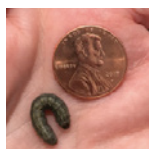




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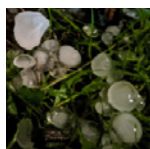
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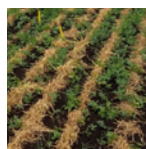
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## Be on the Lookout for Cutworms and Armyworms

Julie Kikkert, Cornell Cooperative Extension, Cornell Vegetable Program

My colleagues in field crops maintain traps for black cutworm and common (true) armyworm moths because they are regular pests in those crops. While these are also pests of vegetable crops, we haven't focused on them too much unless populations are high in the area. Both are considered migratory pests, with moths being brought up from the south by storms. Over the past several weeks, the moth catches indicate significant flights in our region. Using degree days, it is predicted that the time for feeding is now through the month of June at least. Last season saw some large fields of table beets hit by this pest. I was out scouting table beets in Genesee County yesterday and in one field found a few cutworms eating beet leaves and starting to pull plants into the ground. Common armyworm is also a concern because it can feed on many crops.

### BLACK CUTWORM (*AGROTIS IPSILON*):

The larvae feed on newly emerged vegetable crops and often clip many young plants at or below the soil line each night. Crops grown from seed are more prone to damage than transplants. According to R. Groves, Univ. of Wisconsin-Madison, susceptible crops include beets, carrots, cucumber, leafy greens, melons, peas, potato, pumpkin, snap beans, squash, and sweet corn.



Hole in a beet row where a black cutworm larva was discovered feeding on young beets and pulling them below ground.

Photo by Julie Kikkert, CCE Cornell Vegetable Program

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## About VegEdge

VegEdge newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension partnership between Cornell University and CCE Associations in 14 counties.



The newsletter is a service to our enrollees and is intended for educational purposes, strengthening the relationship between our enrollees, the Cornell Vegetable Program team, and Cornell University.

We're interested in your comments. Contact us at:  
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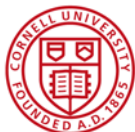
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**Help us serve you better by telling us what you think. Email us at [cce-cvp@cornell.edu](mailto:cce-cvp@cornell.edu) or write to us at Cornell Vegetable Program, 480 North Main Street, Canandaigua, NY 14224.**



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*This next issue of VegEdge newsletter will be produced on June 10, 2020.*

## Upcoming Events

*View more events at [CVP.CCE.CORNELL.EDU](http://CVP.CCE.CORNELL.EDU)*

### Food Safety & Wash/Pack Facilities

June 15, 2020 (Monday) | 6:15 pm - 9:15 pm via Zoom

This virtual training, presented by Robert Hadad and Caitlin Tucker from the CCE Cornell Vegetable Program, will help farmers and workers understand the concepts of food safety from harvest to packing. This training will also cover facility design, operation for washing produce and cleaning/sanitizing to minimize the risk of possible microbial contamination. Topics will include:

- The Basics: Understand **what is contamination**, why do we care, and where does it come from
- Identify **sources and routes of contamination** from field to Wash/Pack line – what to do about it
- Demonstrate the process of **proper handwashing, and recognizing signs and symptoms of illness and injuries**
- Understand the importance of **prioritizing Wash/Pack design and function**
- Review **cleaning and sanitizing procedures for facilities** and basic wash lines
- Review **cleaning and sanitizing procedures for Wash/Pack equipment**

This meeting is a FREE online webinar. For more information and registration, contact Robert Hadad at [rgh26@cornell.edu](mailto:rgh26@cornell.edu) or 585-739-4065.



NORTHEAST  
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United States Department of Agriculture  
National Institute of Food and Agriculture

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Economic treatment thresholds for black cutworms have been developed for the following crops (Univ. of Wisconsin):

- Snap bean= 2 larvae/row foot
- Potatoes= 4 larvae/row foot
- Sweet Corn= >5% of plants damaged
- Leafy greens= <3% of the stand affected

Several pyrethroid products are labeled in New York for the control of cutworms. Please check the label for your specific crop. For organically grown crops, our current best thinking is that a mixture of azadirachtin and pyrethrin provides the best chance of control. Contacting the caterpillars with the spray might improve efficacy, so spraying in the late evening or night might be beneficial. While Bt's (*Bacillus thuringiensis*) are labeled, the caterpillars must ingest the product and it may not be very effective on large caterpillars.

