UMass Extension
Vegetable Notes
For Vegetable Farmers in Massachusetts since 1975

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In this issue:

New irrigation pipe being installed in a farm field in Eastern MA

Crop conditions

Storage crops keep coming out of the ground and harvesters are still cutting greens in the field once the temperatures warm by mid-morning. One farmer is happy with a new carrot harvester, explaining that 85% of roots come out clean and it saves hours of bending over in the field; "It cost us a dollar or two, but we're already harvesting more carrots with less labor." The same grower lamented that while last year he was getting about 2 lbs of carrots per ft^2, this year he's only getting about ½ lb/ft^2. Planning ahead for early spring carrots, another grower has already set caterpillar hoops in the ground before it freezes so that they can just seed and throw the cover on in the spring.

We've heard from several small farms that were not able to survive the drought this year, lacking access to irrigation or the potential infrastructure for it. Meanwhile, others are installing irrigation, digging new ponds, and preparing for the new normal in which we may have to irrigate for months, then have a warm rainy fall.

Winter cutworm. Photo by T. Cook.

A new (to us) pest popped up in a crop of high tunnel spinach in Hampshire Co., MA and was later found on foxgloves in Franklin Co., MA this year: winter cutworm (*Noctua pronuba*). This pest is different from other cutworms in that it is active at very cold temperatures, and likes to chew through leaves unlike the black cutworm which normally cuts through the stem base of a plant. It's host range is wide and includes beets, cabbage, carrot, grape, grasses and sod, lettuce, potato, strawberry, and tomato as well as numerous ornamental plants and weeds. It can be difficult to find the actual worms because they will drop to the ground when the plant is disturbed and make themselves at home just under the soil, only crawling up on to the plant to chew. It is a lepidopteran pest, so the gut disrupting BT kurstaki (Dipel) is an effective control.

Bulb mites in garlic

Two genera of mites are known to infect species of *Allium*. The dry bulb mite (*Aceria tulipae*) is an eriophyid mite that survives on cultivated *Allium* species. It is often confused with the wheat curl mite (*A. tosichella*), though it is believed that the host range of the latter species may also include Alliums. Bulb mite species in the genus *Rhizoglyphus* can also be troublesome on *Alliums*.

Bulb mites cause dessication of heads, cloves may have brown sunken spots, and secondary pathogens may come in and cause other diseases.

These mites can overwinter in soil and also survive in stored garlic. They can damage garlic in the field, but are particularly troublesome in storage. Their feeding can cause desiccation and creates wounds that provide an ingress for soft-rotting bacteria and

A Rhyzoglyphus mite at 10x magnification.

pathogenic fungi such as *Fusarium* and *Penicillium*. In addition, dry bulb mites can transmit garlic allexiviruses. Infected seed is the most common way that bulb mites are introduced into a field.

Symptoms: Infected seed may fail to germinate. Plants grown from infected seed may lack vigor and produce stunted, deformed leaves. Plants may outgrow the damage if the infestation is not heavy, but mites may increase in number over the growing season and will remain in the harvested garlic. Viral symptoms may be seen. In the field, mites feed mainly on the roots and basal plate. In storage, the mites move into the garlic bulb, where their feeding activity causes sunken tan to brown spots to form on cloves. Desiccation may occur. Soft rot bacteria or fungi may also be present.

Adult *Rhizoglyphus* mites are 0.5-1.0 mm long, have four pairs of legs, and are bulb-shaped. Their legs are brown. Eriophyid mites like the dry bulb mite are usually less than 0.3 mm long, have two pairs of legs near the front of their bodies, and are somewhat more conical or cigar-shaped. The bodies of both species are off-white to pale yellow in color and may be visible with a hand lens.

Management options:

Plant clean seed. Hot water treatment of seed garlic is effective, but can decrease germination. Put seed in water heated to 130°F for 10-20 minutes, or 140°F for 10-15 minutes.

Soak seed for 24 hours in 2% soap (not detergent) and 2% mineral oil prior to planting.

Dust bulbs with sulfur.

Mild mite infestations are often mitigated by the process of curing bulbs before storage.

