

Eleven sweet corn varieties were evaluated on yield, ear number, and average ear

weight. Initial results and photos of the ears are found here.

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Can you tell the difference between Alternaria leaf spot and downy mildew of Cole

crops? Learn more about these

diseases and control methods.



All dry bean growers should begin scouting pods for WBC feeding about 10 days after peak



PAGE 7



There are multiple viruses that affect cucurbits in New York and produce distorted and stunted foliage

and color breaking or ringspots on fruit.

August 30, 2017

Photo: Judson Reid

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Issue 21

Volume 13

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**Cornell University Cooperative Extension** Cornell Vegetable Program

# **Evaluation of Sweet Corn Varieties**

### Darcy Telenko, CCE Cornell Vegetable Program

We completed the first round of harvesting fresh market sweet corn demonstration trials in Batavia on August 24. The first replication of the trial in Portland was picked on Tuesday to share with growers that attended the August 29 Field Day.

Here's our initial results from Batavia. Eleven varieties were planted on May 23 in two row plots. Each variety was evaluated on yield, ear number, and average ear weight. In addition, we rated each variety for ease of picking, shank length, husk quality, flag leaf presence, tip fill and ear worm damage. The initial results can be found in Table 1 and photos of the ears after they were picked and husked.



The eleven varieties growing in Batavia, 2017. Photo: D. Telenko, 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 in two weeks: September 13, 2017.

# New Videos Aid in the Identification of Pigweed Species

### Julie Kikkert, CCE Cornell Vegetable Program

A new series of videos and factsheets have been created by Associate Professor and Extension Specialist, Mark Renz and Assistant Outreach Specialist, Sam Marquardt from the University of Wisconsin-Madison to help in the identification of pigweed species (available at <a href="http://bit.ly/2vb2OCK">http://bit.ly/2vb2OCK</a>). Now that species in the Amaranth (pigweed) family are in bloom across our region, you may want to check out the video on identification at this stage. You can also look at stem and foliage characteristics at the same time. From Renz and Marquardt: "While it is relatively easy to identify these species while in flower, realize that if you intend to control plants it is much more desirable to identify it when plants are young and vegetative (e.g. < 6 inches tall). A range of methods are available that are effective at controlling the plants and preventing seed production at this stage. Few options for effective control exist once plants are taller than this, especially when they are flowering."

In New York crop fields, we typically have mixed populations of redroot pigweed (*A. retro-flexus*), smooth pigweed (*A. hybridus*), and Powell amaranth or green pigweed (*A. powellii*) growing together so please keep that in mind when viewing the information from other states. The concern for everyone is to be on the lookout for two invasive species waterhemp (*A. tuberculatus*) and Palmer amaranth (*A. palmeri*) which are known to develop resistance to herbicides rapidly. If you suspect Palmer amaranth or waterhemp, please contact one of our team members for assistance with identification.

#### Additional Resources:

Weeds of the Northeast book by R. Uva, J. Neal and J. DiTomaso (1997), Cornell University Press, describes identifying features of redroot pigweed, green pigweed, smooth pigweed.

Biology and Management of Waterhemp (includes comparison with other species) <u>http://www.glyphosateweedscrops.org/mdtykk/extmedia/BP/GWC-13.pdf</u>

Palmer Amaranth Biology, Identification, and Management (Purdue University) <u>https://www.extension.purdue.edu/extmedia/ws/ws-51-w.pdf</u>

#### Varieties included:

- Rosie Insect Guard F1 74 day, augmented supersweet, bicolor (Harris Seed)
- Raquel Insect Guard F1 72 day, augmented supersweet, bicolor (Harris Seed)
- 3. Integrity SH2 Yellow (Seedway)
- 4. **2876 Xtra Tender** 76 day, SH2 Bicolor (Seedway)
- 5. **Breza** 79 day, SH2 yellow (Seedway)
- 6. **Traveler** 80 day, SH2 white (Seedway)
- 7. XTH1876 82 day, SH2 yellow (Seedway)
- 8. **Caliber** 75 day, SH2 bicolor (Seedway)
- 9. Rosie (HMX4369BS) 74 day, SH2 bicolor (Seedway)
- 10. Picket 80 day, SH2 bicolor
- 11. Seminole Sweet 79 day, Bicolor SH2 (Siegers)