#### **COMMON "TRUE" ARMYWORM (*PSEUDALETIA UNIPUNCTA*):**

*Information from NYS IPM*

True armyworms prefer to feed on plants in the grass family such as corn, small grains, pastures and lawns. However, when populations are large and their food is limited, they will feed on legumes and other plants. This was the case with huge populations in 2001 and 2008, with the caterpillars were seen "marching" from field to field and sometimes across roads.

They feed mostly at night. True armyworm larvae range in size from 1/8 inch to 1.5 inches long. Small larvae appear smooth, cylindrical, and are pale green to brownish. Mature larvae are smooth and marked with two orange and white-bordered stripes on each side. The larvae spend their time above ground on foliage, unlike cutworms, which spend most of their time underground.

Larvae typically feed on leaves, stripping them down to the midrib. Feeding is generally the worst on field edges or in areas where grassy weeds are prevalent. Many pyrethroids are labeled for control. Caterpillars that are over 3/4 to 1-1/4 inches long are getting ready to pupate and will stop feeding and causing damage. At this point, an insecticide application is not likely to provide much benefit. Subsequent generations are rarely a problem because crops will be larger and not vulnerable to the armyworms.

Recommended economic thresholds for corn:

- seedling: 10 percent or more plants show damage and larvae are still present.
- whorl-stage: apply an insecticide when there are three or more larvae per plant.

[More information about true armyworms](http://blogs.cornell.edu/ipmwpr/true-armyworm-aka-common-armyworm-pseudaletia-unipuncta-in-field-corn/) can be found at: <http://blogs.cornell.edu/ipmwpr/true-armyworm-aka-common-armyworm-pseudaletia-unipuncta-in-field-corn/>



A black cutworm larva that has curled up into the typical C-shape when disturbed. Photo by J. Kikkert, CCE Cornell Vegetable Program



Supsect black cutworm feeding on beets. Note clipped leaves on plant and leaves lying on the ground. Photo by J. Kikkert, CCE CVP ●



# Responding to Hailstorms

Crystal Stewart-Courtens, CCE Eastern NY Commercial Horticulture Program



Figure 1. Hailstones ranging from pea- to quarter-sized were delivered late last night by a severe thunderstorm tracking over Niagara and Erie counties. Photo taken in a grassy yard about 15 minutes after hailing stopped, when many stones had been washed away by the torrential downpour. Photo by Elizabeth Buck, CCE Cornell Vegetable Program

*[The weather continues to cause crop damage. Last night Buffalo sustained at least 15 minutes of hail amidst a torrential downpour, with the stones for a majority of that time larger than peas and most often in the ¼ inch size range. For brief periods, we received hailstones that were a ½ inch in diameter (Fig. 1), coming down with enough force to ricochet from the sidewalk, up under covered steps, and land at my feet well inside an open porch door. The storm took a generally north to south track over western Niagara and Erie Counties.]*

*Crystal Stewart wrote a great article on hail damage in the 2018 field season. Unfortunately, many crops in the region are quite small right now. Very young plants battered by hail may not stand a chance of recovery. I'm happy to come walk fields to help assess damage and plan a strategy for moving forward. ed. E. Buck, CCE CVP]*

Unfortunately, the hail season has started early and with a vengeance this year. If you find yourself facing the aftermath of a hailstorm, here are a few things to consider.

The damage left by hail varies tremendously based on the size and shape of the hailstone, the wind velocity of the storm, the duration of the hail event, and the stage of growth plants are in. Deciding how to respond is really case-by-case. Two farms right next to each other can experience very different levels of damage. However, there are some rules of thumb that generally hold true.

- 1. Cucurbits are going to look really bad but are likely to recover.**  
Those huge leaves tend to tatter very dramatically during hail, and can look absolutely awful. However, the leaves can also help to protect the growing points, which largely determine whether a plant will recover or not. Generally cucurbits that are old enough to have an established root system and have intact growing points will be able to generate new leaves very quickly and will begin producing fruit within a couple of weeks. To facilitate this process, give some extra nitrogen through the drip system. Pick and remove summer squash fruit that were damaged by hail if you can.
- 2. All plants will benefit from a protective fungicide application.**  
After hail, plants have hundreds of small (or large) wounds which leave them extremely vulnerable to diseases. As soon as you can get on the field, apply a protectant such as copper or chlorothalonil (copper will protect from bacterial and fungal diseases so is the better option), even if you applied one before the storm. This will help prevent infection while the plant heals up those wounds.
- 3. Incidence of bacterial rot in onions is going to increase.** We tend to see many more issues with onion storage following hail. Copper may help somewhat, but results have been mixed to poor.



