UMASS EXTENSION

Vegetable Notes

For Vegetable Farmers in Massachusetts

Volume 26, Number 22 September 25, 2014

In this issue:

Crop conditions

Overall, cool, dry conditions have meant great harvest weather around the state. The last of the summer crops – peppers, eggplants, summer squash, sweet corn - is still coming in, while fall harvests of cabbages, potatoes, sweet potatoes, turnips, beets, carrots and radishes are well underway, though the bulk of storage crops is still waiting in the ground. The first frost warnings (and frosts, in a few spots!) prompted growers to hurry up and haul in all of their winter squash to avoid chilling injury. Coolers, barns, and greenhouses are stuffed to the gills during this bottleneck period when bins of winter squash and cabbage are competing for space on the farm with crates of onions and garlic. This has been a bountiful year for many, and figuring out where to cure and store all these riches could be a challenge! September is Hunger Action Month, organized by Feeding America, the national food bank network, so if you find yourself with more than you need or can handle, consider donating some of your bumper crop to your local food bank, or contact a gleaner organization like the Boston Area Gleaners to come harvest it for you.

Though we've largely transitioned to harvest mode, many pests are still active. Scout for caterpillars and aphids in brassicas -- caterpillars can damage developing cabbage and broccoli heads, and aphids have a particular taste for Brussels sprouts. There are several options for fungicides to use against Alternaria leaf spot in brassicas, and copper can be effective against black rot. See the NE Veg Management Guide for more information. The UMass Vegetable team is currently in the middle of a research trial to test the efficacy of some OMRI-approved materials for controlling fall brassica diseases. White mold may be present in tomato greenhouses. Look for a fluffy, white mycelia on tomato stems, and if you cut open stem lesions, the hard black overwintering structures of the pathogen, called sclerotia may be seen. These structures can persist in the soil for several years. Cut off affected plants at the soil line and discard.

Barn stacked high with butternut bins

The FDA released their revisions to the Food Safety Modernization Act last week. Changes to the Produce and Preventive Controls rules including provisions on water testing, manure application, definitions for covered farms, exemptions, and wild life were made in response to the public's comments. The FDA will begin accepting comments on these changes on September 29.

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.

Harvest. 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 de-

termining 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.

Chilling injury. Photo M. Leonard, UC Davis Post-harvest Technology Center

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. Also, 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.


Internal effect of chilling injury. Photo www.omafra.gov.on.ca

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 CO_2 and replenish O_2. This forms a corky periderm layer below the damaged areas that limits microbial invasion and water loss. A greenhouse can provide good curing conditions.

Storage. 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 (55-60°F) 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.

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 Sudangrass 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. Corn wireworm larvae are also favored by wet soil conditions thus, damage may be heavier in wet areas. There are baiting methods to sample for larvae before planting.


Insect damage on sweet potato

Voles love sweet potatoes and can take up residence in the sweet potato field, causing significant damage. Voles may be deterred by maintaining 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 facility for vole activity after harvest.

Yield studies were conducted for several years by Becky Sideman at University of New Hampshire. Best yields were found with the varieties 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. 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.

PLANTING CONSIDERATIONS FOR A HEALTHY GARLIC CROP

Begin with high quality disease-free seed. Garlic is a popular crop among diversified New England growers yet seed availability continues to be a large obstacle. Without a seed certification program in place some growers are wondering how they should source and treat new seed introduced onto the farm. Introduction of a new pest, the stem and bulb, or 'bloat' nematode (*Ditylenchus dipsaci*) in garlic throughout New England requires garlic growers to take new precautions at planting time to ensure a healthy crop next year. The garlic bloat nematode (GBN) is transported on seed, and this is the primary means of its spread from farm to farm or field to field. The first line of defense is to find sources of healthy seed from reliable growers whose seed lots have been tested. Seed may also be infested with Fusarium basal rot, white rot, downy mildew, Botrytis Bulb rot or Penecillium decay. If buying seed, learn the cultural history of the garlic and field in which it was grown. If saving your own seed, keep the largest and firmest bulbs. Cull seed when you are cracking (dividing bulbs into cloves before planting) and discard cloves with unhealthy-looking basal plates, discoloration, dents or lesions on or under the wrapper leaf, and any cloves that feel unusually light. Do not compost these cloves---either bury them away from the field or throw them away. For help with disease identification, refer to the article on culling garlic in the July 31, 2014 issue of Vegetable Notes. If you suspect GBN or disease symptoms in your purchased or saved seed, send samples to the UMass Disease Diagnostic Lab before planting. Select 4-6 symptomatic bulbs (not just 1) to have them tested for nematodes and other bulb diseases.

