



UMASS
EXTENSION



Vegetable Notes

For Vegetable Farmers in Massachusetts

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CROP CONDITIONS

Several hot sunny days in a row are more than welcome. However, heat may be stressing plants that were waterlogged for weeks, have small root systems, and are now transpiring large amounts of water daily. Nitrogen or calcium deficiency may be an issue. In general, crops are leaping ahead in growth. Eggplant is strong. Peppers vary among fields in size, fruit set and maturity. Some never grew. Some, especially on plastic, grew reasonably well but dropped blossoms in the cold, and fruit set seems to be inconsistent or missing this year. Field tomatoes are starting to come in but not in the quantity that would be normal for early August. Many growers have lost some or all of their tomatoes to late blight, especially early plantings. Every crop (except possibly Brassica, which seem to have done well

everywhere) every success story at one farm can be matched by a loss at another farm. Winter squash and pumpkin fields are being watched nervously for disease outbreaks. Diseases and insects that make their way to New England from points south are arriving: corn earworm numbers are up, cucurbit downy mildew and basil downy mildew (see June 11, 2009 issue) are on Long Island. In spite of all this, farmstands and farmer's markets have great offerings, and wholesale shipments are moving.

LATE BLIGHT UPDATE

The biggest news is hot, sunny weather for several days at a time. However, late blight is still progressing; unsprayed fields are going down; sprays are mostly keeping it at bay. Scout fields often if you have not seen LB yet. Continue protectant fungicides (less frequently is ok since it's not raining every night!). In potato that is close to harvest, switch to a fungicide which can provide very good tuber blight protection, such as Ranman, or Revus.

Some points:

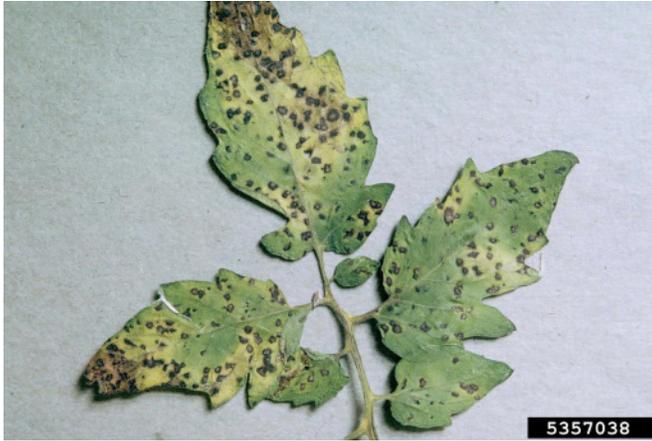
- If LB is progressing and you have not been able to stop it with fungicides or are not using fungicides, it's time to make the call to destroy the crop. This serves your farm by protecting potato tubers and your neighbors by preventing the amplification of spores that travel off farm.
- Propane flamer, cutting and removal, mowing followed by disking are all options. Do this on a sunny, hot, calm day if possible, when spore production, survival and movement will be at a minimum.
- Some varietal resistance among heirlooms has been observed, especially in Striped German and some other variegated tomato heirlooms. At three locations the variety has at least held out a bit longer, though it remains to be seen whether they will last through to harvest.
- Focus on quick fall crops that can help take up the slack – carrots, beets, cole crops, herbs, turnips, greens.

At the NOFA Conference at UMass in Amherst, a special meeting about late blight is being held, open to the public, Sunday, August 9, at 10:00am at UMass Amherst in the Student Union Ballroom. See upcoming meetings.

THE 'OTHER BLIGHTS' OF TOMATO; SEPTORIA LEAF SPOT, EARLY BLIGHT AND FULVIA

While late blight has been the dominant force in tomato this season, it is certainly not the only foliar leaf blight in the picture. The wet weather of the past eight weeks -- with frequent rain and very long periods of leaf wetness -- has provided a heyday to Septoria leaf spot and early blight in most tomato fields. The Disease Diagnostic Lab has been busy with early blight and Septoria samples, as growers come in to find out if they do or do not have late blight.