Table '	Table 1.									
			Sweet corn variety evaluations, Batavia (1 rep) 24 Aug							
#	Variety	Yield (lb)	Ear (#)	Ave Ear WT (lb)	Ease of Pick (1-5)	Shank (1-5)	Husk (1-5)	Flag (1-5)	Tip fill (1-5)	Worm (%)
1	Rosie Insect Guard F1	60.6	58	1.04	4	2.8	3.1	4.8	4.2	20
2	Raquel Insect Guard F1	60.8	64	0.95	5	4.1	3.6	4.3	4.0	40
3	Integrity	42.8	60	0.71	2	4.0	3.8	4.6	4.9	10
4	2876 Xtra Tender	46.6	64	0.73	5	3.8	2.8	4.0	4.6	30
5	Breza SH2 yellow	44.4	72	0.62	2	3.3	3.0	3.3	4.1	10
6	Traveler	46.0	63	0.73	5	3.5	3.1	4.3	4.2	10
7	XTH1876	37.0	50	0.74	5	3.5	3.4	3.9	4.6	10
8	Caliber	40.8	58	0.70	3	4.2	4.5	4.1	4.5	0
9	Rosie (HMX4369BS)	45.8	55	0.83	3	3.6	2.7	2.8	3.4	50
10	Picket	39.9	53	0.75	4	3.3	3.0	3.0	4.9	20
11	Seminole Sweet	45.8	60	0.76	4	3.4	4.1	3.3	4.7	0
Viold	Viold: number and lb per plet									

Yield: number and lb per plo

Picking ease (Picking ease rated on a scale of  $1\Box 5$  where 1= difficult and 5= easy) Shank rated on a scale of 1 to 5, where 1= short, 3= average, 5= long.

Husk quality rated on a scale of 1 to 5, where 1= short, 3= average, 5= long.

Flag leaf rated on a scale of 1 to 5, where 1= duil, 3= average, 5= very attractive. Flag leaf rated on a scale of 1 to 5, where 1= none, 3= somewhat attractive, 5= very attractive. y

Tip fill rated on a scale of 1 to 5, where 1= more than 2 inch unfilled, 3= 1 inch unfilled, 5= complete tip fill.



# Managing the Diseases of Fall in Cole Crops: Alternaria Leaf Spot and Downy Mildew

Christy Hoepting, CCE Cornell Vegetable Program

Alternaria leaf spot (ALS) and downy mildew (DM) of Cole crops, become more prevalent in the fall when cool night time temperatures result in heavy dewfalls, because these diseases are favored by extended periods of leaf wetness. Optimum temperatures for DM are 50 to 60°F while ALS is favored by 75° to 82°F; however, if leaf wetness is prolonged for 20 hours of more, ALS can produce many spores outside of the optimum range of temperatures. Both diseases survive in soil and crop debris and can be spread onto plants from splashing soil and over longer distances aerially. Additionally, ALS can be spread by flea beetles. Best control is generally achieved with choosing tolerant varieties, preventative fungicide sprays, post-harvest crop destruct to destroy infested crop residue and a 3-year crop rotation out of Cole crops.

DM vs. ALS: Can you tell the difference? Lesions/spots first appear on lower frame leaves, which turn yellow (Fig. 1). To determine which disease is present, look at the lesions on the older lower frame leaves. ALS will have circular small, dark/brown spots with concentric rings (target spots) on the upper surface of leaf. When humidity is high, lesions can be covered with a sooty black mass of spores (Fig. 2). ALS lesions are papery and eventually fall out leaving a shot hole appearance. DM causes irregular, yel-

low to brown spots on the upper side of the leaves (Fig. 3) with a grayish, white mildew on the underside of the leaves (Fig. 4) that occurs during cool, moist conditions.

As soon as DM and ALS lesions are evident on older leaves, spores can spread to marketable portions of the crop, where they can cause economical crop loss. ALS and DM can also make the heads more susceptible to soft rot bacteria and other storage rots, especially in cabbage and broccoli. In cabbage, early signs of DM can be subtle and easily over looked (Fig. 5). In cabbage heads, when DM and ALS are advanced, both diseases may be confused with bacterial or Botrytis diseases (Fig. 6). In broccoli, DM and ALS both appear as dark discoloration of the beading, of which ALS is slightly darker and more sunken (Fig. 7). In cauliflower, both DM and ALS appear as black sooty spots (Fig. 8). A distinguishing feature between the two diseases is that only DM causes a gravish/brownish internal discoloration in these crops when the heads are cut open (Fig. 9). In Brussels sprouts, ALS appears mostly as small black spots (Fig. 10).



Figure 1. Both Alternaria leaf spot (ALS, left) and downy mildew (DM, right) cause lower frame leaves to turn yellow as shown here in cabbage. Close inspection of the leaves will reveal which disease is the cause. *Photos: C. Smart, Cornell (left), and C. Hoepting, CVP (right)* 



Figure 2. Circular concentric rings diagnostic of Alternaria leaf spot. When humidity is high, abundant sooty black spores can be seen on the lesions (right). *Photos: C. Hoepting (left) and H. Dillard (right)* 

 Table 1. Relative performance of fungicides for control of Alternaria leaf spot (ALS) and Brassica

 Downy mildew (DM) in fungicide trials conducted by Cornell Plant Pathologists (Smart 2014, 2015; Dillard 2011).

