



Vol. 2, Issue 8
June 5, 2014

Weekly Vegetable Update

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Regional Updates:

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

Warm temperatures made a brief appearance this week and crops responded with a surge of growth. Rain has been spotty. Some areas have had short downpours while others have had only light showers; we have also had a lot of wind and stormy events. These turbulent conditions make it more important than ever to take a few days to harden off seedlings before transplanting. Conditions are so ideal in germination houses that plants develop soft, lush tissue. Many growers have seen some of their best looking transplants turn into tatters within a day or two of planting.



Lettuce field in Orange County Black Dirt.

Photo by TR

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

Some parts of the Capital District are quite dry this week, having not received any rain in about 14 days. For those who have irrigation running the heat and sun have been welcomed. Weeds are also responding to the warm weather, with lambsquarter, pigweed, orchardgrass, and others putting on significant growth.

We have not yet seen striped cucumber beetle but they will be here soon so be sure to scout young crops and control these pests as soon as they reach threshold. There has been one report of Colorado Potato Beetle in eggplant.

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

Planting of vegetable crops is in full swing. Peppers, tomatoes, and many cucurbits are in the ground and more and more fields of lettuces and greens are going in as older plantings are harvested. Early corn on plastic seems like it may not be so early this year as many plantings are comparable to first bare ground plantings. The first European Corn Borers were caught this past week at low numbers, 2ECB I and 3 ECB II. We will begin regional trap counts in next week's issue. Beet army worm has been seen in significant numbers in a few sweet corn fields. Be on the lookout for this pest in sweet corn and other crops.

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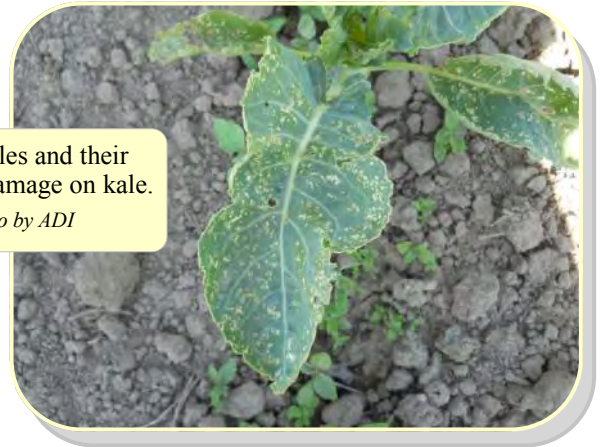
Army worm in sweet corn whorl. *Photo by TR*

Flea Beetle Brief

Flea beetles are flourishing on all the brassicas: broccoli, cauliflower and cabbage, including arugula and kale. They make small holes but in such great numbers that it's critical to protect the seedling stage from these pests. Consider planting a trap crop of Chinese cabbage, their favorite, along the edge of your crop and then direct your sprays there. Spray thresholds are 1 beetle per plant at the cotyledon stage. After 6 leaves treatments are not necessary unless there is an outbreak. No natural enemies are known. Rowcover set up immediately after planting can be effective. Spray options include Bathroid XL, Hero, Sevin, Leverage, Warrior II, Endigo ZC, Platinum 75SG and Mustang MAXX. Of those, only Sevin is not restricted. Systemic products will provide longer term control although beetles may still be present. -ADI

Flea beetles and their shot hole damage on kale.

Photo by ADI



Enrollment Reminder — Don't Miss Out!

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

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

Unless we receive your enrollment information by June 20th, any publications that you are currently receiving from the ENYCHP will end.

If you have questions about enrollment please contact one of the educators listed on the cover of this publication or call Chuck Bornt at 518-272-4210 or email cdb13@cornell.edu

Tomatoes and Fertility

Fertigating tomatoes or any crop grown with plastic mulches is a very common practice these days, however achieving the right balance can be tricky. This article will have 3 parts: Part 1 is a reminder of how to calculate the acreage or area under mulches which is quite different than a “field acre”. Part 2 is some actual nitrogen and potassium recommendations for NY tomato growers derived from Florida recommendations and Part 3 is some great information from Steve Bogash, a Commercial Horticulture Educator with Penn State Extension.

