Cornell University
Cooperative Extension

Eastern NY Commercial Horticulture Program

Vol. 1, Issue 8
May 23, 2013

Weekly Vegetable Update

ENYCH Program Educators:

Vegetables
Chuck Bornt
Cell: 518-859-6213
Email: cdb13@cornell.edu

Amy Ivy
Phone: 518-561-7450
Email: adi2@cornell.edu

Teresa Rusinek
Phone: 845-340-3990 x315
Email: tr28@cornell.edu

Crystal Stewart
Cell: 518-775-0018
Email: cls263@cornell.edu

Maire Ullrich
Phone: 845-344-1234
Email: mru2@cornell.edu

Fruit
Laura McDermott
Cell: 518-791-5038
Email: lgm4@cornell.edu
Berries

James O'Connell
Phone: 845-691-7117
Email: jmo98@cornell.edu
Berries & Grapes

Michael Fargione
Phone: 845-691-7117
Email: mjf22@cornell.edu
Tree Fruit

Kevin Iungerman
Phone: 518-885-8995
Email: kai3@cornell.edu
Tree Fruit & Grapes

Layout:
Carrie Anne Doyle

Content Editor:
Crystal Stewart

Regional Updates:

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

We finally got some much-needed rain this week, but not nearly enough. Light showers are predicted through this week. Temperatures have been up and down.

Last week's frost damage was variable. Growers who put out cucumbers and squash under rowcover had considerable damage but the growing points look okay in some fields. It will be interesting to see if much catfacing develops on unheated high tunnel tomatoes later on from those cold nights.

Weeds are exploding! Light scuffling when weed seedlings are tiny will really pay off. Staying ahead of them now will make a big difference later on. Try to work in time for this if at all possible.

Capital District—Albany, Fulton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, southern Warren and Washington counties

Many parts of the Capital District received some much needed rain yesterday and last night, but unfortunately some hail was also thrown into the mix. Reports from the Mid-Hudson valley indicate up to golf ball sized hail in some locations. If you did receive hail and want help figuring out next steps, please feel free to contact us. Fruit growers can also find resource people in the contact bar to the left.

Growers are gearing up to place the majority of tender transplants out over the next few weeks. Pumpkins are being planted, potatoes are coming up, and sweet corn plantings continue to move right along. Insect pressure is expected to pick up soon, so traps are being placed around the area to monitor sweet corn pests and Brown Marmorated Stink Bug.

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

Early last week the Mid Hudson valley experienced two mornings with temperatures in the low thirties, frost damage was limited as most growers were able to protect crops sufficiently with row cover. Soil temperatures are expected to finally warm up as temperatures go well into the 80's for most of the week. Fields are getting on the dry side once again. Pest wise, keep an eye out for onion thrips especially in transplants from Texas and Arizona. We have multiple reports of plants coming in already infested with thrips. No moths in Lep traps that have been up for a week in the earliest sweet corn planting in Ulster.

Considerations When Planting Sweet Potatoes

In the next couple of weeks I suspect many of you will be receiving your sweet potato slips and will start planting. We recently completed a Northeast SARE Grant for improving the yield and quality of sweet potatoes grown in NY. The project focused on different plastic mulches, variety selection and plant spacing/populations. These are some of the conclusions we drew: Black plastic remains the recommended plastic for sweet potatoes. We also focused a lot on the determining what plant spacing gave us the best yield and quality roots. It didn't make sense to me when we started looking at this project for a single row of slips to be planted down a 30—35" wide bed on 6—7' centers and at anywhere from 15—30" in-row spacing. Our data suggests that planting a double staggered row (like you do with peppers) at 15—18" in-row spacing resulted in the greatest number of marketable yields.

