



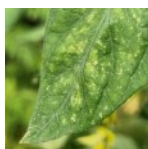
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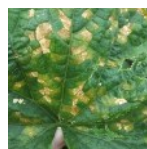
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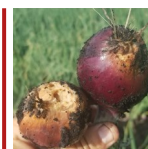
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## Management of White Mold in Beans

Julie Kikkert, CCE Cornell Vegetable Program, and Sarah Pethybridge, Cornell University

Akin to a flush of germinating weeds after a rain, resting structures of the fungus that causes white mold in beans (*Sclerotinia sclerotiorum*) will likely germinate as rain (or irrigation) and cooler temperatures arrive as the bean growing season continues. These resting structures, called sclerotia, are hardened masses of the fungus which can survive for long periods of time in the soil. If you have ever had a crop with white mold in a field, it is likely that there are sclerotia buried in the ground, that may come to the surface with tillage or planting equipment. Under conducive environmental conditions, sclerotia at or near the soil surface form fruiting structures called apothecia. Although these tan, cup-shaped structures may sometimes be observed beneath the bean canopy, most people will never see them as they are very small, blend in with the soil, and often appear for only short periods of time. Mature apothecia release ascospores into the air, which are transported by wind and infect dying flowers leading to white mold.



Hard black sclerotia formed around dry bean seeds at harvest. Photo: J. Kikkert, CVP



In vitro production of apothecia on sterile sand (left) and ascospore discharge of *Sclerotinia sclerotiorum* (right). (Courtesy H.R. Dillard). Photos: J. Ogradnick, Cornell

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**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.

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*The next issue of VegEdge newsletter will be produced August 7, 2019.*

**Elba onion growers, Matt Mortellaro, Guy Smith, Chuck Barie, Emmaline Long, and Mark and Max Torrey received an Excellence in Integrated Pest Management (IPM) Award from the New York State Integrated Pest Management Program (NYS IPM). Congratulations!!**



Elba muck onion growers received their awards for Excellence in Onion Integrated Pest Management from New York State IPM in a small roadside ceremony appropriately at Muck Donut Hour this week. Flanked by Brian Nault, Cornell Onion Entomologist on the left, and Christy Hoepting, CVP Onion Specialist on the right are award recipients, Chuck Barie (CY Farms), Peter Smith (accepting the award of behalf of winner Guy Smith with Triple G Farms), Emmaline Long (CY Farms), Matt Mortellaro (G. Mortellaro & Sons), Jennifer Grant (Director of NYS IPM) and Max Torrey, Torrey Farms. Missing from photo was Mark Torrey.



### What is the Risk for White Mold Infection?

In regions where it has been hot and dry for the past few weeks, non-irrigated beans were at pretty low risk for infection. However, the risk for later planted beans is much higher, so make sure to consider the following when deciding to treat beans with a fungicide:

1. **Soil Moisture.** For germination of sclerotia to occur, the soil must be cool (40 to 60°F) and moist for 7 to 10 days prior to bean flowering. Often the soil under the canopy remains cool and moist throughout the day compared to bare ground.
2. **Crop Stage.** Spores only infect dying flowers. Growth of the fungus may subsequently spread from the flowers to pods and foliage.
3. **Environmental Conditions.** Infection requires extended periods (40 hours) of high humidity or foliage wetness and temperatures less than 85°F. The period when morning dews are common is usually high risk.
4. **Canopy Density.** In recent multivariate data analysis of risk factors, canopy density (i.e. ground cover) was the single most important variable. Dense plant canopies and other factors that reduce air flow increase the risk of white mold. Fields with trees around the borders, valleys where humidity and fog persist also carry more risk.
5. **Field History.** If susceptible vegetables, dry beans, soybeans, sunflowers, etc. have been grown in the field and had white mold, then it is likely that inoculum is present in sufficient quantity to cause disease. Sclerotia can survive for many years in the soil. It only takes one germinating sclerotia per row meter of beans to start an infection. Rotation with non-host crops such as grains for 4 to 5 years is recommended.



White mold symptoms on snap bean.

Photo: J. Kikkert, CVP

### Management Options for Dry Beans and Snap Beans

If you've decided that field history and environmental conditions warrant a fungicide application, there are several labeled products (see the 2019 Cornell Vegetable Guidelines). The sprays need to be applied to protect the flowers and timing is critical as no products will cure an infection after it has started.

