UMASS EXTENSION

Vegetable Notes

For Vegetable Farmers in Massachusetts

Volume 23, Number 11 July 5, 2012

IN THIS ISSUE

CROP CONDITIONS

Hot, dry and sunny weather has dominated central New England, though north of us has been excessively wet. One very welcome light rain brought some moisture throughout MA late Tuesday and early Wednesday this week. Cultivation is working well, as weeds keel over under the hot sun. Sales of the first sweet corn are strong and quality is excellent. Consistent with everything else, garlic is ready to harvest earlier than usual (see article). Storage carrots for fall and winter are being planted and fall Brassicas are in or will be transplanted soon. Cucumbers, zucchini and summer squash are pumping out big harvests. Peppers and eggplant have been setting fruit and early fruits are gaining size; heat may cause some blossom drop in pepper. Onions are bulbing and need regular irrigation. Winter squash and pumpkins quickly closing in between rows. Tomato fruit in the field are sizing up. Late blight is here!

LATE BLIGHT ALERT

On July 3, 2012, late blight was confirmed on tomato in Middlesex County, MA. The proximity of this inoculum source in Massachusetts raises the risk of late blight spores reaching surround areas of New England. It also indicates that conditions have been favorable for development of late blight and disease may have developed at other locations as well.

We are fortunate that weather conditions have generally been hot, sunny and dry. Late blight spores can travel a long distance in cool cloudy weather, but are killed easily in hot sunny weather. However, the period of rainfall on Tuesday night plus the cool, moist nightime conditions with long leaf wetness periods allow late blight to develop -- especially in areas of the field that are shady or slow to dry. Tomato and potato crops should be protected with fungicides on a regular basis, at least at weekly intervals, using a material with activity against late blight.

For details on materials to use see the New England Vegetable Management Guide potato and tomato sections.

http://www.nevegetable.org/index.php/crops/potato and http://www.nevegetable.org/index.php/crops/tomato-outdoor

For details on symptoms of late blight and other leaf blights visit the UMass Extension late blight webpage at http://extension.umass.edu/vegetable/

Continue to scout potato and tomato crops especially in low-lying and shady areas. If you suspect late blight is present at your farm or garden it is very important to send a sample to the UMass Disease Diagnostic Lab or another diagnostic lab in your state for confirmation. This disease affects farmers and gardeners across the region, and accurate identification and reporting of the county where late blight has occurred is key to preventing crop loss. The UMass Disease Diagnostic Lab can be reached by phone or email: M. Bess Dicklow, (413) 545-3209, mbdicklo@umext.umass.edu

Excellent photographs are also at: http://www.longislandhort.cornell.edu/vegpath/photos/diagnose.htm

See also: http://usablight.org/map for late blight reports and information nationwide.

Early blight: conditions for early blight have been low to moderate. fungicide intervals based on Tom-Cast would be

longer than what is recomended for late blight at this time.

PEST ALERTS

Spotted Wing Drosophila found in MA: First capture of both male and female spotted wing drosophila in western Massachusetts July 3, 2012. See article below for more background and management strategies.

Downy Mildew of Cucurbits (DM): Risk is currently low for New England. Earlier this week (July 4) the NC cucurbit cucurbit downy mildew website posted a 'moderate risk' rating for southern New England. There was a new report of DM in cucmber in PA for July 5, but no confirmed reports from NY or New England to date this season.

Powdery mildew has been found in summer squash in central MA. Scout summer squash, zucchini and other cucurbits for symptoms (see last week's Veg Notes). Remember that powdery mildew is resistant to strobilurin fungicides. See June 7 issue of VN for more details on cucurbit fungicide strategies.

Squash bugs are active in cucurbits. Adults have been laying eggs, and eggs have hatched into nymphs. See squash bug link for more on management: https://extension.umass.edu/vegetable/insects/squash-bug.

