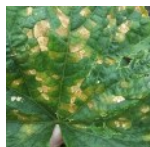




Damaging populations of two spotted spider mites have risen in HT peppers, onions, tomatoes, and cucumbers. Learn how to control this pest.

**PAGE 1**



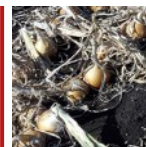
Downy mildew has been confirmed in Ontario, Canada. It usually starts on cucumbers and cantaloupes. Resources on this disease are available.

**PAGE 4**



The hot and dry weather has been favorable for development of insect pests include imported cabbage worm and diamondback moth in Cole crops.

**PAGE 4**



Fungicide trials, 2013-2015, conducted in muck-grown onions showed that fungicides belonging to FRAC groups 3 and 7 provided the best control of SLB.

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# VEGEEdge

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● Volume 12 | ● Issue 12 | ● July 6, 2016

Organic cucumbers.  
— Photo: Darcy Telenko

**Cornell University**  
Cooperative Extension  
Cornell Vegetable Program

## Two Spotted Spider Mites in High Tunnels and Greenhouses

*Judson Reid, CCE Cornell Vegetable Program*

Two Spotted Spider Mites (TSSM) are at high levels in many greenhouse/high tunnels across the region. The pest has risen to damaging populations in crops such as peppers, onions, tomatoes and cucumbers. Often they are in high numbers on weeds, which serve as green bridges into vegetables. When not controlled, TSSM will destroy a crop.

Look for stippling, or small white dots on the surface of foliage. TSSM, their webs and eggs can be found on the underside of leaves, except when in very high numbers when they will move throughout the canopy. For many a 10X hand-lens will aid in scouting.



Two spotted spider mite on high tunnel tomato. Mites, webbing, and feeding damage visible.  
*Photo: Judson Reid, Cornell Vegetable Program*

*continued on page 3*





**VegEdge** newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension regional agriculture team, serving 12 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](mailto:cce-cvp@cornell.edu)

Web address: [cvp.cce.cornell.edu](http://cvp.cce.cornell.edu)

#### Contributing Writers

Robert Hadad  
Christy Hoepfing  
Julie Kikkert  
Carol MacNeil  
Judson Reid  
Darcy Telenko

#### Publishing Specialist/Distribution/Sponsors

Angela Parr

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*The next issue of VegEdge will be produced on July 13, 2016.*



CVP Specialists Robert Hadad and Judson Reid discussing tomato and cucumber varieties and organic spray programs for disease management at the Fresh Market Vegetable Field Day this morning.  
Photo: Bev Mancuso, CCE Genesee

TSSM overwinters in NYS in the soil or crop debris. Controlling weeds and reducing dust (with mulch) are the first preventative steps.

Biological control is possible with TSSM and releases of predators must begin very early. *Phytoseiulus persimilis* can be effective, but requires high relative humidity to survive, so may require repeat releases. Other beneficials to control TSSM include *Feltiella acari-suga* and *Amblyseius californicus*. The benefits of biological control include reduced labor and no PHI/REI concerns. Biocontrol is suitable for both conventional and organic farmers. The spray options for organic control are limited to oils that encapsulate the mite when applied at high pressure to the underside of foliage. Biocontrol, when deployed early is an excellent option.



*P. persimilis* about to be introduced in high tunnel tomatoes for TSSM control.  
Photo: Judson Reid, CVP

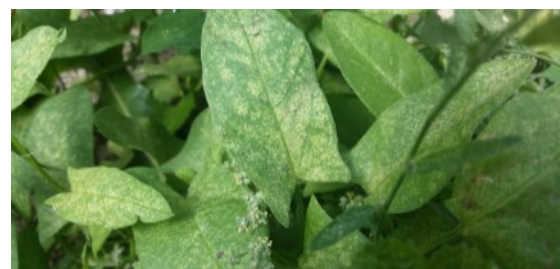
Conventional sprays can be effective, but again acting early is best. We seek materials that are effective, labeled for greenhouse use and have PHIs that allow regular harvest. The following table applies to tomatoes.

Product	PHI (days)	REI (hours)	Greenhouse OK in NYS?
Danitol 2.4 EC	3	24	yes
Agrimek	7	12	yes
Portal	1	12	yes

**Field growers beware;** dry weather favors mite infestations outside too. 🍅



Two spotted spider mite on high tunnel onion. Photo: C. Hall, CVP



Bindweed with TSSM in tomato canopy. Low growing bindweed carries mites from the soil level into the tomato canopy.  
Photo: Judson Reid, CVP

## Late Blight Risk

Carol MacNeil, CCE Cornell Vegetable Program

Few late blight (LB) severity values (SV) accumulated this past week. However, a few weather stations in Western NY passed the 18 severity value (SV) trigger for the first fungicide spray a few weeks ago. LB infections could be developing in those spots producing spores which could infect fields as far as 30 miles away. Even if 18 SVs have not been reached near you, your potato fields should be sprayed by the time the rows close, according to Ian Small, Cornell. After the first spray LB Decision Support System (DSS) blight units (BU) will provide guidelines on the spray interval based on the weather. If you are overhead irrigating and you are using the LB DSS forecast be sure to input your irrigations on your field account!

