UMASS EXTENSION

Vegetable Notes

For Vegetable Farmers in Massachusetts

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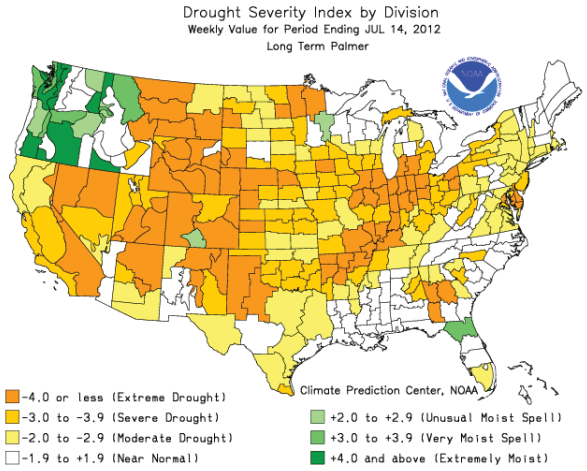
Crop conditions

Hot and dry: hard on plants and people. Daily highs over 90 for seven days or more has put high demand on soil water reserves, and irrigation water sources. Yield will be reduced in some non-irrigated fields, including sweet corn, cucurbits and potato. Nonetheless we are seeing strong yields of excellent quality midsummer crops.This issue will focus on heat related crop problems and pests. Some parts of the state received 1-2 inches Wednesday night as the front moved through, extremely welcome, though spotty across the state. Hail hit some areas.

Compared to many other regions of the US, southern New England's drought conditions are mild. The map below uses the Palmer index as a measure of drought severity. Visit the eXtension drought website for more on definitions of drought, the far-reaching impacts, and helpful resources. See EDEN, Extension Disaster Education Network at http://eden.lsu.edu/Pages/default.aspx



US-wide drought severity, using the Palmer Drought Severity Index (PDSI) based on temperature and rainfall.For more on how drought is measured see EDEN website listed in text.

NOTE: he twilight meeting planned for July 31 at Kosinski Farm has been cancelled.

Spinach leafminer eggs on Chard leaf

PEST ALERTS

Swiss Chard: look for eggs and larval mines of spinach leaf miner (see photo). Generally this pest drops off in midsummer but this year flies are actively laying eggs and leaf damage from mines has been found at several farms. Scout, time sprays for egg hatch. Eggs are white, 1/8 inch long, laid in tidy rows.

Potato, eggplant and bean: hopperburn can be mistaken for disease. This is especially true in potato, where growers are on the watch for late blight. Marginal scorch on multiple leaves per plant, accompanied by general yellowing and decline in vigor and growth are signs of hopperburn. Nymphs are more numerous than adults; search undersides of leaves. Dry beans are also

Growing Degree Days, Late and Early Blight Forecasts for Week Ending July 19

DATE:	7/19/2012		Blitecast for Late Blight		Tomcast for Early Blight	
`	GDD Base 50F	7-Day Rainfall (in)	LB Severity Values - season*	LB Severity Values - 7 day	Tomcast Severity Values - season**	Tomcast Severity Values - 7 day
Pittsfield	1268	0.10	92	3	41	5
South Deerfield	1396	0.08	60	2	33	3
Belchertown	1578	0.50	61	4	53	4
Bolton	1461	0.08	69	1	38	5
Stow	1593	0.37	67	3	56	5
Dracut	1437	0.49	66	0	37	7
Tyngsboro	1479	1.36	61	1	28	5
Boston	1480	1.42	49	0	54	7
Sharon	1406	0.27	65	3	54	7
East Bridgewater	1378	0.52	85	6	39	6

*Values accumulated since May 1. See NEWA for Blitecast values for later emergence or TP date.
**Values accumulated since May 14. For later transplant dates use NEWA forecast for your station & TP date.

affected.

