

as 40 ft to feed on nearby crops? Learn how to manage them.





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bacterial bulb rot, a disease that routinely causes annual losses of 2% to 20%.

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Heavy infestations of cutworms have been reported in mixed vegetable crops in the

Genesee Valley. Scout recent plantings regularly for damage.

PAGE 5



Scout for Botrytis Leaf Blight and onion thrips, especially in onions with 4 leaves or more.

Scouting tips for both pests are provided.

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## Are Slugs and Snails Feeding on Your Vegetable Crops?

Julie Kikkert, CCE Cornell Vegetable Program

It's no secret that slugs and snails love wet weather, and reports locally and regionally indicate that active feeding is happening at this time. In the Great Lakes region, eggs of slugs/snails that were laid last fall begin to hatch in mid to late May. Feeding occurs one to two weeks after egg hatch. Hence, significant feeding will begin in early to mid-June, with the heaviest feeding in late June and early July. Prolonged wet weather increases slug and snail activity in crops.

To determine if you have slugs and/or snails in your crops, look for signs of damage which may include complete loss of small seedlings; and in older plants, large holes where the veins of the leaf remain intact (skeletonized). There are often trails of slime that glistens in the sunlight. Finding the actual slugs and snails is easiest at dusk or dawn. If you really want to know what is happening, go out with a flashlight



Snail active on pea leaf in the morning dew. Photo: Julie Kikkert, CCE CVP



VegEdge newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension regional agriculture team, serving 13 counties in Western New York.

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: CCE Cornell Vegetable Program 480 North Main Street, Canandaigua, NY 14224 Email: cce-cvp@cornell.edu

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Cornell University Cooperative Extension Cornell Vegetable Program

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The next issue of VegEdge will be June 14, 2017.

## Late Blight Risk – Severity Values Accumulations

Darcy Telenko and John Gibbons, CCE Cornell Vegetable Program

Late blight severity values continue to rise for many locations. The threshold for risk is 18 SVs and within about a week of reaching 18 SVs growers need to apply fungicide on all potatoes 4+ inches tall, and on all field tomatoes, to protect them against late blight. Based on weather station data using first emergence of potatoes on May 12, twelve locations have exceeded the threshold, these include Albion, Baldwinsville, Buffalo, Gainesville, Knowlesville, Niagara Falls, Penn Yan, Rochester, Sodus, Versailles, Volney, Wellsville, and Wolcott. The forecast projects that Bergen, Elba, Medina, and Williamson will reach 18 SVs by the end of the week (see table for other weather stations). Once you've applied your first fungicide, use Sincast or early blight P-Days to help schedule your fungicide applications for

the remainder of the season.

National late blight monitoring had positive sites in south in Florida, North Carolina and Virginia. US-23 was the pathogen type isolated in Florida. We will continue to watch the national occurrence map to track late blight movement.

#### Late Blight Severity Values\* 6/6/17

Location	Total	Forecast 6/07-6/09	Location	Total	Forecast 6/07-6/09
Albion	34	2	Lodi	0	0
Baldwinsville	18	2	Lyndonville	14	2
Bergen	15	2	Medina	16	2
Buffalo	24	2	Niagara Falls	20	2
Ceres	4	1	Penn Yan	19	0
Elba	17	2	Rochester	25	1
Fairville	9	0	Sodus	20	1
Farmington	16	0	Versailles	20	2
Gainesville	46	1	Volney	27	0
Geneva	0	0	Wellsville	19	2
Kendall	12	2	Williamson	15	2
Knowlesville	39	2	Wolcott	22	0

\* Severity value accumulations start 5/12/2017 0

in the middle of the night and you may be amazed at how many slugs and snails are out feeding. Slugs will move out of the borders at night and travel as much as 40 ft. to feed on crops nearby. Slug traps can also be built by placing boards or other materials in the field and looking underneath (you can find options for these on the internet).

Populations of slugs and snails, are often highest in fields with more crop residue, in weedy fields and along hedge rows. While they often spend most of the time underground, pulling back heavy foliage will often find them feeding there. It is estimated that only 5% of the population will be above ground during the summer months. Tillage helps to reduce population, but of course this practice needs to be weighed based on your soil health goals.

In regards to management, overall long-term ecological practices may be best.

- Avoid planting highly problematic crops (such as processing peas) in areas with known heavy slug populations.
- Avoid planting near fields with wet and lush borders, and near ponds and ditches.
- Consider a tilled strip between borders with slugs and your crop.
- Maintain good weed control.
- If slugs and snails are a contaminant in your crop, harvest during the daytime when fewer slugs/snails will be on the foliage.
- Baits are available for use around some crops, but generally must be kept off of the harvestable plant parts (read labels carefully).
- Lannate LV is labeled for control of slugs in cabbage only. The key to best control with Lannate is that it comes into contact with the slugs. Spray at night or in the early morning when temperatures are cool and foliage is wet with dew or rain.

