



Cornell University
Cooperative Extension

Eastern NY Commercial Horticulture Program

Vol. 3, Issue 2
April 23, 2015

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: 845-691-7117

Email: tr28@cornell.edu

Crystal Stewart

Cell: 518-775-0018

Email: cls263@cornell.edu

Maire Ullrich

Phone: 845-344-1234

Email: mru2@cornell.edu

Kevin Besler

Phone: 845-344-1234

Email: [kreb98@cornell.edu](mailto:krb98@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

Dan Donahue

Phone: 845-691-7117

Email: djd13@cornell.edu

Tree Fruit

Anna Wallis

Phone: 443-421-7970

Email: aww232@cornell.edu

Grapes & Tree Fruit

Business and Marketing

Bob Weybright

Phone: 845-797-8878

Email: rw74@cornell.edu

Jesse Strzok

Phone: 608-556-4365

Email: js3234@cornell.edu

Layout: Carrie Anne Doyle

Content Editor: Teresa Rusinek

Regional Updates:

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

This is the time of year when you can really see what a difference geography and topography makes in the arrival of spring-like conditions. Here at the north end of our region the grass is just barely beginning to turn green. Garlic is up a few inches but some growers have still not uncovered theirs. There is still ice in the ground in the woods, even after last week's glorious spell of mild, sunny weather. The rain projected for this week should drive out any remaining frost from the ground and green up the fields.

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

Field prep and planting has definitely starting to progress in the Capital District! Peas, sweet corn, and even some hearty transplants are going in, especially last week with some moderate temperatures and some good dry soils. A major factor to early plantings, especially in the last few years, is the wind. I just don't seem to remember there being this many sustained windy days. On one hand it's great for drying our soils and letting us get onto fields earlier, but at the same time it can really punish young seedlings. This highlights another benefit of floating rowcovers, beyond frost and insect protection. If you can set up rowcovers to protect rather than batter crops in the wind (hoops and tight rowcovers are key), you can see a huge reduction in wind damage.

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

A lot has changed over the past two weeks. Temperatures went up and the piles of snow have melted away. Soils have finally warmed up and dried up so farmers were able to get out on their fields. Peas, spinach and brassicas have been planted this past week, and even some early sweet corn (under plastic). It's been a late start so everyone is happy to get going.

Early Season Muck Update: Planting onions has moved along nicely in the last couple of weeks. This past week's rain slowed folks down on a couple of days but it seems like we should be "all-in" by 4/25. We were late, clearly. As I write this on 4/18 there are only a few forsythia bushes with the first few blooms out. Onion planting has gone smoothly and quickly so far but there are still a few risks to consider for seeded onions. Please see "Early season assaults on seeded onion plants" in this newsletter issue to learn more about these risks.

Serving the educational and research needs of the commercial small fruit, vegetable and tree fruit industries in Albany, Clinton, Columbia, Dutchess, Essex, Fulton, Greene, Montgomery, Orange, Putnam, Rensselaer, Saratoga, Schoharie, Schenectady, Ulster, Warren and Washington Counties

First Leek Moth Adults Found

In spite of the cold conditions and slow start to spring in the northern region, we had our first catch of leek moth adults this week in Essex County - 55 moths in the 2 traps on April 20. You can see in the photo that the field is still dormant. The Clinton County traps have not caught any moths yet, but I expect that to change by the end of the week. The leek moth is one of the few moths that overwinters as an adult. It emerges in mid April in northern NY and begins laying eggs in about a week. Garlic is just emerging and is the first allium crop to be infested.

Although it seems like this is very early, it's actually a few days late. Masanori Seto has been collecting growing degree and life cycle data on leek moths in northern NY for 3 years and even this far north, we usually start catching the adults in mid April. This trap count of 55 is quite high so it's clear the cold winter weather has not deterred this pest in the least. -ADI



