UMASS EXTENSION

Vegetable Notes

For Vegetable Farmers in Massachusetts

Volume 15, Number 22 October 4, 2004

UPCOMING TWILIGHT MEETING WILL FOCUS ON WINTER GREENS, GARLIC, FARM TO SCHOOL SALES, AND ENERGY ALTERNATIVES ON THE FARM

Where: Seeds Of Solidarity Farm and Education Center, Orange, MA
When: Tuesday, October 12, 2004
Time: 3:00-6:00 p.m. Note afternoon hours! Plenty of time before the early twilight.
Contact: Ruth Hazzard (413-545-3696) or Deb Habib and Rick Baruc (978-544-9023)

-**Take a break after the busy weekend** and visit Seeds of Solidarity Farm, owned and operated by Deb Habib and Ricky Baruc. This is a working model of a profitable, small, energetic new farm enterprise utilizing alternative energy. In addition to producing food, its mission is to provide educational programs that promote regional food and energy self-reliance.

Join an exciting farm tour featuring:

- ***Designing to reduce reliance on fossil fuels***: Solar greenhouses are used to extend the growing season, solar electricity is used to power the farm and buildings, and biodiesel is used to fuel the farm truck. In addition to Rick and Deb's tour of the farm, Cathy Roth will speak about other farmers around the state who are developing ways to produce and save energy on the farm.
- ***Production of winter greens and garlic***: Now is the time to plant garlic, and cultivate greens for late fall and winter!

Greens starting in a hoophouse at Seeds of Solidarity

Garlic growing in permanent no-till raised beds at Seeds of Solidarity, early spring 2004

Seeds of Solidarity produces high quality organic greens, garlic, herbs, and flowers, grown intensively and marketed directly to restaurants and food coops. Ricky Baruc will be speaking about his production methods, which utilize soil-building techniques and permanent no-till raised beds and have transformed rocky soils into productive land. Come and learn from Ricky's experience growing and marketing these high value, popular crops. Ruth Hazzard (UMass Extension) will talk about pest management in greens, especially management of flea beetles. Learn of the North Quabbin Garlic and Arts Festival, "the festival that stinks", a highly successful yearly event that promotes garlic, local agriculture, and local artisans.

Ricky Baruc sharing tips on improving soil fertility

INSIDE: MORE UPCOMING EVENTS THIS FALL!

-- "***Kids Eat Your Spinach": Farm to School Projects***
Several projects are underway in this region to build links between school districts and local farms. Sales of healthy, fresh local food, and teaching children about food and farms, can work together to benefit our farms and the health of our children. Can this be profitable for the farmer? Will schools be receptive? Deb Habib, and Mark Lattanzi (CISA) will talk about their progress in getting local foods into local schools and the creation of local hero school systems.

--**Agricultural Commissions** Susan Phinney from Dept of Agricultural Resources will speak about efforts throughout the state to establish Agricultural Commissions at the local town government level, to provide much-needed advocacy for farmers and farming within each town.

--**Finish the tour with a great meal of local food** -- courtesy of Lynn Hartman and Barbara Hamilton from **Mass Association of Roadside Stands**. Refreshments will be served at 5:15…including butternut soup, corn chowder, roasted vegetables and pies for desert! Enjoy chatting with other farmers and eating great food.

Pesticide Applicator Recertification credits will be offered for this meeting (0.5 hour)

DIRECTIONS FROM ROUTE 2 EAST or WEST: Take Exit 14 (West River Street, Lake Mattawa). Turn South off exit ramp (from the west, turn right, from the east, turn left) onto Holtshire Road.

Follow this road approximately 1.5 miles to the first intersection at which point you will see, but not pass a large lake (Mattawa). Turn right onto Chestnut Hill Road. Proceed uphill 1/2 mile to the " T ". Turn left (still on Chestnut Hill Rd.). In approx. 1/2 mile the road forks-bear right (still Chestnut Hill --do not take the left fork which is Lower Chestnut Hill!). Continue 3/4 mile.

FROM ROUTE 202 AND POINTS SOUTH: Route 202N to New Salem. At the yellow blinking light, turn left onto Wendell Road (just before the New Salem General Store). From points north (Athol) turn right onto Wendell Rd. at the yellow blinking light. Follow Wendell Road approximately 3 miles to the end. There is no stop sign, but the road curves sharply to the right, placing you on Neilson Road. Go 1/8 mile to the first left which is Crowl Road (a dirt road). Continue ½ mile.