Part 1: Calculating fertilizer needs where plastic mulches and drip irrigation is used - take the time and do the math!

The key to remember when trying to figure out how much fertilizer to dissolve in your bucket for a crop planted into plastic mulch is, it is not the same as a “field acre”. You should only calculate the fertilizer needs for what is covered by the mulch. The easiest way for me to describe this to you is to give you an example: First, you need to

determine what your bed top width is or, in other words, the area across that your mulch covers. For example, if you are using a Rain-Flo raised bed maker, a typical bed top width is 30 inches or about 2.5 feet. There are other machines and other systems that might use a different width so you need to go out and measure it. Take this value and multiply it by the row length and finally multiply that by the number of rows per section that you irrigate at one time or “zones”. So, if my bedwidth is 2.5 feet, my rows are 345 feet long and I have 5 rows per section then my total acreage would be $(2.5 \times 345 \times 5)$ divided by 43,560 (number of square feet in an acre) which would be 0.1 acres! If I need to apply 7 pounds of actual nitrogen (per field acre) and the analysis of my nitrogen source is 20% nitrogen, I divide 7 pounds by 0.20 (that is the fertilizer analysis expressed as a decimal). That means for one field acre I would need 35 pounds of this fertilizer for one “field acre”, but because I'm only treating the acreage that is covered by the mulch, I actually only need to dissolve 3.5 pounds of this fertilizer to get my

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Got Grubs?

All kinds of grubs are lurking in your soil, hidden from sight. Some, like the larva of the ground beetle are beneficial, but most are up to no good. The term ‘grub’ is rather vague; it refers to the larval stage of many types of beetles. White grubs are the most familiar; they lie curled into a ‘C’ shape with thick bodies and 6 legs easily visible close to their brown heads. The best known white grub is the Japanese beetle larva, but there are actually many more species of white grubs throughout our region including European chafer, Oriental beetle, Asiatic beetle and June beetle. Even though I see plenty of adult Japanese beetles, I rarely see their grubs in my northern region, even in lawns. Last week we were digging around in strawberry fields, looking for black vine weevil larvae and rather than finding the pest of interest, we found several white grubs.

At first glance the group guessed Japanese beetles, since the adults are such a nuisance there, but on closer examination they turned out to be Oriental beetles and Asiatic garden beetle grubs. And I do mean it when I say ‘on closer inspection’. The best way to identify white grubs is to look at their hind ends with a 10 power hand lens. You really have to look at the shape of their anal slit and the pattern of bristly hairs just below it, referred to as the raster pattern. And who said Extension work isn’t exciting?

Another grower commented last week that Japanese beetle (JB) grubs were chewing his lettuce near the soil line, much as a cutworm would. He assumed they must be JB grubs since he finds lots of adults each summer. But without a close inspection as described above, you really can’t be sure. It could be a completely different pest feeding at the soil line and the JB adults flew in from elsewhere. Neither cutworms nor JB grubs are listed as a known pest of

lettuce in the current Pest Management Guidelines so we don’t have a simple solution for this problem. They are often worse the first year after sod and then move on to grassier sites.

There is one white grub that is becoming a problem for vegetable growers, the Asiatic garden beetle. Both the larva and adult feed on over 100 plants, but are especially damaging to carrots, beets and peppers. The larva/grub is smaller than the other white grubs, is much more active when caught, and is easily identified by the pair of rather large white pouches just under its mandibles, so you don’t have

to study its hind end to know which one this is. It also feeds on corn, lettuce and onion. The adult feeds at night so is rarely seen, and is active from July to September, shredding foliage. It nestles in the soil at the base of the plant by day and is attracted to porch lights at night. As always, contact any of us on the team if you need help identifying pests or problems. We appreciate knowing what is being found and where. -ADI

Asiatic Garden Beetle

Maladera castanea (Arrow)



The adult is half the size of a Japanese beetle and a uniform orange/tan color with a hump shaped body.

