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Weekly Vegetable Update

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

The weather has remained cool and with off and on showers and sun the past week so crops continue to progress slowly. Cool pockets are very apparent this time of year with some protected areas much farther ahead than cooler hollows. There have been some close calls with frost in those cooler areas but most growers either have protection for their tender crops or are still waiting to transplant them.

Weeds are popping up like mad. If using cultivation to control weeds remember to focus on the white thread stage. This is when the root first emerges from the seed, before any leaves are even visible. Plants are the most vulnerable at this stage and are therefore much easier to control with just a light cultivation. If you miss this stage, then at least get them as soon as you can; the smaller the better.



A field of recently transplanted tomatoes doing very well.

Photo by TR

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

Growers continue to make progress planting though heavy rains from last week have some fields still too wet to work. Some crops have been hit particularly hard by the relentless winds we've had. A few nights with temperatures in the upper 30's low 40's have slowed things down a bit but I'm still seeing good growth in general. The cooler temps and rain haven't slowed the flea beetles one bit and I've already seen significant populations in Bok Choi (apparently a favorite). See Crystal's article on this tiny but mighty pest!



Fields ready for transplanting. Photo by TR

Welcome Dan!

We are pleased to announce that Dan Donahue has started as a Cornell Cooperative Extension (CCE) Regional Fruit Specialist in the Hudson Valley. Dan has been hired by CCE of Ulster County as part of the Eastern New York Commercial Horticulture program. He will be based out of the Hudson Valley Lab in Highland, NY and will be filling the vacancy left by Mike Fargione.



Dan completed a Bachelor of Science degree in agronomy at Cornell University, then went on to receive a Master of Science degree in entomology from Virginia Tech. His career experience in the commercial fruit industry includes: agrochemical research; commercial fruit production and farm management; fruit purchasing and packing; cider production and retail produce operations; government & university relations; fruit industry education, as well as organizational administration, information technology, sales, and marketing.

Cercospora Samples Needed

Periods of warmer, wet weather are favorable for development of Cercospora leaf spot, a perennial disease of beets, spinach, and Swiss chard. Symptoms include small circular tan to brown lesions with a distinctly dark red/purple to brown halo. The centers of spots may be lighter on beets than Swiss chard. On Swiss chard, the spots are often so numerous that they may coalesce to cause some leaf distortion. Leaves in the center of the plant may be less affected.

Cercospora leaf spot survives as sclerotia between crop cycles in residues from infected crops, in weed hosts like Lamb's quarters, in the soil for up to 2 years, and on infected seed. High levels of infection can occur from just a few infected plants. Several cycles of infection can occur throughout the growing season whenever high humidity and temperatures are in the 70's and 80's. Rain splash, wind, overhead irrigation, insects, workers and equipment can all spread this fungus.

Management includes burying infected crop residues and destroying volunteer plants and weed hosts. Start with certified, disease-free seed or treat seed with hot water or fungicides. Rotate out of spinach family crops for 2-3 years to reduce disease in the soil. If disease is present, do a once-over cut then destroy the residue instead of waiting for chard or spinach for regrowth. Avoid planting succession crops close together, as disease can move from one planting to the next. Avoid overhead irrigation if possible. In tunnels, keep an eye on humidity and ensure good air movement.

There is a great need to implement an effective fungicide resistance management program against the leaf spot pathogen by alternating or using a mixture of fungicides with different modes of action and other IPM strategies. Resistance to Quadris

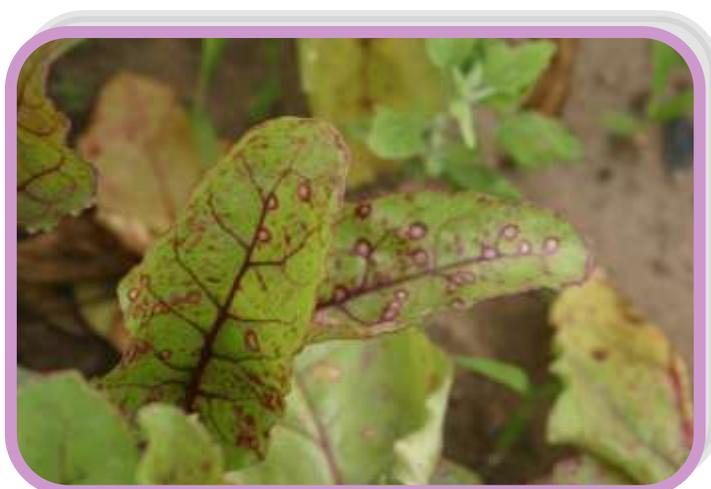


Image source U-Mass, available online at <http://extension.umass.edu/vegetable/sites/vegetable/files/articles/images/cercospora%20beet.jpg>

(FRAC group 11) was confirmed in laboratory tests in 2012. Do not apply more than 1 application of Quadris or other strobilurin (group 11) before alternating with a fungicide that has a different mode of action. Use fungicides as preventative treatment prior to infection.