Garlic bloat nematode damage. Photo B. Watts, UMaine

Plant into a well prepared field without a history of Allium diseases. If GBN has been diagnosed in your field, follow a 4 year rotation away from Alliums (garlic, onion, leek, chives), parsley, celery, salsify, as well as weeds Canadian thistle and hairy nightshade. If Fusarium basal rot of garlic (caused by *Fusarium culmorum*) is diagnosed, other alliums may be planted in rotation, but cereal crops should be avoided as they can be a host. Plant new seed into fields away from your existing seed stock to keep problems from spreading. Although GBN can move no more than one foot in soil on its own, it is easily spread by water run-off, contaminated equipment, shoes or clothes, and by any other means of moving infested soil. Other than crop rotation, several other cultural practices at the time of planting also enhance the quality of your garlic crop. Garlic is planted in the fall since it requires a cold treatment to induce bulb formation. Planting typically occurs from October in northern New England to early November in southern areas. The goal is to allow good development of roots but not enough time for the shoots to emerge from soil before winter. Plant immediately after cracking; individual cloves do not keep long due to disease susceptibility and desiccation. Bury each clove 2 to 4 inches deep, depending on winter temperatures and cover with straw or leaf mulch. Colder areas require deeper planting. Planting arrangements include: 2 row beds 30 inches apart on center with 6 inch spacing in and between rows; 3 or 4 rows per bed, with 6 to 8 inches between and within rows; single rows spaced 24 to 30 inches with 6 inch spacing in the row.

Fusarium in garlic head. Photo OSU

Follow best fertility and water management practices.

Fertility recommendations can be found in the NE Vegetable Management Guide (see table 1 below). All phosphorus and potassium should be applied at planting if needed according to the soil test results. One study showed that sulfur applications up to 50 lbs/A significantly increased yields when applied at the time of planting with nitrogen compared to fertiliz-

Plant Nutrient Recommendation According to Soil Test Results for Garlic									
GARLIC	Nitrogen (N)* Lbs per acre	Phosphorus (P) Lbs P_2O_5 per acre				Potassium (K) Lbs K_2O per acre			
Soil Test Results		Very Low	Low	Optimum	Above Optimum	Very Low	Low	Optimum	Above Optimum
Broadcast and Incorporate in fall	40	150	100	25-50	0	150	100	50	0
Sidedress in spring when shoots are 6 inches high	40	0	0	0	0	0	0	0	0
Sidedress 3-4 weeks later	40	0	0	0	0	0	0	0	0
TOTAL RECOMMENDED	120	150	100	25-50	0	150	100	50	0

Table 1. Plant Nutrient Recommendations for garlic

ing with nitrogen alone. Up to 40 lb available N, preferably from a slow release organic form such as alfalfa and soybean meal, can be applied at planting. Quick release synthetic or soluble forms of N should be reserved for use in the spring. Side-dress in spring after leaching rains have occurred and when shoots are 6" high, then fertilize again 3-4 weeks later. No nitrogen should be applied during the last 60 days before harvest.

Water: Garlic typically does not require irrigation in New England, however, the use of straw mulch is helpful in retaining moisture and reducing temperature fluctuations. During a wet spring, removal of straw mulch is advisable to reduce the risk of soil borne disease development. Removing mulch in the spring can also allow the field to warm up, and will enable side dressing and cultivating. If you do irrigate, stop after cutting scapes on hard neck varieties to allow the bulbs to develop healthy, dry wrappers.

Without seed inspection and testing facilities in place, many growers rely on their own saved seed or seed purchased from other growers. Therefore, disease management practices and the cultural practices outlined above are imperative to maintaining a healthy seed crop for years to come.

-by K. Campbell-Nelson. Adapted from Crystal Stewart, Cornell Extension (VegEdge, 2012) and Brad Bergefurd, Ohio State Extension.

Refererence: Farooqui, M.A. et al. Effect of nitrogen and sulphur levels on growth and yield of garlic (*Allium sativum L.*). As. J. Food Ag-Ind. 2009, Special Issue, S18-23.

CHECKLIST FOR HARVEST AND CURING OF POTATOES

Potato acreage has been increasing in recent years; the 2012 Ag Census reports that in MA both acreage and the number of farms growing potatoes has doubled since 2007. The increase includes farms that focus on potatoes as well as diversified farms gearing up for more fall and winter sales. While potato production ranges from less than one to over 1,000 acres per farm, the needs of the crop are pretty much the same.