Rotate out of *Alliums* for at least four years. Control wild *Allium* species in the vicinity.

Mites can survive on the residues of a number of crops. Plant only in fields where crop residue is thoroughly decomposed.

Avoid planting *Alliums* directly after *Brassicas*, corn, grain, or grass cover crops.

-Angela Madeiras, UMass Plant Disease Diagnostic Lab

UNDERSTANDING NITROGEN AVAILABILITY FROM SPRING-INCORPORATED COVER CROPS ON VEGETABLE FARMS

Many vegetable farmers are well aware of the myriad benefits of cover cropping, ranging from reduced nutrient leaching and run-off, to erosion control, to weed suppression, to improved soil organic matter. Despite the challenges that may accompany cover cropping such as seed costs, timing cover crop establishment with cash crops, or a limited land base, many growers are dedicated and successful cover croppers. However, as farmers in Massachusetts, Vermont, and several other states are facing increased water quality regulations, a new and critical role for cover crops is emerging.

Phosphorus management is a primary focus of nutrient management requirements due to the negative impact excessive amounts can have on water quality, largely due to run off from manure or manure-based soil amendments applied to farm fields. For vegetable growers in particular, many have long relied upon affordable amendments such as composted chicken manure to meet crop nitrogen (N) needs. However, since these soil amendments also contain significant levels of phosphorus, yearly applications to meet N needs has resulted in cumulatively high soil phosphorus levels on many vegetable farms. Many of these farms will need to adjust their nutrient management practices to comply with new regulations.

Transitioning to other sources of nitrogen (N) may be costly, unpredictable, and disruptive for many growers. Unfortunately, there are few affordable and sustainable (particularly organic) sources of soil amendments that adequately provide nitrogen (N) for growers without also adding phosphorus. Common options are seed meals (apx $6-8/ lb N), feather meal (apx $8/ per pound of N), and Chilean nitrate, (apx $5/ lb N). In comparison, most growers pay around $4/ lb of N for composted chicken manure (note that this and all prices vary based on annual supply, source, volume, and trucking). Conventional sources of N such as Urea cost far less, hovering around $1/ lb N.

Nitrogen fixing bacteria made themselves at home in this healthy legume cover crop.

Although farmers have grown legume cover crops for their N-fixing benefits for years, the timing and availability of nitrate-N (which is the form available to crops once atmospheric N has been fixed by the legumes—see this Cornell Factsheet for more on the nitrogen cycle) is largely unknown to growers. Once growers incorporate a legume cover crop, they are often left guessing as to the timing and quantity of nitrogen availability. In order to successfully transition into using more legume cover crops as a reliable source of N, growers will need supporting data to help guide them in efficient, economical, and practical management. Furthermore, understanding the quantity and timing of N available for cash crops may help growers save time and money by reducing purchased nitrogen amendments.

UMass planted 6 on-farm trials early in September 2016 to study nitrogen mineralization from cover crops to match crop demands in 2017. Treatments include: No cover (except weeds), Rye/Vetch, and Farmer Choice. Farmer choice treatments were: 1. Oat, pea, vetch 2. Annual ryegrass, crimson clover, vetch, 3. Annual ryegrass, crimson clover, tillage radish, 4. Sorghum sudangrass in the fall followed by oat pea in the spring 5. Oat, crimson clover, vetch 6. Rye, vetch, radish.

In order to unravel the mystery of nitrogen management with cover crops in the cooler regions of New England, UVM Extension's vegetable and berry specialist, Vern Grubinger and vegetable nutrient management specialist Becky Maden initiated a farmer-participatory research project to gather information on the optimal timing of leguminous cover crop incorporation and subsequent cash crop planting. This project was also intended as background research for a more extensive and controlled two-year study beginning in the spring of 2017, which will carefully track nitrate release (as well as moisture, temperature, biomass, and cash crop yield) of two different common cover crop blends (oat pea and rye vetch) based on seeding dates. UMass Extension Vegetable Specialist Katie Campbell-Nelson collaborated with Becky Maden to design a similar project in Massachusetts and is currently conducting a similar replicated trial on 6 vegetable farms. We are excited that regional data and recommendations on nitrogen mineralization to meet crop demand will be available to growers in the next few years.