If you are seeing Cercospora, a Ph.D. student with Chris Smart, is in need of some isolates.

If you would like to help out, you can send samples to:

Amara Dunn
630 W. North St.
Geneva, NY 14456
Plant Pathology – NYSAES

If you need help diagnosing this or any disease, please contact one of the ENYCHP team specialists. -CLS

Source: *Updating Foliar Diseases of Beets and Carrots and Their Management*, by George Abawi, Kundan Muktan and Julie Kikkert, Cornell University Dept. of Plant Pathology and Plant-Microbe Biology, NYSAES; CCE Regional Vegetable Program

Considerations When Planting Sweet Potatoes

I suspect many of you will be receiving your sweet potato slips soon and will start planting. 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 than a couple of 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 than 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.
- 6) Sweet potatoes can actually tolerate a wide range of pH levels, with the optimum between 5.8 and 6.3.
- 7) Most research indicates that 50 pounds of actual nitrogen is plenty and more than 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 than the recommended 50 lbs.
- 8) Sweet potatoes require a lot of potassium: rates are 120—150 pounds of actual potassium. Potassium helps ensure uniform roots and has been indicated in improving flavor and storability.
- 9) Sweet potatoes require moderate amounts of phosphorous with 60 pounds per acre as the general recommendation. However, these levels should be adjusted to your soil type and frequent soil nutrient testing.
- 10) And probably the hardest of all—the warmer your beds are at planting, the better your plants will do—I know this is hard as we would like to get as much growth as possible because they are such a long season crop so we put them in as soon as possible. However, you will be ahead of the game if your beds can reach soil temperatures in the mid to upper 60's.

The last bit of information that I'll leave you with is while doing some recent reading, it was brought to my knowledge that sweet potatoes actually do not fair well in soils with high levels of organic matter. High levels of organic matter have been linked to root staining and some overall poor root quality such as long spindly roots. -CDB

Watch Those Temperatures

Just another reminder that even though we teetered on the edge of frost the last couple of mornings, temperatures in high tunnels, crops under rowcovers or especially those under clear plastic hoops (such as sweet corn) that are used, can get very hot on bright sunny days! The following information is from Dr. Steve Reiners of Cornell University Department of Horticultural Sciences and can be used as a guide to know when to remove covers before it's too late! -CDB

Most of the published temperature guidelines list maximum temperatures at which either vegetative growth becomes limited or reproductive capabilities are threatened, i.e. flowers or fruit fall off. Temperatures at which vegetable plants may die varies and depends not only on the vegetable type but also on other factors such as whether irrigation is being provided or for how long the high temperature occurs. Also, a transplant will be under much greater stress than a plant that is direct seeded.

The following table lists temperatures at which severe stress will occur, possibly death, especially if soil moisture is low. These temperatures refer only to potential crop death. **Temperatures 15 to 20F lower than those listed in the table will result in the loss of flowers and fruit** and will negate the positive effects of early warming under row covers.

Crop	Maximum Temp Fahrenheit (F)
Sweet Corn	120
Watermelon	115
Cucumber	115
Squash	115
Eggplant	110
Hot Pepper	110
Sweet Pepper	105
Tomato	105

GAPs Education Update for Eastern NY

There is help on the way!!! You may have noticed we held a GAPs training recently in Albany County and that is part of an initiative to increase the number of farmers with GAPs certifications. The outreach has 3 parts:

- More GAPs programs in counties through the Fall of '14, Spring of '15 & Fall '15. As FSMA (Food Safety Modernization Act) comes on-line, those trainings will be added to the schedule as well, depending on what the final rules say for farmer certifications.
- One-on-one assistance with GAPs plans. It has come to our attention that many of you have attended trainings and started plans and the plans sit languishing on a shelf, not yet to be applied during an inspection. We hope to help remedy this. For a small fee (\$10/hr) staff will help you polish up those plans, point out ways to get the farm inspection ready and get you all the way to the inspection.
- Assistance with identifying other wholesale quality factors. Staff will be helping farmers identify non-GAPs specific quality factors. These factors may be related to food safety, but not necessarily. They will all be related to package quality and uniformity to aid in additional wholesale sales.

