UMASS EXTENSION

Vegetable Notes

For Vegetable Farmers in Massachusetts

Volume 17, Number 19 September 11, 2006

Crop conditions

With cooler nights and shorter days, the pace of crop growth and maturity has slowed dramatically in the past several weeks. Light frost hit some areas of the Berkshires and southeastern Mass this week. Peppers, eggplant and tomato are still producing, and growers with a late tomato planting are glad to see the good quality of a younger crop at this point. Summer squash and zucchini that are at the end of their cropping life are about done, although some late plantings are still yielding fruit. Sweet corn is maturing more slowly, and markets are good for September. Late corn will be harvested through September and some growers are aiming for Columbus Day weekend.

Cool weather crops are growing very well although there are some insect and disease concerns to watch out for. Growers are seeding protected field houses for fall and overwintering greens.

Growers are bringing in their pumpkin and winter squash as soon as possible to avoid the risks of life in the field. Overall it is a difficult year for these crops. Late planting or no planting due to wet conditions in June, lower yields from poor fruit set, disease pressure from Plectosporium and Phytophthora capsici have all contributed to a short supply of our own pumpkins this year. We have heard reports of fruit breaking down after harvest and packing, which is a tough situation for everyone involved.

Don't forget the next two upcoming Twilight meetings: heirloom crops and fall brassicas (Sept 24) and burning biomass for heat (Oct 4)

This will be the last regular sweet corn report and pest update for the season. Vegetable Notes will be published next in early October.

Sweet corn update

The sweet corn season is over for the majority of growers in New England. Since most are within a week of picking their latest corn, the last spray for Corn earworm has already been made. For sweet corn that you expect to pick in late September or early October, spray schedules can be extended. If you are still catching over 7 moths per week, remain on a 5 day spray schedule in silking corn. CEW flight had decreased significantly across the state over the past week. The same is true for Fall armyworm. The European corn borer flight appears to be over for the season but remember that the moths overwinter in crop debris so chop up your stalks to get a head start on control for next year. Get rye cover down as soon as possible after harvest to take up nitrogen and store it for next year's crop.

Overall growers have been reporting that this was a good year for sweet corn sales. After a very rocky start this season, sales began to pick up after the 4th of July and remained consistent throughout the Labor Day weekend. As the 2006 season comes to an end you may want to consider how your own on farm scouting program could benefit you in 2007. Throughout the season, trap captures and field infestation levels can be very different from one location to the next. By monitoring flight patterns and caterpillar activity on your own farm you may be able to save yourself some time, money and stress! For more information on scouting and for a list of resources for ordering monitoring tools, visit the University of Massachusetts Vegetable Program website at: http://www.umassvegetable.org/soil_crop_pest_mgt/crops/documents/organicinsectmanagementinsweetcornfactsheet.pdf

Corn Earworm Spray Thresholds

Moths/Night	Moths/Week	Spray interval
0-0.2	0-1.4	no spray
0.3-0.5	1.5-3.5	every 6 days
0.6-1	3.6-7	every 5 days
1.1-13.0	7.1-91	every 4 days
Over 13	Over 91	every 3 days

Corn Earworm thresholds apply only to silking corn up to 5-7 days before harvest. Lengthen spray intervals by one day if maximum daily temperature is **less** than 80 degrees F.

•Weekly European Corn Borer and Fall Armyworm and Nightly Corn Earworm Trap COunts for week of 9/1-9/7

Location	Z I	E II	CEW (per night)	FAW
Brandon, VT	-	-	0	-
Pittsfield	-	-	9.14	-
S. Deerfield (UMass)	3	8	1.92	11
Deerfield	0	3	0	65

Hadley (1)	3	0	2.21	-
Hadley (2)	3	19	2.28	-
N. Hadley	0	13	1	10
Sunderland	6	3	4.57	6
Easthampton	0	2	7.35	27
Feeding Hills	6	6	5.71	0
Still River	0	0	0.14	-
Rehobeth				
Concord	0	2	1.57	0
Leicester/ Spencer	0	2	4.28	2
Northbridge	1	2	7	8
Tyngsboro	0	12	4.28	6
Mason, NH	0	0	0.28	0
Hollis, NH	0	1	2.42	4
Litchfield, NH	0	3	5.13	31