**Dry Beans:** 1 open flower/plant in 10% of the plants; a second application may be considered 10 to 14 days later.

**Snap beans:** 1 open flower/plant in 10% of the plants; a second application may be considered at 100% bloom (this may happen within a day or two in some varieties in warm weather). Our recent research has focused on the products Endura, Topsin 4.5 FL, and Omega 500F. Each of these products is highly efficacious when applied at optimal timing and there was no significant difference in the disease control between the products. In further teasing out the optimal application timings, our research has shown that the optimal timing of Topsin 4.5 FL is at 10% bloom, and that this product is not effective when applied at 100% bloom. Furthermore, there is no benefit to a second application. Conversely, disease control with Omega 500F was not related to timing (10% or 100% bloom) and there was no benefit from a second application even when applied at 100% bloom. For growers who were not able to put on a spray at 10%, then Omega 500F would be the choice product to use. Timing of the other possible fungicides was not tested. Results of these studies can be found in the Proceedings of the 2017 Empire Expo at <http://www.hort.cornell.edu/expo/2017proceedings.php>.

### Options for Organic Beans

Strategies include good crop rotation, manipulation of plant densities to improve air flow, maintaining good weed control, and selection of varieties that have a more open canopy. We have conducted extensive testing of OMRI listed products in our trials at Geneva. To date, the most efficacious and reliable product from year to year is Double Nickel (*Bacillus amyloliquefaciens* strain D747). Both the LC and 55 formulations are equally effective. While labeled at the rate of 1 to 2 quart/acre, there was no benefit of the higher rate, and thus 1 quart/acre is recommended. We continue to test additional products, including those under development and expect new registrations of efficacious products in the future. ●

# Two-Spotted Spider Mites: A Common and Serious Pest to Several Vegetable Crops

Elizabeth Buck, CCE Cornell Vegetable Program

Two-spotted spider mites (TSSM) attack several vegetable crops and are associated with hot, dry conditions. As you can guess, we've started seeing them in a number of crops throughout the region. TSSM is a generalist that can target most crops. Eggplants, watermelon, melon, and cucumber tend to have the worst problems in the field. I have also seen bad outbreaks in sweet corn and on fresh market beans. In greenhouses and high tunnels, TSSM is a common and serious pest concern that regularly overwinters and can move readily between ornamental and vegetable crops.

Leaves damaged in a low-population infestation will remain mostly green and develop numerous pin-prick sized yellow or pale dots. We call that damage pattern stippling. The leaves become yellowed or bronzed as the population persists and increases. Bronzing damage in watermelon can become quite dark, and tends to be centered in the leaf. The TSSM will be visible on the underside of the leaf as very small, moving black or reddish specks. A 10X hand lens makes detection much easier. Examine areas close to the veins in small populations or after treatment. Large populations will usually produce some webbing on the leaf underside. Severe infestations will make webs that encase whole leaves.

## Early Detection is Key to Managing TSSM

In a greenhouse setting, TSSM infestations almost always warrant treatment. In the field, scout the area looking for beneficial insects to determine whether there is a naturally occurring population of biocontrols. Beneficials can maintain small populations at tolerable levels, but their success in limiting population spread and size must be closely monitored during hot, dry periods.

Many products carry TSSM on their label, but few are highly effective. Organic crop oils and insecticidal soaps work by smothering the mites and require good contact. Sulfur used to treat powdery mildew may also offer some suppression of mite populations. Both oils and sulfur can cause phytotoxicity and burn plants when temperatures are high (ideal TSSM weather). Because of this, there may be a trade-off between spider mite control and crop safety.

Pyrethroids (Group 3A) no longer control spider mites well; many TSSM populations are resistant. Overreliance on pyrethroids for worm control in sweet corn has led to severe spider mite outbreaks in the last several years. Infestations became so bad that they rendered the ears unmarketable. Pyrethroids are generalist insecticides and kill off a wide range of insects. In the absence of any natural predators, the resistant spider mite populations flourish. In other crops, TSSM flare ups can be a reaction to pyrethroids used to kill pests like cucumber beetles and stinkbugs. Another reason to rotate your insecticide groups when treating for run-of-the-mill pest pressures.

On the next page is a run-down of common insecticides labeled for TSSM control in our most troublesome crops. Two-spotted spider mites are not insects, they are arachnids, more closely related to spiders and ticks. That's why most insecticides provide poor control of TSSM. Importantly, many products only kill adults, not eggs.



TSSM high population on reverse of cuke leaf. Note chlorosis, and the specks, which are mites. Photo: E. Buck, CVP



TSSM causes yellowing between veins in the central part of the leaf on watermelon. Damaged tissue can become bronze or dark. Photo: E. Buck, CVP



Severe TSSM infestation in high tunnel tomato showing webbing and mites encasing an upper leaf. Photo: E. Buck

Treating spider mites should always be a two-pass operation – initial spray and a follow up 5 to 7 days later – to kill the hatching eggs. As always, read the label thoroughly before applying pesticides.

## Best Approach

Treat first with an effective material designed to kill spider mites (an acaricide). Acramite is one of the best options available. Agri-mek is another good choice. Follow up with a material from a different group that is still effective against spider mites. Agri-mek, Zeal, and Portal are some good options. Though pyrethroids are included below, they are not likely to give good levels of control and should always be followed up with a better material from a different group number.