Early Season Assaults on Seeded Onion Plants

- 1) Frost at loop stage. When the seedlings are in loop stage they are quiet vulnerable to a freeze or even a frost. Their growing point is above ground and should that loop get too cold the plant may not survive. They are particularly vulnerable to low temperatures if they have suffered other assaults (see below). However, the next 10 days do not have anything below 35F predicted for Orange County.
- 2) High soil temperatures for un-emerged seedlings. Seedlings that have not emerged and suffer a sunny day with temps in the 70-80's (soil temps in the high 80's) may wither and die without ever emerging. This can be confused for poor germination but when investigated you can find that the seed did, in fact, germinate.
- 3) Crusting. The temptation to plant is great but soil that has a lower OM content (below 30%) is likely to crust when it's a bit too wet. Even higher OM soils can crust but it tends to be less brick-like. Of course, onion seedlings are weak little things that need every advantage early on. Crusting can significantly sap them of energy and definitely reduce stands.
- 4) Wind. OK, not a phenomena, really. Not only is wind a threat to uncovered germinating seeds, but also to those extra-sensitive loop onions. Should loop onions be pelted with soil particles, the damage may be too severe to allow for recovery.
- 5) Mites. Again, not extraordinary in their appearance but in the past few years I have been seeing more damage. More damage happens with slower-growing conditions too. Low temps or slow-starting seeds don't quickly produce as many roots early. Then the mites eat what few roots are there, killing the seedling. And, with the absence of Vydate for nematode control, there may be an increase in sightings this year. Keep an eye out for circular patterns of missing or weakened onions. If you suspect mites, please call for identification. No, there is not a certain control for 2015 but great information to help avoid or preempt them for 2016.

Quick Reminder:






Save at least 200 seeds of each lot you plant should you need to send them for testing later. Put them in a regular envelope (no plastic) and label the envelope with variety, lot, treatments and what fields it was planted to. That last one is just a "double-check" for the notebook you keep should there ever be a question. -MRU

Vydate L Approved for Use in New York (Except on Long Island)

The Section 24(c) Special Local Need Registration for DuPont's Vydate L has been renewed through March of 2017. Both bulb onions and garlic are covered under this renewal. Vydate L is an insecticide/nematicide that is thought to have activity against bulb mites, even though it is not specifically labeled to control this pest. This product may be difficult to obtain this year due to an accident at a US DuPont factory last year, however growers who have access to it and meet current pesticide certification requirements are now legally allowed to apply it.

Nutrient Deficiencies of Tomatoes

As many greenhouse and high tunnel tomato operations are now in full swing, it is important to keep an eye out for potential nutrient deficiencies. This is of particular importance when growing tomatoes in pots using a fertigation system to supply plants with the bulk of their nutrients. Below is a table detailing some common tomato nutrient deficiencies along with typical remedies. Remember that pH affects the availability of nutrients in the soil, so monitor your pH frequently and make sure it is at the proper level (usually 5.4 to 6.2) before adding amendments. Since many nutrient deficiencies are challenging to diagnose, growers may also elect to send plant samples to a tissue analysis lab which will assay plants for all macro and micronutrients. -KB

| | | |
|--------------------|--|--|
| <p>Calcium</p> | <ul style="list-style-type: none"> • Dieback at growing points including root tip death • Blossom end rot – distal end of fruit flattens out and develops necrosis • Apply calcium nitrate through irrigation system • Apply calcium nitrate/ chloride foliar sprays |  <p>sanluisobispo.com</p> |
| <p>Magnesium</p> | <ul style="list-style-type: none"> • Interveneal yellowing progressing to interveneal necrosis • Apply magnesium sulfate through the irrigation system |  <p>http://extension.umaine.edu</p> |
| <p>Nitrogen</p> | <ul style="list-style-type: none"> • Slow growth; thin and upright plants; small fruit • Rigid stems and petioles • Younger leaves pale green, older leaves yellowing • Increase nitrate applied through irrigation • Foliar sprays ineffective |  <p>Gerald Holmes</p> |
| <p>Phosphorous</p> | <ul style="list-style-type: none"> • Slow growth dwarfed plants • Drooping leaflets with outward curl; purple tint • Poor fruit production • Apply phosphate through drip irrigation |  <p>www.tomatogrowing.co.uk</p> |
| <p>Potassium</p> | <ul style="list-style-type: none"> • Yellowing of leaflets starting at tips and progressing inward • Progresses to interveneal browning and necrosis • Apply potassium through irrigation system as potassium phosphate or potassium nitrate |  <p>http://herb-stuff.com</p> |

Avoid Ammonium Toxicity During Cool Weather

This past week greenhouse plants really took off with some nice sunny days and warmer temperatures. Prior to this week, though, we had a lot of cooler, cloudy weather, and we seem to be heading into another little stretch of the same. Cool, cloudy weather creates a host of problems in the greenhouse. One of the preventable issues that comes with this weather is ammonium toxicity.