Potatoes headed out of the field

Harvesting potatoes for immediate sale has been underway for many weeks, but we are approaching the time when harvest for longer term storage will begin. As we move into early October, conditions are favorable for harvest and curing of potatoes for storage: soils are cool but not too cold; they may be dry or moist but are not, at the moment, soggy; and air temperatures have been ranging from around 40 to 65°F so can be used to assist with managing storage temperatures for curing and cooling the tubers. Most potato vines have died back or been killed, so skins have set.

Storage never improves tuber quality. Effective potato storage provides an environment to maintain the best possible tuber

quality and appearance until potatoes are sold. This requires careful harvesting practices, followed by attention to the successive stages of storage: curing, cooling, holding, and removal. Below is a checklist to help get potatoes into the 'holding' phase of storage. More details on holding and removal will follow in the October issue of Vegetable Notes.

Preparing the storage

Maintaining a pathogen-free storage environment is critical to successful storage. All storage and potato handling equipment surfaces should be thoroughly cleaned and disinfected prior to handling and placing the crop into storage. Surfaces should be well moistened by the disinfectant spray. Spray bin walls until there is a slight runoff. Recommended disinfectants are quaternary ammonium compounds such as Hyamine 2389. Bins or equipment treated with quaternary ammonium compounds must be rinsed with clean water before coming into contact with potatoes to be used for human consumption. Read labels carefully regarding use on walls or floors versus use on 'food contact surfaces' and to determine suitability for your needs. Organic produce may not come in contact with surfaces that have been treated with quaternary ammonium compounds. For more resources on organically approved sanitizers, see reference 4 below.

Pre-harvest practices: maturity, vine kill, skin set

Maturity is indicated by the ability of the tuber skin to resist skinning during harvest. Generally this is achieved through natural or managed vine desiccation (vine kill). Sugar content is a maturity index for processing potatoes, with both immaturity and over-maturity resulting in higher sugar levels (see reference 3).

Vine killing stops tuber growth at the desired size, stabilizes the tuber solids, controls hollow heart disorder, promotes skin set and allows for easier digging and harvesting. Vines may have died down naturally but if they are still green, mechanical (mowing or vine beating) or chemical methods or a combination of the two can be used to kill potato vines. Desiccation of vines also kills late blight spores, reducing the possibility of late blight tuber infection at harvest.

Skin set. Allow two to three weeks for tuber skins to mature in the field after vine kill but before harvest. Most tuber diseases require a wound to infect potatoes and good skin set greatly reduces the amount of wounding at harvest and increases the storability of tubers.

Sprout inhibitors may be needed, depending on storage goals, storage conditions, and cultivar. Later maturity varieties usually have a longer period of dormancy (2-3 months).

For more details on vine kill, sprouting management, and other aspects of potato harvest and storage see New England Vegetable Management Guide, http://nevegetable.org/crops/varieties-13

Harvest practices to prevent wounding and bruising

Efforts that reduce bruising during harvest are cost-effective. Check harvesting and transporting equipment before harvest begins, to make sure it is working properly and does not bruise or wound tubers, and continue to inspect during harvest to determine injury points. Potatoes should not be allowed to drop more than 4" to 6" and all equipment surfaces should be padded. Replace bare chain with rubberized links on all chains except the primary chain. Adjust chain and ground speed so that chains are loaded to full capacity during harvest, so that potatoes will 'flow' rather than drop from one chain to another. In many cases increasing ground speed helps achieve this. Avoid drops > 6 inches during all transfers and handling.

Harvest equipment should be working properly to avoid bruising

Temperatures of the fleshy interior of tubers (tuber pulp) around 60-65°F make the potatoes less susceptible to bruising and wounds compared to lower temperatures. Avoid harvesting at temperatures lower than 45°F as this increases the occurrence of bruising.

Since curing is done at 50-60°F, harvesting when pulp temperatures are in that range is ideal. The ability to move from field to curing pulp temperatures will depend on storage ventilation systems, varieties, availability of cooling air, and humidity controls. If potatoes are harvested during hot weather and cool off slowly, the likelihood of storage rot is increased. If active refrigeration is available, potatoes can be harvested at 62 to 65°F pulp temperature and cooled effectively. Storage areas with no refrigeration should not be loaded with potatoes with a pulp temperature above 60°F. Time your harvest when outdoor cooling air is available to allow ventilation with 3 to 6 hours of fresh air per day.

