



# VEGETABLE NOTES

For Vegetable Farmers in Massachusetts

Volume 13, Number 1

January 2002

*This issue of Vegetable Notes gives information on growing new crops for new and expanding markets. There is a tremendous amount of information about crops on the web. In fact, incorporated into this issue are excerpts from the University of Texas website. Keep in mind that some of the information you find on the Internet may not be relevant to production practices in New England. Feel free to contact me if interested in getting information about new crops you are considering for your farm.*

**FRANK MANGAN**  
*Vegetable Team*

## IN THIS ISSUE...

Producing and Marketing Vegetable Crops for Ethnic Markets . . . . . 1

Non-chemical Weed Control . . . . . 6

Editor for this issue of *Vegetable Notes*:  
Frank Mangan  
978-422-6374  
fmangan@umext.umass.edu

Subscription Manager:  
Marilyn Kuzmeskus  
413-577-0712

<http://www.umassvegetable.org>

## Producing and Marketing Vegetable Crops for Ethnic Markets

*by Frank Mangan,  
Department of Plant and Soil  
Science, UMass Extension*

With the release of the data from the 2000 US Census, there has been a tremendous amount of publicity about the growth in ethnic diversity in Massachusetts. Latinos are now the largest ethnic minority in the state, outnumbering African-Americans, with 6.8% of the population. Asians are expected to reach 4% of the population by 2010 and the Portuguese-speaking population is also increasing, represented by people from the Azores, Cape Verde Islands, and in particular, by large numbers from Brazil. For the first time, non-whites make up a majority of the population of Boston.

With the growing diversity in the demographics of the state, some growers are asking how they can take advantage of these trends. Are there crops that can be grown to meet these new or expanding

market? There are definitely opportunities out there, but as is always the case, it is important to proceed with caution and to have good information on all aspects of the particular crops before producing them in any volume.

Anytime that you want to produce a crop, you should have a very good idea as to where it is going to be marketed, what the production costs will be, and what price you can expect to charge. The UMass Vegetable Team has been working on several "new" crops that are being grown and marketed in Massachusetts by commercial growers. Based on these experiences, here are some points to keep in mind when considering growing and marketing new crops.

### **Determine the market demands for new crops**

Here are some suggestions:  
**Visit stores that cater to the ethnic group in question.** This is extremely useful. In the case of

farmers' markets, it is worth taking the time to visit markets in the area where the farmers' market is situated. If you have a farm stand, perhaps there are new ethnic groups moving into your area and there are markets that cater to their needs. The more stores you visit the better. If there are agricultural products being sold in a particular store, then you can be sure that there is a demand for it. Markets will not carry product if it is not being sold, especially fresh

fruits and vegetables which have a relatively short shelf life.

Depending on the market, the crop names might be in English or another language. In some cases, an English translation doesn't really exist. Some crops will have multiple names in both English and the native language.

For example, there is a squash that we have done a lot of research on in this state that is popular among Latinos. It is the same genus and

species as winter squash, *Cucurbita moschata*, and has a similar growth habit and production practices. In the Spanish-speaking world it has several names. In Puerto Rico it is called *calabaza*, in the Dominican Republic it is called *anyama*, and in many countries in South America it is called *zapallo*. There are also other names in the English, Portuguese, and French-speaking countries. So if you visited a store in Holyoke that caters to Puerto Ricans you will

see it labeled as *calabaza*, whereas in Lawrence, where there are many Dominicans, it may very well be labeled as *anyama*.

The identification of crops in Asian markets can be even more difficult since they may not use our alphabet. And if the names are in English, they can vary tremendously due to differences in local languages or dialects in the same country. The following is from *Oriental Vegetables* by Joy Larken:

...the naming of Chinese vegetables is highly confusing. China is an enormous country, and inevitably vegetables are called by different names

## Amaranths (Chinese Spinach)

**Description.** Amaranths are green, leafy vegetables and grain crops. Leaves of vegetable amaranths and seeds of grain amaranths are high in protein. More commonly known in the United States is the amaranth used as a bedding plant called Joseph's Coat. Amaranth varies greatly in foliage color, leaf shape, and plant height. The clover-like flowers are small but occur in such large numbers, their effects is outstanding.

