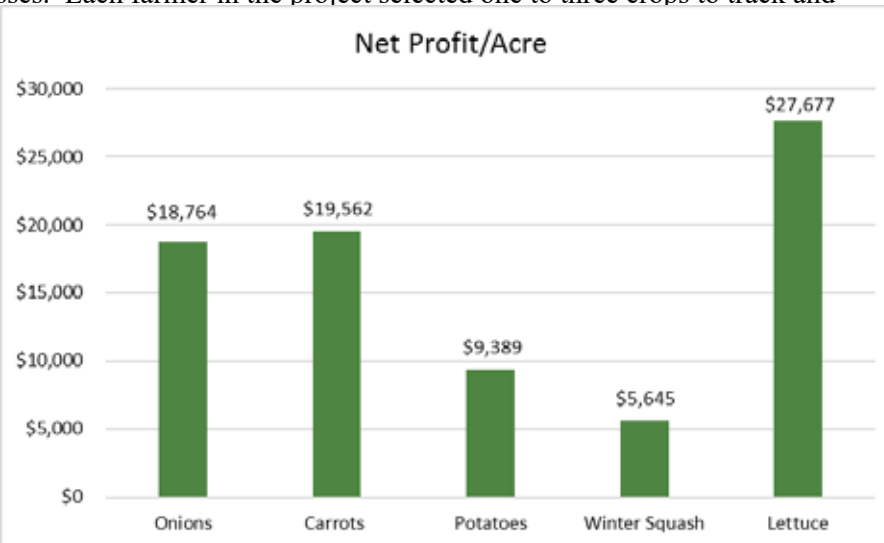
Please Note: *Any reference to commercial products, trade or brand names is for information only; no endorsement is intended. The specific directions on fungicide labels must be adhered to -- they supersede these recommendations, if there is a conflict. Check state registrations and labels for use restrictions.*

Resources:

Occurrence of downy mildew on spinach varieties in the northeast.
Update on downy mildew occurrence in the region and management recommendations (4-11-17)
Evaluation of spinach varieties for downy mildew resistance conducted in 2015 in AZ.
Evaluation of biofungicides and conventional fungicides for managing downy mildew conducted in 2015 in AZ.

NORTHEAST ORGANIC VEGETABLE PROFITABILITY STUDY

Over the past two years, three Northeast Organic Farming Association (NOFA) chapters- Vermont, New Hampshire, and Massachusetts- worked with 30 organic vegetable farmers to determine the cost of production of vegetable crops commonly grown in the Northeast. The project, funded by a USDA Specialty Crop Block Grant, developed tools, provided technical assistance, and aggregated data into factsheets to support farmers' production planning and assist them in increasing the profitability of their farm businesses. Each farmer in the project selected one to three crops to track and analyze using a workbook created by Richard Wiswall, author of The Organic Farmer's Business Handbook. Looking at their numbers at the end of the 2016 season, one farmer participant noted, "Some crops that seem intuitively profitable are actually not that much better and sometimes worse than others that seem more onerous. And some aspects of a crop production that seem onerous actually don't cost that much at all."



Results from 30 farms in MA, NH and VT: Net profit is defined as total sales minus all expenses, including overhead and marketing expenses.

The results from participating farms were aggregated on a per acre basis into five crop-specific fact sheets that present key metrics such as net income, average price/case, cultivation hours/acre, wash and pack hours/acre, and many other data points related to the produc-

tion of winter squash, potatoes, onions, head lettuce, and carrots. Supplemental factsheets present crop profitability comparisons, whole farm financial ratios, and tips for success when undertaking cost of production analysis.

This data provides a reminder of the reality that farmers cannot continue growing food if their farm is not profitable. The list of expenses that were part of producing each vegetable sitting on your plate is extensive - seed, labor, tractors, packaging supplies, marketing, overhead and more. In order to not only be profitable but to maximize their profitability, farmers need to determine which crops are worth growing and which crops are not pulling their weight. A profitable crop is one that covers all business expenses with some money left over to pay the farmer.

The cost of production workbook and the factsheets generated by this project can help farmers make informed decisions on crop mix, markets, and production systems that maximize their profitability. Interested farmers can access these resources and request technical assistance by visiting www.nofavt.org/cost-of-production or contacting Jen Miller, NOFA-VT Farmer Services Coordinator, jen@nofavt.org.