Garlic nematode and diseases: if you find diseases in garlic bulbs as you harvest, it is possible that nematodes are the primary cause. Lesions on bulbs caused by nematodes are colonized by fungi and bacteria leading to bulb decay. Find out what the real cause is – the future of your garlic production depends on it! Send a sample to the Disease Diagnostic Lab in your state (MA: 413-545-3209)

Japanese beetles are active in peppers, basil, leafy greens, raspberries – they have been active since July 1. UMass Turf specialists report that Japanese beetle flights are the heaviest they have seen in recent years. One of the factors that dictates when and where Japanese beetles lay eggs is soil moisture. Hot dry weather may have forced females to delay egg-laying a little bit.

Taking Disease Samples: Avoid a disappointing message from the Diagnostic Lab that your sample could not be diagnosed! For leaf blights, select leaves which include healthy tissue and show a range of symptom development. Specimens that are dead or dry are of little diagnostic value. Take both stems and leaves so there is enough plant tissue. Place leaves between sheets of paper or inside a magazine. Place the pack age in a plastic bag, then into the envelope for mailing. More more details on collecting samples and a form for submitting samples see http://extension.umass.edu/vegetable/services/disease-diagnostics

POTATO AND TOMATO -- LATE AND EARLY BLIGHT UPDATE

There were new reports of late blight from Connecticut in Litchfield County (northwest corner) and New London County (southeast corner), both in tomato. One additional site in Middlesex County was confirmed to have late blight. All reports in southern New England have been in tomato, which suggests that the strain is more virulent on tomato. Reports in Maine and on Long Island included both potato and tomato. Scouting in both tomato and potato fields within 5 miles of the late blight outbreak in Franklin County, MA did not turn up any additional late blight. Though obviously this search was not exhaustive, it suggests that under recent weather conditions, spread of spores and/or development of new infections is limited. These fields had fungicide applications, but spray intervals had been extended to about 10 days. So far in MA, significant outbreaks have occurred only in unsprayed fields. Continue to scout tomato and potato and maintain fungicides at least at 10 day intervals (shorter if conditions grow more favorable, the field is close to an outbreak, or weekly SV is >4 and rain >1.2 inches

	Blitecast SV and Spray Interval Table					
	Total severity values during last 7 days					
	<3	3	4	5	6	>6
Total rain/ irrigation for past 10 days	Spray Interval for late blight control (in number of days)					
>1.2 inches	10-14	10	7	5	5	5
<1.2 inches	10-14	10-14	10	7	5	5

Even minimally sprayed tomato fields show less early

blight than is typical for this season. Fruit set is excellent in many fields. Potato harvest is underway especially early reds, and field tomatoes are coming in.

CUCURBIT UPDATE

Watch for **powdery mildew** especially on summer squash and zuchiini; look for first symptoms in winter squash and pumpkin. **Bacterial leaf spot** has been diagnosed in some fields but so far is not developing. Fungicide intervals can be extended based on dry, hot conditions. Fruit set may be affected by hot weather (see article on heat effects). Irrigation is the greatest need at this time.

Bacterial wilt is showing up in winter squash and pumpkin, can easily be mistaken for another disease. First leaves wilt, then they develop scorched brown edges and interveinal areas, then the whole leaf becomes crisp brown. New leaves forming near the crown have scorched, brown tips and don't unfold. Entire vines or the entire plant may show these symptoms. You may also see feeding damage at the crown, and several inches down into the soil These are all the result of feeding by striped cuke beetles, which pick up bacteria from infected plants, and vector the bacteria in feeding wounds. It is basically too late to do anything about it this season. Often it is the Cucurbita maxima types (buttercup, kabocha, hubbard, specialty 'pumpkins') that show the worst symptoms – they were likely attached more severely by cuke beetle since they are more attractive than cucurbita pepo (pumpkin, delicata) or moschata (butternut). Note that cuke beetle adults lay eggs and larvae feed on roots – often too small to see – and high numbers of adults lead to high numbers of larvae and more root damage. This compounds the overall crop damage. So too does the lack of water.

