



Cornell University
Cooperative Extension

Eastern NY Commercial Horticulture Program

Vol. 1, Issue 6
May 9, 2013

Weekly Vegetable Update

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

What a difference in just one week! We have had steady, warm, dry, sunny weather and plants are progressing very fast. Some early seedlings have suffered from the dry conditions and may need replanting including some carrots, parsley and spinach. Asparagus has begun to shoot up, rhubarb is visible and garlic looks good.

The days have been in the 80's, nights in the 50's but growers are still wary of frost in the coming week. Extra rowcover is being kept close by, tunnels are shut up at night, and spare plants are kept on hand in case some replacements are needed. Flea beetle and cucumber beetle prone crops are under rowcover for protection and to give crop seedlings a chance to get toughened up and established. Dandelions are just beginning to bloom and weed seedlings are exploding from barely visible to inches tall in a matter of days under the conditions this week. We're all hoping the chance of rain later this week comes true.

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

The Capital District is still very dry. Everyone is working very hard to stay on top of irrigating. Garlic growers are starting to do their first field culling, since the warm weather is making those plants with Fusarium or other root issues flag. Remember to remove culled plants from the field, but not into your compost piles!

We have seen aphid populations in greenhouses explode, so make sure that if you have greenhouses you check your plants carefully and if you are purchasing transplants look them over before you set them out. Aphid feeding on young plants is often focused near the growing point. Look for distorted young leaves as a first sign of trouble.

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

Some direct seeded crops are showing uneven emergence and stands. It is likely this is due to a slow-warming spring and cooler-than-average soil temperatures. Onion maggot damage is showing up at high levels in some untreated plantings. Other than that, and dry soil conditions threatening stand emergence for currently-planted crops, there is little new to report.

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, Rensselaer, Saratoga, Schoharie, Schenectady, Sullivan, Ulster, Warren and Washington Counties

Cabbage and Seedcorn Maggots

Are your early crops of beans, onions, or cauliflower in the field looking weak? It may be that they are under attack by cabbage or seed corn maggot. Seedcorn maggot is an occasional pest of many vegetable crops including snap, kidney, and lima beans; corn; turnips; peas; cabbage; and cucurbits. Cabbage maggot generally attacks cabbage, cauliflower, turnip, radish, and related crucifer crops.

Both types of maggots are particularly of concern in spring to newly emerging seedlings, especially if germination is delayed due to wet, cold conditions. As you set your transplants or seeds, adult flies, rarely seen, emerge from the soil where they overwintered as pupae. These flies lay eggs between the plant stem and the soil of transplants, or lay eggs into a recently seeded field. Flies prefer to lay eggs in soils with high organic matter. The eggs hatch into maggots that attack young plants or seedlings at emergence. The maggots damage young seedlings by feeding on roots and burrowing into seedling stems or sprouting seed. The early spring brood of these flies is the most important because transplants and direct seeded seedlings are small and very susceptible to attack. Older plants are more tolerant of injury. Also, the eggs of successive generations do not survive well when soil temperatures are above 95 F for several days.

You can find the maggots in the soil close around the seedling or transplant roots or sometimes inside the seed or stem of the transplant. Both types of maggots are about one-fourth inch long, legless and tapered toward the head;



Cabbage maggot flies resemble houseflies but are only about half as long, 1/4 inch (6 mm). They are dark gray with black stripes along the body. Adults emerge between late March and early May. There are 3-4 generations per year. *Courtesy of Cornell University*

cornseed maggots are yellowish while cabbage maggots are whiter in color.

Plants damaged by maggot feeding will look wilted especially on warm days and take on a bluish cast. Seedlings may emerge with holes in leaves or no leaves at all. Feeding damage may also allow bacteria that cause soft rot to infect the plant.

Often by the time the injury is noticed, plants will not recover with any treatment, so planning ahead is the best strategy. The primary way to control maggots is simply waiting until soil is warm enough to allow quick germination and rapid growth; of course this is not always possible. Do not spread manure directly before planting, and incorporate crop residues well before planting. The decaying organic matter from fresh manure attracts the egg-laying adult stage of the maggot. Shallow planting and other means to speed up germination and emergence will reduce damage. Seed can be treated with insecticide or purchased as treated seed. Some organic growers feel they have had success controlling maggots with Entomophagous nematodes applied at planting. Crop rotation or planting non-susceptible crops can help break the infestation cycle. Barriers such as spunbonded row covers can be used. . They can be effective as long as 1) there are no gaps or tears in the material; and 2) the material is placed over the crop before or immediately upon crop emergence or transplanting; and 3) crops are rotated, no hosts. Allow the cover to be loose enough so plants have room to grow. -TR



Cornseed maggots attacking seedling. *Courtesy Univ. of Kentucky*

Scout Early Cole Crops for Flea Beetles

Flea beetles are active in new plantings around the region, so be sure to regularly scout established plantings and have a plan in place to protect transplants you will be setting out soon. Most flea beetles overwinter as adults, sheltering under plant debris in the field, in field margins, and in adjacent areas. The adults emerge in spring 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.