Growing Degree Days, Late and Early Blight Forecasts for Week Ending July 5

DATE:	7/5/2012		Blitecast for Late Blight		Tomcast for Early Blight	
Location	**GDD Base 50F**	**7-Day Rainfall (in)**	**LB Severity Values - season***	**LB Severity Values - 7 day**	**Tomcast DSV's - season since 5/14****	**Tomcast Severity Values - 7-day**
Pittsfield	959	0.24	86	1	32	2
South Deerfield	1037	0.10	55	2	29	5
Belchertown	1212	0.14	55	4	45	2
Bolton	1108	1.14	66	0	33	2
Stow	1217	0.83	63	0	43	5
Dracut	1076	0.61	68	3	25	2
Tyngsboro	1117	0.62	60	3	21	2
Boston	1108	1.14	66	0	44	5
Sharon	1049	0.32	61	2	40	6
East Bridgewater	1025	0.29	83	5	27	3

*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.

	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

SPOTTED WING DROSOPHILA: STRATEGIES FOR DEALING WITH A NEW PEST

Spotted Wing Drosophila (Drosophila suzukii), or SWD, is a species of fruit fly that has recently been introduced to the United States. It was first found on the West Coast in 2008, but has rapidly colonized many fruit producing regions of the country. Last year it was detected in Connecticut, Rhode Island, and Massachusetts. While fruit flies (or vinegar flies) that infest over-ripe or damaged fruit are nothing new in the US, this new species has the ability to infest healthy fruit. Females of this species have serrated ovipositors that can cut into healthy fruit to insert eggs. This can lead to problems with customers who find multitudes of larvae in otherwise sound-looking fruit after only a couple of days.

This insect is primarily a pest of small fruit and berry crops, but we had reports of the fly being found in high tunnel tomato crops last fall. The information below is geared toward berry crops, but much of the information is applicable

to tomatoes as well. If you think you have this pest in your tomato greenhouse, please call the UMass Vegetable Program at 413-577-3976 or email us at umassvegetable@umext.umass.edu.

The first step in dealing with this new pest is identification. Simple traps are used to capture fruit flies, which can then be checked to determine if SWD are present. Trap designs vary in detail but generally consist of plastic cups with holes punched in the sides, fill with a small amount of cider vinegar as a lure and with a sticky card hung from the cup lid to capture the flies that enter the trap. Sticky cards are available from several sources, such as Gemplers (http://www.gemplers.com/product/RSTRIP/Olson-Yellow-Sticky-Traps-3x5-Pkg). Traps should be checked frequently and viewed with a magnifier to see details of the flies caught. Vinegar flies are small (2 - 3 mm) with rounded abdomens. Examine the wings of trapped vinegar flies using a hand lens. Some small native flies have dark patches on the wings, but will not have the distinctive dark dot that is present on both wings of SWD males. Female SWD are harder to identify, but this can be done by using a hand lens to examine the ovipositor (see photos). If you're not sure if you have SWD, take a close-up photo and send it to Sonia Schloemann, who will try to help with identification.

If SWD are present, the first thing is to try to harvest frequently to avoid build-up of ripe or over-ripe fruit. Try to eliminate fruit on the ground as much as possible. Both of these measures are easier in small plantings, but are important to do if possible. Also, try to remove wild hosts for this pest such as wild blueberries, brambles, grapes, etc. Again, this will be easier for some than others, but is recommended to the extent that it is possible. Spray recommendations coming from states where this pest was established last year or earlier can be found in some of the fact sheet links below.

The summary of these recommendations is to a) use an effective material that has a short phi, b) use an effective material with at least some residual control (SWD can lay eggs one day after adult emergence!), and c) rotate resistance classes of materials so that effective materials remain effective. In reviewing recommended materials from Michigan, it looks like Malathion, Mustang Max and Delegate have the shortest phi and all have 5-7 day residual control. They are all in different resistance classes, so using them in a rotation is a good idea.