Try to catch s**quash vine borers** early, just after eggs are laid, and target sprays to the base of the stem. Vine borer flights have been strong this season and we may see more damage than usual, in summer squash and zucchini as well as in pumpkin. **Squash bug** numbers are also up, with copper colored egg masses showing up on tops as well as undersides of leaves. Nymphs have hatched and will feed till frost as they molt several times and finish the season as adults. Time insecticide sprays to kill nymphs; spray late in the day to minimize risk to bees. Squash bugs are resistant to all but a few insecticides (eg bifenthrin). Clean cultivation, mowing of headlands may reduce numbers. Hubbard or marrow squash can but use as a trap crop early in the season.

Downy mildew was reported at new locations this week on Long Island, NY and in southwestern Ontario on cucumber, and in Maryland on cantaloupe. Given weather patterns, the risk that DM will reach and infect cucurbit crops in New England is "minimal" (this is even less than "low"!) for the next few days. Avoid overwatering raised beds under plastic, where *Phytopthora capsici* can bloom even in a drought.

MELON APHID LIKES HOT, DRY WEATHER

Melon aphid (*Aphis gossypii*) outbreaks are more common in hot, dry weather, so it is a good idea to watch for them this season, especially in cucurbits, asparagus, pepper, eggplant and okra. Among cucurbits, they are reportedly more serious on cucumber, muskmelon and watermelon than in winter squash and pumpkins. Varietal differences in susceptibility can be dramatic. Melon aphid can build up very rapidly. Wingless females are 1-2 mm long. Color varies from light green mottled with dark green (most common) to white, yellowish or dark green. The cornicles at the tip of abdomen are always black, a key diagnostic feature.

Melon aphid overwinters in the north on woody plants including catalpa and Rose of Sharon; more southerly, adults survive on cold tolerant plants including spinach and dock. Winged females colonize crops in early summer, and wingless females produce live young for about 15 days (70-80 offspring per female) resulting in multiple generations. The time from birth to reproductive adult can be one week.

Infestations occur on undersides of leaves where aphids extract plant sap with their piercing sucking mouthparts. As numbers build up, feeding causes yellowing, puckering, leaf curling, and leaf death. Glossy 'honeydew' (sweet, sticky aphid excrement) deposits encourage buildup of sooty mold. Viruses transmitted by melon aphid include cucumber mosaic, watermelon mosaic, and zucchini yellow mosaic.

Controls for melon aphid: Use row covers or reflective plastic mulch to prevent early infestation and virus transmission (direct seeding is recommended in reflective mulch for maximum effectiveness). Cultivars differ in susceptibility to aphid buildup and to virus; plant resistant varieties if they are available. Separate early and late

plantings. Use selective insecticides for other pests to conserve natural enemies such as ladybeetles, as well as the tiny wasps that parasitize aphids.

Scout for aphids by searching undersides of leaves. In vine crops, if 20 percent of runners or more have live aphids treatment may be needed. Good coverage of undersides of leaves is needed for control. Insecticide options include several neonicotinoids, pyrethroids and carbamates. For products that conserve natural enemies, have low or negligible toxicity to pollinators, the aphid-specific products such as Fulfill, Beleaf, and M-Pede are a good choice. Organic options include M-Pede, Neem, and Pyganic. For more details on these see www.nevegetable.org and select 'cucumbers'or 'pumpkin' under crops; also check Insect Management/Table 20 under pest management.

WATCH FOR SPIDER MITES IN EGGPLANT, TOMATO AND VINE CROPS

The two-spotted spider mite (TSSM) is the most common mite species that attacks vegetable and fruit crops in New England. Spider mites can occur in a variety of crops, including tomato, eggplant, potato, beans and vine crops such as melons and cucumbers. It is particluarly important in eggplant. Spider mites are favored by hot, dry and dusty conditions, which also aggravate mite injury by stressing the plant. Damage is often underestimated since the wounds and the pest are often not apparent without close inspection. Leaves become blotched with pale yellow, reddish brown spots ranging from small to large areas on both upper and lower leaf surfaces. Feeding injury often gives the top leaf surfaces a mottled or speckled, dull appearance. Leaves then turn yellow and drop. Large populations produce visible webbing that can completely cover the leaves.