--by Jen Miller, NOFA-VT Farmer Services Coordinator

UMASS EXTENSION RISK MANAGEMENT EDUCATION PROGRAM

The UMass Extension Crop Insurance/Disaster Assistance Education Program provides Massachusetts producers with information on a variety of disaster assistance programs available from USDA, The Commonwealth of Massachusetts and private sources. Paul Russell and Tom Smiarowski are the two primary contacts for producers wishing to learn more about any of these programs. While Federal Crop Insurance is the primary focus of the program, Paul and Tom are well versed in other programs that can assist producers in managing and mitigating losses on their farming operations.

Please don't hesitate to contact either Paul or Tom if you have any questions. The Program works closely with 11 different organizations representing all types of agricultural producers across Massachusetts and the Program's goal is to provide timely and accurate information on available Federal Crop Insurance Policies as well as other USDA and State programs available to agricultural producers.

The purpose of the Program is not to sell Federal Crop Insurance nor is the Program's effectiveness measured on the number of crop insurance policies sold in Massachusetts. We are well aware that Federal Crop Insurance is not for everyone but our goal is to ensure that Massachusetts producers have a good understanding of what is available to them to help manage and mitigate agricultural risks on their farming operations. Here is our contact information: Paul Russell (pmrussell@umass.edu) or Tom Smiarowski (tsmiarowski@umass.edu).

Crop Disaster Program Deadline November 20, 2017

Are you concerned with the weather extremes we have seen in the last few years? There have been more incidents of hail, drought and excess moisture. Any one of these perils can destroy a vegetable crop in a matter of hours. Maybe you can absorb a loss here and there and still survive, or maybe you'd like some level of disaster coverage!

Crop insurance is available for only a few vegetable crops in Massachusetts (potatoes and sweet corn) but all other crops are covered by the USDA Farm Service Agency (FSA), Non-Insured Crop Disaster Assistance Program (NAP). Under NAP, a producer can purchase basic coverage, commonly called catastrophic coverage, which provides 50% yield protection @ 55% of the established price. Producers can also purchase "Buy-Up" coverage in various levels (50%, 55%, 60%, 65% of established yields) which provides protection at 100% of the established price.

Beginning farmers, historically underserved farmers, and limited resource farmers pay no administrative fee and calculated premiums are reduced by 50%.

The NAP **sales closing date** for all perennial vegetable crops is **November 20, 2017**. The same date applies to any perennial fruit crops that you produce on your operation. If by chance you raise apples (all counties) or peaches (Hampden, Hampshire, Middlesex & Worcester), Federal Crop Insurance is available for those two tree fruits. Closing date for **annual crops** under NAP (and those limited crops covered by Federal Crop Insurance) is **March 15, 2018**.

It's not too late to do obtain coverage for your 2018 crops! So take a close look at NAP and Federal Crop Insurance to

determine if NAP and/or Federal Crop Insurance can provide you with some peace of mind in the event that a weather related event affects your crop(s) in 2018!

Events

Massachusetts No-Till Conference 2017: Dairy and Vegetables

When: Monday, October 30, 2017 - 9:00am to 3:00pm

Where: Carter and Stevens Farm, 500 West Street, Barre, MA 01005

Topics will include:

- Why No-till Works! (*Kate Parsons, NRCS Resource Conservationist)*
- *Nutrient Management in No-till systems (Tom Morris, UConn Plant Science Professor)*
- *Cover Crop Selection and Termination (Dave Wilson, PennState Extension Agronomist)*
- *Pest and Disease Management for No-Till (Katie Campbell-Nelson, UMass Extension Vegetable Program)*
- *Adapting Your Planter for No-Till (John Hoffman, Johnny's Ag Service, Ellington,CT)*
- *Equipment tradeshow*
- *Dairy and Vegetable Farmer panels*

One Pesticide credit will be available for this program, and Crop Advisor credits will be available.