Curing

The curing period, often referred to as suberization or wound healing, is one of the most critical storage phases. The curing period is also essential for the thickening and setting of the skin. This will increase the tuber's resistance to moisture loss and minimize entryways for rot-causing disease organisms. Wound healing is dependent on temperature and relative humidity. **Maintain temperatures in the range of 50-60°F with a relative humidity of 95% for 10 to 21 days.** A low relative humidity will result in poor suberization and the formation of a starchy layer over any bruises, preventing healing. Weight loss is highest during the curing phase due to a combination of moisture losses from cuts and bruises and high respiration rates. As much as 2-4% of the tuber weight can be lost in the form of water during the first month. If managed properly, this water loss can be minimized, and can also be used to one's advantage as a means of maintaining the high relative humidity needed during the wound-healing process.

Uniform air movement is necessary during the curing process to remove heat of respiration and field heat, to supply oxygen, and to prevent condensation within the pile. Monitor temperatures within the tuber bins or pile to avoid heat buildup which increases tuber rot. Humidity should also be monitored. If available, a humidifier should be used to maintain the ventilating air at a relative humidity of 95%. Where a humidifier is not used, naturally occurring humid air can be used for ventilation, for 3 to 6 hours per day. In a through-the-pile forced air ventilation system, fans should be operated minimally, usually only 1 to 2 hours per 24 hours to provide sufficient oxygen while minimizing moisture loss.

Curing may be accomplished within the space that will be used for storage, or in a different location. Diversified farms and those who are in the process of building up their fall/winter storage infrastructure may find it more challenging to provide the conditions for this step. On a small scale (up to about 1100 cubic feet), curing can be accomplished using a Cool-bot and humidifier in an insulated space. A combination of vents and fans to exhaust warm air and bring in cool air, controlled with RH and temperature sensors, can make best use of outdoor conditions to manage the indoor environment. Good environmental control is very difficult in open barn situations.

Since even low light levels can cause development of chlorophyll (greening) and bitter, toxic glycoalkaloids, that render tubers unmarketable, all curing and storage should take place in the dark. , but One to two weeks in low light results in greening, and higher light levels cause faster greening.

When tuber quality is poor. Potatoes affected by freezing injury, Pythium leak, late blight or soft rot will break down at normal curing temperatures. Eliminate the curing period, grade out the rot and sell immediately, or cool rapidly to 45 with low to medium RH. Questionable potato lots should be harvested closer to 55° F if they must be stored. Freezing occurs at 30°F, but chilling injury can occur after a few weeks at 32°F. Note that fields that were flooded by river water are considered contaminated and should not be harvested.

Disease management

Late blight spores can be carried by rainwater onto tubers and cause problems in storage but are only produced on live tissue, hence vine kill is key in disease management if late blight is present on the farm. If black scurf (*Rhizoctonia* spp.) or silver scurf (*Helminthosporium solani*) are present they will increase in severity as long as tubers remain in the soil. Wireworms can also cause tuber damage. If markets are ready or suitable storage is available, avoid these diseases and pests by starting harvest as soon as skins are set.

If the soil is wet during the harvest, soil may adhere to the tubers during harvest and promote infection by soft rotting organisms. Potato fields that have been saturated with water will be especially prone to post-harvest diseases. Bacterial soft rot (*Erwinia* spp.), Fusarium dry rot, pink rot (*Phytophthora erythroseptica*), and Pythium leak are four serious tuber rotting pathogens that cause the most significant losses in storage (see Potato Tuber Diseases in August 14, 2014 Vegetable Notes). Cornell Extension has another good resource, Detection of Potato Tuber Diseases & Defects. However, finding a photo online that looks like your problem is not the same as having a plant pathologist confirm what is on YOUR tubers! Send samples to the UMass Plant Disease Diagnostic Lab (413-545-3209) to get an accurate diagnosis as different tuber blights need different management and proper identification will allow for better management practices and prevention next year.

Ventilation boxes below this pile help ensure proper airflow

Grade out diseased tubers before storage as much as possible. The longer they are mixed with healthy tubers, the higher the chance of disease spread.

Cooling and Storage. After the curing period, cool potatoes gradually and steadily to the holding temperature suited to your goals: 80-90% RH and 38-40°F for tablestock potatoes and seed potatoes, 45-50°F for chipping; and 50-55°F for French fry stock. The upcoming October issue of Vegetable Notes will have more details on storage.

