

know that blossom end rot can affect the inside of your

tomato. This phenomena is called internal blossom end rot.

PAGE 1



soft, smelly mess.

PAGE 4

Unfamiliar with carrot rust fly? Learn more about how the larva can damage the root and lead to carrots that decompose into a



Here's a review of the characteristics of the common caterpillars that might be found infesting sweet

corn ears now through the remainder of the season.

PAGE 5





Next week, the CVP Specialists are presenting the latest research findings at several regional meetings. We hope

you'll join us!

PAGE 8





YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

Volume 14

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Audusi

Cornell Cooperative Extension Cornell Vegetable Program

Internal Blossom End Rot

Elizabeth Buck, CCE Cornell Vegetable Program

Tomato and pepper growers are well-familiar with blossom end rot, especially with the droughty conditions many areas experienced this year. Blossom end rot is that typical dark, dry spot at the bottom end of tomatoes, or on the side or tip of peppers. It is a water-driven calcium deficiency and is often a temporary condition brought on by environmental conditions a couple weeks before the damage is observed. Pretty standard stuff, right?

Nope, not exactly. Blossom end rot can throw us a curve ball and show up as an internal disorder of tomato fruit. Internal blossom end rot manifests itself in the pack house as a darkening of the fruit. There may be just an unusually dark red or black spot under the surface of the skin on an otherwise normally ripening tomato. Internal blossom end rot can be difficult to detect and requires a sharp eye. If there is a surface lesion or injury to the tomato above the spot, something penetrating the skin, then you don't have internal blossom end rot, you likely have an invasion of a much more typical tomato pathogen.



Internal blossom end rot nugget removed from the otherwise ripe fruit. Photo: E. Buck



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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Help us serve you better by telling us what you think. Email us at *cce-cvp@cornell.edu* or write to us at Cornell Vegetable Program, 480 North Main Street, Canandaigua, NY 14424.



Contents

Contact Us

Corne	ll Vegetable Program	10
Crops		
CROP	Insights – Our Observations from the Field and Recommendations	07
Carrot	: Rust Fly – From Zero to Terrible in a Blink	04
Potato	p/Tomato: Late Blight Risk Update	06
WNY S	Sweet Corn Trap Network Report, 8/14/18	05
Identi	fication of Caterpillars in Sweet Corn	05
Tomat	to: Internal Blossom End Rot	01

Upcoming Events

V

Oswego Onion Growers Twilight Meeting	
Urban Farm Twilight Meeting	
3rd Annual Vegetable Pest Management Field Day	
Genesee Valley Produce Auction Growers Meeting	
No-Till and Never-Till Soil Health Workshop	
Veather Charts	

The next issue of VegEdge will be August 22, 2018.



continued from cover - Internal Blossom End Rot

Upon cutting the fruit open, you'll find a firm, darkened area in the lower portion. This is the area where the cells failed to properly expand their cell walls and develop. The area dies out, leaving the discoloration. Cells around the killed spot may fail to mature properly, causing a gray



or pale appearance and firm texture. Essentially, the spot is surrounded by immature tissue.

Unfortunately, these internal disorders leave weaknesses inside the tomato fruit. **Secondary pathogens** that find an entry point into the fruit can easily set up shop in the damaged tissue, soften the damaged area, and give rise to internal molds and rots. This makes the diagnosis of internal blossom rot more difficult – it is easy to suspect a pathogenic problem when really you have an underlying physiological disorder. Unlike a pathogenic cause, a variety of opportunistic breakdown and disease organisms will take advantage of fruit weakened by internal blossom end rot. The same thing happens with external blossom end rot, where a variety of saprophytic (opportunistic) microbes attack the damaged tissue and cause decay.



A secondary grayish mold is attacking the internal blossom end rot nugget. *Photo: E. Buck*



A different, secondary whitish mild attacked this internal blossom end rot tomato. Note the dark damage spot in the lower part of the fruit. The mold's entry path into the internal blossom end rot was through a stem crack and left a dark trace coming down the central vein. *Photo: E. Buck, CVP*

So why, does *internal* blossom end rot happen?

