



UMASS  
EXTENSION



# Vegetable Notes

For Vegetable Farmers in Massachusetts

Volume 23, Number 19

October 23, 2012

## IN THIS ISSUE:

Crop Conditions  
 Planting Considerations for a Healthy Garlic Crop  
 Sweet Potato Harvest and Storage  
 Brussels Sprout Variety Trial at UMass  
 Potato Storage Management: Curing and Cooling  
 Spotted Wing Drosophila Survey  
 Federal Crop Insurance Reminders for Vegetable Producers  
 MDAR Ag Business Training Courses Gear Up  
 Upcoming Meetings

## CROP CONDITIONS

Farmers who grow fall root crops -- potatoes, sweet potato, carrots, turnips, rutabaga, parsnips – are focused on bringing in the crop and establishing the best possible storage conditions. Squash and onions are under cover and are selling well. Field losses in pumpkin and winter squash during September were worse than expected given the overall dry summer, when August and September rains set off fruit rots including Pythium, Fusarium and Phytophthora capsici. This is the season when broccoli, cauliflower, kale and cabbage are at their best although disease pressure from Alternaria and black rot have taken a toll in some fields. Fall insect pressure in Brassicas now includes striped cabbageworm which is extending its range northward. Those farmers who concentrate on summer markets might actually be slowing down now! Farms that are gearing up for winter greens

harvests are busy planting with an eye to the shortening days and the key timing for winter and early spring harvests in low or high tunnels. Check out the updated UMass Vegetable website on winter production and sales at <http://extension.umass.edu/vegetable/research-projects/winter-harvest-sales>, which has new reports on several exciting research projects. Excellent fall and winter conferences and meetings are coming up fast – see upcoming meetings at the end of this Vegetable Notes.

Publication of Vegetable Notes will continue monthly through the winter. Many thanks to all of the growers, consultants, and Extension colleagues around the region whose contributions made our weekly Vegetable Notes possible!

--R. Hazzard

## PLANTING CONSIDERATIONS FOR A HEALTHY GARLIC CROP

Now that the Garlic Bloat Nematode (*Ditylenchus dipsaci*) has spread throughout New England, garlic growers need to take new precautions at planting time to ensure a healthy crop next year. Transport on seed is the primary means for spread of the bloat nematode from farm to farm. Without a seed certification program in place some growers are wondering how they should source and treat new seed introduced onto the farm. The first step is to find sources of healthy-looking seed from reliable growers whose seed lots have tested negative for Garlic Bloat Nematode (GBN), which is also known as stem and bulb nematode. However, this result is not a guarantee that every bulb that the grower produced is free of bloat nematode; it is only a guarantee that the garlic used in the test is GBN free! Additionally, new seed may come with Fusarium or surface molds. To minimize risk of infesting established seed stock, and to promote healthy and vigorous garlic next year, include a few safeguards and best practices in your fall plans.

**Practice long rotations.** The dry, resting stage of the nematodes can survive in the field for long periods. Use your planting maps to help you establish a 4 year rotation (at minimum) out of host crops which include Alliums (garlic, onions, leek, chives), parsley, celery, and salsify, as well as weeds Canadian thistle and hairy nightshade. This practice will also reduce other diseases.

**Map it out.** Create a planting map for the garlic, and separate the new seed from your existing seed stock. Although

**Plant Nutrient Recommendations According to Soil Test Results for Garlic**

Garlic	Nitrogen (N) Lbs/A	Phosphorus (P2O5) Lbs/A					Potassium (K2O) Lbs/A				
		Very low	Low	Medium	High	Very High	Very low	Low	Medium	High	Very High
Incorporate at planting	40	150	100	75	50	0	150	100	75	50	0
Sidedress at 6" tall	40	0	0	0	0	0	0	0	0	0	0
Sidedress 3-4 weeks later*	40	0	0	0	0	0	0	0	0	0	0
TOTAL	120	150	100	75	50	0	150	100	75	50	0

*Source: New England Vegetable Management Guide 2012-2013*

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. Separate new seed from your established seedstocks to prevent movement with erosion or cultivation. Place your new garlic where you will be able to plant and cultivate it separately, and clean equipment between plots as you would for other soil-borne diseases. Label each garlic seedlot clearly in the field for reference next year.