Septoria leaf spot is one of the most destructive diseases of tomato foliage and it occurs worldwide, wherever tomatoes



Septoria Leaf spot on tomato

are grown. This disease can destroy most of a plant's foliage resulting in sunscald, failure of fruit to mature properly, and low yields. Once infections begin, they can spread rapidly from lower to upper tomato canopy.

Symptoms consist of circular, tan to grey lesions with a dark brown margin, that appear on lower leaves first after the first fruit set. If conditions are favorable, lesions can enlarge rapidly, form pycnidia (fruiting bodies that look like black specks) and turn infected leaves yellow then brown. With a 10X hand lens, these black specks can be seen in the center of the lesions. These fruiting bodies, plus the generally smaller size of the lesions, and the absence of target-like circular bands within the lesion, distinguish this disease from early blight.

Fruit infection is rare, but lesions occur on foliage, stems, petioles, and the calyx. The pathogen overwinters on infected tomato debris or infected solanaceous weed hosts, and can also survive on stakes and other equipment. Seed infection is possible, but rare. Once introduced, Septoria is spread by splashing water, insects, workers, and equipment.

Early blight. Early blight occurs on the foliage, stem, and fruit of tomato, and also occurs worldwide. It first appears as small brown to black lesions on older foliage. The tissue surrounding the initial lesion may become yellow, and when lesions are numerous entire leaves may become chlorotic. As the lesions enlarge, they often develop concentric rings giving them a 'bull's eye' or 'target-spot' appearance. As the disease progresses, plants can become defoliated, reducing both fruit quantity and quality. Fruit can become infected either in the green or ripe stage through the stem attachment. Fruit lesions can become quite large, involve the whole fruit, and have characteristic concentric rings. Infected fruit often drop and losses of 30-50% of immature fruit may occur.

On potato, foliar symptoms are quite similar, though complete defoliation rarely results. Tuber lesions are dark, sunken, and circular often bordered by purple to gray raised tissue. The underlying flesh is dry, leathery, and brown. Lesions can increase in size during storage and tubers become shriveled.



Early blight of tomato - note the concentric rings

Management. Some varieties with early blight resistance or tolerance are available, however most tomato cultivars are susceptible to Septoria leaf spot. Adequate nitrogen fertility throughout the season can help delay the disease; lower leaves become more susceptible as the nitrogen demand increases with fruit load and older leaves decline in nitrogen. Protective fungicide sprays at regular intervals (depending on weather conditions and disease pressure) will delay onset of the disease. Both pathogens survive between crops on infected plant debris, soil, other solanaceous host weeds and can be carried on tomato seed. Early blight can be transmitted in infected potato tubers. Rotate out of tomato crops for at least two

years, control susceptible weeds, and incorporate debris after harvest. Reduce the length of time that tomato foliage is wet by using trickle irrigation, wider plant spacing, and staking. Keep workers and equipment out of wet fields where possible.

Many fungicides are registered and effective against both early blight and Septoria, including chlorothalonil (Bravo, Equus 500), maneb (Manex), mancozeb (Dithane), and copper (Kocide, NuCop, Champ), strobilurins (Group 11: Quadris, Cabiro, Tanos, Reason), Scala, Gavel, and Endura. Recommendations from Chuck Borndt, Cornell Coop Extension, on mixtures: Bravo and generics do a good job, but sometimes you need to add Gavel, Endura or Scala. If you use either Endura or Scala, tank mixing with a protectant such as Bravo, maneb or mancozeb can provide good EB control. However, neither Endura nor Scala alone provides control of late blight (LB) or Septoria leaf spot (SLS), which is another good reason to include a good protectant fungicide in the tank-mix. Gavel, on the other hand, does help control LB, EB and SLS. If you're picking tomatoes, Scala has a 1 day preharvest interval, Endura is 0 days to harvest (same for Bravo) but a 12 hour re-entry interval. However, if you use maneb or mancozeb products, the PHI is 5 days! (source: Pestminder, August 5, 2009)

For organic growers, copper hydroxide products (NuCop 50WP, Champ WG) are probably the best option for protectant fungicides. Copper would be a more effective spray than Oxidate (or its equivalent) and may be the only effective product. Oxidate might kill spores that are present but would not prevent production of new spores. Copper sprays that are used to protect tomatoes from late blight will also reduce the spread of Septoria and early blight. Sulfur (Microthiol), bicarbonate (Armicarb) list 'leaf spots' on the label, but would be more effective against powdery mildew than early blight or Septoria.