ALL DAY VEGETABLE AND BERRY MEETING, NOVEMBER 6

Sponsors: New England Vegetable and Berry Growers Association & New England States Cooperative Extension
When: Saturday November 6, 2004 ALL DAY
Where: White's of Westport, MA
66 State Road, Route 6
Exit 9 east or Exit 10 West off I-195

PROGRAM:

-**9:30 AM REGISTRATION**: There is a $10 registration fee for those who are not members of NEV&BGA. This does not include lunch.

-**30 min- Recycling Plastics Into Pellets For Use as a Greenhouse Fuel.** This is an update on research being conducted at Penn State University by Bill Lamont

-**30 min- Update on High Tunnels** by Bill Lamont, Penn State University. Bill is co-founder of the Center for Plasticulture and conducts extensive research projects on the use of high tunnels on vegetable, fruit and flower crops.

-**30 min- Getting Weather and Frost Predictions On Line** by Carolyn Demoranville, UMass Cranberry Station and Alan Dunham, National Weather Service in Taunton.

-**30 min- Food Safety: Field Sanitation, Safe Handling of Food; Record Keeping and Requirements For Establishments That Serve the Public** by Rita Brennan Olson, UMass Dept of Nutrition. Rita will provide advice on preventing food-borne illness during production, handling and marketing

-**12:00 Lunch.** Reservations are required. Return the enclosed card or contact John Howell at (413-259-1203 by October 31,2004.

-**30 min- Plectosporium Disease on Cucurbits** Dr. Rob Wick from UMass will bring us up to date on identifying and managing this disease is becoming serious in New England.

-**30 min- Trap Cropping and Other Ways to Manage Cucumber Beetles** Ruth Hazzard, UMass. Ruth has been achieving good results by using beetle-attractive trap crops and other methods to protect cucurbits. This work was funded in part by a grant from NEV&BGA

-**30 min- Diseases on Purchased Cuttings and Plants** Rob Wick, UMass. Rob will discuss diseases to look out for on transplants, seedlings and cuttings coming ento the greenhouse and farm and greenhouse and how they can put other plants at risk.

-**60 min- Choosing Sprayers, Update on Nozzle Tips and Equip Maintenance** Rick Clark, Orchard Equipment, Conway, MA. Rick will discuss the pros and cons to consider when choosing sprayers. He will tell us about the latest

in nozzle tips and discuss general equipment maintenance, including choice of lubricants.

NOTE: You will earn 3 hours toward pesticide recertification by attending the afternoon part of this meeting.

SEED THRESHING AND CLEANING WORKSHOP

Where: LOCKWOOD FARM, 890 Evergreen Avenue, Hamden CT , Telephone: (203) 974-8618
When: October 7th, 2004
Time: 9:00 am - 1:00 pm
http://www.caes.state.ct.us/Directions/directions.htm for directions
-This workshop will require PRE-REGISTRATION for the event and also REGISTRATION to clean seed while the equipment is at the farm in CT until the 14th.

EXPLORING THE SMALL FARM DREAM: IS STARTING AN AGRICULTURAL BUSINESS RIGHT FOR YOU?

Where: New England Small Farm Institute,
275 Jackson St., Belchertown, Massachusetts.
When: 4 Consecutive Thursdays, October 7, 14, 21, 28
Time: 6-9pm
-Limited to 12 enterprises. Up to four enterprises may register two participants on a first-come, first served basis.

Fee: $100 per enterprise (whether one or two participants). Fee includes one Workbook per enterprise and additional handout materials. Additional workbooks may be purchased for $20.
To apply: Contact the New England Small Farm Institute at (413) 323-4531 or explorer@smallfarm.org to receive further information and application materials. It's not too late to enroll!

-*If you are thinking about starting a farm, this course is designed for you. This includes people thinking about full-time farming, farming part-time while continuing other employment, changing careers to start a farm, taking over an existing family farm business, and/or developing an existing but informal farming pastime into a more serious business activity. Note that the course includes several hours of assignments between each class.*

FARMER/ GROWER GRANT APPLICATIONS

Get funds to develop a new idea!

The Northeast Region Sustainable Agriculture Research and Education program has posted the new Farmer/ Grower grant application to it's website at www.uvm.edu/~nesare. Take the "grants and application information" link to "Farmer/ Grower grants" and follow the download instructions. The application is a Word file. If you prefer a printed version, call 802-656-0471.

A new guide, "**How to Write a SARE Farmer/ Grower Grant Application**", is also posted to the website and available in print. This guide explores what makes a competitive application. To request a printed version, call 802/656-0471.

If you have questions about the Farmer/ Grower grant program, visit the website, call 518-733-0602, or send e-mail to farmergrants@taconic.net The application deadline is December 7, 2004.

