UMass Extension
Vegetable Notes
For Vegetable Farmers in Massachusetts since 1975

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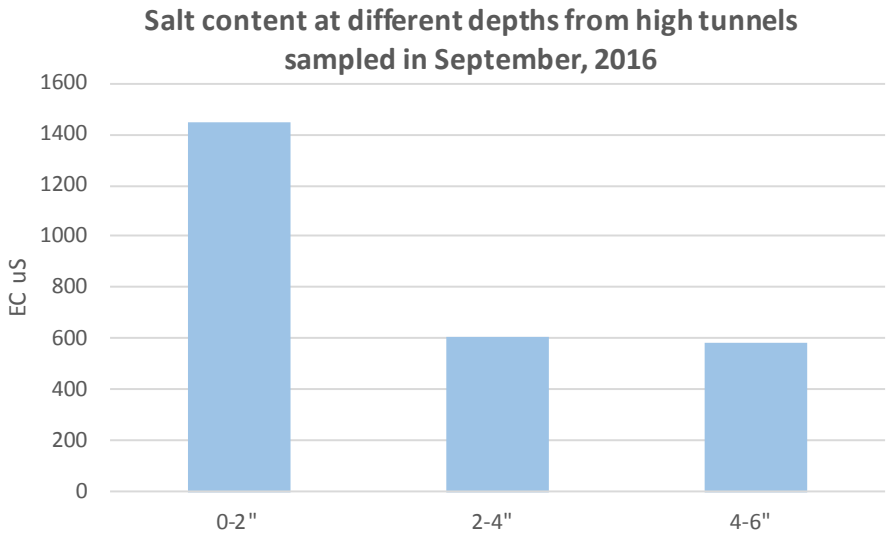
A tomato plant busting through the roof of a high tunnel might mean that it's time to replace the plastic or at least make repairs before hurricane season sets in. See article this issue for tips on preparing your greenhouse for a hurricane. Photo: L. McKeag

CROP CONDITIONS

It's been a relatively mild fall so far, with the exception of one early frost (in some fields) on September 25th, and farmers are enjoying the good harvesting weather. Folks are hauling in bins of winter squash and pulling up root crops like carrots, beets, and sweet potatoes. Leeks, turnips, and radishes, celeriac and other fall staples are also coming in. Cover crops germinated well with a few showers over the last few weeks to water them in. Winter production tunnels are planted and storage facilities are filling up with produce for winter. To avoid salt buildup, incorporate high tunnel soils well and flush with irrigation water after removing summer crops. If tunnels will remain unplanted over the winter, consider planting a cover crop or removing the plastic to help reduce salt build up. In September, we collected and analyzed salt content of soils at 3 depths from 5 high tunnels that had been fertilized in the spring and still had a summer crop growing in them (Figure below). We found that over the summer, salts had accumulated in the top 0-2" at levels above 1,300 ECuS which is a threshold at which most seedlings would have difficulty germinating or suffer yellowing from salt damage. This preliminary data highlights the importance of flushing and incorporating high tunnel soils between crops. We will continue monitoring these tunnels through the winter to see if salts continue to accumulate in the top 0-2" while winter crops grow. Figure: K. Campbell-Nelson



MASSACHUSETTS DISASTER DECLARATION - LOANS AVAILABLE

Though the heat and drought of the summer feels far behind us now, the USDA recently announced that MA has been designated a natural disaster area due to the damaging drought conditions and farmers in all of MA are eligible for emergency loans to help mitigate losses. In order to receive a loan you must apply through your county Farm Service Agency (FSA) office by May 21, 2017—see details from the Massachusetts Department of Agricultural Resources (MDAR) announce-

ment below:

Due to ongoing drought conditions and their effect on Massachusetts' agricultural industry, the United States Department of Agriculture (USDA) has recently designated eleven Commonwealth counties and three contiguous counties as primary natural disaster areas. All qualified farm operators within the designated counties (Barnstable; Bristol; Essex; Franklin; Hampden; Hampshire; Middlesex; Norfolk; Plymouth; Suffolk; and Worcester) and the three contiguous disaster counties (Berkshire; Dukes; and Nantucket) are eligible for low interest emergency (EM) loans provided by the USDA's Farm Service Agency (FSA).