Leaf Mold (*Fulvia fulva*)

This disease occurs in both soil or hydroponic production and is most important in poorly ventilated plastic greenhouses. It can occur in the field, but is most common in greenhouses. Symptoms look somewhat like late blight. The high temperatures in the greenhouse make late blight unlikely, but growers on hyper-alert for late blight have been concerned. Infections begin on older leaves with yellow areas visible on the upper leaf surface. Corresponding to these, on the underside, are areas of olive-green to grayish-purple fuzzy growth where the fungus is making spores. Leaves turn yellow, then brown.

The disease can spread rapidly as spores disperse throughout a greenhouse on air currents, water, insects, and workers.

Management: Start with certified disease free seed. Improve air circulation by adequate row/plant spacings and removal of lower leaves. Avoid the formation of water droplets on leaves by watering in the morning. Reduce relative humidity by a combination of heating and venting, especially at night. Avoid excessive nitrogen fertilization. Remove diseased leaves, place in plastic bag, and destroy. At the end of crop cycle, remove all plant residue and destroy and disinfest the entire greenhouse.



Fulvia leaf spot on lower surface of tomato leaf



Fulvia leaf spot on upper surface of tomato leaf

Protectant fungicides registered for use in greenhouse tomatoes:

copper hydroxide (Kocide 3000 and others): 0.75-1.75 lb/150 gal water. (0dh, REI 24h, Group M1). Do not apply in a spray solution having a pH less than 6.5 or tank mix with Aliette.

copper plus mancozeb (Cuprofix Disperss): 1.75-7.25 /100 gal water. (5 dh, REI 24h, Group M1 & M3). Do not apply in spray solution having a pH less than 6.5. Crops grown in the greenhouse may be more sensitive to copper injury; user should determine crop sensitivity.

mancozeb (Dithane F45): 1.2 to 1.6 qt/100 gal water. (5 dh, REI 24h, Group M3). Apply when disease first appears and repeat as necessary on a 7- to 10-day schedule.

pyrimethanil (Scala SC): 7 fl oz/A. (1 dh, REI 12h, Group 9). Use only in a tank mix with another effective fungicide with a different mode of action. Apply Scala SC only in well ventilated plastic tunnel houses or glass houses. Ventilate for at least two hours after application.

-Bess Dicklow and R. Hazzard, University of Massachusetts

CUCURBIT UPDATE

Strong sun and heat are fostering faster growth along with flowering and fruit set in plantings that were ‘on hold’ during June and early July. This fruit may ripen late, but still has a chance to mature in September.

Diseases: As noted last week, we’re seeing powdery mildew and plectosporium blight showing up in cucurbit fields – see July 30 2009 Vegetable Notes for articles on managing these diseases. With the warmer weather after all that July rain *Phytophthora capsici* has started to really take off in infected fields. Where infections started in a low spot, growers are disking in infected sections with a border of healthy crop. Sometimes this helps, often it does not, but it’s worth a try.

Downy mildew has been confirmed in Long Island and in New Jersey. The forecast for our area has been moderate risk, so if you haven’t been applying a protectant fungicide to your vine crops now’s the time to start. With the disease this close, you may want to start including fungicides for Downy Mildew in your spray rotation. Tanos, Previcure Flex, Ranman, and Gavel are some good choices. Remember that any of these materials should be mixed with a protectant such as clorothalonil.