Severe infestations of flea beetles will stunt and kill transplants, with cole crops being the favored choice of the insect. 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. In other words, our crops are currently very vulnerable!

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.

Conventional treatment options for flea beetle include carbaryl (Sevin XLR Plus), pyrethroids (Baythroid XL, Brigade 2EC or OLF, Mustang MAX) and endosulfan (Thionex 3EC). Organic growers can use Entrust for flea beetle suppression. –CLS



Flea beetles feeding on radish cotyledons. *Source: Fieldcropnews.com*

Sweet Corn Herbicide Update

Sweet corn is moving along, especially under plastic and floating rowcovers. However, I am concerned that this dry period we are having is going to affect our pre-emergent weed control programs. Many products need rain needed to activate the herbicides, so plantings done within the last couple weeks are at risk for herbicide failure. I think this year we made need to follow-up with some post-emergent materials.

Post emergent options for sweet corn herbicides: There are a few materials labeled for post emergent use on sweet corn—each with their own strengths and weaknesses. Most of the ones discussed below are newer products that have been found to work quite well. Keep in mind that many of these products work best if applied to small, actively growing weeds! The other key is adding the right adjuvants and usually, but not always, a nitrogen source. You need to remember if you are using tank mixes with other materials to read the labels carefully and choose the most restrictive adjuvant type and rate as well as the correct nitrogen source (if required) and rate. When in

doubt, call your local extension person or your supplier.

Impact has been out for several years and has been working well. It controls many of the troublesome broadleaves as well as barnyard grass, fall panicum and foxtail species (Yellow, Green and Giant) as well as crabgrass. Impact works best when broadleaves are less than 4" tall and grasses less than 3" tall. Impact at a rate of 0.75 fluid ounces plus MSO (methylated seed oil) and a sprayable grade nitrogen such as AMS (ammonium sulfate) or UAN (urea ammonium nitrate) are recommended adjuvants (see label for rates). The label recommends MSO at 1.0—1.5 gallons per 100 gallons of water or 1.0% - 1.5% per finished volume of spray water. Research has shown that MSO under not the most perfect conditions improves weed control. The label also recommends 1.25—2.5 gallons of UAN (liquid nitrogen or Nitan 28% - 34%) per 100 gallons of water or 1.25—2.5% per finished volume of spray water. You can also use AMS at 8.5—17 pounds per 100 gallons of water. We

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Poor Stand Could be the Result of Temperature Issues

Many growers have been noticing uneven or poor germination/emergence or seeded crops. Many of the vegetables grown in Eastern NY require a long growing season in order to mature and produce a crop with the northern areas of ENY not obtaining minimum temperatures for the season length required for some crops. This year early seeding was not early by the calendar, but was early by soil temperatures.

This Spring and germination....

Good seed germination will help the crop get off to a good start and can significantly impact final yields and returns. Germination will affect plant stand and crop uniformity. Soil temperature, and more specifically the soil temperature in the seed zone, is critical to the level, rate and quality of seed germination. Slower germination increases the chance of infection by seed rot pathogens, which may result in uneven or poor plant stands and increased seed costs. Cool soil temperatures can also result in weak and slow growing seedlings.

Which temperature is best?