Many growers have been keeping greenhouses cooler to save money and sometimes to slow the growth of plants. However, keeping temperatures below 60°F, especially when media or soils are wet, suppresses the activity of nitrifying bacteria and means that ammonia based fertilizers are not converted to nitrate forms of nitrogen. Plants do not have the ability to stop taking up ammonia if it is present, and will end up reaching toxic levels which damage cells in the leaves and roots if ammonia levels are high for long periods of time.

Surprisingly, the first symptoms of ammonium toxicity on bedding plants and plugs is interveinal yellowing on young leaves, which progresses to dead spots. On older plants symptoms may occur on mid to older leaves. Leaf

curling is also a symptom in some plant species.

The easiest way to deal with ammonium toxicity is to avoid it. When we are having periods of cool weather, or if you are planning to keep the greenhouse cool in general, select fertilizers with low levels of ammonium fertilizer. Also avoid overwatering, as saturated soils do not convert ammonium to nitrate nitrogen quickly.

If you are already dealing with ammonium toxicity, raising the greenhouse temperature to allow biological activity to progress can help alleviate the problem. You can also topdress with gypsum at a rate of one tablespoon per 6-inch pot to facilitate leaching of ammonium. Water through with clean water, then follow a few hours with a 50ppm calcium nitrate watering so the plant has enough N fertilizer.

As always, it's best to get a diagnosis before beginning treatment, so if you aren't sure what you are dealing with, give one of us a call or send some pictures. -CLS

Source: Ammonium Toxicity: Avoid Getting burned this winter. By Dr. Neil Mattson, Cornell University.

Food Safety First

What's more important than flavor and appearance of your produce? Food safety. Many high-risk activities are obvious and avoided by the great majority of producers. While everyone knows that workers need to wash their hands after using the restroom and before handling fresh produce, it might not be obvious that the temperature difference between certain crops and the wash water (tomatoes and peppers, for example) should not be more than 10 degrees Fahrenheit or you risk infiltration of pathogens into the body of the fruit. It might not be common practice to use a sanitizer in your single-pass brush washer water, but it actually should be. As the season gets going and things get busy, it is easy for food safety to be put on the back burner. Remember that now is the time to get ready for and set up appointments for USDA Good Agricultural Practices (GAPS) audits or other third party audits such as global GAP or SQF. There

are grants available that will cover most of the cost of your first audit. Now is the time to plan ahead *to get ahead* of food safety, because the FDA's Food Safety Modernization Act (FSMA) is hitting the ground in October. This new Federal law will be the first to regulate production practices for fresh fruit and vegetables, and its focus is on the prevention of microbial contamination.

If you want to learn how FSMA will affect you, or if you just want to learn more about food safety, or have a CCE food safety specialist visit the farm and help you do a food safety risk assessment of your operation, get in contact with our food safety and GAPS coordinator: -ES

Erik Schellenberg
Email jk2642@cornell.edu
Phone 845-344-1234

Eastern NY Commercial Horticulture Website

For event announcements and registrations, previous issues of our newsletters and more, please visit the Eastern NY Commercial Horticulture Team's website at <http://enych.cce.cornell.edu/>. We hope you bookmark it on your computer and begin using it as your 'go to' website for production and marketing information.

Email or call any of the educators with questions or comments on the website – we want to make it work for YOU!

Ariston: New Fungicide Registered in New York

Ariston contains chlorothalonil plus cymoxanil, the active ingredient that is also in Curzate and Tanos. It is a standard resistance management practice to pre-mix a broad spectrum fungicide with a fungicide like cymoxanil that is at risk for resistance to develop in pathogens. Ariston is broadly labeled reflecting the activity of chlorothalonil. It is recommended used to manage diseases that cymoxanil has targeted activity for, which are those caused by oomycete pathogens. They are on the Curzate label: late blight in tomato and potato and downy mildew in cucurbits. Curzate is also labeled for downy mildew in spinach and lettuce. It is distributed by Sipcam Agro USA, Inc. This and other NYS pesticide labels can be viewed and downloaded at: <http://pims.psur.cornell.edu/ProductName.php>.