Performance of	ALS		DM		
Fungicide	Fungicide	FRAC <sup>1</sup> code	Fungicide <sup>2</sup>	FRAC <sup>1</sup> code	
Best	Endura	7	Presidio	43	
	Quadris Top	3, 11			
	Quadris	11			
	Switch	9, 12			
	Cabrio	11			
	Inspire Super	3, 9			
Good	Bravo	M5	Cabrio	11	
	Presidio	43	Quadris	11	
			Quadris Top	3, 11	
			Bravo	M5	
			Copper bactericide		
Mediocre			Phosphorous acid	33	
			a.i. mancozeb <sup>3</sup>	M3	
Failed			Actigard	P1	

<sup>1</sup>FRAC fungicide resistance group.

<sup>2</sup>Note: **Several other fungicides are labeled for control of DM in brassicas and include** Ridomil Gold, Reason, Presidio, Ranman, Forum, Alliette and Actigard.

<sup>3</sup>fungicides with active ingredient mancozeb include Manzate Max, Dithane, etc.

During favorable conditions, it is important to apply fungicides preventatively to prevent economical losses of marketable portions of Cole crops. Use of fungicides can alleviate development and spread of ALS and DM, although most plants will still be infected, at least at low levels. Table 1 lists the relative performance of selected fungicides in Cornell fungicide trials. Although several fungicides control both ALS and DM, best control of each disease is achieved with different fungicides.

- Note that Bravo did not provide the best control of either disease.
- Protectant fungicides like Bravo should be used before disease levels are high.
- Once risk of disease increases, then a more effective fungicide may be justified.
- Be aware that for resistance management, there are restrictions on the number of sequential applications, maximum rates used per season and rotation partners that can be used with several of these fungicides including Quadris/Quadris Top, Cabrio, Presidio and Inspire Super.
  - For example, Presidio cannot simply be used weekly for 5 weeks for DM control; rather, it needs to be used in a tank mix with a fungicide belonging to a different mode of action and may not be used more than twice before rotating to another chemical class. Read labels carefully!



**Figure 3.** Downy mildew causes irregular, yellow (left: early infection) to brown spots (right: older infection) on the upper leaf surface, which shows up on lower frame leaves first. *Photos: C. Hoepting, CVP* 



**Figure 4.** On the underside of the leaf, the lesions of downy mildew have a grayish, white mildew. These spores can spread to the marketable portion of the plant. *Photo: C. Hoepting* 



Figure 6. In cabbage, advanced symptoms of downy mildew (left) and Alternaria leaf spot (right) can be confused with bacterial or Botrytis diseases. Look for accompanying lesions on lower frame leaves to provide clues as to the cause of head degradation. *Photos: C. Smart, Cornell (left); H. Dillard (right)* 



**Figure 7.** In broccoli, both DM (left) and ALS (right, top and bottom) cause dark discoloration of the beading. ALS tends to cause more distinct sunken spots. *Photos: C. Hoepting, CVP* 





Figure 8. In cauliflower, both DM (left) and ALS (right) cause black spotting. Photos: C. Smart



Figure 9. Only downy mildew causes and internal grayish/brownish discoloration of the head in broccoli (shown) and cauliflower (not shown). When broccoli and cauliflower heads are infected with DM or ALS, it deems them unmarketable. *Photo: C. Hoepting, CVP* 



Figure 10. In Brussels sprouts, ALS appears mostly as tiny black spots (as opposed to brown spots with concentric rings). *Photo: H. Dillard* 

Table 2 shows an example of a spray program that maximizes control of both ALS and DM while respecting the rotation restrictions and tank mixes for resistance management of each fungicide.



Figure 5. Early symptoms of downy mildew on cabbage may easily be overlooked. *Photo: C. Smart, Cornell* 

*If ALS is your only target,* to maximize best ALS

fungicides: Week 1: Quadris or Cabrio Week 2 & 3: Inspire Super or Endura Week 4: Quadris or Cabrio Week 5 & 6: Inspire Super or Endura

# *If DM is your only target*, to maximize use of best DM fungicides:

Weeks 1 & 2: Presido + Bravo Week 3: Quadris Top Week 4 & 5: Presdio + Bravo

Some growers also use a copper based bactericide in addition to fungicide to help to prevent secondary bacterial rots, especially in broccoli.

# Other practices for managing ALS and DM include:

- Avoid using varieties that have shown chronic problems to DM and ALS.
- When growing more susceptible varieties, scout these varieties more diligently. If DM is detected on the lower frame leaves, it would be sensible to apply fungicides during heading to prevent infection from spreading to the marketable portions.
- Incorporate crop residue immediately after harvest to remove this as a source of disease for other plantings and to hasten decomposition of the infested material.

- Rotate away from cruciferous crops for a minimum of two years.
- Mulch (straw, plastic, etc.) can reduce disease incidence by providing a protective barrier against soil-borne inoculum.
- Maintain good weed control, especially of brassica-type weeds.
- Storage cabbage should be handled carefully during harvest to avoid bruising and other wounds that will allow easy entry of the fungus.
- Storage facilities should be thoroughly cleaned of debris before harvest and wooden storage boxes disinfected.