As with most pests, catching the problem early will mean easier control. Look for spider mites in greenhouses on vegetable transplants. Also scout plants in the field by looking for mites and injury especially on the undersides of leaves. Adult females are tiny; they can be seen with the naked eye but a 10x hand lens is very helpful. TSSM adults are sbout 1/50-inch long, slightly orange or pale green in color, with two dark spots on their body.

Two-spotted spider mite injury on eggplant. Photo by Jude Boucher, Univ. of CT

All mobile life stages can feed on plant tissue. Eggs are laid singly, up to 100 per female, during her 3- to 4-week life span. Eggs hatch into larvae in as few as 3 days. Following a brief larval stage, several nymphal stages occur before adults appear. The egg to adult cycle can be completed in 7-14 days depending on temperature.

Outbreaks may be worsened by excess nitrogen fertilization, or by the use of broad-spectrum insecticides that kill naturally occuring mite predators. Overhead irrigation or prolonged periods of rain can help reduce populations. Keep weeds under control.

Controls. Use selective products whenever possible. Selective products which have worked well in the field include Agrimek (abamectin, derived from a soil bacterium) and Acramite (bifenazate, a long residual nerve poison), and the relatively new products, spirotetramat (Movento) and spiromesifen (Oberon 2SC) (both Group 23) which mainly affect immature stages. Two other selective products are Kanemite (acequincyl) and Portal (fenpyromixate). OMRI-listed products include insecticidal soap (M-Pede), neem oil (Trilogy), and soybean oil (Golden Pest Spray Oil). See the New England Vegetable Management Guide for more details (http://www.nevegetable.org/index.php/crops/eggplant?start=3). including resistance groups. With most miticides (not bifenazate), use 2 applications, approximately 5 to 7 days apart, to help control immature mites that were in the egg stage and protected during the first application. Alternate between products after 2 applications to help prevent or delay resistance. Preventative releases of the predatory mite, *Phytoseiulus persimilis*, may suppress TSSM populations in vegetable fields, as they do in strawberry fields. *Amblyseius fallicis* is a predatory mite that is widely used in greenhouses. See the New England Vegetable Guide on biological control in greenhouse bedding plants, Table 25: Scouting guidelines and biological control options for bedding plants.

-- Ruth Hazzard, UMass Extension. Updated July 2012.

TOMATO POLLINATION AND EXCESSIVE HEAT

Extreme heat can play havoc on tomato fruit that is just flowering or ripening, causing problems in fruit development due to poor pollination. Constant exposure of a tomato plant to high temperatures (day/night temperatures of 95/80°F) significantly reduces the number of pollen grains produced and released per flower and decreases the pollen's viability. Most pollen is shed between 10:00 a.m. and 4:00 p.m. and 3-hours or more at 103F on two consecutive days can cause fruit set failure. Temperatures at night may play a more important role in determining whether or not pollination takes place than day time temperatures. This is because ideal fruit set occurs within a very narrow range of night temperatures (60°-70° F). If tomato plants experience night temperatures above 75°F, interference with the growth of pollen tubes can occur, preventing normal fertilization and causing blossom drop. Prolonged high humidity (>80%) also will hinder good fruit set as the pollen either will not shed freely or the pollen grains may bind together, resulting in poor pollination. Poor pollination may result in undersize fruit that looks 'normal' but is just a great deal smaller. Other problems include poor development of the gel inside the fruit. This causes the fruit to appear angular and soft when squeezed. When this type of fruit is cut in half, open cavities can be seen between the seed gel and the outer wall. High temperatures during the ripening period additionally can cause 'internal whitening' in tomato fruit. This white tissue only is noticeable when the fruit is cut. The hard, white areas tend to be in the vascular tissues in the outer and center walls of the fruit. Low potassium levels are also associated with 'internal whitening'. There is not a great deal that can be done about any of these environmental problems, other than to be sure to water enough and not over-fertilize during extreme conditions. Although growth-regulating chemicals can be used sometimes to help fruit set under cooler than ideal conditions, there is no growth regulator that will induce normal fruit development under high temperature conditions.