RESTORING OUR SEED CONFERENCE

Where: Brattleboro, VT
When: December 4-5, 2005
Ever wonder how generations of farmers without advanced degrees grew their own seed and developed the foods of today? Join us to learn to:

* Grow, select and breed organic seed for sustainable farming in New England,
* Integrate seed crops and wild habitats for enhanced biodiversity
* Develop local markets for 'vintage vegetables' with communities, schools and chefs
- to grow a bioregional food and seed system.

Workshops with New England's master seed growers, **Dr. Raoul Robinson**, the Public Seed Initiative, **Dominique Guilette** of kokopelli-seed-foundation.com, **Bret Grohsgal** and more.

Contact **CR Lawn** and **Eli Rogosa** for more information: 207 872 9093 or email: humus1@netvision.net.il

FALL TIPS ON GARLIC PRODUCTION

Garlic is an increasingly popular crop in farmers markets, farm stands and CSA's. Now is the time to plant for next season's crop.

The following article is used with permission from the University of Minnesota Extension Service article, "Growing Garlic In Minnesota" (www.extension.umn.edu then search "growing garlic".) Copyright 1999. All rights reserved. Additional information is included from the ***2004-2005 New England Vegetable Management Guide*** section on Garlic, written by Vern Grubinger, UVM Extension System).

Garlic does not produce a true seed and therefore is multiplied vegetatively from cloves. Each clove that is planted produces a bulb. Garlic grows well in many soil types and climates, but only varieties that are hardy and adapted to the Northeast will perform well here. Supermarket variet-

ies, most of which are grown in warm climates with long growing seasons, usually do not grow well in this area.

Varieties

Garlic varieties are broadly classified into two main categories: hardneck and softneck. Stiffneck, or topset garlic (*Allium sativum var. ophioscorodon*) sends up a flower stalk called a scape, and produces bulbs with few, large cloves. Rocambole is a topset type that has a curved scape. Flowers, if they are produced, usually abort and form "bulbils" instead. These are small, aerial cloves that have the same genetic make-up as the mother plant. They can be used for propagation, but the bulbs that are formed from bulbils are usually small the first year after planting. Two or three years are required before marketable bulbs are produced from bulbils. They are, however, an economical way to increase seed stock. Typically, hardneck garlic varieties have four to 12 cloves surrounding the flower stalk. Because of the hard flower stalk, they are difficult to braid. Another disadvantage of hardneck varieties is that they do not store well and may either to form roots or start to dry out within a few months after harvest.

Softneck garlic (*Allium sativum var. sativum*), sometimes referred to as "Artichoke" varieties, does not produce a scape or seed stalk, and the bulbs contain more numerous, smaller cloves. These are among the varieties that are commonly used in California for commercial mass production. There are, however, some softneck varieties that are suitable for cold climates. Softneck varieties are considered to be the most domesticated varieties due to minimal flower stalk and bulbil production. They are generally more productive than hardnecks because all the energy goes to producing a bulb rather than a bulb and flower stalk. Each bulb generally contains between 10 to 40 cloves arranged in multiple layers somewhat like an artichoke. Softneck garlic generally has a much longer shelf life than hardneck garlic and typically can be stored for six to eight months without significant deterioration. They also are easy to braid.

Varietal characteristics can vary tremendously from one location to another, complicating variety selection. Climate can have a significant impact on garlic flower stalk formation as well as garlic taste. For example, a variety may be considered a softneck in one location, but in other locations it may produce a flower stalk. Occasionally, only a partial flower stalk is produced and bulbils will form directly above the bulb. Since there is no standardization, some garlic seed producers will rename particular varieties, leading to more confusion. It is best to try out several different varieties for a few years and select those that do best in your area. For more information on varieties, refer to "Growing Great Garlic" and the "Supplement to Growing Great Garlic" by R. Engeland, or The Garlic Seed Foundation, by David Sterns

Seed sources

While commercial sources of garlic have increased in recent years, it may still be something of a challenge to obtain well-adapted planting stock from commercial sources. A promising source of well-adapted varieties is likely to be growers in your area. Locally-grown bulbs may be obtained at a farmers market, local stand or food co-op. If ordering varieties from out of the region, start on a small scale and evaluate their performance. Note that it may take several years for a variety to adapt to new growing conditions.

Established growers usually save about 15 percent to 20 percent of their crop for planting the subsequent year. Large cloves tend to produce large bulbs. When saving seed, select the largest bulbs, and plant only those that show no signs of injury or disease. To minimize disease problems, it is advisable to rotate fields out of garlic or onions for at least several years before replanting them to garlic.

Elephant garlic, a member of the leek species *Allium ampeloprasum*, is not a true garlic. It produces large bulbs with five to six cloves weighing as much as one pound. The taste of elephant garlic is much milder than true garlic, and in cold climates can develop a sharp or bitter taste.

PLANTING

Plant garlic in the fall to allow enough time for it to develop roots but not to emerge from the soil. In the Northeast, this calls for planting in October. To prevent winter injury and heaving of cloves from the soil, plantings should be heavily mulched with straw until early spring. Garlic roots and shoots can tolerate freezing conditions provided that sudden drops in temperature do not occur. Therefore, after planting, rows should be covered with a three-inch to four-inch layer of weed seed-free straw mulch to moderate soil temperatures and minimize excessively fluctuating temperatures in the winter and early spring. This mulch also will help control weeds during the growing season. Last winter, cold injury caused crop losses in unmulched beds in Massachusetts.

Time of planting is critical since both optimum shoot and bulb development require a cold treatment. Garlic should be planted in the fall - usually within one to two weeks after the first killing frost (32 degrees Fahrenheit). Ideally, roots should be developing and shoots should be emerging from the clove but not above the soil at the time of the first hard freeze (28 degrees Fahrenheit). Garlic shoots will emerge from the ground in late March or early April. Garlic requires a cold treatment of 40° F for 2 months to induce bulbing. Spring-planted garlic should be refrigerated first or planted early enough to get a natural cold treatment. Unless given a proper cold treatment prior to planting, garlic planted in the spring will often produce weak shoots

and poorly developed bulbs. Lack of scape development in hardneck garlic and bulbing in all garlic is usually due to an inadequate cold treatment.

A common spacing for garlic cloves is from 4 to 6 inches apart, with three or four rows to a bed, or in rows that accommodate cultivation equipment. Optimal spacing depends on a number of factors. Close spacing results in high yield but smaller bulbs, while spacing farther apart will result in lower total yields but larger bulbs. Generally, cloves planted in double row beds 30 inches apart on center and six inch spacing within and between rows in the beds results in good bulb size and yield. Some growers will plant four to five row beds on 3 ft. to 4 ft. centers with six-inch spacing; however, plants in the middle of the bed will compete for light and nutrients, which may result in smaller bulbs than for those on the edge of the bed. Other options include single rows spaced 30 inches apart and cloves spaced six inches apart within the row. This wide spacing between rows allows for easy mechanical cultivation for weed control. Some growers plant in beds covered with black plastic, making holes large enough for the garlic to emerge through. Typically, yields of garlic planted in double rows 30 inches apart will range from three tons to five tons per acre.

The amount of garlic to purchase will depend on the area to be planted, spacing, and variety. Some varieties have more plantable cloves per bulb than others. Generally, there are about 50 cloves per pound of cloves. Therefore, garlic spaced at six inches within a row 100 feet in length will require approximately four pounds of cloves or four to five pounds of bulbs. Generally, seedcloves from one pound of garlic bulbs will yield between four and eight pounds of harvestable bulbs. This will also vary, of course, with growing conditions and variety.

Individual cloves should be separated from the bulb the day of or up to two days before planting. Cloves separated for longer than two days tend to dry out. Generally, larger cloves from larger bulbs will produce the largest bulbs. In some varieties, large cloves may be actually two cloves fused together, known as a “double.” These doubles will produce two bulbs that become flattened as they grow together. The result is less marketable, poorly shaped bulbs. Double cloves are more prevalent in certain hardneck varieties, such as German Red and other Rocambole types, compared to softneck varieties.

Cloves should be planted with the pointed side up. Cloves planted upside down will develop a curved shoot that results in misshapen bulbs. The base of the clove should be planted two to three inches below the soil surface. For small acreage, cloves are generally planted by hand. Large commercial growers in California use mechanical planters.

Fertility

Garlic grows best on well-drained soils high in organic matter with soil pH maintained in the range of 6.2 to 7.0. Sandy loam or loam soils have the most ideal texture for garlic. Drought or excessively wet conditions will reduce yields and marketable bulbs. Liming is recommended if the pH is less than 5.8.

Garlic has a moderate to high demand for nitrogen. Recommendations for nitrogen based on previous crop and organic matter content range from 50-120 lbs./A (Table 1). Reduce recommended rates of nitrogen by: 70 lb. N/A if the previous crop is alfalfa, 40 lb. N/A if the previous crop is clover, and 20 lb. N/A if the previous crop is soybean or peas. About one-quarter to one-third of the recommended N (40 lbs./A) should be broadcast and incorporated in early fall before planting ; suggested N sources at this time include either ammonium sulfate, urea, or blood meal. The remainder of the N should be topdressed as ammonium nitrate or blood meal in the spring after shoots are 4 inches to 6 inches tall. Avoid N applications after the first week in May since bulbing may be delayed. If manure or compost has been applied, be sure to take credit for the nutrient value of these amendments. Obtaining a nutrient analysis of these organic amendments before application is strongly recommended. Symptoms of nitrogen deficiency include a yellowing of older leaves and leaf tips, general yellowing of the plant, poor vigor, and low yields.