There isn't a good understanding of why, on the odd occasion, blossom end rot only shows up inside the fruit. I know, that is a rather dissatisfying lack of an answer. The good news for everyone's marketing channels is that **the internal version of this disorder is rather uncommon**. There are often other field indicators associated with its presence:

1) Dry conditions and infrequent, inconsistent, or insufficient water delivery (amount and timing)

 Presence of typical, external blossom end rot in the same or neighboring plantings. May be present in the fruitset/picking before or after the internal defect is noticed.

Ultimately, internal and external blossom end rot happen for the same physiological reason. Cells need calcium to expand their walls and grow, among other functions. Calcium can only move through the plant in the water-delivery tissue, the xylem veins. Xylem flow delivers water based on demand. Leaves have lots of water demand capacity because of all their gasexchange openings (stomata), while the waxy coating that protects the fruit also limits its ability to demand water. Imagine each little stomata is a straw. The xylem has to deliver water to all the straws in the plant. When the roots don't consistently have enough water to allow the xylem to meet all the delivery needs, water is directed to the places with the most straws. The fruit lose out and get short-changed on the water. With less water delivered, they don't receive the required amount of calcium and blossom end rot develops. Even if the soil is overloaded with calcium and there is lots of calcium in the water, the fruit can't get enough calcium under droughty or inconsistent water conditions because they can't yell loud enough for the water needed to get the calcium there.

Ok, so I'll fix this by foliar feeding calcium? No.

If you put calcium on the leaves, it is absorbed by the leaves. They can only try to export it by loading it into the water stream. And the water stream in a leaf is flowing out to the leaf tip and not down to the fruit.

So I'll **fix this by feeding calcium nitrate** through the drip?

Not necessarily. Yes, if your soil test has shown that you have low calcium. Yes, if your foliar test shows that the plant is calcium deficient. No, if the availability of water is the main problem. And the vast majority of the time, water is the problem. On a small number of cases, lack of calcium or competition from other soil nutrients can underlie the problem.

Blossom end rot is common. It is usually easy to remediate and contain to a single fruit set. Ultimately, **blossom end rot tells the grower that they need to pay more attention to the crop's needs** on a daily basis during the busy part of the summer. In the short term, walking the crop helps you decide where to give irrigation when the water is limited. And making that small management change – being more attuned – will protect you from missing bigger, more serious disease problems down the road.

Carrot Rust Fly – From Zero to Terrible in a Blink

Crystal Stewart, CCE Eastern NY Commercial Horticulture Program; from Vegetable News, 7/19/18

I've never personally encountered carrot rust fly until this year, and after pulling a few handfuls of foul, melting carrots, I'm quite certain I'd prefer not to see it again. However, chances are good that isolated populations will show up here and there throughout eastern NY, so I want to simply place some information about this pest into the back of your mind, hopefully never to be accessed again.

Eric Sideman from the Maine Organic Farmers' Association wrote a great article about this pest some years ago, which beautifully explains the life cycle and organic controls:

"... The spring generation of the fly lays its eggs on the ground at the base of the carrot plant in mid-May to early June. The young larvae burrow into the soil and feed on the small roots of the growing carrot. Then the older larvae enter the main root. When the larvae mature they leave the carrot and pupate in the soil. The second generation of adult flies emerges from the pupae from mid-August to mid-September and lays another batch of eggs that produce the maggots that develop in storage carrots. If carrots remain in the garden, these larvae mature, leave the carrot, pupate in the soil over winter and emerge in spring as flies. Wild and volunteer carrots, parsley, celery, coriander and parsnips are other hosts, and rust fly larvae from these crops mature and pupate in the soil, so crop rotation is unlikely to provide control.

Larvae feeding during the summer cause stunted plants that turn yellow. Larger larvae destroy the crop. To add insult to injury, soft rot bacteria may take hold in the tunnels, so that the carrots decompose into a soft, smelly mess. Larvae in fall carrots may be small when the crop is harvested for storage and may go unnoticed, but they continue to develop into large larvae during storage.

Controls for carrot rust fly are all cultural modifications. If feasible, rid the growing area of all hosts the year before growing carrots, and, in any fields that had hosts, plow deeply in the fall to bury overwintering pupae.