All crops have a minimum temperature for germination. Below this temperature, germination will not occur, as processes such as water uptake and enzymatic activity cannot take place. As soil temperatures approach the optimum for each crop, the rate and percentage of seed germination will increase. The following table presents soil temperature requirements for a variety of vegetable crops, with a corresponding rate of germination. -MRU

Crop	Minimum Soil Temp. (°F)	Optimum Soil Temp. (°F)	Days to Germination
Celery	39	69-73	10-14
Bean, Snap	59	73-84	7
Beet	39	75	7-14
Carrot	39	73-78	12-15
Cole Crops (Cabbage, Cauliflower, Broccoli, etc)	39	64-84	5-10
Cucumber	59	69-84	7-10
Eggplant	59	69-84	10
Lettuce	32	64-69	7-10
Melon	59	78-86	5-10
Onion (bulb)	32	69-73	10-14
Onion (bunch)	32	59-68	10-14
Pea	39	64	7-14
Pepper	59	73-84	10
Pumpkin	59	69-73	7-10
Radish	39	64-69	5-7
Spinach	32	69	7-14
Sweet Corn	50	69-84	7-10
Swiss Chard	39	68-73	7-14
Tomato	50	73-78	7-14
Turnip/Rutabaga	59	64-69	7-14

Source: Alberta Agriculture and Rural Development [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/faq8347](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/faq8347)

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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 (see label for specific rotations) for most vegetable crops with atrazine. Due to the hot, dry weather, it might be advisable to wait for a rain shower or irrigate before applying Impact to ensure that the weeds will be growing to take up the herbicide and to minimize injury to the corn. Best control will also occur if broadleaf weeds are less than 4" tall and grass weeds are less than 3" tall.

Option is another post emergent herbicide which will

control several different broadleaves and annual and perennial grass species in sweet corn. Option can be broadcast sprayed in 10—20 gallons of water or applied with drop nozzles on sweet corn in the V1 to V6 (visible leaf collars) growth stage. It is not recommended to apply Option to sweet corn past the V6 stage as concentrating sprays in the whorl will increase crop injury. It works best if most broadleaves are less than 4" tall and grasses are 2-4" tall. It is also effective on Quackgrass up to 10" in height. Do not use on varieties treated with Counter, Thimet or Dyfonate (see label for more information). gain, there is a 45 pre-harvest interval with sweet corn and

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it should be tanked mixed with MSO (containing at least 80% methylated seed oil and 10% or greater emulsifier) at 1.5 pints per acre in 10—20 gallons of water per acre) For spray volumes of 19 gallons or more per acre use a 1.0% per volume of finished spray water of MSO. The label also recommends the addition of either a spray grade UAN (28% - 32%) at 1.5 2.0 quarts per acre or 1.5—3.0 pounds of AMS per acre. Research and experience has also shown that adding at least 1/4 pound of atrazine per acre can significantly improve 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. 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 and be sure to use all the mixed product in your tank within 24 hours to avoid product degradation. Some sweet corn varieties have also shown more injury to Option so check with your seed salesman to determine if the varieties you plan on using Option can tolerate it.

Accent has been around for quite a few years and has had very good success especially on annual grasses. Please note that the formulation has changed and the new one is called Accent Q. On sweet corn, you are allowed one application per season at the rate for Accent Q is 0.45—1.8 ounces per acre on corn that is 12" tall or less and when the weeds are small and actively growing. The label indicates that 0.9 ounces per acre controls many of the weeds listed on the label as long as they are not taller than the maximum height listed in the label. For corn taller than 12", drop nozzels will need to be used to avoid getting Accent Q in the whorl which can lead to ear malformation—DO NOT USE on corn taller than 18". The label also recommends the addition of a COC (crop oil concentrate) at 1% finished spray volume or 1 gallon per 100 gallons of water and ammonium nitrogen fertilizer at 2 quarts per acre of UAN or 2 pounds per acre of AMS. The label recommends using a minimum of 15 gallons of water per acre for optimal control. Adding a 1/4 pound of atrazine will also improve weed control. Do not tank mix this product with any other herbicides not mentioned on the label and do not use it on corn that has been treated with Counter or Lorsban. Check the label for crop rotations also.

Callisto works well post-emergent only on large crabgrass (maximum of 2" in height) and most of the broadleaves and will provide some residual. However, it is very, very

important to note that if you are using Lumax or Lexar (pre-mixes of atrazine, Dual and Callisto) you will not be able to use a post emergent application of Callisto due to maximum rate restrictions per season. If you did not use any pre-emergent Callisto containing materials, you can use it at a rate of 3.0 fluid ounces per acre in 10—30 gallons per acre. For sweet corn and yellow popcorn the label recommends using a non-ionic surfactant (NIS) instead of a crop oil concentrate (COC) due to the increased risk of crop injury. DO NOT ADD AMS or UAN. The addition of a 1/4 pound of atrazine per acre is also recommended to increase weed burn down. Do not use Callisto on corn treated with Counter or Lorsban and do not tank mix or apply Callisto within 7 days of making an organophosphate or carbamate application. Be mindful of the 45 days to harvest period on Callisto.