**Cull bulbs or cloves with symptoms or damage when cracking.** Carefully feel and look at each clove during this process, and remove anything that looks suspect. Discard cloves with unhealthy looking basal plates, with 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.

**Test your own seed or untested seed from off the farm.** If the symptoms described above are common in any of your own seed lots, send samples to your Extension Disease Diagnostic Lab before planting. Select 4-6 symptomatic bulbs (not just 1) and have them tested for nematodes and other bulb diseases. For UMass Diagnostic Lab contact M. Bess Dicklow, (413) 545-3209, mbdicklo@umext.umass.edu.

**Learn more about bloat nematode.** A good reference (including photos) on GBN, by Steve Johnson of U. Maine Coop Extension, can be found at <http://umaine.edu/publications/1205e/printpage/>. This fact sheet recommends that no seed garlic should be planted or sold from a field that has confirmed GBN infestations, even if it looks healthy. Very low numbers in seedstock can result in significant crop loss.

**Treat all seed with a surface sterilizer.** Sterilizing the surface of the cloves will NOT control GBN! However, it will reduce issues with surface molds such as aspergillus and will kill surface penicillium. This is a best practice for all garlic. You can either use a 10% commercial bleach solution (1 part bleach and 9 parts water) or you can use an OxiDate dip (32 oz per 25 gallons water). Remember to test bleach and OxiDate dips for activity if treating large amounts of seed, and replace solution when activity decreases. Plant cloves immediately after dipping, not after they have dried back out.

**Optimize pre-planting soil fertility.** See Table above for New England fertility recommendations (see also New England Vegetable Management Guide p 153 or [www.nevegetable.org](http://www.nevegetable.org)). All phosphorus and potassium should be applied at planting. 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 dressing in spring when shoots are 6" high and again 3-4 weeks later is recommended.



*Garlic bloat nematode injury on garlic bulbs. Photo by Sandra Jensen, Cornell Univ., [www.bugwood.org](http://www.bugwood.org)*

Optimum fertility and soil conditioning will help keep garlic healthy, and healthy garlic will withstand everything from GBN to Fusarium better than stressed, unhealthy garlic.

**Next year, watch new seed closely.** During the growing season, cull suspicious looking plants and have them tested for GBN. Selecting the most suspicious plants gives you the highest probability of detecting GBN, if present. If a seed certification program is developed, farm inspectors will take this step for you. Until then, you can act as your own informal inspector.

**If any garlic on your farm turns out to be positive for GBN, you can still sell it as food.** Clearly label this garlic as for table use only. Avoid returning any infested bulbs, plant tops, or scales to your fields or compost piles; bag and discard off the farm.

*Adapted from article by Crystal Stewart, Capital District Veg. and Small Fruit Program, Cornell Coop. Extension., published in Veg Edge, October 2012 Vol 8:26. Adapted for New England by R. Hazzard. Thanks to Steve Johnson's article and New England Vegetable management Guide as cited above.*

## **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. After harvest is completed, 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. When tops of the plants turn black after the first frost, it is imperative to harvest as quickly as possible regardless of root size.

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. 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 sweet. During curing and storage, starches in the sweet potato are converted to sugars, improving flavor. 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. Signs of chilling injury include sunken, dark areas on the tuber surface, and blackening of tubers when cut open.

Yield studies were conducted for several years by Becky Sideman at University of New Hampshire. Best yields were found in Bearegard, Covington and O'Henry (a white-fleshed variety). A good yield was 2.5 lbs per plant; equivalent to >100 lbs per 20 row-feet.

Tuber damage from wireworms can occur during the growing season and reduce marketability (see photo). More work needs to be done to understand which species is causing the damage, but likely candidates are corn wireworm (*Malanotus commu-*



*Injury to sweet potatoes from insect feeding, most likely wireworm, early in tuber growth. Photo by R. Hazzard*

nis) or wheat wireworm (*Agriotes mancus*). Both feed on roots, stems, stolons and tubers and are pests of potato, sweet potato, other non-root vegetables crops, grains such as wheat and oat, 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 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, so damage may be heavier in wet areas.

Voles love sweet potatoes and can take up residence in the sweet potato field, causing significant damage. Timely harvest may reduce the level of damage. Watch storage for vole activity after harvest.

