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Eastern NY Commercial Horticulture Program

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Weekly Vegetable Update

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Regional Updates:

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

The dry weather has helped the soil dry out and warm up but now we're so dry a soaking rain would be welcome. The season is off to a slow start but it has really picked up just this past week with sun and temperatures in the 70's.

Weeds are popping up shortly after field preparation; a well-timed, shallow cultivation during this dry weather will really knock them back nicely. Try to get the seedlings when they are young and barely visible and cultivate as shallowly as possible to avoid bringing more weed seeds to the surface to germinate.

Image: a greenhouse hoping to move some baskets for Mother's Day so that the rest of the plants have enough light and space. Remember that some flower can harbor vegetable diseases (petunias to tomatoes, for example) so stacking plants is a disease liability. Image: CLS

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

The warm, dry weather has been great for getting field work done, and planting and transplanting are moving along very nicely. As much as we hate to think of adding one more thing to the to-do list, if the dry weather holds it is worthwhile to get the irrigation systems set up and running. Direct seeded crops need some moisture to germinate, and the transplanted crops will soon use up transplant water on these warm, windy days. Remember that early water stress can impact future yield, and be ready to water when your plants need it. An additional benefit to irrigating is that many of our herbicides need moisture to be activated, so you will be helping your weed control as well. The same is true if stale seedbedding—you may need to prompt that first flush of weeds so you can then control it.

Greenhouses are absolutely packed, and growers know they need to move some plants for the health of their entire houses. The warm weather and Mother's Day should help bring plant densities back down to a reasonable level.

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

It is quite dry here and as this is written, on 5/4, we are awaiting some much needed thundershowers. Onion seedlings have begun to emerge and all seems well. Due to the heat of this week a close eye must be on the barley/oats as it will blaze past 5 leaves making Fusilade applications less effective and resulting in more escapes as weeds. Many other cool seasons crops have also been planted and it seems as though, for the most part, growers are caught-up with the planting they can do for now. Garlic is 6-8" and little bulblets have formed nicely.

Watch for Cabbage Maggot Flies

Figure 1: Cabbage maggots feeding on cabbage stems: maggots are legless, tapered and white in color, and are usually less than 1/3 inch in length. (Picture courtesy of Michigan State University)

In the last week I've seen quite a few brassicas going in the ground and with the soils starting to finally warm up, they are getting off to a fairly good start. Cabbage maggot is the pest to be thinking about right now. Cabbage maggots can stunt or kill young plants as a result of root feeding. I have also seen where this feeding injury may not kill the plant outright but leaves a wound for other diseases to get in and started and finally finish the job. Don't forget that cabbage maggot can also attack other crops such as turnips, radishes and daikon (all in the Brassica family).

Cabbage maggot flies overwinter as pupae in the soil and emerge in early spring usually about the same time as yellow rocket or wintercress starts to bloom. We can also predict when they are going to emerge based on the number of Growing Degree Days or GDD's that accumulate during the spring. Table 1 gives approximate percent emergence of adults based on 40^0 Fahrenheit.

Table 1: Cabbage Maggot Degree-Day Model
(accumulations are in °F)

Cabbage Maggot Stages (Model by: J.L. Jyoiti and A.M. Shelton)	
Stage	Accumulated Base 40 Degree-Days
1st Emergence	288 +/- 15
25 percent	366 +/- 5
50 percent	452 +/- 14
75 percent	547 +/- 66
95 percent	697 +/- 14
Overwintering generation	809 +/- 3

The number of accumulated GDD's for select sites around eastern NY can be found in Table 2. I've also included in the table the "Forecasted date of 50% emergence" of the flies which is the trigger for insecticide treatments to begin. Seedlings, transplants or root crops present around the time of peak flights should be protected by an insecticide treatment or with row covers. These are not definite dates, but using past weather data and future weather forecasts, these dates are "predicted" dates for half of the flies to emerge. If your location or a location near you does not appear in Table 2, please visit the Cabbage Maggot Prediction Model on the Network for Environment and Weather Applications or NEWA website. If you need help interpreting the information , please feel free to give me a call at 518-859-6213.