## Flea Beetles, Imported Cabbage Worm and Diamondback Moth in Cole Crops

#### Christy Hoepting, CCE Cornell Vegetable Program

Flea beetles (FB) are especially problematic on Asian crucifers. When FB reach 1 beetle per plant at the 6-8 leaf stage, 50% infested during the cotyledon stage, or at the first signs of shot hole feeding damage, the crop needs to be sprayed (Fig. 1). Any of the labeled pyrethroids (i.e. Baythroid XL, Brigade, Warrior, Hero, Mustang MAXX and their generics), Sevin, or neonicotinoid pre-mixes with a pyrethroid including Voliam Xpress, Endigo and Leverage may be used. Soil applications of Platinum (neonicotinoid) or Verimark (diamide) provide longer residual control.

The critical growth stage to control worm pests including imported cabbage worm (ICW) and diamondback moth (DBM) is from the 8 leaf stage until head formation. Look for newly hatched larvae in the heart leaves where their feeding leaves tiny brown scarring (Fig. 2a). Once they get bigger, they generally feed on the undersides of leaves making small irregular holes (windows) leaving the upper leaf surface intact (Fig. 2b). This type of injury generally does not affect yield UNLESS populations are high or the feeding is in the heartleaves prior to head formation. Worm frass can also be a source of contamination in harvested product. When scouting, be sure to look at both the undersides of leaves as well as digging into the heart leaves. DBM wriggle when prodded and hang by a silk thread (Fig. 3) and ICW are sluggish and fuzzy (Fig. 4). In seedlings, treatment is warranted if 20% (all worms included) of plants are infested. The threshold rises to 30% infestation in the early vegetative to cupping stage and then drops to 5% through harvest. Bts (Dipel, Xentari, etc.) are all very effective against ICW and can also be used for DBM at low populations. Avaunt, Radiant, Coragen, Voliam Xpress and Proclaim are recommended if high populations of DBMs appear. Pyrethroids are generally effective for ICW but note that their use is sometimes associated with a buildup of DBM and aphids.



Figure 1. Crucifer flea beetles (black) and feeding injury on cabbage. The spray threshold is 1 flea beetle per plant between the 6-8 leaf stages. Sprays often need to be reapplied frequently. Photo: C. Hoepting, CCE CVP



Figure 2. Diamondback moth feeding damage in heart leaves (a). Diamondback moth feeding (window paning) on undersides of leaves (b). Photos: C. Hoepting, CCE CVP



Figure 3. Diamondback moth larvae wriggle and hang from a silk thread when prodded. Photo: C. Hoepting, CCE CVP



Figure 4. Imported cabbage worm larvae of different sizes are fuzzy green and sluggish when prodded. Their frass are green nuggets tucked at the base of the newly forming head. Photo: C. Hoepting, CCE CVP

## SURCHLOR for Reduction of Onion Bacterial Bulb Rot in New York

Steve Beer, Plant Pathology and Plant-Microbe Biology, School of Integrated Plant Science, CALS, Cornell University, and Christy Hoepting, CCE Cornell Vegetable Program

As recently announced, SURCHLOR, Surpass Chemicals' brand of sodium hypochlorite was registered by the NYS DEC for application to growing onions to reduce bacterial rot in NY. SUR-CHLOR was registered under FIFRA 24 (c) as a Special Local Need (SLN) label. No other material registered by the EPA is available to reduce bacterial rot of onions. Growers now have a tool to address one of their most challenging and costly problems, bacterial bulb rot, which routinely causes annual losses of 2% to 20%. Crop Production Services (CPS) will distribute SURCHLOR, which has outlets throughout the State. SUR-CHLOR will be available from CPS, with a few days.

The registration was accomplished through collaboration in 2015 and 2016 among several commercial onion growers in NY and Research and Extension personnel at Cornell University. Onion growers added sodium hypochlorite to their routine insecticide and fungicide sprays for 4 to 8 weekly applications starting in late June. Just before harvest, the Research/Extension crew collected bulbs from plots that had been treated with sodium hypochlorite and comparable "check" plots that had not been sprayed with sodium hypochlorite. Each bulb was cut and examined closely for symptoms of bacterial rot and judged either rotten or not. Tests were conducted in all the important onion-producing areas of NY, with emphasis on the Elba Muck region of Genesee and Orleans Counties and the Black Dirt region of Orange County. Summary data are presented in Fig. 1. There was less rot in most of the trial plots that had been treated with sodium hypochlorite, than in the "check" plots.

Sodium hypochlorite is a common sanitizer/disinfectant used to treat contaminated and municipal water, "shock" swimming pools, spas and hot tubs, sanitize hard surfaces, bleach laundry and paper pulp and treat sewage as a final step before releasing treated sewage into bodies of water. It is also used



Figure 1. Effect of hypochorite (both sodium and potassium hypochlorite were trialed by growers across NY in 2016) on the incidence of bacterial bulb decay at harvest. Onion grower-cooperators added a hypochlorite product to their weekly tank mixes. Just before harvest, treated bulbs were compared to "check" bulbs that had been sprayed with the same tank mix without hypochlorite. In 10 of 14 side-by-side comparisons, the incidence of bacterial bulb rot was reduced in the onions had been treated with hypochlorite.

in dental root-canal therapy and poultry, meat, fruit and vegetable packing. However, the registration of SURCHLOR for application to growing onions is the first use of sodium hypochlorite for application to **GROWING** plants.