 Table 2. Example fungicide program to use in Cole crops for management of both Alternaria leaf spot (ALS) and Downy mildew (DM) based on Cornell fungicide evaluations and rotations for resistance management.

Week	Fungicide	FRAC <sup>1</sup> Group	Disease(s) Controlled	PHI <sup>2</sup>	Notes			
While disease pressure is low	Bravo	M5	ALS & DM	7 days				
	Quadris Top	3, 11	ALS & DM	2 days	<ul> <li>To prevent spread from lower frame leaves to marketable portions.</li> <li>Must rotate away from FRAC 11 after <u>one</u> application.</li> <li>Maximum 4 applications per season</li> </ul>			
When	Alternated with:							
disease is present	Presidio + Bravo	43 M5	ALS & DM ALS & DM	1 day 7 days	<ul> <li>To prevent spread.</li> <li>Use higher rate of Presidio</li> <li>Presidio must be tank mixed with an- other fungicide belonging to a different mode of action.</li> <li>Must rotate to another FRAC after <u>two</u> sequential applications</li> <li>Maximum 4 applications per season.</li> </ul>			

<sup>1</sup>FRAC: Fungicide Resistance Action Committee fungicide class for resistance management. <sup>2</sup>PHI: Pre-harvest interval. **O** 

# Late Blight Update

Darcy Telenko and John Gibbons, CCE Cornell Vegetable Program

Late blight continues to be found in western NY and most counties in western NY have had a positive report. All isolates continue to be identified as US 23 in NY, which is aggressive on both tomato and potato but generally sensitive to Ridomil.

The cooler temperatures this past week (with some stations getting down in the 40's) have reduced the risk at some locations. Locations that remain over the 30 BU threshold include Albion, Baldwinsville, Fairville, Farmington, Penn Yan and Rochester. See the table for the Blight Units (BU) accumulation from around the region. All tomato and potato growers, conventional and organic, should be applying a protectant fungicides and monitoring the DSS to determine spray intervals. <u>Most sites will go over the 30 BU threshold based on 3-day forecast. This trig</u>gers the recommendation for an addition fungicide application



Current observations of late blight – red counties have had a positive report in the last 7 days. Blue counites the report is >7 days old. *Source <u>https://usablight.org/map.</u>* 

<u>this week</u>. Remember to rotate fungicide FRAC groups and use contact fungicides in your program to minimize the chances of fungicides resistance.

Continue applying fungicides regularly, even past potato vine-killing, and even if you've abandoned a tomato planting, as long as any green tissue remains, to prevent the production of late blight spores.

#### Late Blight Risk Chart, 8/29/17

Location <sup>1</sup>	Blight Units <sup>1</sup> 8/23- 8/29	Blight Units <sup>2</sup> 8/30- 9/01	Location <sup>1</sup>	Blight Units <sup>1</sup> 8/23- 8/29	Blight Units <sup>2</sup> 8/30- 9/01
Albion	44	14	Lodi	NA	NA
Baldwinsville	26	15	Lyndonville	16	19
Bergen	19	18	Medina	18	13
Buffalo	15	13	Niagara Falls	12	13
Ceres	28	17	Penn Yan	25	13
Elba	NA	NA	Rochester	33	15
Fairville	36	13	Sodus	20	14
Farmington	28	12	Versailles	26	15
Gainesville	NA	NA	Volney	33	11
Geneva	4	14	Wellsville	19	15
Kendall	16	14	Williamson	4	7
Knowlesville	NA	NA	Wolcott	10	13

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

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

# WNY Sweet Corn Trap Network Report, 8/29/17

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

Twenty-four sites reporting this week. Only one site caught European corn borer (ECB)-E and two sites caught ECB-Z. Corn earworm (CEW) was trapped at eleven sites, with seven sites high enough to be on a 4, 5, or 6 day spray schedule (see chart below). Fall armyworm (FAW) numbers continue to increase this week with eighteen sites reporting catches. Western Bean cutworm (WBC) was reported from fourteen sites this week.

Where CEW are being caught in high enough numbers to drive the spray schedule, the other worm pests should also be controlled. Where FAW are being caught, a tassel emergence scout is still a good idea, as some years we see heavy FAW infestations in the emerging tassels in late plantings that may have time to get into developing ears before silk sprays for

![](_page_6_Figure_4.jpeg)

Sweet corn trap catches 2017

Average sweet corn trap catches for all reporting sites from 5/23/17 - 8/29/17

larvae. Use a threshold of 15% infested plants in tassel emergence stage fields and 5% in silk stage fields. WNY Pheromone Trap Catches: August 29, 2017