Planting later than the end of May will avoid the first generation of egg-laying flies. Harvesting an early planting by mid-June will get carrots out before the larvae enter the taproot or grow large enough to be noticed. Harvest early

plantings in blocks and be sure to harvest the crop completely so that the area will not produce secondgeneration flies....

flies....By far, covering the planting with floating row cover is the best Carrot ru control – espe-



Carrot rust fly larva and damage to root. Photo: UMass

cially if you have had repeated problems with the pest and know that it overwinters regularly in your area. Carrots that are relatively large in August, when the second generation of egg-laying flies is active, and that are intended for late fall harvest are most important to cover. Early carrots that are large when the first generation is laying eggs, from mid-May to June, may also be important to cover if you plan to harvest those carrots in late summer, since that would give the larvae time to grow."



Adult carrot rust fly. Photo: OMAFRA



Pupa of carrot rust fly (left) and larva (right). *Photo: OMAFRA*



Feeding damage from the carrot rust fly with a larva emerging from the feeding site. *Photo: Mike Derie, Washington State University*

If you think you have seen (or felt gross) carrot rust fly, feel free to call [Elizabeth Buck at 585-406-3419 or Robert Hadad at 585-739-4065] to talk through protecting your next generation of carrots.

WNY Sweet Corn Trap Network Report, 8/14/18

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

Thirty of 38 sites reported this week. European corn borer (ECB)-E was caught at 7 sites and ECB-Z was caught at 15 sites. Corn earworm was caught at 16 sites with 8 sites high enough to be on a 4, 5, or 6 day spray schedule (see table below). Fall armyworm (FAW) was caught at 14 sites and Western bean cutworm (WBC) was caught at 24 sites.

According to the average trap catches to date, WBC, ECB-E and CEW continue to decline while FAW and ECB-Z are on the rise. Where FAW are being caught, a tassel emergence scout in late plantings is still a good idea, as some years we see heavy FAW infestations in the emerging tassels that may have time to get into developing ears before silk sprays for CEW.



Feeding damage. Photo: D. Telenko, CVP



Fall armyworm damage.

Average corn earworm catch and recommended spray interval

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

Identification of Caterpillars in Sweet Corn

Julie Kikkert, CCE Cornell Vegetable Program

While New York sweet corn growers do a good job managing insect pests, some escapes do occur. With Western bean cutworm now widespread in New York, , it is a good time to review the common caterpillars that might be found infesting sweet corn ears now through the remainder of the season. Understanding where breaks occur in your management strategy can show where improvements might be made in future years. If you need assistance with insect identification or management, please contact one of our team members. Additional information can be found at <u>https://</u> sweetcorn.nysipm.cornell.edu.

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.



ECB larvae boring in sweet corn ear. Note dark head capsule. Photo: NYS IPM

WNY Pheromone Trap Catches: August 14, 2018

Location	ECB-E	ECB-Z	CEW	FAW	wвс	DD to Date
Baldwinsville (Onondaga)	1	0	7	5	6	1965
Batavia (Genesee)	0	8	5	0	4	1940
Bellona (Yates)	0	15	1	7	6	2008
Eden (Erie)	0	0	0	2	0	1882
Farmington (Ontario)	0	0	1	2	1	1861
Geneva (Ontario)	2	2	1	5	1	1937
Hamlin (Monroe)	NA	NA	NA	NA	NA	1830
Kennedy (Chautauqua)	0	2	0	2	2	1697
Pavilion	0	2	0	91	6	1569
Penn Yan (Yates)	0	7	2	10	4	1982
Ransomville (Niagara)	0	1	0	7	10	1997
Seneca Castle (Ontario)	1	NA	0	7	0	1887
Williamson (Wayne)	0	0	0	0	10	1771
ECB - European Corn Borer WBC - Western Bean Cutworm						

DD -

CEW -Corn Earworm FAW - Fall Armyworm

not available

Degree Day (mod. base 50F) accumulation 0

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 1/2 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.



CEW caterpillars (left) have a uniform light vellow-brown head, while FAW (right) have a dark head with a prominent, light colored area shaped as an inverted Y. Photo: A.T. Eaton, Univ. NH Cooperative Extension

continued from page 5 – Identification of Caterpillars in Sweet Corn



WBC larvae. Early instars (left) lack the identifying black rectangles that older larvae have. *Photo: J. Obermeyer, Purdue Univ.*

Late Blight Risk Update

John Gibbons, CCE Cornell Vegetable Program

No new reports in NY. From Amanda Gevens, U. of Wisconsin: Late blight was confirmed in Adams and Marquette Counties, WI this past week. Additionally, the disease was also confirmed in Henderson County, IL. All samples tested from WI and IL, to date, are of the US-23 genotype. We will continue to watch the national occurrence map to track late blight movement.