•Weekly European Corn Borer and Fall Armyworm and Nightly Corn Earworm Trap COunts from 9/8-9/15

Location	Z I	E II	CEW (per night)	FAW
Brandon, VT				
Pittsfield	-	-	0.85	-
S. Deerfield (UMass)	1	2	0.43	3
Deerfield	0	6	0.78	11
Whately	0	0	0.57	1
Hadley (1)	1	1	-	-
Hadley (2)	0	23	-	-
N. Hadley	1	8	-	-
Sunderland	1	6	1.42	0
Easthampton	2	1	1.07	4
Feeding Hills	0	4	2.71	3
Still River	0	0	0.28	0
Rehobeth	8	9	0.43	-
Concord	1	1	0.14	1
Leicester/ Spencer	0	0	0.14	0
Northbridge	0	0	1	6
Tyngsboro	4	0	2.14	0
Mason, NH	0	0	0.14	0
Hollis, NH	0	0	0.57	0
Litchfield, NH	0	1	3	14

-Thanks to our scouting network: R.Hazzard, A.Brown, K. Reidel, J.Mussoni, D.Dumaresq, D.Rose, J.Otto, T.Gallagher, J.Golonka, W.Kingsley, P.Willard, G.Hamilton, C. Leich, B. Howden, S. Clegg, J. Ward

POTATO UPDATE

Minimize Tuber Injury During Harvest and Handling:

1. Allow for good skin set before harvesting. Allowing two to three weeks between vine killing and harvest gives the tuber time to set its skin and to seal off the stem end of the tuber. A tuber with good skin set is less likely to be injured and so will be less likely to become infected during harvest

2. Avoid harvesting when pulp temperature is greater than 60 F. Temperatures greater than 60 F favor development of diseases such as pink rot, leak, and bacterial soft rot. Once warm tubers are piled in storage, it can be very difficult to get the field heat out. The act of harvesting potatoes increases tuber respiration and increases tuber temperature. This is exacerbated in the deep piles we find in modern storages.

3. Manage equipment to avoid damaging tubers. Adjust forward speed and chain speed to keep the harvester filled to capacity as much as possible to avoid bruising; avoid drops of more than 6-inches.

4. Post harvest treatments with phosphorous acid may offer help. Prophyt or Phostrol applied at 13 fluid ounces in ½-gallon of water per ton of potatoes can reduce tuber to tuber spread during loading. Coverage is critical – adjust application equipment to provide thorough coverage of entire tuber surface.

Minimize Disease Development During Early Storage:

1. Manage storages to promote healing and prevent infection. If some infection is present, tuber temperature should be kept close to 50 F during curing and high airflow should be maintained. Free water on tuber surfaces should be avoided as it promotes development of numerous diseases. If disease presence is not a pressing issue, optimum temperatures during curing are 57 to 60 degrees F. Tuber temperatures need to be continually monitored and managed according to the situation.

2. Avoid storing loads that have excessive tuber disease incidence. Grade questionable loads hard and store them separately from clean loads to decrease risk and avoid disease spread through the pile.

--excerpted from the Long Island Fruit and Vegetable Update September 8, 2006, originally from Potato Notes, Univ. of Maine Cooperative Extension, Steve Johnson

BRASSICAS: FALL INSECTS AND DISEASES

Fall with cooler temperatures and shorter days is the time when Brassica crops tend to look terrific. Fall is the easiest time to grow high quality broccoli. **Flea beetles** seem to evaporate, as they depart the field for overwintering sites in the border. Caterpillars grow slowly, so that as long as you don't ignore them completely, they are easy to control. However, its worth keeping a close eye on these crops, especially by looking underneath the leaves. As usual, that is where you will be able to notice problems early, and avoid having them sneak up on you.

Alternaria Leaf Spot (ALS) is showing up, encouraged by the cooler nighttime temperatures and heavy dews. At least three species of Alternaria can cause serious losses in cruciferous crops. It occurs on many Brassica crops, including *Brassica oleracea* types (eg broccoli, cabbage, collard) and *Brassica rapa* types (eg, bok choi, tatsoi, komatsuna)

Alternaria on Komatsuna, Brassica rapa

(see photos). These pathogens may be seed-borne, both as spores on the seed surface and as mycelium within the seed. However, the major source of inoculum is crop debris in soil.