Generation	Accumulated Base 40 Degree-Days for Peak (50%) Emergence
First	1261 +/- 59
Second	2176 +/- 38
Third	3014 +/- 6

Once emerged the cabbage maggot fly lays small, white eggs at the base of the plants near the soil line. As the eggs hatch the maggots burrow into the host plant and begin to feed. In rare instances, eggs can be killed if soil temperatures exceed 95^0 F in the top 2-3 inches. However, because this rarely happens for the first flight of flies and eggs, insecticides may be required. The most effective insecticides have been chlorpyrifos (eg Lorsban 4E, 75 WG, or 15G) and diazinon (Diazinon AG500). Because there are some label restrictions, please read the labels carefully for rates and application techniques. However, the best use of these materials is when the applications are applied to the base of the plants after transplanting in 100 to 200 gallons of water per acre to help the insecticide penetrate to the root zone.

Table 2: Accumulated Growing Degree Days as of May 4, 2015 for Cabbage Maggot Emergence at base 40^0 F for selected sites within the ENYCHP area. Values based on NEWA Cabbage Maggot forecasts.

Location	Accumulated GDD's (F^o)	Forecasted date of 50% emergence		Location	Accumulated GDD's (F^o)	Forecasted date of 50% emergence
Albany	350	5/8		**Highland**	397	5/6
Castleton	346	5/8		**Hudson**	360	5/8
Clinton-dale	397	5/6		**Montgom-ery**	379	5/7
Glens Falls	258	After 5/9		**Peru**	268	After 5/9

Last year you may recall reading in this newsletter about a new 2 (ee) label we received for Coragen (*chlorantraniliprole)* on cabbage maggot. Coragen should be applied at a rate of 5.0 fluid ounces per acre as a water transplant treatment at planting in a

Continued on next page

Cabbage maggots, continued from previous page

minimum of 2.0 fluid ounces of solution per transplant. For the best results, the product needs to be taken directly up by the roots so it needs to be either put directly into the planting furrow or in the plugs—DO NOT use it as a post-plant drench as it will not be as effective! Do not apply more than 15.4 fluid ounces of chlorantraniliprole containing products per acre per crop. Growers should have a copy of the 2(ee) label and the full Coragen label in their possession when applying this product. For a copy of the 2(ee) label, contact Chuck Bornt at 518-859-6213 or cdb13@cornell.edu or http://pmep.cce.cornell.edu/profiles/insect-mite/cadusafos-cyromazine/chlorantraniliprole/coragen_2ee_0112.pdf

This year we have another product that received registration called Verimark *(cyantraniliprole, Group 28 insecticide similar to Coragen)* that is also labeled for cabbage maggot. It can be used similarly to Coragen as a in-furrow application or in the transplant water (minimum 2 fluid ounces of water per plant) **but** one of the main differences between Verimark and the other labeled products is that it can be used as a transplant drench *"by growers or commercial transplant producers no earlier than 72 hours prior to planting in the field. Use only on transplants grown in soil/potting media."* The following information comes directly from the Verimark label:

"Follow these steps to calculate the amount of VERIMARK™ and water to use:
1. Determine the number of plants per acre to be planted.
2. Divide the desired VERIMARK™ rate (fl oz/acre) by the number of plants per acre to be planted (this provides the fluid ounces of VERIMARK™ per transplant).
3. Multiply the fluid ounces of VERIMARK™ per transplant times the number of plants in each tray to determine the fluid ounces of VERIMARK™ per tray.
4. Multiply the fluid ounces of VERIMARK™ per tray times the number of trays to be treated.
5. Determine the amount of water needed to thoroughly drench transplant plugs in a transplant tray without runoff through the bottom of the tray (see directions for application below). The amount of water needed may vary by size of the transplant and plug. Multiply the amount of water needed per tray times number of trays to be treated.
6. Mix the amount of VERIMARK™ in the volume of water needed to drench the desired number of trays and follow application instructions below.
Application should be made with properly calibrated spray equipment with continuous agitation.
Application: If possible discontinue watering 24 hours before treatment so spray solution is absorbed quickly. Apply as a broadcast low pressure coarse high volume spray so that solution runs off from the foliage to the soil/potting media in the tray, but it does not runoff from the bottom of the tray. If necessary, wash solution from foliage to soil by making a second pass with water only before the spray solution dries. It is critical to drive as much of the spray solution as possible into the soil/potting media to maximize product performance. Make application no longer than 3 days before transplanting in the field. Allow tray to dry before transporting to the field for planting, and do not handle treated trays prior to 4 hours after the application without appropriate personal protection equipment as described in the agricultural use requirements section of this label. Do not mix any other product when applying VERIMARK™ using this application method unless crop safety has been previously shown with the tank mix."