**Culture.** Amaranths, both vegetable and grain types, are easy to grow. Order specific edible varieties of amaranth to use as greens. If you do not find *Amaranth gangeticus*, get one of the edible varieties. Some seedsmen promote their varieties as producing edible grain only, while other seedsmen promote their varieties for "greens" or leafy use. This warm-season crop grows from 2' to 4' or more. The grain varieties are usually erect. Amaranth greens are grown like other green crops. They do well in hot, high light conditions, producing edible foliage in summer conditions. Plant 1/4 ounce of seed for 250' of bed to a depth of 1/2" or less and cover. Amaranths do best on sunny, raised beds. Thin plants to 6" apart. Plants respond to well fertilized soils and irrigation during hot summers.

**Selection.** Harvest greens five to six weeks after sowing. As with most greens crops, young succulent leaves are preferred for eating. Greens are tied in bunches and sold in cartons by the bunch or by the pound. Keep amaranth greens refrigerated or iced during shipment or storage.

*Taken from the University of Texas Extension website pages on Specialty Vegetables in Texas (<http://aggie-horticulture.tamu.edu/extension/specialty/>)*

in different parts of the country, the same name sometimes being used for several vegetables. (The same situation occurs in Europe. Several vegetables are known as “broccoli”; there are countless ambiguities in wild plants.) The problem is compounded by the two principal Chinese languages, Mandarin and Cantonese, which when “anglicized” have given rise to a host of indigenous spellings in attempts to capture the Chinese pronunciation.

Visiting the market with someone from the ethnic group is extremely helpful. Many of the ethnic groups in our state have liaisons with the local governments, or there are community-based organizations serving their needs. For example, the mayor’s office in Boston has a liaison with all the major ethnic groups in the city. I visited Asian markets in Chinatown with the director of the Chinatown Business Association who was a tremendous help in navigating the labyrinth of crops. In most cases, these people are extremely helpful and interested in promoting the local production of crops used in their cuisine.

It is also worth asking the produce manager or owner of the store. Sometimes they can be very helpful, and sometimes they want nothing

**Table 1. Redemption of farmers’ market coupons in 2000 by three Asian nationalities**

Farmers’ Market	Redemption of All Coupons at Market (%)			Total Coupon Sales (US \$)
	CAMBODIAN	CHINESE	VIETNAMESE	
Fields Corner (Dorchester)	0	1	29	21,610
Lowell	24	0	3	18,232
Quincy	0	20	3	10,782

to do with you. I have had both experiences and many in-between.

In the case of farmers’ markets, one way to learn more about the ethnic groups that are buying at a certain market is through the redemption of farmers’ market coupons, provided through a program under the Supplemental Food Program for Women, Infants and Children, (WIC). Ethnicity of the coupon recipient is traceable through the WIC participant identification number printed on each coupon. Table 1 shows the data for the three most dominant Asian groups in the three selected markets.

If you sell in one of these markets, you would obviously be aware of the Asians in the market, but you may be uncertain of their nationality. You can see that Fields Corner (Dorchester) is mainly Vietnamese, Lowell is Cambodian, and Quincy is Chinese. There are differences in the preferences for Asian crops among these nationalities, so it would be important to know which groups are in your market.

**Be aware of the local selling price for the crop**

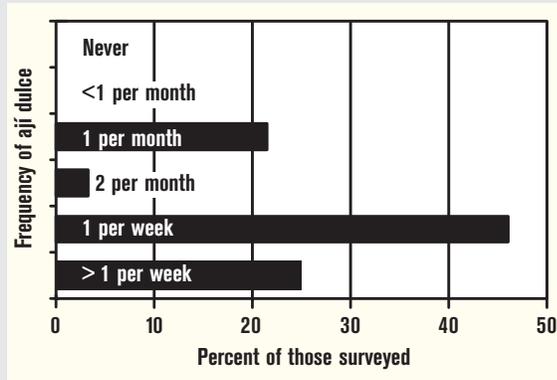
It is important to have an idea of what the market is charging for a given crop. Keep in mind that the prices can be seasonable, and also can fluctuate tremendously due to production problems in areas of the world where the crop is imported.