A useful report on Becky Sideman’s sweet potato work can be found at

<http://www.mofga.org/Publications/MaineOrganicFarmerGardener/Spring2009/SweetPotatoes/tabid/1081/Default.aspx>

- adapted by R. Hazzard from the *New England Vegetable Management Guide*, [nevegetable.org](http://www.nevegetable.org); wireworm information from J. Capinera, *Handbook of Vegetable Pests*.

## **BRUSSELS SPROUT VARIETY TRIALS AT UMASS.**

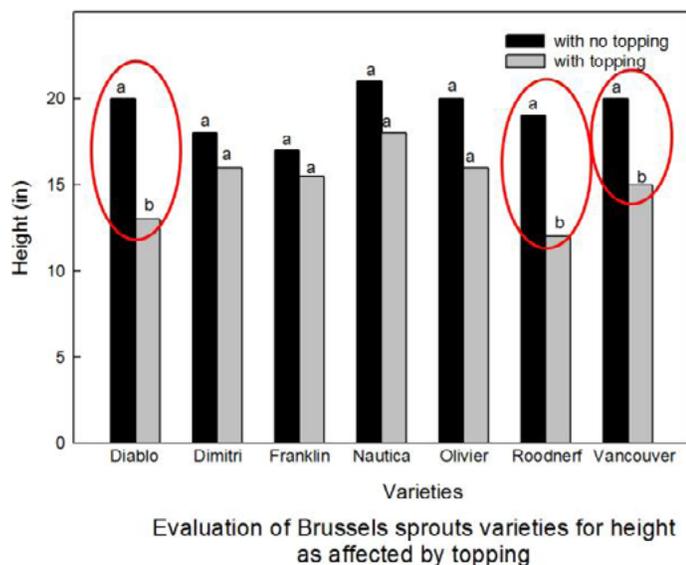
Brussels sprouts (*Brassica oleracea gemmifera*) are getting increased attention from consumers, but production is labor intensive and plagued by crop diseases that reduce yield. Brussels sprouts are subject to several diseases including black rot, *Alternaria* leaf spot, downy mildew, club root, and white mold. *Alternaria* (*Alternaria brassicicola* or *A. brassicae*) progresses later in the season, starting on the old leaves and moving up to the new leaves and onto the older sprouts as they grow. Selling Brussels sprouts on the stalk is increasingly common especially in retail markets, and reduces labor compared to selling loose buds.



*Alternaria* on Brussels sprout buds

The objective of this study was to evaluate cultivars of Brussels sprouts for parameters associated with marketability as stalks. Seven cultivars (Vancouver, Franklin, Nautica, Diablo, Dimitri, Roodnerf, and Olivier) were evaluated with or without topping (see table). Seedlings were transplanted in mid-June, 2009 and topped when lowest buds reached ½ inch. Each cultivar was harvested

when buds reached 1-2 inches. The marketable stalk (MS) was not to exceed 56 cm (22”) and was defined as the section with dense, uniform, firm, and large (at least 1” of diameter) buds. We evaluated the stalks for the bud number, yield, bud density (buds/in), and disease damage from *Alternaria spp.*



**Results summary.** The effect of mechanical topping by removing the apical bud when the lowest buds were about 2.5-cm diameter was studied as a factor affecting yield and bud size. Height of the marketable stalk (MS) did not differ among cultivars. Topping reduced the heights of MS with Diablo, Vancouver, and Roodnerf from 50.8, 50.8, 48.3 cm to 33, 38, 28 cm respectively, with corresponding reduction in bud number, but had no effect on the other cultivars. Vancouver had the highest yield (780g) and Franklin had the lowest yield (400g). Topping reduced yield in Diablo from 700g to



Example of Brussels sprout cultivar Roodnerf, topped and not topped.

2009 Brussels Sprout Variety Trial			
UMass Research Farm, South Deerfield, MA			
Variety (seed source)	Transplant Date	Days to Maturity (as listed)*	Actual Date of Harvest according to market desirable size (sprouts (1"-2"))
Vancouver (STO)	June 17	105-120	Nov 18
Nautic (BEJ)	June 25	115-140	Nov 16
Diablo (JSS)	June 17	110-125	Nov 30
Dimitri (BEJ)	June 17	103	Oct 28
Roodnerf (TSC)	June 17	100	Nov 23
Oliver (JSS)	June 17	90-100	Oct 19
Franklin (TSC)	June 17	80-100	Oct 26

Seed Sources: Stokes (STO), Bejo (BEJ), Johnny's Selected Seeds (JSS), and Territorial Seed Company (TSC). All varieties are hybrids except Roodnerf which is open pollinated.