Organic Cabbage Maggot Control:
The following information on cabbage maggot is from Ruth Hazzard and was found in the UMASS Vegetable Notes, Volume 26, No. 5: "An organic product that may have repellent effects is Ecotrol G, a plant based-granular with several aromatic oils that is applied to the furrow. This is exempt from pesticide registration, so does not have an EPA number or official label. Floating row covers provide an effective barrier against this pest. Place the cover as soon as the transplants are set. Do not use where the same crop family -- brassicas or onions -- were grown last year, as flies left in soil could emerge under the cover. Replace cover after weeding operations. As soil temperatures rise, first flight ends and crops grow large, covers can be safely removed.

Cultural practices and natural controls: Crop rotation contributes to keeping populations low; greater distances are more effective. Fall tillage to bury crop residues and to expose over-wintering pupae is also important. Bury, compost, or haul away onion culls—do not simply pile them somewhere on the farm. In a vigorous brassica crop, cultivation that brings soil up around the stem may help encourage formation of adventitious roots from the stem, which can help compensate for root loss even if maggots are present. Conditions that favor vigorous growth will enable the plant to compensate and outgrow moderate amounts of root injury.

Avoiding damage by later planting: The first flight and egg-laying period is generally most intense in the first half of May, depending on accumulated growing degree days – thus, it will vary with the season and location. After the first flight is over, and as soils heat up, fewer eggs are laid and those that are laid are less likely to survive. Planting from late-May into June is generally safer than the first half of May." -CB

Pollution in the Greenhouse: Identifying and Preventing Ethylene Damage

Ethylene is a colorless, odorless gas and one of the five major classes of plant hormones. It is produced by plants and helps regulate growth, flower and leaf senescence and abscission, and fruit ripening. While the ethylene produced by plants is necessary for proper growth and function, exposure to excessive amounts can cause detrimental effects and lead to crop damage. Symptoms of ethylene poisoning include slow growth, bud or flower abortion, malformed leaves or flowers, leaf chlorosis or necrosis, and leaf epinasty (downward curling leaves that remain firm). Tomatoes and leafy greens, including brassicas, lettuce, and spinach are among the most ethylene-sensitive vegetables.

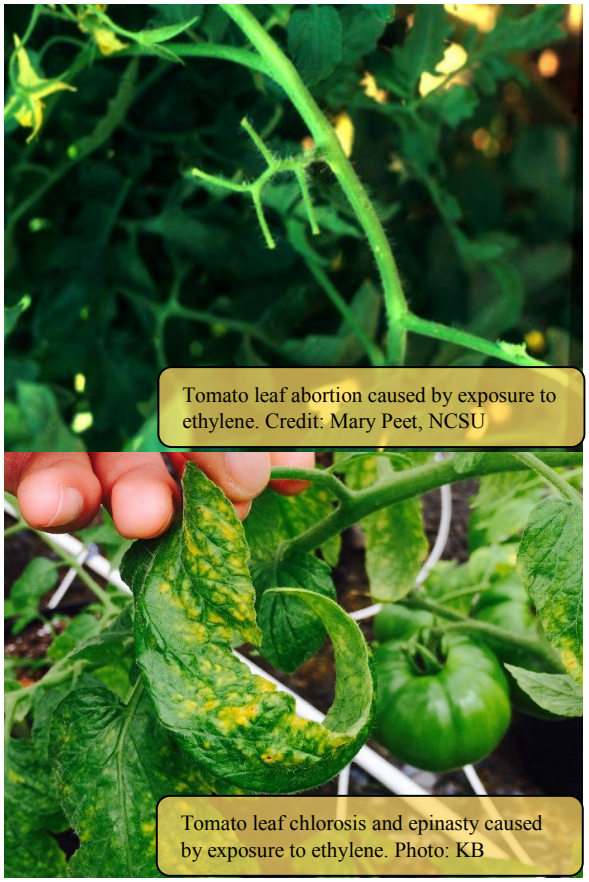
Ethylene pollution in the greenhouse most commonly comes from incomplete combustion of fuels used for heating. Normal wear and tear can lead to cracks in the heating and ventilation system. Cracked heat exchangers or leaky gas lines can cause the release of ethylene into the greenhouse. Cracks and leaks can be detected by visual inspection or by applying soapy water to joints, seems, or other vulnerable areas and watching for the formation of bubbles.

The type of heater you are using in your operation can also affect the likelihood of ethylene becoming a problem. While unvented heaters are generally cheaper and more efficient than vented heaters, they also release more pollution into the greenhouse. To help reduce the problems associated with this, a distribution tube should be installed to dilute the flue gas and reduce the concentration of ethylene. For vented heaters, make sure vent stacks extend at least 2 feet beyond the top of the greenhouse and check stacks for blockages on a regular basis.