The Gainesville station forecasts the need for a 5 day fungicide spray interval due to high relative humidity at night in spite of no rain. The Wellsville station (and Albion, not shown in the table) forecasts the need for a weekly interval due to some rainfall and/or high humidity. There are no new LB confirmations in the Eastern US.

Many potato fields should be receiving fungicide applications for early blight (EB). For the current early blight (EB) risk on potatoes see Crop Insights - Potatoes in this issue of VegEdge. You can get spray guidelines for both EB and LB at weather station locations only, and for the use of chlorothalonil, at: <http://newa.cornell.edu/index.php?page=potato-diseases> Note, however, that this NYS IPM NEWA version of the DSS LB forecast does not take into account irrigation, which can increase disease risk.

Tomato growers may refer to TomCast regarding EB, Septoria and anthracnose at: <http://newa.cornell.edu/index.php?page=tomato-diseases-tomcast> Tomato growers should follow the TomCast forecast until LB is detected in your region, according to Abby Seaman, NYS IPM Vegetable Coordinator. 🍅

### Late Blight Severity Values\* 6/28/16

Location**	Total	Forecast 7/06-7/08	Location	Total	Forecast 7/06-7/08
Appleton N	1	5	Lodi	6	1
Baldwinsville	5	2	Lyndonville	0	3
Bergen	0	0	Medina	2	1
Buffalo	11	3	Niagara Falls	4	1
Ceres	13	3	Penn Yan	11	2
Elba	4	0	Rochester	12	0
Fairville	3	2	Sodus	5	2
Farmington	3	1	Versailles	3	1
Gainesville**	49**	4	Wellsville**	31	3
Geneva	2	0	Williamson	6	2
Kendall	0	5	Wolcott	5	2

\* Severity value accumulations start 5/12/2016

\*\* Please see the text



# Downy Mildew Nearly Here: Monitor Your Fields

Robert Hadad, CCE Cornell Vegetable Program

Downy mildew has been confirmed this week in Kent Cty, Ontario Canada, as it was last year. All vine crop growers in the region should be monitoring their fields closely and applying protectants. When DM shows up in this area, it is only a matter of a week or so before Erie and Niagara Counties become infected. An excellent article on DM management can be found at the Cornell Veg MD website. Effectively Managing Cucurbit Downy Mildew in the Northeast and Mid-Atlantic Regions of the US in 2013 is still a very relevant article. It can be found at: <http://vegetablemdonline.ppath.cornell.edu/NewsArticles/Cucurbit%20Downy%20Mildew%20MGT2013.pdf>



Yellow spotting of the leaf (close up) and wide view. Lesions under the leaf early in the infection are confined to the leaf tissue within the vein borders. Early morning under high humidity gray sporulation can be seen on the undersides as well. Photos: Meg McGrath and Tom Zitter, Cornell

**DM usually starts on cucumbers and cantaloupes. It can later be found on summer squash, and zucchini. During some seasons, DM can spread to winter squash and watermelons.**

Another important fact sheet found on VEG MD is a listing of fungicides available for use on cucurbits including OMRI approved products for organic farmers. CUCURBIT FUNGICIDES (Labeled & Rates/A) as of JULY 2014. [http://vegetablemdonline.ppath.cornell.edu/NewsArticles/Cuc\\_LabRts.pdf](http://vegetablemdonline.ppath.cornell.edu/NewsArticles/Cuc_LabRts.pdf) The OMRI lists should be checked regularly to see if the products are still currently listed. If you have questions, contact your certifier for clarification. 🍌

# Imported Cabbage Worm and Diamondback Moth in Cole Crops

Christy Hoepting, CCE Cornell Vegetable Program

The hot and dry weather has been favorable for development of insect pests including imported cabbage worms (ICW) and diamondback moth (DBM). The critical growth stage to control these worms 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. 1). Once they get bigger, they generally feed on the undersides of leaves making small irregular holes (windows) leaving the upper leaf surface

intact (Fig. 2). 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 and ICW are sluggish and fuzzy (Fig. 3). 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, Proclaim and Belt are also very effective against all the main worm pests and 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.** Diamondback moth feeding damage in heart leaves.