Insects: Striped cucumber beetles will be found in flowers, along with squash bees and honeybees. Nymphs of squash bugs are feeding in clusters on undersides of leaves. Aphids are generally present, but generally controlled by beneficials. Unless they build up to large numbers (threshold: 20% of leaves have more than 10 aphids, based on 50 leaves) it is questionable whether is a benefit from trying to control them with insecticides. Most viruses vectored by aphids in squash are transmitted in seconds by probing, and this is not reduced by insecticide applications.

Vertebrates: See article on deer fencing and repellents. Keep an eye out for woodchuck villages hidden out in the canopy.

- R. Hazzard & A. Cavanagh

SWEET CORN REPORT

Corn plants are responding well to the sunny hot days we had this week. Picking is in full swing and sales remain steady while retail prices are holding around \$4.00 a dozen. Many fields with heavy soils that have been saturated throughout this season are very uneven in terms of harvestable ears. Some plants are stunted, yellowing and tasseling with small undeveloped ears while in contrast other plants are green with fully developed ears. This is forcing growers to hand pick through a marginal crop. Drier fields that were planted on high ground have yielded some of the best corn in years.

The European Corn borer second flight has picked up in most areas. We have not found any larvae feeding in pretassel and green tassel corn indicating that hatch has not occurred as of yet. Keep an eye out on susceptible corn, with the warm temperatures we have had hatch should be occurring any time now. Where flight is over 7 moths per week maintain a 6-7 day spray schedule in silking corn to protect ears. We are expecting the second flight of ECB to remain steady for the next week or so before it starts to decline. Remember to continue scouting and spray once your fields are 15% infested.

Corn earworm trap counts are high in all areas of Massachusetts and southern New Hampshire. A 6-7 day schedule should be maintained where corn earworm is 2-3 moths per week (see table below). If you are catching 7 or more moths per week (1 moth per night or more), you should be on a four day schedule. If you have pheromone traps make sure that you move them to fresh silk to get an accurate measure of CEW activity. In silking corn, Baythroid, Warrior and Larvin are good for high pressure corn earworm situations; Spintor is good for ECB in silk and for low or moderate levels of CEW. Organic growers have found that Entrust applications have yielded clean corn in fields where CEW populations reached over threshold as long as they maintained the schedule according to trap captures. Keep checking your traps at least twice a week so you don’t have a surprise attack from a CEW infestation in your silking corn.

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

Location	Z1	EII	Total ECB	AVG CEW	FAW
CT Valley					
South Deerfield	4	64	68	-	0
Deerfield	0	4	4	-	0
Sunderland (1)	40	6	46	3	0
Sunderland (2)	0	24	24	18	0
Hadley (1)	0	6	6	12	0
Hadley (2)	0	15	15	-	0
Whatley	2	1	3	28	0
Central & Eastern MA					
Lancaster	1	0	1	6	0
Tyngsboro	0	0	0	5	0
Concord	0	16	16	10	0
Northbridge	0	0	0	15	0
Spencer	0	0	0	14	0
Dracut	0	2	2	1	0
Nantucket	0	0	0	58	0
Sharon	5	5	10	0	
NH					
Litchfield, NH	0	0	0	83	5
Hollis, NH	0	0	0	64	0

Corn Trap Counts

Location	Z1	EII	Total ECB
CT Valley			
Hadley	0	31	31
Deerfield	2	24	26

Pepper Trap Counts

Numbers can reach alarming levels overnight when weather fronts move up the coast from the South.

Fall armyworm has not been caught in traps however feeding damage from FAW has been seen in a few fields in the eastern part of the state. If you are seeing ragged looking feeding in your fields you may have a FAW infestation. Caterpillars are smooth and dark green or brown with lengthwise stripes and dark spots. Full-grown larvae can reach up to 1.5 inches. The head capsule is dark with a distinctive light colored marking in the form of an upside down Y. This is contrast to the CEW which always has a plain tan colored head. FAW needs to be controlled in whorl stage corn when 30% of the plants are infested and when 15% of the plants are infested in pre-tassel and tassel corn.