CEW. At locations where CEW numbers are still low, scout

tassel emergence and silk stage fields for ECB and FAW

Location	ECB-E	ECB-Z	CEW	FAW	WBC			
Baldwinsville (Onondaga)	1	0	1	7	0			
Batavia (Genesee)	0	0	10	0	2			
Bellona (Yates)	0	0	0	81	0			
Eden (Erie)	0	0	0	3	1			
Farmersville (Cattaraugus)	NA	NA	NA	NA	NA			
Farmington (Ontario)	0	0	0	2	0			
Hamlin (Monroe)	NA	NA	NA	NA	NA			
LeRoy (Genesee)	NA	NA	NA	NA	NA			
Pavilion	0	0	5	48	5			
Penn Yan (Yates)	0	0	2	37	1			
Ransomville (Niagara)	0	0	2	7	4			
Seneca Castle (Ontario)	0	0	0	10	1			
Williamson (Wayne)	NA	NA	NA	NA	NA			
ECB - European Corn Borer V	ECB - European Corn Borer WBC - Western Bean Cutworm							

CEW - Corn Earworm FAW - Fall Armyworm NA - not available DD - Degree Day (mod. bas

0 - Degree Day (mod. base 50F) accumulation

Degree-day accumulatio moth emergence (begin	Percent WBC moth emergence based or degree day	
Accumulated Degree-days	accumulation, data	
1319	25%	Nebraska O
1422	50%	
1536	75%	

# Dry Bean Western Bean Cutworm Alert, 8/25/17

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

All dry bean growers should begin scouting pods for WBC feeding about 10 days after peak flight regardless of cumulative trap catch, and should continue to scout for three weeks, especially if damage has been seen in recent years. Peak trap catch for each site is given in red in the table below. Geneva and Wayland were the only sites where trap catch numbers increased this week (for reporting sites), most other sites peaked 2-3 weeks ago.

Twelve sites were scouted this week and no WBC damage was observed in any of the sites. To scout dry bean fields check 10 random spots in a field. Inspect all the pods on the plants looking for holes. Below are some photos of WBC damage in dry beans from Chris DiFonzo of the University of Michigan.

Questions? Contact Marion Zuefle at <u>mez4@cornell.edu</u> or 315-787-2379. *This project is funded by the NYS Dry Bean Industry*.

![](_page_6_Picture_18.jpeg)

Early damage made by small WBC larvae.

![](_page_6_Picture_20.jpeg)

Damage caused by slug feeding, not WBC. Note the slime trail.

Dry Bean Location	7/25	8/1	8/8	8/15	8/22	8/29	Cumulative WBC
Attica 1	54	61	56	30	9	2	238
Attica 2	4	12	3	1	2	0	35
Avoca	7	16	8	5	7	0	48
Caledonia North	4	24	18	89	10	2	148
Caledonia South	2	14	11	8	1	0	37
Covington	9	6	103	78	47	17	267
Geneva	7	4	7	9	24	0	52
Groveland	1	7	4	4	4	2	24
Kanona	0	0	4	6	0	0	10
Pavilion	39	28	18	13	4	NA	111
Riga	77	107	61	23	7	0	310
Stafford	42	29	8	11	2	1	110
Wayland	1	6	20	2	50	3	83

![](_page_6_Picture_23.jpeg)

Later feeding damage going through pod and into beans.

![](_page_6_Picture_25.jpeg)

Later feeding damage on beans. 🧿

![](_page_7_Picture_0.jpeg)

**Brassica downy mildew** Be on the lookout for brassica downy mildew (BDM). This disease can show up randomly and our weather conditions have been favorable for it. The leaf surfaces can first appear as yellow patches that will develop black dots or streaks on the upper leaf with eventual white sporulation the undersides. This disease will persist so long rotations out of brassicas can help. Cultivation to remove brassica weeds is also important. – *RH* 

![](_page_7_Picture_2.jpeg)

Brassica downy mildew. Photo: UMass Extension, <u>ag.umass.edu</u>

<u>Cabbage aphids</u> are rampant on Brussels sprouts, cabbage, Chinese cabbage, and kale. Cabbage worm complex are in full force with larval feeding going on damaging leaves with holes and leaving frass. Bt products or for conventional controls, see the Cornell Vegetable Guidelines for a long list of spray options. – *RH* 

#### CUCURBITS

Powdery mildew is still pretty active in many cucurbits. Bacterial wilt is also appearing in pumpkin and gourd plantings. It is a bacterium that is spread by both the striped cucumber beetle and spotted cucumber beetle. It is a primary concern in cucumber and melon but gourd, pumpkin and squash are susceptible. Management options need to look at managing the striped and spotted cucumber beetles in susceptible crops. -DT

<u>Melon aphids and green peach</u> aphids are moving in on later plantings of cucumber as well as winter squash. -RH

<u>Anthracnose</u> in butternut has been found in several locations.