**How popular is the crop?**

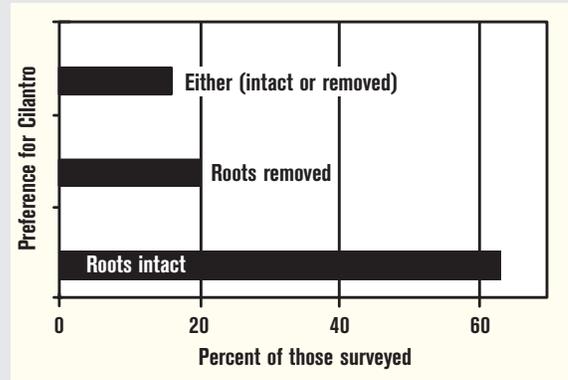
This might be difficult to assess from a visit to the market. Sometimes you can get a sense from the size of the container that the crop is in.

Doing a very simple survey is another way to get good information. This can be implemented at a farmers’ market or at your farm stand with relative ease. Figure 1 (page 4) shows information from a survey on the frequency of *aji dulce* purchases in a farmers’ market in Lawrence where the majority of the customers are Latinos. *Aji dulce* is a pepper popular among Latinos from the Caribbean.

**Figure 1. Results from survey taken of customers at Lawrence Farmers' Market on August 30, 2000**



**Figure 2. Results from survey taken of customers at Lawrence Farmers' Market on August 18, 1999**



**What is the quality of the product?**

The reason to be aware of this aspect is that sometimes the market will vary in what it is willing to accept for quality. As an example, the pepper *aji dulce* is often times of very poor quality in neighborhood stores. This pepper is used by Latinos as a condiment. Since it is usually mixed up in a blender, or chopped up and added to other dishes, the market is willing to except fruit that is not very fresh. In this case there might not be a premium for locally grown fruit that is fresher than what is imported.

**Are there differences in the appearance of the crop?**

Many vegetable crops grown in this state are also popular among newer immigrant groups. However

they may have different preferences for the cultivar, maturity, or other characteristics. For example, tomatoes are a popular crop among many Latinos. However the type and appearance can vary from county to country. In the Dominican Republic, the preference is for tomatoes that are more green than red. In Mexico, the preference is for plum tomatoes (called "saladette") rather than round ones. Most of the round tomatoes produced in Mexico are for export to the United States.

Another example is cilantro, which is very popular among most Latinos and many Asians. A survey at the farmers' market in Lawrence, where over 80% of the customers are Latino, found that the preference is for cilantro to be sold with the roots intact (Figure 2).

The reason given was that the cilantro remains fresher longer when it has intact roots.

**Producing the crop**

After deciding that there is a market for a given vegetable crop, here are some considerations about producing it.

**Can it be grown successfully here?** Most annual vegetable crops can be grown in our climate. There are a few exceptions. In some cases the crop may grow in our climate, but the yield is not as good compared to other parts of the country or world with more favorable climates for the crop. It is always recommended to produce a small amount initially to become familiar with all aspects of the production of a given crop before producing it in any quantity.

As an example, *culantro* (*Eryngium foetidum*) is a popular herb among both Latinos and Southeast Asians. It is in the same family as cilantro and has a similar aroma and taste. We evaluated this crop for production in Massachusetts at the UMass Research Farm in 2001. In our climate, this plant continually produces flower stalks which have to be removed. If the flower stalks are allowed to proliferate, the leaves, which are the harvested part of the plant, will not grow. We believe it is the longer day length during our spring/early summer in Massachusetts that causes this effect. This crop can be grown here, but the yields and quality of the crop is not the same as the crop being imported from the tropics. (We are looking at producing this crop as a bedding plant, which seems more promising.)

#### **Is there a reliable seed source?**

Obviously in order to meet the market demand, you must have a source of seed. This can range from straightforward to almost impossible. There are many commercial seed companies that carry cultivars of crops that are used by different ethnic groups. Varieties for Asian eggplant, hot peppers, and specialty greens are easy to find. However, there are some crops for which commercial sources of seed can be difficult to find.