More information on materials that can be used for SWD can be found at:

https://extension.umass.edu/vegetable/insects/spotted-wing-drosophila

This website provides a chart of materials with high efficacy on SWD, grouped according to their IRAC resistance groups.

We will continue monitoring this situation but feel it is important to alert growers to the possibility that this pest may be present. Implementing a sound IPM approach of monitoring and executing good cultural and spray practices (including organic options) can keep this pest in check.

For more details, see…

http://www.ipm.msu.edu/SWD/ManagementRecommendations-RaspberryBlackberryAug2011.pdf

http://www.ipm.msu.edu/SWD/E-3140.pdf

http://www.oregon.gov/ODA/PLANT/docs/pdf/ippm_d_suzukii_id_guide10.pdf?ga=t

- Sonia Schloemann, UMass Extension Small Fruit expert

BACTERIAL LEAF SPOT MANAGEMENT FOR PEPPER

Bacterial leaf spot (BLS) is one of the most common diseases of pepper, one that can be very destructive once it takes hold. It is caused by the bacterium Xanthomonas campestris pv. vesicatoria, and there are numerous races of the pathogen. Tomato is also affected by this disease, but strains differ in their pathogenicity on tomato vs. pepper. Many cultivars of pepper have been bred for resistance to several races which are usually listed in the seed catalogue. Growing resistant varieties has made a big difference in reducing losses from BLS, especially in

bell peppers. Successful deployment of resistant varieties requires knowledge of which bacterial strains are present in a given region. For some specialty peppers there are no resistant varieties available.

Sources of infection are infected seed, infected residue from a previous crop, and movement from other infected crops or weeds. If a seed lot of one cultivar is infected, these plants can serve as a source of infection for the remaining cultivars, in the greenhouse or in the field. The most effective disease control is prevention. Crop rotation (at least two years away from tomato, eggplant or potato), use of disease-free seed, hot water treatment of seed, and greenhouse sanitation are important steps in prevention. Maintaining optimum fertility is also important; low nitrogen is associated with greater losses when BLS is present. However, excessive N can cause tip dieback especially when combined with copper applications and cloudy weather.

Regular scouting for symptoms is one of the most important management practices for bacterial diseases. Even when you are growing resistant pepper varieties, leaves still need to be examined because of the potential for development of a new race of the pathogen that is able to overcome resistance. Look for this disease early in the season, as symptoms may show up in the greenhouse or in a few plants soon after transplanting. Bacteria can be moved among transplants in the greenhouse.

Symptoms include brown to black irregularly shaped spots on the leaves; spots typically have a yellow border. Margins turn brown, curled or scorched. Infected leaves become yellow and drop from the plant. Fruit develops raised white or black scab-like spots. Yield is reduced by defoliation and the resulting sunscald, loss of leaf area for photosynthesis, and subsequent loss of vigor. Disease development is favored by high temperatures (especially nighttime temperatures > 75 F), as well as by high moisture (rain, fog, high humidity). Cooler nights, below 60 F, suppress the disease. Infection is spread from plant to plant through rain, irrigation, high pressure airblast sprayers, or movement by wind. It can also be carried on workers' hands and on equipment.

Detecting symptoms very early is critical because bacterial diseases are extremely difficult to manage with chemicals, especially if the environment remains conducive and/or the disease is well established before treatment begins. Preventive applications of copper are recommended before or immediately after a rainstorm, especially when heavy rain and wind is predicted, as these provide favorable conditions for movement of bacteria and can create wounds that provide an entrance place for bacteria. Spray susceptible varieties on a 7 to 10 day schedule if conditions remain favorable. Additional products to consider using with copper include Tanos, which is labeled for suppression of bacterial diseases and streptomycin (Agri-mycin), which can be used in greenhouses only.