*continued on next page*



Material	Rate/A	PHI (days)	REI	Environmental impact quotient	Notes	Crops	Restricted Use
Agri-Mek SC (abamectin) Group 6	1.75 - 3.5 fl oz	7 (1 greenhouse tomato, 14 potato)	12	0.1 - 0.6	Follow adjuvant instructions to limit residue levels	Dry & succulent bean, cucurbits, eggplant, pepper, potato, sweet corn, tomato (incl. greenhouse)	Yes
Acramite 50WS (bifenazate) Group UN	0.75 - 1.0 lb	3	12	10.5 - 21.1	1 or 2 apps/season. 1.0 – 1.5 lb rate in succulent bean.	Succulent bean, cucurbits, eggplant, pepper, field tomato	No
Acramite 4 SC (bifenazate) Group UN	12 - 24 fl oz*	3 (7 dry bean, 14 potato)	12	9.1 - 18.2	*See label for crop-specific rates. 1 or 2 apps/year	Dry & succulent bean, cucurbits, eggplant, pepper, field tomato, potato	No
Hero (bifenthrin + zeta-cypermethrin) Group 3A	10.3 fl oz	1 tomato. 3 bean, sweet corn. 7 pepper, eggplant. 21 potato	12	4.1	Many crops labeled for TSSM	Dry & succulent bean, cucurbits, eggplant, sweet corn, pepper, potato	Yes
Brigade 2EC (bifenthrin) Group 3A	5.12 - 6.4 fl oz	1 sweet corn, tomato. 3 succulent bean, cucurbits. 7 eggplant, pepper. 14 dry bean.	12	3.6 - 4.5	Many crops labeled for TSSM	Dry and succulent bean, cucurbits, eggplant, pepper, tomato, sweet corn	Yes
Endigo ZC (lambda-cyhalothrin + thiamethoxam) Group 3A + 4A	4.5 fl oz	5 (1 cucurbits)	24	13	Suppression only.	Cucurbits, eggplant, pepper, tomato	Yes
Dimethoate 400 (dimethoate) Group 1B	0.5-1 pt	0	48	7.3 - 14.6	Organophosphate. Do not apply during bloom.	Dry & succulent beans	Yes
Zeal Miticide1 (etoxazole) Group 10B	2.0 - 3.0 oz	7	12		1 app/season. More effective against eggs & juveniles than adults.	Cucurbits, eggplant, pepper	No
Portal XLO (fenpyroximate) Group 21A	2 pt	1 (3 melon, 7 potato)	12	1.9	Not labeled in all cucurbits	Cucumber, melon, pepper, potato, snap bean, tomato	No
Gladiator (zeta-cypermethrin + avermectin) Group 3 + 6	19 fl oz	7	12	1.3	Many crops labeled for TSSM.	Cucurbits, eggplant, pepper, tomato	Yes

## Downy Mildew in Vine Crops Advisory

Robert Hadad, CCE Cornell Vegetable Program

Fortunately, we have made it to the end of July without downy mildew (DM) rearing its ugly head in our vine crops so far. There has been DM in the east in NJ and MA and now a new finding in southwestern MI. Michigan State Univ has issued a notice that DM was confirmed late last week. With the near-term forecast calling for northwesterly winds and mild temperatures, growers should be ready to start putting down some preventative sprays.

A basic spray program can consist of using a 7-day interval schedule before the disease has been found in the area but when a threat is imminent. Once the disease has been confirmed in the area, then the schedule should go to an application every 5 days. Refer to last week's VegEdge for Dr. Meg McGrath's article on products rated for use for DM. 📌



Yellowing of small patches of tissue on a cucumber leaf. The underside of the leaf will show a soft fuzzy growth and sometimes darker spores found in between leaf vein margins. Photo: Cucurbit IPM PIPE disease reporting site

Later symptoms on the leaf surface of a cucumber leaf where the yellow blotches have dried to a crispy whitish tan color reducing the healthy leaf area.

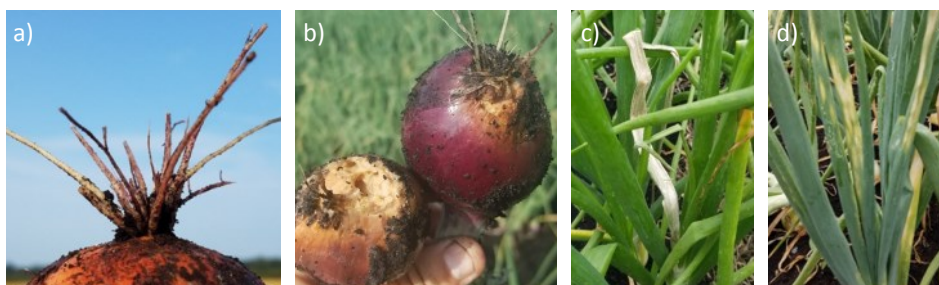
Photo: T. Zitter, Cornell's Veg MD Online