Credits: C.M.F. Pierce and M.A. McDonough, Purdue Univ.



The larva/grub of the Asiatic garden beetle, the red arrow points to the distinctive white sacs just under the mandibles.

Photo credit: D. Sheltar, Ohio State Univ.



The larva/grub of European chafer, very similar to the Japanese beetle and Oriental beetle grub.

Brassica/Crucifer Downy Mildew

Conditions have been favorable for development of Brassica Downy Mildew (BDM) which was found earlier this week in a field planted to radish. There were two varieties of radish side by side in the field; “Rover” showed a higher level of susceptibility to BDM than “Red Pearl”. Remember this is a different type of Downy Mildew than those that infect cucurbit crops, lettuce or basil. Downy Mildew of Cruciferous crops is caused by the fungus *Peronospora parasitica*. Cabbage, Chinese cabbage (including NAPA and bok choy) broccoli, cauliflower, radish, turnips, Brussel Sprouts, mustard, collard, rutabagas, kohlrabi, kale as well as cruciferous weed species. It is particularly destructive if plants are infected at the seedling stage. On more mature plants such as the radish in the picture below, it causes poor growth and reduces yield and quality. This disease can be identified by the angular lesions that develop on leaves and inflorescences. The lesions enlarge and become irregular, yellow to orange necrotic patches. Under moist conditions, sporulation on the underside of the leaf may be seen as a gray to purple fuzz. Affected tissues become susceptible to attack by secondary rotting organisms. Downy mildew also attacks the taproots of turnip and radish and infected organs develop a black, epidermal blotch and an internal discoloration.



Downy mildew overwinters on winter-sown host crops or cruciferous weeds. Sporangia are spread by wind and splashing water. Oospores, if produced, survive in crop residues and in the soil. There is some evidence that *P. parasitica* may be seed borne. The pathogen is favored by cool, moist conditions.

Cultural Controls & Prevention:

- Removal of crop debris and weed hosts may reduce inoculum.
- Practice rotation with non-brassica crops.
- Plant resistant or tolerant cultivars.
- Manage Downy Mildew on transplants in the seedling bed by improving air circulation, irrigating early in the day

The following are just a few products labeled for control of Downy Mildew on Brassica crops. Please read the label before applying any pesticide.

- **azoxystrobin (Quadris):** 6.0 to 15.5 fl oz/A. (0 dh, REI 4h, FRAC Group 11).
- **chlorothalonil (Bravo Weather Stik):** 1.5 pt/A. (7 dh, REI 12h, FRAC Group M5). Read label for replant restrictions.
- **copper compounds (Champ F or OLP)(** FRAC Group M1)
- **mandipropamid (Revus):** 8.0 fl oz/A. (1 dh, REI 4h, FRAC Group 40). A spreading/penetrating type adjuvant must be added. -TR

References: <http://extension.umass.edu/vegetable/diseases/brassica-downy-mildew> and <http://veg-guidelines.cce.cornell.edu/15frameset.html>

Annual Weeds: Changing of the Guard

By Justin O’Dea, CCE Ulster County

Late May to early June really marks when winter annual weeds are in their most alarming glory, and will soon largely bow out of center stage to a new flush of summer annual species. It is an excellent time to 1) take note of what winter annual species are problematic for you (as this is one of the easiest times to identify weed species) and to 2) heed the reminder to keep a tight reign on the next flush of summer annuals to follow. Weeds are unique in that when a problem is unchecked, the problem is almost always sure to compound many times over in the years that follow; this is sometimes, but not always the case with disease and insect pest pressures, which can sometimes be more transient (depending on weather and other factors).