The USDA's most recent declaration comes on the heels of a separate primary natural disaster areas announcement the federal department made earlier this week for several Massachusetts counties due to crop losses, particularly of tree fruits like peaches, caused by frost and freeze occurring between February and May. The disaster designation also made farms in designated counties eligible for assistance from the Farm Service Agency (FSA), including emergency loans.

"The Baker-Polito Administration continues to work with state, federal and agricultural stakeholders to address the adverse effect drought conditions are having on the Commonwealth's agricultural industry," said Energy and Affairs Secretary Matthew Beaton. "As ongoing drought conditions persist, residents in all corners of the state are strongly encouraged to support the agricultural community by shopping local for food products to help provide relief for farmers who have faced negative impacts associated with this period of prolonged dry weather."

CABBAGE APHID

Cabbage Aphid *(Brevicoryne brassicae)* infestations are being reported widely in fall brassica plantings across the region. Brussels sprouts are particularly hard hit, as aphids have a long time to build up and they get into the buds where they can't be reached.

There is potential for huge cabbage aphid population growth, especially where long-season crops are infested early. Photo: L. McKeag

Only crops and weeds in the brassica family are suitable hosts for cabbage aphid (CA). Cabbage, cauliflower, broccoli and Brussels sprouts are most severely affected, but other crops may become infested. Aphids tend to be more of a problem in fall plantings. Adults, both winged and wingless, and nymphs are grayish green with a dark head and short, dark cornicles, but appear more grayish white because the body is covered with a fine, white, powdery secretion. In fall, eggs are laid on the underside of leaves of the same crops or weeds that were fed on during the summer, and survive the winter on brassica host plants. This differs from the life cycle of many aphid pests of vegetables, where eggs are laid and overwinter on alternate hosts outside the field. Eggs typically hatch in April. Nymphs feed and develop into reproductive females who produce live young without mating. Winged adults disperse with wind and infest new crops. There are multiple summer generations and potential for huge population growth, especially where long-season crops are infested early. CA prefers to feed on young leaves, flower buds or seed stalks in the upper part of the plant and also feeds in developing Brussels sprout buds. Dense colonies may develop. Feeding injury includes wrinkled and downward-curling leaves, yellow leaves, reduced growth, contamination with aphid honeydew, and contamination of the marketable parts of the plant with aphids. CA can also transmit cauliflower mosaic and cabbage ring spot virus, among other viruses; transmission is non-persistent, with virus particles passed to new plants by probing.

Natural enemies can suppress cabbage aphid populations, but may not be able to prevent high densities that can occur in cool fall weather. Planting flowers that attract aphid predators (Syrphid flies and ladybugs) and parasitoids (the small *Ichneumonid* wasp, *Diaeretiella rapae*). Cultural controls include soil incorporation of crop residues immediately after harvest or, for overwintering brassicas, before eggs hatch in spring. Control brassica weeds in or near fields. Check transplants to be sure they are clean. Use reflective mulch to repel aphids. Use selective products when controlling other pests to conserve beneficial insects. If CA is a consistent problem, systemic insecticides used at planting or sidedress may elimi-

nate early infestations. Scout weekly to determine % infested plants, starting before harvested portions of the plant form. Treat if >10% of the plants are infested with aphids, especially after heads or sprouts begin to form. Or select 10 leaves at 10 sites for 100 leaves per field, and treat if >20% have aphids. Coverage of all leaf surfaces, buds and new growth is key. Waiting until there are heavy outbreaks or until just before harvest makes it hard to prevent loss of marketable yield. Dan Gilrain of Cornell Cooperative Extension writes,