For example, there is no commercial source of seed for

*calabaza*. The work done in Massachusetts with *calabaza* used seed produced by a joint breeding project between the University of Puerto Rico and the University of Florida. They have a line of seed that grows very well in our climate. Unfortunately this seed is not commercially available yet.

*Calabaza* grown in Latin America and in southern parts of the US (there are over 1,000 acres grown in Florida) are grown from seed

that is saved from mature fruit (i.e. open-pollinated).

One reason why there are not commercially-available sources of seed for some crops is that in many countries of the developing world, the standard practice is to save seed from one harvest for the next planting. For many vegetable crops it is unusual to buy seed from a commercial company. For this reason many ethnic groups will bring seeds from their native

## **Chinese Radish (Daikon)**

**Description.** Chinese radish is a cruciferous root crop used mainly as a cooked vegetable. It can also be eaten raw. Roots are large, often 2-4" in diameter and 6-20" long. There are three distinct shapes – spherical, oblong, and cylindrical. Most of the commonly available Chinese radishes are white, but some are yellowish, green, or black.

These radishes are generally marketed in bunches of three or four roots for the small variety, and one to three roots for the larger variety, depending on size.

**Culture.** Culture is similar to the common radish, except that daikons are bigger and need more space and a longer growing season. A deep, loose, moist, fertile soil is required. Plant in late winter or early spring for spring and summer use, and in July for fall harvest.

**Selection.** As with any root crop, look for Chinese radishes that are free of growth cracks and bruises with firm and crisp roots. Chinese radishes keep well in refrigeration if they are placed in a sealed container or plastic bag to maintain high humidity.

Since the pungent flavor of daikon is found primarily in the skin, they are sometimes peeled before cooking.

*Taken from the University of Texas Extension website pages on Specialty Vegetables in Texas (<http://aggie-horticulture.tamu.edu/extension/specialty/>)*

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countries or save seed from mature fruit. In the case of bringing seeds from other countries, this has to be done through the USDA. As for saving seed from mature fruit, one has to be concerned about outcrossing and also the possibility of seed-borne diseases.

#### **How labor-intensive is the crop?**

This is a very important consideration. Keep in mind that the cost of labor in many countries in the developing world, where much of the ethnic crops are imported, is much lower. In the Dominican Republic, for example, agricultural laborers will get between \$2 and \$3 per day (not per hour, per day!). Crops that can be grown cost-effectively in the developing world may not be able to be produced cost-effectively in the US.

#### **Pest management**

Management options available to you are going to depend on the crop. Many “ethnic” crops are

very similar to crops that are already grown here in Massachusetts which means that they will have the same pest problems and most likely will have the same management options on the pesticide labels. For example, *calabaza* mentioned above, will suffer from striped cucumber beetle and squash bug, along with all the diseases that are found on winter squash. Since it is the same genus and species as winter squash, all pesticides labeled for use on squash and pumpkins are allowed with this crop.

However, in many cases, there may not be any pesticides registered for a crop because it is too obscure. When we did research on cilantro in 1999, there were no pesticides registered for use in Massachusetts. This included Roundup for a stale seedbed technique! (Roundup has since been registered for this use.) For this reason there is an article on non-chemical weed control in this issue.

#### **References for ethnic crops**

1. *The UMass Vegetable Team Web Page* ([www.umassvegetable.org](http://www.umassvegetable.org).)

You’ll find information on many crops used by Latinos and Asians.

2. *Oriental Vegetables* by Joy Larcom. Kodansha International (ISBN: 1-56836-017-7).

This is the best resource I have come across on Asian vegetables. It includes all aspects of production and has good nomenclature and recommended varieties

3. *Specialty and Minor Crops Handbook*, Second edition.

University of California

1-800-994-8849

email: [danrcs@ucdavis.edu](mailto:danrcs@ucdavis.edu)

You can see excerpts and more information on specialty crops at their website: [http://www.sfc.ucdavis.edu/cgi-bin/spec\\_crop.exe/](http://www.sfc.ucdavis.edu/cgi-bin/spec_crop.exe/)

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## **Non-chemical Weed Control**

by Dr. A. Richard Bonanno, Department of Plant and Soil Sciences, UMass Extension  
[rbonanno@umext.umass.edu](mailto:rbonanno@umext.umass.edu)

**W**eed management in vegetable crops is difficult regardless of the strategies used by growers. To obtain good control of weeds, growers must be aware of a variety of information and management tools that are available.