CCE Orange received a grant provided by the Local Economies Project of the New World Foundation as part of its Hudson Valley Farm Hub programming to do this work in "Wholesale Readiness". We have hired a person to do the bulk of the work but he is not available to start until September. In the meantime, we have Regina (Gigi) Jennings working on setting up trainings and meeting with farmers who would like to move forward with their plans, on a part-time basis. The granter is most interested in farms Saratoga County- south and west to Sullivan but is open to assisting farmers in the whole ENY Team area.

If you have questions about how this program might help you advance your wholesale presence, please call me, Maire Ullrich, at 845-344-1234 or e-mail mru2@cornell.edu. -MRU

What is the National GAPs Program?

The National GAPs Program was established in 1999, funded by CSREES-USDA and US-FDA, and based at Cornell University. The goal of the National GAPs Program is to reduce microbial risks in fruits and vegetables by developing a comprehensive extension and education program for growers and packers

The GAPs Program has collaborators in 26 states throughout the nation and has created many educational materials to help implement good agricultural practices on the farm. The Good Agricultural Practices Network for Education and Training (GAPsNET) creates a universal portal bringing GAPs related information together in one, user friendly web site for growers, packers, farm workers, extension educators, scientists, state and federal government personnel, and other interested stakeholders.

Our [Research and Extension Database](#) provides a searchable database of research and extension articles, access to multilingual educational materials, and links to GAPs collaborators and programs at other institutions. The searchable citation database is updated through monthly, automated searches of AGRICOLA and PubMed databases. Site users can search under specific GAPs topics such as water, manure, and worker training as well as by a specific commodity, or can search the entire database using key words to find the most current GAPs information and recommendations.

The database was created by the National GAPs Program at Cornell University with support from its collaborators at 26 Land Grant Universities across the US. It was developed with assistance from Cornell Cooperative Extension IT-team and library professionals at Cornell University's Mann Library.

For more information, contact Betsy Bihn at (315) 787-2625 or e-mail her at eab38@cornell.edu.



Post Emergent Sweet Corn Herbicide Options

Early plastic corn that has had the plastic removed or rowcovers taken off in the last week or two looks good, but as I would expect, weeds are also looking pretty good under the covers. There are several post emergent herbicides that have proven to work pretty well most of the time. Impact and Option are both labeled for sweet corn and control many of the troublesome grasses and broadleaves that have been hard to control in the past.

A note about adjuvants and nitrogen additives:

Keeping all of the different active ingredients or chemicals straight is almost as hard as determining which adjuvants and nitrogen additives you need to add to achieve the best performance. I've tried to give you some indications for the different materials recommended by the labels and the company representatives, **but I highly encourage you to read the labels!** And if you are going to be tank mixing more than one herbicide, I highly recommend that you read the labels and make sure that the chemicals and almost as important, the additives are compatible. This is not only for crop safety, but efficacy of the materials used too!

Impact at a rate of 0.75 fluid ounces plus MSO (methylated seed oil) or COC (crop oil concentrate) and a sprayable grade nitrogen such as AMS or UAN are recommended adjuvants (see label for rates). Impact controls several species of grasses including barn-yard

grass, fall panicum, foxtails, crabgrass and several broadleaves such as lambsquarter, ragweed and velvetleaf. Best control will also occur if broadleaf weeds are less than 4" tall and grass weeds are less than 3" tall. We have also seen that adding 0.25 lbs of atrazine improves weed control. Please be mindful that there is a 45 pre-harvest interval for sweet corn and an 18 month rotational restriction for most vegetable crops with atrazine. Key for this material is to make sure the weeds are growing to take up the herbicide and to minimize injury to the corn.