Table 1. Nitrogen recommendations for garlic, University of Minnesota.

Soil Organic Matter Level (O.M.)			
Low	Medium	High	Organic soil
N to apply (lb/A)			
120	100	80	50

Low = less than 3.1% O.M.
Medium = 3.1-4.5% O.M.
High= 4.6-19% O.M.
Organic soil = greater than 19% O.M.

Follow soil test P and K recommendations for onions, and incorporate prior to planting. Without a soil test, garlic is generally fertilized with N-P-K in a 1-2-2 ratio. Broadcast and incorporate 150 lb/acre of both potash and phosphate, along with the plant nitrogen. For home gardens, broadcast and incorporate about 40 pounds of 5-10-10, or the equivalent, per 1,000 sq. ft before planting.

Use of a green manure crop such as buckwheat tilled in a few weeks before planting is recommended to improve soil physical properties. Well-composted manure applied and incorporated at a rate of 20 tons to 30 tons per acre has also

been shown to be ideal as a soil amendment, especially on low organic matter soils. Rates to apply should be based on soil test recommendations. Prior to planting, soils should be well tilled to provide a loose growing bed for bulb growth.

Commercial Sources for Garlic Seed (from Growing Garlic in Minnesota)

Arnold Farm, Rt. 2, Box 36, Long Prairie, MN 56347, 320-732-4398

Filaree Farm, 182 Conconully Hwy,Okanogan, WA 98840, 509-422-6940

Girardin Gourmet Gardens, 29321 Enger Court, Cannon Falls, MN 55009, 507-263-5897

Johnny's Selected Seeds, 1 Foss Hill Rd., RR 1 Box 2580, Albion, Maine 04910, 207-437-4301

Seed Savers Exchange, RR 3, Box 239, Decorah, Iowa 52101, 319-382-5872

Silver Springs Nursery, HRC 62 Box 86, Moyle Springs, ID 83845, 208-267-5753

Territorial Seed Company, P.O. Box 157, Cottage Grove, OR 97424, 541-942-9547

Weavers Garlic Shedd, P.O. Box 67, Crabtree, OR 97335, 541-491-3840

Northeastern sources for garlic (primarily for organic seed):

Fraser's Garlic Farm
1379 Johnson Rd.
Churchville, NY 14428
Ph: 585-359-8295

White House Farm
P.O. Box 745
Oxford, NY 13830
Ph: 607-843-8473

Garlic Heaven
2079 Washburn
Stanley, NY 14561-9566
Ph: 585-526-5779
Email: rjdunkel@yahoo.com

NEW BRASSICA PROJECT LOOKING FOR GROWERS

Are any of the brassica crops – anything from cabbage to turnips, bok choi to broccoli, salad greens to kale – important on your farm? Are you thinking of moving in some new direction with your brassicas – new crop choices, new markets, a different production system? Do you have some production problems – disease, insect, weed, nutrient -- that you would like to find a better way to solve? Do you wish you knew which brassicas bring you the best profit? Would you like to extend your production season?

If the answer to any of these questions is "yes", then this project might be for you! A new two-year project is starting up and we are looking for growers to participate. This project is funded by the Northeast SARE program and led by UMass Extension and the Connecticut Agricultural Expt. Station. Would you like to be one of nine growers who will each set their own goals for "achieving high quality Brassica crops" on their farm? Farmers' goals can be related to their crop choice, their markets, their production practices – or their profits. You will get assistance from specialists in marketing, financial analysis, nutrient and pest management, or organic production to help you reach your goal, plus an annual stipend. You'll attend one winter seminar each year and receive regular farm visits during the summer. We'll make sure you get the help you need to reach your goal!

If this sounds interesting to you, and you'd like more information, please call or email to:

Ruth Hazzard (rhazzard@umext.umass.edu, 413-545-3696), **Andy Cavanagh** (413-577-3976, acavanagh@pssci.umass.edu), or **Kim Stoner** (203-974-8480, Kimberly.stoner@po.state.ct.us)

Vegetable Notes, Ruth Hazzard, editor and Ben Hunsdorfer, Assistant Editor. *Vegetable Notes* is published weekly from May to September and every 4-6 weeks during the winter, 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.

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