- Amanda Brown

HARVESTING POTATOES FROM FIELDS WITH LATE BLIGHT

If late blight is starting in your potatoes and you're not willing or able to apply fungicides in a timely manner to combat it, or if it starts to get the upper hand, then cut the chances of infecting nearby tomatoes or losing what tubers you do have to infection. Mow or burn down the crop to kill it. Then allow time for the foliage to die and the skins to set. Harvest should not be started until vines are completely dead, so a minimum of two weeks should pass between vine killing and harvest. Late blight will not survive on dead vegetation, thus the tubers that are exposed at harvest are less likely to be infected if vines are dead. Remove any obviously infected tubers before storage to reduce additional losses from soft rot. Do not wash tubers, as they should be dry when placed in storage. Wait 3 or 4 days before selling any and check to see if they are breaking down. If any infection is believed to be present, forced air ventilation through the storage bin can help minimize spread from tuber to tuber. Storage of potatoes with small amounts of late blight should be at 38 F to retard late blight tuber rot (skip the curing stage). If you must wash tubers before sale, organic growers can use Storox (Oxidate) or chlorine (must dilute to 4ppm before discharge) at labeled rates in wash water; another more effective option for suppressing late blight tuber rot appears to be Phostrol but it is labeled for russet-skinned varieties only.

- Vern Grubinger, VT Veg and Berry news, July 21, 2009

PREVENTING DEER DAMAGE

The population of deer in Massachusetts continues to grow, and damage on vegetable and fruit crops can be serious. They can be very damaging in vine crops, and now that the fall pumpkins and winter squash are forming fruit, it is critical to take action to prevent damage if you are in a high deer area. Temporary electric fencing can be an effective barrier but should be installed before deer begin feeding in a field. Repellents may also help deter deer, especially if the pressure is

not severe. One advantage of a wet season is that deer can find plentiful food in other locations besides your pumpkin field!

Deer Fencing

Fencing, the construction of a barrier between the crop and the deer, is the most effective long-term solution to deer damage. The basics of fencing apply to both electric and non-electric fencing. It is important to understand that deer can easily jump a fence 10 feet high, but much prefer not to. Deer prefer to go under or through a fence than to jump it if at all possible. Thus, the bottom wire of an electric fence should be no more than 10 or 12 inches off the ground and non-electric fences should either have an even lower bottom wire (about 6 inches) or be of mesh construction.

Fence maintenance is critical in both applications. If a tree falls on the fence or a hole is cut in the fence, the fence should be repaired immediately. Once deer have gotten inside and discovered the crop, it will be harder to keep them out, even with an electric fence. No gaps should exist in the fence, access must be provided through gates that are closed at all times. Fences should have a clear perimeter, at least 5 or 6 feet on the outside of the fence, so deer have to cross an opening before encountering the fence. This also enhances visibility of the fence to the deer. Deer will blunder into a fence placed tight to a wooded edge and can actually damage or take down sections of a fence simply because they do not see it very well, especially smooth wire designs. Having a clear border will increase the effectiveness of the fence and aid in maintenance.