Figure 2. Determinate plants were snapped off about halfway by high winds and stripped by hail. These plants are not salvageable. Small transplants with broken or damaged growing points and stripped leaves would also best be replaced. Photo by Crystal Stewart-Courtens, CCE ENY Commercial Horticulture Program

*continued on next page*

Deciding what to do with tomatoes can be tricky. According to Dr. Steve Reiners (Chair of the Cornell Horticulture Section), determinate varieties suffering from moderate to severe damage (think of snapped branches and stripped leaves-Fig. 2 & 3) are most likely to be lost causes because by the time they recover they will practically be at the end of their lives. It is best to pull out plants at this threshold. Indeterminate tomatoes have a better chance of recovering from hail. All fruit which was hit will be relegated to seconds at the very best. Damage can vary greatly by variety because of the differences in canopy cover, so assess each separately. Last year (2017) we saw Primo Reds that were a complete loss next to Amish Paste tomatoes which were about 80% ok.

On plants with heavy foliage such as corn and sweet potatoes, a foliar feeding including nitrogen and some micronutrients may be beneficial. Remember that you have to have intact foliage to spray for this to be effective.

Once you have done everything you can to clean up and protect your plants, it is often best from a mental health standpoint to walk away for a few days up to a week. There is a small period of time where this is nothing more to do but let the plants recover. Nice time for a mini vacation. Really.

As always, if you would like help deciding what to do after hail or any other weather event, please give us a call. ●



Figure 3. Exposed fruit have been severely damaged by hail. If these plants were saved, these fruit would not be marketable. Note all the dark, water soaked spotting on the stems and petioles where hail has bruised the plant. Photo by Crystal Stewart-Courtens, CCE NY Commercial Horticulture Program

## Essentials of Food Safety for Farmworkers – A New Online Food Safety Resource

We all know that farm employees have many crucial roles on the farm, including carrying out food safety policies and practices. However, their ability to do that effectively, depends heavily on the quality of the training they receive. To meet the growing need for online, easily accessible resources, Robert Hadad and Caitlin Tucker have designed “Essentials of Food Safety for Farmworkers”, a 5-part video series that covers many of the required worker training topics set forth by FSMA (the Food Safety Modernization Act), or other 3rd party auditing programs.

### PART 1: CREATING A WORKER TRAINING PROGRAM

In Part 1, farm employees and managers will learn about the importance of training farmworkers, topics that farmworkers should be trained on, considerations for training farmworkers, the role of the food safety manager, and resources available to managers to assist in training.

### PART 2: FOOD SAFETY AND WHY IT MATTERS

In Part 2, farm employees will learn 5 reasons we should care about food safety, the 3 types of pathogens that cause foodborne illnesses, the 5 routes of contamination on the farm, and potential food safety risks on the farm.

### PART 3: EVERYDAY PRACTICES TO PREVENT FOODBORNE ILLNESS

In Part 3, farm employees will learn about everyday practices that can reduce the risk of contaminating produce with foodborne pathogen, the steps of proper handwashing, when hands should be washed, the proper way to deal with injuries, and symptoms of foodborne illnesses.

### PART 4: REDUCING FOOD SAFETY RISKS ON THE FARM

In Part 4, employees will learn the difference between cleaning and sanitizing and how to effectively do both, possible risks throughout production areas, wash/pack facilities, storage, and transportation, and steps farmworkers should take if they find a risk they cannot mitigate.

### PART 5: SPOT THE RISK – A SERIES OF CASE STUDIES

In Part 5, employees will be introduced to possible scenarios containing food safety risks, learn why the scenario contains a food safety risk, learn about immediate actions they can take to minimize the risks, and learn about future changes that can be made to prevent the risk from happening again.

The [Essentials of Food Safety for Farmworkers series playlist](https://www.youtube.com/user/ccecvp) can be found on the Cornell Vegetable Program’s YouTube page at <https://www.youtube.com/user/ccecvp> ●



# POST-Emergent Weed Control in Onion

Christy Hoepting, Cornell Cooperative Extension, Cornell Vegetable Program

The 2-leaf stage tends to be the minimum most tolerant leaf stage to post-emergent herbicide injury. By the time onions are at 2-leaf stage weed escapes from pre-emergent programs may range from cotyledon stage to 4" in height/diameter. Table 1 provides some very general information on the ability of single application of post-emergent herbicide to kill the most common weed species in muck-grown onion. Most often, if after a week and the weeds are not yet dead and the onions can tolerant another herbicide application, make a second application. You may need to switch post-emergent herbicides or rates to tailor to which species are not dying.