> "Movento was particularly effective in one cabbage trial at the Long Island Horticultural Research and Extension Center. Fulfill and Beleaf are also highly effective and specific aphid materials – all three have helpful translaminar or systemic activity. Alternatives include Assail and Admire Pro/generic spray. Include a nonionic surfactant (wetting agent) and verify material adheres and doesn't roll off during application. Note that the Bravo Weather Stick label prohibits tank mixing with DiPel, Latron B-1956 or Latron AG-98 and warns about combinations with other pesticides and surfactants unless a test shows the mix is safe. Organic growers can use M-Pede or a horticultural oil (SuffOil-X, Sunspray Ultra-Fine). (I suggest a combination of 2% hort. oil + 0.5% M-Pede). Cabbage aphids affected by treatment may not quickly appear to be dead – check after 2 days to verify efficacy."

This year the UMass Extension Vegetable Program conducted two studies on cabbage aphid. In the first preliminary trial we investigated using insectary plants—flowers attractive to bees, wasps, and syrphid flies because they produce both pollen and nectar—to attract predators and parasitoids. We direct seeded white clover, calendula, sweet alyssum, and buckwheat in replicated random complete blocks. The white clover struggled in the drought conditions and never flowered. Sweet alyssum (a brassica) when direct-seeded was not competitive with weeds and got eaten up by flea beetles. We re-planted with seedlings which did establish nicely but still seemed to attract more flea beetles than other insects. Buckwheat and lacy phacelia were the most competitive and attracted more benneficial insects than other plants. Calendula was slower to establish and produce flowers but continued flowering well into fall which is a critical time. Next year we will work on planting times and seeding rates for some of the more promising flowers we evaluated this year.

In the second study we evaluated a number of "soft" pesticides with reduced-risk towards beneficial insects and could be used in combination with insectary plantings. Unfortunately, we didn't have very high aphid pressure in this study and instead the plants got hammered by onion thrips so we monitored thrips numbers and damage as well. No significant differences in thrips or aphid numbers or damage were found, and no differences in yield were observed. We will repeat this study next year and will infest plants with aphids to ensure adequate pressure to see treatment differences. Stay tuned!

-Adapted from the 2016-2017 New England Vegetable Management Guide by Susan B. Scheufele

SWEET POTATO HARVEST & STORAGE

Sweet potato acreage is steadily increasing in New England as it becomes clear that this crop can yield well, store well, and has a strong market. The sweet potato's harvest and storage needs differ from other common New England root crops. Once harvest is completed—generally by early to mid-October—curing and storage issues continue to be important.

Sweet potato roots continue to grow until the leaves are killed by frost or until soil temperatures fall consistently below 65°F, whichever comes first. Time of harvest is often determined by digging up a few representative plants and determining the percentage of roots in different size classes. The crop can be harvested whenever the majority of the roots are the desired size. When tops of the plants turn black after the first frost, it is imperative to harvest as quickly as possible regardless of root size. Chilling injury can occur in the soil, if soil temperatures drop to 55°F or below. It is also important to avoid holding sweet potatoes in saturated, low-oxygen soil conditions prior to harvest, because this promotes rapid decay in storage.

Sweet potatoes are very susceptible to damage at harvest. Sweet potato roots do not have a thick protective outer layer of cells such as that on white potato tubers. Abrasions and wounds can lead to rots in storage.

Curing immediately after harvest is recommended when sweet potatoes will be held in storage for retail or wholesale sales. Curing minimizes damage and loss during storage by healing harvest wounds. To cure, maintain roots in temperatures between 80°F to 86°F and a high relative humidity (85-95% RH) for 4 to 7 days. Respiration rate is high during curing, so ventilation is important to remove CO2 and replenish O2. This forms a corky periderm layer below the damaged areas which limits microbial invasion and water loss. A greenhouse can provide good curing conditions.