Option is another choice, especially if Quackgrass is a problem, but will also control several different broadleaves and grass species post emergent in sweet corn. Again, there is a 45 pre-harvest interval with sweet corn and it should be tanked mixed with MSO and either UAN or AMS and at least 0.25 lbs of atrazine for improved weed control. Like Impact, it is not recommended that Option be applied to corn that is drought stressed, in saturated soils or experiencing other poor growing conditions. Option can be broadcast sprayed on corn in the V1—V6 growth stage (see note below about growth stages) or applied using drop nozzles to corn in the V6—V8 stage. Do not broadcast apply to corn with more than 6 leaves as concentrating sprays in the whorl will increase crop injury (ear malformation). It works best if most broadleaves are

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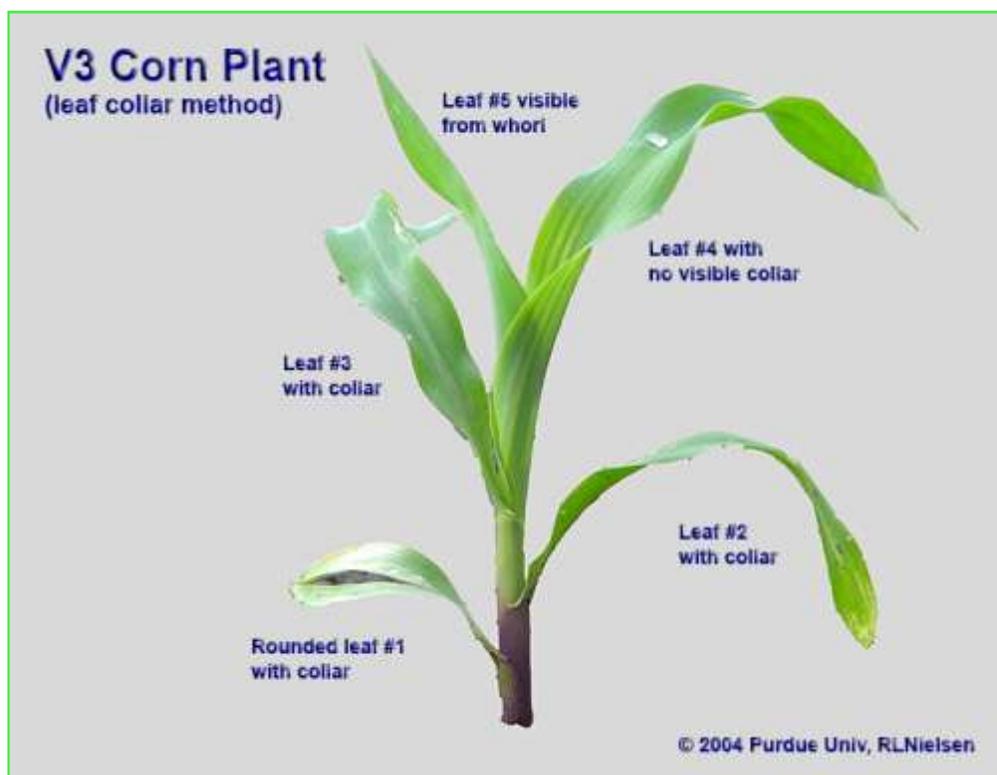


Figure 1: Young corn plant staged as V3 according to the collar method.

Determining Corn Leaf Stages by R.L. (Bob) Nielsen, Agronomy Dept., Purdue Univ.

Post Emergent Sweet Corn Herbicide Options, continued from p. 5
less than 4” tall and grasses are 2-4” tall. It is also effective on Quackgrass up to 10” in height. Please pay attention to the mixing order: fill tank with 25% of the total water volume and begin agitation. Add Option and make sure it is thoroughly mixed; add in other herbicides such as atrazine followed by the MSO and UAN. If your using AMS, this should be added and mixed thoroughly first, before the Option is added. Do not leave mixed product in the tank for more than an hour without agitation as it will settle out.

Accent Q, the newer version of Accent, is also labeled in NY and the main difference between the two is Accent Q has an added safener. Accent Q will provide post emergent control of most annual grasses (limited crabgrass control) and if applied alone has very little broadleaf control (Redroot pigweed). If additional broadleaf control is also needed, consider tank mixing Accent Q with another herbicide listed in the label. Rate of application varies from 0.45 ounces to 0.9 ounces depending on size of weeds and should be mixed with a crop oil concentrate (COC) or Non-Ionic Surfactant (NIS) plus a sprayable grade ammonium nitrogen such as UAN or AMS. See label for specific rates and uses.