In the absence of chemical tools, the task is more difficult. Strategies include an understanding of weed biology, physical methods of weed management, and cultural methods of weed management.

#### **Weed biology**

Weeds are classified in several ways. One of the most basic is a separation into monocots and dicots.

Monocots include all grasses as well as sedges. Although sedges, most notable, nutsedge, are sometimes called grasses, they are not the same and will not be controlled by herbicides specific for grasses. Both of these types are identified by a single shoot or spike that emerges first from a germinating seed or a tuber. All other weeds are called broadleaf weeds. These are identified by a set of cotyledons or “seed leaves” which first emerge from a germinating seed.

To better describe these two main types, a discussion of weed life cycles will follow. All weeds fall into one of four life cycle categories. These include summer annuals, winter annuals, biennials, and perennials.

**SUMMER ANNUALS** are weeds that complete their life cycle in one year or less. The cycle is from the spring to fall. These weeds are triggered to germinate as the soil warms in the spring with most broadleaf weeds germinating before grass weeds. In the fall, these weeds will produce viable seeds that will overwinter and germinate the following spring. Most weeds common to vegetable planting fall into this category. Examples of important summer annual broadleaf weeds include carpetweed, galinsoga, jimsonweed, common lambsquarters, black nightshade, common purslane, common ragweed, redroot pigweed, Pennsylvania smartweed, and velvetleaf. Examples of important summer annual grasses include barnyardgrass, crabgrass, fall panicum, and foxtails (yellow, green, and giant).

**WINTER ANNUALS** are weeds that also complete their life cycle in one year or less. In this case, however, the cycle is from fall to spring.

These seeds usually germinate as the soil cools. The weeds grow vegetatively during the fall, overwinter, and then produce viable seeds before the weather becomes hot the following spring and summer. Many weeds common to small fruit plantings fall into this category. Most are winter annual broadleaf weeds.

Important examples include common chickweed, wild mustards, henbit and field pansy.

**BIENNIALS** are broadleaf weeds that complete their life cycle in two years and are sometimes confused with winter annuals. They germinate and form a low rosette of leaves the first year and form an upright seed stalk during the second year. They are not usually a problem in annual cropping systems since they need such a long time to produce viable seeds although they can be a problem in small fruit plantings. Examples include common burdock and wild carrot.

**PERENNIALS** are weeds that live for three or more years. There are two types, simple and spreading. Simple perennials grow as individual broadleaf plants with a taproot and reproduce by producing viable seeds. The most common example of a simple perennial is a dandelion. Spreading perennials usually do not produce viable seeds but spread vegetatively. These are grasses, sedges and broadleaf perennial weeds. Important examples of spreading perennials include quackgrass (sometimes called witchgrass), yellow nutsedge, and field bindweed. Usually, no part of these weeds are exposed during the winter and they must grow each year to remain alive over several years.

Most weed management strategies are aimed at weed seeds that remain in the soil from year to year. Two aspects of seeds will be discussed, production and germination. Weeds, especially annual weeds, produce a great number of weed seeds. A brief listing in of the number of seeds produced per plant follows in Table 2:

**Table 2. Number of seeds produced per weed plant**

Weed Species	Seeds per Plant
Redroot Pigweed	117,400
Purslane	52,300
Ragweed	3,380
PA Smartweed	3,140
Foxtails	2,420

These weed seeds are distributed in the soil to the depth of the plow layer in most cases. Life expectancy of these seeds can range from as little as one or two years to several decades, depending on species and environment. Only a small percentage of weed seeds will germinate each year. Germination is influenced by many factors including seed depth, cultivation, light, soil compaction, and seed color.

