Cornell University Cooperative Extension

Eastern NY Commercial Horticulture Program

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Weekly Vegetable Update

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North Country—Clinton, Essex, northern Warren and Washington counties

Warm temperatures arrived last week and a couple of days hit the high 80's. Plants surged in growth, both warm season crops as well as weeds. Cucumber beetles and flea beetles are increasing in numbers, and Colorado potato beetle adults will be laying eggs. Although we got off to a slow start the warm temperatures are letting plants, weeds and bugs catch up.

Swiss chard in the Hudson Valley.
Photo by TR

Mid-Hudson Valley—Columbia, Dutchess, Greene, Orange and Ulster counties

Needed rain on Wednesday/Thursday last week spurred additional growth that had been pent up from the sunny days we had preceding. Overall, things look good and if we get the predicted temperatures over the next couple of days we might even make up a few of the GDDs we are behind. In Sweet Corn we have seen a significant increase in ECB trap counts since late last week, up to 3 moths caught per night in two locations in Ulster County. In other areas such as Orange County we have not trapped any moths to date. Setting up traps in your own fields will give you the best indication of Lepidoptera pressure. If you want help with ordering and setting up traps, please do not hesitate to contact one of the educators/agents listed on the left bar of this page (more on sweet corn pest management inside this issue). In tomatoes we have seen some bacterial diseases already. It is so important to detect bacterial speck and canker very early in order to protect fruit from spotting. Plants with symptoms should be rogued ASAP and copper applied to the crop to limit spread. Storms with driving rains will quickly spread these diseases. It is always a good idea to keep workers out of fields when foliage is wet, including morning dews.

Bacterial speck on tomato.
Photo by TR

Tomato Leaf Symptoms

Once tomatoes are over their initial transplant shock and begin to push out new growth, growers often breathe a sigh of relief. Most growers got their plants in later than they would have liked but finally, whether inside a tunnel or out in the field, the plants are really taking off.

Tunnel grown tomatoes get more attention from growers than field grown but it's always a good idea to pay close attention to all your crops in an effort to catch problems early on. Here are a few leaf symptoms that may catch your eye this month. Remember you can call on any of us in the Eastern NY program to help you diagnose what's going on.

Photo A – leaf roll. *Photo by ADI*

Leaf Roll (Photo A) has a dramatic look and comes on suddenly, causing quite a shock to many growers. Luckily it's a physiological response to stress and the plants should grow out of it. It occurs most commonly the day after a heavy pruning in tunnels. If the soil is dry when you do the pruning, the stress will be even greater. Try to get into the habit of pruning a little bit every week, rather than one big pruning job less often. Sometimes it can't be helped so make sure your plants have a good soaking and let them grow out of it.

Photo B – typical virus symptoms. *Photo by ADI*

Virus symptoms (Photo B) are more subtle but very distinctive. Where leaf roll is usually a lengthwise curling of full-sized leaves, the various virus diseases cause cupping, oddly scalloped and cut, and odd color patterns on the leaves. This photo shows one example of what a virus can do to leaves, there are other variations but there is a similar oddity to them that makes them distinctively viral.

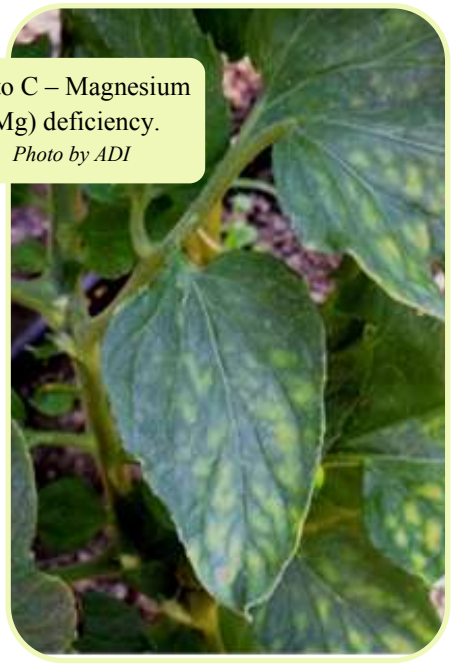

Photo C – Magnesium (Mg) deficiency. *Photo by ADI*

Magnesium deficiency (Photo C) can be startling but this is not an issue. It starts on the lowest leaves and works up the plant very gradually. It first appears when the first fruit cluster begins sizing up and as long as basic nutrient needs are being met, it is not a concern. Tunnel grown tomatoes push out vigorous growth and can become deficient more quickly than field grown. A foliar sample will give you much more accurate information. Epsom salts and sul-po-mag are some sources of supplemental magnesium. *-ADI*

Enrollment Reminder — **Don't Miss Out!**

Thank you to those of you that have enrolled in CCE Eastern NY Commercial Horticulture Program—we appreciate your support. You should have received your complimentary Cornell University Integrated Pest Management Guidelines and the seasonal newsletters you chose as part of your enrollment.