Photo: C. Hoepting, CVP



**Figure 2.** Diamondback moth feeding (windowing) on undersides of leaves.

Photo: C. Hoepting, CVP



**Figure 3.** Imported cabbage worm larvae of different sizes are fuzzy green. Their frass are green nuggets tucked at the base of the newly forming head. Photo: C. Hoepting, CVP 🍌

# CROP INSIGHTS

## DRY BEANS

The earliest beans have their third trifoliate leaf pushing, while some bean fields have just emerged. The first few Western bean cutworm (WBC) moths were caught in traps in dry bean fields this past week. Soils are quite dry in many areas which reduces the effectiveness of soil-applied herbicides. Cultivation and post-emergence materials are the

back-up. Try to avoid spraying herbicides when temperatures are 85+ degrees. Spray early in the morning or late in the evening to reduce foliar burn. Oil spray additives will cause more burn than surfactants. Weeds will be harder to kill because of the hot, sunny weather and dry soils, so apply post-emergence herbicides when weeds are very tiny for best results. Consult the 2016 Cornell Vegetable Guidelines and/or go to the chart Herbicides for Snap and Dry Bean Weed Control at [http://cvp.cce.cornell.edu/submission.php?id=52&crumb=crops|crops|dry\\_beans|crop\\*3](http://cvp.cce.cornell.edu/submission.php?id=52&crumb=crops|crops|dry_beans|crop*3) which rates the effectiveness of herbicides against each common problem weed species.

## ONIONS

Despite continued dry conditions, the crop is looking very good. All growers who are able are irrigating as a consistent water supply is most critical during the bulbing stage of development. Disease pressure remains very low, although I am recommending to start fungicide spray program for Stemphylium leaf blight (SLB) in main season transplants and direct seeded fields that are bulbing, especially where tipburn and outer leaf dieback has begun to occur. I saw my first SLB lesion of the season this week (Fig. 1). There are strict rotation restrictions and maximum use rates on the most effective fungicides for managing SLN which make designing a spray program challenging – see article on page... as well as article in [last week's VegEdge](#) for further updates on SLB. Also, new information has been posted on the CVP website including a fungicide cheat sheet and fungicide trial results.

Onion thrips pressure was notably up this week. In Elba, all fields have now reached spray threshold and the Momentum of Movento only lasted 1-2 weeks this year. In Wayne Co. where thrips pressure is much less, most fields have had their second application of Movento and we look forward to seeing how long its momentum will last. In Elba, growers are having to be strategic about avoiding use of Radiant on early transplanted onions to ensure that this early generation of onion thrips are not already exposed to Radiant. Otherwise, when the early transplants are harvested and the thrips move into neighboring fields of later transplants and direct seeded onions, they will again be treated with Radiant in these fields exposing another consecutive generation to Radiant, and so on down the line, until potentially four generations of thrips in a row are exposed to Radiant and resistance to one of our most effective insecticides develops. Since Agri-Mek has demonstrated mediocre control of onion thrips in Elba the last couple of years, it has not been uncommon for growers to switch to “an emergency spray of Radiant” to knock down a population that exceeded 3.0 thrips per leaf before returning to Agri-Mek in sequence. This year, to preserve the use of Radiant until later in the season, we are suggesting that Agri-Mek be tank mixed with Warrior or Lannate when thrips are 1.5 per leaf or greater to give it more strength. More on onions thrips management in next week's issue.



**Figure 1.** First Stemphylium leaf blight lesion detected in 2016: tan concentric spot on necrotic tissue of outer leaf dieback. Photo: C. Hoefting, CVP

## POTATOES

Late planted potatoes are just emerging. There are small tubers under early potatoes. Potatoes begin to set, showing a “hook” at the end of the stolons, when the plants are just 8-12” tall. Potatoes require about 1.5” of water a week (from the soil, rain or irrigation) from tuber set through tuber bulking. Many areas have had much less than that for weeks. While muck soil holds significant water potatoes only root 12-18” deep, and even good muck soil holds only 2.2” of water per foot. In addition, dry soils at tuber set contribute to the development of [scab](#).

Many potatoes are flowering or close to it. Flowering potato plants are most likely to show wilting of stems if the seed was infected with [bacterial blackleg Dickeya \(BBD\)](#). If stem wilting is common in one of your fields contact Carol MacNeil at [crm6@cornell.edu](mailto:crm6@cornell.edu) or 585-313-8796. See the suspect Maine/New Brunswick varieties in [last week's VegEdge](#). For information on BBD go to: [https://www.aphis.usda.gov/aphis/ourfocus/planthealth/plant-pest-and-disease-programs/pests-and-diseases/sa\\_nematode/sa\\_potato/ct\\_dickeya](https://www.aphis.usda.gov/aphis/ourfocus/planthealth/plant-pest-and-disease-programs/pests-and-diseases/sa_nematode/sa_potato/ct_dickeya)

An initial spray for [late blight \(LB\)](#) should be made by row closure since some spots in Western NY have had high [severity value \(SV\)](#) accumulations and could potentially have LB. See more in the Late Blight Risk section of this issue. Fungicide sprays for [early blight \(EB\)](#) are recommended on all potatoes that emerged on or before June 1. Non-rotated, higher risk fields that emerged on or before June 10 should also be sprayed. For other emergence dates see the [EB Physiological Day \(P-Day\)](#) forecast as well as the LB forecast at the weather station locations at: <http://newa.cornell.edu/index.php?page=potato-diseases> Potatoes are at more risk from EB when they begin to flower and should be sprayed with a fungicide.

A number of growers have Cornell variety NY141 this year, recently named Algonquin. It's coming up unevenly in many fields. At Cornell, potato breeder Walter DeJong, and his assistant Matt Falise, have also noticed that their NY141 is coming up unevenly. They grow their own seed, pre-cut and cure for a week, then put back in cold storage if they have to wait to plant. Growers have wondered if NY141 has long dormancy, like Genesee, which can also cause uneven emergence. According to Walter DeJong: “NY141 dormancy is about two weeks longer than an average variety (e.g. Atlantic) - while Genesee/Eva/Waneta have 6-8 weeks longer dormancy. So I don't think dormancy is the cause of the skippy emergence.” It's possible that the cold weather early, and the drier than usual spring, are contributing factors.

## VINE CROPS

[Downy mildew \(DM\)](#) has been confirmed this week in Kent County, Ontario Canada. All vine crop growers in the region should be monitoring their fields closely and applying protectants. When DM shows up in this area, it is only a matter of a week or so before Erie and Niagara Counties become infected. See article, page 4, for more information on DM.

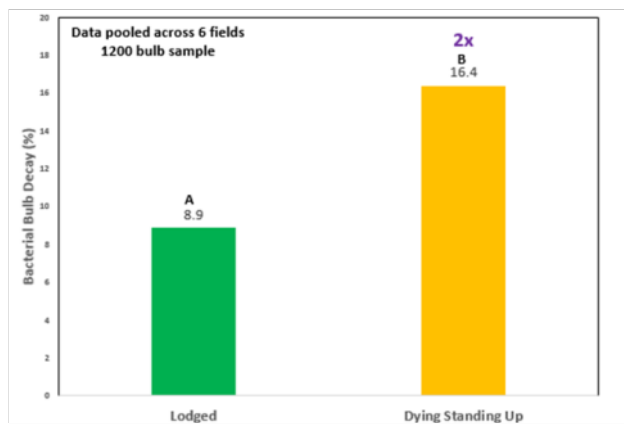
# "Spray by Number" for Stemphylium Leaf Blight in Onion

Christy Hoepting, CCE Cornell Vegetable Program

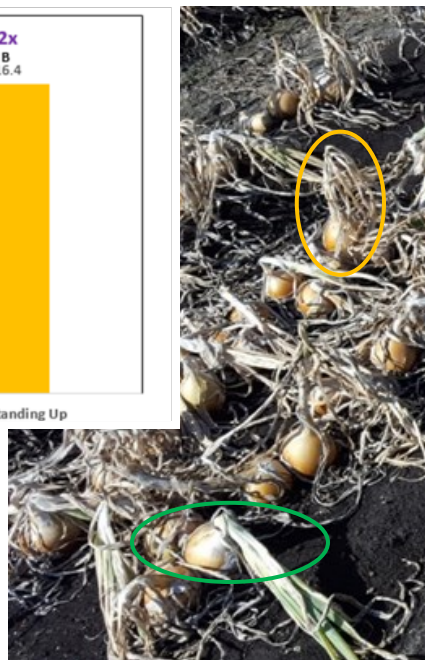
In 2015 we learned that Stemphylium leaf blight (SLB) is everywhere and that it appears to have displaced Purple Blotch in conventional muck onion production as the main target spot disease of concern – see article in [last week's issue of VegEdge](#). SLB is characterized by target-spot lesions that are usually tan in color, but can also be purplish, reddish or blackish. Sometimes only a few large lesions with concentric rings occur while other times several smaller lesions occur (see last week's article). Regardless of lesion type, leaf dieback can be excessive which in severe cases can result in premature plant mortality (i.e. onions dying standing up). In 2015, 30 side-by-side comparisons totaling 1200 onion bulbs at harvest showed that those that died prematurely had almost twice as much rot than those that lodged normally (Fig. 1. Premature: 16% rot; normally lodged; 9%).

## FRAC Group 3 & 7 Fungicides provide best control of SLB

Fungicide trials conducted in muck-grown onions between 2013 and 2015 (Hoepting *et al*) showed that fungicides belonging to FRAC (Fungicide Resistance Action Committee) groups 3 and 7 provided the best control of SLB. Some of **the most effective fungicides include Luna Tranquility (FRAC 7 & 9), Merivon (7 & 11), Quadris Top (3 & 11) and Inspire Super (3 & 9)**. Protectant fungicides including Bravo (M5), mancozeb (M3) and Rovral (E3) had very little activity against SLB. FRAC group 11 including Cabrio and Quadris also had very little activity against SLB. Fungicides belonging to FRAC groups 9 (Scala), 20 (Omega), 22 (Gavel) and 12 (in Switch) had mediocre activity against SLB. **For best control of SLB, it is recommended to include a FRAC group 3 or 7 fungicide in every spray**, at least in situations where disease is expected to be high. Because most new fungicides have only a single site of action, they are prone to disease developing resistance to them. Thus, strict rotation restrictions and maximum use rates are included on their labels for resistance management to preserve the useful life of these new fungicides.



**Figure 1.** In 30 side-by-side comparisons of onion bulbs collected at harvest from 6 fields (200 bulbs per field), those that were dying standing up (e.g. premature mortality from excessive leaf dieback caused by Stemphylium leaf blight; = yellow) had almost twice as much bacterial bulb decay as those that lodged properly (green). Hoepting, 2015. Photo: C. Hoepting, Cornell Vegetable Program



## The challenge is to adhere to rotation restrictions on SLB fungicides:

- **Luna Tranquility, Merivon, Inspire Super and Endura** may not be applied in more than **two** sequential applications before being rotated away to different FRAC groups.
- **Quadris Top** may not be applied more than **one** time before being rotated away to different chemical classes.
- Luna Tranquility, Merivon, Inspire Super, Quadris Top and Endura have maximum allowable rates per season that do not exceed 2 to 4 maximum rate applications.
- Additionally, **Luna Tranquility label states that no more than 2.1 lb of its active ingredient pyrimethanil (FRAC 9, also in Scala) may be applied per acre per season.** There are 0.024 lb/fl oz in Luna Tranquility and 0.039 lb/fl oz in Scala. Therefore, if you use three applications of Luna Tranquility this would use 1.15 lb of pyrimethanil (0.024 lb/fl oz x 16 fl oz x 3 apps), which would leave 0.95 lb of pyrimethanil that could be used as Scala (up to 24 fl oz of Scala at 9-18 fl oz per app). Luna Tranquility also has maximum use rates for its FRAC 7 active ingredient, but this is not labeled in any other products in onion in NY currently.
- Additionally, **Inspire Super and Quadris Top labels state a maximum use of active ingredient difenoconazole (FRAC 3) of 0.46 lb per acre per season.** Maximum rates of Inspire Super (20 fl oz) and Quadris Top (14 fl oz) both contain 0.11 lb/acre of difenoconazole, so **if maximum rates are used, a maximum of four applications between the two products is allowed per season.**

Table 1 shows three examples of fungicide rotation plans using the four top performing SLB fungicides that adhere to the rotation restrictions and maximum use rates, while delivering a FRAC 3 or 7 fungicide for each of 8 consecutive weeks. Of course, there are other possibilities as well, but each takes some planning ahead. An updated [Cornell Onion Fungicide "Cheat Sheet"](#) is also available to help you plan your fungicide spray program. Also included on our website is more information on relative performance of fungicides in Cornell trials at <http://cvp.cce.cornell.edu/crop.php?id=20>.

*continued on next page*



Be aware that the fungicide **Viathon**, which is marketed for downy mildew protection due to its phosphorous acid component (FRAC 33), is a pre-mix with tebuconazole, which is **another FRAC group 3 fungicide** like Inspire Super and Quadris Top. If it is used with Luna Tranquility (7 & 9) as a DM protectant between applications of Quadris Top (3 & 11), there will not be any rotation away from FRAC 3.

**Luna Tranquility is available for use on onion in New York only as a Section 24 (C) Special Local Needs Label (SLN NY-160003).** It is not labeled on any other crops in NY, except for apples under another SLN label. **The onion SLN label must be in the possession of the user** (<http://132.236.168.99/ppds/545255.pdf>).

#### Improve Scala for SLB/PB control

If you do not have significant issues with SLB, but would still like to provide protection against target spot diseases, we conducted a trial in 2015 to optimize the use of Scala.

**Compared to Scala 18 fl oz (green foliage rating: 31% on Aug-30) (Fig. 3):**

- **Use half rate with Bravo:** Scala 9 fl oz + Bravo 1.5 pt significantly improved foliage health by 14%
- **Use half rate with mancozeb:** Scala 18 fl oz + mancozeb 3 lb significantly improved foliage health by 15%, which was not significantly different than Scala 9 fl oz + mancozeb 3 lb
- **Use with adjuvant:** Scala 18 fl oz + Induce 0.125% v/v significantly improved foliage health by 22%
- **Use half rate with Rovral:** Scala 9 fl oz + Rovral 1 pt had significantly improved foliage health by 24%



**Figure 2.** Spray by number: Fungicide resistance groups of active ingredients are listed on the front of the label (yellow).

**Table 1a.** SLB Fungicide Rotation Strategy: Sample #1.

	Product and Rate per acre	FRAC groups	Notes
Week 1	Scala 9 fl oz + Bravo 1.5 pt	9, M5	Add DM protectant*
Week 2	Quadris Top 14 fl oz	3 & 11	
Week 3	Luna Tranquility 16 fl oz	7 & 9	Add DM protectant*
Week 4	Quadris Top 14 fl oz	3 & 11	
Week 5	Luna Tranquility 16 fl oz	7 & 9	Add DM protectant*
Week 6	Quadris Top 14 fl oz	3 & 11	
Week 7	Luna Tranquility 16 fl oz	7 & 9	Add DM protectant*
Week 8	Quadris Top 14 fl oz	3 & 11	

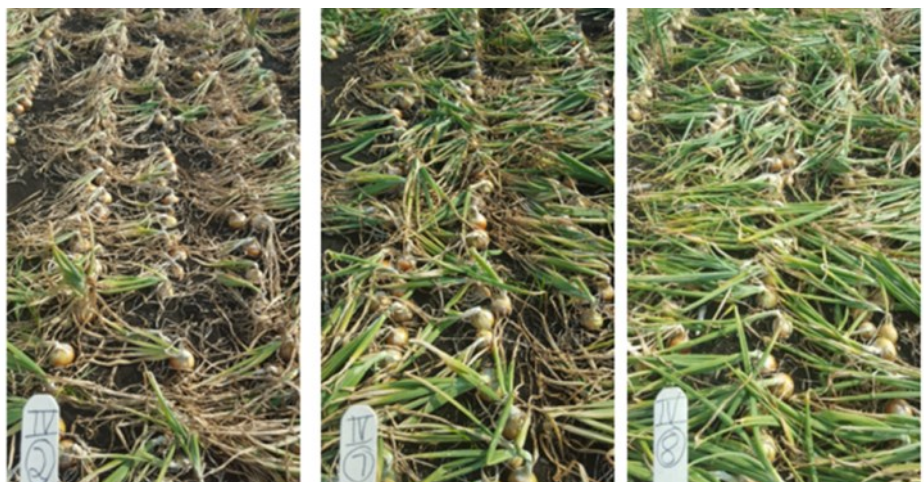
**Table 1b.** SLB Fungicide Rotation Strategy: Sample #2.

	Product and Rate per acre	FRAC groups	Notes
Week 1	Inspire Super 20 fl oz	3 & 9	Add DM protectant*
Week 2	Luna Tranquility 16 fl oz	7 & 9	Add DM protectant*
Week 3	Merivon 9 fl oz	7 & 11	
Week 4	Inspire Super 20 fl oz	3 & 9	Add DM protectant*
Week 5	Quadris Top 14 fl oz	3 & 11	
Week 6	Luna Tranquility 16 fl oz	7 & 9	Add DM protectant*
Week 7	Merivon 9 fl oz	7 & 11	
Week 8	Inspire Super 20 fl oz	3 & 9	Add DM protectant*

**Table 1c.** SLB Fungicide Rotation Strategy: Sample #3.

	Product and Rate per acre	FRAC groups	Notes
Week 1	Inspire Super 20 fl oz	3 & 9	Add DM protectant*
Week 2	Inspire Super 20 fl oz	3 & 9	Add DM protectant*
Week 3	Merivon 9 fl oz	7 & 11	
Week 4	Merivon 9 fl oz	7 & 11	
Week 5	Inspire Super 20 fl oz	3 & 9	Add DM protectant*
Week 6	Luna Tranquility 16 fl oz	7 & 9	Add DM protectant*
Week 7	Luna Tranquility 16 fl oz	7 & 9	Add DM protectant*
Week 8	Quadris Top 14 fl oz	3 & 11	

\*FRAC group 11 suppresses downy mildew (DM) and can be used as a protectant. Otherwise, mancozeb or other fungicide with DM activity (but NOT Viathon) should be added to this tank mix when DM risk is high.



Scala 18 fl oz

Scala 9 fl oz + Rovral 1 pt

Luna Tranquility

**Figure 3.** In 2015 on-farm onion fungicide trial in Elba (Hoepting et. al), Scala 9 fl oz + Rovral 1 pt had significantly 24% greener foliage on Aug-30 than Scala 18 fl oz (31%). However, Luna Tranquility, which is a premix of Scala and a FRAC group 7 fungicide had significantly 24% greener foliage than Scala 9 fl oz + Rovral and was one of the best performing fungicides in the trial. Photos: C. Hoepting, CVP

## UPCOMING EVENTS view all Cornell Vegetable Program upcoming events at [cvp.cce.cornell.edu](http://cvp.cce.cornell.edu)

### High Tunnel Pest and Disease Management: Organic Control Strategies

August 2, 2016 | 4:30 PM - 7:30 PM

Fellenz Family Farm, 1919 Lester Rd, Phelps, NY 14532

How can you manage your tunnel to limit losses due to pests and disease? This field day will start with identification of common high tunnel pests and diseases and effective organic control strategies, including spraying. Andy Fellenz, with support from NE-SARE, has developed and will demonstrate a boom-style high tunnel sprayer, as well as discuss the proper use of backpack and other relatively low pressure, low flow single-tip sprayers. Variety selection, rotation, cultural practices and spraying all have a place in the overall farm strategy. Fellenz Family Farm received its certification for growing organic vegetables and fruits in Phelps, NY in 2005, and has been growing in high tunnels for more than 10 years.

Cost: FREE! Email Angela Parr at [aep63@cornell.edu](mailto:aep63@cornell.edu) to register or call 585-394-3977 x426. This event is sponsored by NE-SARE through a Farmer Grant. The Cornell Vegetable Program is cooperating with Fellenz Family Farm to bring you this event.

### Vegetable Walk and Cut Flowers

August 15, 2016 | 5:30 PM

Werner's Farm, 8427 West Henrietta Rd, Rush, NY 14543

A discussion and field walk for cut flower growers. Topics will be production considerations, and disease and insect management. The vegetable field walk will be conducted by Cornell Vegetable Program Specialists Judson Reid and Robert Hadad and will cover identification and management of insects, diseases, and weeds. FREE! Contact Robert Hadad for more information at 585-739-4065.

### Muck Donut Hour

Every Tuesday through August 9 | 8:30 AM - 9:30 AM

Elba Muck, corner of Transit and Spoilbank, Elba, NY



Meet with Cornell Vegetable Program Specialist Christy Hoepting every Tuesday morning to ask questions and share your observations. Grower experience is combined with research and scouting information for a whole lot of talk about growing ONIONS!

## WNY Sweet Corn Trap Network Report, 7/05/16

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

Fifteen sites reporting this week for Western NY. European corn borer (ECB)-E was caught at three sites and ECB-Z at four sites. Corn earworm (CEW) was not caught at any of the reporting sites while fall armyworm (FAW) was caught at one site, Eden. No reports of Western bean cutworm (WBC) this week.

Even though ECB trap catch numbers remain low, feeding damage has been observed in the field. If corn is in the tassel emergence stage, scouting should focus on the emerging tassel. Separate the leaves and look down into the tassel for any signs of feeding, frass or larvae. The threshold for tassel emergence stage corn is 15%.

If the corn field is silking, scout for egg masses and larvae within the ear zone. The threshold for silking corn drops to 5% infested plants. The ear zone is the area between the two leaves above the top ear and one leaf below the bottom ear. ECB egg masses are usually located on the underside of the leaf along the midrib. The egg mass consists of 10-35 flattened eggs that overlap like fish scales. Eggs take approximately 100 base 50 degree days to hatch. Egg masses will change from white to cream to black as they age. When they appear black they are in the "black head" stage and will most likely hatch with 24 hours. Be sure to check the ear as well, as eggs are sometimes laid on the husk and flag leaves. Larvae are often found between the ear and stalk, or sometimes in the top of the silks. ●

#### WNY Pheromone Trap Catches: July 5, 2016

Location	ECB-E	ECB-Z	CEW	FAW	WBC	DD to Date
Baldwinsville (Onondaga)	0	0	0	0	0	1129
Batavia (Genesee)	0	1	0	0	0	859
Belfast	2	0	0	0	0	988
Bellona (Yates)	NA	NA	NA	NA	NA	1197
Eden (Erie)	1	0	0	8	0	1136
Farmington (Ontario)	0	0	0	0	0	1074
Hamlin (Monroe)	NA	NA	NA	NA	NA	1028
LeRoy (Genesee)	NA	NA	NA	NA	NA	1047
Pavilion	0	0	0	0	0	901
Penn Yan (Yates)	NA	NA	NA	NA	NA	1176
Ransomville (Niagara)	1	1	0	0	0	1132
Seneca Castle (Ontario)	0	0	0	0	0	1092
Spencerport (Monroe)	0	2	0	0	0	1145
Waterport (Orleans)	NA	NA	NA	NA	NA	1035
Williamson (Wayne)	NA	NA	NA	NA	NA	999

ECB - European Corn Borer

CEW - Corn Earworm

FAW - Fall Armyworm

WBC - Western Bean Cutworm

NA - not available

DD - Degree Day (modified base 50F) accumulation

#### Average corn earworm catch

Per Day	Per Five Days	Per Week	Days Between Sprays
<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 80°F for the previous 2-3 days.



## Weather Charts

John Gibbons, CCE Cornell Vegetable Program

### Weekly Weather Summary: 6/28 – 7/4/16

Location	Rainfall (inch)		Temp (°F)	
	Week	Month July	Max	Min
Albion	0.08	0.03	85	54
Appleton, North	0.03	0.03	83	49
Baldwinsville	0.02	0.00	87	55
Buffalo*	0.00	0.00	85	55
Butler	0.03	0.01	87	53
Ceres	0.01	0.01	81	43
Elba	0.79	0.25	82	50
Farmington	0.02	0.02	86	50
Gainesville	0.00	0.00	85	48
Geneva	0.08	0.00	84	53
Lodi	0.09	0.01	86	52
Niagara Falls*	0.02	0.02	87	52
Penn Yan*	0.00	0.00	85	57
Rochester*	0.04	0.00	85	55
Romulus	0.00	0.00	83	53
Silver Creek	0.07	0.06	80	54
Sodus	0.00	0.02	84	49
Versailles	0.18	0.01	83	48
Williamson	0.02	0.01	82	50

### Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 – July 4, 2016

Location	2016	2015	2014
Albion	902	953	923
Appleton, North	753	762	768
Baldwinsville	894	978	1016
Buffalo	937	977	951
Butler	885	999	987
Ceres	683	868	839
Elba	636	736	754
Farmington	823	934	954
Gainesville	638	770	752
Geneva	865	953	957
Lodi	955	1074	1055
Niagara Falls	993	896	901
Penn Yan	924	1028	1015
Rochester	933	1044	1031
Romulus	856	973	972
Silver Creek	826	879	882
Sodus	757	846	895
Versailles	809	915	911
Williamson	773	859	884

\* 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

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

## VEGEdge

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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.



### VEGETABLE SPECIALISTS

**Robert Hadad** | 585-739-4065 cell | rgh26@cornell.edu  
food safety & quality, organic, business & marketing, and fresh market vegetables

**Christy Hoepting** | 585-721-6953 cell | 585-798-4265 x38 office | cah59@cornell.edu  
onions, cabbage and pesticide management

**Julie Kikkert** | 585-313-8160 cell | 585-394-3977 x404 office | jrk2@cornell.edu  
processing crops (sweet corn, snap beans, lima beans, peas, beets, and carrots)

**Carol MacNeil** | 585-313-8796 cell | 585-394-3977 x406 office | crm6@cornell.edu  
potatoes, dry beans, and soil health

**Judson Reid** | 585-313-8912 cell | 315-536-5123 office | jer11@cornell.edu  
greenhouse production, small farming operations, and fresh market vegetables

**Darcy Telenko** | 716-697-4965 cell | 716-652-5400 x178 office | dep10@cornell.edu  
soil health, weed management, plant pathology

### PROGRAM ASSISTANTS

**Jodi Callwood** | jbc278@cornell.edu

**Amy Celentano** | ac2642@cornell.edu

**John Gibbons** | 716-474-5238 cell | jpg10@cornell.edu

**Cordelia Hall** | ch776@cornell.edu

**Gretchen Seigworth** | gs649@cornell.edu

### ADMINISTRATION

**Peter Landre** | ptl2@cornell.edu

**Angela Parr** | 585-394-3977 x426 office | aep63@cornell.edu

**Steve Reiners** | sr43@cornell.edu

For more information about our program, email  
[cce-cvp@cornell.edu](mailto:cce-cvp@cornell.edu) or visit us at [CVP.CCE.CORNELL.EDU](http://CVP.CCE.CORNELL.EDU)



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