- *R. Hazzard, adapted from an article by Meg Mcgrath, Long Island Horticultural Research Center, Cornell University, and Northeast Pepper IPM Manual by J. Boucher and R. Ashley.*

PEPPERS: WATCH FOR PEPPER MAGGOT FLY

Pepper maggot fly (Zonosemata electa) is closely related to the apple maggot fly and has one generation per year. Adults emerge in mid to late July and are active for several weeks, so this is the time to watch for their activity. Flies lay eggs directly into pepper fruit, therefore the damage often goes unseen until it is too late. In New England, the range of pepper maggot has been creeping northward and now extends into southern NH and throughout Massachusetts. Populations are spotty and rather unpredictable – that is, pest status is often a farm-by-farm or field-by-field phenomenon without any clear reason for high or low populations that occur in a particular place. The best way to detect activity is to look for stings on the fruit, and these are easiest to spot on cherry peppers.

Pepper maggot flies are smaller than a house fly, bright yellow with three yellow stripes on the thorax, green eyes, and clear wings with a distinct banding pattern. On a daily basis, flies enter the field and return to the surrounding forest – passing across the border areas. Females insert their eggs directly into the pepper fruit and leave a small dimple – an oviposition sting or scar.

The legless white maggots feed and tunnel inside the fruit, especially in the placenta. Maggots reach about ½ inch in length over a period of about two weeks, and do not have a distinct head capsule. When they are ready to pupate, they exit at the blossom end, leaving tiny round exit holes. These holes allow for the entry of pathogens into the fruit.

Sometimes the oval brown pupae can be found inside the fruit. Often damage is detected only because of premature ripening or decay of the fruit.

Pepper maggot monitoring: Maggots prefer to lay eggs in the small round fruit of cherry peppers. When these are planted in the border rows they work very well as indicator plants. The egg-laying stings appear as depressions or scars and are easy to find on these small, round fruit. By timing insecticide applications with the first occurrence of the stings on the indicator plants' fruit, damage to the main crop can be avoided with a minimum of spraying. If cherry peppers are not part of your crop mix, look for stings on bell peppers.

It's too late for this year, but if this pest is a concern for your farm, consider using perimeter trap cropping which is very effective. Two or three rows of hot cherry peppers can be planted around the perimeter of the pepper crop, encircling it like castle walls. These peppers are more attractive to the maggot flies than the sweet bells, so the flies will build up in the perimeter, allowing for a perimeter spray that will reduce pest populations and protect the main crop. Perimeter trap crop systems can be as effective as whole field sprays while dramatically reducing pesticide costs.

Pepper maggot threshold: If stings are observed on fruit, make two insecticide applications, 10-14 days apart, with a material labeled for pepper maggot. Pepper maggot fly activity can be very localized, and varies by farm, by region, and by year. Many farms never have a problem with this pest. Some may have it and not realize it, because it is possible to confuse maggot damage with damage caused by European corn borer. Check nearby fruit carefully for proper identification if fly has been captured. If a given farm has a history of pepper maggot activity, and pepper maggot, then it is recommended that an insecticide be applied on that farm. Farms that have never had a problem with this pest generally do not need to be concerned; however, the range of this pest seems to be expanding.

When the activity of European corn borer and pepper maggot fly overlap, use of Orthene at 8-10 day intervals for control of ECB will also provide control of pepper maggots. However other, selective insecticides for ECB will not control pepper maggot. Insecticides labeled for pepper maggot fly include Dimethoate, Malathion, Mustang (zeta-cypermethrin), and GF-120 Naturalyte (spinosad). GF-120 Naturalyte is OMRI listed, allowed for organic production. Begin applications as soon as monitoring indicates flies are present and use a large droplet size (4-6 mm) to optimize length of bait attractiveness. See Vegetable Management Guide for more details.

-R. Hazzard and A. Cavanagh, University of Massachusetts with source material from J. Boucher, University of Connecticut Extension

IT'S TIME FOR GARLIC HARVEST!