<u>Cucurbit downy mildew</u> is spreading on cucumbers as usual. If you have a late planting that has been fertilized well, it might be

![](_page_7_Picture_10.jpeg)

Pumpkin variety trial showing the difference in susceptibility to powdery mildew. *Photo: Darcy Telenko, CVP* 

worth your time to keep DM under control and shoot for late season sales. Generally the cucumber prices rise in the region going into September. The NY terminal market prices for field grown cucumbers have been low coming out of Ohio but quantities coming out of WNY, MI, and Canada have been limited so no prices are available. The local markets probably would pay more for late season cukes. Surprisingly, Canadian greenhouse cucumber prices are quite high (over \$24 carton for Persians). – *RH* 

#### ONIONS

The cool second half of the growing season with ample rainfall has provided excellent conditions for bulbing and the crop has bulked up very nicely. The same conditions have also been favorable for disease, but in spite of this, effective fungicide programs have kept all leaf diseases including Botrytis leaf blight, Stemphylium leaf blight, Purple blotch and downy mildew well under control. Consequently, fields are lodging normally (Fig. 1), as opposed to prematurely. When onions die prematurely from excessive leaf dieback, which may be caused by leaf disease(s), thrips feeding and/or other stress,

![](_page_7_Picture_15.jpeg)

**Figure 1.** Onions lodging properly. Cool temperatures and ample rainfall during bulbing and effective fungicide programs have produced onions with a lot of healthy foliage. It is a race against time to get all this foliage dried down for a timely harvest. *Photo: Christy Hoepting, CVP* 

![](_page_7_Picture_17.jpeg)

Figure 2. Onions suffering from excessive leaf dieback, which may be caused by uncontrollable leaf diseases or onion thrips (or other stress), do not have enough leaf weight to lodge properly and die prematurely. This increases the risk of bacterial bulb rot problems and reduces storability. *Photo: C. Hoepting, CVP* 

they "die standing up" or "with their boots on" (Fig. 2). When this happens, the neck does not finish off properly, and the upright onion is predisposed to infection from bacterial diseases when soil particles contaminated with bacterial pathogens pool in the loosely bound leaf axil. A couple of years ago, in side-by-side comparisons, we found twice as much bacterial bulb rot in onions that had died standing up compared to those that lodged properly. Although, the majority of fields have had sprout inhibitor applied, there is a lot of healthy green foliage that needs to dry down yet. As a general rule of thumb, onions are pulled/undercut when they readily give way when you gently tug them. If you have to yank on the plant to pull it out of the ground, then it is still growing. The cold chill in the air and little heat in the forecast implies that we are running out of time; some growers are pulling on the greener side to give the crop enough time dry down before harvest. Ideally, you never want to top an onion with a green neck. With so much healthy foliage and cool weather, it is going to take a while for the onions to dry down. On another note, Radiant did a fantastic job knocking back some high thrips populations this past week (e.g. 7.0 per leaf to 1.6).

#### continued - CROP Insights

**Donut hour is closed for the season!** This year, we had 13 consecutive weeks of donut hour in Elba due to long growing season. I think this outreach activity is truly where the rubber meets the road and has proven to be an integral part of my onion program. Thank you to all the onion growers and special guests who participated to make this one of the best donut hour seasons ever.

#### PEPPERS

<u>Stink bugs</u>, including brown marmorated stink bugs, have been causing some damage to fruit. The damage first appears as yellowish scarring or chafing. Later the areas can turn tan making the fruit less than desirable for market.

**Pepper Maggot** This is a new pest that has been hitting the New England area and parts of the Northeast. This is one we need to be on the lookout for. Maggots tunnel into the fruit on the upper portions of the fruit and moving into the area where the seeds are. The adult flies have 3 yellow stripes on back with banded wings. A scar where the eggs were laid leaves a whitish mark in an indentation on the fruit.

If you see this type of damage on your peppers, please <u>contact</u> <u>the Cornell Vegetable Program</u>. Management methods being tried include trap cropping and using baited yellow sticky cards at this time.

![](_page_8_Picture_6.jpeg)

Stink bug damage to pepper. Photo: University of Delaware Extension, <u>http://aqdev.anr.udel.edu/</u> weeklycropupdate/?taq=brownmarmorated-stinkbug&paged=2

Pepper maggot damage. Photo: OMAFRA, <u>omafra.gov.on.ca</u>

#### томато

Diseases are starting to take their toll on early, susceptible tomato varieties. Now is the time to take note of the diseases that having the most impact and look to selecting resistant varieties for next season if available. Late blight is continuing to spread, so continue to stay on top of your management programs to protect against late blight. -DT

# **Vine Crop Viruses**

#### Judson Reid, CCE Cornell Vegetable Program

There are multiple viruses that affect cucurbits in New York, including Watermelon Mosaic (WMV), Cucumber Mosaic (CMV), Zucchini Yellow Mosaic and Papaya Ringspot. Symptoms of these viruses are difficult to distinguish from each other and produce distorted and stunted foliage and color breaking or ringspots on fruit. A lab test can confirm which virus is present, although all four listed here are spread by aphids. Once a virus is inside a plant, treatment is futile, so management focuses on:

- Excluding aphids
- Planting resistant or tolerant varieties
- Eliminate overwintering weeds which can harbor viruses

#### From CU Guidelines:

"Yellow straightneck summer squash varieties such as Multipik, Superpik, General Patton, Fortune, Sunbar, Cougar, Lioness, Precious II, Sunbar, Sunray, and Seneca Supreme and the crookneck variety, Supersett, contain a yellow precocious gene that allows plants to produce marketable yellow fruit in spite of infection with either CMV or WMV."