Scout fields twice a week. See the table for the Blight Units (BU) accumulation from around the region. The trigger in the Decision Support System (DSS) forecast for applying a fungicide is <u>30 BU's</u> if the variety is susceptible. All tomato and potato growers, conventional and organic, should be applying a protectant fungicides and monitoring the DSS to determine spray intervals. While there have been no new late blight occurrences, the weather has become much more favorable for late blight development. This week all stations reached the 30 BU's needed to trigger a spray by 8/15 except Volney, which reached the 30 BU's by the end of the forecast period on 8/17. Monitor your fields closely. Keep the vines protected until they are dead after vine killing. With the recent weather we will probably see more reports coming in. 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.

If you think you have late blight contact your local CCE office or a CVP specialist so a sample can be obtained for positive identification and genotype identification. You can monitor late blight development at the following web address: <u>https://usablight.org/map</u>.

Late Blight Risk Chart, 8/17/18

Location ¹	Blight Units ¹ 8/08-8/14	Blight Units ² 8/15-8/17	Location ¹	Blight Units ¹ 8/08-8/14	Blight Units ² 8/15-8/17
Albion	49	16	Lodi	NA	NA
Baldwinsville	40	18	Lyndonville	39	19
Bergen	37	17	Medina	40	15
Buffalo	43	17	Niagara Falls	44	12
Ceres	48	20	Penn Yan	57	16
Elba	40	17	Rochester	46	18
Fairville	41	13	Sodus	46	14
Farmington	45	17	Versailles	44	17
Gainesville	NA	NA	Volney	25	16
Geneva	32	10	Wellsville	48	21
Kendall	40	7	Williamson	46	14
Knowlesville	36	16			

¹ Past week Simcast Blight Units (BU)

² Three day predicted Simcast Blight Units (BUs)



RAIN OR SHINE – ONION GROWERS GATHER FOR EXTENDED MUCK DONUT HOUR

Cornell Entomologists Brian Nault (center in black) and Ashley Leach (under red umbrella) give Elba muck onion growers a tour of their 2018 onion thrips research trials during an extended muck donut hour Tuesday. Even in the rain, differences among treatments were striking. *Photo: C. Hoepting, CVP*

PAGE 6 | VegEdge



Remember to pre-register for the Portland field day! <u>Register online</u>, or call Elizabeth at 585-406-3419. I want everyone to get dinner, so you need to pre-register. – *EB*

Weeds have become particularly obnoxious after we finally got some rain, and many species are flowering and beginning to set seeds. Mowing off crops that have already finished will help reduce the seed set and next year's weed problems. It also helps reduce disease pressure on the farm by cleaning up encouraging crop debris break-down. – *EB*

COLE CROPS

Seeing an uptick in aphids, particularly inside Brussels sprouts. – *EB*

DRY BEANS

From Marion Zuefle, NYS IPM Program: Western bean cutworm (WBC) moths have reached the threshold (cumulative trap catch reaches 100 moths) at all but one site that we are monitoring. The threshold indicates that nearby corn should be scouted for egg masses and larvae.

Dry Bean Location	7.10.18	7.17.18	7.24.18	7.31.18	8.7.18	<u>8.14.18</u>	Cumulative WBC
Attica (Wyoming Co.)	4	32	105	154	57	26	380
Avoca 1 (Steuben Co.)	0	2	37	NA	61	NA	100
Avoca 2(Steuben Co.)	2	30	101	NA	61	NA	194
Caledonia South (Livingston Co.)	0	6	30	59	35	13	143
Chili (Monroe Co.)	1	8	54	81	51	12	207
Geneva (Ontario Co.)	0	4	24	41	31	2	102
Groveland (Livingston Co.)	0	5	76	110	161	59	411
Riga (Monroe Co.)	5	54	146	71	121	41	438
Stafford (Genesee Co.)	0	8	83	80	70	16	258
Wayland (Steuben Co.)	2	3	11	NA	10	NA	26
Western Bean Cutworm trap counts by date							