Here are some other thoughts on how to make sure your sweet potatoes are at their best:

1) Try to plant them as soon as you receive your plants—do not try to hold on to them for more then a couple days.
2) If you can't plant them right away, **do not put them in a cooler**—keep them in a cool, shady area. Coolers can be too cold and result in the plants getting injured.
3) If possible, open the boxes and spread your slips out if you can't get them planted right away.
4) Do not "soak" your plants in water! This does not help and usually only makes them slimy and encourages bacterial breakdowns. If you need to hold your plants for more then 3 or 4 days, place them standing up in shallow trays filled with sand and keep the sand moist.
5) Make sure the beds you are planting in are moist and maintain good moisture for at least 7—10 days after planting to ensure the plants start to root well.

Example of a 15" Double Staggered Row planting of sweet potato slips. *Photo by Chuck Bornt*

Fertility: Sweet potatoes do not require a lot of nitrogen. In fact, most research indicates that 50 pounds of actual nitrogen is plenty and more then that we end up with more growth cracking and rough root appearances. Some varieties such as Beauregard and Covington are less sensitive to the nitrogen levels, but still do not require more then the recommended 50 lbs. Varieties such as Georgia Jet are very sensitive to nitrogen and too much nitrogen is I think one of the reasons the root quality of this variety is so poor here most times. However, sweet potatoes do require a lot of potassium and it is not uncommon for them to require 120—150 pounds of actual potassium. Potassium helps ensure uniform roots and has been indicated in improving flavor and storability. Sweet potatoes require moderate amounts of phosphorous with 60 pounds per acre the general recommendation. However, these levels should be adjusted to your soil type and frequent soil nutrient testing. *-CDB*

Coming Soon .... Cucumber Beetles

Striped cucumber beetles overwinter as adults in crop debris, field edges and deep in the soil. Shortly after any members of the cucurbit family (cucumbers, squash, melons) are set out, adults move in and begin feeding. Covering young plants with rowcover can provide 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. To prevent bacterial wilt, keep the beetles under control! Once flowers form, the best place to look for beetles when scouting is right inside the flower. They are attracted to yellow so yellow sticky cards may provide some control, or at least alert you to the presence of the beetles.

Organic Controls: Rowcovers as mentioned before can be used to help protect plants for feeding injury, but they need to be applied before cucumber beetles are found 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 those leaves, but the new, emerging leaves will be vulnerable. Pyganic mixed with Surround can also be applied as a foliar application but will need to be applied often. The Pyganic can give you some quick knockdown of the beetle and the Surround can provide some residual control. However, is using Pyganic, I think it is best to apply it late in the evening when the sun goes down as it is very quickly degraded by sunlight. Surround can also be used foliar alone, but needs to be reapplied after each rainfall or

(Continued on page 3)

(Continued from page 2)

irrigation event and can be hard to mix. Be sure to check your sprayers filters and screens frequently when using this product as clogging can occur.

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 we need to know is what formulation we 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! If you aren't sure what formulation you have, call Chuck Bornt at 518-859-6213.

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 applicatons, 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

Striped Cucumber beetles feeding on a recently transplanted vine crop.

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 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*

Between Row Spacing in Feet	Amount per acre (ounces) of 2F formulation imacloprid (2 lbs active ingredient/gal)	Amount per acre (ounces) of Pro formulation imacloprid (4.6 lbs active ingredient/gal)
3	16.0 ounces	7.3 ounces
4	12.0 ounces	5.4 ounces
5	9.6 ounces	4.4 ounces
6	8.0 ounces	3.6 ounces
7	7.0 ounces	3.1 ounces
8	6.0 ounces	2.7 ounces
10	4.8 ounces	2.2 ounces

Starter Solution Fertilizers at Transplanting

Cool spring temperatures like we have been experiencing until very recently can set back growth in newly transplanted fields. One way to give transplants a boost through sub optimal temperatures is by using starter fertilizer solution. Starter solutions are mixtures of soluble fertilizer and water used to stimulate growth of young transplants such as tomato, eggplant, pepper, melons, cucumbers and cabbage. Soluble fertilizer easily dissolves in water and the nutrients are readily available for plant uptake. (Regular field grade fertilizers will not completely dissolve.) Starter solutions minimize transplant shock when plants are moved from a protected environment to an open field and help the recovery of disturbed root systems. Response to starter solutions is most likely when soils are cool and tests indicate low phosphorous and potassium. There is little risk of plant injury (burning) when using starter solutions. Dry fertilizer in close contact with plant roots can result in serious injury, while starters can be added directly to plant roots.