A freshly harvested sweet potato is more starchy than it is sweet. During curing and storage, starches in the sweet potato are converted to sugars, improving flavor. The change in sugars is measurable within one week, but it is recommended to wait at least three weeks after harvest before consuming sweet potatoes to permit the starches to convert to sugars for maximum eating quality.

Sweet potatoes can maintain excellent quality for up to a year in proper storage conditions. The ideal storage conditions for sweet potato are the same as for winter squash; moderately warm (55-60F) at 60-75% relative humidity. Like winter squash, sweet potato suffers chilling injury at temperatures below 55 F and grows more severe at lower temperatures or longer periods of exposure. Signs of chilling injury include shriveling, sunken, dark areas on the tuber surface, and blackening of tubers when cut open. 'Hardcore' is a physiological disorder cause by chilling, in which areas of the tuber become hard – but this condition only appears after cooking. Because chilling injury is irreversible and makes tubers unmarketable, growers should take particular care to avoid field, curing or storage conditions that dip below 55°F.

Yield studies were conducted for several years by Becky Sideman at University of New Hampshire. Best yields were found in Beauregard, Covington and O'Henry (a white-fleshed variety). A good yield was 2.5 lbs per plant; equivalent to >65 lbs per 20 row-feet, assuming 9 inch spacing between plants in a single row.

Tuber damage from wireworms can occur during the growing season and reduce marketability. More work needs to be done to understand which species is causing the damage, but likely candidates are corn wireworm (*Malanotus communis*) or wheat wireworm (*Agriotis mancus*). Both feed on roots, stems, stolons and tubers and are pests of potato, sweet potato, other non-root vegetables crops, and grains such as wheat and oat as well as sod and grassy cover crops such as Sudangrass. Adults are most active in spring (April-June). Eggs are laid in soil and larvae feed and develop for 2, 3 or 4 years. They can survive periods without food—essentially waiting for new crops to come along. Corn wireworm adults may be especially attracted to grassy cover crops such as Sudan thus keeping fields free of those during peak egg laying is advisable. It is difficult to trace the history and cause of wireworm damage, because it is often 2-4 years after eggs are laid before the damage becomes noticeable or serious. Damage is likely to be worst when larvae are nearly full grown. There are baiting methods to sample for larvae before planting. Corn wireworm larvae are also favored by wet soil conditions thus damage may be heavier in wet areas.

Voles love sweet potatoes and can take up residence in the sweet potato field, causing significant damage. Voles may be deterred by a clean cultivated border around the planting, and keeping nearby areas weed-free or well mowed to minimize good hiding areas. Timely harvest may reduce the level of damage. Watch storage for vole activity after harvest.

Reports on Becky Sideman's sweet potato work can be found at

http://www.mofga.org/Publications/MaineOrganicFarmerGardener/Spring2009/SweetPotatoes/tabid/1081/Default.aspx and in the related fact sheet, Growing Sweet Potatoes in New Hampshire.

- adapted by R. Hazzard from the Sweet Potato section of the New England Vegetable Management Guide, nevegetable.org; articles by Becky Sideman, UNH Cooperative Extension; wireworm information from J. Capinera Handbook of Vegetable Pests.

SOIL ACIDITY, PH, AND LIMING – FALL IS THE BEST TIME TO LIME!

Adding lime in the fall will allow time for it to react in the soil and prepare your fields for spring planting. If you haven't already, take a soil test to determine the pH of your soil, and the amount of lime you may need to reach your target: **http://soiltest.umass.edu/.**

One of the most important aspects of nutrient management is maintaining proper soil pH, which is a measure of soil acidity. A pH of 7.0 is neutral, less than 7.0 is acidic, and greater than 7.0 is alkaline. Most New England soils are naturally acidic and need to be limed periodically to keep the pH in the range of 6.5 to 6.8 desired by most vegetable crops. Scab-susceptible potato varieties are an exception but, even here, some lime may be needed to maintain the recommended pH of 5.0 to 5.2. When the soil is acidic, the availability of nitrogen (N), phosphorus (P), and potassium (K) is reduced and there are usually low amounts of calcium (Ca) and magnesium (Mg) in the soil. Under acidic conditions, most micronutrients are more soluble and are therefore more available to plants. Under very acidic conditions aluminum (Al), iron