# Onion Diseases of August

Christy Hoepting, CCE Cornell Vegetable Program

The month of August tends to cause me the most anxiety about growing onions, because during August a good looking crop can turn the other way quickly. Finishing up spray programs is a balancing act between using too much fungicide and keeping the crop green for too long and not using enough, which can result in unstoppable leaf dieback at the expense of yield. Thrips pressure can also ramp up to excessive levels as thrips move from fields being harvested to fewer remaining green fields. August is also when soil borne diseases including pink root and Fusarium basal rot show up in increasing incidences, and when bacterial diseases and Iris yellow spot virus (IYSV) settle in (Fig. 1). It is important to note that thrips, and both foliar and soilborne diseases can cause excessive leaf dieback in onion. Important lessons learned from the 2018 growing season were: 1) You cannot control a root problem (such as pink root) with a good foliar fungicide program, and 2) Genetic tolerance to pink root is huge. I noticed huge variability in root quality this week (Fig. 2). **Growers are encouraged to go below ground when they are scouting so that they can accurately identify cause of leaf dieback in their fields.** On top of that, August is when pressure from Stemphylium leaf blight (SLB) is the highest of the growing season, conditions are most favorable for downy mildew (long periods of dew and sometimes cooler temperatures), and Botrytis leaf blight (BLB) can resurge after fizzling out during the July heat.



**Figure 1.** All of these diseases may cause leaf dieback: a) pink root, b) Fusarium basal rot (excessive leaf dieback/tipburn and infected basal plate with poor roots), c) bacterial disease (inner leaf collapse) and d) Iris yellow spot virus (white elongated and/or diamond lesions on middle-aged leaves). Photos: C. Hoepting, CVP



**Figure 2.** There is currently a wide range of differences in onion root health. Growers are encouraged to check underground when scouting. Photos: C. Hoepting, CVP

## So what to do about all of this?

**Pink root** – This disease is driven by stress and weather conditions will mostly dictate its severity. However, last year tolerant varieties such as Bradley and Saddleback demonstrated ability to handle heat/thrips/pink root noticeably better than other varieties, to the extent that these varieties were able to lodge normally while others died “standing up”. Red Wing is an example of a variety that tends to be susceptible to and suffer from pink root. Last year, we saw that irrigation helped “a little bit” with plants struggling with pink root-ridden roots to grow more roots to put on just a little bit more size. Trials are underway to see if there are any at-planting treatments that may alleviate pink root. If you do have a field where pink root is bad, be aware that an expensive SLB fungicide program cannot stop the excessive leaf dieback, and you may be better off saving your money. Ensuring best thrips control will reduce stress and relieve some pressure off of the pink root-stress complex.

**Fusarium basal rot** – This disease seems to be most problematic in red varieties. The disease can survive in the soil, so it is not uncommon to see it show up in “hot spots” where the disease was a problem in previous years. We are also looking for an at-planting treatment that may alleviate FBR in our trials this year.

**Bacterial disease** – This is one of the most problematic ailments of onion Nationwide and still with no great solutions. Copper bactericides and sanitizers (such as Oxidate) applied weekly during bulbing may help, but results are inconsistent, and some treatments may result in phytotoxicity, especially if products are used in a tank mix. Post-harvest practices including topping only when necks are completely dry can significantly reduce rot problems in storage. Plans are in place for extensive research to tackle bacterial disease of onion in the near future.

**IYSV** – This disease is exacerbated by thrips and plant stress. Ensuring excellent thrips control throughout August as thrips pressure escalates during harvest can be tricky. Following the Cornell Onion Thrips Management Plan should keep thrips in check. However, a couple of additional sprays may be helpful to further reduce thrips buildup and spread of IYSV: 1) Field edge sprays (not whole field) to target newly migrated thrips from adjacent harvested fields. And 2) Extra spray after 50% lodging, because it may be easier to control thrips in the field that is about to be harvested than in the neighboring field where the thrips will migrate to. Shutting them down at the source will not allow them to cause more damage (= plant stress) and introduce more IYSV. Irrigating when natural rainfall is not enough may also help to alleviate plant stress.

**SLB, BLB and DM** – See previous articles in VegEdge for SLB and BLB (June 26) and DM (June 12). 🍅

# Western Bean Cutworm Report

Margie Lund, CCE Cornell Vegetable Program

Numbers of Western Bean Cutworm (WBC) have started to pick up this week. Historically, peak flight for WBC is the last week of July to the first week of August. Both the trap reports and scouting corn in fields near dry beans can help determine the risk. Growers should scout adjacent corn fields when cumulative WBC have reached 100-150 moths per trap. Dry bean pod scouting should begin 7 to 10 days after peak emergence, regardless of cumulative WBC trap catch, and especially where WBC has been found in bean pods/seeds in recent years. This scouting should continue for three weeks.

To scout for WBC, inspect 50 plants per field (10 stops, 5 plants per stop), looking at all pods present on the plant for holes. WBC chew directly into the pod and eat the seed. It can be difficult to scout dry beans for egg masses or caterpillars, since

the caterpillars move from the pods to the soil during the daytime, so looking for signs of damage is the best strategy. European corn borer damage (ECB) may be similar to WBC, but an ECB larva would likely still be present in the pod when inspected. If damage into the pod and seed is found with no larva present, it is possible this is WBC. A spray is recommended if dry bean pod damage is found. In addition, to the WBC traps listed in the sweet corn report, the following dry bean trap sites are being monitored this year (project funded by the NYS Dry Bean Endowment and led by Marion Zuefle, NYS IPM):

Dry Bean Location	7/2/19	7/9/19	7/16/19	7/23/19	7/30/19	Cumulative WBC
Avoca 1 (Steuben Co.)	0	0	1	NA	NA	1
Avoca 2 (Steuben Co.)	1	1	0	NA	NA	2
Caledonia S (Liv. Co.)	NA	0	0	11	44	55
Caledonia SW (Liv. Co.)	NA	0	0	0	8	8
Geneva (Ontario Co.)	NA	NA	0	2	10	12
Riga (Monroe Co.)	NA	0	0	17	61	78
Stafford (Genesee Co.)	NA	0	0	5	28	33
Wayland (Steuben Co.)	0	2	3	NA	NA	5
Western Bean Cutworm trap counts by date NA - not available						

## NY Sweet Corn Trap Network Report, 7/30/19

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

### WNY Pheromone Trap Catches, 7/30/19

Location	ECB-E	ECB-Z	CEW	FAW	WBC	DD to Date
Batavia (Genesee)	0	0	0	0	6	2580
Bellona (Yates)	0	0	0	1	20	2634
Carlton (Orleans)	0	0	0	0	4	2476
Eden (Erie)	0	0	0	11	17	2603
Farmington (Ontario)	0	0	0	0	1	2641
Geneva (Ontario)	5	0	0	11	17	2611
Hamlin (Monroe)	NA	NA	NA	NA	NA	2512
Kennedy (Chautauqua)	0	0	1	1	14	2519
Lyndonville (Orleans)	0	0	12	0	20	2461
Penn Yan (Yates)	1	0	0	2	11	2568
Portville (Cattaraugus)	1	0	48	1	10	2432
Ransomville (Niagara)	0	0	6	0	5	2546
Seneca Castle (Ontario)	113	0	2	0	2	2548
Williamson (Wayne)	NA	NA	NA	NA	NA	2368

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

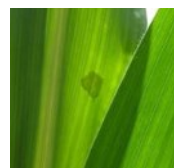
Thirty-one sites reporting this week. European corn borer (ECB)-E was caught at eight sites and ECB-Z was caught at only one site. Thirteen sites reported corn earworm (CEW), with ten sites high enough to be on a 4, 5, or 6 day spray schedule. Fall armyworm (FAW) was caught at fourteen sites and Western bean cutworm (WBC) were caught at twenty-five sites this week.

WBC continues to increase. This week's estimated WBC flight completion map created by Dan Olmstead, NEWA coordinator, based on Hanson et al, can be found on the [Sweet Corn Pheromone Trap](#)

[Network Report](#). See last week's post for a summary.

Michigan State University recommends scouting for WBC egg masses when cumulative trap catch numbers reach 100 moth/trap for field corn, though I have found egg masses with cumulative trap catch of just one. Therefore it is recommended that all fields that are in the whorl or early tassel stage be scouted for egg masses with a 4% threshold for processing sweet corn and a 1% threshold for fresh market sweet corn. WBC will usually lay eggs on the upper side of the top 1-3 leaves of pre-tassel corn, close to the leaf base. After tasseling has finished WBC seek out younger corn or dry beans. To scout for egg masses check the top 3 leaves of ten corn plants in ten locations throughout the field. The eggs are easy to observe if you view the leaf while holding it towards the sun. The egg mass will appear as a distinct shadow.

It takes 5-7 days for eggs to hatch. It is critical that sprays are timed before the larvae have a chance to enter the ear. The egg mass will become purple in color approximately 24 hours before egg hatch. ●



WBC egg mass shadow. Photo: T. Baute, OMAFRA



WBC egg mass.



WBC eggs become purple prior to hatch. Photo: Marlin Rice



# CROP INSIGHTS

## FRESH MARKET CROPS

**Weather** – We've had very dry weather in areas near Lake Ontario and very cool nights in parts of the Southern Tier. I'm expecting to see a divergence of disease issues across the region with dews and greater moisture getting the late summer issues started along the PA border. – *EB*

**Pepper** – **Bacterial spot** is taking off. This is caused by *Xanthomonas* and may be difficult to treat with copper. Avoid working infected areas or fields when the crop is wet, and work infected areas last. **Phytophthora**

**blight** (*P. capsici*) is taking down plants stressed from fruit load. Now is a good time to scout fields with a known history of *P. capsici* to make note of its geographical spread in the field. Outbreaks should be treated. – *EB*

Pepper plants whose growth was slowed due to poor weather conditions have now having problems with issues of **sunscald** due to thin leaf canopy cover. Some plantings that were not staked have had plants fall over exposing the fruit to the sun causing more sunscald. – *RH*

Pepper fruit are still showing up with **European corn borer** damage. The internal damage is hard to see from the exterior. To check for problems, look at the top of the fruit for small pinholes or small amounts of brown frass. These can be seen around the base of the stem generally. – *RH*

European corn borer has also been spotted feeding on high tunnel tomato fruit. – *CV*

**Cucurbits** – **Squash vine borer** is active in isolated locations. The adult moths have reddish-orange bodies with black markings and are very active during the daytime. Sudden wilting of squash plants that have received adequate water and show no other apparent signs of disease often indicate squash vine borer damage. Scout for adults and check your squash plants for signs of saw-dust like frass and entrance holes towards the base of the stem. – *CV*

**Alternaria** is also widespread and is showing up in cukes before melons this year. Take advantage of the warning provided by the cukes to get a timely treatment on your melons, where the disease causes greater losses. Virus has been spotted on several farms in Niagara and Orleans Counties - watch for symptoms and scout for + control your insect vectors.

**Bacterial wilt**, transmitted by cucumber beetles, is taking out some plantings of zucchini, melons, and cucumbers. – *EB*

**Alternaria** on older cabbages also becoming more widespread. – *RH*

**Leafhoppers** are having fun in fresh market beans and potatoes. – *EB*

**White mold** is beginning to show up in a number of crops. – *EB*

**Two-spotted spider mites** are enjoying the hot weather and are well-distributed throughout the region. See article, page 4. – *EB*

**Flea beetles** keep on going in Cole crops. And going and going and going.... – *EB*

**Cabbage worm** damage is more prolific in some plantings of cabbage, Asian brassicas, and kohlrabi. – *RH*

Continuing to see cases of **verticillium wilt** in both high tunnel tomatoes and eggplant. – *CV*

## DRY BEANS

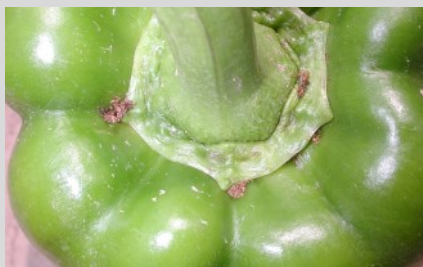
Many dry beans are now flowering, and canopies are closing, so it is time to consider applying a fungicide treatment for white mold if you have not already done so. Closed canopies and accompanied by the rain events we have been experiencing throughout the region can



Bad case of bacterial spot in peppers.  
Photo: E. Buck



Mottling and misshapen leaf of a virus-plagued zucchini. Note nearly mature squash bug eggs upper left corner of leaf. Photo: E. Buck



European corn borer entrance holes on pepper.  
Photo: ON Vegetables



Flea beetles chewing off axillary buds on young, late cole crop planting. Photo: E. Buck



Verticillium wilt in tomato (left) and eggplant (right). Photos: C. Vore





lead to the proper moist conditions for white mold to thrive. Applying a fungicide at the beginning of or during flowering is an important control measure, as this is when the fungus becomes established. See cover article. – ML

## ONIONS

The crop is looking good. Many fields are still riding the momentum of Movento. Some growers have been stretching their spray programs out 10-14 days to reduce pesticide use during this relatively “calm” period for leaf diseases and onion thrips. Thrips are on the increase and the ride with the momentum of Movento is over in some fields. When thrips reach spray threshold after Movento, Agri-Mek can only be relied on when thrips pressure is 0.8 to 1.0 per leaf. If pressure is higher than that, Minecto Pro (premix of Agri-Mek + Exeril) can at least hold a population of 2+ per leaf. If pressure is greater than 3.0 per leaf, Radiant is the only product that can reliably control such a population. For more information, see article in July 17 issue of VegEdge and the decision diagram on the CVP website. **Congratulations to Elba Muck Onion Growers, Matt Mortellaro, Guy Smith, Mark and Max Torrey, Chuck Barie and Emmaline Long for your pioneering excellence in onion Integrated Pest Management. They received their IPM awards at a roadside ceremony appropriately at Muck Donut Hour this Tuesday.** Be sure to read, Onions Diseases of August, page 6. – CH

## POTATO

Colorado potato beetles (CPB) continue to be a problem in potatoes. Continue to scout fields for larvae and adults, observing 50 plants per field (5 plants at 10 stops per field). An insecticide should be considered in the following conditions: 25 adult beetles/50 plants, 4 small larvae per plant, 1.5 large larvae per plant, or overall 10% defoliation. – ML

## PROCESSING VEGETABLES

Harvest of green peas is still wrapping up in the Southern Tier, after a challenging year of trying to get peas in the ground coupled with wet soils that resulted in poor root growth, setting up peas for increased stress later on as temperatures climbed and soils became dry. Some fields also suffered from root rot diseases. Soil compaction issues (even in the upper 4 inches of soil) is often a culprit in setting up peas for invasion of root rot pathogens. Downy mildew was an issue in some pea fields this year. Snap bean harvest is ramping up now. White mold management is important for beans coming into flower (see article on cover page) as that is the time of infection by the pathogen, whereas, symptoms show up closer to harvest. Table beet harvest is also underway. Continue to watch for Cercospora leaf spot (CLS) infections showing up and treat accordingly. Fields that I scouted in Genesee Co. this week were dry and no Cercospora was found. However, we have a report of CLS blowing up in a field in Livingston Co. We have also seen CLS coming in at low levels on a trial field at Geneva (not inoculated). CLS inoculated trials at Freeville are increasing with infection in control plots. Bottom line is that CLS is present in some areas and scouting fields remains important at this time. Sweet corn insect management is important at this time and please refer to the information provided in the trap catch reports by NYS IPM. – JK

## Late Blight Risk

John Gibbons, CCE Cornell Vegetable Program

Most of the stations have accumulated 30 blight units (BU) needed to trigger a spray for late blight (LB) through the forecasted period thru 8/02. Some are a ways off because of the dry weather being experienced by those sites and the lack of high humidity periods. They include Bergen, Burt, and Knowlesville. Albion had 29. If the weather station closest to you has not yet reached 30 blight units (BU) and the forecast indicates that it will in the next 2-3 days, a spray is still recommended. Note that this 30 BU threshold is for fully susceptible varieties, and assumes the use of fungicides such as chlorothalonil. Warning! Forecast BUs can change day by day, just like the weather! The chart assumes that chlorothalonil at the high rate was applied on 7/24. Information for other weather stations can be found at the following address: <http://newa.cornell.edu/index.php?page=potato-diseases>

Late Blight Risk Chart, 7/30/19

Location <sup>1</sup>	Blight Units <sup>1</sup> 7/24-7/30	Blight Units <sup>2</sup> 7/31-8/02	Location <sup>1</sup>	Blight Units <sup>1</sup> 7/24-7/30	Blight Units <sup>2</sup> 7/31-8/02
Albion	5	24	Hammondsport	10	20
Arkport	20	20	Kendall	15	17
Baldwinsville	31	23	Knowlesville	6	17
Bergen	6	19	Lyndonville	17	18
Buffalo	22	17	Medina	22	17
Burt	12	0	Niagara Falls	26	18
Ceres	48	20	Penn Yan	33	20
Elba	15	17	Rochester	17	18
Fairville	23	14	Sodus	30	20
Farmington	36	20	Versailles	30	20
Fulton	37	20	Wellsville	37	20
Geneva	11	19	Williamson	5	25

<sup>1</sup> Past week Simcast Blight Units (BU)

<sup>2</sup> Three day predicted Simcast Blight Units (BUs)

There was one new report of late blight from Wisconsin. *From Amanda J. Gevens, Associate Professor & Extension Vegetable Plant Pathologist – UW-Madison* - Late blight on potato has been confirmed in Wood County on 07-17-19. Sporulation was present but light on most leaves. Lesions were quarter sized on upper leaves. The clonal lineage/strain type of the late blight pathogen isolated from Wood County is US-23. This has been the most predominant type in the US in recent years and can be controlled with phenylamide fungicides like Ridomil.

The other locations that late blight has been confirmed are Florida, Tennessee, Washington and Pennsylvania. You can monitor this by going to the late blight website at - <https://usablight.org/?q=map> ●

## Upcoming Events

view all Cornell Vegetable Program upcoming events at [CVP.CCE.CORNELL.EDU](http://CVP.CCE.CORNELL.EDU)

### Niagara Region Summer Vegetable Meeting

August 6, 2019 (Tuesday) | 5:45 - 8:00 PM  
Freatman Farms, 3699 N Ridge Rd, Lockport, NY 14094



Join the CCE Cornell Vegetable Program for an evening of pest management options plus a crop walk to learn scouting techniques: Optimizing sweet corn worm and spidermite control programs; crop walk of tomato and pumpkin fields; pepper Weevil & other pepper problems; management options for potato pests; Rhizoctonia and wire-stem of cole crops. It's FREE! 2.0 DEC recertification credits offered. [Full agenda](#) available at [cvp.cce.cornell.edu](http://cvp.cce.cornell.edu). Questions? Contact Elizabeth Buck, 585-406-3419.