Most weed seeds will not germinate if they are placed too deeply within the soil profile. In fact, most weed seeds will not successfully germinate if they are deeper than seven times their maximum diameter. Cultivation influences weed seed germination by repositioning seeds closer to the soil surface so that they can germinate. For this reason, cultivations should be kept shallow. Also, some seeds such as redroot pigweed need light to germinate. Deeper seeds briefly exposed to light as the cultivator passes can be triggered to germinate.

Soil roughness and soil compaction have a great effect on weed seed germination. Twice as many seeds will germinate in smooth soil compared to germination in rough soil. Also, up to 60% more seed will germinate in compacted soil than in loose, friable soil. Common lambsquarters provides an example of how seed color influences weed seed germination. This weed produces both brown and black seed. The brown seed will germinate the year following its production, while the black seed will not germinate until at least the second year after its production. This insures the perpetuation of the species in case there is a year with severe drought, early frost, or with some other unfavorable environmental condition.

### Physical weed management

Physical weed management strategies include hand weeding and cultivation. Hand weeding is, of course, time consuming and expensive; however, it is often necessary for many reasons. These reasons include in-row weed control and roguing new species that may appear in a field.

Cultivation is an important component of weed control in vegetable crops, especially when chemical control is not possible. The timing of cultivation,

equipment used, and accuracy of use are all important factors to consider. Weeds are best controlled when small. While all cultivation equipment will provide control of weeds between crop rows, equipment should be chosen for its ability to provide control of as many in-row weeds as possible with minimal damage. Minimizing soil movement, especially deep soil movement, is necessary to minimize movement of weed seeds closer to the soil surface.

Several types of cultivation equipment are available. These include: rotovators, multivators, rolling cultivators, rotary hoes, sweep cultivators with discs, s-tine or Danish s-tine cultivators, basket weeders, finger weeders, spring-hoes or spyder weeders, spring-tine weeders, and wiggle hoes.

An excellent video describing each of these cultivators is available from the Vermont Extension System. Call Dr. Vern Grubinger at 802-257-7967. They are also described in the *New England Vegetable Management Guide*. The 2002–2003 edition of the guide will be available in February 2002.

### Cultural weed management

Cultural weed management includes organic and inorganic mulches, effective soil preparation to kill existing weeds and minimize soil compaction, stale beds with flaming, increased crop spacing, use of transplants rather than direct seeding where possible, fallowing of fields to reduce weed-seed populations, and crop rotation to avoid the buildup of weeds which are similar to the crop (grass weeds in corn, cool season weeds in potato and cabbage, etc).

### Other options

Future possibilities include allelopathy, biological control, biopesticides, and transgenic plants.

**Vegetable Notes** is a publication of the University of Massachusetts Extension Vegetable Program which provides research-based information on integrated management of soils, crops, pests, and marketing on Massachusetts farms.

Subscriptions to **Vegetable Notes** include the **IPM Newsletter**, published weekly during the growing season. For subscription information, call 413-577-0712 or visit our website at [www.umassvegetable.org](http://www.umassvegetable.org). For more information about the Vegetable Team's research and UMass Extension programs, call Ruth Hazzard at 413-545-3696.

## All-Day Vegetable Growers Meeting

**UMass Extension and New England Vegetable and Berry Growers' Association Cooperating**  
**Eastern Massachusetts Extension Center, 240 Beaver Street, Waltham, Mass.**  
**Friday, January 25, 2002, 9:30am-3:00pm**

*(Please note that this meeting is on Friday this year.)*

- 9:30AM Registration** Free to members though registration is necessary. Non-members registration fee of \$10 does not include lunch.
- 10:00AM Trends in Bedding Plants** *Dr. Peter Konjoian, Knjoian Greenhouses, Andover, Mass.* Peter is in the bedding plant business and will bring us up to date on what is happening in the business, what plants are selling, new plants, and more.
- 10:45AM Plastic Culture and Fertilization** *Prof. James Patterson, retired, Rutgers University.* A pioneer in plastic culture, fertilizing under plastic and by trickle irrigation, Jim will discuss what he has learned from his research and experience.
- 11:15AM Grower Experiences With High Tunnels** *Dr. Otho Wells, retired, University of New Hampshire.* Otho developed the use of high tunnels in New Hampshire and nationally. He will share the experiences of some of the growers with whom he has worked.
- 11:45AM Show and Tell** *Warren Gove, Gove Farm, Leominster, Mass.* Warren has been a leader in developing and utilizing new techniques and equipment. He plans to demonstrate some of these.
- NOON Lunch (by reservation only!)** Chef du jour John Ayotte will provide us with a sumptuous lunch including banana fritters. Reservations may be made or changed by phone until noon on Wednesday, January 23. Call 508-378-2546. If you are not able to attend after making reservations, please phone since the association must pay for all reserved meals. Those who make reservations and do not show up will be billed.
- 1:00PM ASSOCIATION BUSINESS MEETING, ELECTION OF OFFICERS, REPORTS**
- 1:30PM Black Rot and Powdery Mildew Management on Butternut** *Dr. Anne Carter, University of Massachusetts.* Anne has been conducting research on these diseases and will present a progress report. Her work has been supported in part by an association grant.
- 2:00PM A Visit to Chauncey Farm** *Diane Chauncey, Antrim, NH.* Diane will take us on a tour of her farm via slides taken this past season.
- 2:30PM Pest Management Update** *Ruth Hazzard, Rob Wick, Rich Bonanno, University of Massachusetts.* This presentation reviews changes in registrations, regulations, new materials, and recommendations that will appear in the *New England Vegetable Management Guide*.

*For more information call Dominic Marini, 508-378-2546. We expect to offer one hour of credit toward pesticide recertification.*

## 2002 NOFA/Massachusetts Winter Conference & Annual Meeting

**Co-sponsored by NOFA/Massachusetts and the UMass Extension Vegetable Program**

**Quabbin Regional High School, Barre, Mass., Saturday, January 26, 2002, 8:30am-5:30pm**

The Northeast Organic Farming Association of Massachusetts, founded in 1982, is an organization of farmers, gardeners, and consumers working for safer food and a healthier environment through the use of organic agricultural practices.

At the 15th NOFA/Massachusetts Winter Conference & Annual Meeting, individuals ranging from novice to experienced farmers and landscapers, as well as consumers who are organic enthusiasts, will be able to learn more about the methods and efforts that go into organic farming. In addition to the workshops, a farmers' market, daylong children's program, potluck lunch, and raffle will be offered. Workshops with an asterisk before their title have been approved for pesticide recertification training contact hours.

### 8:30-10:00AM

*Practical Beekeeping, David Noonan*  
*\*EPA Worker Protection Standard Workshop, Natalia Clifton*  
*Identifying Markets for Specialty Crops, Frank Mangan*

*Soil Basics and Understanding Soil Tests, John Howell*  
*\*Managing Insect Pests of Vegetables, Ruth Hazzard*  
*Making Do, Larry Siegel*

*High PolyTunnels, Ed Stockman*  
*Access to Land, Kathy Ruhf*  
*A Citizen's Guide to Organic Land Care, Marilyn Castriotta*

### 10:30AM-Noon

*Growing Early Season Vegetable Crops, Ryan Voiland*  
*Raising Children in a Troubled World, Ted Conna*  
*\*Weed Management Principles and Practices, Rich Bonanno*

*Using Soil Tests in Managing Soils Organically, John Howell*  
*\*Organic Sweet Corn, Ruth Hazzard and Steve Mong*  
*Introduction to Organic Certification, Don Franczyk*

*Access to Land: Alternative Tenure Models Land, Kathy Ruhf*  
*Invasive Plants and the Landscape, Donald Bishop*  
*\*Successful Turfgrass Selection, J. Scott Ebdon*

### 2:00-3:30PM

*Soap Making, Kathy Morris*  
*Tax Issues for Farmers: A Farmer-friendly Guide, Dan Beaudette and Matt Rulevich*  
*What One Thing Would I Like To Do Better On My Farm or Garden In 2002, Julie Rawson*

*Basic Organic Gardening and Beyond, Stan Ingram*  
*National Organic Program Update for Certified Farmers, Don Franczyk*  
*Greenhouse Peppers, Patrick Taylor*

*Successfully Growing Mesclun Greens and Herbs for Market, Ted Dobson*  
*\*Anatomy of a Regional Pesticide Awareness Campaign, Sarah Little and Sherry Ayers*