(Fe), and manganese (Mn) may be so soluble they can reach toxic levels. Soil acidity also influences soil microbes. For example, when soil pH is low (below 6.0), bacterial activity is reduced and fungal activity increases. Acidic soil conditions also reduce the effectiveness of some pesticides.

The most effective way to manage soil acidity is to apply agricultural limestone. The quantity of lime required is determined by the target pH (based on crops to be grown) and the soil's buffering capacity. Buffering capacity refers to a soil's tendency to resist change in pH. Soil pH is only a measure of active acidity, the concentration of hydrogen ions (H+) in soil solution. It is an indicator of current soil condition. When lime is added to a soil, active acidity is neutralized by chemical reactions that remove hydrogen ions from the soil solution. However, there are also acidic cations (H+ and Al+) adsorbed on soil colloids (the cation exchange capacity, or CEC) which can be released into the soil solution to replace those neutralized by the lime. This is called reserve acidity. Soils such as clays or those high in organic matter have a high CEC and a potential for large amounts of reserve acidity. These soils are said to be well buffered. To effectively raise the soil pH, both active and reserve acidity must be neutralized. Soil test labs determine buffering capacity and lime requirement by measuring or estimating the reserve acidity. This is typically accomplished by equilibrating the soil with a buffered solution and measuring pH (buffer pH). Some laboratories calculate lime requirement from pH and soil texture (estimated CEC and base saturation) while others make this determination based on extractable aluminum levels.

The neutralizing power of lime is determined by its calcium carbonate equivalence. Recommendations are based on an assumed calcium carbonate equivalence of 100. If your lime is lower than 100, you will need to apply more than the recommended amount, and if it is higher, you will need less. To determine the amount of lime to apply, divide the recommended amount by the percent calcium carbonate equivalence of your lime and multiply by 100. Your supplier can tell you the calcium carbonate equivalence of the lime you are purchasing. Wood ash is another amendment that may be used to manage soil acidity. The calcium carbonate equivalence of wood ash is typically around 50%, but it can vary widely. If purchasing wood ash from a supplier, they will provide a recent analysis. Otherwise the wood ash should be submitted to a lab offering lime analysis to determine the calcium carbonate equivalence.

The speed with which lime reacts in the soil is dependent on particle size and distribution in the soil. To determine fineness, lime particles are passed through sieves of various mesh sizes. A US Standard 10-mesh sieve has 100 openings per square inch while a 100-mesh sieve has 10,000 openings per square inch. Lime particles that pass through a 100-mesh sieve are very fine and will dissolve and react rapidly (within a few weeks). Coarser material in the 20- to 30-mesh range will react over a longer period, such as one to two years or more. Agricultural ground limestone contains both coarse and fine particles. About half of a typical ground limestone consists of particles fine enough to react within a few months, but to be certain you should obtain a physical analysis from your supplier. Super fine or pulverized lime is sometimes used for a "quick fix" because all of the particles are fine enough to react rapidly.

Lime will react most rapidly if it is thoroughly incorporated to achieve intimate contact with soil particles. This is best accomplished when lime is applied to a fairly dry soil and disked in (preferably twice). When spread on a damp soil, lime tends to cake up and doesn't mix well. A moldboard plow has little mixing action, therefore, disking is preferred.

Besides neutralizing acidity and raising soil pH, lime is also an important source of Ca and Mg for crop nutrition. It is important to select liming materials based on Ca and Mg soil content with the aim of achieving sufficient levels of each for crop nutrition. If the Mg level is low, a dolomitic lime (high magnesium lime) should be used; if Ca is below optimum a calcitic (low magnesium lime) should be used. If soil pH is high and Ca is needed, small amounts can be applied as calcium nitrate fertilizer (15% N, 19% Ca). Ca can also be supplied without affecting pH by applying calcium sulfate (gypsum) which contains 22% Ca or superphosphate (14% to 20% Ca).