In the spring of 2016, eleven commercial Vermont vegetable farms agreed to sample fields with legume cover crops that were planted as part of their regular farming operation by taking monthly Pre-Sidedress Nitrate Tests (PSNT) beginning one week after cover crop incorporation. Although the PSNT has been in use since the early 1990's for field corn (see factsheet), it is only in more recent years that vegetable growers have found the test to be a useful tool in managing N applications for diverse crops. If the test is taken at the time when a sidedress would normally be applied to vegetable crops, no additional nitrogen should be applied if the PSNT is 30 ppm or higher. For more background on uses for the PSNT on vegetable farms, read the article in the May 15, 2014 UMASS Veg Notes.

Cover crop species on participating farms varied based on what the farmers had planned as part of their usual rotation. Seeding rates, seeding dates, incorporation dates, and tillage practices also vary. Farmers were encouraged to maintain their usual farming practices, including fertilizing, cultivating, and planting of cash crops. Records of soil amendments and crops planted were collected for this project.

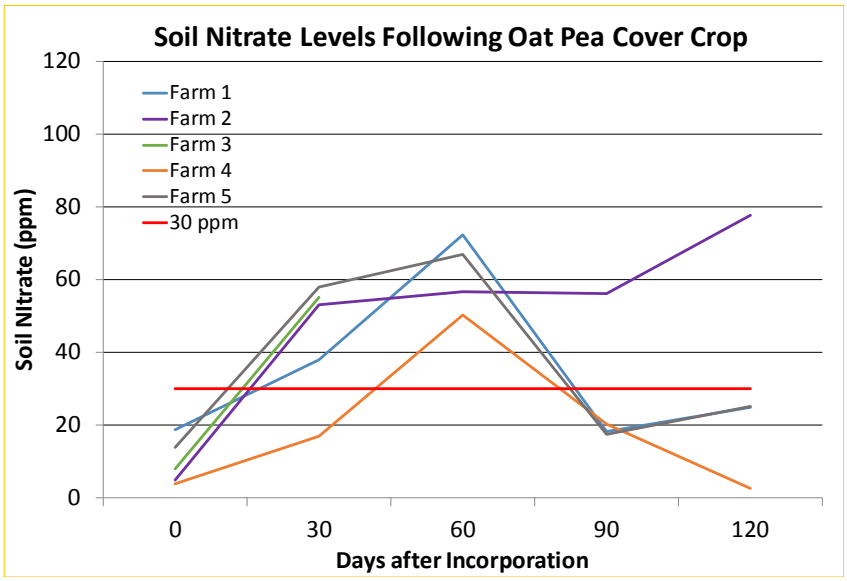
Cover crop species sampled:

- Spring planted Oat-Pea (five farms)
- Fall planted Rye-Vetch (four farms)
- Single trials of each of the following:
    - Spring planted Triticale (not a legume but sampled as a comparison with a legume crop on the same farm)
    - Spring planted Field Pea
    - Fall planted Oat Vetch
    - Fall planted Red clover/ Timothy
    - Spring planted mixed grasses/ Timothy (not a legume but sampled as a comparison with a legume crop on the same farm)
    - Fall planted Yellow clover/ Winter rye

Results/ Discussion:

Because the data for this study was "crowd sourced" and sampling was done in an active, on-farm setting, there were a number of uncontrolled variables. However, several trends are worthy of attention despite the huge variability in agronomic practices.

The largest number of field trials (on five different farms) were spring planted oat/ peas. Despite the variation in seeding dates, the collected data suggests that under this season's weather conditions, spring planted oat pea blends have a peak release between 45 and 70 ppm of nitrate approximately 60 days after incorporation in Vermont (see Graph at right). Peak soil nitrate levels varied from 13.7ppm to 122ppm depending on soil organic matter content, cover crop mixture, incorporation method, or addition of fertilizers, and peak release occurred anywhere from 30-60 days after incorporation. The peak release rate may be 40-50 days further south in warmer or moister soils.



Nitrogen mineralization peaked on most farms 60 days after incorporating oat/pea cover crops this summer in Vermont. 30ppm soil nitrate is the threshold at which no additional nitrogen fertilizer is needed to achieve maximum yield for most vegetable crops.