Complete combustion of your fuel is also necessary to prevent the accumulation of ethylene and other gases. Burners must be supplied with an adequate stream of oxygen to ensure complete combustion; your furnace flame should be blue and not orange or yellow. Oxygen intake recommendations call for 1 square inch of vent cross-sectional area of opening from outside air for every 2,500 Btu capacity of the heater.

Although heating units are the primary source of ethylene pollution in the greenhouse, other sources of ethylene can be problematic and include exhaust fumes from trucks or other machinery entering the greenhouse, cigarette smoke, ripening fruits, and dying or decaying plant material.

Most growers detect harmful ethylene levels by observing damage to sensitive plants. However, the Plant Disease and Insect Clinic at North Carolina State University accepts air samples for ethylene testing, if you would like to test ethylene levels. Be sure to take an air sample on a cooler day when your heating unit is running. It is important to note that ethylene damage can be the result of acute or chronic exposure, so a negative test result does not necessarily rule out ethylene as the culprit. *–KB, edited by CLS*



Tomato leaf abortion caused by exposure to ethylene. Credit: Mary Peet, NCSU

Tomato leaf chlorosis and epinasty caused by exposure to ethylene. Photo: KB

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!

Wash Water Considerations

Although spring came late this year, the first vegetable harvests are days away. Asparagus and early baby greens will be here soon. Of all produce, leafy greens are responsible for the highest percentage of foodborne illnesses. The reasons for this are that they are generally consumed raw, they are generally washed before being packed and shipped, and they grow very close to the ground where there are many chances for the introduction of microbial contamination. Good Agricultural Practices (GAPS) in the field are your first line of defense in delivering a food safe product. Ensuring that the field has no previous contamination such as wildlife scat is an important first step before planting. Using clean water for irrigation is also critical. Surface water sources should be tested for generic E. coli at least twice per season, and the test results should be less than 126 colony forming units (CFU) or most probably number (MPN) per 100 ml. Once the greens are ready for harvest, they should be harvested with clean hands and sterilized knives and loaded into clean or preferably sterilized transportation crates. They should be transported in a clean and covered vehicle to the packing house. Once in the packing house, greens are often washed in dump tanks. The water used in all washing must be of potable quality, and there should have zero detectable coliforms. This water must be tested. Additionally, water in the tanks should be treated with a sanitizer of your choice such as chlorine labeled for use in washing fruit and vegetables by the EPA, or another sanitizer such as Tsunami or Sanidate. Instructions on the label must be followed carefully to maintain the appropriate level of available sanitizer. Keep in mind that the purpose of this is to sanitize the water, not the product. Contaminated greens are NOT sterilized by this process, it is merely meant to prevent cross-contamination so that one piece of contaminated lettuce doesn't contaminate the entire lot. The sanitizer will also increase the shelf life of the product by reducing plant pathogens. After washing, the greens should be packed in new or cleaned and sterilized packing material and put in a cooler or refrigerated truck to be brought down to temp.

If you have any questions regarding washing procedures or any aspect of food safety, contact Erik Schellenberg. 845-344-1234, jk2642@cornell.edu.

Eurasian milfoil as a fertilizer?

Eurasian milfoil is an invasive aquatic weed that is choking out many lakes and ponds. There are services that remove it by the truckload in an attempt to control it, and Fledging Crow Farm in Keeseville has been trying various ways to this waste milfoil as a soil amendment. They have added it to their compost piles, tilled it into their fields and used it as a mulch under tomatoes in a high tunnel. For more information or to share any experiences others have had with it, contact Ian at http://www.fledgingcrow.com/

Images: closeup of Milfoil (WI DNR) and an infested lake (image: syracuse.com)

Wash Station Set-up Meeting Scheduled for May 27th

Join Cornell Vegetable Program's Robert Hadad to learn how to design, build, and operate a small-scale, DIY post-harvest handling system! This great workshop will focus on the trifecta of good washing and handling—food safety, maintaining high quality and efficiency, and affordability for new and small growers. The session starts with a discussion and hands-on demonstration of how to design and set-up your wash line, tables, and packing shed, with a focus on safe and efficient product flow to separate "dirty" field harvested produce from the washed and "clean" final product. Next, we'll look at setting up standard operating practices covering a range of methods of washing produce, including dunking, spraying, and aerating, as well as the why and how of using organic sanitizers. This session finishes with an examination of clean-up procedures and post-harvest handling considerations, including re-cooling, packing, and storage. If you want to build or upgrade your wash lines and post-harvest handling techniques and produce a safer, longer storing product, this workshop is for you!