Winter annual weed species most often germinate in fall (though some are also capable of early spring

germination) and produce seed and die off by late spring. A good number of broadleaf winter annuals have a characteristic rosette (Figures 1a and 1c) that is resilient to the weight of winter snow and helps them to begin taking advantage of warming soil temperatures and sunlight as soon as snow clears. Rosettes are common to some biennials and perennials also (examples: dandelion, Canada thistle, common burdock, wild carrot), but you won’t find rosettes on summer annuals, only winter annuals. In particular, winter annual brassica species (aka mustards, crucifers), which comprise a large percentage of all common winter annual weed species, often have rosettes. The flowering stems eventually emerge from the center of the rosette to flower and produce seed this time of year (Figures 1b and 1d).

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Annual Weeds, continued from previous page

Common winter annual brassica species found in northeastern croplands are [shepherd's-purse](#) (Figures 1a and 1b), field pennycress, wild mustard, yellow rocket, hairy bittercress, field pepperweed, wild radish, hedge mustard, and marsh yellowcress; some of these weeds have biennial and/or perennial species/subspecies and sometimes go by other common names. Other winter annual weeds common to northeastern croplands this time of year are prickly lettuce (Figures 1c and 1d), chickweeds (*Stellaria* species), field violet, chamomiles (*Anthemis* species and *Matricaria matricarioides*), common groundsel, annual sowthistle, corn cockle, white campion, henbit, catchweed bedstraw, and corn speedwell. Downy brome is a winter annual grassy weed that I am seeing more commonly this year. Other winter annual grassy weeds often originate from volunteer cover crops including feral rye and Italian/annual ryegrass. Feral vetches from cover crops can also become weedy winter annuals.

The above list can help you get a start by narrowing down the list of possible weeds you might be seeing going to seed in the field right now. Narrowing identification down to genus (as opposed to identifying down to species; common names of weeds often refer to a given genus, rather than specific species) is often adequate for informing how a given weed might be controlled. Multiple -university based websites offer tools for identification; northeastern based universities will offer the most regionally specific information but many, many, weeds are

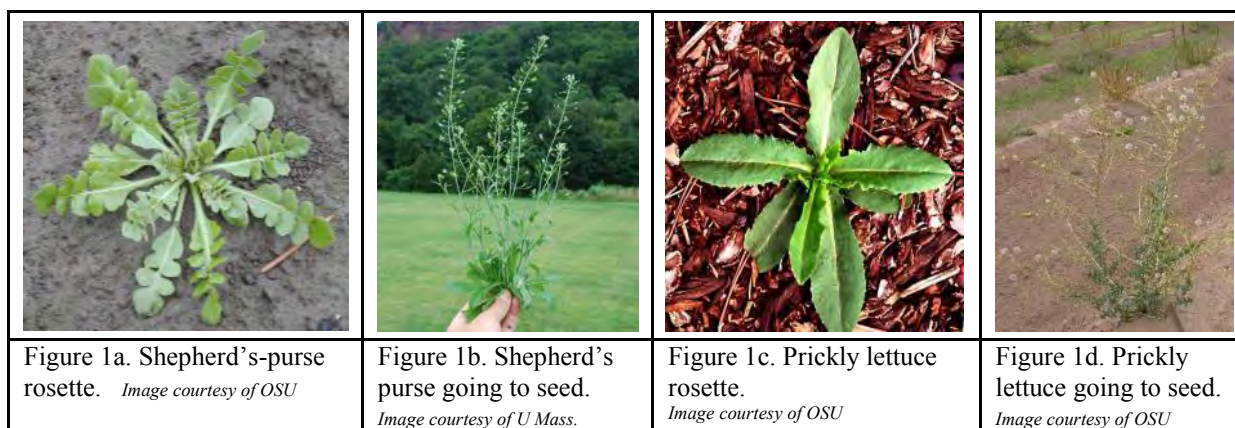
common to other areas of the US. Some northeastern-based resources are:

- <http://extension.umass.edu/landscape/weed-herbarium>
- <http://extension.psu.edu/pests/weeds/weed-id>
- <http://njaes.rutgers.edu/weeds/>
- <http://www.msuweeds.com/worst-weeds/>