Mid to late July is the 'normal' harvest season for garlic, but this year the crop is maturing early and on western MA farms is ready for harvest. The ideal timing attains maximum bulb size (bulb size doubles in the last stage of growth), but does not allow the cloves to begin to separate. Separated bulbs sell and store poorly. Harvest when leaves begin to turn yellow, but when about 60% are still green. Check bulbs by cutting through the head sideways to see how well developed the cloves are. Cloves should fill the wrappers - if they seem a little loose, the garlic has a little ways to grow. A little of the very outer wrapper may have started to discolor at this point. Harvest before the bulbs pop, which can happen relatively quickly, especially in a wet year. *It is better to harvest too early than too late.*

Harvesting. Use hand tools to loosen soil under the bulbs or a mechanical harvester to undercut the bed. Pulling bulbs out when they are tight in the ground can open wounds at the stem/ bulb junction and allow infection. Treat the bulbs like eggs or apples: they bruise easily! Don't knock off dirt by banging bulbs against boots, shovels, or buckets – shake or rub gently, and leave the rest to dry out during curing. Fresh bulbs are fragile. Bruises will encourage infection.

Curing. Most growers will store their garlic for a period of weeks or months before selling. Curing is important for successful storage. Curing in the field runs the risk of sunscald, while poorly ventilated barns can result in loss from disease. Avoid high temperatures (over 90 F) and bright sunlight. A hoophouse covered with a sunshade cloth, with sides and ends open, with bulbs placed roots-up on 1" wire mesh, and maybe even a fan running, will provide for rapid curing. A well-ventilated barn will also work, but be sure that bulbs are hung with adequate air circulation, or on open racks up off the floor. Curing takes 10-14 days. Stems may be cut before or after curing. Curing is complete when the outer skins are dry and crispy, the neck is constricted and the center of the cut stem is hard.

Be on the lookout for garlic blight nematode which may have been distributed around New England on infected seed garlic. This nematode, which is also known as a bulb and stem nematode, causes bloated, twisted, swollen leaves, and distorted and cracked bulbs with dark rings. Infestation with this nematode can weaken plants, causing them to be susceptible to secondary infections. The UMass Plant Disease Diagnostic Lab can make a positive identification; call 413-545-3209 to submit a sample.

Storage conditions: After curing, garlic can be kept in good condition for 1 to 2 months at ambient temperatures of 20 to 30 °C (68 to 86 °F) under low RH, ie., < 75%. However, under these conditions, bulbs will eventually become soft, spongy and shriveled due to water loss. For long-term storage, garlic is best maintained at temperatures of -1 to 0 °C (30 to 32 °F) with low RH (60 to 70%). Good airflow throughout the vented bins or other storage containers is necessary to prevent any moisture accumulation. Under these conditions garlic can be stored for more than 9 mo. Storage at higher temperatures (60 °F) may be adequate for the short term, but it is important to select a place with low relative humidity and good air flow. As with onions, relative humidity needs to be lower than for most vegetables because high humidity causes root and mold growth; on the other hand, if it is too dry the bulbs will dehydrate.

The optimum conditions for seed garlic are 50 F with a humidity of 65-70%. Garlic cloves break dormancy most rapidly between 40 to 60 °F, hence prolonged storage at this temperature range should be avoided. Storage of planting stock at temperatures below 40 F results in rough bulbs, side-shoot sprouting (witches-brooming) and early maturity, while storage above 65 F results in delayed sprouting and late maturity.

-R Hazzard. Resources: NE Vegetable Mgt Guide, Oregon State, Wishingstone Farm, Astarte Farm, USDA Handbook 66.

COPPER FUNGICIDES FOR ORGANIC FARMS

The labeled fungicides available to organic growers that have demonstrated effectiveness in preventing late blight are based on copper, generally either copper sulfate or copper hydroxide. Effectiveness varies with the late blight strain that is present, and copper only works as a protectant. Given the presence of late blight infections in Massachusetts, organic growers are strongly advised to apply copper preventatively on a weekly basis. Regular applications of copper will also help to control other common tomato blights. Copper fungicides have no curative value, that is, they do not kill infections that are already present. Once an infection is established in your fields, spraying copper will do little to slow it's spread.