### 4:00-5:30PM

*Research by Farmers with Costs Shared by SARE, David Holm*  
*Making Fool-proof Country Wines, Jack Kittredge*

*The Wildflower Garden, Priscilla Hutt Williams*  
*\*Organic Weed Control, Edwin McGlew*  
*CSA Newsletters, Anne Gagnon*  
*Cultivation of Woodland Medicinal Plants, Zoe Gardner*

*Introduction to Biointensive Mini-farming, Rod Frenz*  
*\*Organic Approaches Toward Turfgrass Management, William Torello*

*Registration deadline for the children's program is January 19. An "early bird" discount is offered to individuals who register before January 12. The cost of registration for adults is a sliding scale ranging from \$25 to \$40 per person. For more information or to register, contact Elaine Peterson, 411 Sheldon Road, Barre, MA 01005, or email her at jackkitt@aol.com or www.massorganic.org.*

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# Winter 2002 Meetings, Shows, Conferences, Workshops

- January and February 2002**     **FARMER-TO-FARMER WORKSHOPS**  
*Balston Spa, NY*  
February 1, Financial Management  
February 1–3, Creating Healthy Soils and Overcoming Weeds  
For more information call 518-427-6537 or 426-9331,  
or email farmfood@capital.net or www.capital.net/~farmfood.
- January and February 2002**     **AG BUSINESS SHORT COURSES**  
Call Irene Winkler, SEMAP, at 508-295-1317, ext. 130.
- January 15–17, 2002**     **NEW JERSEY VEGETABLE MEETING AND TRADES SHOW**  
*Taj Mahal, Atlantic City, NJ*  
Call Phil Traino at 856-985-4382.
- January 22, 2002**     **WINTER FLOWER GROWERS PROGRAM**  
*JP Bartlett Greenhouses, Sudbury, Mass.*  
For a program flier and preregistration form, call Tina Smith, 413-545-5306;  
Paul Lopes, 508-295-2212, ext. 24; or Bob Luczai, 978-952-0116.
- January 23–26, 2002**     **ECOLOGICAL FARMING CONFERENCE**  
*Asilomar, Calif.*  
Call 831-763-2111 or www.eco-farm.org for information.
- January 25, 2002**     **ALL-DAY VEGETABLE GROWERS MEETING**  
*Waltham, Mass.*  
Call Dominic Marini at 508-378-2546 for more information.  
See the meeting's program announcement on the reverse of this page.
- January 25–27, 2002**     **NOFA-NEW YORK ANNUAL CONFERENCE**  
*Holiday Inn, Waterloo-Seneca Falls, NY*  
Call 518-734-5495.
- January 26, 2002**     **NOFA-MASSACHUSETTS WINTER CONFERENCE**  
*Barre, Mass.*  
Call Ed McGlew at 413-247-9264.  
See the conference's program announcement on the reverse of this page.
- February 12–14, 2002**     **NEW YORK VEGETABLE AND BERRY CONFERENCE**  
*Holiday Inn, Liverpool, NY (near Syracuse)*  
Call 607-539-7648.
- February 15, 2002**     **NORTHERN PIEDMONT SPECIALTY CROPS SCHOOL**  
*Oxford, NC*  
Contact Carl Cantaluppi at 919-603-1350 or email carl\_cantaluppi@ncsu.edu.
- February 16, 2002**     **NOFA-VERMONT WINTER CONFERENCE**  
*Vermont Technical College, Randolph Center, Vt.*  
Call 802-434-4122
- February 19, 2002**     **VERMONT VEGETABLE AND BERRY GROWERS ANNUAL MEETING**  
*Rutland, Vt.*  
Call Vern Grubinger at 802-257-7967.
- February 23–26, 2002**     **NATIONAL AGRICULTURAL PLASTICS CONGRESS**  
*San Diego, Calif.*  
Call 717-238-9762 or email pheuser@calabreseheuser.org.
- March 6, 2002**     **ALL-DAY POTATO MEETING**  
*Bluebonnet Diner, Northampton, Mass.*  
More details to follow.