Phosphorus is essential for root growth. Even though this element is distributed throughout the soil, it is not readily available to plants when the soil temperature is 60°F. and lower. Since soil temperatures are low in the early spring, the addition of a starter solution at transplanting gives plants a boost by making phosphorus readily available. Additional phosphorus can compensate for low soil temperatures; however, there is a limit. For example, tomato growth will not be improved with additional phosphorus if the soil temperature is below about 56°F. But if the phosphorus is already near the plant, it will be available when the soil temperature rises to 58° - 60°F.

Many grades of water soluble fertilizer are available (e.g. 10-52-17, 14-28-14, 23-21-17, 20-20-20, 6-24-6, and 10 - 34-0). They are generally used at a concentration of about three pounds per 50 gallons of water and about one- third this strength on squash, melon and cucumber plants. For vegetable production, it is generally recommend that starters contain 2 to 3 times as much phosphorus as nitrogen or potassium. Application of high nitrogen starters could result in excessive vegetative growth. Always check the label and mix at the proper rate.

Starter solutions can be applied several ways. Some growers soak the root system with starter solution either by dipping trays or watering in overhead before transplants are set in the field. If starter solution gets on leaves be sure to rinse the leaves with water to avoid burn. Another method of application is at the time of transplanting by using starter solution in the water wheel transplanter tank. The primary concern is that roots have immediate access to a readily-available source of phosphorus. However you do it, the goal is to soak the entire root system uniformly with starter solution (about ½ pint per plant).

Note: Do not apply starter solutions when soils are excessively dry since such conditions could result in root damage. If plants are set into dry soil, water should be added first, followed by starter solution. *-TR*

Sources: University of New Hampshire Cooperative Extension http://extension.unh.edu/resources/representation/Resource000618_Rep640.pdf and 2013 Cornell Integrated Crop and Pest Management Guidelines for Commercial Vegetable Production

Herbicide Options for Cucurbits

Not much has changed with herbicide recommendations for pumpkins and winter squash and with Memorial Day coming up, a lot of pumpkins and winter squash will be going in the ground starting this weekend and into June. To get the most out of what we do have labeled remember the following:

1) Tank mixes are going to be better than single product applications.
2) A pre-emergent (to crop and weeds) or post plant application (right after planting before anything is emerged) will give you the greatest weed control.
3) Most of these work best as seed germination inhibitors – therefore the best control with occur when you do your final tillage, planting and herbicide application as close together as possible – do not till, wait a couple days to plant and wait another couple days to spray – get it done within a day or so.
4) Make sure that your fields are prepared correctly by reducing field clods so that the entire soil surface is covered is also important.
5) All of these materials need rain or irrigation to activate them.

With that said, here is the rundown on what is labeled for cucurbits:

Command 3 ME (clomazone) – annual grasses and many broadleaves but is weak on Pigweed and Common Ragweed. Command is labeled for all cucurbit crops but the company has made a point of labeling it on processing pumpkins only. Command may be used pre-plant, post

(Continued on page 5)

(Continued from page 4)

plant pre-emergent, pre-transplant (make sure plants are planted below the chemical barrier). The rates vary according to the crop and unlike the old Command formula **this one does not and should not be incorporated.** It can cause plants to turn white for a while, but yields are usually not affected. Be sure to review the label for crop rotation restrictions as fall grass cover crops could be injured. Again, use rates vary according to the crop, but 2/3 – 2.0 pints range. Typically we use 1.0 pint in the Capital District and results from our herbicide trial looked promising when tank mixed with 0.5 ounces of Sandea.