\*Days to harvest listed for the same variety can vary with different seed companies; the full range of the listed maturity time is given.

470g but had no effect on the other cultivars. Number of buds on the MS did not vary with cultivars. Topping reduced the number of buds in Roodnerf and Vancouver from 59 to 35 but had no effect on the other cultivars.

Density in numbers of buds per height of MS differed among cultivars. Roodnerf had the highest bud density (1.18 bud/cm), followed by Vancouver, Dimitri, Franklin, and Diablo in a group (1.02), and then by Oliver and Nautica (0.79). Topping reduced the bud density in all varieties. Oliver and Franklin showed more disease damage than the other cultivars. Topping had no effect on disease damage. Overall, Vancouver and Roodnerf followed by Dimitri and Diablo then Oliver showed best results for yield, bud density, and resistance to diseases while Franklin showed worst results. Nautica had low bud density but equivalent bud weight and resistance to disease with top yielding cultivars.

In general, topping had a negative effect on the parameters associated with Brussels sprouts marketability as stalks.

by Touria El-Jaoual Eaton, UMass Dept of Plant Soil and Insect Science and R Hazzard, UMass Extension.

## **POTATO STORAGE MANAGEMENT: CURING AND COOLING**

Conditions are favorable for harvest and curing of potatoes for storage -- soils are cool but not too cold, and moist but not, at the moment, soggy; and air temperatures have been ranging from around 40 to 65 °F which can be helpful in managing storage temperatures for curing and cooling the tubers. Most potato vines have died back or been killed, so skins have set.

**The Curing Period:** The curing period, often referred to as suberization or wound healing, is one of the most critical storage phases. Weight loss is highest during the curing phase, due primarily to 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 used to one's advantage as a means of maintaining the high relative humidity needed during the wound healing process.

The curing period is also essential for the thickening and setting of the skin. This will increase tuber 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 the bruise preventing healing.

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. If available, a humidifier should be used to maintain the ventilating air at a relative humidity of 95%. Where a humidifier is not implemented, 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, providing sufficient oxygen but minimizing moisture loss.

**Cooling Period:** Immediately after the curing period, tubers should be cooled down to the holding temperature. The potatoes should be cooled slowly. A rapid reduction in storage temperature, followed by a mid-fall warm spell, will cause fluctuation in tuber temperatures. Temperature fluctuations may reduce storage life and potato quality. Cool a maximum of 4 – 5° F per week. Use a pulp thermometer to check tuber temperature. Potatoes should be cooled with humid air no lower than 3 - 5° F below the tuber temperature. Temperatures in the pile should not be allowed to build up above 60 degrees F. Check temperatures on the top and in the center of the piles. If these temperatures are above the outside air temperature, then ventilate the storage. An exhaust fan is ideal for removing warm air from the top of the storage and bringing in cooler air. The holding temperature should be suited to your goals: 38-40 °F for tablestock, and seed potatoes, 45-50°F for chipping, and 50-55 °F for French fry stock.

**Other suggestions:**

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. Send samples to the Plant Disease Diagnostic lab to get an accurate diagnosis. Different tuber blights need different management and proper identification can guide management practices next year to prevent re-occurrence. Your potato crop is well worth the cost of an accurate diagnosis.

Before storing potatoes, clean and disinfect your storage facilities. Make sure to check the insulation, fans, humidifiers, and ventilation system are working. If any of these are in poor condition it could result in losses due to disease.

*-- Adapted from LI Fruit & Vegetable Update September 27, 2012*

## **SPOTTED WING DROSOPHILA --- ON-LINE SURVEY**

Spotted Wing Drosophila was a serious problem throughout Massachusetts and New England in 2012. In order to learn more about this pest and how better to manage it, Extension fruit programs need some feedback from you. Many vegetable growers also grow fruit crops but may not have received notice of the survey.

Please take a few minutes to fill out a survey put together by Cornell University to let us know how Spotted Wing Drosophila affected you this year. If you've already filled out this survey (from another mailing), you don't need to fill it out again. If you'd rather fill out a hard-copy survey, please email me at [sgs@umext.umass.edu](mailto:sgs@umext.umass.edu) and I'll send it to you.

Find the survey at <https://www.surveymonkey.com/s/3FH6X3Q>.

Thanks in advance!!