When: May 27th, 10:30 am-1pm
Where: Freebird Farm, 497 McKinley Rd, Palatine Bridge, NY 13428
Cost: $10 per person or $15 per farm. Lunch is included.
Please pre-register by calling Marcie at (518) 272-4210 or on our website: enychp.cce.cornell.edu
Questions? Call Crystal: 518-775-0018

Copper Fungicides For Managing Diseases On Vegetable Seedlings In The Greenhouse:

By *Dr. Margaret McGrath, Long Island Fruit and Vegetable Update, No. 5, April 30, 2015*

Copper fungicides provide broad□spectrum control of several fungal and bacterial pathogens, thus they are often selected for general disease management. Note that young seedlings growing in a greenhouse can be more sensitive to pesticides than field□grown plants.

There are many copper products available differing in active ingredient, use directions, and REI (see list below). REI ranges from 4 to 48 hr. Since seedlings need to be checked and watered at least once a day while growing in a greenhouse, workers need to have the following PPE if they might contact anything that has been treated (plants, soil, or water): Coveralls over long□sleeved shirt and long pants, chemical resistant
gloves made of any waterproof material, chemical resistant footwear plus socks, chemical□resistant headgear if overhead exposure, and protective eyewear. It is also an agricultural use requirement to notify workers of the application by warning them orally. With some products (ex Badge) there are additional requirements for greenhouse use reflecting the fact copper causes moderate eye irritation: See label for more
details.

Some copper fungicides, ingredients, REI, and greenhouse use information, are listed here:

Badge SC. 17% copper oxychloride + 15% copper hydroxide. 48 hr. Greenhouse use section has rate for some crops, range is 1□2.5 tablespoon per 1,000 sq ft.

Badge X2. 24% copper oxychloride + 21% copper hydroxide. 48 hr. Greenhouse use secon has rate for some crops, range is 0.5-1.5 tablespoon per 1,000 sq ft.

Camelot. 58% copper salts of fatty and rosin acids. 12 hr.

Champ WG. 77% copper hydroxide. 24 hr. For greenhouse use, follow rates for field use. One level tablespoon per gal of water is equivalent to 1 lb per 100 gallons.

Cueva. 10% copper octanoate. 4 hr. 1 fl oz per gal water is a lower label rate (label range is 0.5 – 2 gal per 100 gal water).

Cuprofix Ultra 40 Disperss. 71% basic copper sulfate. 48 hr. Rate on label for greenhouse use: One level teaspoon per 1,000 sq ft (equivalent to 0.5 lb/A).

Kocide 3000. 46% copper hydroxide. 24 or 48 hr. One level tablespoon per 1,000 sq ft. is equivalent to 1 lb/Acre.

Nordox 75. 84% cuprous oxide. 12 hr. 0.5 oz per gal water is rate recommended by company.

NuCop HB. 77% copper hydroxide. 24 hr.

Endosulfan (Thionex, Drexel Endosulfan) Phase-Out Reminder:

Endosulfan is being phased out and can no longer be used on many crops. Uses end on apple, blueberry, peppers, potatoes, pumpkins, sweet corn, tomato & winter squash by 7/31/15. Source: *Dan Gilrein, Long Island Fruit and Vegetable Update, No. 5, April 30, 2015)*

Weather Information and Growing Degree Days

As we start another growing season and newsletters, I thought I would take a minute to bring you up to date on the weather table that we have been including in the Vegetable Weekly newsletter for a number of years now. Not much has changed except that we've added a few new stations and removed a few others. This information is taken from various weather stations across eastern NY from the Network for Environment and Weather Applications or NEWA. The NEWA network is maintained by Cornell University and the New York State Integrated Pest Management Program, but NEWA serves more than just NY. So, if you are wondering why we are reporting information from other states it's probably because there is no station within NY around that region, but we feel that there is still enough production in that area to warrant including the information.

Second, there are lots of formulas for determining growing degree days (GDD's), but we decided to use what is called the averaging method. This method attempts to calculate the amount of heat accumulation above a minimum threshold temperature or "base" temperature. For our table, we decided to use the Base 50^{o} F as this fits the temperature requirements of the warmer season crops such as tomatoes, peppers, sweet corn etc. For cooler season crops such as cabbage and broccoli a 40^{o} F base can be used. In the case of some crops such as sweet corn, there are both a minimum and maximum base temperature. This is because we know that corn does not grow when temperatures are below 50^{o} F or above 86^{o} F.