-from the 2016-17 New England Vegetable Management Guide

PREPARING YOUR GREENHOUSES FOR A HURRICANE

Climate change predictions for the Noreastern US point to more intense storms punctuated with more periods of drought in between. According to recent information from FEMA, Matthew is a major hurricane on the Saffir-Simpson Scale with sustained winds near 145 miles per hour (mph) and while some fluctuations in intensity are possible during the next couple of days, this storm is expected to remain a powerful hurricane. According to the National Hurricane Center, the

current forecast models for impact to the United States vary greatly from direct landfall to remaining offshore along the East Coast. Although huricane Matthew is expected to miss us in Massachusetts, impacting the coastal US from Florida to the Mid-Atlantic, we thought now would be a good time to prepare for future storms and think about protecting your greenhouses. The following article was written by Skip Paul in 2011 just before Hurricane Irene. Skip is a farmer on coastal Rhode Island with experience dealing with high winds and hurricanes.

How to Prepare

Hurricane preparedness should start with checking all your connections and structural members every time you change your plastic (every four years). For instance if there is a weak link in a chain and a nut vibrates off of a critical connection, you will start a cascade of other failures. Take the two hours required to check and evaluate the connections on your houses between coverings. Don't just throw on another covering and call it done. Evaluation includes cleaning the bugs out of your inflation fans. Keeping the two sheets a bit over inflated during a storm is a good thing. This requires patching the myriad of small holes and nicks. We just open up the inflation fan air intake (all the way) and get that plastic extra tight. Don't forget to readjust the inflation fan intake slide vent after the storm - you don't want to over stretch your plastic. It will shorten its life over time.

The next biggest problem is junk around the farm that can get going in the wind and rip a hole in the plastic, which leads to the next most important thing: don't let the wind get in the structure. The wing on an airplane lifts as much from the wind speed of the wind going over the top and lifting the wing from the rear as it does from getting under the wing. In a similar way, the air going over the top of the greenhouse wants to lift the downside. Buttoning up the structure will help keep the air from doing this. Obviously, keeping the wind from getting inside is important as well. If we know we will lose power, we duct tape the intake shutters to keep the wind out. Keep your large doors closed by putting something in front of them. Most greenhouses don't have good door latches for their doors; if they vibrate loose or fail, wind will get in.

Probably the most important decision is whether to cut or take off the plastic. I once heard that the increase of wind pressure or damage increases 80% when you go from 75 mph to 100 mph. If you add rain water to that, you have a force most of us have never experienced. We have always thought that if we know we are getting 100+ mph winds then we should take the plastic off...the structural damage to the greenhouse doesn't warrant trying to make it through the storm. Plus, at 100+ mph you probably will lose your power and there is another reason you will be glad you took the plastic off. Uninflated greenhouse coverings are like a large boat spinnaker gone wild...It can be dangerous and just beat the hell out of the structure. Tip: if you do take the plastic off; try to do it in two separate pieces and put it away somewhere dry. If you let it slump off the greenhouse and fill with water, the capillary activity of the water between the sheets will make it impossible to recover the house until they are separated and dry.

People with Haygrove (that includes us): don't even think about trying to make it through anything over 65 mph. Your manual will tell you it isn't made for that kind of wind. Especially since their solution to lower wind speeds is to open the structure up! That can work up to 55 mph, but above 65 the wing on the airplane physics kicks in and you will be sorry. Our Haygrove had one end crushed in a sudden wind gust last season; it can happen. Those with Rimol moveable houses (or greenhouses on skids a la Elliot Coleman) should heed the same warning: like the above airplane wing conclusion, small pipes driven in here and there will do you no good when the wind gets over 75 mph. It's better to take the plastic off than to see your greenhouse rolling over your neighbor's hayfield.