Strategy –This is a pre-mix material of the active ingredients is Command (clomazone) and an older product known as Curbit (ethalfluralin). It does a pretty good job on annual grasses and many broadleaves. Recommended as a post plant pre-emergent application or banded application between rows after emergence or transplanting or banded to row middles after a cultivation. **Do not incorporate!** It is labeled on all the crops and rates depend on soil type and organic levels and is recommended for 2 – 6 pints per acre, applied post plant/pre-emergent. Most growers are using the higher rate and have seen fairly good weed control but can be highly dependent on getting at least 1/2" of rain after application. Weakness—Ragweed and Smartweeds. Note that if you have some Strategy left from a previous season, make sure you shake the contents up completely. I have seen cases where the material was frozen during the winter and settled out or created a bunch of clumps when dumped out. However, if you continue to shake it (it might take a while), it will usually go back into suspension.

Dual Magnum (s-metolachlor) – This material controls mostly annual grasses and a couple broadleaves (especially galinsoga) but as a pre-emergent/post plant to direct seeded crops, I would not recommend using Dual Magnum alone, but rather in a tank mix with Command or Sandea. It is labeled as a 24 (c) and is now labeled on pumpkins and winter squash which is good news. Dual Magnum is labeled at rates of 2/3 – 1.33 pints and should not be incorporated. May be used post plant pre-emergent, post transplant (within 72 hours of planting), post emergent broadcast (4 true leaves required) following a cultivation or post emergent row middles. It will not work on emerged weeds which is why they recommend using it post after a cultivation.

However, this is an indemnified label which means you accept the risk of using this material and not the company. Because this is an indemnified label, several more steps need to be taken – first, you need to obtain a copy of the correct 24 (c) label and second, register with Syngenta that you are using this product on those specific crops. The good news is, this process is simple and can be done via the internet. First, go to www.farmassist.com where you will need to create a user name and password. Once logged in, select "Products" where a dropdown menu will appear. Under that, select "Indemnified Labels". Next, select "New York" under the state and "Dual Magnum" under the "product". It is very important to note here that **only the Dual Magnum formulation** is labeled on pumpkins and winter squash and not Dual II Magnum. Then the list of Dual Magnum indemnified labels come up and you need to find the appropriate one (on my computer it was the fourth one that included pumpkins and winter squash). Click the crop you are applying it to and the "submit" button. You will then be navigated to a "WAIVER OF LIABILITY AND INDEMNIFICATION AGREEMENT" page where you will either accept or decline the special instructions for using this product on the selected crops. If you accept it, the label you need to print will appear as a pdf file and you can then print it and you are ready to go. If you decline it, the labels will not appear and you legally cannot apply Dual Magnum to the selected crop. The good news is that farmassist will save all of the indemnified labels you have agreed to in case you lose your label and need another one. If you need assistance you can call the Syngenta Customer Resource Center at 866-796-4368. **Remember, you need to have a copy of the 24 (c) label in your possession when using this material.**

Sandea – This material is labeled on all cucurbits as a post plant/preemergent application. It controls many different broadleaves including galinsoga, lambsquater (pre-emergent), mustard species, ragweed, pigweed and velvetleaf. As a preemergent it also suppresses yellow nutsedge, but is very effective when used post emergent to control yellow nutsedge. Weakness – short residual of about 4 weeks, Common lambquarters breaks through as does Eastern Black Nightshade and grasses. It has a 0.5 to 1.0 ounce rate range; however I tend to recommend the 0.5 ounce rate as I have seen some delayed emergence and stunting when used at the higher rates. Also, the maximum use rate per season is 1.0 ounce which means if you use the higher rate at planting and you need to come back for a post -emergent application for nutsedge or some broadleaf control, you may not be able to use it post due to this restriction. When you purchase this material make sure the distributor provides you with a measuring container that is supposed to come with the package. Again, I would recommend tank mixing this with one of the materials that controls annual grasses such as Dual Magnum. I was quite impressed with the level of weed control and safety to the crop when we tank mixed it with 1 pint of Command 3 ME without being very expensive.