## Dry Bean and Potato TWILIGHT MEETINGS

Two educational events offered on one night! Come to either meeting or join us for both!

Monday, August 12, 2019  
Cory Mark Farms, Wayland, NY 14575  
dinner included @ 6:00 PM

#### DRY BEAN MEETING

4:30 - 5:45 PM

meet at dry bean field, corner of Whiteman Hill Rd and Gross Hill Rd, Wayland

White Mold Management

Update on WBC and Use of a Sweep Net to Scout for Potato Leaf Hoppers

Management of Potato Leaf Hoppers in Dry Beans for Conventional and Organic Growers

#### POTATO MEETING

6:45 - 8:00 PM

dinner and potato meeting held in farm shop, 11595 Buffalo St, Wayland

Update on 2019 Potato Trials

Update on Insect Pests of Potatoes

Late Blight Update

Question & Answer

Dry bean and/or potato growers in the Cornell Vegetable Program region are encouraged to join us for an evening with two educational events in one!

***Come to the Dry Bean Meeting, the Potato Meeting, or stay for BOTH!***

Research updates will be provided by Cornell University faculty and the NYS IPM Program. *Hosted by CCE Cornell Vegetable Program and CCE Steuben County.*

\$20/person, includes dinner and access to both meetings. [Register online](#) at [cvp.cce.cornell.edu](http://cvp.cce.cornell.edu) 1.0 DEC recertification credits available for both portions of the evening. Questions? Contact Ariel Kirk, 607-664-2574.



### WNY Produce Auction Summer Meetings

August 13, 2019 (Tuesday) | 6:15 - 8:30 PM | Farm of Melvin Hostetler, 2213 Rt 76, Panama, NY 14767  
August 14, 2019 (Wednesday) | 6:15 - 8:30 PM | Farm of Henry Stutzman, 7700 East Flats Rd, East Otto, NY 14729



Attendees will be led by CCE Cornell Vegetable Program Specialists, Elizabeth Buck and Judson Reid, on a tour of the produce fields and receive hands-on training in scouting and identification of common weeds and vegetable-attacking diseases and insects. Cultural and chemical control options will be discussed, keeping in mind broader vegetable production best management practices. FREE! Questions? Contact Elizabeth Buck, 585-406-3419.

### Elba Muck Onion Twilight Meeting

August 20, 2019 (Tuesday)

Mark your calendars! More details coming soon!



# Weather Charts

John Gibbons, CCE Cornell Vegetable Program

## Weekly Weather Summary: 7/23 - 7/29/19

Location**	Rainfall (inch)		Temp (°F)	
	Week	Month July	Max	Min
Albion	0.00	3.19	87	57
Arkport	0.23	2.46	86	50
Bergen	0.71	1.58	88	55
Brocton	0.10	2.86	84	57
Buffalo*	0.23	1.31	86	57
Burt	0.22	3.12	87	55
Ceres	0.44	4.93	84	52
Elba	0.02	1.74	85	55
Fairville	0.31	2.83	87	56
Farmington	0.10	3.05	89	56
Fulton*	0.15	4.21	87	55
Geneva	0.02	2.02	88	59
Hammondsport	0.24	1.39	87	55
Hanover	0.26	1.33	84	54
Lodi	0.12	2.84	87	57
Niagara Falls*	1.80	2.75	86	55
Penn Yan*	0.16	2.57	89	60
Rochester*	0.00	2.63	90	57
Sodus	0.36	2.11	88	55
South Bristol	0.13	1.70	86	56
Varick	0.45	4.33	88	58
Versailles	0.15	1.61	84	52
Williamson	0.08	1.05	88	56

## Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 - July 29, 2019

Location	2019	2018	2017
Albion	1389	1640	1415
Arkport	1271	1629	1313
Bergen	1340	1545	1374
Brocton	1363	NA	NA
Buffalo*	1379	1709	1454
Burt	1250	1490	1330
Ceres	1332	1420	1295
Elba	1290	1548	1363
Fairville	1277	1492	1348
Farmington	1301	1536	1347
Fulton*	1368	1538	1362
Geneva	1378	1578	1422
Hammondsport	1313	1500	1369
Hanover	1355	1601	NA
Lodi	1411	1614	1490
Niagara Falls*	1330	1760	1598
Penn Yan*	1440	1644	1523
Rochester*	1481	1748	1514
Sodus	1251	1481	1432
South Bristol	1303	1511	1356
Varick	1451	1643	1507
Versailles	1337	1565	1447
Williamson	1240	1450	1381

\* 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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# Cornell Cooperative Extension Cornell Vegetable Program

480 North Main Street  
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VegEdge is the award-winning 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 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 Cooperative Extension  
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