-updated by R Hazzard, K. Campbell-Nelson, S. Scheufele and M.B Dicklow. Sources include 'Potato Storage Management: Curing and Cooling' by S. Menasha, Vegetable/Potato Specialist, LI Fruit and Vegetable Update 2012 & 2014, CE-Suffolk County; New England Vegetable Management Guide; Potato Production in the Northeast: A Guide to Integrated Pest Management, Chapter 5 by Dale D. Moyer 'Potato Storage Management'; and USDA Handbook 66, Potato.

Further resources:

1. For 2012 USDA Ag Census data by state: http://www.agcensus.usda.gov/Publications/2012/Full_Report/Census_by_State/
2. Potato postharvest disease control: "Application Equipment for Potato Post-Harvest Disease Control" (http://www.umext.maine.edu/onlinepubs/PDFpubs/2443.pdf) by Steven B. Johnson, University of Maine Cooperative Extension.
3. USDA Handbook 66, Potato. http://www.ba.ars.usda.gov/hb66/potato.pdf
4. Approved Chemicals for Use in Organic Postharvest Systems, Adapted by eXtension.org from: Silva, E. 2008. http://www.extension.org/pages/18355/approved-chemicals-for-use-in-organic-postharvest-systems#.VCRGMBbiuRk

NRCS OFFERS HELP WITH CONSERVATION PLANNING AND FINANCIAL ASSISTANCE PROGRAMS

If you're a farmer, you can get help from the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) to protect natural resources on the land that you own or manage. NRCS provides free conservation planning assistance and administers several financial assistance programs, authorized under the federal 2014 Farm Bill. These programs can help defray the cost of implementing conservation practices identified in your conservation plan.

Since 1935 when the agency was established during the Dust Bowl, NRCS has focused on soil erosion reduction. Over time, the NRCS has expanded its conservation focus to protect water quality, soil quality, water conservation, air quality, at-risk wildlife, and the sustainable production of crops and livestock. NRCS is currently promoting the multiple benefits of improving soil health. To learn more about soil health, ask your local NRCS representative, or visit: www.nrcs.usda.gov to learn about "Unlocking the Secrets in the Soil."

A conservation plan should provide you with a long term strategy for sustaining or improving your production while also improving the natural resource base that supports your farm. A conservation plan cites your goals and objectives, identifies natural resource limitations, and presents you with alternatives and documents your decisions about addressing resource concerns. Developing a conservation plan is the first step in working with NRCS and is a prerequisite for applying for NRCS financial assistance programs. Call your local NRCS office to set up an appointment with a conservation planner.

At times, there is a backlog of farms waiting for conservation planning assistance, so it is best to start the process well before the deadlines for financial assistance programs. Awards for financial assistance are competitive, based upon the environmental benefits delivered by the selected conservation practices. Applications with conservation practices that deliver more environmental benefits will rank higher. However, farmers can begin the conservation planning process and/or apply for financial assistance (if a conservation plan is already in place) at any time of the year. If a conservation practice can help you address the resource needs identified in your conservation plan, an NRCS representative will be happy to explain the application process.

The Conservation Planning/Financial Assistance Application Process:

1. Establish a customer record with the USDA Farm Service Agency (FSA). This usually requires an appointment with the local FSA office, typically located in your local USDA Service Center. Often it helps to bring a map of your property and a copy of your latest tax return to aid with registration. You want to register the farm with FSA under the same name and tax ID with which you file your taxes.
2. Work with FSA to develop a map of your field boundaries. This will help the NRCS planner locate fields to visit during the site visit, as well as make sure that your field inventory is up to date in the FSA records.
3. NRCS determines if your land is eligible for conservation planning and/or programs. FSA determines additional eligibility (such as income limits) for conservation program participation.
4. A NRCS planner will conduct an initial site visit. During that site visit, you and the planner will work to identify the land that you would like to include in your conservation plan and determine what are the resource needs and which conservation practices may be used to solve the identified concerns. It is good to include leased fields that you plan to continue farming in your conservation plan.
5. After the site visit, your NRCS planner will work to develop some initial alternatives based upon your interests. The alternatives that you choose will be documented in your conservation plan and may ultimately become the basis for a program application.
6. Review your conservation plan and, if desired, work with an NRCS planner to identify which conservation practices you wish to include in a conservation program financial assistance application (e.g., as EQIP – Environmental Quality Incentives Program or CSP—Conservation Stewardship Program).
7. Your NRCS representative will also help you to determine the program and funding pool (e.g., "Organic", "Beginning Farmer", "Historically Underserved") for which you are eligible to apply.
8. Fill out a Conservation Program Application and associated eligibility paperwork and submit it to NRCS.
9. Some of the FSA eligibility forms need to be updated each year to keep your USDA conservation program eligibility up to date. Your application can not be considered unless you keep these forms up to date.