"Green zucchini varieties with intermediate WMV resistance include Bobcat, Contender, Dividend, Equinox, Payroll, Elegance, Jaguar, Magnum, Noche, Quirnal, Reward, Revenue, and Tigress. Genetically engineered (GE) varieties include Declaration II, Independence II, Judgement III, and Justice III."

![](_page_8_Picture_21.jpeg)

Color breaking caused by virus on yellow squash. Photo: J. Reid, CVP

![](_page_8_Picture_23.jpeg)

CMV on Jade Star watermelon in Yates County. Photo: J. Reid, CVP

UPCOMING EVENTS

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

## Hands-on Seminar on Cover Crops, Mulching, and Reduced Tillage by German Organic Vegetable Expert Jan-Hendrick Cropp

![](_page_9_Picture_3.jpeg)

September 11, 2017 | 6:00 PM - 8:00 PM

Klaas and Mary-Howell Martens Farm, 1443 Ridge Rd, Penn Yan, NY 14527

Jan-Hendrik Cropp is an innovative organic farmer and consultant based in Germany. He has developed a vegetable transplanter that plants through heavy organic mulches and pioneered new ways to use cover crops to improve soil while growing high quality vegetables. This special hands-on seminar will feature innovative European equipment and a presentation by Mr. Cropp.

The registration fee of \$20.00 will include seminar and a tour of the Martens' new European equipment. Please have dinner beforehand; light refreshments will be served. For more information and to pre-register (preferred, but not required), contact Brian Caldwell at <a href="https://bacill@cornell.edu">bacill@cornell.edu</a>.

## Strategic Marketing Conference – Getting Started in Agri-tourism

September 20-21, 2017 | 8:30 AM registration on September 20 Becker Farms, 3724 Quaker Rd, Gasport, NY 14067

On September 20, speakers from around the state will provide tips on how to start an agri-tourism business, how to market an agri-tourism enterprise, and will share information from a variety of businesses covering: farm stays, wedding venues, farm-to-table restaurants, and you-pick operations.

On September 21, conference attendees will have the choice of joining a bus tour to several agri-toursim businesses in Western New York to hear from the owners and learn about successes and challenges in starting an agri-business.

The cost to register is \$60 for 2 full days. Farmer scholarships are available reducing the rate to \$20 for two full days. The cost includes materials, breakfast, lunch and dinner on September 20 and the bus tour on September 21. Lunch on September 21 and hotel accommodations will NOT be provided. Conference attendees are also responsible for their own hotel reservations. A block of rooms is reserved at Hampton by Hilton Lockport-Buffalo, refer to group code: CCE, to get the negotiated rate. Call (716) 625-6900 to reserve your hotel room.

To register for the Strategic Marketing Conference contact Megan Burley at <u>msb347@cornell.edu</u> or 716-652-5400 x138, or online at <u>https://reg.cce.cornell.edu/Agritourism\_214</u>. The registration deadline is September 17.

# Farmer / Buyer Meet & Greet

September 25, 2017 | 7:00 PM - 9:00 PM 42 North Brewing Company, 25 Pine St, East Aurora, NY 14052

CCE Erie County, Harvest NY, and Eden Valley Growers are inviting farmers and buyers to an exciting networking opportunity! While you mingle, sample innovative recipes using locally-sourced farm products that can be bought in large quantities at competitive prices. Listen to GAPs 101: A Discussion of Buyer Protocols and How to Become GAPs certified.

FREE to attend! Please RSVP by September 22 to Eva McKendry at 716-652-5400 x176 or <u>emb73@cornell.edu</u>. For more information about this event, or for special accommodations, contact Megan Burley at 716-652-5400 x138.

## **Pickle Variety Twilight Meeting**

September 26, 2017 | 5:30 PM - 8:00 PM Goodman Farms, 3701 Braley Rd, Ransomville, NY 14131

An on-farm evaluation of new downy mildew pickle breeding lines led by Cornell Vegetable Program Specialist Darcy Telenko. For more information, contact Darcy at 716-697-4965 or <u>dep10@cornell.edu</u>.

