



We evaluated 4 organic spray options and resistant varieties for their ability to control late blight in tomatoes and downy mildew in cucumbers and improve yield.

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If you're thinking of renovating or building a wash/pack facility, having wall boards that are easy to clean is worth the investment. Options provided.

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These best management practices for long term soil health and fertility in high tunnels can be used remedially or implemented in a new high tunnel system.

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Did you know you can insure green or red, summer-planted cabbage intended either for fresh market or processing? Learn more about insuring cabbage in NYS.

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# VEGEdge

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

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*Photo: Judson Reid*

**Cornell Cooperative Extension**  
Cornell Vegetable Program

## Evaluation and Demonstration of Integrated Disease Management Options for Organic Tomato and Cucumber Production

*Darcy Telenko and David Ludwig, CCE Cornell Vegetable Program*

Late blight (*Phytophthora infestans*) and downy mildew (*Pseudoperonospora cubensis*) have the potential to significantly reduce tomato and cucumber yields in western NY, especially for organic growers. We evaluated four organic spray programs and resistant varieties for ability to control disease and improve yield. Our objectives were:

- 1) Demonstrate the importance of using disease resistant cultivars.
- 2) Evaluate new biopesticides for organic tomato and cucumber production.

By evaluating and demonstrating the importance of host resistance and evaluating new biopesticide fungicide programs for efficacy we aim to identify new tools that will be effective, and potentially reduce the number of copper sprays needed and slow the development of fungicide resistance. This will save growers time and money. Additionally, these trials allow us to monitor and detect the movement of these diseases into New York.

Organic fungicide programs and two cultivars each of tomato and cucumber were evaluated at the Cornell Lake Erie Research and Extension Laboratory (CLEREL), Portland, NY. Calendar sprays of each program were applied on 29 Jun, 13 Jul, 20 Jul, 2 Aug, 16 Aug, and 25 Aug and included:

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**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:  
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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 product or service.

This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are possible. Some materials may no longer be available and some uses may no longer be legal. All pesticides distributed, sold or applied in NYS must be registered with the NYS Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide usage in NYS should be directed to the appropriate Cornell Cooperative Extension (CCE) specialist or your regional DEC office.

CCE and its employees assume no liability for the effectiveness or results of any chemicals for pesticide usage. No endorsement of products or companies is made or implied. **READ THE LABEL BEFORE APPLYING ANY PESTICIDE.**

**Help us serve you better by telling us what you think. Email us at [cce-cvp@cornell.edu](mailto: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 February 1, 2018.*



*Happy Holidays*

*Wishing you a beautiful holiday season and a prosperous new year.*

Our offices will be closed from December 23 - January 1.

- 1) Untreated
- 2) Standard copper spray (Badge X2 @ 1 lb/A)
- 3) Oxidate 2.0 (1.0%)
- 4) Standard copper spray (Badge X2 @ 1 lb/A) + Oxidate 2.0 (0.5%)
- 5) Serifel (4 oz/A) in-furrow on 7 June; foliar spray on 29 Jun, 20 July, 16 Aug; alternated with Copper (Badge X2 @ 1 lb/A) spray on 13 July, 2 Aug, 25 Aug

Tomato cultivars included:

- 1) Polbig (susceptible to late blight)
- 2) Iron Lady (resistant to late blight)

Cucumber cultivars included:

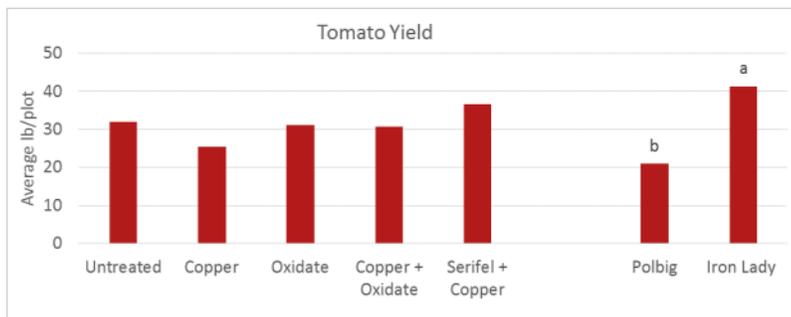
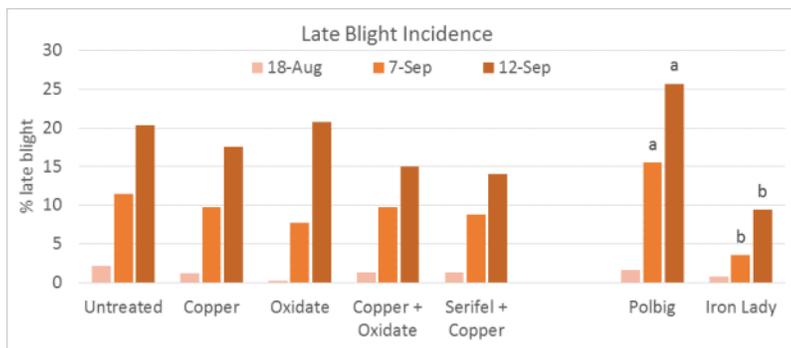
- 1) Marketmore 76 (susceptible to downy mildew)
- 2) DMR 264 (resistant to downy mildew)

Incidence of downy mildew and late blight were rated, approximately once per week after each disease was first detected. Cucurbit downy mildew was first detected on 2 August, while late blight was first detected on 12 August. Fruit was harvested and weighed approximately once per week after first fruit-set reached maturity.

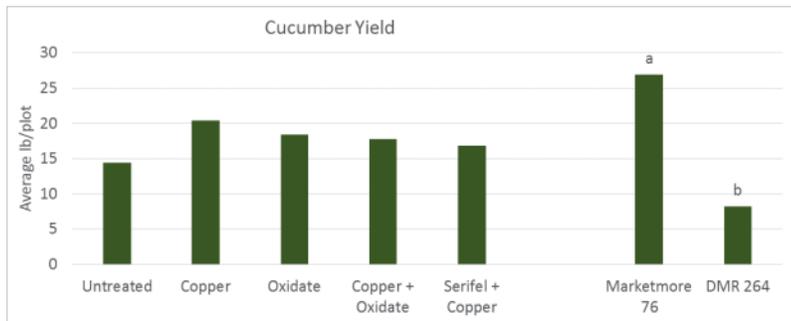
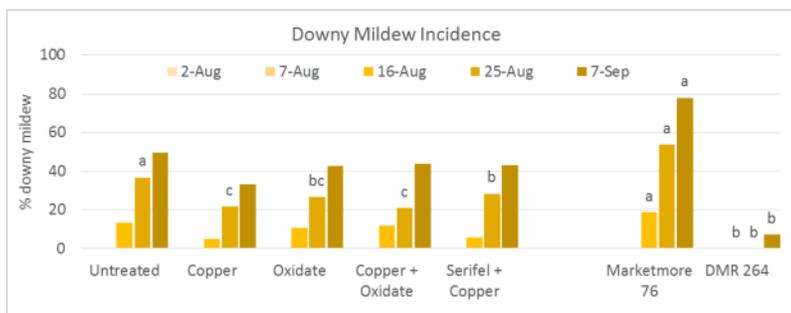
In tomato, all organic programs reduced disease compared to untreated, no significant differences between the fungicide programs were detected and there were no significant differences in yield between programs. Iron Lady exhibited season-long resistance to late blight and had twice the yield of Polbig.

In cucumbers, no significant differences were detected between fungicide programs on all dates, except 25 Aug, where Copper and Copper + Oxidate provided the best protection from downy mildew. Both the Serifel + Copper and Oxidate also significantly reduced downy mildew over the untreated. DMR 264 showed season-long resistance to downy mildew. Although Marketmore 76 had significant amount of disease it had the highest yield overall as it was an earlier maturing variety compared to DMR 264.

These trials demonstrated the importance of utilizing disease resistance when available in organic tomato and cucumber production. Host resistance is the best defense option against these two diseases for organic production. The organic fungicide programs helped to protect the crops, but overall were not as effective as resistance in Iron Lady tomato and DMR 264 cucumber cultivars.



Late Blight in untreated tomato demonstration plots Polbig (left) with 80% incidence and Iron Lady (right) with only 1% incidence. Photo: D. Telenko, CVP



Downy mildew in untreated cucumber plots DMR 264 (left) with 0% incidence and Marketmore 76 (right) with 53% incidence on 25 August. Photo: D. Telenko, CVP

# Wall Board Options for Wash/Pack Sheds

Robert Hadad, CCE Cornell Vegetable Program

If you are thinking renovating or building a new wash/pack facility, one of the most important considerations is how best to clean the area. Food safety is paramount where reducing the chances of microbial contamination is always in the forefront. Having walls that are easy clean is worth the investment. There are a lot of choices out there; some options are much more expensive than others. Being able to readily clean up after running a wash and pack line will make the job more manageable with better results. This will pay off in the long run. No one wants to spend a lot of time scrubbing walls or ceilings so having the right building materials will go a long way.

Chris Callahan and Andy Chamberlin, Univ. Vermont, have created an easy to use chart that provides the pros and cons of different wall and ceiling materials:

Smooth and cleanable surfaces are an important aspect of areas where produce is washed, packed, stored and processed. Many farms are investing in renovations and expansions of these areas and are seeking materials to meet this “finish surface” need regardless of specific regulation. Meanwhile, food processing companies are often required to incorporate these materials due to regulation. This is a summary of some of the finish surface materials that are available, their pros, cons and pricing at this time.

## Notes:

- These are not necessarily compliant for food contact surfaces; they are meant to be finish materials for areas where food is being washed, packed or stored. The general guidance is “smooth and cleanable.” Check with the appropriate local and/or state enforcement agency to confirm applicability to your project.
- The prices listed are material cost only. The products differ in with regard to installation labor. For example, flexible sheathing like FRP will require some sort of rigid wall material to mount to where as rigid panels such as Trusscore, Extrutech and Utilite can be installed on top of furring strips. No installation costs have been captured in the prices listed.
- Links to manufacturer info are included. Most manufacturers sell via distribution channels. Check with your local building supply company for availability and current pricing. As with most materials, higher volume purchasing generally results in lower unit costs.
- The pricing on these materials is quite variable depending on the source, when you obtain a quote, the quantity being ordered and how it is delivered. The listed price is the best information available at the time of writing. Shop around and obtain quotes from several distributors.
- Most manufacturer webpages include an easy to find, specific, installation guide for their product that will be helpful in guiding installation.
- FRP panels use H or J channel trim between pieces and corners which are calked in place to ensure a moisture proof seam. Follow the manufacturers installation procedures.

The complete fact sheet, containing photos and additional information, can be found at <http://blog.uvm.edu/cwcallah/files/2016/04/Smooth-and-Cleanable-Surfaces-Fact-Sheet-2017-09-29-1.pdf>

## Smooth & Cleanable Surfaces

Material	Description	Pros	Cons	Material Cost (\$/ft <sup>2</sup> )
 Fiber Reinforced Plastic (FRP) Textured – Class C	Fiberglass-based wall sheathing material. Dimpled or textured surface.	Very common and familiar to trades and suppliers.  Can be installed with rivets or with adhesive.  Wide array of trim pieces to aid in clean installation.	Requires a backer board to install.  Drilled and riveted installations can allow moisture and water leakage into wall. Consider adhesive.	\$1.03
 Fiber Reinforced Plastic (FRP) Smooth – Class C	Fiberglass-based wall sheathing material. Smooth, flat surface.	Very common and familiar to trades and suppliers.  Can be installed with rivets or with adhesive.  Wide array of trim pieces to aid in clean installation.  Smooth surface is more appealing to some due to cleanability.	Requires a backer board to install.  Drilled and riveted installations can allow moisture and water leakage into wall. Consider adhesive.	\$1.92
 Galvalum Roofing – Ridged	Painted, aluminum coated, galvanized steel sheets intended for roofing material but often used for wall sheathing as well.	Does not require a backing board, can be installed on furring.		\$0.95
 Galvalum Roofing – Flat	Flat version of the ridged product above sheet galvalum sheathing. (see p.25 of linked manual)	Does not require a backing board, can be installed on furring. Flat surface may be easier to clean for some.		\$0.76
 Trusscore Paneling	PVC twin-wall plastic panels in 16” widths, and available in a variety of lengths.	Does not require a backing board, can be installed directly on studs		\$1.52
Find more info at: <a href="http://www.trusscore.ca">http://www.trusscore.ca</a> 1-888-418-4679				
 WallTuf Paneling	Recycled PVC-based wall sheathing.	Considered more environmentally benign than FRP panels.	Requires a backer board to install. Drilled and riveted installations can allow moisture and water leakage into wall. Consider adhesive.	\$1.25
Find more info at: <a href="http://www.palramamericas.com/Products/Flat-Sheets/WALLTUF">http://www.palramamericas.com/Products/Flat-Sheets/WALLTUF</a> 1-610-285-9918				
 Extrutech Twinwall	PVC twin-wall plastic panels	Does not require a backing board, can be installed on furring.		\$2.20
Find more info at: <a href="http://www.epioplastics.com">http://www.epioplastics.com</a> 1-888-818-0118				
 Utilite Paneling	Polypropylene twin-wall plastic panels	Does not require a backing board, can be installed on furring.		\$1.85
Find more info at: <a href="http://www.nudo.com/p_utilite_wall.php">http://www.nudo.com/p_utilite_wall.php</a> 800-826-4132				
 Ribcore	PVC ribbed panels Used for ceilings	Will not rust or rot		\$0.77
Find more info at: <a href="http://www.ribcore.info">http://www.ribcore.info</a> 888 773-3130				

# Best Management Practices for Long Term Soil Health and Fertility

Judson Reid and Cordelia Machanoff, CCE Cornell Vegetable Program

These best management practices were selected by experienced high tunnel growers and extension staff as a result of a four year project tracking economic, soil and irrigation water data from high tunnels across New York State. They can be used remedially, or implemented in a new high tunnel system.

## Soil test annually and keep track of trends in major nutrients

Nutrient levels can shift quickly in high tunnel soils. Fertilizers are often over applied or contain non-target nutrients, leading to nutrient imbalances that impact yields. Keeping track of these levels is a key practice to maintaining productive tunnel soils. An annual soil test and knowing how to manage fertility in response to changing nutrient levels can help prolong the productivity of high tunnel soils.

- Perform an annual soil test at the same time each year with the same lab.
- Keep records of nutrient levels, especially phosphorus and calcium.
- Avoid fertilizers that contain phosphorus and calcium, especially when soil levels are high.
- Test amendments such as composts for these nutrients prior to application.

## Actively address and manage soil pH, and irrigation water pH and alkalinity

Over half of the tunnels we tested have soil pH higher than 7.0, while the optimal pH range for most crops is between 5.5 and 6.5. Outside of this range, micronutrients become less available to the plants and can lead to deficiencies in the crop. Keeping track of soil and water pH levels and managing fertility with these levels in mind is crucial for long term tunnel productivity.

- Test soil pH and irrigation water pH and alkalinity annually and keep track of changes over time.
- If either pH is higher than 6.5 and/or seems to be rising over time, consider mitigation efforts.
- Apply elemental sulfur to soil in the fall or spring.
- Add sulfuric or citric acid to irrigation water with an injector throughout the growing season.
- Leave plastic off for a season to mitigate high pH soils, precipitation is naturally slightly acidic.
- Check the pH of any amendments, weigh the benefits against potential impact on soil pH.

## Add Organic Matter

Given the intensive nature of high tunnel growing, incorporating organic matter back into high tunnel soils is essential to maintain soil health and productivity. There are a number of effective methods, and some pitfalls to be avoided when aiming to increase organic matter levels.



Regular soil and foliar testing can lead to increased net revenue.  
Photo: J. Reid, CVP

- If organic matter levels are decreasing on soil tests, start adding organic materials to the program.
- Mulch aisles between rows with straw, and turn it in at the end of the season to decompose.
- Amend soil with peat moss, which has a low pH level and does not contribute additional nutrients.
- Incorporate cover crops into the tunnel rotation. More research is needed on the benefits to high tunnel soils of growing a cover crop.
- If compost will be used, test for pH, salt level and nutrient content prior to application.

## Foliar test the crop and respond to the results

Foliar testing is key for making sure your crop is getting the necessary nutrients from the soil or fertility amendments and avoid overloading high tunnel soils with excessive inputs. Foliar testing your crop will give you an inside look at how your plants are doing before symptoms arise.

- Check with your local Cooperative Extension office for reputable labs in your state.
- Sample two weeks post-transplant and then every 2-3 weeks throughout the growing season.
- Collect 5-10 of the youngest fully mature leaves from one variety and send to a lab for analysis.
- The lab should provide you with macro and micronutrient levels and recommended ranges for each nutrient, and your local extension agent can help with interpretation of the data.

*This information is provided by the Cornell Vegetable Program, in collaboration with NOFA-NY, with support from the NYFVI SCB grant, 'Best Management Practices for Long Term Profitable High Tunnel Soil Fertility and Health' FVI 16 017* 

# Insuring Cabbage

From Ag-Analytics: <https://ag-analytics.org/documents/Factsheets/Cabbage%20fact%20sheet.pdf>

**Crop insurance** is a safety net for farmers that helps you **manage risk**. If you have a crop failure, crop insurance can help you plant again next year.

## How it works



## What can I insure?

You can insure green or red, summer-planted cabbage intended either for fresh market or processing.\* (Cabbage intended for sale as coleslaw is insurable as fresh.)

To be insured, cabbage must be:

- From the family Brassicaceae and genus Brassica, excluding Savoy and Chinese cabbage or oriental greens;
- Planted with inspected transplants, or hybrid seeds without interplanting;
- Planted between April 1 and July 20;
- Grown to be sold as fresh or processing cabbage;
- Planted in rows wide enough to permit mechanical cultivation, unless otherwise approved by written agreement; and
- Planted on land on which Clubroot was NOT detected within the previous 10 years, and Blackleg or Black Rot was NOT present in any of the previous 4.

## Can I insure cabbage in my county?

Cabbage is insurable in 5 New York counties: Genesee, Monroe, Niagara, Ontario, and Orleans counties. Cabbage may be insurable in other counties by written agreement.



## What am I protected against?

Cabbage crop insurance protects against losses due to most natural causes (including drought and pests like diamondback moth, onion thrips, and cabbage loopers) as long as the loss could not have been prevented using standard management practices. You can receive compensation for losses in yield and for quality losses that result in a lower market price.

## Deadlines

- March 15: Sales closing date.
- April 1: Earliest planting date.
- July 20: Final planting date.
- August 15: Acreage reporting date.

## Prices (per hundred pounds)

For each hundred pounds you lose, you may be compensated up to:

- Fresh: \$16.25\*\*
- Processing: \$3.60\*\*

## If a loss occurs

- If crop damage occurs 15 days or more prior to beginning of harvest, give notice within 72 hours of discovery;
- If damage occurs within 15 days of harvest or during harvest, give notice immediately so that a crop inspection can be performed and leave three rows of unharvested crop per field for sampling;
- If you realize any of the crop is not harvestable, give notice at least 15 days before harvest would normally begin; and
- If any cabbage intended for fresh market is so damaged that it needs to be sold for processing, give notice at the beginning of harvest.

## Cabbage quality loss example

Say you insure 50 acres of fresh market cabbage at a 65% coverage level (meaning you will get a payment if your yields are below 65% of average). You use your actual production history (APH) of 400 hundredweight per acre and one "basic" insurance unit.

That year, diamondback moths damage your cabbage so that it can not be sold as fresh market, and instead you market it for processing. Even though you were able to harvest the crop and receive some value for it, you can still file a crop insurance claim to help cover your loss of income due to quality loss.

By the Numbers		Amount received per hundredweight for processing cabbage
	3.60	Price election for fresh market cabbage
÷	16.25	Quality adjustment factor
	0.221	Production-to-count
x	380	Adjusted production-to-count
	84.18	
	400	APH yield per acre
x	0.65	Coverage level
	260	Acre guarantee
-	84.18	Adjusted production-to-count
	175.82	Loss per acre
x	\$16.25	Price election
	\$2,857.07	Indemnity per acre

In this example, the producer pays a crop insurance premium of \$160.15/acre.

## Learn more

Find crop insurance information at [ag-analytics.org](https://ag-analytics.org)

## Find an Agent

Ask a neighbor for a recommendation or use the Agent Locator tool at [www.rma.usda.gov/tools/agent.html](http://www.rma.usda.gov/tools/agent.html)

Cornell University delivers crop insurance education in New York State in partnership with the USDA Risk Management Agency. 

\* Insured acreage can be no more than 25% higher than the highest planted acreage from the past three years, unless the increase is less than five acres or is for processing cabbage under contract.

\*\* The lowest level of coverage, known as "catastrophic" or "CAT" coverage, pays only 55% of these prices: \$8.93 for fresh, \$1.98 for processing cabbage. You only receive an indemnity under CAT if you lose >50% of your average yield.

## UPCOMING EVENTS

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

### 2018 Produce Auction Growers Meeting (Yates County)

January 4, 2018 | 9:00 AM - 2:30 PM

Finger Lakes Produce Auction, 3691 Rt 14A, Penn Yan, NY 14527



This course will educate growers on disease and pest management, varieties and marketing issues in open field and high tunnel vegetables. Topics such as disease resistant varieties, pest/disease, cultural management and appropriate spray options. DEC re-certification credits applied for. FREE to attend. For more information, contact Judson Reid at 585-313-8912.

### 2018 Becker Forum: Farm Employment Practices – Planning for the Future

January 15, 2018 | 8:30 AM re

Holiday Inn Syracuse-Liverpool, Exit 37

The forum will focus on agricultural workforce issues with three general themes: securing a legal agricultural workforce, labor law compliance and H-2A program topics. For more information, visit <https://cvp.cce.cornell.edu/event.php?id=834>. Online registration available at <http://nysvga.org/expo>

### Empire State Producers Expo

January 16-18, 2018 | 1.25 hr sessions throughout each day

SRC Arena & Event Center, Onondaga Community College, 4585 West Seneca Turnpike, Syracuse, NY 13215



This annual show combines the major fruit, flower and vegetable associations of NYS in order to provide a comprehensive trade show and educational conference. Online registration available at <http://nysvga.org/expo>

### Produce Grower Food Safety Training – FSMA and GAPs/HGAPs

January 30, 2018 | 8:00 AM - 5:15 PM

CCE Niagara County Training Center, 4487 Lake Ave, Lockport, NY 14094



This program is for fruit and vegetable growers who need Food Safety Modernization Act (FSMA) certification or GAPs/HGAPs (Good Agricultural Practices/ Harmonized Good Agricultural Practices) training required by buyers (i.e. 3rd-party food safety audits based on a written food safety plan) or if you are just interested in learning about produce safety.

Over the course of the training, certified Produce Safety Alliance trainers will cover content contained in these seven modules:

- Introduction to Produce Safety
- Worker Health, Hygiene, and Training
- Soil Amendments
- Wildlife, Domesticated Animals, and Land Use
- Agricultural Water (Part I: Production Water; Part II: Postharvest Water)
- Postharvest Handling and Sanitation
- How to Develop a Farm Food Safety Plan

Cost: \$70 for first person from farm; a maximum of 2 additional attendees from the same farm/organization allowed at \$60 each. Pre-registration is required by January 25.

An optional farm food safety plan writing workshop is offered on January 31. Separate registration required. Cost: \$75 for first person from farm; \$20 each up to 2 additional people from same farm/organization. Pre-registration is required by January 25.

More information and online registration is available at <https://cvp.cce.cornell.edu/event.php?id=856> or vegetable producers can call Robert Hadad at 585-739-4065. (Fruit growers can call Craig Kahlke at 585-735-5448.)

### 2018 WNY Fresh Market Winter Vegetable Meeting (Western location)

January 31, 2018 | 8:00 AM registration, 8:30 AM - 3:30 PM

CCE Niagara County, 4487 Lake Ave, Lockport, NY 14094



A regional meeting to discuss results from 2017 research trials and present information on pest management. Research and outreach programs supported by NY Farm Viability Institute. 3.5 DEC credits available to those that attend the entire meeting. The full agenda including details on speakers and topics is available at <https://cvp.cce.cornell.edu/event.php?id=860>

Cost: **FREE to those that pre-register by Friday, January 26** so that we can get a lunch headcount. **\$20/person at the door** for those that have not pre-registered. Call 716-652-5400 to pre-register. Special accommodations (dietary or other) should be requested by January 26. Questions? Contact Darcy Telenko at 716-652-5400 x178.

More events on pages 8-9

# UPCOMING EVENTS

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



## 2018 WNY Fresh Market Winter Vegetable Meeting (Eastern location)

February 1, 2018 | 8:00 AM registration, 8:30 AM - 3:30 PM  
Irondequoit Public Library, 1290 Titus Ave, Irondequoit, NY 14617

A regional meeting to discuss results from 2017 research trials and present information on pest management. Research and outreach programs supported by NY Farm Viability Institute. 3.5 DEC credits available to those that attend the entire meeting. The full agenda including details on speakers and topics is available at <https://cvp.cce.cornell.edu/event.php?id=863>

Cost: **FREE to those that pre-register by Friday, January 26** so that we can get a lunch headcount. **\$20/person at the door** for those that have not pre-registered. Call 716-652-5400 to pre-register. Special accommodations (dietary or other) should be requested by January 26. Questions? Contact Darcy Telenko at 716-652-5400 x178.

## Improving Agriculture Labor Management Workshop Series

Offered in 5 sites in New York: Canandaigua (Ontario Co.), East Aurora (Erie Co.), Essex, Kingston, and Oriskany

**Workshop 1 – Marketing your farm as a great place to work**

**Workshop 2 – What is my job? Hiring, training and evaluating employees effectively**

**Workshop 3 – Keeping good staff when money is tight & managing conflict in the workplace**

**Workshop 4 – The compliance and safety workshop. Are you managing your risks as an employer?**

Cost: \$25 per workshop or \$60 for the entire series.

Each location is offering these workshops on different dates and times throughout the winter months.

To attend in Canandaigua, visit <http://www.cceontario.org/temp2.asp?id=ag-workshops#ImprovingAgricultureLaborManagementSeries> or call Marie Anselm at 585-394-3977 x402 or for more details.

To attend in East Aurora, contact Megan Burley at 716-652-5400 x138 or [msb347@cornell.edu](mailto:msb347@cornell.edu) for more details.

## 2018 Pesticide Training and Recertification Series

Mondays, February 5, 12, 19, 26, 2018 | 7:00 PM - 9:30 PM

Exam: Monday, March 5, 2018 | 6:30 PM - 11:00 PM

CCE Ontario County, 480 N Main St, Canandaigua, NY 14424

Anyone interested in obtaining a pesticide certification and meets the DEC experience / education requirements **OR** current applicators seeking pesticide recertification credits should attend. 2.5 recertification core credits will be available for each class.

### Class 1 - Pesticide Laws & Regulations:

Certification Regulations  
Pesticide registration  
FIFRA, OSHA  
Hazard Communications Standard  
Safety Transportation Act  
Sara Title III  
Endangered Species Act  
Worker Protection Standards  
NYS Reporting Law  
Pesticide Record Keeping

### Class 2 - Pesticides & the Environment

Toxicity of pesticides, pesticide residue & tolerance  
Environmental considerations  
Pesticides and ground water  
Pesticides and wildlife  
Types & formulations of pesticides

### Class 3 - Pesticide Safety

Personal & environmental safety  
Selection & use of personal protective equipment  
Symptoms of pesticide poisoning  
Pesticide storage & disposal.  
Understanding the pesticide label

### Class 4 - Pesticide Mixing & Equipment Calibrations

Procedure for mixing and filling  
Calculations for mixing pesticides  
Equipment calibration  
Types of pumps, nozzles, sprayers

COST: \$175.00 for certification which includes the training manuals and all 4 classes. Does not include the \$100.00 exam fee. Recertification is \$25.00 per class. To register, contact CCE Ontario County at 585-394-3977 x427 or x436 or email [nea8@cornell.edu](mailto:nea8@cornell.edu) or [rw43@cornell.edu](mailto:rw43@cornell.edu) Registration form will be available on the website [www.cceontario.org](http://www.cceontario.org)

## Vegetable Fertility Considerations for Season Extension

February 8, 2018 | 6:00 PM - 8:00 PM

Frank W. Bratt Agricultural Center, 3542 Turner Rd, Jamestown, NY 14701



Interested in pushing your fruits and vegetables further with season extension techniques? Mulch, low tunnels, high tunnels and greenhouses all can increase yield and harvest window, but require a different fertility approach. In this L.E.A.F session hosted by CCE Chautauqua County, we will discuss how to provide adequate nutrients to your crops without overloading the soil. By taking a balanced approach we can assure long-term, high yielding soils. Nitrogen, phosphorus, potassium and much more! Judson Reid, Cornell Vegetable Program Specialist, will be the leader of this interactive workshop. Pre-registration required. More information available at <http://chautauqua.cce.cornell.edu/agriculture/2017-2018-l-e-a-f-workshop-series>

## UPCOMING EVENTS

view all Cornell Vegetable Program upcoming events at

### Genesee Valley Produce Auction Grower Meeting

Hold-the-Date: February 13, 2018  
Centerville Fire Hall, Centerville, NY

Topics will include: pest and disease management, greenhouse, food safety, packing guidelines and more. For more info, contact Judson Reid at 585-313-8912, Robert Hadad at 585-739-4065, or Lynn Bliven at 585-268-7644

### Greater WNY Vegetable Farming Collaborative Teach-In

February 15, 2018 | 10:00 AM - 3:00 PM  
NYS Ag Experiment Station, Jordan Hall 2nd floor lounge,  
630 W North St, Geneva, NY 14456

To launch this inaugural Teach-In program (discussion group), we will be discussing necessary equipment and how to come up with a plan for solving our seasonal labor issues.

#### Equipment

- What are the most useful and necessary pieces of equipment to get started with based on scale?
- What are the priorities for acquiring equipment based on the experiences of the group?
- Tractors, cultivators, wash lines, oh my...
- Sharing equipment possibilities
- Using tarps – the good, the bad, and the ugly
- Other equipment/tools

#### Labor

- What type of jobs needed?
- Full-time, part-time
- Salary rates
- Where to look?
- Sharing workers among farms to increase hours to full time for the workers while meeting farmer needs

Attendees are welcome to bring up other topics, as well. Subject contributors: Bryan Brown, NYS IPM Weed Specialist; Chaw Chang, Stick and Stone Farm; Ryan Maher and Brian Caldwell, Cornell; and yourselves!

Cost: FREE to attend but please bring a dish to contribute to the pot-luck luncheon. For more information, contact Robert Hadad [rgh26@cornell.edu](mailto:rgh26@cornell.edu) 595-739-4065

### 2018 NYS Dry Bean Meeting

Hold-the-Date: March 6, 2018  
First United Methodist Church, 8221 Lewiston Rd (Rte 63),  
Batavia, NY 14020

Time and agenda TBA. For more info, contact Julie Kikkert at 585-394-3977 x404 or [jrk2@cornell.edu](mailto:jrk2@cornell.edu)

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# Cornell Cooperative Extension Cornell Vegetable Program

480 North Main Street  
Canandaigua, NY 14424



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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Cornell Vegetable Program