

Want to grow tomatoes in your tunnel every year but concerned about your soil

health? Consider growing them in containers in your tunnel.

PAGE 1



Watch a video on incorporating buckwheat cover crop on a diversified vegetable farm.

Important considerations are provided too.

PAGE 2



Fall armyworm numbers continue to rise while all other moths are on the decline. Read

the WNY Sweet Corn Trap Network Report for details.

PAGE 3



Field bindweed is a climbing or trailing perennial vine resembling a morning glory. It is the Weed of the

Week. Learn how it spreads and how to control it on your farm.

PAGE 5



Container Grown Tomatoes An Option for High Tunnels

by Judson Reid, CCE Cornell Vegetable Program

A common question in our high tunnel classes is, "What can I do to keep my soil healthy if I want to grow tomatoes every year?"

The unstated problem is that soil health in tunnels degrades over time as pH, alkalinity, salinity, nutrients and diseases enter unsustainable levels. The balancing act of adding compost, cover crops and fertilizers is like juggling chain saws while walking a tight rope. With considerable skill it can be done. In the absence of skilled management...(we'll let the reader complete the metaphor).

An alternative to the slow motion juggling act of growing tomatoes in the same ground year-after -year is to grow in containers. This allows the use of fresh potting soil every year to preclude alka-





VegEdge newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension regional agriculture team, serving 11 counties in

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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Information provided is general and educational in nature. Employees and staff of the Cornell Vegetable Program, Cornell Cooperative Extension, and Cornell University do not endorse or recommend any specific

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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.



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The next issue of VegEdge will be produced September 3, 2014.

HOW to INCORPORATE BUCKWHEAT COVER CROP on a DIVERSIFIED VEGETABLE FARM

Thomas Bjorkman, Cornell

Watch an excellent video showing how to incorporate a buckwheat cover crop on a diversified vegetable farm at http://youtu.be/fAUN4iKZVOg. The video is from Jones Family Farms in Shelton, CT and was filmed 1 year ago.

While watching the video, keep these things in mind:

- They are incorporating just after the field turned from green to white as
 - the flowers opened. This is an obvious sign that it is time to terminate the buckwheat.
- Since this is a vegetable farm with high fertility, the buckwheat gets large. It was a month old and four feet tall. That size can easily be obtained on vegetable farms.
- They have a excellent soil condition, so they did not need to mow the buckwheat first in order to get it incorporated. If the ground is chunky or hard, that will not work as
- Since they Kill on Time, there are no seeds forming. As long as the kill is complete, as it appears to be, there will be no volunteers.

For more information, get the Buckwheat cover crop handbook as a PDF. Or read the cover crop guide about buckwheat. •

linity, salinity and nematodes. How do yield and inputs compare to growing in the ground? To find out we are conducting a container trial (not a pot trial) to analyze the labor, water, and nutrition inputs of tomatoes grown in several different sizes of containers as well as in the ground. You are invited to see the show featuring one of the better jugglers out there, Friday August 29 at 6:00 pm in Penn Yan. Contact Karen at (315) 536-5123 for a front row seat.





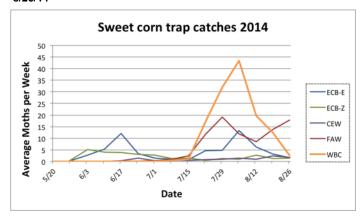
WNY Sweet Corn Trap Network Report

Marion Zuefle, NYS IPM Program

Nineteen sites reported this week. Only five sites reported European corn borer-E (ECB-E) and seven sites had ECB-Z. Corn earworm (CEW) was reported from 6 sites with three sites requiring a 5 or 6 day spray interval (see table below). Fall armyworm (FAW) numbers continue to increase at certain sites with one site, Pavilion, catching a total of 72 moths. Ten sites reported Western bean cutworm (WBC), but overall numbers continue to decrease.

The graph below shows the average number of moths caught per week throughout the season. From this graph you can see that FAW (red line) peaked in late July and is now showing a second peak. All other moths are on the decline.