For those of you that have not enrolled, we invite you to do so as soon as possible by completing the enrollment forms that were mailed to you in early April. If you do not think you received them or misplaced them, contact Marcie Vohnoutka at 518-272-4210 or mmp74@cornell.edu for a copy.

Unless we receive your enrollment information by June 20th, any publications that you are currently receiving from the ENYCHP will end. If you have questions about enrollment please contact one of the educators listed on

European Corn Borer

Scouting can begin in fields that are in the whorl stage. Female ECB moths have been laying egg masses on the underside of the corn leaves and larval feeding should be evident in fields that are nearing the tassel stage. It is likely that corn with ECB injury will have higher damage levels along the perimeter.

Heavily infested sweet corn damage from the common army worm *Mythimna unipuncta*; dead larva at the base of plants.

Typical examples of ECB feeding are a series of straight line pinholes as well as "window pane" damage on the emerging leaves from the whorl. Window pane damage occurs when the young ECB larvae feed on the upper epidermal of the leaf leaving a clear lower level epidermal. Below are pictures that show both types of damage.

Research has demonstrated that applying insecticides for first brood ECB before the tassel emergence does not significantly increase control. In the whorl stage the ECB larvae are protected within the leaves of the whorl. It is recommended to wait until tassel emergence before applying insecticide. When the tassels begin to emerge the ECB larvae are exposed and begin to look for a more protected environment.

The threshold for insecticide application at the tassel emergence stage is 15% infested plants. *-CDB*

ECB pinhole damage.

ECB "window pane" damage.

Managing ECB in Plastic, Row Cover, or Transplanted Sweet Corn

The usual scouting and threshold recommendations do not apply for row cover, plastic, or transplanted sweet corn that is close to tassel emergence during the first generation flight of European corn borer (ECB). In these early plantings, larvae don't feed in the whorl and emerge in the tassel as they do in bare ground corn. To follow are suggestions for timing sprays in season extension corn. -CDB

Moths will be most attracted to, and deposit the most egg masses in, the most advanced corn, especially fields started under plastic or row cover. Corn that is in late whorl to tassel emergence stage when egg masses are being laid does not show the typical larval feeding in the emerging tassel that we see in bare ground corn that is in the whorl stage during the flight. For this reason, tassel emergence scouting and thresholds have not been

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Managing ECB in Plastic, Row Cover, or Transplanted Sweet Corn, continued from previous page

successful in plastic and row cover corn. Target newly hatching larvae using the moth trap catches or scout for egg masses to determine when sprays are needed. Growers have had good results when pheromone trap catches were used to time sprays for the first generation ECB in row cover or plastic corn. Growers waited until there was a significant increase in the ECB trap catches in their area and then timed sprays to coincide with egg hatch. ECB eggs require 100 degree days (base 50) from oviposition to hatch. Two to three applications bracketing the peak moth flight are generally effective.

Source: Abby Seaman and Marion Zuefle, Cornell University NYS IPM Program, Sweet Corn Pheromone Trap Network Report, June 3, 2014

Sweet corn started under row cover with traps set up along the edge.

HopGuard II

A new formulation of HopGuard now has a Section 18 emergency exemption for Varroa mite in honeybees, updating the prior HopGuard Section 18. A copy of the approved HopGuard II label can be found at http://pmep.cce.cornell.edu/regulation/sec18/2014/index.html. Users must have a copy of the Section 18 exemption in their possession at the time of use.

Source: Daniel Gilrein, Entomologist, Cornell Cooperative Extension/Suffolk County

Onion Bulb Mites

Increased sightings of mites are occurring this spring. If you have not already positively identified, but have some thin spots, you may be seeing mites.