Applications of ACCENT® Q may be applied broadcast or with drop nozzles (post-directed) on sweet corn up to 12 inches tall or up to and including 5 leaf-collars (V5) . For sweet corn 12 - 18 inches tall, apply only with drop nozzles. Do not apply to sweet corn taller than 18 inches or those which exhibit 6 or more leaf-collars (V6), and make only one application of ACCENT® Q per year. DO NOT APPLY ACCENT® Q to corn previously treated with “Counter” 15G or to corn treated with “Counter” 20CR in-furrow or over the row at cultivation. Applications of ACCENT® Q to corn previously treated

with “Counter” 20 CR, "Lorsban", or “Thimet” may cause unacceptable crop injury, especially on soils of less than 4% organic matter.

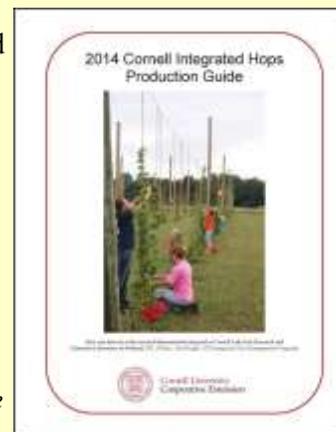
There are several other post emergent herbicides labeled for sweet corn, but they are fairly specific in what weeds they control. Permit works great on Yellow nutsedge, especially if it can be applied just when the seed stalk of the nutsedge is starting to emerge. It will also control Redroot pigweed, Ragweed and Velvetleaf when they are small. If these weeds are a problem, Permit at .67 ounces per acre plus a non-ionic surfactant (NIS) may work. Stinger is another material that is highly effective, but on a very narrow range of weeds. It is effective on Ragweed, certain nightshades and Canada thistle. I have also seen it hurt wild buckwheat. See the label for more specific information on these two materials.

A note about corn development stages: Sometimes sweet corn herbicide or pesticide labels may refer to different stages of sweet corn growth as “V1” or “V3”. What does this mean? It refers to the number of leaves the plant has with “visible collars” and is used in determining the stage of corn growth. When the leaves are young they are in the “whorl” of the plant and as they mature and come out of the whorl, they attach to the stem of the plant with what are called “collars” (see Figure 1). Leaves without collars may still be visible, but because there are no visible collars, they are not counted. So if you want to use an herbicide that says on the label “only use on corn between the V3 and V5” now you can correctly identify and count the number of “visible collars” to determine if that herbicide can be used. Be sure to look at a dozen or more plants across the field as all plants may not be at the same stage of growth and if a majority fall within the stage recommend, you know you can go ahead with your application. -CDB

Cornell Integrated Hops Production Guide

The Pesticide Management Education Program (PMEP) at Cornell University is pleased to announce the availability of the brand new *Cornell Integrated Hops Production Guide*. Written by Cornell University specialists, this newly created publication is designed to offer beginning and veteran hops producers practical information on growing and managing hops. Topics covered include site selection, nutrient management, use of cover crops, selecting varieties, and managing common hopyard pests. Also included is information on selecting, operating, and maintaining pesticide spray equipment. As an added feature, the book sports UV-resistant laminated covers and a spiral binding to add to its durability and practicality.

The *2014 Cornell Integrated Hops Production Guide* can be obtained through local CCE offices or directly from the Cornell Store at Cornell University. Cost for the *Guide* is \$28 plus shipping. To order from the Cornell Store, call (800) 624-4080 or order online at <http://store.cornell.edu/c-874-pmep-manuals-and-guidelines.aspx>.

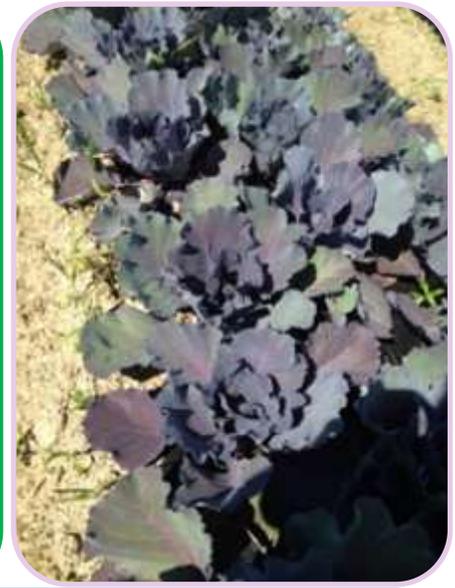


Flea Beetles are Active- Protect your Transplants

Flea beetles are active in new plantings around the region, so be sure to protect transplants you know flea beetles favor. Most flea beetles overwinter as adults, sheltering under plant debris in the field, in field margins, and in adjacent areas. The adults emerge as the weather warms and may feed on weeds and less-desirable vegetation until crop plants become available. As soon as suitable crop plants are set out, the beetles will enter the field, often in large numbers. You can lose susceptible transplants in days and seedlings in hours if pressure is high enough.