Jerry Brust, IPM Vegetable Specialist, University of Maryland, published in Issue # 17 of the Weekly Crop Update, 7/15/2012; jbrust@umd.edu

STRESS IN VEGETABLES

In the summer months, we often see fields where the major symptom is poor vigor, due to one or more stress factors. Pests such as root and crown rot fungi, bacterial and fungal wilt organisms, and insects such as squash bugs can damage plant roots, stems, and vascular systems, limiting water uptake, and causing excess stress. However, there are many stresses that don't involve diseases or insects. The following are some other causes of excess stress in vegetables this time of year.

Soil Compaction. Plants will have limited rooting in compacted areas and therefore cannot take up adequate water or mineral nutrients. In addition, compacted soils have reduced air exchange. Plants will often be stunted and will wilt early in the day in high temperatures. Cultivation can alleviate surface compaction but not deeper compaction.

High Soil Temperatures. Soils that have limited water holding capacity can have excessively high soil temperatures during long hot days in late spring and early summer. Late planted crops on black plastic mulch are very likely to be exposed to high soil temperatures and surface roots will often be damaged. Overhead irrigation over the black plastic mulch is very beneficial to reduce heat loads until plants have sufficient canopies to shade over the mulch.

Drip Tape and Drip Irrigation "Diseases". Issues with drip irrigation can often be the cause of plant stress due to inadequate water. This includes plugged emitters; leaks due to insect or animal chewing; leaky connections reducing flow; tape twisting and binding; improper tape selection or improper irrigation timing; limited well capacity; emitter spacing that is too wide for the crop or soil; and beds that are too wide for a single tape (with double rows). Over application of water in drip irrigation also can be an issue, especially in lower field areas and where soil types change in the field. This can lead to saturated beds limiting oxygen for roots. The keys to avoiding drip irrigation-associated problems is to monitor fields closely, note any areas that look stressed, and investigate whether or not the drip irrigation is functioning properly. Soil moisture monitoring devices can aid greatly in detecting problems.

Inadequate Overhead Irrigation. Under-watering can lead to additional plant stress. Plugged nozzles are a major problem that often goes uncorrected. Excessive runoff due to compacted soils can lead to reduced water intake.

Excessive Fertilization. Salt induced stress conditions can occur when excess fertilizer, manure, or high salt compost is applied or when high salt index fertilizer is applied too close to vegetable plants.

--Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu, Univ. of DE Coop.Extension

WATCH FOR POTATO FLEA BEETLE ON EGGPLANT

From the perspective of a farmer surveying the crops, different types of flea beetles do not look much different – they all are small and black, they all hop away when you approach the plant, and they all make small round holes in the leaves. When eggplant, tomato and potatoes are hit hard by flea beetles, the damage is usually caused by the potato flea beetle, Epitrix cucumeris. Another species, the eggplant flea beetle, looks very similar but is found in more southern areas. Summer adults are busy feeding now.

Chunky and hairy. In contrast to crucifer flea beetle, the potato flea beetle is shorter and broader (more 'chunky'), has a more pitted and hairy body surface, and is less shiny, though both are all black. They also have a distinctly different diet, as crucifer flea beetle feeds only on Brassica crops and weeds. Their life cycle is very similar: adult beetles spend the winter protected under leaf litter in field edges near the crop where they were feeding in late summer, and search out new food plants in the spring. Eggs are laid in the soil, larvae feed on roots, and after a pupal stage a new flush of adult beetles will emerge. These feed and then move to a protected spot for the winter. Thus there two major flushes of summer adults.