Electric Fencing

Electric fencing need not be a tremendously costly remedy to deer damage. Many small fields can be protected by portable units that can be put up and taken down in half a day. Larger farmers and orchards may want to invest in permanent fences, but even here costs can be reduced by using solar chargers and having clear perimeters. For small fields of a few acres or less, portable fences either of regular electric wire or tape ("Hot Tape") will provide relief from deer. Hot tape is a wide, colored tape with several wires embedded inside. It enhances protection by being very visible to deer, even at night, while providing an electric shock on contact. As few as two strands of electric wire can be used to protect crops if it is put up immediately after planting, it is baited initially (explanation to follow), it is always "hot", and is maintained properly (e.g., do not let weeds or grass grow up into the fence). The effect that being shocked by an electric fence has on deer behavior and their subsequent avoidance of the fence allows a landowner to use a lower fence than in the non-electric case. Baiting the fence is quite simple but enhances the deterrent powers dramatically. Deer are extremely well-insulated over most of their body with fur. Couple that with their tendency to go under or through a fence, where they are most likely to contact the fence with their back or neck and it is easy to see how deer can penetrate an electric fence and not be shocked too badly. Baiting the fence, usually with a metal tab smeared with peanut butter, will make the deer contact the fence with it's nose and tongue, wet parts that will conduct the electricity quite well. This first contact and the resulting shock on sensitive parts will educate a deer to respect the fence for quite some time. Obviously, the fence must be off to apply the tabs and bait, but turn it on immediately upon finishing. Space the tabs about 30 feet apart and keep the fence baited for several weeks after the fence is installed. When the deer have become acquainted with the fence the baits can be removed if desired. However, deer will occasionally test a fence that has shocked them and new deer may enter the area so keeping the fence baited is not a bad idea. Most important is to keep the fence hot at all times. Deer will try to go under or through the fence, thus keep the bottom wire 10 to 12 inches above the ground. In a two-wire fence, the second wire can be at a height of 30 to 36 inches above the ground. A three-wire fence can have strands at 12, 24, and 40 inches. Keep in mind that adult deer are about 36 inches at the shoulder. Fence posts do not need to be as stout as with the non-electric fence. Fiberglass posts driven into the ground at 30 to 40 foot intervals, close enough to keep the fence from sagging are adequate. It is the electric shock that provides the deterrent here, not the strength of the fence. Electric fence supplies can be found at farm supply centers or through fencing specialty companies. Three fencing specialists in the Northeast are:

-Wellscroft Farm 167 Sunset Hill- Chesham Harrisville, NH 03450, (603) 827-3464

-Kiwi Fence Systems 1145 E. Roy Furman Hwy. Waynesburg, PA 15370 (724) 627-5640

-Walnut Grove Farm 50 Cartland Rd. Lee, NH 03824 (603) 659-2044

Non-electric Fencing

The non-electric fence does not work as a behavioral barrier to deer the way the electric fence does; thus it needs to be

constructed differently. To be effective, these fences should be a minimum of 8 feet tall. There are two styles to consider: smooth wire strands or mesh. The mesh can be either woven wire or plastic mesh, both will work well. Non-electric fences usually are permanent structures. Because the wire needs to be tensioned, the fence posts must be very secure and corners constructed carefully. Here the fence itself provides the deterrent. Deer will attempt to push through a non-electric fence and are strong enough to exploit weaknesses in fence design. The result will be a break in the fence and crop damage. Many designs exist for non-electric fencing. For stranded wire, they involve gradually increasing distances between wires as the height of the fence increases. Again, this is because deer prefer to go under or through a fence and are not likely to jump through the top strands. Keep the spacing between the lowest strands (below four feet) to no more than 10 inches, with the bottom strand about six inches above the ground.

The strands above four feet can be spaced at 15 to 20 inches. Attaching streamers or flagging to the strands increases the visibility of the fence and provides an additional deterrent. Woven wire or mesh designs are used extensively at captive deer facilities to keep deer inside pens and do just as good a job keeping deer out. The woven wire designs typically have small spaces at the bottom and progressively larger spaces toward the top. Mesh construction may be easier to maintain than stranded wire and more resistant to the attempts of deer to push through. In places where appearance is a concern, heavy-duty plastic mesh, usually black in color, can be used.

In some instances, the NRCS EQIP program has provided cost-share to growers who install permanent deer fencing as part of their overall conservation plan.

Repellents

Repellents reduce deer damage by making the target crop taste or smell unpalatable to deer. All repellents are billed to reduce, not eliminate, deer damage. To achieve this reduction, they must be consistently applied and reapplied as directed. The objective is to make the planted material unattractive to deer, so that they feed elsewhere. Once a feeding pattern has been established, repellents are usually less effective. Repellents fall into three categories: taste, odor, and combination taste and odor. Different formulations allow the user to change the repellent and keep the deer on guard by providing a change in the range of odors and tastes.