For more information, contact your local NRCS office (http://offices.sc.egov.usda.gov/locator/) or visit the NRCS Massachusetts website at www.ma.nrcs.usda.gov.

WE NEED YOUR INPUT!

Expanding Winter Harvest & Sales Survey

More and more vegetables are being grown and sold during the winter in New England, and the addition of new crops and markets has happened rapidly. We're trying to determine what the biggest issues are for growers with respect to production and marketing to guide our future research and programs. We also want to get an idea of the impact that the addition of winter sales has had on farms and farmers' incomes overall.

If you market vegetables between December and April, please take our survey. Your answers will go a long way in determining what the state of winter growing is now, how it has changed over the last few years, and how our organizations can assist you in the future.

The survey should take about 5 minutes to complete.

https://www.surveymonkey.com/s/winterVN

Cover Cropping Survey

Research & Extension staff from the Universities of Rhode Island, Vermont and New Hampshire are working together to create a set of programs focusing on using cover crops and organic matter amendments to build soil organic matter, and would like your input to help guide the project. This quick survey should take no more than 5 minutes of your time, and will help us make our project relevant to as many growers as possible. Thank you for helping us!

https://unh.az1.qualtrics.com/SE/?SID=SV_8c7WYaGJEXLE3ml

Upcoming events

Growing Grains in Massachusetts

When: Saturday, September 27, 2014 from 1:00 pm to 4:00 pm

Where: Alprilla Farm, 94 John Wise Ave., Essex, MA 01929

NOFA/Mass presents this workshop, hosted and led by Noah Kellerman of Alprilla Farm. Growers of all levels of experience and all scales of production are welcome!

Have you ever still been hungry after eating a big, homegrown salad and wished that you grew something more…substantial? Grains and beans can be grown and harvested at any scale to add diversity to your dinner table, CSA share, farm stand, and crop rotation. Come to Alprilla Farm to learn how we grow and process wheat, barley, flint corn, popcorn, and dry beans as part of a soil building, organic crop rotation with vegetables.

A farm tour and discussion will be followed by locally grown pizza from our wood fired cobb oven. Please feel free to bring something to share.

Pre-registration is required. Cost: $25 NOFA members; $31 non-members

SAVE THE DATE!—Soil Health in Vegetable Production—Farming with Nature

When: Wednesday, November 5th and 6th, 2014, 9:30 am--3:30.

Where: Immanuel Lutheran Church, N. Pleasant Street, N. Amherst, MA—November 5th

Bristol County, location to be determined—November 6th

Sponsored by USDA NRCS, UMass Extension, and the Conservation Districts serving Berkshire, Hampshire, Hampden, Franklin, and Bristol Counties. This FREE program will feature:

5. Featured speaker: Ray Archuleta (Ray the Soil Guy), Agronomist & Soil Health Educator USDA NRCS;
6. Farmer panel and their experiences with reduced tillage, cover cropping, and crop rotations in vegetable production;
7. Full agenda and registration information in the next Veg Notes.

Pollinator Health and Safety Conference

When: Thursday, November 20, 2014 from 8:00 am to 5:30 pm

Where: Portland Marriott at Sable Oaks, 200 Sable Oaks Drive, South Portland, ME 04106

The University of Maine Cooperative Extension and the Maine Department of Agriculture, Conservation and Forestry are co-sponsoring the Pollinator Health and Safety Conference to bring together farmers, bee-keepers, entomologists, policy-makers and others interested in protecting pollinators. State and national experts on pollinators, bee-keeping, and pesticides will share the latest scientific research on factors affecting pollinator health and best practices for their protection.

Register by October 31, 2014: $50.00/person; after October 31, 2014: $75.00/person. DEADLINE TO REGISTER: November 14, 2014. Contact Meghan Dill, meghan.dill@maine.edu or 207.581.3878 for more information.

Approved for 7 pesticide applicator recertification credits

Vegetable Notes. Ruth Hazzard, Katie Campbell-Nelson, Lisa McKeag, Susan Scheufele, co-editors. Vegetable Notes is published weekly from May to September and monthly during the off-season, and includes contributions from the faculty and staff of the UMass Extension Vegetable Program, other universities and USDA agencies, growers, and private IPM consultants. Authors of articles are noted.