*--Sonia Schloemann, UMass Extension Small Fruit Specialist*

## **FEDERAL CROP INSURANCE REMINDERS FOR VEGETABLE PRODUCERS**

**Sales Closing & Policy Change/Cancellation Deadlines.** Vegetable producers wishing to purchase Federal Crop Insurance or producers currently insured who want to make changes to an existing policy are reminded of the following deadlines:

-January 31, 2013 - Adjusted Gross Revenue (AGR) & AGR-Lite (Existing Policies)

-March 15, 2013 - AGR-Lite (New Policies), Corn, Fresh Market Sweet Corn, Potatoes & Tobacco and most other spring-seeded crops.

Producers currently enrolled should contact their agent to make changes to an existing policy. Producers wishing to purchase Federal Crop Insurance should contact an authorized agent at: <http://www3.rma.usda.gov/apps/agents/index.cfm>.

**Reminder to Report Crop Damages Promptly.** Insured producers are reminded to monitor their crops for insurable damage throughout the growing and harvesting season. If you find damage notify your crop insurance agent within 72 hours of discovery, 15 days before harvesting begins and within 15 days after harvesting is completed on the insurance unit. Two other important reminders:

- Direct marketed crops must have a yield appraisal before they are harvested, if loss is anticipated.
- Do not destroy crop evidence that is needed to support your claim without clear direction, in writing, from the insurance adjuster.

UMass Extension works in partnership with the USDA Risk Management Agency (RMA) to educate Massachusetts producers about Federal Crop Insurance and Risk Management Programs. For more information, please visit [www.rma.usda.gov](http://www.rma.usda.gov) or contact UMass Risk Management Specialists Paul Russell at [pmrrussell@umext.umass.edu](mailto:pmrrussell@umext.umass.edu) or Tom Smiarowski at [tsmiarowski@umext.umass.edu](mailto:tsmiarowski@umext.umass.edu).

## **UPCOMING PROGRAMS FOR FALL**

### **Attracting and Conserving Natural Enemies in Plant Production Yards and Greenhouses**

October 24, 9:30 AM - 3:30 PM, Publick House, Sturbridge, MA. Registration by mail or on-line

Details: <http://extension.umass.edu/floriculture/>

Featuring John Sanderson, Cornell University and Brett Blaauw, Michigan State University. Free biological control agents to manage pests are as close as your own production yards. Learn about natural enemies native to the northeast, which flowers enhance natural enemies, and how to attract and conserve the biological control agents that are already in your area. 4 Pesticide credits. Sponsored by UMass Extension and UConn Extension

### **Farming in Community: Four Farmers, Two Farms, One Mission.**

Saturday, October 27, 2:00pm to 5:00pm

Waltham Fields Community Farm, 240 Beaver Street, Waltham, MA

Sponsored by NOFA Mass. Cost: \$25 NOFA members, \$30 non-members

Waltham Fields operates a 500-share CSA as a revenue-generating part of a nonprofit community farm. We'll talk about farming as a management team, our collaboration with Picadilly Farm, and how our mix-and-match CSA improves our food access work. We'll focus on finances, crop planning, and managing harvests for maximum shareholder flexibility.

Instructors: Andy Scherer, Amanda Cather, Dan Roberts, Erinn Roberts.

For more information, please contact Ben Grosscup, Email: [ben.grosscup@nofamass.org](mailto:ben.grosscup@nofamass.org) or call: 413-658-5374

### **Profitable Year-Round Farming and Marketing**

Monday, November 5, 2012 (From 8:30 a.m. to 5:30 p.m)

Stonehill College, The Martin Institute, 320 Washington Street, Easton, MA

With Paul and Sandy Arnold of Pleasant Valley Farm

Sponsored by NOFA/Mass and SEMAP

Description: Learn farming techniques that enable one to make a living on a small farm. Seminar topics include record-keeping, labor efficiencies, high tunnels, low tunnels, and row-covers, soil management, crop storage, and marketing. A detailed outline of the seminar can be found online.