Source: Margaret McGrath, Long Island Fruit and Vegetable Update, No. 3, April 16, 2015

Bacterial/Angular Leaf Spot in High Tunnel Production

Last week I identified angular leaf spot on a planting of Zucchini in a high tunnel with supplemental heating. It was all the same variety which already had some fruit set. The plants were under row cover and the HT was not well vented for some time allowing the humidity and condensation to build up. Because leaves were wet over an extended period of time, the bacteria were able to flourish. -TR

The following is excerpted from: Assorted Foliar Diseases of Cucurbits, Thomas A. Zitter, Cornell University

This bacterial disease can occur on most cucurbits, including cucumber, muskmelon, pumpkin, and winter squash. The disease is less common on cucumber because resistant varieties are widely grown.

Leaf spots are variable in size and may be angular in shape because leaf veins limit enlargement of spots. Initial symptoms appear as brown water-soaked spots.

Fruit spots are smaller than leaf spots and are usually superficial but can develop into deeper rots if secondary soft-rot bacteria invade.

The bacteria can survive for possibly 2 years in soil or debris from diseased plants. It is also known to be associated with seed.

Bacteria can enter through wounds or stomates. Moisture in the form of rainfall or relative humidity greater than 95 percent for several days is required for infection and later disease development. Dry weather for 2 weeks can arrest the disease.

Controls include the selection of resistant cucumber varieties, use of disease-free seed, and a 2year rotation out of all cucurbits. Check with your seed supplier for the current list of resistant cucumbers. Copper fungicides can be applied to slow disease spread during particularly wet periods but can be dropped if dry weather continues for 2 weeks.



Angular leaf spot,

Photo by TR

2015 Weather Table—We are again happy to supply Growing Degree Day and Precipitation information this year from selected weather stations around eastern NY. Please note that some locations are outside NY. We felt that there was significant production in the area and because there were no immediate weather stations located around these areas, we chose to use the closest one we could find. If there are other weather stations that you feel are missing or are redundant, please let us know. This chart is compiled using the data collected by Northeast Weather Association (NEWA) weather stations and is available for free for all to use. 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.

| 2015 Weekly and Seasonal Weather Information | | | | | | |
|---|---|--|--|--|---|--|
| Site | Growing Degree Information Base 50⁰ F | | | Rainfall Accumulations | | |
| | 2015 Weekly Total 4/13 - 4/19 | 2015 Season Total 3/1 - 4/19 | 2014 Season Total 3/1 - 4/19 | 2015 Weekly Rainfall 4/13 - 4/19 (inches) | 2015 Season Rainfall 3/1 - 4/19 (inches) | 2014 Total Rainfall 3/1 - 4/19 (inches) |
| Albany | 31.4 | 39.9 | 41.5 | 0.11 | 2.43 | 3.74 |
| Castleton | 32.2 | 41.3 | 42.3 | 0.10 | 2.34 | 3.93 |
| Clifton Park | 31.2 | 38.0 | 30.9 | 0.03 | 1.66 | 4.12 |
| Clintondale | 51.8 | 60.3 | 51.3 | Na | 2.07 | 5.41 |
| Glens Falls | 13.4 | 15.9 | 24.5 | 0.02 | 1.43 | 4.65 |
| Guilderland | 22.0 | 27.5 | 35.5 | 0.14 | 2.68 | 0.41 |
| Highland | 51.8 | 60.3 | 48.4 | 0.23 | 4.59 | 5.35 |
| Hudson | 39.7 | 49.2 | 46.4 | 0.09 | 3.37 | 4.22 |
| Marlboro | 43.7 | 48.2 | 42.8 | 0.26 | 3.80 | 4.93 |
| Montgomery | 30.6 | 46.0 | 42.5 | 0.18 | 4.12 | 4.69 |
| Monticello | 17.3 | 17.3 | 28.0 | 0.01 | 0.02 | 3.31 |
| Peru | 16.7 | 25.3 | 18.3 | 0.12 | 1.89 | 3.25 |
| Shoreham, VT | 19.7 | 25.7 | 23.9 | 0.01 | 2.29 | 3.82 |
| Wilsboro | 15.0 | 21.4 | 16.2 | 0.01 | 0.24 | 2.39 |

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