Watch out for seedlings of the oncoming summer annual species that more commonly plague principal vegetable crops grown in eastern NY. Cornell's list/descriptions of major weeds and some control measures (including non-chemical management) can be found on the Weed Ecology and Management Laboratory webpage:

- <https://weedecology.css.cornell.edu/index.php>
- Importantly, because chemical weed control regulations vary by state, please consult the NYS IPM Weeds in Vegetables page at
- <http://www.nysipm.cornell.edu/vegetables/weeds.asp>
- and specifically consult , the 2014 Integrated Crop & Pest Management Guidelines for Commercial Vegetable Production at
- <http://veg-guidelines.cce.cornell.edu/>
- for current information on Cornell-trialed NYS-registered herbicides for specific crops.

Having a print copy of [Weeds of the Northeast](#) on hand, and help from your local Extension office can also often help immensely when the process of identifying your weeds gets tedious and/or overwhelming.



Water Testing

Even if you are not GAPs certified, or even investigating the possibility of becoming such...get your wash water tested. Produce should only be washed in potable water. If your wash water is found not to be potable, it would be best to add a chlorination system. If that is not possible, it would be best to leave the produce unwashed than washed in water that is not potable. Water tests should be done annually on each of the wells on the farm

Good/quick factsheet on wash water requirements: <http://www.uvm.edu/vtvegandberry/factsheets/postharvest.html>

Tomatoes and Fertility, continued from page 2

7 pounds of nitrogen per acre. If you need help, please call me (Chuck Bornt) at 518-859-6213.

Some other things to remember:

1. Before you go through all the work to plumb in a fertigation unit on your drip system, make sure that the unit you purchase meets the required “gallons per minute” (GPM) needs otherwise it will not operate correctly! For example, if you purchase a Mazzi injector that needs 10 GPM and you are only irrigating a section at a time that is only using 8 GPM, there is not a enough flow rate to syphon the fertilizer solution into the main line.
2. Make sure the system has been turned on long enough to pressurize it completely. Failure to do this will result in all of your fertilizer solution getting sucked up all at once and only going to a couple rows.

Part 2: Nitrogen and Potassium Rates for Tomatoes

For many of the early field transplanted tomatoes, it’s time to start fertigating (or may be you already have). Last year after sitting through a talk about nitrogen and potassium recommendations for Florida tomato growers, Dr. Steve Reiners from Cornell and I interpreted those rates and came up with adjusted values that we think are appropriate for NY grown tomatoes. Table 1 has the rates of nitrogen and potassium that plants are using per day, per acre. Since most growers are not going to fertigate on a daily basis, Table 2 gives you the rates that are needed per week, per acre. Nitrogen as you may remember is important for overall plant growth and vigor while potassium is responsible for flavor, firmness and shelf-life. **Please note that these levels are for beds that did not receive any fertilizer applications in the bed prior to bedding and planting.** Rates could be further adjusted if soil tests have been taken on the field for this growing season.

These recommendations also do not include any phosphorus additions which may need to also be addressed. Again, if a soil sample has been taken and shows low phosphorous levels, and no phosphorus was added pre-plant, it is possible to fertigate with a good, soluble grade of greenhouse fertilizer which contains either just phosphorous or a complete analysis (ie. 20-20-20).

In my opinion, I think weekly fertigation (which some growers are doing) and spoon feeding our

tomato plants is a better way to go instead of applying a large dose of fertilizer a couple times a season. It might be that this constant feeding and watering, may improve not only yield but fruit quality as well. I often wondered when we apply a good dose of nitrogen (20 lbs plus), we push the plant too hard and too fast and the result is tomatoes that crack or are more susceptible to other disorders that affect the fruit. If you need help calculating rates or have questions about these recommendations or need recommendations for other crops, please feel free to contact Chuck Bornt at 518-859-6213. -CDB

Part 3: Banking Potassium - Getting A Bit Ahead on Tomato Consumption, from Steve Bogash

One of the greatest challenges in growing tomatoes in an intensive production system is keeping up with the plants high consumption of potassium during fruit production. Past recommendations have been based around beginning to increase potassium applications along with the first tissue test starting at the onset of flowering. This often results in our chasing potassium levels over 2-4 weeks in order to get them above 3% by dry matter. Very often some of the first fruit are yellow shouldered. The heavy consumption of potassium actually starts about 2 weeks before the first flowers are visible. The concept of ‘banking’ potassium or applying extra a bit earlier seems indicated in order to reduce packing house losses.