**Chateau 2 oz (WSSA Group 14).** Chateau is excellent on controlling select small weeds (less than 1"). It has great utility for killing small marsh yellowcress (MYC), ragweed (RW) and smartweed/Lady's thumb (SW/LT). Pigweed is the only species that it can kill larger sizes, sometimes up to 4". Generally Chateau results in a very high mortality rate of the species and size of weeds that it is good at, but beyond that it has very little burning, stunting or ability to "hold back" the weeds. The exception to this is yellow nutsedge, where Chateau can do a great job burning back (but not killing) this perennial weed. A follow-up application 7 days later of 1 oz will generally "finish off" any seedlings that were "not quite dead yet". Chateau is notably weak on Lamb's quarters (LQ), which will escape when Chateau is used alone. Best utility of Chateau is for <1" flushes of MYC, SW/LT and RW. Another advantage of Chateau is that the rates used for post-emergent weed control have very good pre-emergent control as well.

**Goal 2XL (WSSA Group 14).** Compared to Chateau, Goal 2XL has more broad-spectrum weed control, but tends to have lower mortality rates. Instead, it causes much more "injury" to the weeds that it does not kill and has better ability to "hold back" a weed flush. Multiple applications progressively kill more individuals and continue to burn back the population, but larger weeds (>3-4") can be tough to kill. Leaves can be burned up all the way up the stem, but the growing point at the top is still green. I call this the "green eye". Goal 2XL is notably weaker on mustards compared to Chateau.

**Goaltender (WSSA Group 14).** Compared to Goal 2XL at equivalent rates (Goal 2XL 4 fl oz = Goaltender 2 fl oz), Goal 2XL provides better weed control including better burn and ability to kill larger weeds. A single app of Goaltender does not really kill anything except for PW, although it can hold them back. It is also notably safer on the onions, so it can be used on young onions or in tank mixes with much less injury than 2XL. To achieve similar weed control as 2XL, its rates would have to be bumped up.

**Buctril (a.i. bromoxynil, WSSA Group 6).** The strength of Buctril is its activity on RW and mustards. It is weak on PW and LQ. Compared to Chateau and Goal 2XL, Buctril is the safest to the onion at 2-leaf.

**Buctril + Goal 2XL.** Buctril 2EC 8 fl oz + Goal 2XL 4 fl oz will kill PW, LQ, SW/LT, RW and MYC (and other mustards) up to 3", as well as other weed species. A follow-up application of Buctril 2E 4 fl oz + Goal 2XL 4 fl oz may finish off what wasn't killed with the first app, including some 6-8" weeds (such as RW, MYC, SW/LT). These rates can cause greater than 10% injury to onion.

**Buctril + Goaltender.** This is safer than Buctril + Goal 2XL, and is comparable for RW and SW/LT control/mortality, but not quite as good on PW and LQ.

**Table 1. General weed size that post-emergent herbicides kill in onion, from herbicide trials conducted 2017-2019 (Hoepting).**

Herbicide Treatment (single application)	Maximum Size of Weed Killed						PRE-emergent Activity
	PW	LQ	SW/LT	RW	MYC	YNS	
Chateau 2 oz	2-4"	none	0.5-1"	1" Some 2"	1-2"	2" Very Good burn	YES!
Goal 2XL 4 fl oz	4"	1"	1-2"	none	none	1-2" Good burn	No
Goaltender 2 fl oz	1-2"	none	--	none	none	--*	No
Buctril 2E 8 fl oz	1"	1"	1"	2-3"	--	--	Some
Buctril 2E 8 fl oz + Goal 2XL 4 fl oz	4"	1-3"	4"	3"	4-6"	--	Some
Buctril 2E 8 fl oz + Goaltender 2 fl oz	3"	1-2"	4"	3"	4-6"	--	Some

PW: pigweed; LQ: Lamb's quarters; SW/LT: smartweed/Lady's thumb; RW: ragweed; MYC: marsh yellowcress; YNS: Yellow nutsedge.

\*have not tested ●

## TCM GPS Calibration

Ali Nafchi, Cornell Cooperative Extension, Cornell Vegetable Program and NWN Dairy, Livestock & Field Crops Team

Terrain Compensation Module better known as “TCM” makes calculations to adjust for roll, pitch, and yaw to improve GPS receiver and Auto-Trac system performance. The TCM is designed to improve the GPS accuracy to keep the vehicle on the right track even on the uneven terrain. TCM calibration may be needed if the receiver has moved to a different machine or if experiencing “wide and narrow” rows when using auto-steering.