Potato flea beetle on eggplant.

Host plants and damage. Potato flea beetle has been reported to feed on cucurbit crops as well as bean, lettuce, radish, turnip and sunflower. It feeds on solanaceous weeds (jimsonweed, ground cherry, black nightshade) as well as redroot pigweed and lambsquarters.

Leaves that are heavily fed may be riddled with holes. Growth may be stunted, delayed, or plants may succumb altogether. Potatoes, once well established, can withstand considerable feeding damage. Eggplants are more vulnerable even at later stages. Damage is probably the best measure of flea beetle populations, since they are difficult to count.

Controls. In Mid-Summer, several materials can be used as a foliar spray. The two main groups are synthetic pyrethoids and necotinoids. See the New England Vegetable Management Guide for specific products. To avoid development of resistance, do not use nicotinoids for both soil and foliar applications, and rotate chemistries after one or two sprays.

For organic growers, spinosad, pyrethrin and kaolin are options that are OMRI listed. Kaolin (Surround WP) protects seedlings by acting as a feeding deterrent. We have observed effective control from applications of a mixture of kaolin and spinosad.

SAP BEETLES

Sap beetles are common secondary pests of sweet corn usually associated with damage caused by other pests. They can also be pests of strawberry. Sap beetles overwinter as adults or pupae in crop refuse, decomposing corn ears, or decaying fruit on the ground. Eggs are laid in spring. There are several generations per year. They are more likely to be a problem on farms producing a variety of vegetable and fruit crops.

Dusky sap beetle is black and plain (3.5-4.5 mm long), while four-spotted sap beetle (also known as picnic beetle) is black with four irregular yellow spots (5-6 mm long).

Adults are first noticeable about the time that tassels appear. They may invade corn borer tunnels or areas with other insect or bird damage, feed on pollen or silks, and lay eggs in these sites or in silks at the tip of ears. Eggs are milky white and resemble tiny grains of rice. The larvae are small, pinkish white or creamy colored grubs about ¼ inch long. They may hollow out kernels of the upper half of the ear.

Monitoring and sprays. Sample for sap beetles when silks begin to wilt. Inspect the silk area at the tip of 20 ears at each of five sites and determine the percent of ears infested with adults, eggs, or larvae. Sprays for other ear pests usually control sap beetles, but if other pests are absent and more than 10% of ears are infested with sap beetles, treat for sap beetles. Insecticides used to control ECB and CEW, including synthetic pyrethroids, may reduce sap beetle. Insecticides will not completely control heavy infestations. Bt hybrids that produce Bt toxin at the cellular level do not protect against sap beetles.

Cultural practices. Ears with exposed tips, especially super sweet and Bt varieties, are susceptible to infestation. To prevent or reduce damage, select varieties that have good tip cover, use clean cultivation, control ear-infesting caterpillars, and remove or bury decomposing fruit on a regular basis. Sanitation is important to prevent successful overwintering and reproduction during the season. Bury corn residue, especially decomposing ears; remove or bury alternate hosts such as rotting tree fruit or discarded vegetables. Burial should be deeper than 10 cm.

Corn Earworm Threshold		
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

SWEET CORN REPORT

Corn earworm numbers remain low with highest captures at 8 moths per week in Barnstable and Feeding Hills. Silk sprays can be extended to 6 day intervals where CEW is less than 4 per week (see table). Fall armyworm captures are zero or one throughout the region.

Captures of ECB remain very low in many locations, but high numbers were reported at others. Based on heat units and the strong first generation we would expect a strong second flight. However dry conditions may have affected emergence or flight activity. The high numbers reported at some locations may possibly include a new look-alike moth (see article below). Weekly silk sprays are recommended where ECB flight is greater than 12 per week. Scout pretassel fields for new ECB larvae and for fall armyworm.

Also watch for sap beetles. Sap beetles feed on silk and lay eggs in the tips of ears, producing tiny white larvae that nibble on kernels and render ears unmarketable. In the absence of all sprays these may become a problem so it is worth scouting especially if they have been a problem on your farm in the past. See article.