Registration: Register by October 22, 2012, and pay the early registration fee of \$55. Members of any NOFA chapter or SEMAP receive \$5 member discount. Download a mail-in registration form at [http://www.nofamass.org/sites/default/files/attachments/2012\\_Advanced\\_Growers\\_Fall\\_Seminar\\_with\\_Paul\\_and\\_Sandy\\_Arnold\\_1.pdf](http://www.nofamass.org/sites/default/files/attachments/2012_Advanced_Growers_Fall_Seminar_with_Paul_and_Sandy_Arnold_1.pdf)

### **Northeast Greenhouse Conference and Expo**

November 7 & 8, DCU Center, Worcester, MA

Nearly every vegetable grower has and uses a greenhouse and could benefit from the wide range of production and marketing topics covered in this conference! For greenhouse growers, garden retailers, landscapers, nurseries, educators, students and allied trades. Educational sessions: 3 concurrent sessions for both days. For a look at the session schedule and topics see <http://www.nogreenhouse.org/html/schedule.shtml>. Trade show includes 150 exhibitors. <http://www.nogreenhouse.org/html/schedule.shtml>

[extension.umass.edu/floriculture/](http://extension.umass.edu/floriculture/)

### Upcoming Meetings in NH

October 30, 2012 - North Country Fruit & Vegetable Seminar & Trade Show. Mountain View Grand, Whitefield, NH, 03598. 9:00am – 3:30pm. Hear Steve Johnson of U. Maine report on his work on garlic diseases. For more information see: <http://extension.unh.edu/events/files/8F3BFDA1-0F2C-E5AD-68ACB1FDB492E1C0.pdf>

October 31, 2012. Greenland, NH. <http://extension.unh.edu/Counties/Rockingham/Docs/IMarketS.pdf>

### Maine

**November 9-11, 2012. Northport, ME. MOFGA's Farmer to Farmer Conference.** An excellent opportunity for in-depth discussion with other farmers, and presentations from both farmers and researchers. <http://www.mofga.org/Events/FarmertoFarmerConference>

### MDAR Ag Business Training Courses Gear Up

MDAR's Agricultural Business Training Program responds to these and other planning needs by raising awareness and providing a forum for feedback and support. More than 475 agricultural enterprises have completed one of three MDAR course formats for different stages of farm development. Before completing an application, please review the individual course descriptions for relevance and pre-requisites:

**“Exploring Your Small Farm Dream” Course Description:** For pre-venture and just beginning farmers still trying to decide on their basic early ideas – a five session course. Application Form <http://www.mass.gov/agr/programs/abtp/docs/Exploring-the-Small-Farm-Dream-Application.doc>

**“Planning for Startup” Course Description:** For those a step beyond Explorer who have firm access to land and a clearer sense of what they want and are capable of doing, but who do not yet have a financial, marketing and personnel track record for their enterprise – a six session course. 2012 Planning for Startup Application Form <http://www.mass.gov/agr/programs/abtp/docs/2012-13 Planning For Startup Application Early.doc>

**“Tilling the Soil of Opportunity” Course Description:** For existing agricultural enterprises with at least two years of income generating operation and farm recordkeeping that are seeking an in-depth tune-up and are preparing to make new investment and/or prepare for expanded operation – a 10 session course. 2012 Tilling the Soil of Opportunity Application Form <http://www.mass.gov/agr/programs/abtp/docs/2012 - 13 Tilling the Soil Application 2013 prelim.doc>

## **LAST CALL FOR REGISTRATION: UMASS SUSTAINABLE VEGETABLE PRODUCTION COURSE**

To assist new vegetable farmers, UMass Extension is conducting a Sustainable Vegetable Production course. This course is designed for beginning farmers wishing to gain an understanding of horticultural fundamentals and strategies and their relation to environmental quality. This 60 hour course is a comprehensive certificate short course taught by UMass Extension Specialists and faculty. Cost: \$675, includes all materials. **Registration deadline has been extended to October 28, 2012.** Location: Holiday Inn, 265 Lakeside Ave., Marlboro, MA. Dates: October 31 - December 12, 2012; meets twice/week, 9 am to 3:30 daily. For more information, contact UMass Extension at (413) 545-0895 or [eweeks@umext.umass.edu](mailto:eweeks@umext.umass.edu) or Dr. Frank Mangan, [fmangan@umext.umass.edu](mailto:fmangan@umext.umass.edu)

For a complete schedule and to register online, go to <http://extension.umass.edu/landscape/education/green-school-sustainable-vegetable-production-track>

*Vegetable Notes. Ruth Hazzard, Amanda Brown and Andrew Cavanagh, co-editors. Vegetable Notes is published weekly from May to September and at intervals 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.*

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