### HOW TO CHECK YOUR CURRENT TMC CALIBRATION?

On a flat open area, where you have enough space to turn the tractor around, set a new AB line and let the machine drive itself for about 50 yards. Turn around and let the machine drive itself back down the same tracks you just made. If your tires are falling back exactly in the previous tire tracks the TCM is calibrated correctly. If the tires are offset from the previous tracks the TMC need to be recalibrated.

### HOW TO CALIBRATE YOUR TCM?

On level ground, on the “Main Menu”, click on the ISO bus VT at the bottom of the page. Prior to calibrating the TCM we need to verify the 3D position mode and then drive a figure 8 (Fig. 1) two times in a row.



Figure 1. Prior to calibration, drive a figure 8 two times in a row.

Click the Menu Button and then click the Starfire receiver in the Menu. At the top of the page, choose the tab labeled Setup. Click on the Setup tab, the TCM section is located on the bottom right quarter of the page. By clicking the button with the black triangle labeled “CAL”, you will get to the calibration page.

Menu Button → Starfire Receiver → Setup → CAL.

Once you are in the calibration page, follow the on-screen instructions which will walk you through the calibration step by step. When the calibration is completed, you can re-check and see if you have a good calibration (using the “How to check your calibration” section of this article). You may need to calibrate the TCM more than one time to get it tuned.

For more information, visit:

[TCM Calibration](#)

[How to Calibrate Your TCM](#)

[John Deere TCM Calibration Video](#) ●

## NY Sweet Corn Trap Network Report, 6/2/2020

Marion Zuefle, NYS IPM Program; from <http://sweetcorn.nysipm.cornell.edu>

Two sites reported corn earworm (CEW) and both caught 2 CEW each, which puts those sites on a 6 day spray interval. See table. Traps for western bean cutworm (WBC) went out this week, so the first reports will begin next week.

Sites marked with an asterisk have, in addition to the 5 regular traps, a new trap for the hybrid ECB. This moth is known to be present in North America and was caught at several sites in Canada last year. We have added the trap to these sites to see if the hybrid is present in NY. Over the last year I have received several reports of damage in the field but without significant trap catch. The ECB hybrid responds to a different pheromone lure and if present would not be attracted to either the ECB-E or ECB-Z lure. If any hybrid ECB moths are caught I will post those numbers here as well.

Next to each site I have also included the accumulated degree days (base 86/50). Most sites are in the first spring moth or early egg laying stage for ECB.

ECB in early sweet corn, which was started under row cover, plastic or transplanted, does not feed in the whorl and emerge in the tassel as they do in bare ground corn and therefore the usual scouting and threshold recommendations do not apply. Target newly hatching larvae using the moth trap catches or scout for egg masses to determine when sprays are needed. Growers have had good results when pheromone trap catches were used to time sprays for the first generation ECB in row cover or plastic corn. Growers waited until there was a significant increase in the ECB trap catches in their area and then timed sprays to coincide with egg hatch. ECB eggs require 100 degree days (base 50) from oviposition

to hatch. Two to three applications bracketing the peak moth flight are generally effective.

### WNY Pheromone Trap Catches: June 2, 2020

Location	ECB-E	ECB-Z	CEW	FAW	WBC	DD to Date
Batavia (Genesee)	NA	NA	NA	NA	NA	412
Bellona (Yates)	NA	NA	NA	NA	NA	417
Brockport (Monroe)	0	0	0	0	NA	439
Eden (Erie)	0	0	2	0	NA	450
Farmington (Ontario)	0	0	0	0	NA	434
Geneva (Ontario)	NA	NA	NA	NA	NA	417
Hamlin (Monroe)	NA	NA	NA	NA	NA	408
Kennedy (Chautauqua)	NA	NA	NA	NA	NA	422
Leroy (Genesee)	NA	NA	NA	NA	NA	404
Lyndonville (Orleans)	0	0	2	0	NA	386
Oswego (Oswego)	0	0	0	0	NA	347
Panama (Chautauqua)	NA	NA	NA	NA	NA	372
Penn Yan (Yates)	0	1	0	0	NA	400
Portville (Cattaraugus)	NA	NA	NA	NA	NA	395
Ransomville (Niagara)	0	0	0	0	NA	418
Seneca Castle (Ontario)	6	0	0	0	NA	391
Williamson (Wayne)	NA	NA	NA	NA	NA	386

ECB: European Corn Borer; CEW: Corn Earworm; FAW: Fall Armyworm; WBC: Western Bean Cutworm; NA: not available; DD: Degree Day (mod. base 50F) accumulation

Average Corn Earworm Catch			Days Between Sprays
Per Day	Per Five Days	Per Week	
<0.2	<1.0	<1.4	No spray (for CEW)
0.2-0.5	1.0-2.5	1.4-3.5	6 days
0.5-1.0	2.5-5.0	3.5-7.0	5 days
1-13	5-65	7-91	4 days
over 13	over 65	over 91	3 days

Add one day to the recommended spray interval if daily maximum temperatures are less than 80F for the previous 2-3 days. ●

## GENERAL

The hot weather scorched, some cases cooking, plantings under plastic mini-tents in the field. These ventilated mini-tents are used by some growers to push ahead early sweet corn, cucurbits, and sometimes tomatoes or peppers. Transplants can outgrow scorched leaves so long as the growing point is not damaged and the stem is not girdled. The growing point on corn is protected below ground until the 5th leaf stage, so while sweet corn can look bad from scorch or frost, it will outgrow the injury.

Lanky transplants and seedlings put into plastic mulch can show damage on the stem from physical abrasion by the edge of the plastic mulch, heat venting out of the planting holes, and rough transplanting. These wounds can become entry points for pathogens, particularly in cucurbits. Sun scalding is common on lanky cucurbit transplant stems and leads to bleaching and stem narrowing, which can limit vigor.

Other regions experienced frost this weekend. Chilling injury occurs at temperatures above freezing but below what the plant can physiologically tolerate. Chilling and frost injury has a dark gray or blackish look to the tissue as it dries down. Experience among Ontario potato farmers is that potatoes suffering from chilling injury can recover more quickly if they receive a foliar feeding of magnesium within a few days of injury.

All of these damages can leave plants more susceptible to physiological stress from high light and temperatures, excessive water, and drought during the recovery period. Depending on the point of injury (leaf vs. crown) and environmental conditions (moisture, field history of disease) they could also face increased risk from disease. In areas with severe damage, there's a short window where resowing newly emerged crops or replacing recently transplanted plants should be considered. The fresh crop will be able to establish more vigorously without stress and damage and can yield at the same time as the damaged plants would have. - EB

## ASPARAGUS

Harvest is under way and prices are high! Flea beetles can move into asparagus and at high levels may cause damage to spears. Growers are reporting infestations now. Most labels do not mention flea beetles on asparagus, but do list asparagus beetle, which will require control soon. There are a number of pyrethroids (group 3A) including Baythroid, Warrior and Brigade with a 1 d PHI. Other materials to consider are Exirel (group 28 and Actar a(group 4A) with 1 d PHI. Sevin (group 1A) has a 3 d PHI. Organic? Entrust (group 5) is labeled for application to ferns and has a 60 d PHI. Please remember to rotate between groups. - JR

## BEETS

See the cover article on black cutworms. Young beets are a favored food of this migratory pest. For conventional processing beet growers, bifenthrin will have the longest residual and acute activity of any pyrethroid. The two products that I am aware of in NY are Sniper LFR (bifenthrin) and Hero (bifenthrin + zeta-cypermethrin). According to Russ Groves, Vegetable Entomologist at Univ. Of Wisconsin-Madison, "if the bifenthrin application is made to the soil surface (predominantly), and targeting the area where cutworm larvae are residing during the day, then the bifenthrin should have a reliable 2 to 3 week residual. Especially if it were watered in as much as possible (>0.25") immediately after application. There probably won't be a need for re-applications." Organic growers can use azadirachtin (several products) at 7 day intervals if needed. Growers with small plantings have other options as well. Check product labels. - JK

## COLE CROPS

In addition to the on going flea beetle pressure, white imported cabbage worm butterflies are beginning to show up in fields. Diamondback moth larvae were present in several brassica fields, though only one field scouted exceeded threshold and warranted spraying. Threshold in established, pre-cupping/pre-heading cabbage and cauliflower is 30% of plants with diamondback moth, cabbage looper, or imported cabbage worm present. Not seeing widespread cabbage maggot damage. - EB  
I agree, also saw DBM, ICW eggs and of course flea beetles! - CH

## CUCURBITS

Most plantings look pretty good, with early zucchini sizable enough to be developing both male and female flowers. A few fields are suffering from the weather, being root bound and nutritionally stressed by delayed transplanting, or root rots. Cucumber beetles are out, be ready to treat if you aren't using exclusion techniques or treating with imidicloprid at planting. - EB

*continued on next page*



continued...

## GARLIC

Onion maggot has started to show up and damage roots and young bulbs. More importantly, the damage is opening up the plants to bacterial infection like Fusarium. Unfortunately there is little to be done to manage the problem at this stage. Lorsban has been used to reduce the onset of onion maggot but this material is losing potency for this pest. Future work on dealing with onion maggot on garlic will be forthcoming. Note: Lorsban will probably be phased out for use in NY in the coming months. - RH

## LETTUCE AND GREENS

Seeing leaf miner damage in chard. This can be prevented by using row cover to exclude the adults that emerge in April and mid-May. While prevention works best, followed by targeting adults and hatching eggs, spinosad (Entrust) offers some control over larvae. All other options, aside from Radiant, require a pesticide license. Of those restricted use materials, Coragen specifically targets larvae. - EB

## ONIONS

Back to normal? Unfortunately, last week's heat did cause some sunscald and fried up some onion seedlings in a few stands. The majority of the crop got through it just fine. Earliest transplants are at 6-7 leaf stage and earliest direct seeded onions are in 2-leaf stage. See article on POST-emergent weed control in onion, page 6. We detected first Botrytis leaf blight (BLB) lesions this week in transplanted onions 4-5 leaf and larger in Elba this week. Much more coming regarding fungicide research highlights from 2019 and new fungicide recommendations for 2020 in upcoming issues of VegEdge. - CH

## PEPPERS

Some pepper transplants on plastic mulch are showing damage from high temperatures last week. Others show signs of aphid damage, which likely occurred in the greenhouse. Often these early infestations work themselves out once planted in the field. If not, Beleaf (group 29) and Fufill (group 9A) are non-restricted materials and good choices for early outbreaks. In our experience aphid numbers can spike when pyrethroids (group 3A) are used repeatedly. Organic? Consider Mycotrol. Please remember to rotate between groups. - JR

## POTATOES

The earliest planted potatoes are starting to emerge in fields. Pesticides applied at planting should help deter pest problems for the first few weeks of the growing season. Do be on the lookout for black cutworm damage to newly emerged plants, as this pest has been found in high numbers in other crops in the region. Consider treatment if 5% or more of potatoes have been cut. -ML

Colorado potato beetles are out, with reports of both walking adults and flying adults. Scout last year's potato fields looking for adults crawling on the ground or feeding on volunteer potatoes and nightshade weeds. Overwintering adults will eventually fly if they can't find a good food source by walking. - EB

## SWEET CORN

Early sweet corn under plastic has mostly been cut out. Stands on the first covered plantings can be variable in both emergence and uniformity. The first open field plantings are looking more consistent. Corn earworm was caught in two WNY traps this week, but it is not a threat at this early crop stage. - EB

## TOMATOES

Field transplants are establishing well. Early high tunnel tomatoes are sizing up and reaching breaker stage. - EB

Late Blight Severity Values\* 6/02/2020

Location	Total	Forecast 6/03 - 6/05	Location	Total	Forecast 6/03 - 6/05
Albion	1	2	Hammondsport	1	1
Arkport	4	3	Knowlesville	2	2
Baldwinsville	1	2	Lyndonville	2	5
Bergen	3	5	Medina	8	2
Buffalo	16	5	Niagara Falls	14	3
Burt	2	5	Penn Yan	6	3
Ceres	10	6	Rochester	6	3
Elba	0	5	Sodus	1	4
Fairville	0	3	Versailles	13	3
Farmington	2	3	Wellsville	18	5
Fulton	7	4	Williamson	0	4
Geneva	1	3			

\* Severity value accumulations start 5/20/2020



## Berry Update, June 3: Bloom and Beyond

Esther Kibbe, Cornell Cooperative Extension, Harvest NY

### STRAWBERRIES

Early varieties have small green fruit, while mid to late varieties are in early to full bloom. Cold damaged primary flowers have shriveled, while secondary and tertiary flowers/fruit are prominent. Fruit size will probably be down somewhat, but there are still a good quantity of berries developing. I'm seeing strawberry aphids in many fields, and 2-spot spider mites and tarnished plant bugs in a few. I spotted my first spittle bug of the season. A first for me: slime mold in strawberries. This is a harmless decay organism, but looks pretty dramatic.



Petal fall to small green fruit stages in strawberry.  
Photo by Esther Kibbe, CCE Harvest NY



Slime mold in a strawberry planting. It will dry up and fade away as drier conditions continue in the summer.  
Photo by Esther Kibbe, CCE Harvest NY

### BLUEBERRIES

Mostly full bloom to petal fall. Bees have been abundant and active in fields I visited. I have seen some blighted flower clusters and shoots. It can be hard to diagnose exactly which type of blight causes these (there are several candidates), but a good fungicide program can help keep things under control. Many folks have commented on plants that seem to have a lot of flowers but poor leaf development. There isn't a confident diagnosis for this condition, but could be a combination of variety characteristics, cold damage, plant stress, or even viruses or other disease issues. If you're seeing issues like this, let us know, as we're trying to understand the condition better. During bloom, flowers are susceptible to mummyberry fruit infection, botrytis blossom blight and anthracnose blight. Pristine and Indar have shown the best degree of control against mummyberry infection and will control the other blossom blights as well. Be ready for fruitworm sprays as early varieties move to petal fall.



Blighted flower clusters in blueberries.  
Photo by E. Kibbe, CCE Harvest NY

### BRAMBLES

Buds visible, open flowers in some areas. Black raspberries and blackberries a little behind red raspberries. Still seeing effects of cold damage. In many plantings, floricanes are short and weak because there hasn't been much of a fertility program. It's getting late to fertilize, it really should have gone on a few weeks ago, but an application of a highly soluble (or liquid) product could still get to the roots and help primocane growth, and set the plants up for a better crop next year.

### RIBES (CURRANTS & GOOSEBERRIES)

Moving past bloom to fruit set. Keep an eye out for powdery mildew development. While all commercial cultivars for sale in NY are supposed to be resistant to White Pine Blister Rust, resistance seems to be breaking down, and sometimes susceptible cultivars find their way in. Systemic fungicides (Rally, Cabrio) should be used if you have observed rust symptoms in the past, to reduce the build-up of this disease. Stylet Oil can be used in organic production systems. ●



White pine blister rust on black currant.  
Photo by E. Kibbe, CCE Harvest NY

**Cornell Fruit Resources for Commercial Berry Growers:** <https://blogs.cornell.edu/berries/>  
information on production, IPM, post-harvest, the Berry Blog, and other resources for berry growers



## Weather Charts

John Gibbons, CCE Cornell Vegetable Program

### WEEKLY WEATHER SUMMARY: 5/26/20 - 6/01/2020

Location**	Rainfall (inch)		Temperature (°F)	
	Week	Month May	Max	Min
Albion	0.75	2.17	89	41
Arkport	0.21	2.66	89	38
Bergen	0.72	2.16	95	41
Brocton	1.10	4.67	90	43
Buffalo*	1.22	3.87	92	43
Burt	0.84	2.15	86	48
Ceres	0.37	2.25	88	34
Elba	0.92	2.04	90	41
Fairville	0.59	1.87	93	39
Farmington	0.86	2.94	93	39
Fulton*	0.37	2.94	91	42
Geneva	0.07	1.30	88	42
Hammondsport	0.43	2.00	92	42
Hanover	0.48	3.34	89	43
Lodi	0.45	2.31	90	42
Niagara Falls*	0.80	1.94	90	43
Penn Yan*	0.26	1.60	89	45
Rochester*	0.86	1.92	92	45
Sodus	0.61	2.00	93	38
South Bristol	0.24	1.67	90	42
Varick	0.37	NA	92	42
Versailles	0.72	4.18	91	45
Williamson	0.44	1.47	90	39

### ACCUMULATED GROWING DEGREE DAYS (AGDD)

BASE 50°F: APRIL 1 - JUNE 1, 2020

Location**	2020	2019	2018
Albion	261	243	468
Arkport	237	265	521
Bergen	272	262	442
Brocton	295	290	NA
Buffalo*	293	240	508
Burt	230	192	383
Ceres	236	333	433
Elba	262	233	458
Fairville	274	239	434
Farmington	286	251	448
Fulton*	295	239	435
Geneva	285	276	458
Hammondsport	282	277	448
Hanover	291	289	469
Lodi	305	303	487
Niagara Falls*	266	213	509
Penn Yan*	293	307	488
Rochester*	284	308	510
Sodus	268	236	424
South Bristol	283	269	470
Varick	317	312	480
Versailles	292	301	464
Williamson	261	210	410

\*Airport stations

\*\* For other locations: <http://newa.cornell.edu>

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# Cornell Cooperative Extension Cornell Vegetable Program

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VegEdge is the highly regarded newsletter produced by the Cornell Vegetable Program. It provides readers with information on upcoming meetings, pesticide updates, pest management strategies, cultural practices, marketing ideas and research results from Cornell University and Cornell Cooperative Extension. VegEdge is produced every few weeks, with frequency increasing leading up to and during the growing season.

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