Calculating GDD's using the "averaging method": If the maximum temperature was 78^{o} F and the minimum was 47^{o} F for May 1st, the average temperature was 62.5^{o} F. We are using a base of 50 so 62.5 – 50 = 12.5. So, for May 1st, we accumulated 12.5 GDD's. Now, if the average temperature is below 50, there are no degree days accumulated and zero is reported. Luckily you don't have to do these calculations on your own unless you have a max/min thermometer at your farm and want to track the GDD's. All of this information can be found on the NEWA website at http://newa.cornell.edu/ plus lots of other information. If you need a short tutorial on where to find this information, please feel free to give me a call and I can walk you through it.

Why are growing degree days important? First, it can give you an idea of how two or more seasons might compare to one another. Second, most seed catalogs list variety maturity in Days to Harvest or (DTH). However, some may also list the number of GDD's it takes a crop to mature so this is another method for determining maturity for some crops (sweet corn is the best example I can think of). However, I would say the most popular way in which we use GDD's is in Integrated Pest Management (IPM) systems. We can use GDD's to determine important events in an insects lifecycle such as emergence from overwintering stages, egg laying, etc. This information can be used to help target scouting or help time pesticide applications etc.

I hope that as you read the current and future issues of the Weekly Update and you find us mentioning GDD's as it relates to a certain pest or timing of the season, you'll have a better understanding of what we mean. -*CB*

2015 Weather Table—The weather information contained in this chart is compiled using the data collected by Network for Environment and Weather Applications (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

	Growing Degree Information Base 50^{O} F			Rainfall Accumulations		
Site	**2015 Weekly Total** 4/27 - 5/03	**2015 Season Total** 3/1 - 5/03	**2014 Season Total** 3/1 - 5/03	**2015 Weekly Rainfall** 4/27 - 5/03 (inches)	**2015 Season Rainfall** 3/1 –5/03 (inches)	**2014 Total Rainfall** 3/1 - 5/03 (inches)
Albany	**49.7**	**93.7**	**73.0**	**0.02**	**2.45**	**4.54**
Castleton	**45.7**	**90.0**	**72.5**	**0.01**	**2.35**	**4.34**
Clifton Park	**50.6**	**92.6**	**55.7**	**0.02**	**1.68**	**5.15**
Clintondale	**54.0**	**125.1**	**96.0**	**0**	**2.07**	**8.02**
Fishkill	**42.4**	**101.6**	**Na[1]**	**0**	**2.68**	**Na[1]**
Glens Falls	**25.5**	**42.9**	**69.0**	**0.01**	**1.44**	**8.30**
Griffiss	**25.0**	**35.2**	**44.0**	**0**	**4.91**	**8.83**
Guilderland	**35.5**	**66.5**	**54.0**	**0**	**2.68**	**0.43**
Highland	**54.0**	**125.1**	**92.3**	**0**	**4.59**	**8.13**
Hudson	**47.9**	**104.8**	**83.0**	**0.02**	**3.39**	**5.45**
Marlboro	**45.4**	**105.9**	**74.8**	**0**	**3.80**	**7.30**
Montgomery	**54.4**	**115.9**	**75.0**	**0**	**4.12**	**7.63**
Monticello	**24.3**	**42.5**	**41.0**	**0**	**0.02[2]**	**4.06**
Peru	**29.9**	**55.2**	**48.7**	**0.08**	**1.97**	**4.86**
Red Hook	**42.2**	**96.2**	**95.0**	**0.01**	**4.53**	**0.40**
Shoreham, VT	**31.7**	**57.4**	**49.7**	**0.03**	**2.32**	**4.96**
Wilsboro	**21.8**	**43.4**	**40.3**	**0.14**	**2.39**	**3.20**
South Hero, VT	**32.4**	**50.2**	**33.3**	**0.15**	**3.12**	**5.08**
N. Adams, MA	**14.1**	**23.6**	**49.5**	**0**	**2.95**	**6.13**
Danbury, CT	**33.1**	**71.8**	**61.0**	**0**	**3.64**	**9.03**

Na[1]: The Fishkill site is new for 2015 so there is no historical data to report.
Na[2]: The Monticello station is not properly recording data at this time.