Based in part on our trial results, Surpass Chemical Co, a century-old chemical manufacturer based in Albany, applied to NYS DEC to register its brand of sodium hypochlorite for use on growing onions. On May 15, 2017, NY DEC granted registration of SURCHLOR, active ingredient: sodium hypochlorite, for application to growing onions to reduce bacterial rot. The SLN label is valid until December 31, 2022.

#### Precautions for Handling SURCHLOR 12.5% Sodium Hypochlorite

The concentrated 12.5% sodium hypochlorite, which is the active ingredient in SURCHLOR is labeled "DANGER". It should be handled and used with due caution. When preparing the material for spraying, caution should be exercised. Protective clothing, including goggles and rubber or plastic gloves, should be worn. Bear in mind that sodium hypochlorite bleaches clothing and contact with cotton clothing may cause holes.

According to the SLN label, SURCHLOR (12.5% sodium hypochlorite) may be added to grower spray tanks to achieve a final concentration of 1:1000 (v/v) (~1,200 ppm) in the spray tank (see Table 1). The spray tank may contain any materials (herbicides, insecticides or fungicides) registered for application to onions at that stage of growth. Sprays may be applied at a rate of 20 to 40 gallons per acre. Applications should be made every 7-10 days beginning in mid-June or at bulbing and ending when onions are 50% lodged.

Table 1. Amount of SURCHLOR to add to tank mix to achieve 1:1000 (v/v) dilution.

Gallons of Spray Mix in Spray Tank	Fluid Ounces of SURCHLOR to Add:	Milliliters of SURCHLOR To Add:
20	2.56 fl oz	76 ml
30	3.9 fl oz	113 ml
40	5.12 fl oz	151 ml
50	6.4 fl oz	189 ml
75	9.6 fl oz	284 ml
100	12.8 fl oz	378 ml
150	19.2 fl oz	567 ml
200	25.6 fl oz	756 ml
500	64 fl oz	1890 ml
		continued on next page

2016 Hypochlorite Field Trials

Both the SURCHLOR SNL label (SLN NY -170004) and the primary label (EPA No. 9359-2) must be in the possession of the applicator at the time of use. CPS will supply the labels, which are also available on-line. Go to <u>http://</u> www.dec.ny.gov/nyspad/products; on the right-hand side, under "Product Name" search for/type in "Surchlor", then scroll down to click the "search" button. On the left-hand side, several products will appear: you will need the SLN and EPA No. 9359-2 labels. For each, click on the "more" button and from the screen that pops up, select the primary label of the most recent date.

Additional testing is underway during the present season. Growers who wish to participate in trials in 2017 should contact their respective CCE associate right away. The program will supply SURCHLOR needed for the trials as well as measuring beakers and testing materials to monitor hypochlorite concentration and pH of the spray. Why more testing in 2017, given that the material is registered already? We need more data to determine factors affecting efficient use of SURCHLOR, namely concentration, spray schedule and effect of SURCHLOR on other materials present in the spray tank, and vice-versa. In addition to grower trials, we will be doing other trials to help determine optimum efficiency. We also hope to get clues as to when bacterial rot is initiated during the growing season.

## New Pesticide Registrations (since April 25, 2017)

Christy Hoepting, CCE Cornell Vegetable Program

[2017 Vegetable Pesticide Updates appeared in the April 26, 2017 issue of VegEdge. The registrations appearing below have been received since that date. Information on how to look up labels for pesticides labeled in NY appeared in the April 26 issue, as well. ed. A. Parr, CCE CVP]

#### New Label (new EPA No.)

• MINECTO PRO Insecticide: (EPA No. 100-1592; a.i. cyantraniliprole and abamectin; Syngenta Crop protection). Essentially, a premix of Agri-Mek and Exirel for control of worms, flea beetles, aphids, spider mites and onion thrips.

#### **Supplemental Label for Additional Crops:**

• SERIFEL BioFungicide: (EPA No. 71840-18; a.i. *Bacillus amyloliquefaciens* strain MBI 600; BASF). Soil and foliar-applied for suppression of broad-spectrum of plant diseases. Added new crops including asparagus, brassicas, onions and leaf vegetables. Cucurbits, fruiting vegetables and tuberous (e.g. potatoes) on primary label.

#### FIFRA Section 24(C) Special Local Needs Label:

• SURCHLOR Disinfectant: (SLN-NY-170004; EPA No. 9359-2; a.i. sodium hypochlorite; Surpass Chemical Company). For control of bacterial decay on growing onions. [See announcement on previous page. ed. A. Parr, CVP]

#### FIFRA 2(ee) Recommendations (unlisted pest for crop already on label)

 VELIUM PRIME Fungicide/Nematicide: (EPA No. 264-1078; a.i. fluopyram; Bayer Crop Protection). Same active ingredient as group 7 fungicide in Luna Fungicide series. In-furrow application to suppress nematodes, early blight and nematodes in potatoes.