Average sweet corn trap catches for all reporting sites, 5/20/14-8/26/14



I have received several reports of FAW damage and have seen feeding damage in several of the fields that I scouted. 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 (see photos to the right) that may have time to get into developing ears before silk sprays for CEW.

WNY Pheromone Trap Catches: August 26, 2014

Location	ECB-E	ECB-Z	CEW	FAW	WBC
Baldwinsville (Onondaga)	2	0	2	0	5
Batavia (Genesee)	0	0	1	1	3
Bellona (Yates)	NA	NA	NA	NA	NA
Eden (Erie)	0	0	1	37	1
Farmington (Ontario)	0	0	0	0	0
Hamlin (Monroe)	1	2	6	0	8
LeRoy (Genesee)	2	1	0	0	0
Lockport (Niagara)	1	0	0	1	0
Pavilion	0	3	0	72	0
Penn Yan (Yates)	0	0	0	2	1
Seneca Castle (Ontario)	8	1	0	1	1
Spencerport (Monroe)	0	4	5	0	0
Waterport (Orleans)	0	0	0	0	1
Williamson (Wayne)	NA	NA	NA	NA	NA

ECB - European Corn Borer

WBC - Western Bean Cutworm

CEW - Corn Earworm FAW - Fall Armyworm

NA - not available

Average corn earworm catch				
Per Day	Per Five Days	Per Week	Days Between Sprays	
<0.2	<1.0	<1.4	No Spray (for CEW)	
0.2-0.5	1.0-2.5	1.4-3.5	6 days	
0.5-1.0	2.5-5.0	3.5-7.0	5 days	
1-13	5-65	7-91	4 days	
over 13	over 65	over 91	3 days	

Add one day to the recommended spray interval if daily maximum temperatures are less than $80^{\circ}F$ for the previous 2-3 days.





Fall Armyworm (FAW) feeding damage.



GREENS

Keep on top of the Tarnished Plant Bug and watch for aphids. Both of these pests are moving into lettuce plantings especially if there are weedy areas nearby. Mow down the weeds and open things up. The green peach aphid and black aphids are both showing up with more frequency.

Use row covers to protect young greens from flea beetles. Slugs in chard and lettuce are also becoming a problem. As the nights turn a bit cooler and the mornings stay damper, slugs can infest a planting and do a lot of damage. Treat for them ahead of time but try to keep the slug baits from landing inside the leaf folds of lettuce.

For older plantings of chard and kale, give extra N to perk them up with new growth going into the late summer and early fall.

After this short hot spell, cooler temperatures are set to return making it possible to get a new seeding of spinach going. Keep the seeding from drying out and give the seedlings adequate moisture as they establish.

For spinach, chard, and beets, be on top of the leaf miner threat. It seems like we are seeing more of this pest later in the season each year. Entrust is listed for management of leaf miner and the best defense is to be proactive protecting your crop before the pests take hold.

ROOT CROPS

Take some time to clean up the weeds around the root crops. Keep the moisture available to avoid cracking. Be on top of the management of cabbage maggot below ground and slugs above ground. This ensures both great looking roots with marketable tops. Beets are susceptible to Cercospera Leaf Spot which is generally a cosmetic thing if you are just harvesting roots but if you want spotless tops, then a couple of sprays would help alleviate the problem.

VINE CROPS

Powdery mildew has really kicked up in winter squash, pumpkins, and late summer squash. Water melon and cantaloupe have really suffered from gummy stem blight and lack of sufficient heat to gain good fruit size. Excess rain has diluted available nutrients so size and plant vigor has also been affected.



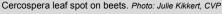




Photo: Honeyhill Farms,

Downy mildew has shown up in Ulster County, NY this past week to our east, central PA to our south and north central OH to our west. I predict that WNY should start seeing this disease by Labor Day.

Late Blight Risk

Carol MacNeil and John Gibbons, CCE Cornell Vegetable Program

<u>Late blight (LB)</u> in potatoes and tomatoes has now been confirmed in the following counties: Allegany, Erie, Genesee, Madison, Livingston, Ontario, Schuyler, Tompkins, Wayne, Wyoming, Yates, Seneca and Cortland Counties. Cortland and Seneca are new counties this week. Cortland was typed as US-23. A sample is being sent from Seneca. This sample was found in a demonstration garden and confirmed by Ann Cobb formerly from Helene Dillard's lab.