Symptoms of ALS are circular, small, dark spots with concentric rings (target spots) on the upper surface of leaf. Older leaves are more susceptible to infection. When humidity is high, lesions can be covered with a sooty black mass of spores. The pathogen sporulates abundantly on foliar lesions and centers may fall out to give a 'shot-hole' appearance. Lesions can grow together leading to large necrotic areas and early leaf drop. Symptoms on cauliflower and broccoli heads begin as browning at the margins of individual flowers. ALS requires leaf wetness for 16 hours to initiate infection and at least 12 hours of continuous humidity at >90% RH to develop. Note that if ALS does not have the required amount of leaf wetness, it will appear as tiny black "sooty" dots (not as the characteristic target-spot lesions).

Close-up of Alternaria on Broccoli, Brassica oleracea

In stored cabbage, ALS can cause economical loss in storage if infection spreads into the upper frame leaves or head due to additional trim loss, the production of ethylene, and invasion by secondary fungi and bacteria.

Fungicides are most effective if applied before disease gets established. Bravo, Amistar, Quadris and Maneb are control options. See the *2006-2007 New England Vegetable Management Guide* for more details.

Because inoculum carries over in crop residue, crop debris should be destroyed as soon as possible after harvest and a minimum 3- year rotation out of crucifers should be used. For rotation to be effective, cruciferous weeds need to be controlled during the rotational period. Buy seed from a reputable source or treat with hot water to eliminate Alternaria from seed. Avoid overhead irrigation during head development.

--Adapted from September 7, 2005 PestMinder 12.19 1, Cornell Cooperative Extension Vegetable Program

Powdery mildew of Brassicas. This disease is unusual in the US, but is reported to occur regularly in England and southern Ontario, among other locations, especially on rutabagas and turnips. Two occurrences, both from eastern Massachusetts, have come to our attention this week – one on collard, one on Lacinato and red Russian kale. Brussels sprouts, kale, Chinese cabbage, collards, broccoli, mustard and cauliflower are also reported to be hosts. Just as you would expect, the symptoms are white talcum-like growth on the upper leaf surface, starting as circular patches and expanding to cover the leaf. Leaves become pale green to yellow or tan, or if severely infected, curl and die. The plant is rarely killed, but growth can be stunted or defoliated, and of course is the leaves are sold, the disease would render them unmarketable. Note that this is a different species of powdery mildew than those that infect cucurbits, or tomato, or various ornamental crops.

Conditions that favor this disease seem to be low relative humidity with cool temperatures, water stress of the crop, and the availability of a thin film of moisture in which spores can germinate. The white powdery growth includes mycelium and spores (conidia), which can be dispersed quite long distances by wind. Spores overwinter "with difficulty"; however, survival of the fungus is better when live plant material carries over through the winter, which enables the fungus to produce new spores in the spring. It seems possible that one reason that we are seeing some occurrence of this disease is the milder winter last year, which allowed survival of brassicas. Also more growers are

overwintering Brassica plants through protection with row covers. If you see this in fall crops, don't overwinter those Brassicas!

Fungicides which are labeled for fungal diseases of Brassicas, especially those which also work against powdery mildew in other crops, should provide control of the disease. Apply at first indication of disease. Put crop residue under as soon as possible after harvest, control Brassica weeds which could also harbor the disease. *Sources: Vegetable Diseases and their Control, by Sherf and Macnab; Diseases and Pests of Vegetable Crops in Canada.*

Downy mildew of crucifers. This disease, caused by the fungus *Peronospora parasitca*, should not be confused with downy mildew of cucurbits (caused by *Pseudoperonosproa cubensis*), which is related but does not infect brassica crops. Downy mildews tend to be specific to a certain plant family or even species within a plant family. They are in the same group of fungi (Oomycetes or 'water molds') that cause late blight of potato and tomato and blue mold of tobacco.

Downy mildew is an important disease of broccoli, collards, kale, cabbage, cauliflower and Brussels sprouts. It can also infect rutabaga, turnip and radish. It is encouraged by cool, moist conditions (from rain, heavy dew or fog), which are more typical in late August, September and October in our region. Infection can occur at any stage of growth. Severe infections can kill seedlings, but stem, leaf and flower/head infections can cause crop injury and loss at later stages.

The most distinctive symptom is grayish white, fluffy growth on the undersides of leaves. Irregular, angular yellow to brown spots develop on both top and bottom of the leaf. In the floral parts of broccoli or cauliflower, dark brown areas develop internally in curds or floral buds of the head. Stems and stalks of the flower head may be darkened or have black streaks, and this may be the first sign of infection in broccoli. In cabbage, internal darkening and purplish spots appear in the inner layers of the head or move upward in the head from stem infections. Secondary infection with soft rot bacteria (always smelly!) may follow the downy mildew. In cabbage, systemic invasion of the stem may occur after infection of the lower leaves. The fungus may then invade the head leaves and sporulate after the cabbage has been stored.

The fungus survives from season to season as thick-walled resting spores, called Oospores. These sexual spores can survive in the soil for extended periods and produce sporangia when conditions are moist and cool, especially at night. Disease development is favored by abundant moisture on leaves provided by dew, drizzling rain, or heavy fog. Sporulation, germination, and reinfection can occur in four to five days. The fungus may also survive in a latent state within systemically infected plants. Oospores and mycelium can be carried in and upon seed. Sporangia are carried on air currents and on wind-blown rain and when conditions are right, will germinate on leaves and produce new infections.

Cultural controls: Rotation out of brassicas for at least two years; removal of crop residues which contain Oospores (may not be practical!); adequate crop spacing to encourage drying of leaves. Control in the seed-bed is very important and includes the use of clean growing medium, good drainage, and an avoidance of overhead irrigation. Resistant or tolerant varieties of broccoli have been developed; our sources list Marathon and Arcadia among these.

Fungicides for downy mildew include Prophyt, Alliette, Ridomil or Ridomil/Bravo. Preventive spraying of protectant foliar fungicides may be necessary if environmental conditions favor disease development.

Non-pathogenic disorders of broccoli: Brown bead, heat injury, hollow stem. As part of the Brassica project, we are working to gain a better understanding of these disorders. Each can be caused by a combination of factors – heat stress during head initiation, excessive water especially after a dry period, excessive nitrogen, rapid growth during head formation, deficiency of boron, and cultivar susceptibility. Heat injury is most often manifest as unevenness of the crown and uneven bud size on the head, as well as small head size. Brown bead appears as heads approach maturity and is usually associated with rapid growth during periods of high temperature followed by abundant rainfall. Floral buds turn tan or brown and become easily detached. These may then become infected with soft rot bacteria, Erwinia species. Boron deficiency, which shows up as hollow stem of broccoli or cauliflower, brown discoloration of turnip or rutabaga roots, or internal

Broccoli head with buf damage, uneven head and bud growth and leaves in the head

discoloration of cauliflower, can be more severe if plants are water stressed or pH is greater than 7. Adequate supplies of soil organic matter, consistent and adequate water levels in the soil, and supplemental boron applied before planting if boron levels are low can all help in avoiding these problems.

Cabbage aphid. Cabbage aphids tend to build up in fall Brassicas, and we have observed small colonies starting up in our fall broccoli plots. These are gray-green aphids with a waxy coating that makes them appear whitish gray. Colonies tend to form in younger, upper leaves, in cabbage heads, between cauliflower curds, or in long-season Brassicas such as Brussels sprouts. Numbers tend to build in the fall. Winged aphids arrive, and produce colonies of wingless nymphs that soon produce new offspring. Large colonies can stunt plants or cause curled leaves, and will contaminate harvested parts.

Close-up of Cabbage Aphid

Biocontrols (predators and parasites, and a fungal pathogen) often keep colonies under control; however, if numbers are building, insecticides may be needed. University of Connecticut recommends a threshold of 10% infested plants in cabbage, broccoli, cauliflower and Brussels sprouts after heads or sprouts begin to form.

There is a range of chemistries available among insecticides labeled for this pest: including pyrethroids and organophosphates, neonicotinoids (Provado), pymetorzine (Fulfill), and insecticidal soap (MPede). Note plant back limitations or label restrictions on which Brassicas are allowed. Always uses a spreader sticker to obtain better coverage and more insecticide persistence. Insecticidal soaps are capable of reducing cabbage aphid and are relatively easy on natural enemies. Soaps must contact the pest to be effective and have no residual activity once they have dried. Several applications may be needed. Fulfill is an effective aphicide with a 7 DH interval.

Cabbage root maggot can cause root injury in fall turnips and rutabagas. Timing of controls is more difficult than in spring crops, and root crops are more sensitive to injury since the root is marketed. The adult flies are active in early September, but the precise flight period is not well known and not easy to detect. The only labeled chemical control is Lorsban, which may be directed to the base of the plant and has a 30 days to harvest interval. Non-chemical controls are in short supply. Last year, one grower in the UMass Brassica Project evaluated row cover to exclude maggot flies from fall root crops and found the cover reduced yield (and enhanced aphids).

-R Hazzard, Bess Dicklow, A. Cavanagh

FALL WEED MANAGEMENT ADVICE

Weed management is still important at the end of the season. There are three main activities that need to be completed. They are: fall field scouting, preventing weed seed production, and controlling perennial weeds.

End of Year Weed Scouting

It is worthwhile to take the time to check fields for weed problems at this time of year. A quick scouting can identify problems that will be expensive to solve if they get out of control and can provide clues that will help in designing a weed management program for next year. Mapping weedy spots, and keeping some kind of permanent record of weed surveys, can help you evaluate your weed management over the years. Make a map of each field and fill in the following information:

How dense are the weeds? If weeds are very dense, they may be having an impact on yields. This is especially true if these weeds emerged early in the season. If weeds were actively growing during the period of greatest crop growth, consider changing the weed management program.

Which Weeds? Identifying weeds can help identify potential problems before they get out of hand, and can help you decide if you need to modify your weed control program. Weeds like yellow nutsedge, field bindweed, and quackgrass are spreading perennials, which have underground parts that enable them to spread throughout whole fields. Because these weeds can be very damaging, and are very difficult to control, they are worth "nipping in the bud". In addition, keep an eye out for annual weeds that are new to a field or are increasing in numbers. With current herbicide registrations, certain weeds can be very difficult to control in some or all of the crops in your rotation. Galinsoga, for example, is hard to control in cole crops, greens, peppers, and squash. Nightshades are difficult to control in tomatoes because they are in the same family as tomatoes. Grasses are hard to control in sweet corn.

What worked? It is also useful to look at the whole field and evaluate the effectiveness of your weed control efforts. If some weeds are generally escaping, identify them. They may point to weaknesses in your herbicide or cultivation program. If mostly grasses, or mostly broadleaves are escaping, it may require an adjustment of either the rates or the timing of grass or broadleaf herbicides. You may also find the New England Vegetable Management Guide useful. This manual contains a chart listing the effectiveness of vegetable herbicides on most of the common weeds in New England. Use this guide to find an herbicide labeled for your crop that might give better control than the one which was used.

Where are the weeds? Weeds in the rows or planting holes are much more damaging to crop yields than between-row weeds. Weeds in rows may be an indication that cultivation equipment needs adjustment, or cultivation needs to be done earlier.

Preventing Weed Seed Production

Annual weeds produce incredible amounts of seeds. Annual grasses normally produce 3000 to 5000 seeds per plant, small seeded annual weeds such as pigweed and lambsquarters can produce 100,000 to 250,000 seeds per plant, and larger-seeded broadleaf weeds such as velvetleaf and smartweed can produce 5,000 or more seeds per plant. Perennial weeds can also produce seeds or other reproductive structures. For example, one yellow nutsedge plant can produce 2000 tubers. Perennial weed management is covered below.

Once fields are harvested, they should be tilled or disked as soon as possible to prevent seeds from maturing. Be especially concerned with weeds that are new to a field or are in abundant supply. If time is short, one alternative is to mow the weeds. This will remove the primary seed stalk but will also encourage lateral branching. Eventually, however, these branches will produce seeds and must be destroyed.

Perennial Weed Management

The best time to control perennial weeds is in the Fall. All perennial weeds have storage structures (tap roots, tubers, or rhizomes) below ground that enable these plants to survive the winter and regenerate themselves the following year. Fall tillage of perennial weeds will kill top growth and fragment the storage organs but will not kill the weed. Frequent tillage will, over a long period of time, control perennial weeds but, in most cases, this is not practical.

Perhaps the best control technique for perennial weeds is an application of glyphosate (Roundup) before the plant goes dormant. Perennial broadleaf weeds such as bindweed or dandelion should be sprayed while they are still actively growing which is usually before a hard frost. Perennial grasses, such as quackgrass, can be sprayed as late as mid-November. Use 10 to 20 gallons of water per acre when spraying Roundup. Two quarts of the herbicide will provide much better control in 10 gallons of water per acre than in 40 gallons of water per acre. Spraying on a mild afternoon following a cold or cool morning is best, to encourage translocation of the herbicide to the below-ground storage structures. Disking or tilling two weeks after application will also improve control of the weeds.