Registration: $16.00 (*lunch included)*

Click Here To Register: http://events.eventzilla.net/e/notill-farming-conference-2138904873

Questions? Contact Lisa Trotto at 508-829-4477 x7038, or Lisa.trotto@ma.usda.gov

Growing Better Brassicas

When: Tuesday, November 7, 2017

Where: Gideon Putnam Hotel, 24 Gideon Putnam Rd., Saratoga Springs, NY

Join us for a day of information exchange between growers, industry representatives, and university researchers with the goal of better understanding how to grow great brassica crops! This day will be filled with short presentations about topics ranging from transplant production to plant spacing and disease management, followed by ample time for growers to ask questions and discuss topics with panelists and each other.

The crops we will focus on during this day are broccoli, cauliflower, and Brussels sprouts, but many topics will be relevant to other brassicas as well. Our very own Susan Scheufele will be presenting!

For more information, click here: https://enych.cce.cornell.edu/event.php?id=832

Registration: Enrolled ENYCHP Farms $40 for the first attendee, $20 per additional attendee. Non-Enrolled Farms $45 for the first attendee, $25 per additional attendee. Lunch included.

To register, click here: https://enych.cce.cornell.edu/event_preregistration.php?event=832

UConn Hydroponics Production Short Course: How to Start a Commercial Hydroponic Production Greenhouse

When: Saturday, November 11, 2017

Where: UConn Floriculture Greenhouse, 1395 Storrs Rd., Storrs, CT 06269

In this workshop attendees will learn how to establish and manage a hydroponic system. By the end of the workshop, attendees will know (1) basic greenhouse design, (2) basic components of hydroponic systems, (3) basic nutrient management of hydroponics greens and lettuce, and (4) how to develop a business management plan.

Credits for pesticide recertification will be provided (approval pending).

For more information, click here: http://greenhouse.uconn.edu/workshopnov11/

Click Here To Register: https://cahnrconference.uconn.edu/?controller=event&task=options&eventId=16

Questions? Contact Rosa Raudales (860-486-6043, rosa.raudales@uconn.edu) or Leanne Pundt (860-626-6855, leanne.pundt@uconn.edu)

Greenhouse Vegetable Production in Hydroponics and Soilless Systems

When: Saturday, December 9, 2017

Where: UConn Floriculture Greenhouse, 1395 Storrs Rd., Storrs, CT 06269

This workshop is for farmers who are already growing greenhouse vegetables and would like to improve their production techniques. Speakers will present on topics including manipulation of environmental parameters to promote crop growth, nutrient management, biofungicide us in edible greens, diseases of hydroponic crops, and beneficial microbes in hydroponic systems. A tour of the UConn research greenhouses will also be conducted.

Credits for pesticide recertification will be provided (approval pending).

For more information, click here: http://greenhouse.uconn.edu/workshopdec9/

Cost: Early registration (Before Dec 1) $55/person, Late registration (after Dec 1) $70/person

To register, send in this form by mail: http://greenhouse.uconn.edu/wp-content/uploads/sites/717/2017/10/2017_UConnHydroponicsDec9.pdf

Questions? Contact Rosa Raudales (860-486-6043, rosa.raudales@uconn.edu) or Leanne Pundt (860-626-6855, leanne.pundt@uconn.edu)

New England Vegetable and Fruit Conference

When: Tuesday, December 12 to Thursday, December 14, 2017

Where: Radisson Hotel, 700 Elm St, Manchester, NH 03101

The New England Vegetable & Fruit Conference and Trade Show will include more than 25 educational sessions over 3 days, covering major vegetable, berry and tree fruit crops as well as various special topics. A Farmer to Farmer meeting after each morning and afternoon session will bring speakers and farmers together for informal, in-depth discussion on certain issues.

There is also an extensive Trade Show with over 120 exhibitors. We hope that you will enjoy your time here, and meet with fellow growers, advisors, researchers, and industry representatives. We want you to leave with new ideas and new information that will have a positive impact on your farm.

Registration information coming soon!

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FARM CREDIT EAST

NEW ENGLAND VEGETABLE & BERRY GROWER'S ASSOC.

CERTIS
The Biopesticide Company

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

Where trade names or commercial products are used, no company or product endorsement is implied or intended. Always read the label before using any pesticide. The label is the legal document for product use. Disregard any information in this newsletter if it is in conflict with the label.

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