The LB <u>Decision Support System (DSS)</u> called for 4 - 5 day fungicide spray interval during the past week (assuming a susceptible variety and the use of chlorothalonil), for all locations. Reaching 30 blight units (see the chart) triggers the recommendation to apply a fungicide under these criteria.

If you have LB in your field, it has been identified as US-23, a sensitive strain, and you spray a mefenoxam fungicide (Ridomil, etc.), note that LB will continue to develop, but at a slower rate than would occur if a less effective fungicide had been applied. The rate of LB increase will be proportional to the % of LB infected foliage in the field when the spray occurred. If 1% of foliage is infected the rate of LB development will be very slow. If 5% of the foliage is infected then LB development will be noticeable. If 10% of the foliage is infected then you're likely to lose the foliage in the field. This should emphasize the importance of quickly destroying hotspots of LB. You don't want a source of millions of spores in the middle of the field you're trying to save.

A note regarding LB Mating Types: There are two LB Mating Types, A1 and A2. If both are in a field they can sexually cross, pro-

ducing oospores, which can overwinter in the soil. To this point LB has only been able to overwinter in potato tubers or in a greenhouse. If LB could overwinter in the soil then every tomato and potato field would need to be sprayed from as soon as they emerge/are planted. Thankfully this has not vet occurred that we know of in the US. US-8, virulent on potatoes, is A2 and not found in NY this year. US-23, virulent on potatoes and tomatoes, is A1 and has been found in most samples from NY this year. US-24, found in Erie and Wyoming Counties, virulent on potatoes is A1. The type B reported in Allegany County is an unknown strain, which we occasionally see, and its Mating Type has not yet been determined, though it's likely A1 or A2. It will take many months to analyze enough of its DNA to make that clear. It must be assumed to be insensitive to mefenoxam (Ridomil, etc), however.

Continue to apply at least a protectant fungicide (chlorothalonil, mancozeb or copper) until all potato leaves and stems are dead and brown. Wait 3

weeks to harvest from the time the foliage is dead and dry, to avoid having LB spores infect tubers during harvest.

If you think you might have LB contact Carol MacNeil at 585-313-8796 or crm6@cornell.edu, John Gibbons at 585-394-3977 x405, or another Cornell Vegetable Program staff member. LB DSS users: If you need assistance contact Ian Small at ims56@cornell.edu •

Late Blight Risk Chart, 8/26/14

Location ¹	Blight Units ² 8/20-8/26	Blight Units ³ 8/27-8/29	Location ¹	Blight Units ² 8/20-8/26	Blight Units ³ 8/27-8/29
Albion	NA	NA	Lodi	49	19
Appleton	48	19	Medina	52	20
Baldwinsville	51	18	Penn Yan	55	16
Buffalo	40	20	Ransomville	52	20
Ceres	49	19	Rochester	53	21
Elba	54	21	Romulus	NA	NA
Farmington	49	20	Silver Creek	41	20
Gainesville	NA	NA	Sodus	49	20
Geneva	46	20	Versailles	37	19
Kendall	51	19	Williamson	50	20

- Weather stations. For more sites, and varietal susceptibility to LB: http://newa.cornell.edu
- Passed Week Simcast Blight Units (BUs) Three days predicted Simcast Blight Units (BUs)

of the FIELD BINDWEED

Darcy Telenko, CCE Cornell Vegetable Program

Field bindweed (Convolvulus arvensis L.) is a climbing or trialing perennial vine. It has arrowhead shaped leaves and white to pink flowers that are similar in shape to morning glory. Field bindweed reproduces by both seed and rhizome (a creeping underground stem). Seedlings that arise from seed produce smooth, dark cotyledons that are square to kidney shaped with a slight notch at the tip and will emerge in spring and early summer. Young plants emerging from rhizomes will not produce cotyledons and these