ONIONS

Lodging is underway in several fields with sprout inhibitor having already been applied in a few of the earlier fields. Tipburn is generally worse than it has been in several years. From the road, some fields look brown and leaf dieback looks excessive, but when you walk into the field, you see that there is actually a lot of green foliage left. Tipburn appears to be caused by several factors; heat stress, pink root,

and onion thrips. Bulbing has generally been slower than usual. Differences among varieties with respect to root health has been especially noticeable this year. Some late maturing fields are holding on really well and bulbing very nicely. With cooler night time temperatures bringing longer and heavier dew periods and more frequent rainfall events, Stemphylium leaf blight (SLB) has been settling in on the necrotic tips and outer leaves, and the lesions have intensified with multiple lesions per leaf, masses of black sporulation and purplish-magenta lesions (Fig. 1). Despite seemingly favorable conditions, Botrytis leaf blight (BLB) pressure is very low and there have been no significant reports of downy mildew. Although onion thrips pressure is variable, it is generally down across the region, mostly due to use of Radiant, which continues to work very well. After the first application of Radiant, you may wait two weeks before applying the second if pressure continues to



Figure 1. Increased periods of leaf wetness over the past couple of weeks has intensified Stemphylium leaf blight of onion with multiple lesions per leaf (left), masses of black sporulation (middle) and purplish-magenta lesions (right). *Photos: C. Hoepting, CVP*

be low. However, if the threshold is reached three weeks after the first application then you should switch to another insecticide with a different mode of action to ensure that two consecutive generations of thrips are not exposed to the same active ingredient and mode of action. The rule of thumb is that onions should die down naturally and not from disease or insect damage. Growers continue their insecticide and fungicide spray programs until 50% lodging. Then, the last spray is often sprout inhibitor alone or sometimes with mancozeb for downy mildew. The **Oswego Onion Growers Twilight Meeting is next Wednesday, August 22nd at Joe Ferlito Farm – RSVP to Kathy Stancampiano (onionstan8@aol.com; call/text 315-591-3478) for dinner by Monday, August 20th would be much appreciated – see announcement for more details.**

Ideal Conditions for Applying Sprout Stop to Storage Bound Onions

Maleic hydrazide (MH) is a growth regulator applied to storage bound onions to prevent sprouting. Ideal conditions include:

- 50% tops down, plants have 5-8 green leaves to ensure translocation into the bulb.
 - If MH is applied too late or when onions have been ravaged by disease or thrips when the onion has less than 3 green leaves, it will not be absorbed properly and the onions will start sprouting in storage.
 - If MH is applied to an onion that is still producing new leaves, cell division will be stopped but individual cells will continue to grow in size. This will produce spongy bulbs where the scales pull away from each other.
- Humid weather and temperatures less than 75°F are ideal.
 - Low humidity and high temperatures (i.e. > 80-85°F) may cause MH to crystallize on the leaves, thereby inhibiting uptake.
- No rain within 24 h after application, as this reduces uptake. CH

TOMATO, PEPPER, EGGPLANT

Tomato fruit anthracnose is beginning to show up with the longer dew periods and cooler nights. – EB



Oswego Onion Growers Twilight Meeting

August 22, 2018 | 4:00 PM registration, 4:30-6:30 PM educational program, 7:00 PM dinner at Vona's Restaurant Joe Ferlito Farm field, 215 Dutch Ridge Rd, Oswego, NY 13126



This event is hosted by Joe Ferlito Farm and Oswego County Vegetable Growers Improvement Association. It is FREE to attend thanks to sponsors and Oswego County Vegetable Growers Improvement Association. Dinner at Vona's Restaurant, 9 Willow St, Oswego, NY at 7:00 PM is included.

RSVP for dinner by Monday, August 20th to Kathy Stancampiano (<u>onionstan8@aol.com</u> or call/text 315-591-3478) would be much appreciated.

Urban Farm Twilight Meeting

August 22, 2018 | 6:00 PM - 8:00 PM GroundWork Market Garden, 1698 Genesee St, Buffalo, NY

The Cornell Vegetable Program and CCE Erie have been working together on an organic vegetable trial to monitor diseases. During this workshop, the audience will visit the on-farm research plots and explore the results collected from the trial. Participants will be guided by Judson Reid through a hands-on demonstration of how to scout for weeds, insects and diseases on urban farms. Participants will engage in peer-based learning. FREE to attend! Please RSVP to Megan Burley, Farm Business Management Educator, phone (716) 652-5400 x138 or email msb347@cornell.edu.