## Note: Users must have a copy of <u>both</u> the approved SLN, 2(ee) or supplemental label, AND the primary label in their possession at the time of application. •

### **Cutworms: A Threat to Fresh Market Vegetables**

Judson Reid, CCE Cornell Vegetable Program

Heavy infestations of cutworms have been reported in mixed vegetable crops in the Genesee Valley. Damage from these worms is difficult to predict and often sporadic. When it does occur it is severe. The best management approach is to scout recent plantings regularly for damage (lodged, wilted or cut plants). The worms themselves can be found by sifting soil from under plastic mulch or near affected plants. The larvae are active at night thus treatments should be applied late in the day. Damage is often concentrated along field edges, weedy areas or low spots in the field. Since cutworms affect a wide range of crops, check rates and PHI's specific to the situation. Recommended materials include Baythroid, Warrior, Asana and Mustang Maxx. For organic control, Entrust does include several cutworm species on its label for different crops. Pesticide application as early as possible in the infestation is critical.



Cutworms from Allegany County vegetable farm and cutworm feeding damage on vine crops. *Photos provided.* 

## First Occurrence of Dickeya on Long Island

#### Margaret McGrath, Cornell; edited by Darcy Telenko, CCE Cornell Vegetable Program

Dickeya blackleg, often just called Dickeya, is a new disease in the USA. It is caused by the bacterium, Dickeya dianthicola. This aggressive pathogen has the potential to cause more severe losses than species of Pectobacterium (aka Erwinia) causing the type of blackleg that has been occurring. High temperatures (exceeding 77 F) are favorable for Dickeya, consequently the greatest losses have been in the southern portion of the northeast (especially the mid -Atlantic region) and further south. Total crop loss has occurred. Dickeya was severe in the last few years at least partly reflecting hotter weather than previous 2 years when the pathogen likely was present.

CCE scouts found symptoms of Dickeya this week on Long Island. This is the same time as it was first found last year. Growers should be inspecting plants, especially in plantings where there is any concern of seed being contaminated and in fields where potatoes were also grown in 2016.

Symptoms. First symptom is poor emergence (skips in a production field) due to rotting seed. Plants that emerge from contaminated seed wilt and typically have black stems extending upwards from rotting seed piece. Occasionally, especially late in the season, only internal stem tissue will be discolored. The fact stem symptoms start at the seed and progress upward illustrates that *Dickeya dianthicola* is in potato seed. Symptoms typically develop following a period of hot weather especially when plants are also stressed. In 2015 on Long Island a lot of plants dropped out during flowering.

Blackleg caused by Pectobacterium differs from Dickeya in that it starts on the outside of stem tissue, infects through wounds, and then moves downward as well as upward causing stem rot that is dark brown. Affected tissue typically has an offensive odor and is slimy. In contrast, plant tissue affected by Dickeya typically has an earthy smell; occasionally it has an offensive smell indicating soft rot bacteria are also present.

Plants affected by Dickeya can just appear unthrifty if they have a sub-lethal titer of the bacterium.

No symptoms may develop when the temperature never becomes hot during the growing season. There are no documented effective management practices to implement after planting. If you suspect Dickeya in your field, please contact Darcy 716-697-4965 or any CVP team member.

Photos and more information are posted at <a href="http://">http://</a>

vegetablemdonline.ppath.cornell.edu/ NewsArticles/Potato-Dickeya.html

## **CVP Welcomes Summer Interns and Technician to the Team**

The Cornell Vegetable Program is excited to have two student research interns this summer to assist in scouting fresh market vegetables in western New York. David Ludwig and Bethany Hunt will be working alongside Darcy Telenko as part of the iPiPE CAP (Integrated Pest Information Platform for Extension and Education, Cooperative Agricultural Project) internship program. They have hit the ground running, as they have already visited several vegetable farms and have helped Darcy set up numerous vegetable research trials. It looks to be a busy summer of pest detection and data collection.

#### David Ludwig

"I'm looking forward to learning more about the great diversity of agriculture that western New York has to offer during my time as an intern with the Cornell Vegetable Program. I am a



junior at Cornell University pursuing a B.S. in Environmental Science and Sustainability with a minor in Crop Management. Originally from Hamburg, New York, I have worked in agriculture with Eden Valley Growers and Amos Zittel & Sons in Eden, New York. I'm interested in learning ways to make agriculture more sustainable and more profitable for growers by using pest management techniques efficiently and effectively. I'm grateful for this opportunity to learn, and hope to leave a positive impact during my time working with growers this summer!" Bethany Hunt "I'm very excited to join the Cornell Cooperative Extension vegetable pest program this summer! I grew up helping my grandparents and parents with their vegetable gardens, and I have



always been interested in food production. I recently graduated from Skidmore College with a bachelor's in biology, and I hope to pursue a PhD in entomology in the near future. I'm looking forward to working with farmers and learning as much as I can about pest management!" The Cornell Vegetable Program is pleased to welcome our new field technician, Audrey Klein, to our team. Audrey will be working this season alongside Christy Hoepting, assisting in data collection, scouting, and research trial management.

Audrey Klein I am a recent graduate of SUNY College of Environmental Science & Forestry with a B.S. in Environmental Biology. During my undergrad I focused on plant biology and



plant pathology. I am so excited to join the Cornell Cooperative Extension Vegetable Program in helping growers find solutions and treatments for a variety of crop pests and stressors. I am a native of Rochester, NY and am looking forward to learning more about New York agriculture and vegetable production.

## Scouting Tips for Botrytis Leaf Blight in Onions

Christy Hoepting, CCE Cornell Vegetable Program

#### Scouting for Botrytis Leaf Blight:

When scouting for Botrytis leaf blight (BLB), look for and count the tiny yellow lesions surrounded by silvery halos on the outer 3 leaves. The number of lesions per leaf is the number of lesions per plant divided by 3. Count the number of lesions on 20 to 30 plants per field. Identifying BLB lesions can be very tricky to the untrained eye.

#### **BLB Lesions:**

These are the tiny pin-prick to pin-head sized yellow necrotic spots surrounded by silvery halos (Fig. 1 lesions 5 & 6). The silvery halo is often blotchy in shape. Sometimes the necrotic spot is barely visible, which can make identification of such versions of these lesions tricky to identify (Fig. 1 lesions 2 & 3). When BLB lesions get old, the center becomes sunken and often splits, it is still vellowish in color and remnants of the silvery halo can usually still be seen (Fig. 1, lesion 9). Herbicide injury and various nicks and dings caused by blowing debris or herbicide injury may be confused with BLB lesions (Fig. 2). BLB lesions can be distinguished by their ghostly appearance not penetrating the leaf surface. BLB lesions are most abundant on the outer leaves, usually on the underside of the leaf, and are distributed anywhere along the leaf. All of these lesions are counted when scouting to use for spray thresholds for BLB.



Figure 1. Ten Botrytis leaf blight (BLB) lesions on an onion leaf. Lesion No. 1,4,5,6 & 7 have tiny yellow necrotic centers. In lesion No. 2 & 10, the necrotic center is not visible. Lesion No. 8 does not have a distinct yellow center and blends into No. 7. Lesion No. 9 is an old lesion with a sunken center and silvery halo still visible. *Photo: C. Hoepting, CVP* 



Figure 2. BLB lesion amongst other necrotic spots on onion leaf. Photo: C. Hoepting, CVP

## Scouting Tips for Onion Thrips in Onions

#### Christy Hoepting, CCE Cornell Vegetable Program

#### **Scouting for Onion Thrips:**

To find the first thrips of the season, look deep into the leaf axils. The adults are brown, sliver-like and up to 2 mm in length (Fig. 1), while the nymphs are yellow and 0.5 to 1.2 mm in length (Fig. 2). Inspect 20 to 30 plants and count the total number of OT per plant and divide by the average number of leaves per plant to get the number of OT per leaf. Thrips feeding causes silvery streaking along the leaves. If you can already see thrips feeding damage (Fig. 3) that is also a good indication that it is time to spray. If there is a lot of feeding damage, than you likely missed a timely first spray.



Figure 1. Adult onion thrips are the first thrips of the season. They are tiny brown sliver-like insects up to 2 mm in length. *Photo: C. Hoepting, CVP* 



Figure 2. Onion thrips nymphs in leaf axil of onion plant (above). Photo: Whitney Cranshaw, Colorado State University



**Figure 3.** Subtle streaking along leaves is an early indication of early onion thrips feedling. This plant has reached the spray threshold. *Photo: C. Hoepting, CVP* 

CRORPINSIGHTS

Keep an eye on insect pest populations. We continue to find hot spots in various crops. The major players include flea beetles, cabbage worms,

aphids, and Colorado potato beetle. Tarnished plant bug, cucumber beetles, and thrips have also started to appear.

**Aphids** are showing up on a lot of different crops. Watch for them on vine crops. Some years we have seen significant damage from viruses spread by some aphids. We don't see this every year and it is sporadic across the region but it can negatively affect summer squash, winter squash, and pumpkins. The symptoms may not show up for weeks or months after infection by the aphids. Keep on top of the insects now.

<u>Leek moth</u> damage is being seen in the North Country. Amy Ivy has reported damage in storage onion plantings and warns garlic growers to look for the worms attacking scapes.

Cucumber mosaic virus.

#### CUCURBITS

In the earliest squash, there are flowers and 1-3-inch fruit developing. We have seen a few cucumber beetles, in-furrow insecticides seem to be providing good management of these infestations. Cucumber downy mildew has been positively identified on cucumber in Duplin County, North Carolina. The current risk remains in the south; we will continue to monitor and update this weekly.

#### GARLIC

<u>Thrips</u> on garlic plants are becoming more numerous. While damage doesn't seem to affect garlic too much, smaller plants could be harmed. <u>White rot</u> in garlic has been found in a number of garlic plantings in Eastern NY, particularly in Orange County. Look for plants that weak and spindly. Leaves are wilting. If you carefully dig around the plants white fungal growth on the stem at the soil line. If the plants are carefully lifted, small black "poppy seed" sized sclerotia hanging from fine strands. More on this problem will be written up next week.

#### ONIONS

It's disease weather! Optimum conditions for **Botrytis Leaf Blight (BLB)** are temperatures between 59 and 65°F with at least 12 hours of leaf wetness. Although, we have detected the odd BLB lesions in transplanted fields, counts have been well below the threshold of <u>1.0 BLB</u> <u>lesions per leaf</u> to start spraying. Some early transplanted fields have already been sprayed with Bravo for BLB. Results from 2016 Cornell fungicide trial showed that Bravo is still the best performing fungicide for BLB control and is recommended for early season BLB control. Generally, onions with less than 4 leaves do not need to be sprayed for BLB. Most of the direct seeded crop is between 1 and 3 leaf stage this week. In the muck lands, **onion thrips (OT)** counts remain very low (e.g. only 4 OT in 40+ plants). Last week, we saw OT counts starting to approach spray thresholds (1.0 OT per leaf) in upland small-scale production. Next week it is predicted that BLB counts will be up following this period of wet weather and that OT counts will be up due to the forecasted temperatures in the 80s over the weekend. Scout for BLB and OT, especially in onions with 4 leaves or more – see scouting tips, page 7.

(From R. Hadad, CVP): Thrips are appearing on onion transplants. Look for the thrips down where the leaf base meets the stem. Short white streaking are common feeding symptoms that are easily seen. There are numerous insecticides listed in the Cornell Vegetable Guidelines. Alternate products. For organic growers, Surround, a kaolin clay, can be applied. Remember the spray mix needs to be constantly agitated to keep the clay in suspension. Removing the screen filter from the spray nozzle will help to get a strong stream onto the plants.

Plants wilting from **onion maggot (OM)** feeding were observed this week (Fig. 1): curious to see how the mild winter with minimal snow cover will affect OM pressure, and whether the wet spring will affect efficacy of seed and in-furrow insecticide treatments for OM – time will tell!

Upcoming Onion Meetings – mark your calendars and plan to attend:

• CVP "Research Scouting" program featuring onion thrips 2016 debriefing and 2017 season ramp-up with Brian Nault and Christy Hoepting. 1 DEC recertification credit will be available at each meeting.

June 13 at Muck Donut Hour in Elba at the corner of Transit and Spoilbank, 8:30 am to 9:30 am.

June 15 in Wayne Co. at Johnson Fish Farm storage from 9:00 am to 10:00 am. From Route 88 just south of Sodus, take Feiock Rd. (on the east) to Fish Farm Rd. Turn right onto Fish Farm Rd. and continue 1.34 miles past right angle turn with Sebring Rd. Johnson storage is on Fish Farm Rd. 0.4 miles past Sebring Rd. on the left.



Figure 1. Onion maggot injury: wilted 2-leaf onion (left). Pull it out of the ground and the roots will be gone and when you squeeze on the bulb an onion maggot may pop out (right). *Photos: Christy Hoepting, CCE CVP* 

• Oswego Onion Twilight Meeting planned for <u>June 22</u> at John Dunsmoor Farm in Oswego. Featuring herbicide demonstration. 2.0 DEC credits will be available. More info and invitations to follow.



#### continued - CROP Insights

#### PEPPERS

Keep an eye out for aphids. Examine ten sites throughout field. Treatment should begin before population exceeds five nymphs per leaf. Natural enemies help suppress aphid infestations such as ladybug larvae and minute pirate bug (*Orius*).

#### Insecticide options for aphid management on pepper.

Trade Name	Common Name	Group	REI (hours)	PHI (days)		
Fulfill	pymetrozine	9B	12	0		
Movento	spirotetramet	25	24	1		
Admire Pro	imadacloprid	4A	12	21 (soil) / 0 (foliar)		
Assail 30 SG	acetamiprid	4A	12	7		
Exirel	cyantraniliprole	28	12	1		
Beleaf 50 SG	flonicamid	9C	12	0		
Dimethonate 400	dimethoate	1B	48	0		
Orthene	acephate	1B	24	7		
Entrust*	spinosad	5	4	1		
PyGanic*	pyrethrins	3A	12	after spray has dried		
* OMRI approved						



10x view of aphid nymphs on the underside of a pepper leaf. *Photo: David Ludwig, CVP* 

#### POTATO and TOMATO

Colorado potato beetles have been active in several locations feeding on foliage. Scouting programs and thresholds for initiating sprays have been developed for potato and tomato (see Vegetable Guidelines for more details). In general, the threshold for potato after sample 50 plants in a field is  $\geq$  200 small larvae,  $\geq$  75 large larvae, and  $\geq$  25 adults. For tomato, thresholds are still in the development stage, but current data recommend a threshold of  $\frac{3}{4}$  adult of  $\geq$  10% defoliation in plants up to 10 inches tall; 1 adult or larvae per plant of  $\geq$  20% defoliation for plants 10 inches to early fruit set; and  $\geq$ 10% defoliation or  $\geq$ 2% plants with one freshly injured fruit.



Colorado potato beetle egg mass on tomato leaf. Photo: David Ludwig, CVP

#### **PROCESSING CROPS and DRY BEANS**

Our field crops colleagues are reporting activity of true armyworm, black cutworm, slugs (see general article), and cereal leaf beetle. Weed control is critical at this time. Scout fields for weed escapes and apply post-emergent herbicides based on the weed species present. Small weeds will be more easily killed. I have been amazed at the weed seedlings germinating after the last bout of rain. Warm temperatures predicted for next week will push weed emergence and even more. While wet fields may keep spray equipment out, be ready to go when conditions are right.

#### SWEET CORN

The earliest sweet corn plantings have started to tassel. We isolated our first corn ear worm moths from Erie County today and found active worm feeding in the tassel at other locations. We will continue to monitor the sweet corn traps (see report for more details below).

#### WATERMELON

Rainy spring observation: Waterlogged watermelons wilt in saturated soils. Replant; hope springs eternal.

### WNY Sweet Corn Trap Network Report, 6/6/17

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

Eleven sites reporting this week with European corn borer (ECB)-E trapped at three of those sites and ECB-Z trapped at one site. Corn earworm (CEW) was trapped at the Eden site with a catch high enough to be on a 4-5 day spray schedule. Fall armyworm (FAW) was also reported this week at the Preble site. Most sites will set Western bean cutworm (WBC) traps within the next 2 weeks.

Peak ECB-E flight occurs at approximately 631 degree days modified base 50. A few sites have already reached this and several other sites will see degree day accumulations for peak flight reached within the next week (see degree days for each site in table to the right).

For fields that are in early tassel emergence, scout for any signs of eggs, larvae and feeding damage in the emerging tassel. Separate the leaves and look down into the tassel for any signs of feeding, frass or larvae. The treatment threshold at tassel emergence is 15% infested plants.

WNY Pheromone Trap Catches: June 6, 2017						
Location	ECB-E	ECB-Z	CEW	FAW	WBC	DD to Date
Baldwinsville (Onondaga)	NA	NA	NA	NA	NA	589
Batavia (Genesee)	NA	NA	NA	NA	NA	539
Bellona (Yates)	NA	NA	NA	NA	NA	648
Eden (Erie)	0	0	7	0	NA	649
Farmersville (Cattaraugus)	0	0	0	0	NA	488
Farmington (Ontario)	6	0	0	0	NA	579
Hamlin (Monroe)	NA	NA	NA	NA	NA	477
LeRoy (Genesee)	NA	NA	NA	NA	NA	551
Pavilion	NA	NA	NA	NA	NA	600
Penn Yan (Yates)	0	0	0	0	NA	450
Ransomville (Niagara)	NA	NA	NA	NA	NA	532
Seneca Castle (Ontario)	15	0	0	0	NA	571
Spencerport (Monroe)	NA	NA	NA	NA	NA	601
Waterport (Orleans)	NA	NA	NA	NA	NA	473
Williamson (Wayne)	NA	NA	NA	NA	NA	501
ECB - European Corn Borer	WBC -	C - Western Bean Cutworm				
CEW - Corn Earworm	NA -	NA - not available				
FAW - Fall Armyworm	DD -	DD - Degree Day (modified base 50F) accumulation				

## UPCOMING EVENTS view all Cornell Vegetable Program upcoming events at cvp.cce.cornell.edu

#### Fresh Market Minutes - Every Other Tuesday in Niagara County June 13 - September 5, 2017 | 9:00 AM - 10:00 AM

June 13 - September 5, 2017 | 9:00 AM - 10:00 AM Kneed the Dough, 3678 Ransomville Rd, Ransomville, NY 14131

*New this year!* Meet with the Cornell Vegetable Program Specialist Darcy Telenko every other Tuesday morning to ask questions and share your observations in fresh market vegetables. Darcy will be in Niagara County on the second and fourth Tuesdays during the 2017 season. Questions? Contact Darcy Telenko at 716-697-4965.

#### Produce Safety Alliance Grower Training Course

June 13, 2017 | 8:00 AM - 5:15 PM CCE Wayne County, 1581 NYS Rt 88 N, Newark, NY 14513

Fruit and vegetable growers and others interested in learning about produce safety, the Food Safety Modernization Act (FSMA) Produce Safety Rule, Good Agricultural Practices (GAPs), and co-management of natural resources and food safety should attend this food safety training. Individuals who participate in this course are expected to gain a basic understanding of microorganisms relevant to produce safety and where they may be found on the farm, how to identify microbial risks, practices that reduce risks, and how to begin implementing produce safety practices on the farm, parts of a farm food safety plan and how to begin writing one, and requirements in the FSMA Produce Safety Rule and how to meet them.

In addition, the PSA Grower Training Course is one way to satisfy the FSMA Produce Safety Rule requirement outlined in section 112.22(c) that requires 'At least one supervisor or responsible party for your farm must have successfully completed food safety training at least equivalent to that received under standardized curriculum recognized as adequate by the Food and Drug Administration.'

COST: \$25 for NY grower/attendee; \$140 for out-of-state attendee. (Price for NY growers low because of a grant from NYS Dept of Ag & Markets.) For more info and to register, visit <u>https://lof.cce.cornell.edu/event.php?id=747</u>

#### 2017 NOFA-NY On-Farm Field Days

From June to October, field days on farms in 14 counties feature a wide range of practical topics for farmers. A full listing of this summer's field days can be found at <a href="http://bit.ly/2q9qnto">http://bit.ly/2q9qnto</a> and a link to register. Pre-registration is encouraged. Costs: \$15/individual, \$25 for two or more people from same farm, unless otherwise noted.

#### 2017 Oswego Muck Onion Twilight Meeting

#### June 22, 2017 | John Dunsmoor Farms, 3883 Co Rt 57, Oswego, NY 13126

This on-farm meeting will provide crucial, in-season research to aid onion growers with their management decisions to keep them profitable. The twilight meeting will emphasize strategies to prevent economic loss from onion pests and weeds. DEC recertification credits will be available. More details soon. Contact Christy Hoepting at 585-721-6953 with questions.

#### Fresh Market Vegetable Field Day

June 26, 2017 | 9:00 AM - 3:00 PM CVP Fresh Market Demo Site at Partridge's on the Farm Market 4924 Ellicott St Rd (Rt 63), Batavia, NY 14020

- Weed management tools for fresh market vegetables
- Fresh market vegetable plot tour tomato varieties and organic spray programs for disease management; cucumber varieties and
  organic spray programs for downy mildew; herbicide options in sweet corn; stale-seedbed techniques for weed management in root
  crops; weed management in root crops and zucchini
- GAPs/FSMA update
- Garlic: Tour of the trials, review of cultural and organic products for fusarium management, Q&A
- Pest management in tomato, pepper, and eggplant
- New market opportunities

Regional equipment dealers and industry representatives will be onsite to display equipment and new technology. CCA and 3.0 DEC credits (categories 10, 1a, and 23) will be available.

Pre-registration cost: \$25 Cornell Vegetable Program enrollees; \$35 all others. Lunch provided if pre-registered by June 22. At-the-door cost: \$35 each and lunch is not guaranteed. Visit <u>https://cvp.cce.cornell.edu/event.php?id=719</u> for more info. *We appreciate the support of Arctic Refrigeration, BioSafe Systems, KeyPlex Biopesticides, NutriAg USA, Oro Agri, Seigers Seeds, and Stokes Seeds.* 







## **Weather Charts**

John Gibbons, CCE Cornell Vegetable Program

#### Weekly Weather Summary: 5/30 - 6/05/17

	Rainfa	all (inch)	Temp (°F)		
Location	Week	Month May	Мах	Min	
Albion	1.62	5.86	75	46	
Appleton, North	NA	NA	NA	NA	
Baldwinsville	2.24	5.54	75	45	
Buffalo*	0.20	6.49	73	48	
Ceres	0.51	4.09	74	36	
Elba	0.27	5.12	74	44	
Fairville	1.21	5.03	74	43	
Farmington	0.40	5.11	74	42	
Gainesville	0.47	5.06	70	39	
Geneva	0.91	5.56	72	46	
Lodi	1.04	4.36	74	43	
Niagara Falls*	0.21	6.71	77	48	
Ovid	0.93	4.73	73	43	
Penn Yan*	0.88	4.69	72	46	
Phelps	2.11	6.32	73	45	
Portland	0.30	4.63	76	52	
Rochester*	0.89	5.02	75	48	
Silver Creek	NA	NA	76	47	
Sodus	1.63	4.54	77	46	
Versailles	0.17	6.23	74	45	
Volney	1.95	6.42	73	43	
Williamson	1.19	4.65	76	47	

#### Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 – June 05, 2017

Location	2017	2016	2015
Albion	370	395	489
Appleton, North	311	306	372
Baldwinsville	404	415	512
Buffalo	391	435	501
Ceres	364	308	421
Elba	352	276	366
Fairville	351	352	NA
Farmington	360	373	484
Gainesville	287	284	386
Geneva	385	394	491
Lodi	472	440	570
Niagara Falls	441	450	448
Ovid	430	409	535
Penn Yan	421	407	536
Phelps	381	382	504
Portland	445	388	461
Rochester	419	419	547
Silver Creek	413	356	431
Sodus	368	333	420
Versailles	434	374	457
Volney	352	NA	NA
Williamson	350	328	410

Airport stations

Data from other station/airport sites is at: http://newa.cornell.edu/ Weather Data, Daily Summary and Degree Days.





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VegEdge is the award-winning newsletter produced by the Cornell Vegetable Program in Western New York. It provides readers with information on upcoming meetings, pesticide updates, pest management strategies, cultural practices, marketing ideas and research results from Cornell 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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#### Cornell University Cooperative Extension Cornell Vegetable Program

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