For protecting vegetable and fruit crops, make sure that a product is approved for use on edible crops. Certain taste-based repellents can be used on edible plants such as vegetable crops, fruits, berries, nuts and herbs, but they must be removed (washed off) prior to eating. The following repellents are approved for use on edible plants: Hinder, Millers' Hot Sauce, Deer Stopper, Plant Pro-Tec, Deer buster deer and & rabbit repellent, Repel.

Hinder and Repel (ammonium soaps of higher fatty acids) are odor repellents that can be applied directly to plants. They are effective but are easily washed off by rainfall. These materials can be applied in combination with normal pesticide applications but are not effective when applied to bare ground. Consult label for details and directions.

Some growers report that foliar applications of fish emulsion, which is sold and applied as a nutrient supplement, have an additional benefit of repelling deer. There are also numerous home-made products that may serve as repellents; as with many commercial products, repeated application is needed.

With the use of repellents, some damage must be tolerated, even if browsing pressure is low. None of the existing repellents provide reliable protection when deer densities are high. Repellents should be applied before damage is likely to occur, when precipitation is not expected for 24 hours, and temperatures will remain between 40° to 80°F for that period. Hand-spray applications may be cost effective on small acreages, while machine sprays will reduce costs for larger areas. If the materials are compatible, spray costs may be reduced by adding repellents to pesticide sprays.

--Sources: John E. McDonald, Jr., formerly US Fish & Wildlife, and Craig Hollingsworth, University of Massachusetts; Richard Ashley and Norman L. Gauthier and Richard A. Ashley; University of Connecticut; Maryland Dept of Agriculture (<http://www.dnr.state.md.us/wildlife/ddmtrepell.asp>);

Massachusetts Tomato Contest

Date: Monday, August 17th

Place: Boston's City Hall Plaza Farmers' Market

Program Details: http://www.mass.gov/agr/markets/tomato_contest.htm.

The 25th Annual Massachusetts Tomato Contest will be held at Boston's City Hall Plaza Farmers' Market on Monday, August 17th 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 by 10:15 am on August 17th or drop their entries off with the corresponding registration form to one of several locations around the state on August 15th or 16th. These tomatoes will be brought into 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 25th Annual Tomato Contest is sponsored by the New England Vegetable and Berry Growers Association and Massachusetts Department of Agricultural Resources in cooperation with the Federation of Massachusetts Farmers' Markets.

Twilight Meeting: Redesigning a Garden Center and Farm Stand for Future Growth

Date: September 2, 2009

Place: Volante Farms, Inc., 226 Brookside Rd., Needham, MA

Time: 4:30 PM to 7:00 PM

Program details: www.umass.edu/umext/floriculture/upcoming_events/index.html

Biological Control for Ornamentals in Greenhouses - Putting It All Together

Date: September 17, 2009

Place: Tolland County Extension Center, Vernon, Connecticut

Time: 9:30 AM – 3:30 PM

Program details: www.umass.edu/umext/floriculture/upcoming_events/index.html

Northeast Organic Farming Association - 35th Annual Summer Conference

August 7-9, 2009 - University of Massachusetts, Amherst, MA

150 workshops on organic farming, gardening, land care, sustainability and homesteading. Teen and children's program.

Organic Lawn & Turf Course - Community Farm Workshop Track – Mass Grass Grazing School

Keynote speakers: Paul Stamets, mushroom expert and author of *Mycelium Running: How Mushrooms Can Help Save The World* and Will Allen, founder and CEO of Growing Power, an organization that brings knowledge about sustainable food systems to urban areas.

Entertainment including dancing, country fair, barter event, and farmers' market. Dorm rooms, camping and wholesome organic meals. To register visit www.nofasummerconference.org. For more information contact the NOFA Summer Conference office at (978) 355-2853 or nofa@nofamass.org.

If you would like to become a Vegetable notes sponsor, please contact Jessica Dizek at jdizek@outreach.umass.edu or 413 545 1445

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