Using Copper. The copper ion is absorbed by the germinating spore, and the copper denatures spore proteins and kills the fungus before it infects the plant. Because there is no 'kick-back' or curative action, coppers must be applied regularly throughout the production season, beginning before the disease becomes established in the field. In dry conditions, coppers persists on plant surfaces. New growth would not be covered. Thus, when the foliage is growing rapidly or when there is frequent rain, applications are required more frequently in order to protect the foliage. Using an approved adjuvant or 'sticker' may help the product be more rainfast.

Human Health Hazards. Skin and especially eye exposure is the most serious risk associated with using copper hydroxide. The greatest health risk is to the person who mixes and sprays the material. Proper protective equipment should be worn when handling or applying any pesticide or fertilizer. The required protective equipment is specified on the label: long-sleeved shirt and long pants, chemical resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride, shoes plus socks, and protective eyewear. You may also want to consider wearing a respirator or at least a dust mask, especially for mixing. In addition, the product sometimes comes in a paper bag that has a tendency to leak out the seams. It would be wise to put the container in a double plastic bag or bin.

One copper product that is allowed in certified organic production AND is registered in MA is NuCop 50WP. Copper hydroxide is the active ingredient. There may be other products allowed for organic but it is not clear that any other are registered for use in MA. NuCop 50WP has a 24 hour re-entry interval which means that workers are not allowed to come in and pick fruit or do other field work for 24 hours after a spray application. Plan your spray and harvest schedule to accommodate your marketing needs as well as the required re-entry interval. Fruit may need to be washed before marketing, as copper leaves a blue residue on fruit as well as leaves.

Environmental Hazards. Some farmers have expressed concern about copper toxicity in the soil or with respect to soil microbes. Copper is actually a plant micronutrient; that is, it is an essential plant nutrient at low levels. In New England it

is more often deficient than excessive in soils. The amount found naturally in soils in MA ranges from 0.1 to 8 ppm. The desirable level for agriculture would depend on the crop to be grown and other soil factors such as pH. Copper does not degrade in soil or leach into groundwater, but becomes chemically bound up, especially with organic matter. An application of 1 lb of active ingredient per acre is estimated to raise the copper levels about 0.5 ppm. A single application of Nu Cop at 2 lb per acre with 77% AI adds about 1.5 lb copper per acre to the soil, or could raise the concentration in the soil by 0.5 to 0.75 ppm. Depending on the level in your soil, it would take numerous applications to exceed the levels that are within the normal range.

The cumulative effect of copper applications might be more of a concern in perennial planting systems. In annual rotational systems, where copper applications might only be made every 4-6 years, copper accumulation is less of a concern. Regular soil tests should be taken and copper levels in the soil should be monitored. In addition, copper can be very toxic to fish and aquatic organisms, so care should be taken to apply sprays properly and avoid drift and run off.

Note that copper will also protect tomatoes against early blight and Septoria leaf spot, which can progress rapidly and cause plantings to produce far less than their full potential yield. It will also protect potatoes from early blight.

High Tunnel Considerations. In greenhouse and high tunnel tomatoes, considerations include:

- Read the label to be sure that a product is labeled for greenhouse use. NuCop50W can be used in the greenhouse at the rates given on the label for the same crop in the field. The same protective great and restricted entry interval would apply. Apply with sides open for ventilation.

-If you suspect late blight, have the disease identified. Gray mold (Fulvia) and botrytis are common diseases in high tunnel tomatoes that look very much like late blight.

-If tomatoes are grown in the same area year after year, and copper is used, build-up in the soil is more likely. Include copper levels in your annual soil testing. Rotate to other crops!