Onion bulb mites

Signs/Identification:

- Look for patches of missing or wilted seedlings, often appearing as a circular spot. These can be difficult to find amongst the windbreak.
    - o This most often occurs in loop or flag stage since roots are few and plants are easily weakened or killed with just a small amount of feeding.
- Look for the next healthiest onion at the edge of the damaged area.
- Dig up the entire plant with soil around the roots and carefully remove soil.
- Look for root pruning/holes/infected areas. It is likely a magnifying lens will be needed (at least 10X).
- Look for mites. Adult females are the easiest to spot as shiny and translucent pearls with legs and a head. She is often surrounded by several smaller, juvenile mites.
- If the field is indeed infested with mites, you may have to consider destroying and replanting the field, depending on the damage. Any greater than 25-30% damage usually recommends discing. However, a 5% field can become a 50% field in just a couple of days.
- Mites do not only infect seeded onions but have been seen on bare-root transplants as well as sets. *-MRU*

Coming Soon .... Cucumber Beetles

We are just starting to see cucumber beetles in the southern part of the region, and expect to see widespread emergence as cucurbit transplants are set out. Covering young plants with rowcover provides some temporary protection and give seedlings a chance to get established before facing the feeding damage. Uncovered transplants can be riddled in a matter of days. Plants can tolerate minor feeding damage but the biggest concern with cucumber beetles is the bacterial wilt they transmit to plants of any age. Once flowers form, the best place to look for beetles when scouting is right inside the flower.

Striped Cucumber beetles feeding on a recently transplanted vine crop. *Photo by CDB*

Organic Controls: As mentioned, rowcovers can be used to help protect plants for feeding injury, but they need to be applied before cucumber beetles are found (if present they need to be applied as soon as a row of transplants is planted) and the edges need to be sealed to prevent beetles from getting under the covers. Dunking transplants into Surround (kaolin clay) before planting will protect existing leaves, but the new, emerging leaves will be vulnerable. Surround can also be used alone as a foliar application, but needs to be reapplied after each rainfall or irrigation event and can be hard to mix. Be sure to check your sprayer's filters and screens frequently when using this product as clogging occurs. Pyganic mixed with Surround can also be applied as a foliar application. The Pyganic can give you some quick knockdown of the beetle and the Surround can provide some residual control (though at high pressure you will rarely get full control). If using Pyganic, remember to apply it late in the evening as the sun goes down as it is very quickly degraded by sunlight.

Conventional Control: If using an in-furrow application of imidacloprid, the active ingredient in many materials such as Admire Pro, Advise 2F etc. for direct seeded or transplanted vine crops, the first thing to consider is what formulation you are using. If the product you have has a "2F" in the name such as Advise 2F (or other generic versions), it means that you have 2 lbs of active ingredient per gallon. If you are using Admire Pro (or generic versions), it has 4.6 lbs of active ingredient per gallon, which is twice the amount of active ingredient compared to 2F formulations!

In-furrow application for direct seeding: Research conducted with 2F formulations of imidacloprid has shown that 1.1 ounces per 1000 feet of row is adequate for striped cucumber beetle control. To determine the per acre rate at different spacings, take 43,560 square feet (the number of square feet in one acre) and divide it by your between row spacing. Take that value and divide it by 1,000. Finally, take that number and multiply it by 1.1 fluid ounces and that is the number of ounces you need to treat one acre. For example, if you plant your Jack-O-Lanterns on 10 foot centers, then you would take 43560/10 = 4,356 row feet. Divide that by 1,000 row feet: 4,356/1000 = 4.4 (this is the number of 1,000 row feet per acre per your spacing). Then take 4.4 and multiply that by 1.1 ml imidacloprid per 1000 feet = 4.8 ounces of imidacloprid 2F per acre. Most growers are aiming to apply their imidacloprid anywhere between 5 and 10 gallons of water per acre. If you have Admire Pro, essentially you will use half that rate (2.2 ounces per acre). Again I cannot stress the importance of knowing what formulation of imidacloprid you have!