If yellow nutsedge is an issue on your farm, Permit or Sandea work great post emergent. They will also work well on pigweed, ragweed and small velvetleaf. The recommended rate is 2/3 ounce and should be mixed with a non-ionic surfactant (1—2 quarts per acre or 0.25% per finished spray volume) or a crop oil concentrate. The use of COC's can improve weed control, but also increases the risk of injury For optimal nutsedge control, allow the nutsedge to have 3—5 leaves before treating. You can make 2 applications at the 2/3 ounce rate per season and there is a 30 day pre harvest interval. Do not apply to corn that has been treated with soil or foliar applied organophosphate insecticides or corn that is under stress due to drought, water logged soils, low fertility (especially nitrogen) or other poor growing conditions.

Another product that is labeled for post emergent sweet corn is Stinger. This is a great material for some tough weeds like Canada Thistle and wild buckwheat. However, this is a very active material and I would not recommend tank mixing this with other herbicides and adjuvants and nitrogen are usually not required. Be sure to also look at the label for the rotational restrictions.

This is not a complete list! There are several other materials labeled for post emergent use on sweet corn, but they have been less successful compared to these other products the reason being they are more contact materials and not systemic compared to the ones mentioned above. For example, tank mixes of Basagran, atrazine and oil have been used for years for burning down of broadleaves and nutsedge. However, the results are erratic and very dependent on the weather, stage of growth of the weeds and how much spray material actually contacts the weeds. For that reason, I would take a look at one of the newer post emergent systemic materials.

Laudis is also labeled for post emergent grass control in sweet corn, but I have heard growers say they have a hard

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time getting the product from their suppliers which is why I didn't list it. The other concern I have heard growers voice about some of these new products is the size of the container compared to the amount you use per acre—some growers say it would take them years to use the product and they are not cheap, but you get what you pay for and usually they are worth every penny.

Please make sure to read the label and determine the correct rates for you application, adjuvants and specific rotational guidelines. If you need assistance, please call Chuck Bornt at 518-859-6213 or your local chemical sales person. -CDB

Meetings and Notices

Last summer, several producers in the area expressed an interest in a NY State grant proposal through the Governor's Consolidated Funding Application. We have received funding for the project entitled "Increasing Cooling Space for Small and Limited Income Farms". We have enough funds to fund up to 60 farms with a 50/50 match program up to \$3000. As we have over 100 farms interested, we are asking applicants who are still interested to fill out a fairly short but comprehensive 4-page application which can be found, along with a cover letter with relevant contact info and other details, at the following link: http://counties.cce.cornell.edu/orange/CFA_Cooler_Project_farmer_application.pdf

For help answering **technical questions** with the application, see the contact info on the cover letter for the CCE specialist in your particular commodity/region.

All applications need to be returned to: Cooling Project, CCE Wayne, 1581 Rte 88N, Newark, NY 14513 or emailed to wayne@cornell.edu. Overall questions about the project can be directed to Beth Claypoole, Executive Director CCE Wayne County, 315-331-8415. The deadline is June 14, 2013.

Weekly and Seasonal Weather Information						
Site	Growing Degree Information Base 50 ^O F			Rainfall Accumulations		
	2013 Weekly Total 4/29—5/07	2013 Season Total 3/1 - 5/07	2012 Total 3/1—5/07	2013 Weekly Rainfall 4/29—5/07 (inches)	2013 Season Rainfall 3/1—5/07 (inches)	2012 Total Rainfall 3/1—5/07 (inches)
Albany	91.5	128.8	220.0	0.00	4.76	6.87
Castleton	84.8	128.4	225.2	0.00	0.90	6.89
Chazy	107.9	133.6	175.3	0.00	2.95	5.64
Clifton Park	93.8	118.3	200.5	0.00	4.71	7.69
Clintondale	72.8	140.6	186.0	0.00	4.37	4.88
Glens Falls	86.1	110.1	130.5	0.00	5.61	5.35
Granville	NA	NA	157.0	0.00	5.39	8.19
Guiderland	71.5	97.0	190.0	0.00	0.53	4.97
Highland	79.4	153.2	266.5	0.00	2.16	5.23
Lake Placid	24.5	27.5	NA	0.00	3.59	NA
Montgomery	53.0	112.0	232.0	0.00	4.08	4.05
Monticello	38.0	74.5	180.5	0.00	0.06	0.71
Redhook	68.0	116.4	237.5	0.00	3.16	4.86

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