Probably the most important thing is to respect the peak of the storm. Don't switch plans and try to do any of this in the midst of the storm. The wind is dangerous and adding heavy rain to that can be catastrophic…I once saw a sailor flipped 30 feet into the air while trying to hold a spinnaker line that got loose. Be careful with this storm.

- Skip Paul, Wishingstone Farm, RI, 2011

News

Locally Grown Frozen Vegetables Survey

Are you interested in freezing your fresh produce for retail sales? Got 3 minutes? Want to win $50?
UMass Departments of Food Science and Resource Economics need growers' input regarding frozen produce. Please click **here** to complete this 3 minute survey. All participants will be entered to win a $50 gift card!

Climate Adaptation Fellowship

SHARE YOUR THOUGHTS: Are you a vegetable farmer or an outreach professional? Have you had to adapt to extreme storms, drought, new pests and diseases? The Climate Adaptation Fellowship program is a collaboration between the USDA Northeast Climate Hub, the University of Vermont, the University of Maine, Rutgers University, the Pennsylvania State University, Cornell Cooperative Extension, Manomet, and the Rodale Institute. We want to get feedback from farmers and outreach professionals on the value of a program like this BEFORE it gets off the ground. This quick **feedback form** will only take 10 minutes of your time, and your input would be greatly appreciated. **Responses due October 17th.**

EVENTS:

Grains and Dry Beans in Vermont Field Day

When: Tuesday, October 11, 2016 from 10:30am – 2:30pm

Where: Morningstar Meadows Farm, 170 Dwinell Dr., Glover, VT 05839

In 2015 and 2016, the Johnsons teamed up with the Northwest Crops and Soils Program and were awarded SARE Partnership grants to research the best practices for organic heirloom dry bean production in the Northeast. This includes large scale variety assessments, bean disease and insect pest scouting and identification, and the determination of the optimum planting dates and seeding rates for this crop. Come check out all the on-farm grain and bean trials. You will hear about heirloom variety assessment, understanding disease and insect issues, and developing planting date and seeding rate recommendations. You will also learn about dry bean seed saving, proper harvesting, cleaning, and storage techniques.

Dry beans trial at Boarderview Research Farm in Alburgh, Northern Vermont showing differences in disease tollerance. Photo taken in July 2016: K. Campbell-Nelson

The event is Free and includes a pizza lunch.

Contact: Susan Brouillette, susan.brouillette@uvm.edu, 802-524-6501

Tractor Safety & Maintenance

When: Monday and Tuesday, October 17th and 18th, 2016 from 9am-5pm

Where: Community Farm of Simsbury, 73 Wolcott Rd, Simsbury, CT 06070

This is a two-day class designed to educate and empower current or future users of agricultural tractors and farm equipment. It appeals to new and beginning farmers, and has proven valuable to many seasoned professionals – some of whom were never formally schooled on tractors. During the class, the instructor will demystify tractors and improve understanding of how tractors are designed to work; how to operate them safely and effectively; and how to perform regular and basic maintenance tasks. The class covers a lot of material – in a classroom setting, on and around the tractor, and "in the workshop." While it would be very difficult to ensure full competency or mastery within two days, the attendees will leave with a much greater appreciation for safe tractor use and machinery care, along with new knowledge and resources they can apply to their own situations.

Cost: $50

***Limited to 15 participants* To register**, please send an email to MacKenzie White Mackenzie.white@uconn.edu including the following; full name, mailing address, phone number, email address, and any dietary restrictions. Please make the checks payable to the University of Connecticut and mail to Tolland County Extension Center 24 Hyde Avenue, Vernon, CT 06066.