Transplants: For transplant applications, apply it to the transplant flats a day or two prior to transplanting. Use a very low rate (0.02 ml/plant of Admire 2F formulation) or 20 ml per 1,000 transplants. It can be applied with a backpack sprayer, Dosatron or other injection watering system or with a watering can. To treat a flat of 200 transplants with Admire at this rate, a grower would need to dilute 4 ml (0.135 oz) of Admire in a volume of water sufficient to soak to soil mix evenly. Here is another trick—remember that 1 ml is equal to 1 cc and that most syringes will also give you ml measurements and they can be purchased at your local pharmacy or even Tractor Supply Company (without the needle of course). It is an easy and more exact way to measure out small quantities of product like this. This treatment will protect the plants for about 2 weeks, and after that may be followed by field application. To help make other conversions: multiply 0.02 ml per plant times the number of plants in your flat. Be sure to rinse the plants off after the application so that the imidacloprid gets washed into the soil. It needs to be taken up by the roots to be most effective. Remember, know your formulation - if you are using Admire Pro, the

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Coming Soon …. Cucumber Beetles, continued from previous page

recommend rate is 0.44 ozs (13.2 ml) per 10,000 transplants**. Note this is the rate for controlling aphids and whiteflies in cucurbit transplants. It is not labeled for control of cucumber beetles as transplant treatment.**

For more information on cucumber beetles and bacterial wilt visit these helpful links:

- http://vegetablemdonline.ppath.cornell.edu/factsheets/Cucurbit_Beetles.htm
- 2013 Production Guide for Organic Production of Cucumbers and Squash: http://nysipm.cornell.edu/organic_guide/cucurbit.pdf
- Insect Diagnostic Lab Factsheets for life cycle information on various pests: http://www.entomology.cornell.edu/cals/entomology/extension/idl/idlfactsheetlist.cfm

There are also more insecticides labeled for post emergent control of Cucumber beetles that can be found in the Integrated Crop and Pest Management Guidelines for Commercial Vegetable Production.
-ADI and CDB, edited by CLS

Pricing for Profit Workshop

June 18 at 6 pm

Hudson Valley Lab, 3357 Route 9W, Highland, NY

"What price should I charge?" "Where's the best place for me to sell my produce?"
"How can I make a profit at this?" "What is a market channel anyway?"

Are these questions you wonder about? On June 18 at 6 pm, Bob Weybright, Business Development Specialist with the Eastern NY Commercial Horticulture Program (ENYCHP) will be at the Hudson Valley Lab for a twilight presentation and discussion, including a light dinner.

He'll provide some suggestions that can help you find some answers to these and other questions you might experience over the course of your growing and selling season. Resources to help you determine a price, where to find price comparisons, and the ins and outs of various market channels will be discussed to help you feel more comfortable with your selling decisions.

Cost: $20 per person for those enrolled in ENYCHP, $30 for those not enrolled, light supper included. (For enrollment information contact Marcie at 518-272-4210 or mmp74@cornell.edu.)

We need a head count in order to have enough food so please mail your registration ASAP. Make checks payable to CCE ENYCHP. You can still enroll to get the discount; we will have enrollment forms available that night.

Mail registration to the Hudson Valley Lab, Attn. Teresa Rusinek/Pricing for Profit, PO Box 727, Highland, NY 12528. With your registration include:

Names of attendees

Farm name and address

Phone number where you can be reached

Email address

If you have questions, call Teresa Rusinek at 845-389-3562 or email tr28@cornell.edu.

Directions: The Hudson Valley Lab is on the southbound side of Route 9W, about 1/4 mile north of the Route 299 intersection; there is a divider, so if you're heading from the south on the northbound side of 9W proceed to the traffic light just past the lab where you can make a legal U-turn.

SCAM ALERT: Phone Scam Alleging Association with USDA Farm Service Agency

It has been brought to the attention of USDA's Farm Service Agency (FSA) that a phone scam is being perpetrated on FSA customers. Please share this alert with family, friends and neighbors.

The caller, who identifies themselves as a Farm Loan Services representative out of Washington, D.C. states that FSA "owes" you disaster assistance funds and proceeds to request your checking account information or requests a credit card number alleging that funds will be credited to these accounts.

SHOULD YOU RECEIVE A SIMILAR CALL, DO NOT, UNDER ANY CIRCUMSTANCES, PROVIDE PERSONAL OR FINANCIAL INFORMATION TO THE CALLER.

Questions?
If you have any questions or concerns regarding this issue, please feel free to contact your local FSA Office.
To find contact information for your local FSA office, go to http://offices.sc.egov.usda.gov/locator/app.