Year-to-year variability of climate and rainfall play a significant role in the timing of nitrate release from legume cover crops. 2016 was unusually dry, which may account for sustained levels of nitrate on some of the trial fields. If rainfall were closer to average, nitrate would be more likely to leach, particularly on sandier soils.

In addition to the variability in weather from year to year is the range among vegetable crops in critical timing of nitrate uptake. Short season crops such as head lettuce need nitrogen around 30 days after planting; whereas with longer season crops like broccoli it is closer to 60-70 days (source). Thus, while the results from this study suggest that legume cover crops can supply more than sufficient nitrate to meet vegetable cash crops' nutrient needs, matching the timing of nitrate release with the timing of cash crop uptake is challenging due to the limited windows available for crop establishment in our short growing season. The most useful tool a farmer could implement would be to take a PSNT before peak crop need to determine whether additional N is needed. Luckily the PSNT is quick and cheap costing only $8 at the UMass soil lab.

Conclusion:

This study offers an exciting foundation upon which further research can be built. First, it helps narrow down the choice

of cover crops to focus research on. Fall planted rye vetch and spring planted pea oats are two of the most popular grain/legume mixes used on vegetable farms because they fit well into vegetable farm crop rotations, they reliably provide nitrogen to cash crops, and they offer substantial organic matter contributions. This project confirms that these are excellent choices for vegetable farmers from a nitrogen perspective since available nitrate from these two cover crops aligns well with most vegetable cash crop needs. It is also clear that planting legumes in combination with grains offers a substantial and sustained release of nitrate available to cash crops, rather than the quick burst of N typically released by pure stands of legumes or a very slow and lower level release from a pure stand of grass.

Some of the trials demonstrated that there were still significant levels of nitrate remaining in the soil through October. Nitrate from cover crops behaves no differently in the soil than fertilizer nitrate, and is therefore susceptible to leaching. Some of these sample sites are entering the winter with over 70 ppm nitrate available in the soil. Hopefully, the farmer will plant a fall cover crop, like winter rye, to mop up the excess nitrate and make it available for next season. Without a cover crop on the soil, the nitrate could leach and ultimately contribute to watershed contamination.

A final objective was to familiarize vegetable growers with the Pre-sidedress nitrate test (PSNT) and to gain an understanding of when optimal timing is for sampling after cover crop incorporation. The past summer's research suggests that for pea oat and rye vetch cover crops, taking a sample 30 days after cover crop incorporation would reveal how much nitrate the cover crop had released until that point, and that the nitrate levels should be well above 30 ppm. The timing of this test could allow the farmer to save time and money by avoiding unnecessary fertilizer applications.

A huge thank you to the following farms for participating—and for faithfully taking soil samples:

Cedar Circle Farm, Clearbrook Farm, Diggers Mirth Collective Farm, Elmer Farm, Intervale Community Farm, Killdeer Farm, Lewis Creek Farm, New Leaf Organics, Pete's Greens, River Berry Farm, and Singing Cedars Farmstead.

Thank you to our funders!:

The New England Vegetable and Berry Growers Association (NEVBGA), The Vermont Vegetable and Berry Growers Association (VVGBA), and University of Vermont Extension.

-Written by Becky Madden, Graduate Student, UVM

IDENTIFYING DISEASES OF CARROTS

Carrot acreage is on the rise in New England, as more growers target expanding, year-round markets. Carrots can be affected by many bacteria, fungi and nematodes in the field and in storage. Foliar diseases may cause lower yields due to loss of photosynthetic area, difficulty in harvest if the tops are weakened, and lower marketability if the carrots cannot be sold in bunches. Root diseases can lower yields of fresh eating carrots and can spread in storage, drastically reducing yields brought to later markets. Root diseases are caused by soil dwelling organisms and therefore their incidence may vary considerably from farm to farm. Proper disease identification will help you to prevent future outbreaks by adjusting crop rotations accordingly, and prevent moving infested soil from field to field. Some of the major carrot disease symptoms are described below. If you are noticing foliar or root symptoms like those described, send a sample to your state diagnostic lab to confirm, and take steps to protect current and future crops. See the UMass Diagnostic Lab website for their sample submission instructions.