## Good Agricultural Practices/Harmonized GAPs Farm Food Safety Training

![](_page_9_Picture_22.jpeg)

September 26-27, 2017 | 9:30 AM - 4:00 PM Southern Tier West, Center for Regional Excellence, 4039 Route 219, Suite 200, Salamanca, NY 14779

Farm food safety is common-sense practices organized to assist farmers to improve their skill set to continue to grow safe and healthy food.

Day One of this GAPs training will be an educational training on farm food safety principles and practices to provide the background and information for farmers to understand how to minimize the risk of food born disease contamination. Day Two will be for those who want help with writing a farm food safety plan. If you want to be certified under the GAPs or HGAPs program, a farm food safety plan is needed for the audit.

Cost: Pre-registration is required. \$25 for first farm attendee (\$15 for second) for County Extension enrollees; \$35 and \$15 for nonenrollees. Register online at <u>https://cvp.cce.cornell.edu/event.php?id=784</u>. For more info, contact Robert Hadad at 585-739-4065.

# Weather Charts

John Gibbons, CCE Cornell Vegetable Program

#### Weekly Weather Summary: 8/22 - 8/28/17

	Rainfa	all (inch)	Temp (°F)		
Location	Week	Month August	Мах	Min	
Albion	0.35	3.83	81	46	
Appleton, North	0.27	1.38	80	43	
Baldwinsville	1.07	2.74	85	46	
Buffalo*	0.56	3.19	82	48	
Ceres	0.51	2.94	83	44	
Elba	NA	NA	NA	NA	
Fairville	NA	NA	NA	NA	
Farmington	NA	NA	86	43	
Gainesville	NA	NA	NA	NA	
Geneva	0.78	3.55	85	47	
Lodi	0.43	0.97	88	NA	
Niagara Falls*	0.23	3.45	82	50	
Ovid	0.76	1.04	87	47	
Penn Yan*	0.52	1.41	88	49	
Phelps	0.78	3.11	85	47	
Portland	1.38	3.66	82	51	
Rochester*	0.90	3.04	84	48	
Silver Creek	NA	NA	81	53	
Sodus	NA	NA	85	50	
Versailles	NA	NA	81	45	
Volney	1.68	3.66	86	45	
Williamson	0.80	2.98	86	48	

#### Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 - August 28, 2017

Location	2017	2016	2015
Albion	2003	2286	2078
Appleton, North	1827	2019	1796
Baldwinsville	2036	2240	2085
Buffalo	2036	2331	2116
Ceres	1779	1837	1810
Elba	NA	NA	NA
Fairville	NA	2065	NA
Farmington	1875	2118	1971
Gainesville	NA	NA	NA
Geneva	1972	2179	2016
Lodi	2163	2384	2190
Niagara Falls	2229	2475	1978
Ovid	2093	2275	2138
Penn Yan	2097	2307	2128
Phelps	2013	2179	2036
Portland	2075	2183	1981
Rochester	2091	2365	2178
Silver Creek	2037	2142	1948
Sodus	2010	2167	1958
Versailles	1964	2076	1933
Volney	1887	NA	NA
Williamson	1967	2132	1903

Airport stations

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

![](_page_10_Picture_8.jpeg)

![](_page_10_Picture_9.jpeg)

American Takii, Inc. 831-443-4901 | www.takii.com 180 years Creating Tomorrow Today

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Vegetable Seeds for Professionals 315-789-4155 www.bejoseeds.com

![](_page_10_Picture_13.jpeg)

**Crop Production Services** 585-589-6330 | www.cpsagu.com "Profit from our Experience"

![](_page_10_Picture_15.jpeg)

Growmark FS - Filling Your Crop Needs Elba Muck 716-474-0500 | Caledonia 585-538-6836 Knowlesville 585-798-3350 | Batavia 585-343-4622

![](_page_10_Picture_17.jpeg)

Pest control products for fruit, vegetable and field crops. Dave Pieczarka, 315-447-0560

![](_page_10_Picture_19.jpeg)

Call 800-544-7938 for sales or visit www.harrisseeds.com EST SEEDS 1879 A Grower Friendly Company

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Medina, NY...(585) 798-6215 Geneva, NY...(315) 789-4450 Genoa, NY...(315) 497-2713

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SEEDWAY Vegetable Seeds 800-952-7333 | www.seedway.com We are focused on quality seed and service!

![](_page_10_Picture_25.jpeg)

Blake Myers, 585-303-3252 ED CO. vegetableseeds@aol.com www.siegers.com

![](_page_10_Picture_27.jpeg)

Our Vision... "To be the first choice for growers in all of our marketplaces." www.StokeSeeds.com

![](_page_11_Picture_0.jpeg)

Cornell University Cooperative Extension Cornell Vegetable Program

480 North Main Street Canandaigua, NY 14424

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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, potatoes 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, carrots) and dry beans

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, fresh market vegetables, and plant pathology

For more information about our program, email cce-cvp@cornell.edu or visit us at CVP.CCE.CORNELL.EDU

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Cornell University Cooperative Extension Cornell Vegetable Program

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