20th Annual Engineering Design of Recirculating Aquaculture (RAS) Hydroponic, and Aquaponic Systems Short Course

June 23-27, 2014

Mount Saint Mary College, 330 Powell Ave., Newburgh, NY

There are still plenty of spots open for the Cornell University's 20th Annual Engineering Design of Recirculating Aquaculture (RAS), Hydroponic, and Aquaponic Systems Short Course, June 23-27, 2014. Room check in is Sunday afternoon June 22 and class room instruction begins Monday morning June 23 at 8:30 am in Aquinas Hall. Course ends Friday afternoon.

The classroom course location is Mount Saint Mary College, 330 Powell Ave., Newburgh, NY 12550. The course is intended to give a thorough coverage of the engineering design, operation, and management of water reuse systems. One day of **hydroponics and one day of aquaponics** are also included, in addition to a local farm tour of a 2-acre hydroponic and 100,000 lb/yr tilapia farm.

At the conclusion of the course, individuals should be able to design their own water reuse systems and have a fundamental knowledge of the principles influencing design decisions. For students unable to attend the classroom course, we also offer a distance learning option. Registration is $1,000 classroom option (includes breakfast, lunch, and BBQ and the Timmons Ebeling text *Recirculating Aquaculture*), while the distance learning option is $250 within the U.S. and $300 to ship internationally. The class site is approximately 1 hour by car from metropolitan New York City (either Newark Airport or JFK airport); and onsite housing is available for $30 night/single or $45 night/double.

More information on the short course, both **Classroom and Distance Learning options**, can be found here: http://fish.bee.cornell.edu/short-course-info/. For directions to the Mount Saint Mary Campus go to http://www.msmc.edu/About_MSMC/Our_Location.

Walden Farmer's Market (Orange County) Looking for Vendors

Held on Thursdays from 2pm to 7pm from June 19th thru October 2nd.
Located on 1 Municipal Square in the Village of Walden (Orange County).

Contact: Kerri-Ann Lynch, phone 845-476-6241
email waldenfarmersmarket@yahoo.com

Have questions? Need something in the field or greenhouse checked out?

The Eastern NY Horticulture team has a number of expert educators throughout the region in the areas of vegetable, tree fruit, and small fruit production; business development and food safety/GAPS. Give one of us a call and we will get you in touch with someone who can help.

2014 Weather Table—This chart is compiled using the data collected by Northeast Weather Association (NEWA) weather stations. For more information about NEWA and a list of sites, please visit http://newa.cornell.edu/ This site has information not only on weather, but insect and disease forecasting tools that are free to use.

2014 Weekly and Seasonal Weather Information

	Growing Degree Information Base 50^{O} F			Rainfall Accumulations		
Site	**2014 Weekly Total** 6/2-6/8	**2014 Season Total** 3/1 - 6/8	**2013 Season Total** 3/1 - 6/8	**2014 Weekly Rainfall** 6/2-6/8 (inches)	**2014 Season Rainfall** 3/1 - 6/8 (inches)	**2013 Total Rainfall** 3/1 - 6/8 (inches)
Albany	**133.5**	**517.0**	**497.0**	**1.31**	**7.39**	**13.17**
Castleton	**128.9**	**494.1**	**501.1**	**0.37**	**8.61**	**9.70**
Clifton Park	**124.3**	**469.7**	**461.8**	**1.46**	**8.95**	**15.28**
Clintondale	**132.8**	**565.8**	**553.1**	**0.44**	**10.18**	**9.35**
Glens Falls	**116.0**	**489.0**	**421.5**	**0.47**	**8.49**	**11.74**
Guilderland	**120.0**	**482.5**	**446.0**	**0.66**	**1.31**	**2.39**
Highland	**126.3**	**558.4**	**562.0**	**0.69**	**10.20**	**7.83**
Hudson	**137.9**	**551.0**	**507.9**	**0.52**	**8.60**	**9.56**
Marlboro	**121.9**	**506.5**	**522.9**	**0.55**	**11.50**	**9.82**
Montgomery	**123.2**	**517.7**	**495.0**	**0.31**	**12.05**	**10.25**
Monticello	**94.5**	**360.0**	**371.5**	**0.00**	**5.48**	**0.12**[1]
Peru	**120.0**	**427.3**	**446.8**	**0.00**	**7.96**	**6.21**
Shoreham, VT	**127.2**	**442.0**	**474.7**	**0.13**	**7.54**	**9.58**
Wilsboro	**113.5**	**397.9**	**420.5**	**0.31**	**4.14**	**9.02**

[1] This unit was not working properly during 2013. We will try to find another nearby weather station to accurately reflect rainfall amounts for 2013.