Before you start applying extra potassium, your irrigation / fertigation solution needs to be at the correct pH. Tomatoes and peppers extract the most nutrients at a pH of 6.2-6.5. For growers pulling irrigation water from limestone aquifers, this will probably mean the addition of acid on a constant basis to lower your water’s pH. Get your water tested at a laboratory for pH and alkalinity

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	Pounds of Fertilizer Required Per Day Per Acre			
	Weeks 1—2	Weeks 3—4	Weeks 5—11	Week 12 +
Nitrogen	1.0	1.25	1.5	1.25
Potassium	2.0	1.5	2.0	1.25

	Pounds of Fertilizer Required Per Day Per Acre			
	Weeks 1—2	Weeks 3—4	Weeks 5—11	Week 12 +
Nitrogen	7.0	8.75	10.5	8.75
Potassium	14.0	10.5	14.0	8.75

Tomatoes and Fertility, continued from previous page

expressed as ppm bicarbonate. Since the pH scale is logarithmic, each 1 point on the scale is a 10X difference in pH. A two point difference is 10 x 10 or 100X. This means that small variances from the ideal pH of 6.2-6.5 can result in major nutrient deficiencies. Most growers use either sulfuric acid or citric acid. Organic growers can use citric acid. Use the [online alkalinity calculator](#) to get your acid concentrations. Be sure to follow all directions on the calculator and pay careful attention to the pull down menus on the input side to get the correct recommendations.

Since we need to start the application of higher levels of potassium earlier than flowering in order to bank some and have high enough levels for the first fruit, tissue analysis should start as soon as your plants are large enough to collect full sized mature leaves from and not cripple your plants. Make the change to a higher potassium ratio fertilizer about 2 weeks prior to what you've been doing in the past and start a weekly foliar application of potassium at the same time. Be sure your fertilizer is compatible with foliar application.

Growing great tomatoes that are full flavored and have low losses in the packing house requires keeping tissue potassium levels above 3%. From before the first blossoms to the last harvest, tomato plants (and peppers as well)

require huge amounts of potassium to produce the most flavor and prevent yellow shoulders / gray wall. Although I look at every nutrient level, those most important to packout are the following:

1. Tissue N levels should be at about 4% as fruit are developing. Higher levels can create soft fruit, more foliage, and fewer fruit.
2. Tissue K levels need to be above 3% for tomatoes and peppers to produce the highest quality fruit and to keep creating new blossoms.
3. Ideally Ca should be at about 3% and Mg at 0.8-1%. This prevents cracking and produces fruit that are tough enough for packing and shipping.

In retrospect, although I've always recommended bi-weekly tissue testing to growers due to the cost of the tests, I now recommend weekly sampling that starts as early as the plants can handle the cut.

If you plowed down 30-50% of your soil test recommended potassium, calcium and magnesium when getting your soil ready and work to keep these levels at their optimum values during production, you should be able to increase yields and reduce packing house losses.

Source: Steve Bogash, Penn State Extension Vegetable, Small Fruit, and Mushroom Production News, June 2, 2014

Garlic Update

Garlic across the region has reached the point where it is living entirely off its own root system rather than from last year's clove, so we are starting to getting a sense of how the crop will fare now. Across the region stands are pretty spotty due to overwintering issues. Garlic that has survived is a little smaller in stature than last year, though I'm not willing to guess on head size just yet. Many growers did a great job of applying fertilizer in April and May, which should help keep garlic healthy and vigorous even when the clove was damaged by winter and disease.