Alternaria Leaf Blight (*Alternaria dauci* and *A. radicina*) symptoms first appear along leaflet margins as greenish-brown, water-soaked lesions which enlarge, turn brown to black, and often develop a yellow halo. Older leaves are more susceptible to infection. When about 40% of the leaf is infected, the leaf yellows, collapses, and dies. Petiole lesions are common, elongate, and can quickly kill entire leaves. *A. radicina* causes similar foliar symptoms but can also produce a dry, mealy, black decay known as black rot on carrot roots held in storage.

Alternaria leaf spot. Photo by D.B. Langston

Bacterial Leaf Blight (*Xanthomonas campestris* pv. *carotae*) symptoms appear primarily on leaf margins as small, yellow, angular leaf spots

which expand, turn brown to black with a yellow halo, and become dry and brittle. Leaflets may become distorted and curled. Symptoms can extend into petioles, produce a yellow-brown, gummy exudate, and occur on flower stalks. Infected umbels can be completely blighted and seed infection can occur—use treated seed to prevent introducing this disease.

Root Knot Nematode (*Meloidagyne hapla*) forms galls or root thickenings of various sizes and shapes. Growth of infected carrots is patchy and uneven and severely infected carrots exhibit forking, galls, hairiness, and stubby roots. When soil populations of *M. hapla* are high symptoms include stunted plants, uneven stands, premature leaf death, and branches and swellings on both lateral and tap roots. Marketable yield is reduced by deformities, size reduction, branches, and knobs. *M. hapla* persists in the soil and has a very wide host range so rotation can be difficult, but monocots are non-hosts so small grains and corn as well as resistant varieties of tomato and bean can be grown in rotations to reduce population size.

Root knot nematode. Photo by RL Wick.

Black Root Rot (*Thielaviopsis basicola*) occurs primarily in storage when conditions are not ideal and temperature and humidity are too high. The fungus causes superficial, irregular black lesions which occur in a random pattern. The discoloration, caused by masses of dark brown to black chlamydospores, is limited to the skin. The pathogen rapidly invades wounded tissue and is favored by long post-harvest periods without cooling so careful harvest and immediate cooling and storage can minimize disease impact.

Black root rot. Photo by RL Wick.

White Mold (*Sclerotinia sclerotiorum*) affects many vegetable crops but carrots are particularly susceptible, especially late in the season and during storage. The fungus may be present in soil, storage areas, or containers. Symptoms include characteristic white mycelial growth and hard, black sclerotia (overwintering structures), which can be seen on the crown of infected carrots. In storage, the disease is characterized by a soft, watery rot with fluffy white mycelia and black sclerotia present. Sclerotia can persist in soil for many years and the fungus has a very wide host range making this disease difficult to manage. Grasses and onions are non-hosts that can be used in long rotations and a commercially available biocontrol organism (trade name Contans) has been shown to be effective in parasitizing overwintering sclerotia. Contans should be incorporated into infested soils in the fall if a susceptible crop must be planted there next year.

White mold with sclerotia. Photo by W. Brown

Cavity Spot and Root Dieback (*Pythium* spp.). Infections from *Pythium* spp. can occur during early root development and are favored by moist soil conditions. Root dieback symptoms appear as rusty-brown lateral root formation, or forking and stunting; symptoms that can be easily confused with damage from nematodes, soil compaction or soil drainage problems. Cavity spot often shows up later in the season near harvest. Horizontal, sunken lesions varying in size from 1 to 10 mm appear on the surface of the root and can provide an ingress for secondary fungal or bacterial infections.

Cavity spot (Pythium spp.). Photo by S. Livingston

Crown Rot (*Rhizoctonia carotae*). Early symptoms are horizontal dark brown lesions around the root crown. As the crop matures the tops may die in patches in the field and as the disease progresses lesions join to form large, deep, rotten areas on the top part of the root. *R. carotae* can also cause crater rot and violet root rot but these diseases are less common in MA. Crown rot is favored by moist conditions, so planting on ridges, harvesting early and without wounding, cleaning equipment, and maintaining clean and proper storage conditions may minimize impact.

Scab (*Streptomyces* spp.) can cause both raised and sunken, dry, corky lesions on the carrot root, however, symptoms are rarely severe enough to cause major losses in yield or crop marketability. Avoid planting carrots in alkaline soils, which are known to favor the incidence of scab, or in potato fields with high incidence of scab, as the disease may be caused by the same organism in carrots.

-Written by Susan B. Scheufele, UMass Extension

UVM FALL COVER CROP SURVEY

The purpose of this 5-minute survey is to get a better understanding of cover cropping practices and information needs of vegetable growers, to help guide a Specialty Crop Block Grant based on preliminary data gathered through the work described in Becky Maden's article in this issue of Veg Notes. Any information you share will be confidential. Thank you for participating!

https://www.surveymonkey.com/r/covercrop

JOB OPPORTUNITY! NEW ENGLAND VEGETABLE AND BERRY GROWERS ASSOCIATION SEEKS NEW SECRETARY-TREASURER

The New England Vegetable & Berry Growers Association (NEV&BGA) is a strong and progressive organization that offers wide-ranging initiatives supporting the well-being of the vegetable and berry industry throughout New England. It is the oldest vegetable growers' association in the United States and has been run by and for vegetable growers since 1886. With over 300 members from all five New England states, it is an active advocate for farmers, and works closely with Cooperative Extension to organize and co-sponsor educational programs including daylong meetings and the biennial New England Vegetable and Fruit Conference and Trade show in Manchester, NH. The Association supports Extension research projects with funding from members. It offers regular, commercial and associate memberships for growers and agricultural businesses. It is a non-profit membership organization with an Executive committee that includes representatives from all New England States.

The Secretary-Treasurer position has in recent history been held by retired or current Extension personnel, but this is a great opportunity for a farmer as well! This is a paid, part-time position. The hours are flexible, with the busiest times in the winter. It offers an opportunity to engage with growers and Extension educators and researchers from around the region and to support the Association's work and growth over the coming years.

The duties of the position include:

- Pay all bills, receive all monies and maintain financial records and bank accounts.
- Send dues notices, meeting notices and other pertinent information to members.
- Meet with the Executive Committee to conduct the business of the organization, and maintain minutes of these meetings.
- Meet with the Program Committee to select topics for 2-3 annual daylong meetings, and then plan and organize these programs.
- Represent the Association at various meetings and functions and act as a primary contact person.
- On behalf of the Association, act as treasurer for the New England Vegetable and Fruit Conference and participate in the steering committee of the NEVFC.

For more information, or to apply contact: Lisa McKeag, Secretary-Treasurer, secretary@nevbga.org or 917-573-5558

Events

Better Process Control School

When: November 15-18th
Where: UMass Amherst, Food Science Building, 102 Holdsworth Way, 243 Chenoweth Lab (Conference Room), Amherst, MA 01003

Are you interested in expanding your business with value-added processing by canning? This course will train food processors the principles of acidification and container closure evaluation programs for low-acid and acidified canned foods as required by FDA regulations in CFR 108, 113 and 114. By law, all commercial processors, when first engaging in the manufacturing, processing, or packing of low acid or acidified foods in any state must register with the FDA on Form FDA 2541 (Food Canning Establishment Registration; 21 CFR 108.25). In order to be approved as a registered process, businesses need to operate with a certified supervisor on the premise when processingThis course will satisfy both USDA and FDA regulatory training requirements for producing canned goods. This event is sponsored by Umass Extension, Department of Food Science and Grocery Manufacturers Association (GMA Science).

Click here to register!

Growing Vegetables & Small Fruit in Tunnels Conference

When: Thursday, November 17, 2016 from 7:30 am to 4:30 pm
Where: Tolland County Extension Office, 24 Hyde Ave., Vernon, CT 06066

We have gathered a very experienced and successful group of growers and Extension Educators to help you get started with low, high or caterpillar tunnels. If you're an experienced tunnel grower, this conference can help improve your growing skills and profit margin. You will learn about the NRCS cost-sharing program, about constructing and improving high tunnels, crop rotation, fertilization, production, growing different crops, overwintering crops, biological control and the economics behind tunnel production.

This program will offer 5 Pesticide Certification Credits towards your license renewal and the pre-registration price is $25 ($40 for late registration or at the door).

The New England Vegetable and Berry Growers' Association and New England Cooperative Extension 592nd meeting

When: Saturday, December 3, 2016 from 9:00 am to 4:00 pm
Where: Holiday Inn Portsmouth, 300 Woodbury Ave., Portsmouth, NH 03801

Educators and farmers from around New England will cover a wide range of issues important to vegetable and small fruit growers in this all-day meeting, including:

- **What's New with Crop Insurance?** – *Tom Smiarowski and Paul Russell, UMass Extension Risk Management/ Crop Insurance Education Program*
- **Pumpkin and Butternut Varieties Evaluation** – *Dr. Rebecca Brown, Associate Professor, Plant Sciences, University of Rhode Island*
- **Wildlife Management in Farm Fields: Managing Crop Losses and Food Safety Risks** – *David Allaben, State Director and Wildlife Biologist and Tony Musante, Disease Biologist, New Hampshire Wildlife Services*
- **Nutrition and Nutrient Management Recordkeeping for Small Fruit** – *Mary Concklin, Visiting Associate Extension Educator, Fruit Production & IPM UConn Extension*
- **2016 Weather, Insect & Disease Pest Issues in Fruits & Vegetables** – *George Hamilton, Extension Field Specialist, UNH Cooperative Extension*
- **Managing Irrigation during Drought** – *Trevor Hardy, Brookdale Fruit Farm Inc. Irrigation and Row Crop Supplies*

There is a $20 registration fee, which is waived for members of NEV&BGA. Lunch buffet is an additional $20.
To register: CLICK HERE or contact Lisa McKeag at 917-573-5558 or secretary@nevbga.org by **November 28**

** **4 Pesticide recertification credits** have been approved for this meeting.

High Tunnel Production Conference

When: Wednesday, December 14, 2016 from 9:30 am to 4:00 pm
Where: Radisson Manchester, 700 Elm Street, Manchester, NH

Do you want to fine-tune your management of crops, nutrients, pests and diseases in high tunnels? The AM session will focus on high tunnel tomatoes, discussing advanced cultural practices and soil fertility management. The PM session will focus on identification and management of diseases and insect pests of high tunnel crops. Throughout the day, there will be plenty of opportunities to share expertise and learn from one another in moderated farmer-to-farmer sessions.

Register here: http://bit.ly/2ePCiUC

Vegetable Winter School

When: Tuesdays, January 10th, 2017 – February 28st, 2017 from 9am – 3:30pm
Where: Brigham Hill Community Farm, 37 Wheeler Rd, North Grafton, MA 01536

Save the dates for this course designed to provide growers with regulatory certainty in a time of many regulatory changes. Leave winter school ready for a Commonwealth Quality Program (CQP) audit and the peace of mind that you are prepared to handle the requirements of: the Food Safety Modernization Act (FSMA), EPA Worker Protection Standards (WPS), Nutrient Management Regulations, and changes in Employment Law. Get up to date on research and IPM practices important to vegetable growers and gain a competitive advantage in a heavily regulated market. Each farm will get detailed support in developing food safety and nutrient management plans, training employees in WPS, developing standard operating procedures compliant with regulations, and preparing an employee handbook and a whole farm IPM plan. Twelve contact hours available for the vegetable pesticide license category. This course is designed for farm owners, managers and employees.

Click here to register: regonline.com/vegwinterschool

Questions? Contact: Katie Campbell-Nelson, kcampbel@umass.edu, 413-545-1051

SAVE THE DATES...

The New England Vegetable and Berry Growers' Association and New England Cooperative Extension 593rd and 594th meetings

When: Friday, January 6, 2017
Where: Hadley Farms Meeting House, 41 Russell St, Hadley, MA 01035

When: Saturday, February 4, 2017
Where: Hudson-Concord Lodge of Elks, 99 Park St, Hudson, MA 01749

Programs and registration coming soon!

Sponsors

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

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