Other products available for organic producers. The Bacillus subtilis product, Serenade (used at a rate of 4-8 lb every 5-7 days, with a 0 days to harvest interval) is labeled for suppression of late blight. This is a biological control product that needs-be applied before disease development. Supression is not control. Control may be limited under heavy disease pressure. Other fungicides labeled for late blight that are OMRI-listed include Sporatec, Sonata, and OxiDate. Check with you certifier regarding allowed status. Growers often ask about Oxidate; since it has no residual effect nor any protectant effect, it has demonstrated no efficacy in reducing, controlling or preventing late blight

SWEET CORN WEEKLY TRAP CAPTURES

Location	Z1	EII	Total ECB	CEW	FAW
CT Valley					
	0	0	0	15	
South Deerfield	0	0	0	0	
Sunderland	0	0	0	1	0
Hadley	4	7	11	0	0
Feeding Hills	0	0	0	3	0
Central & Eastern MA					
Spencer	0	0	0	0	0
Dracut	0	0	0	0	0
Tyngsborough	0	1	1	1	0
Lancaster	0	2	2	0	0
Concord	1	2	3	0	0
Millis	0	0	0		
Northbridge	0	1	1	0	0
Rehoboth	1	10	11		
East Falmouth	1	3	4		
NH					
Litchfield	0	6	6		
Hollis	0	0	0		
Mason	0	0	0		

in the field in disease management trials. In general, products available to organic growers are not likely to halt tomato late blight when the environment favors disease (cool and wet) or infections are already present.

--R. Hazzard, A. Cavanagh. Updated for 2012.

SWEET CORN REPORT

Harvesting has begun and more early blocks will be ready across the state this coming week. Customers are eager for local corn! Corn caterpillars are in the lull between European corn borer generations and before any major corn earworm flights reach New England. There are likely still some ECB larvae in emerging pretassel and green tassel corn blocks, scout and treat at 15% infestation. Fall armyworm is also showing no captures around the state. These will show up first in whorl stage corn. Be on the ready for changes in weather patterns especially storms reaching New England from the south. If you are releasing Trichogramma for ECB control, be ready for releases the week of July 9 or at the latest the week of July 16.

UPCOMING MEETINGS

Early Summer Pest Management Field Meetings for Vegetable & Small Fruit Growers

Cornell Cooperative Extension Capital District Vegetable and Small Fruit Program

Wednesday, July 11th, 2012

Join Dr. Tom Zitter and the team as we visit two Capital District farms. We will discuss diseases that we have seen this season and controls for problems that we anticipate arriving later in the summer.

10:00 am to Noon— Korona Korn and Veg Farm, 1979 County Highway 107, Amsterdam, NY 12010, Fulton County.
6:00 to 8:00pm—Engel's Acres, 445 Brunswick Road, Troy, NY 12180, Rensselaer County.

For more info call Chuck Bornt (518-859-6213), Crystal Stewart (518-773-0018) or Laura McDermott (518-791-5038)

UMass Fruit and Vegetable Twilight Meeting

July 31 from 5-7:30pm at Kosinski Farm in Westfield, MA. We will discuss IPM innovations for apples and blueberries, greenhouse tomatoes. More details coming soon!

UMass Greenhouse Crops and Floriculture Program: Great Ideas Summer Conference

Elm Bank Horticulture Center, 900 Washington Street (Rt.16) Wellesley, MA 02482

Thu, July 26, 2012, Time: 9:00 AM - 3:30 PM, See listing for more details:http://extension.umass.edu/floriculture/events/great-ideas-summer-conference.

University of New Hampshire Vegetable & Berry Twilight Meeting

Surowiec Farm, 53 Perley Hill Road, Sanbonrton, NH, 03239 , 5:00 PM - 07:30 PM. This meeting features a tour of Surowiec farm, owned and operated by Steve and Katie Surowiec. The farm grows pick-your-own blueberries and apples, strawberries and raspberries, greenhouse tomatoes, and several mixed vegetable crops. For more information contact Becky Sideman, becky.sideman@unh.edu, phone 603-862-3203

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.