Many growers fight perennial weeds such as quackgrass in corn fields year after year because their primary goal in the Fall is to plant a cover crop. This is usually followed by a Spring application of Roundup which provides top kill but does not kill the whole weed. Applying Roundup at the proper time is the only way to achieve good control. Delaying the seeding of a cover crop may be a necessary evil in the fight against perennial weeds.

In conclusion remember to scout and map your fields, prevent weed seed production, and apply Roundup at the right time to control perennial weeds.

--Rich Bonanno, UMass Extension Weed Specialist

INDIAN CORN: HARVESTING AND HANDLING INDIAN CORN

Ornamental corn must be harvested by hand when the husk is dry. When ears of ornamental corn have lost their green color and begin to dry down, they have reached full maturity. If warm, dry weather is expected, the ears may be left on the plants until sales are expected. To harvest, break off ears with a quick downward motion. Be careful not to damage the ear or husk attached to it. Pick ears carefully so that the kernels are not damaged. Spread the ears out to dry in a shallow pile where there is good air circulation and under cover if the weather has been damp. Pull the husk back if it is not completely dry at harvest. Be careful not to tear the husks because they contribute to the value of the ears. The husk and ear may become moldy if they are not handled properly. Pulling the husk back allows slightly damp husks and ears to dry quickly. When husks and ears are dry, tie the ears together with twine or rubber bands in bunches of two or three around the base of the ears and allow them to dry in a warm, dark, airy place. If husks are too dry, they tend to pull off or break easily from the ears, decreasing their value. Should this occur, wait for a humid or rainy day to prepare the ears for sale. DO NOT box or bag ears when they are first harvested or they may mold. Mold may occur on both the husk and ear if proper handling and storage techniques are not used. During and after drying, ornamental corn may be stored in open wooden apple or cabbage bins. Growers with small quantities often suspend the ears in cabbage or onion sacks

in a dry location until time for marketing. The ears are usually sold in groups of three. The three ears are held together with rubber bands, wire twists, or with a plastic sleeve similar to that used for dried flower arrangements.

This is information from a University of Kentucky Cooperative Extension Publication, "Ornamental Corn Production in Kentucky". Contact Alan Erb at (716) 652-5400 ext. 139 for a copy of this fact sheet.
Originally printed in Vegetable Notes September 12, 2002

The 2006 New England Greenhouse Conference – Featuring Alternative Crops Ideas and Dappling in Vegetables and Cut Flowers

The New England Greenhouse Conference will be held November 1-3 at the DCU Center in Worcester, Massachusetts with a trade show on November 2nd and 3rd. Wednesday, November 1st, is a pre-conference day featuring in-depth workshops and short courses.

The third day of this year's conference will offer workshops of interest to vegetable growers and greenhouse growers looking to extend their season and grow their business. If you've never been to the New England Greenhouse Conference before this is a great opportunity to see what it's all about!

Vern Grubinger, Director of the Center for Sustainable Agriculture at the University of Vermont will be speaking about organic production of greenhouse crops, using tomatoes as an example. Vern will cover the requirements for organic greenhouse production and discuss details about growing greenhouse tomato production. Find out if greenhouse tomatoes are the right crop for you.

Eliot Coleman, author of 3 books on organic gardening and season extension and part owner and operator of Four Season Farm in Harborside Maine, will be speaking about how he gets returns from greenhouse production of salad and root crops using no heat! Eliot will share his production strategies on growing a variety of profitable crops over the winter months.

The theme of season extension continues with a talk by Mark Bridgen from Cornell University and Ted Blomgren from Windflower Farm regarding using season extenders for the production of cut flowers. Mark and Ted will discuss various materials and structures used to get plants going early in the spring and keep them going late into the fall.

Greg Berger from Springledge Farm will discuss how he successfully grows and markets his cut flowers, which are sold, at his farm stand and as a profitable "U-Pick" crop. Greg will share with us what he grows in the fields and in his high tunnels, how is grows it, and how he gets all those customers!

Susan Han from the University of Massachusetts will talk about harvesting and caring for cut flowers. Learn the whys and how to's of handling cut flowers for maximum longevity. This session is a must for anyone handling cut flowers!

To receive the 2006 New England Greenhouse Conference Program or for more information, contact: Cindy Delaney, Phone: 802-655-7769 Email: delaney@sover.net . The complete program and registration information is also available on our web site: *www.negreenhouse.org*.

Upcoming Twilight Meetings

Upper Forty Farm, 86 Nooks Hill Road, Cromwell, CT
Sunday, September 24, 10 am – 1 pm
Host: Kathy Caruso

Kathy Caruso's huge selection of tasty traditional and heirloom vegetable varieties have earned Upper Forty Farm a wide following at West Hartford Farmers Market and a dedicated group of Community Supported Agriculture (CSA) shareholders. Kathy, her husband Bennett, and her son Andy grow vegetables, flowers, and herbs and keep a small flock of laying hens on 3.5 cultivated acres. The specialty of the farm is seeking out and producing a diversity of vegetable varieties, particularly heirloom varieties, chosen for flavor, novelty, and other unique characteristics. In a recent case study, Kathy reported that she was growing 99 varieties of tomatoes, 35 varieties of hot peppers, and 18 varieties of potatoes.

In the Brassica project, Kathy has focused on developing a system for broccoli production and on getting a better handle on soil fertility and soil amendments.

2. Field Corn Biomass for Heating Greenhouses
Wednesday, October 4, 2006
3:00 PM – 6:00 PM
Kosinski Farm, Westfield , MA
Host: Mike Kosinski, Kosinski Farm

Kosinski Farm grows 140 acres of blueberries, apples, grain corn, vegetables and tobacco. Five greenhouses provide flower and vegetable plants for retail sales at their farm stand and use in the field. Blueberries, apples and butternut squash are major wholesale crops.

Mike began heating one greenhouse with corn three years ago and has been expanding his use of corn for heat each year. This year he is installing two larger stoves with automated auger stoking systems. Field corn fits well into his vegetable rotation.The corn is dried off-site and trucked back to the farm. His production costs are about $60-$65 per ton of corn, which is about one-third of the cost of heating oil based on energy costs per BTU.

PASSING OF RAY PESTLE, VERMONT EXTENSION AGENT

Ray Irving Pestle Jr., the long time County Agent for Windham County, died peacefully in Brattleboro Memorial Hospital on Sunday, Sept. 3, 2006. Ray was born June 22, 1921, grew up in Waitsfield, Vt., received his bachelor of science degree in dairy husbandry from the University of Vermont cum laude in 1943 and his masters degree in animal nutrition in 1945 from Rutgers University in N.J.

In May of 1945, Ray came to Brattleboro as the county agricultural extension agent for Windham County, and married Annette Lilley, of Bakersfield, Vt. They lived in the same house on Southern Avenue from 1951 until recently. Ray continued as county agent until 1976, and served as a small fruit specialist for many other counties. During his career he saw major changes in agriculture in Windham County and surrounding areas, such as a decrease in the number of dairy farms in the county from over 600 fulltime farms to under 200, and the end of tobacco growing in the county. As county agent, he helped introduce grass silage, electronic farm accounting and artificial cattle breeding to the county and promoted direct sales by farmers to consumers. At the time of his retirement from the UVM Extension Service, he was the longest serving extension agent in Windham County and the second longest in Vermont, a little over 31 years.

During his entire career, Ray was a strong believer in educating the public on agricultural matters. He wrote for the Brattleboro Reformer, had weekly radio programs and arranged many publicity events, such as a milking contest between innings at a Brattleboro High School baseball game.

From 1976 until his death he was an agricultural consultant working with farmers and fruit and vegetable growers in Vermont and New Hampshire. He was still doing this work during the 2006 field season, at age 85.

Ray touched the lives and careers of many farmers, Extension agents, and others in his community and in New England. We will miss him.

There was a memorial service for Ray in Brattleboro on Saturday, Sept. 9. Gifts in Ray's memory may be sent to the Memorial Fund of Centre Congregational Church, 193 Main Street, Brattleboro, Vt. 05301.

Vegetable Notes, Ruth Hazzard, editor and Kate Reidel, Assistant Editor. 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; author and photographer is R. Hazzard if none is cited.
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