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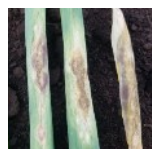
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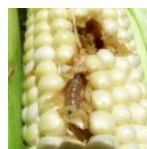
Significant Crop Losses on Peppers Due to Broad Mites

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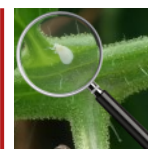
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Significant Crop Losses on Peppers Due to Broad Mites

Judson Reid, CCE Cornell Vegetable Program

Many growers in the CVP region are experiencing significant crop loss on peppers to Broad Mite this season. Broad mites are a microscopic mite that causes severe stunting, twisting and fruit damage, particularly in peppers. They are also a pest of greenhouse flowers. Once contaminated a pepper crop can be entirely lost to them.

Many growers are familiar with Two Spotted Spider Mite, but some struggle to see these without magnification. The Broad Mite is another order of magnitude smaller than Two Spotted Spider Mite, effectively impossible to see with the naked eye at a mere 0.02 mm in width!

The Broad Mite feeds deep within new growth as it develops, injecting a toxin. This creates a severe malformation of the leaves and may eliminate growing points altogether. The plant also may respond by producing a profusion of spindly, new shoots. Fruit develops a gray scar tissue, becoming unmarketable. The mites have a very quick lifecycle, as short as 7 days, with high reproductive potential.



Broad Mite damage causes severe stunting, twisting and fruit damage in peppers.
Photo: Judson. Reid, CCE Cornell Vegetable Program

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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.

We're interested in your comments. Contact us at:
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The next issue of VegEdge newsletter will be produced August 14, 2019.



Not pretty! Beet root rot samples (left) being collected for graduate student project and Cerospora leaf spot "hot spot" (right). We're working with Cornell faculty and cooperating growers to solve industry problems. *Photos: Julie Kikkert, CCE Cornell Vegetable Program*

To prevent crop loss, control of Broad Mite must happen as soon as symptoms appear, if not earlier. Pepper plants, which grow slowly, experience a lag in flowering and fruiting sufficient to prevent harvest, even after Broad Mites have been controlled. Note that the miticide Acramite (commonly applied for Spider Mite) is labeled as not effective on Broad Mite. What is labeled?

- Portal XLO (Group 21A, 1 D PHI, OK for greenhouse/high tunnel)
- Agri-Mek SC (Group 6, 7 D PHI, OK for greenhouse/high tunnel matured crops, but NOT transplants)



Broad mite on a damaged pepper leaf. Image captured under magnification. Photo: Caitlin Vore, CCE CVP

Organic? There are some biocontrol options such as generalist predatory mites *Neoseiulus cucumeris* and *Amblyseius swirskii*. These must be released into transplants preventatively to prevent an outbreak. There is research that supports the use of these beneficial mites as more effective than chemical controls.

All growers need to manage mites in ornamentals that are comingled with pepper transplants. If not using beneficials, there is another suite of labeled materials including Avid (Group 6), Pylon (Group 13) and SanMite (group 21). Note-these products are for ornamentals, not vegetables. By listing here, we hope to encourage active management in ornamentals, which are likely the source of Broad Mites in peppers.



Broad Mite damage to banana pepper. Note there are no new healthy shoots or flowers. Photo: Judson Reid, CCE CVP

Control of Onion Downy Mildew When Disease Pressure is High

Christy Hoepting, CCE Cornell Vegetable Program

Disease pressure is considered high when onion downy mildew (DM) infection sites occur throughout a field (as opposed to 1-2 isolated “hot spots”) and weather conditions are favorable for disease development and spread. Fields neighboring a DM-infected field are also considered to be at high risk. Onion DM is favored by cool temperatures (less than 72 °F) and wet conditions, especially when there is heavy dew at night. Spores are produced at night and are easily blown long distances in moist air. They can germinate on onion tissue in 1.5 to 7 hours when temperatures are 50 to 54°F. High daytime temperatures (>74°F) and short or interrupted periods of humidity at night can prevent sporulation. Therefore, DM is typically of most concern in onions once the heat wave of summertime passes and when cool nights and heavy dews are common. DM-infected plants are quickly invaded by Stem-



Figure 1. Downy mildew-Stemphylium leaf blight complex in onion can cause leaf defoliation in 2 weeks when conditions are favorable and the disease cannot be controlled. Early detection, preventative and curative fungicide sprays may not be able to stop this disease, but it should prevent excessive leaf dieback and plants from “dying standing up”. Photo: C. Hoepting, CCE CVP.