Safety & Maintenance for Small Engines & Power Tools

When: Wednesday, October 19th, 2016 from 9am-3:30pm

Where: Community Farm of Simsbury, 73 Wolcott Rd, Simsbury, CT 06070

This six-hour class is designed to provide a basic understanding of how small engines work. There will be a review of the 2-cycle and 4-cycle process with actual engines to demonstrate how these engines work, and tips on how best to maintain them. Like many machines, these tools are as readily misused or abused as they are used properly, and lack of maintenance often leads to expensive repair or replacement. The instructor will review safe and proper use, as well as daily care and routine maintenance procedures. He will also address a vexing issue for many novices and experienced users alike: starting procedures and using the choke. With such a variety of small engine machines on the market, it is almost impossible to address all of the potential repair issues on these little workhorses. So rather than focus on actual repair, the class is designed to provide a deeper understanding of how they work and how they are meant to be used, and how proper use and regular maintenance can prevent most repair issues. In lieu of actual repair, the class will cover trouble-shooting small engine issues, and some basic repair steps to correct for some of the more common problems. There will be handouts, and participants are encouraged to bring their own small engine machines (and the manuals!) for demo and review (time permitting).

Cost: $25

***Limited to 15 participants* To register**, please send an email to MacKenzie White Mackenzie.white@uconn.edu including the following; full name, mailing address, phone number, email address, and any dietary restrictions. Please make the checks payable to the University of Connecticut and mail to Tolland County Extension Center 24 Hyde Avenue, Vernon, CT 06066.

Public Hearing: 330 CMR 31.00, PLANT NUTRIENT APPLICATION REQUIREMENTS FOR AGRICULTURAL LAND AND NON-AGRICULTURAL LAND, NON-AGRICULTURAL TURF, AND LAWNS

When: Thursday, October 27, 2016 from 10am to 12pm

Where: Division of Fisheries and Wildlife, 1 Rabbit Hill Road, Richard Cronin Building Room 110, Westborough, MA

In addition to oral testimony, written comments will be accepted before and at the Hearing. MDAR will continue to accept written comments until October 27, 2016, at 5:00 P.M. Written comments should be addressed to Taryn LaScola, Director, Division of the Division of Crop and Pest Services, Department of Agricultural Resources, 251 Causeway Street, Suite 500, Boston, MA 02114.

Link to redline version of the regulation: 330 CMR 31.00 Redline

Managing Phosphorus in Organic Residuals Applied to Soils

When: Wednesday, November 2, 2016 from 8:45-4pm

Where: Holiday Inn, 265 Lakeside Ave.Marlborough, MA 01752

How do we develop a balanced system for use of organic residuals, with all their benefits, without adding to negative environmental impacts caused by phosphorus (P) leaching and runoff? This symposium will provide technical, research-based information and dialogue on the presence, forms, dynamics, transport, and fates of P applied to soils in organic residuals such as composts, biosolids, manures, and digestates from anaerobic digestion. This symposium is intended to help in developing guidelines for the use of P-containing organic residuals in accordance with nutrient management regulations.

Approval has been granted for 6 CCA credits and requested for the following professional certifications: CGCS, CSFM, MCH, MCLP, and AOLCP.

Event Website: https://www.regonline.com/phosphorus

Contact: Kelly Kraemer, 413-545-5221, kkraemer@umass.edu

Northeast Greenhouse Conference and Expo

When: Wednesday and Thursday November 9th and 10th all day

Where: Holiday Inn, 242 Adams Pl, Boxborough, MA

The biennial Northeast Greenhouse Conference & Expo is co-sponsored by New England Floriculture, Inc. - a group of grower representatives from the Northeast, augmented by University and Cooperative Extension staff in each state who specialize in greenhouse crops and management. Don't miss this great opportunity to learn, share and connect with other industry professionals.

Registration: http://www.negreenhouse.org/html/registration.shtml

Vegetable Winter School

When: Tuesdays, January 10th, 2017 – February 28st, 2017 from 9am – 3:30pm

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

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.

Registration coming soon!

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

Sponsors

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