The key consideration at this point is weed control. Growers who applied pre-emergent herbicides, or straw mulch should still be seeing good weed control, but there are many, many weeds germinating in bare ground garlic. Weed competition can easily diminish final garlic size by 30%, so timely weed control is essential. Cultivating 4-6 times per season is routine with our most productive bare-ground growers.



Healthy garlic crop at Sky Meadow Garlic Farm. Photo by CLS

Shallow, regular cultivation is your best mechanical option.

This year, due to the numerous skips in many fields, more hand cultivation in-row will probably be necessary. This is an excellent opportunity to also do some field culling. While cultivating, remove any garlic plants which are distorted, flagging yellow, or look otherwise unhealthy. This step will reduce spread of disease to other plants, and also give healthy plants more room to grow and access to water and nutrients. As always, if you see problems you do not recognize during this process, please give me a call or send me a picture of the plants. It's very important to know what diseases or pests you are dealing with.

If we continue to have dry weather heading into June, irrigating garlic will help keep the heads filling well. Garlic needs at least one inch of rain per week to grow and size optimally. If you are not receiving regular rain, and have the ability to irrigate, this month is an important time to do so. Remember to stop watering a week before you harvest. —CLS

Pricing for Profit Workshop

June 18 at 6 pm—Dinner Included—at the Hudson Valley Lab, 3357 Route 9W, Highland NY 12528

“What price should I charge?” “Where’s the best place for me to sell my produce?”

“How can I make a profit at this?” “What is a market channel anyway?”

Bob Weybright, Business Development Specialist from the Eastern NY Commercial Horticulture Team will be at the Hudson Valley Lab for a twilight presentation and discussion which will include some suggestions which can help you find answers to these and other questions you might experience over the course of your growing and selling season. Resources to help determine a price, where to find price comparisons, and the ins and outs of various market channels will be discussed to help you feel more comfortable with your selling decisions.

The cost is \$20 per person for those enrolled in the ENY Commercial Horticulture Program, \$30 for those not enrolled. A light supper is included. You can still enroll to get the discount; we will have enrollment forms available that night (or for information on enrolling contact Marcie Vohnoutka at 518-272-4210 or mmp74@cornell.edu).

We need a head count in order to have enough food so please mail your registration ASAP to Hudson Valley Lab, Attn: Teresa Rusinek/Pricing for Profit, PO Box 727, Highland, NY 12528. Make checks payable to CCE ENYCHP. With your registration, **include the following information:** Names of attendees, farm name and address, phone number where you can be reached, and email. If you have questions, call Teresa Rusinek at 845-389-3562 or email tr28@cornell.edu.

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

2014 Weekly and Seasonal Weather Information

Site	Growing Degree Information Base 50 ^o F			Rainfall Accumulations		
	2014 Weekly Total 5/26-6/1	2014 Season Total 3/1 - 6/1	2013 Total 3/1 - 6/1	2014 Weekly Rainfall 5/26-6/1 (inches)	2014 Season Rain- fall 3/1 - 6/1 (inches)	2013 Total Rainfall 3/1 - 6/1 (inches)
Albany	95.0	383.7	406.0	0.11	7.39	11.51
Castleton	87.0	365.2	409.5	0.33	8.61	7.45
Clifton Park	89.5	345.3	382.4	0.55	8.95	13.87
Clintondale	103.0	433.0	452.4	0.16	10.18	6.84
Glens Falls	74.9	372.9	349.0	0.34	8.49	9.63
Guilderland	93.5	362.5	359.5	0.03	1.31	1.99
Highland	100.1	432.1	459.5	0.07	10.20	5.56
Hudson	98.2	413.1	404.9	0.16	8.60	7.87
Marlboro	97.6	384.6	422.6	0.10	11.50	6.79
Montgomery	89.7	395.2	396.5	0.11	12.05	8.06
Monticello	73.8	264.2	300.0	0.01	5.48	0.12
Peru	70.4	307.3	377.1	0.25	7.96	4.13
Shoreham, VT	71.5	314.8	392.8	0.40	7.54	8.26
Willsboro	66.7	284.4	351.2	0.03	4.14	7.30

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.