shoots will appear early spring. Young leaves of field bindweed are arrow-head shaped and lobed at the base. The stem is smooth to slightly hairy and can trail along the ground or climb on vegetation or other objects. Leaves are alternate, bell-shaped with lobes that point away from the petiole (the stalk between the leaf blade and the stem). Field bindweed produces an extensive root system with vertical roots that can reach depths of 20 feet, the majority of the root system will remain within the top 2 feet of soil and shallow horizontal lateral roots remain within the top foot of the soil. Flowers are trumpet shaped, white to pink in color and produce an egg-shaped fruit capsule with 4 seeds. Seeds are large, rough, and range in color from dull gray to brown to black. Field bindweed is found throughout most of North America. Similar species include hedge bindweed (Calystegia sepium) and wild buckwheat (Polygonum convolvulus) see comparison table for differences.

Management of field bindweed requires a multi-faceted approach that includes prevention of seed production, reduction of stored carbohydrates in the root system and rhizomes, competition for light by other plants, and removal of top growth. In areas and fields where field bindweed is not currently present purchasing clean seed and transplants, removing seedlings before they become perennial plants, and preventing plants from seeding will reduce the possibility of field bindweed establishment. Studies have found that shade can reduce field bindweed growth and competitiveness; rotations with alfalfa, cereal grains, sorghums, and corn are a few crops that have shown to be effective. Cover crops such as sorghum and sudangrass are excellent competitors with bindweed, especially when they are planted in narrow rows. Cultivation is also effective but requires vigilance. Seedlings can be easily controlled, but after perennial buds are formed (3 to 4 weeks after germination) successful control using cultivation is much more difficult. Once the perennial population has become established cultivation will need to occur every 2 to 3 weeks. Dry weather will aid in depleting the stored reserves of the roots following cultivation. Herbicides are effective for suppression but not as successful for eradication. Systemic herbicides, such as Roundup, Clarity, and 2, 4-D are most effective when applied at early flowering to fullbloom when energy reserves in the root system are at their lowest and sugars will be translocating (moving) down from the leaves to the roots and rhizomes. Contact herbicides such as Gramoxone and Basagran can provide top growth control, but will not move into the roots and regrowth is most likely to occur. Any regrowth of field bindweed will require re-treatment or persistent cultivation in order to deplete seed and rhizome banks within an infested area. •

UPCOMING EVENTS

Fresh Market Potato Varieties, Disease & Insect Management Meeting

August 28, 2014 | 5:30 PM - 8:30 PM

Williams Farm, Decker Rd, just west of Minstead Rd, Marion 14505





This meeting will include updates on late blight and other potato diseases, management of Colorado potato beetle and other insects, and the opportunity to see the 2014 Cornell fresh market muck variety and breeding line trial. Dinner provided. 1.25 DEC recertification credits, CCA credits available. This meeting is FREE for growers due to the support of our meeting sponsors: Williams Farms, Gowan Company and Syngenta.

Cornell Vegetable Program Research Updates: Grafting, Living Mulch & More

August 29, 2014 | 6:00 PM - 8:00 PM

Maple Lane Produce (Nelson Hoover farm), 3039 Bath Rd, Penn Yan 14527





Vegetable Specialist Judson Reid will give updates on his fresh market research program, with a major focus on grafting in tomatoes, the use of living mulch in a variety of crops, and varietal resistance to brown leaf mold of tomatoes. The meeting will include a tour of research plots. Cost: \$20/person. Space is limited to 30 participants. Pre-registration is required by calling Karen Gavette at 315-536-5123.

2014 NYS Dry Bean Field Meeting

September 18, 2014 | 5:15 PM - 7:45 PM Tom Corcoran's farm, 1302 McEwen Rd, Caledonia 14423





Tour the Cornell dry bean variety trial and nearby strip trials. Cornell professors will share research-based ideas on pest issues and management including bacterial diseases and Western bean cutworm updates. Changing bean plant architecture to improve yields will also be discussed. DEC pesticide recertification and CCA credits will be available. A light supper will be provided. Cost: \$5 for Cornell Vegetable Program enrollees; \$10 for all others. The full agenda and directions to this event can be found on our website. Pre-register by contacting Angela Parr at aep6@cornell.edu or 585-394-3977 x426 by September 12. Meeting sponsored by Genesee Valley Bean, Gowan Company, and King Cole Bean.