Sweet Corn weekly Trap Captures for Week Ending July 19

Location	Z1	EII	Total ECB	CEW	FAW
CT Valley					
Sheffield	0	0	0	0	
Deerfield	3	1	4		
South Deerfield (1)	0	0	0	1	
South Deerfield (2)	0	4	4		
Sunderland	1	20*	21*	1	0
Hadley	6	17*	23*	0	0
Feeding Hills	3	10*	13*	8	0
Central & Eastern MA					
Spencer	0	18*	18*	3	0
Dracut	1	7	8	1	0
Tyngsborough	0	1	1	1	0
Lancaster	1	4	5	0	0
Still River	0	0	0	2	
Concord	0	0	0	1	0
Millis	0	0	0	0	
Northbridge	0	26*	26*	1	0
East Falmouth	0	29*	29*	3	0
Barnstable	0	57*	57*	8	0
NH					
Litchfield	0	1	1	0	1
Hollis	0	1	1	0	0
Mason	0	1	1	1	0

* High captures reported in some EII traps MAY actually be a new moth , tentatively identified as Carrot Seed Moth -- not European corn borer.

European corn borer, Ostrinia nublalis, adult moth.

A new ECB look-alike that appeared in ECB pheromone traps this week is thought to be Carrot seed moth, Sitochroa palealis (above). It is closely related to ECB. and looks very similar but is white, not tan. See article. Photo by Nolie Schneider

NEW LOOK-ALIKE IN ECB TRAPS

This week, a European Corn Borer trap at the UMass Research Farm held large numbers of an unknown moth, similar in appearance to ECB, but paler, and with a yellowish cast to its wings. We have tentatively identified the moth as the Carrot Seed Moth, *Sitochroa palealis*, a species which was accidentally introduced to the Midwest from Europe some time before 2002. If the insect turns out to be the Carrot Seed Moth, it may be the first record for this pest in Massachusetts. Growers should not be too concerned – where the pest occurs in Europe, it is only a very minor pest of carrots and related root crops, and occasionally attacks some seeds used for spices. The only major damage it causes is in carrots grown for seed (for seed selection and genetic improvement). The species is easily controlled by insecticides. Growers should watch for this moth in ECB traps and be sure not to confuse the two species. It is not clear if some high ECB numbers reported this week reflect ECB flight or the presence of Carrot Seed Moth in traps. --*Zara Dowling, Danya Teitelbaum, R .Hazzard, UMass Extension.*

MASSACHUSETTS TOMATO CONTEST TO BE HELD AUGUST 20TH

The 28th Annual Massachusetts Tomato Contest will be held at Boston's City Hall Plaza Farmers' Market on Monday, August 20th in conjunction with the City Hall Plaza Farmers' Market and the start of Massachusetts Farmers' Market Week. Tomatoes will be judged by a panel of experts on flavor, firmness/slicing quality, exterior color and shape. Always a lively and fun event, the day is designed to increase awareness of locally grown produce.

Farmers who want to submit entries can bring tomatoes to the City Hall Plaza Farmers' Market between 9:00 am and 10:15 am on August 20th or drop their entries off with the corresponding registration form to one of several locations around the state on August 18th or 19th. These tomatoes will be brought in to Boston on Monday. For the complete details, including contest criteria and a registration form, go to http://www.mass.gov/agr/markets/tomato_contest.htm. The 28th Annual Tomato Contest is sponsored by the Massachusetts Department of Agricultural Resources, New England Vegetable and Berry Growers Association and Mass Farmers Markets.

Vegetable Notes. Ruth Hazzard, Amanda Brown and Andrew Cavanagh, co-editors. Vegetable Notes is published weekly from May to September and at intervals during the off-season, and includes contributions from the faculty and staff of the UMass Extension Vegetable Program, other universities and USDA agencies, growers, and private IPM consultants. Authors of articles are noted.