Please read the label for determining rates depending on your soil type for any of these materials. The information above is only a brief introduction as to what is labeled and how they might be used. These are also not the only materials labeled, but appear to be the most effective. *-CDB*

FREE Respirator PPE Fit Test Services through the End of June

By Ray Range, CCE Orange County, edited by CLS

Personal Protective Equipment (PPE), including gloves, goggles, boots, and respirators can protect against hazards and significantly reduce the risk of illness or injury. Appropriate PPE is a component of the Worker Protection Standard (WPS).

Even field workers who do not apply pesticides can benefit from the use of an N95 (NIOSH certified) mask to prevent dust inhalation while pesticide applicators need at least a half-faced cartridge mask if the label requires it. These masks **require a proper fit** to ensure the safety and health of those who wear them.

NYCAMH can provide pesticide PPE at low cost (please consult the Pesticide Product Label of the pesticide you are using for specific information about what PPE is required).

NYCAMH offers **FREE fit testing** for both style masks and will provide bilingual training on their use. On farm testing and training is currently underway throughout eastern New York. Current funding for these FREE services is available until the end of June 2013.

Your NYCAMH contact is Sherry Wyckoff. To schedule on-farm fit testing for your employees contact Sherry directly at 607-437-0166 or swyckoff@nycamh.com. Additionally NYCAMH offers many other **free** on-farm bi-lingual safety trainings and services. Find out more about NYCAMH online @ nycamh.com or call toll free: 800-343-7527.

Partial excerpt From the EPA
WPS — How To Comply Manual:

Employer Duties Related to PPE

1. Provide handlers with the PPE the pesticide labeling requires for the task, and be sure it is:
   - clean and in operating condition,
   - worn and used correctly,
   - inspected before each day of use,
   - repaired or replaced as needed.
2. **Be sure respirators fit correctly.**

Weekly and Seasonal Weather Information

Site	Growing Degree Information Base 50^{O} F			Rainfall Accumulations		
	2013 Weekly Total 5/16—5/20	2013 Season Total 3/1 - 5/20	2012 Total 3/1—5/20	2013 Weekly Rainfall 5/15—5/20 (inches)	2013 Season Rainfall 3/1—5/20 (inches)	2012 Total Rainfall 3/1—5/20 (inches)
Albany	**48.4**	**229.8**	**348.5**	**0.09**	**5.72**	**8.83**
Castleton	**33.5**	**215.2**	**357.3**	**0.03**	**1.29**	**8.49**
Chazy	**36.2**	**227.2**	**308.8**	**0.13**	**3.56**	**7.45**
Clifton Park	**47.1**	**215.9**	**321.7**	**0.09**	**5.30**	**9.75**
Clintondale	**59.5**	**253.2**	**284.5**	**0.18**	**NA**	**6.11**
Glens Falls	**34.4**	**192.5**	**241.5**	**0.10**	**6.20**	**7.21**
Granville	**38.0**	**NA**	**276.5**	**0.15**	**6.05**	**10.32**
Guilderland	**44.0**	**189.5**	**318.0**	**0.01**	**0.67**	**5.00**
Highland	**60.5**	**269.0**	**405.0**	**0.20**	**3.34**	**6.00**
Lake Placid	**9.5**	**66.1**	**NA**	**0.24**	**4.81**	**NA**
Montgomery	**52.1**	**212.5**	**363.0**	**0.19**	**5.00**	**NA**
Monticello	**37.3**	**148.1**	**268.0**	**0.00**	**0.00**	**0.71**
Redhook	**51.5**	**214.0**	**364.0**	**0.06**	**3.76**	**5.92**