3rd Annual Vegetable Pest Management Field Day

August 23, 2018 | 4:00 PM - 7:00 PM

Cornell Lake Erie Research and Extension Lab, 6592 W Main Rd, Portland, NY 14769

Research trial results, cultural technique showcases, and effective varieties and treatments for organic and IPM production are the meeting focus. We will highlight current disease issues, their detection & spread based on this season's climate conditions, and management tools available to reduce yield impacts. Sessions will also be offered on pest identification and control options. Regional equipment dealers and industry representatives will be invited to display equipment and new technology. 2.25 DEC recertification credits will be available (categories 1a, 10 and 23). To see the full agenda, visit https://cvp.cce.cornell.edu/event.php?id=979 FREE to attend; preregistration requested! For more information, contact Elizabeth Buck at 585-406-3419.

Genesee Valley Produce Auction Growers Meeting

August 24, 2018 | 1:00 PM - 3:00 PM David Hostetler farm, 10228 Briar Hill Rd, Dalton, NY 14836

This course will demonstrate pest management in fresh market vegetables in both field and greenhouse (high tunnel) vegetables, primarily for those growing for wholesale auction. A crop walk will provide a hands-on demonstration of weed, insect and disease identification in vegetables including management options. FREE! Contact Judson Reid at 585-313-8912 for more info.

No-Till and Never-Till Soil Health Workshop

August 28, 2018 | 12:00 noon - 5:30 PM Branton Farm, 8538 Route 237, Stafford, NY 14143





The Western New York Soil Health Alliance will be holding a Soil Health Workshop on August 28, 2018 focusing on No-Till practices and benefits. Frank Gibbs, a certified Soil Scientist who formed a Wetland and Soil Consulting Service in 2012 after working for 36 years for USDA in Ohio will be digging underground to look at a section of field that has NEVER had any tillage and will compare it to an adjacent area with a history of tillage practices. James J Hoorman, a NRCS Soil Health Specialist for Ohio & Michigan, will be sharing information on the problem of slugs and voles in the higher residue farming practices. DEC and CCA credits will be offered. Pre-registration fee is \$15; \$25 at the door. Red Osier food truck will be onsite for purchase of roast beef sandwiches from 12:00-4:00 PM. For more information, visit http://www.wnysoilhealth.com and click on the Events tab.

Weather Charts

John Gibbons, CCE Cornell Vegetable Program

Weekly Weather Summary: 8/07 - 8/13/18

	Rainfa	all (inch)	Temp (°F)		
Location**	Week	Week Month August		Min	
Albion	1.31	1.31	85	53	
Baldwinsville	1.82	2.52	87	59	
Bergen	1.44	1.71	82	53	
Buffalo*	1.57	1.61	82	59	
Burt	0.51	0.56	81	52	
Ceres	0.46	0.51	83	55	
Fairville	0.60	1.09	82	56	
Farmington	NA	NA	82	54	
Gainesville	1.02	1.02	81	49	
Geneva	0.91	1.13	81	59	
Lodi	NA	NA	88	60	
Niagara Falls*	0.70	0.70	82	54	
Ovid	0.67	1.80	83	61	
Penn Yan*	0.86	0.87	82	60	
Phelps	2.06	2.10	82	57	
Portland	0.65	0.75	80	59	
Rochester*	0.89	0.90	84	55	
Silver Creek	0.91	1.29	83	56	
Sodus	NA	NA	82	51	
Versailles	1.16	1.33	85	55	
Volney	0.49	1.37	81	55	
Williamson	0.57	0.60	82	52	

Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 - August 13, 2018

Location	2018	2017	2016
Albion	1981	1731	1923
Baldwinsville	2092	1847	1951
Bergen	1878	1663	1761
Buffalo	2058	1759	1961
Ceres	1737	1542	1529
Elba	1870	1665	1433
Fairville	1828	1645	1722
Farmington	1873	1629	1744
Gainesville	1573	1655	1447
Geneva	1923	1715	1829
Lodi	2075	1886	2011
Niagara Falls	2101	1938	2091
Ovid	1983	1815	1913
Penn Yan	1995	1827	1945
Phelps	1805	1735	1822
Portland	1957	1791	1831
Rochester	2115	1823	1986
Silver Creek	1856	1751	1784
Sodus	1813	1749	1681
Versailles	1895	1710	1729
Volney	1848	1628	NA
Williamson	1782	1666	1700

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





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