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phyllium leaf blight (SLB), and when conditions are favorable, a DM-SLB complex may defoliate an onion crop in just 2 weeks (Fig. 1, previous page). A good fungicide program cannot prevent DM-SLB, but it can slow it down to the extent that onions lodge normally and do not die standing up.

Based on Cornell On-farm Fungicide Trial Results:

- Best control of DM provided by:
 - Ridomil Gold Bravo (FRAC 4 + M5)
 - Orondis (FRAC U15)
- Mancozeb (FRAC M3) provided 55% control of DM
 - Significantly better than phosphorous acid (FRAC 33; e.g. Rampart)
- Variable results by FRAC 11 (e.g. Quadris, Cabrio, Reason, etc.)
- Other FRAC groups were not statistically different than mancozeb
 - Zampro (FRAC 40, 45), Tanos (FRAC 11, 27), Revus (FRAC 40), Gavel (FRAC 22, M3), Omega (FRAC 29)

Fungicide Recommendations for Onion DM:

- To keep foliage healthy, DM fungicides need to be tank mixed with best SLB fungicides to control the DM-SLB complex
- When **risk of DM is moderate** (e.g. conditions are favorable), but disease not present – use a protectant
 - Mancozeb (FRAC M3)
 - Phosphorous acid (FRAC 33), which is included in SLB fungicide Viathon
 - FRAC 11 active ingredients, which are included in some SLB fungicides such as Merivon, Quadris Top, etc.
- When **risk of DM is high/DM present** - rotate between
 - Orondis Ultra/Opti + SLB fungicide (2 week residual, 14 days before next spray)
 - Ridomil Gold Bravo + SLB fungicide
 - Double-up on DM fungicides (mancozeb or FRAC 11 in SLB fungicide)

The sample fungicide program (provided on the next page) assumes high pressure for Botrytis leaf blight, SLB and onion thrips* throughout the duration of the spray program. It assumes moderate pressure (= protective program) for DM through month of July and high risk of DM (= battling active DM infection during favorable conditions) in August. It represents the best fungicide program possible to control all leaf diseases for the whole season as it implements best fungicide resistance management practices (no more than 3 apps per FRAC/FRAC sub-class).

When **risk of DM is moderate in weeks 3-6**, mancozeb is added to the tank mix when SLB/BLB fungicide does not have activity on DM (e.g. week 4 & 5). In weeks 3 and 6, the FRAC 11 in SLB/BLB fungicide is used as the DM protectant. **Once DM is detected in the field in week 7 (= high risk)**, and continues to be active for the remainder of the growing season in weeks 8-10, best DM fungicides with curative activity Orondis and Ridomil Gold are used in rotation. To double up on DM active



Figure 2. The many looks of onion downy mildew. Top: Young 1-week old lesions on middle-aged leaves turn pale and sometimes yellowish in elongated patches and have grayish-purple fuzzy growth on green leaf tissue. Middle: 2-week old lesions where DM killed green tissue and left necrotic spots, which are being invaded by SLB. Bottom: 3-4 week old lesions have no more green tissue left and are over run with SLB spores, close inspection should reveal remnants of DM spores.

Photos: C. Hoepting, CCE Cornell Vegetable Program

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Sample Onion Fungicide Program (High Risk DM-SLB & BLB)

Week	Date	Crop Stage	Fungicides			FRAC
			BLB	SLB	DM	
1-2	Jun 21, 28	Pre-bulb	Bravo 3 pt			M5
Insecticides start 3	Jul 5	7 leaf Start bulb	Tilt 8 fl oz			3
			Quadris Top			3, 11
4	Jul 12	9 leaf, start-1" bulb	Inspire Super 20 fl oz		Manzate 2.4 qt	3, 9/ M3
5	Jul 19	9 leaf, 1" bulb	Luna Tranquility 12 fl oz		Manzate 2.4 qt	7, 9/ M3
6	Jul 26	9-11 leaf, 1-2" bulb	Merivon 9 fl oz			7, 11
DM High Risk 7	Aug 2	9-10 leaf 1-2" bulb	Tilt 8 fl oz			3
			Quadris Top 14 fl oz			3, 11
					Orondis Ultra 8 fl oz*	U15, 40
8	Aug 9	10 leaf, 2" bulb, start lodge	Luna Tranquility 16 fl oz		Manzate 2.4 qt	7, 9/ M3
9	Aug 13	8-10 leaf, 1.5-2" bulb, 5% lodging	Merivon 9 fl oz			7, 11
					Ridomil Gold Bravo 2.5 pt	4
10	Aug 23	6-8 leaf, 2-3" bulb, 30-50% lodging	Sprout Stop		Manzate 2.4 qt	M3
					Ridomil Gold Bravo 2.5 pt	4


*2-week residual

ingredients, mancozeb is used in weeks 8 & 10, and FRAC 11 in SLB fungicides is used in weeks 7 & 9. Best SLB fungicides, Luna Tranquility and Merivon are used when battling active DM-SLB complex.

*When insecticides with translaminar or systemic activity are used to control onion thrips, Bravo, which is a very good BLB fungicide, should not be co-applied in the same tank mix as it reduces the efficacy of the insecticide. Since this sample program assumes insecticides being applied every week, Bravo is not used for BLB.

Scout your Fields and be Able to Accurately Identify DM

DM tends to occur sporadically in "hot spots" within a field. Detecting this disease often is the result of a trained eye recognizing the disease when one happens to come across it. The look of this disease changes as it progresses through its stages and can be tricky to identify (Fig. 2, previous page).

For more information, see June 12 issue of VegEdge and Cornell Onion Fungicide Cheat Sheet on CVP website. 



European Corn Borer (ECB): Light colored caterpillar with a dark head capsule. They are often pink, tan or gray and have small dark spots. Fully grown, they reach up to 1 inch long. They make small holes in leaves and stalks and feeding can cause tassels to be knocked over. They will bore into ears.

Corn Earworm (CEW): This caterpillar may vary in color and often has longitudinal stripes. Small bumps and hairs covering the surface may give the body a rough texture. The head capsule is light yellowish brown. Fully grown larvae are 1 ½ to 2 inches long. They are often found feeding on the tips of the ear. They do not feed on the leaves.

Fall Armyworm (FAW): The distinguishing feature of this caterpillar is the inverted white Y on the head. The body is smoother and darker color than CEW. It also has stripes running the length of the body. Fully grown, they reach about 1.5 inches in length. They make large holes in leaves and feed extensively on above ground parts of the plant.

Western Bean Cutworm (WBC): Small larvae may be difficult to identify, but 4th instar or larger larvae (1/2 to 1.5 inches long) have 2 black rectangles behind the head. The larvae feed on leaves, tassels, pollen, silks and kernels. Large larvae are often found feeding on mature ears, usually at the tip but sometimes the sides. Several larvae may be found in one ear.

IDENTIFICATION
**CATERPILLARS in
SWEET CORN**

If you need assistance with insect identification or management, contact one of our team members. Find more information at <https://sweetcorn.nysipm.cornell.edu>.
By Julie Kikkert, CCE Cornell Vegetable Program

NY Sweet Corn Trap Network Report, 8/6/19

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

WNY Pheromone Trap Catches, 8/06/19

Location	ECB-E	ECB-Z	CEW	FAW	WBC	DD Base 38F
Batavia (Genesee)	0	0	0	0	12	2802
Bellona (Yates)	0	0	3	0	12	2855
Carlton (Orleans)	0	1	0	0	28	2694
Eden (Erie)	0	0	2	11	18	2829
Farmington (Ontario)	0	0	0	0	1	2862
Geneva (Ontario)	0	0	0	0	0	2829
Hamlin (Monroe)	NA	NA	NA	NA	NA	2726
Kennedy (Chautauqua)	0	0	3	1	7	2737
Lyndonville (Orleans)	0	0	0	0	121	2678
Penn Yan (Yates)	1	0	0	1	12	2785
Portville (Cattaraugus)	38	0	0	0	4	2634
Ransomville (Niagara)	0	0	5	0	8	2779
Seneca Castle (Ontario)	90	3	0	0	2	2766
Williamson (Wayne)	NA	NA	NA	NA	NA	2573

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

Statewide, 33 sites reporting this week. European corn borer (ECB)-E was caught at eight sites with a high of 90 at the Seneca Castle site. ECB-Z was caught at seven sites. 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 ten sites

and Western bean cutworm (WBC) was caught at twenty-eight sites this week.

We saw a real increase in WBC trap catches this week with a high of 148 moth caught at the Plattsburgh site. Below is this week's estimated WBC Flight Completion map created by Dan Olmstead, NEWA coordinator, and based on Hanson et al. Check the degree days listed in the table to see where each site is predicted to be for WBC flight completion.

WBC are most attracted to pretassel corn. Make sure to scout all pretassel fields for egg masses and larvae. After the eggs hatch larvae will first feed in the tassel before making their way to the ears.



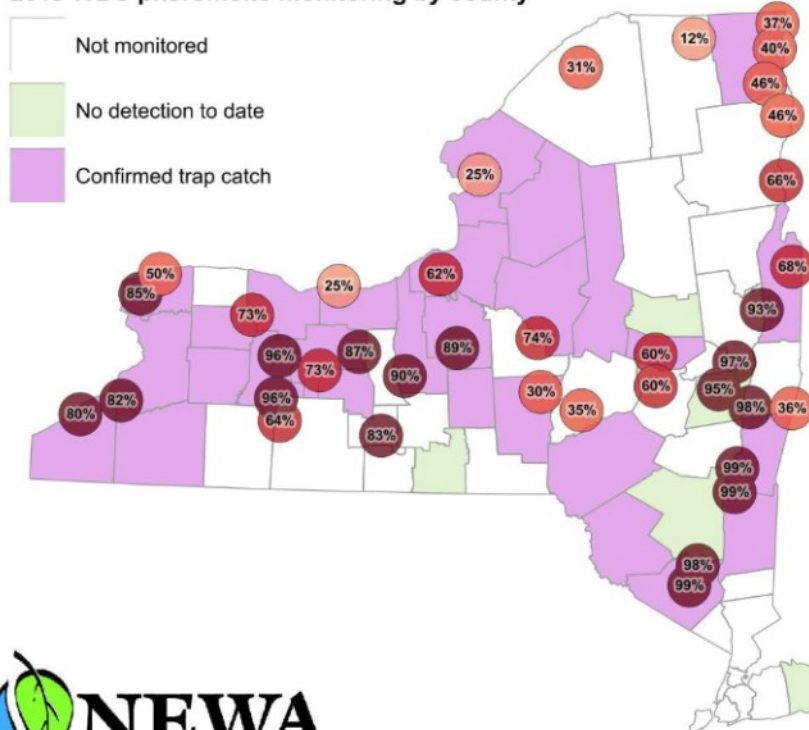
WBC larvae just after hatching. Photo: Tom Cowan



Later instar WBC larva, note the two dark bands behind the head capsule. Photo: Frank Peairs, Colorado State University, Bugwood.org

Western Bean Cutworm Estimated Flight Completion 08/05/2019

2019 WBC pheromone monitoring by county



NEWA Western bean cutworm flight emergence lookup table

Est. Flight completion	Hanson method (2015) ^{1,2}	
	Base 3.3°C	Base 38°F
1%	1230	2200
5%	1320	2390
10%	1365	2460
15%	1390	2540
20%	1415	2585
25% (scout for egg masses)	1430	2615
30%	1450	2655
40%	1475	2690
50%	1500	2735
60%	1530	2800
70%	1560	2845
80%	1600	2919
90%	1660	3030
100%	2110	3825

¹ Hanson, A.A., R.D. Moon, R.J. Wright, T.E. Hunt, and W.D. Hutchison. 2015. Degree-Day Prediction Models for the Flight Phenology of Western Bean Cutworm (Lepidoptera: Noctuidae) Assessed with the Concordance Correlation Coefficient. J. Econ. Entomol. 108:1728-1738. DOI: 10.1093/ee/etv110.

² Model uses lower and upper thresholds of 3.3°C (38°F) and 23.9°C (75°F), respectively.

Western Bean Cutworm Report

Margie Lund, CCE Cornell Vegetable Program

This week, one Western Bean Cutworm (WBC) trap reached >100 cumulative catch (Riga, Monroe Co.). 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	8/6/19	Cumulative WBC
Avoca 1 (Steuben Co.)	0	0	1	NA	74	NA	75
Avoca 2 (Steuben Co.)	1	1	0	NA	38	NA	40
Caledonia S. (Livingston Co.)	NA	0	0	11	44	20	75
Caledonia SW. (Livingston Co.)	NA	0	0	0	8	10	18
Geneva (Ontario Co.)	NA	NA	0	2	10	1	13
Riga (Monroe Co.)	NA	0	0	17	61	80	158
Stafford (Genesee Co.)	NA	0	0	5	28	23	56
Wayland (Steuben Co.)	0	2	3	NA	81	NA	86
Western Bean Cutworm trap counts by date NA - not available							

Late Blight Risk

John Gibbons, CCE Cornell Vegetable Program

Many of the stations have accumulated 30 blight units (BU) needed to trigger a spray for late blight (LB) through the forecasted period thru 8/09. Some are a ways off because of the dry weather being experienced by those sites and the lack of high humidity periods: Albion, Buffalo, Burt, Elba, Geneva, and Hammondsport. 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 7/31. 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, 8/06/19

Location ¹	Blight Units ¹ 7/31-8/06	Blight Units ² 8/07-8/09	Location ¹	Blight Units ¹ 7/31-8/06	Blight Units ² 8/07-8/09
Albion	5	20	Hammondsport	7	21
Arkport	12	21	Kendall	17	21
Baldwinsville	29	21	Knowlesville	11	20
Bergen	11	19	Lyndonville	22	21
Buffalo	0	20	Medina	27	20
Burt	16	6	Niagara Falls	26	19
Ceres	46	21	Penn Yan	30	21
Elba	9	18	Rochester	20	20
Fairville	18	21	Sodus	24	21
Farmington	23	21	Versailles	43	20
Fulton	29	21	Wellsville	42	21
Geneva	0	21	Williamson	17	21

¹ Past week Simcast Blight Units (BU)

² 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 – 8/6/19** – Late blight has been detected in potato in Portage County today. Infected plants were destroyed and treatment has been applied to limit spread beyond. Please be vigilant in protecting susceptible potato and tomato crops. More information will come on clonal lineage.

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: <https://usablight.org/?q=map>

COLE CROPS

A year ago, *Alternaria* leaf spot blew up during the month of August and prevention of such an outbreak is on growers' minds. To the right is a sample fungicide program designed for high pressure ALS using best fungicide products from 2018 on-farm high-pressure ALS broccoli trial. This program was strategically designed to: 1) Use no more than 2 apps per FRAC per crop, 2) No more than 2 apps before rotating to different

Sample fungicide program for control of *Alternaria* leaf spot and head rot in broccoli.

Week	Crop Stage	Fungicide	FRAC Group	PHI (days)	Activity on DM
1 & 2	1-2 weeks after transplanting, prior to ALS infection	Bravo WS 1.5 pt	M5	7	Good
3	Pre-heading, large canopy	Switch 14 oz + penetrating adjuvant	9, 12	7	None
4	Heading begins	Switch 14 oz + penetrating adjuvant	9, 12	7	None
5	Harvest begins	Priaxor 8.2 fl oz + penetrating adjuvant	7, 11	3	Good
6	During harvest	Endura 9 oz + penetrating adjuvant	7	0	None

FRAC group, and 3) 0-3 day PHI products saved for close/during harvest. When pressure is lower, one can always run a less intense program. Other fungicides that demonstrated good to excellent activity in the 2018 trial include Inspire Super (FRAC 3, 9; PHI 7 days), Quadris Top (FRAC 3, 11; PHI 1 day) and Luna Experience (FRAC 3, 7; PHI 7 days). **Be aware that it is highly suspected (not officially confirmed) that ALS has developed fungicide resistance to Quadris (a.i. axoystrobin). Therefore, use of Quadris and other FRAC 11 fungicides (such as Cabrio) are not recommended for control of ALS.** Premixes with FRAC 11 that contain FRAC 3 or 7 (such as Quadris Top and Priaxor) are okay, because it is the FRAC 3 and 7s that are doing the work. For complete article, see May 15 issue of VegEdge. This program may be used for all Cole crops that these products are labeled for.

DRY BEANS

Continue to monitor beans for signs of white mold, and consider applying a fungicide to flowering plants if you have not done so already. The recent dry weather will decrease chances of white mold occurring in fields, but if white mold has become established in fields we may see more occurrences after upcoming rain events.

Leafhopper numbers have increased in dry beans across the region this week. A recommended threshold for leafhoppers in larger dry bean plants is 1 nymph per 10 leaves, or 1 adult per sweep using a sweep net. In plants treated with Cruiser, the presence of nymphs indicates that Cruiser is no longer working to control leafhoppers. A foliar treatment can be used if thresholds are met. – ML

ONIONS

New downy mildew (DM) infections (Fig. 1) were detected this week in Wayne and Genesee counties. Although the odd "hot spot" in a field/planting will not bring down the crop, if there are several infection sites/hot spots throughout a field, it is recommended to apply Ridomil Gold Bravo or Orondis for curative protection. The extent to which the disease progresses is very dependent on the weather, but if conditions are favorable, DM can cause a lot of leaf dieback – see article, page 3. Dry conditions and excellent fungicide programs have kept *Stemphylium* leaf blight and *Botrytis* leaf blight in check. Not much new activity this week with other diseases including bacteria, pink root, IYSV or *Fusarium*.

Many fields are coming out of the momentum of Movento this week, after about 2 weeks of residual control. In general, thrips pressure is low throughout the region with exception of some impressive "hot spots", which appear to be influxes from harvest of wheat, other onions or other external source of thrips. Agri-Mek, Minecto Pro and Radiant are the typical insecticide choices that follow Movento. Agri-Mek can control only low thrips pressure (<1.0 per leaf), so if you are likely to experience influx from external sources, Minecto Pro would be a better choice, which may be applied when threshold reaches 1-2 thrips per leaf. Radiant should be used when thrips are greater than 3 thrips per leaf. Keep in mind that if you make a double application of Minecto Pro, that all you have left is Radiant (or Lannate +/- Warrior), because Minecto Pro is a premix of Agri-Mek + Exirel. For more info, see July 17 issue of VegEdge for article and CVP website for 2019 thrips guidelines. **Elba Muck Onion**

Twilight Meeting is less than two weeks away on Tuesday, August 20th – more info coming soon! – CH

PEPPERS

Conditions are contributing to blossom end rot.

Bacterial leaf spot is becoming more widespread. Rain splash and night time dew has allowed this disease to get started and spread quickly in some areas. Deep penetrating spraying getting good coverage throughout the leaf canopy will help slow the spread. Copper products still provide decent control. – RH



Figure 1. Early detection of downy mildew of onion.
Photo: Sarah Vande Brake, CVP



Leaf Spot symptoms on pepper leaves and fruit.
Photo: Cornell Vegetable MD Online

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POTATO

Colorado potato beetle (CPB) numbers have been low this past week. However, 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.

No new late blight outbreaks have been reported, but was positively reported in Erie County, PA in the past few weeks, so continue scouting for late blight in fields. Late blight will appear as dark green to brown water-soaked lesions, often appearing on lower leaves first. Over time lesions may be surrounded by a light green ring, and white spores will appear on the underside of leaves. Let us know if you suspect you have signs of late blight in your field. – ML

High temperature and dry conditions are causing some fields of early varieties to go down quickly. With late blight being reported in neighboring states a fungicide treatment should be maintained while the vines have green tissue or the plants are completely dead. – JG

PROCESSING VEGETABLES

Sweet corn insect management is important at this time and please refer to the information provided in the trap catch reports by NYS IPM, with additional information on caterpillar identification in the short article on page 5. Rains this week and morning dews that are more typical in late season, increase the risk for White Mold in snap and lima beans. Fungicides sprays must be applied at bloom, with the first spray starting when 10% of the plants have one open flower. We are looking for white mold samples this year for a research project to determine fungicide resistance, so please contact Julie if you have a field with WM. Leaf disease management continues to be important in carrots and table beets. Cercospora leaf spot (CLS) is becoming more prevalent in table beets and often begins as hot spots in a field, so please be looking out for purple patches in the field and investigate for CLS. The disease can spread rapidly under conducive weather conditions. I have also seen a fair amount of Phoma leaf spot in fields, typically on lower leaves that have been moist under the canopy. Phoma is distinguished by a concentric ring pattern, and the lesions are typically much larger than CLS. A fact sheet on each of these diseases can be found at <http://evade.pppmb.cals.cornell.edu/factsheets/>. – JK

FRESH MARKET

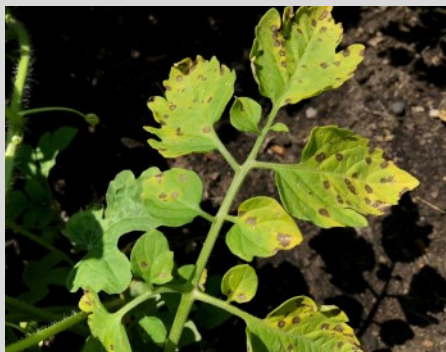
Some reports of squash vine borer damage. Bacterial wilt is taking down a few fields where the cucumber beetle control was poor earlier in the year. Viral infections are showing up in several fields - we are looking for samples of CMV for a project. – EB

SWEET CORN

Sweet corn plantings in a wide geographical area are showing signs of sap beetle damage. Corn varieties with looser ear tip leaves allow the beetles to enter. Eggs are laid and the larvae feed on kernels. – RH

TOMATOES

Little or no rain has occurred in 3-4 weeks in some areas causing plant stress, poor pollination, and disfigured fruit such as catfacing and stitching in tomatoes. The crop is also showing a wide assortment of leaf diseases including **Early Blight**, **Septoria**, and **Bacterial spot**. – RH



Bacterial speck on tomato.
Photo: Caitlin Vore, CVP



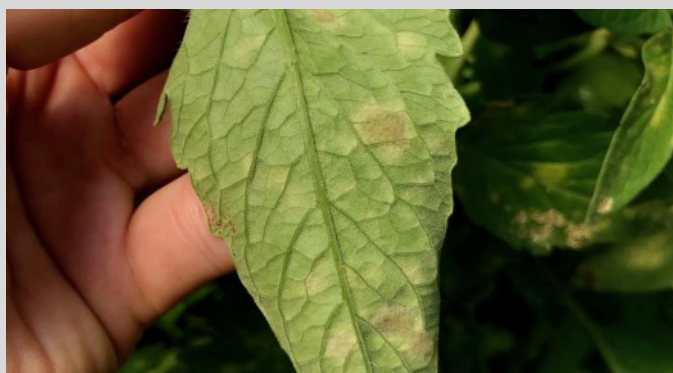
'Honeydew' from white flies in high tunnel.
Photo: Caitlin Vore, CVP



Spider mites on high tunnel tomato.
Photo: Caitlin Vore, CVP



Leaf mold on high tunnel tomato. Photo: Caitlin Vore, CVP



Leaf mold on underside of leaf of high tunnel tomato.
Photo: Caitlin Vore, CVP



Upcoming Events

view all Cornell Vegetable Program upcoming events at CVP.CCE.CORNELL.EDU

Dry Bean and Potato Twilight Meetings

August 12, 2019 (Monday)

4:30 - 5:45 PM Dry Bean: Cory Mark Farms dry bean field, corner of Whiteman Hill Rd and Gross Hill Rd, Wayland

6:00 dinner (included)

6:45 - 8:00 PM Potato: Cory Mark Farms shop, 11595 Buffalo St, Wayland, NY 14572



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 access to both meetings. At-the-door registrations welcome but dinner not guaranteed. 1.0 DEC recertification credits and CCA credits will be available for both portions of the evening. Questions? Contact Ariel Kirk, 607-664-2574. In case of rain, the events will be held in the shop.

Building the Farm Support Network – Women in Agriculture Discussion Group Meeting

August 12, 2019 (Monday) | 6:30 - 8:00pm

Hamlin Park, East Aurora

Farming can be hard. Luckily there are a lot of organizations that offer technical support, funding, and business management resources.

Come join us at our free picnic event to hear what these organizations can do for your farm! It will be an informative and informal discussion setting located at a town park. Speakers include NRCS, Farm Bureau, the Small Business Development Center, and many more.

Any women working in agriculture or associated with horticultural crop production are welcome to attend. RSVP by August 10th to Elizabeth Buck at 585-406-3419 to ensure that we have enough food. This is free thanks to a grant from Farm Credit East's Northeast AgEnhancement program.

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.



We are pleased to welcome you once again to our annual Open House in Geneva, NY. Please join us on August 27 & 28 from 9am-6pm and enjoy our **Kitchen Garden, raised beds and field trials**. This year, we are happy to present the **Organic Oasis**, a showcase of all of Bejo's organic varieties available in North America. We hope our **Container Walkway** will inspire growers who have limited space to see the beauty and bounty that can be produced in pots and planter boxes.

Exploring Nature Never Stops

Bejo Seeds Open House
4188 Pre Emption Rd. Geneva, NY 14456
August 27 & 28 - 9am-6pm
Questions or Comments: media@bejoseeds.com

Weather Charts

John Gibbons, CCE Cornell Vegetable Program

Weekly Weather Summary: 7/30 - 8/05/19

Location**	Rainfall (inch)		Temp (°F)	
	Week	Month August	Max	Min
Albion	0.16	0.00	88	52
Arkport	0.01	0.01	83	50
Bergen	0.07	0.00	86	47
Brocton	0.81	0.00	84	60
Buffalo*	0.51	0.00	85	59
Burt	0.13	0.00	85	52
Ceres	0.16	0.02	82	53
Elba	0.32	0.00	84	51
Fairville	0.00	0.00	84	49
Farmington	0.12	0.00	86	46
Fulton*	0.20	0.02	85	50
Geneva	0.18	0.00	84	52
Hammondsport	0.11	0.00	84	50
Hanover	0.79	0.00	83	57
Lodi	0.72	0.00	84	54
Niagara Falls*	0.23	0.00	84	57
Penn Yan*	0.05	0.00	86	54
Rochester*	0.01	0.00	84	54
Sodus	0.01	0.00	84	47
South Bristol	0.08	0.02	81	50
Varick	0.77	0.00	85	53
Versailles	0.37	0.00	84	54
Williamson	0.03	0.00	84	48

Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 - August 5, 2019

Location	2019	2018	2017
Albion	1533	1806	1577
Arkport	1402	1778	1448
Bergen	1476	1707	1521
Brocton	1514	NA	NA
Buffalo*	1540	1877	1608
Burt	1384	1648	1481
Ceres	1466	1571	1424
Elba	1420	1708	1516
Fairville	1410	1656	1498
Farmington	1437	1700	1491
Fulton*	1400	1708	1512
Geneva	1519	1741	1569
Hammondsport	1447	1656	1507
Hanover	1498	1757	NA
Lodi	1555	1777	1642
Niagara Falls*	1482	1924	1770
Penn Yan*	1589	1809	1676
Rochester*	1631	1925	1672
Sodus	1379	1642	NA
South Bristol	1430	1662	1495
Varick	1602	1807	1662
Versailles	1478	1718	1580
Williamson	1364	1614	1527

* Airport stations

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

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VegEdge is the award-winning newsletter produced by the Cornell Vegetable Program. 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
Cornell Vegetable Program

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



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