Disease and Weed Management Workshop

September 29, 2014 | 8:30 AM - 12:00 PM

CCE Allegany-Cattaraugus Belmont Office, 5435A County Road 48, Belmont 14813







Topics covered will include: Vegetable disease control; focusing on the main diseases of vegetable crops in NYS and their management options; both organic and conventional. Weed topics include: weed biology and identification, difference between annual, perennial and biennial weeds, grasses, sedges and broadleaf, and cool vs. warm season. The major weeds that affect vegetable crops in NYS will be discussed and their management options reviewed. Growers are encouraged to ask questions and actively participate in the course. Hands on examples will be used if available. Pesticide recertification credits will be available.

Cost of the program is \$15.00 per person or \$25.00 for two people from the same farm. If you are interested in signing up for this program, please contact Colleen Cavagna at 585-268-7644 ext. 12. Hosted by CCE Allegany-Cattaraugus and the Cornell Vegetable Program.

2014 Agribusiness Economic Outlook Conference

December 9, 2014 | Time

Cornell University, Warren Hall, Ithaca 14853

New York agricultural leaders (industry leaders, agribusiness professionals, policymakers, educators, and farm managers) learn about the short-and long-term outlook for agriculture and agricultural products in New York and the Northeast. Breakout sessions will provide the near-term outlook for major New York commodities including dairy, grains and feed, and horticultural products. For more information, contact Gretchen Gilbert at 607-254-1281 or gcg4@cornell.edu.

2015 Empire State Producers Expo

January 20-22, 2015

Oncenter Convention Center, Syracuse

This show combines the major fruit, flower, vegetable, and direct marketing associations of New York State in order to provide a comprehensive trade show and educational conference for the fruit and vegetable growers of this state, as well as the surrounding states and Eastern Canada. The Cornell Vegetable Program Specialists are helping to organize sessions on Processing Vegetables, Potatoes, Onions, Cabbage/Cole Crops, Soil Health, Managing Herbicide Resistance, Tunnels, and Ethnic Vegetables. Registration information will be available soon.

Weather Charts

John Gibbons, CCE Cornell Vegetable Program

Weekly Weather Summary: 8/19 - 8/25/14

	Rainfall (inch)		Temp (°F)	
Location	Week	Month	Max	Min
		August		
Albion	NA	NA	NA	NA
Appleton, North	0.01	1.21	77	47
Baldwinsville	0.61	3.87	86	46
Buffalo*	0.00	2.45	82	57
Ceres	0.18	3.70	83	51
Elba	0.01	1.20	80	46
Farmington	1.13	2.76	80	45
Gainesville	0.00	3.07	81	47
Geneva	0.83	2.42	81	49
Kendall	0.00	1.77	80	46
Lodi	0.16	2.65	83	51
Penn Yan*	0.60	3.72	79	53
Ransomville	NA	NA	79	45
Rochester*	0.00	2.12	82	52
Romulus	NA	NA	82	50
Silver Creek	0.01	2.67	81	56
Sodus	0.63	3.93	81	42
Versailles	NA	NA	82	54
Williamson	0.48	6.40	83	44

Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 - August 25, 2014

Location	2014	2013	2012
Albion	NA	NA	NA
Appleton, North	1618	1759	2076
Baldwinsville	1973	2016	2273
Buffalo	1914	2017	2367
Ceres	1653	1657	1859
Elba	1487	1734	1993
Farmington	1815	1857	2072
Gainesville	1457	NA	1941
Geneva	1861	1949	2249
Kendall	1836	2068	NA
Lodi	2041	2159	NA
Penn Yan	1978	1991	2264
Ransomville	1711	1697	2181
Rochester	1988	2081	2304
Romulus	1915	2028	NA
Silver Creek	1827	1958	2176
Sodus	1751	1781	2027
Versailles	1785	1914	2097
Williamson	1736	2009	2256

^{*} Airport stations

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

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 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.

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