Flea beetles do best in stable warm spring weather and seedlings of crops are most vulnerable to flea beetle feeding when stressed, particularly by inadequate moisture. Weather conditions are finally perfect for the beetles now.

Small-scale and organic growers can often exclude flea beetles by immediately covering transplants with light-weight row cover. It is important to cover the edges with soil to prevent gaps that flea beetles will find. Larger growers and those not able to immediately cover transplants may need to rely on sprays to protect small transplants. The best option for organic flea beetle suppression is Entrust.



Cole Crops grown side-by-side in the field. Chinese cabbage is much more susceptible than purple cabbage to flea beetle feeding. *Photos by TR*

If an imidacloprid (Admire, Advise etc.) was used as a drench at planting, it should help provide control soon after transplanting. Sevin (3 PHI), Thionex (7 PHI), Baythroid (0 PHI), Hero (7 PHI) and Mustang (1 PHI) are just a few of the materials labeled for control. For cole crops that you will be harvesting soon, please be sure to note that some of the products mentioned have a 7 day pre-harvest interval (PHI) as indicated by the numbers in parenthesis. –*CLS*

Keep an eye out for leek moth, a new pest found so far only in northern NY and Vermont. We usually find the larvae first on garlic scapes and folded leaf tips in early June and then inside onion leaves from June through harvest. We are monitoring any movement of this pest further into the state so please contact one of us if you find anything suspicious.

For more information and good visuals on this pest visit: <http://web.entomology.cornell.edu/shelton/leek-moth/> -*ADI*



Leek moth larva inside folded garlic leaf.

Photo courtesy: Cornell Univ. Dept. of Entomology

Websites of Interest



Diagnose pest and disease problems using color pictures: <http://vegetablemdonline.ppath.cornell.edu/>

Cornell *Guidelines* for fruit and vegetables: <http://www.nysaes.cals.cornell.edu/recommends/>

USDA Fruit and Vegetable Market News: <http://www.marketnews.usda.gov/>

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						
Site	Growing Degree Information Base 50° F			Rainfall Accumulations		
	2014 Weekly Total 5/12 - 5/18	2014 Season Total 3/1 - 5/18	2013 Total 3/1 - 5/18	2014 Weekly Rainfall 5/12-5/18 (inches)	2014 Season Rainfall 3/1 - 5/18 (inches)	2013 Total Rainfall 3/1 - 5/18 (inches)
Albany	84.6	218.8	207.5	1.44	7.08	5.93
Castleton	81.9	214.1	209.3	1.84	7.82	1.32
Clifton Park	79.0	191.8	195.2	1.45	7.73	6.29
Clintondale	83.1	250.8	230.2	0.23	9.71	5.33
Glens Falls	96.5	230.0	175.0	1.23	7.63	6.29
Guilderland	79.5	194.5	169.5	0.50	1.00	0.69
Highland	85.3	257.1	245.1	0.31	9.77	3.21
Hudson	87.3	244.0	234.2	1.89	8.20	4.29
Marlboro	75.8	214.6	211.1	2.08	10.08	4.53
Montgomery	80.6	224.8	189.0	1.43	10.93	5.99
Monticello	54.9	134.6	132.0	0.03	5.43	0.08
North Easton	80.6	192.9	226.5	N/A	N/A	1.88
Peru	83.7	171.7	199.4	1.56	6.65	1.82
Shoreham, VT	85.0	179.2	215.3	0.79	6.25	4.86
Wilsboro	79.6	162.1	193.7	0.23	3.87	2.53

Cornell Cooperative Extension and the staff assume no liability for the effectiveness of results of any chemicals for pesticide use. No endorsement of any products is made or implied. Every effort has been made to provide correct, complete, and current pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly and human errors are still possible. These recommendations are not substitutes for pesticide labeling. Please read the label before applying any pesticide. Where trade names are used, no discrimination is intended and no endorsement is implied by Cornell Cooperative Extension.

Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities.