



You've heard all of the good reasons to grow high tunnel tomatoes but did you know about the 10 potential drawbacks?

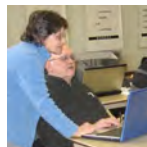
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Don't take a chance on seed if the germination test was done more than 9 months ago.

Have your seed tested by the NYS Seed Testing Laboratory.

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A late blight forecasting tool helps protect 4,000 acres of potatoes and tomatoes in

WNY. Learn more about this Internet-based system.

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Over 20 educational meetings are being offered in our region in the next 2 months.

Scan our Upcoming Events pages for details.

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VEGE**dge**

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

● Volume 10 | ● Issue 2 | ● February 2014

 **Cornell University**
Cooperative Extension
Cornell Vegetable Program

Ten Reasons Not to Grow Tomatoes in High Tunnels

Steve Bogash, Penn State Extension, and Judson Reid, CCE Cornell Vegetable Program

Every good reason to grow tomatoes and other high-return vegetables and small fruits in high tunnels has a compelling argument against it. These potential pitfalls of tunnel culture are seldom mentioned in the rush to put a high tunnel on every farm.

- 1) **Return on investment: Input costs are substantially higher in a tunnel versus the field.** Considering the costs of the structure, the plastic film, and other specialized equipment required to effectively produce in a tunnel, even spread over the lifetime of the materials, a field planting has much lower input costs. Yes, increased yield, higher quality, or market window can justify the increased costs of tunnels. However, we have observed some poorly managed tunnels with yields equal to or less than field plantings. Consider the worth of every square foot of production space and manage that space with the goal of justifying the increased input costs.
- 2) **Increased risk: Greenhouses and high tunnels are typically engineered to balance the environment with the need to keep material costs low.** On occasion, metal tube structures and crops fail. Considering your investment in the tunnel itself, the costs incurred in producing a crop, and your anticipated return on investment, growing in protected culture requires greater attention to details and pest management in order to realize economic goals.



Snow damage to tunnel.
Photo: Judson Reid, Cornell Vegetable Program

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VegEdge newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension regional agriculture team, serving 11 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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Canandaigua, NY 14224

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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 or write to us at Cornell Vegetable Program, 480 North Main Street, Canandaigua, NY 14424.



Cornell University
Cooperative Extension
Cornell Vegetable Program

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New Cornell Cooperative Extension Director Named

Carol MacNeil, CCE Cornell Vegetable Program

Many members of the commercial vegetable community have been enquiring regarding the replacement of Director of Cornell Cooperative Extension Helene Dillard. Helene just accepted the position of dean of the College of Agricultural and Environmental Sciences at the University of California, in Davis, her home town. Horticulture professor, and recent associate director of Cornell Cooperative Extension, Chris Watkins, has just been named director of Cornell Cooperative Extension (CCE).

Chris joined the Cornell faculty as a fruit and vegetable post-harvest specialist in 1994. He is well known for his research on maintaining produce quality and health-related compounds after harvest. He is valued by growers and

extension field staff for his extensive extension activities. Chris was named Outstanding Extension Educator by the American Society for Horticultural Science. In addition, he has been working closely with former Director of Extension, Helene Dillard, since 2006.



Chris Watkins, new
Cornell Cooperative
Extension Director

From Kathryn J. Boor, The Ronald P. Lynch Dean of the College of Agriculture and Life Sciences at Cornell: I am pleased to announce the appointment of Chris Watkins as Director of Cornell

Cooperative Extension (CCE). We are very fortunate to have someone of Chris' caliber seamlessly stepping into this key leadership role, and I am confident that Chris will position CCE for the future by integrating communication and education technologies with the traditional boots-on-the-ground approach that has characterized CCE to date.

As director, Chris will run the diverse portfolio of programs of CCE, which maintains a presence in every county in New York State as well as in New York City. CCE reaches citizens through outreach in food systems, natural resources, sustainable energy, 4-H youth development, nutrition, economic development, and related subjects. ●

Get Carryover Seed Tested!

Carol MacNeil, CCE Cornell Vegetable Program (from <http://www.nysaes.cornell.edu/seed-lab/>)

The germination and vigor of carryover seed can be much reduced, resulting in poor stands. Don't take a chance with seed if the germination test was done more than 9 months ago. Doing your own germination test in a wet paper towel doesn't tell you the whole story. Not every seed that germinates will produce a healthy plant. The procedures and tolerances used by the Seed Lab are prescribed by the Association of Official Seed Analysts (AOSA). The lab is staffed by seed analysts who have been tested and certified by the AOSA. Seed Lab germination tests provide information for use in comparing seed lots, and for making carry-over decisions. They do not predict field performance, which depends on weather and soil conditions. For a more accurate assessment of seed quality the following tests are available: The Breakdown Test for Beans, the Sand Test for Beets, the Cold Test, etc. The NYS Seed Testing Laboratory is the Official seed testing facility for NYS.

The standard germination test for agricultural, flower and vegetable seed costs \$20 per sample. There is an additional charge for the special tests. The

sample of seed provided for testing should be representative of the seed lot. The amount of seed needed ranges from 1 lb. for large dry beans and lima beans, ½ lb. for smaller beans, peas and corn, to ¼ lb. to ¼ oz. for other vegetables, depending on size. For more details call the Seed Lab at 315-787-2242, or go to: <http://www.nysaes.cornell.edu/seed-lab/> (Seed Lab websites work better in Internet Explorer.)

Mail seed to, or drop off at:

NYS Seed Testing Laboratory
Dept. of Horticultural Sciences - Sturtevant Hall
NYS Agricultural Experiment Station
630 W. North Street
Geneva, NY 14456

Note: A seed drop is located in the left front door of Sturtevant Hall (across from Jordan Hall)

Sender identification information needed: Name, address and telephone number.

Seed Sample information needed:

- Identification
- Variety
- Lot Number
- Type of test or analysis desired
- Seed Treatment: Samples submitted for testing must be labeled if they are treated with any seed treatment. This information is essential for both handling and testing procedures.

Reporting: Results will be sent by mail or can be faxed upon request. Payment is required within 30 days after invoicing. ●

- 3) **Increased pressure from insects and other arthropods:** Although tunnel culture allows the opportunity for higher crop quality, aphids, whiteflies, western flower thrips, spider mites, and broad mites also thrive under tunnel conditions. The dry foliage, stems, and fruit grown under intense trickle irrigation and fertigation are ideal environments for these pests to flourish. Without rainfall, a population of spider mites can increase extremely rapidly unless carefully managed. Scout regularly for pests and use proactive pest management that includes banker plants (plants on which natural enemies of pests naturally reproduce), such as Black Pearl and Purple Flash peppers hosting minute pirate bugs (*Orius*). Every crop reacts differently under tunnel conditions versus field conditions.



Thrip-mite injury to high tunnel tomato.
Photo: Judson Reid, Cornell Vegetable Program

- 4) **Irrigation management requires greater care:** This is especially so on the margins of the season, when there are often days with little sunshine, and you must react to rapidly changing conditions. Learn to grow dry(er) during the early and late season to reduce root-borne diseases. Know when to increase irrigation flow to maximize plant growth and reduce cracks and blossom end rot. Invest in tensiometers or irrometers to measure root zone moisture levels. Tunnels will require more irrigation than field plantings; farms with a less than adequate water supply should consider tunnels with caution.

- 5) **Increased disease pressure:** Tunnels do reduce diseases such as early blight and Septoria leaf spot but increase other diseases. Brown leaf mold, powdery mildew, and Botrytis, only occasionally seen in field-grown vegetables, are standard fare under high tunnel conditions. Increase air flow, reduce humidity, and use disease-resistant varieties to help manage these diseases. Brown Leaf Mold in tomatoes is almost exclusive to tunnel-grown tomatoes. We are finally seeing the release of the first tomato varieties with strong resistance to leaf molds. Check with your Extension Specialist / Horticulture Educator for the latest on recommended tunnel varieties.



Severe powdery mildew on tunnel tomatoes.
Photo: Judson Reid, Cornell Vegetable Program

- 6) **Tunnels perpetuate viruses:** Tunnel tomatoes are a 'hands-on' crop, as many growers have come to appreciate the benefits of greenhouse methods of pruning to improve yields. However, viruses such as tobacco mosaic (TMV) are spread mechanically by workers who move the virus down the row with weekly suckering or pruning. Field tomatoes see much less handling and thus are generally at lower risk. High-technology greenhouses have disinfection protocols in place to reduce viral spread, but a high tunnel's soil-based system is more difficult to disinfect than a concrete floor. A high tunnel, with characteristics between a greenhouse and a field, perpetuates TMV. So how to prevent TMV in tunnels? Buy only from reputable seed sources, consider seed treatment, and remove suspect plants immediately. Disposable gloves, regular

hand washing, and tool disinfection will reduce the spread of viruses and other systemic diseases. Commercial pruning tools with reservoirs to disinfect the blade continually during use are now available.

- 7) **Soil health and nutrition:** Tomatoes are the single most popular high tunnel crop due to their high return on investment and high market demand. There is considerable pressure not to rotate tunnel crops as you would field crops. This can result in steadily increasing soil-borne diseases such as Fusarium and Verticillium. Use only the best quality plants from known and trusted sources, and inoculate plant roots with Actinovate AG, RootShield Plus, Companion, Cease.... (There are an increasing number of biological root inoculants available.) These practices reduce the potential need to fumigate.

In addition, tomatoes are heavy feeders, making strict attention to soil tests and tissue analysis especially important in the usually higher (than field) densities used in high tunnels. Maintaining recommended levels of Ca, Mg and K is often challenging in tunnels. Since it never rains in a tunnel, all the nutrients that the roots take up are within the drip irrigation zone. This root area can quickly become exhausted of nutrients. Both injected and foliar-applied nutrients are necessary to maintain nutrient levels at their optimum levels during ideal growing periods.

- 8) **Negative R values:** Under early and late season short, cloudy days and clear, cold nights, it is possible to have the low temperature in a high tunnel be lower longer than outdoors. Cold nights, particularly in spring, can see temperatures lower inside the tunnel than out (hard to believe, but true). Under these conditions, a set of heavy floating row covers can help to keep a

crop alive, but many growers opt to use a low output heater to keep temperatures above 45-50° F. In general, an unheated high tunnel can be reliably planted with tomatoes about four weeks prior to the normal outdoor planting season. Adding heat can speed up successful planting by eight weeks or more.

- 9) **Increased management and labor: It is more challenging to manage tomatoes, peppers, cucumbers, strawberries, and raspberries indoors.** Pest populations and infestations tend to come on quickly, requiring a strong proactive management program. Narrow aisles require careful attention to crop canopy management, so pruning and trellising are constant chores. Is there room within your schedule as manager to accommodate the increased demands of a tunnel? We have seen many cases where the answer is No.
- 10) **Playing field irregularities due to subsidized tunnel purchases: Recent grant programs have created two levels of tunnel purchases, those that are subsidized and those that are not.** Growers who purchased their tunnels without the grant subsidy may have paid out-of-pocket 40-60% more for their first high tunnel. If you are not a grant recipient, your input costs will be higher, and your margin lower, than others.

We remain optimistic about the role of high tunnels on vegetable farms, but they are not ideal for all farms. Here we have presented some of the less glamorous aspects of tunnel production to balance the many favorable programs we've conducted for many years. These challenges must be met by growers currently using high tunnels and carefully weighed by growers considering them. ●

FDA to Revise Sections of Food Safety Modernization Act

Robert Hadad, CCE Cornell Vegetable Program

On December 19, 2013, the FDA announced it would be revising several sections of their proposed food safety rules. Strong opposition from many farmers, grower commodity groups, and congressmen helped to fuel the proposed revamping. Through the public comment period, over 13,000 responses were made to the FDA concerning the rulemaking. The FDA stated it would be making significant changes to the rules and opening up a new public comment period next summer.

One of the major issues of contention was the proposed requirement that farmers conduct weekly water tests of surface water sources during the growing season. The tests, on paper, are to determine quality of irrigation water. The argument against the weekly tests is that they would be costly, hard to achieve in areas where water testing labs are not in the vicinity, and that the science currently used doesn't actually measure food-borne disease pathogens.

The FDA said its new proposal would include revised provisions for water-quality standards and testing. Besides water, the FDA also noted that revisions to the raw manure and compost use will be made.

The FDA did not mention other provisions in the proposed regulations that would affect growers. One is the definition of a facility vs. a farm. This is important because farmers who purchase produce from neighboring farms to sell at their farm stands, at farmers markets, or through their CSAs, would be considered as food handling facilities and have to adhere to a stricter level of regulation, the same as a food processing facility like a cafeteria, caterer, or restaurant.

Another provision not mentioned in the December 19th announcement was about how exemptions to the regulation for small farms would be calculated. Another issue is handling of the on-farm co-management of conservation and food safety practices, including wildlife habitat protections. Also not mentioned in the FDA's announcement was funding for educational programming and training for farmers related to the rule. ●

New USDA Organic Agriculture Website

From: USDA Organic Agriculture Website

(Organic producers, those considering organic production, and those transitioning to organic, should always consult with their local Organic Certifier regarding required practices and banned substances. To have land or crops certified in 2014 consult your local certifier as soon as possible. Since all Organic Certifiers work under the National Organic Foods Production Act the following information is generally important to understand. ed. C. MacNeil, CCE CVP)

A new USDA Organic Agriculture website brings together all USDA organic resources on production, certification, markets, financial assistance and crop insurance, as well as a link to file complaints on products suspected of being improperly marketed as organic. To see the information and resources available go to: http://usda.gov/wps/portal/usda/usdahome?navid=organic-agriculture&navtype=CO&edeployment_action=changenav

For specific information on crop production go to the USDA Guide for Organic Crop Producers at:

<http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC5101542> ●

Time for Planter Maintenance

Sjoerd Duiker, Penn State University, Field Crop News Online, 1/13/14

(Editor's Note: Whether you use reduced tillage or conventional tillage getting a good stand is the first step to a productive crop. These tips should be helpful to all growers. C. MacNeil, CCE, CVP)

Issues with yield reductions in reduced-tillage can often be traced back to failure to guarantee accurate seed placement. Here are some tips to prepare your planter for the new season.

Issues with yield reductions in reduced-tillage can often be traced back to failure to guarantee accurate seed placement. It is all too common to see irregular seed depth, seeds at the soil surface, open seed slots, compacted soil on top of the seeds, hair-pinning, sidewall compaction, doubles and triples, and so forth. So planter performance becomes key. It is especially critical in no-till/strip till because of possible high penetration resistance, and cover crops or crop residue at the soil surface. Here are some tips to prepare your planter for the new season.

- 1) **Meters.** Metering units have to work well or you'll get frequent skips, doubles and triples. To guarantee optimal performance, take metering units apart every winter. Remove dirt and clean the hood with soapy water (no kerosene, diesel or oil should ever be used in metering units!). Replace cracked plastic covers. Replace broken fingers in a finger-pickup meter. Seed brushes need to be replaced when worn. If a groove has formed in the chromium house of the metering unit it is time to replace it. The belt (in finger pick-up meters) should be flexible, not have cracks in it, and should be clean. Clean with soapy water and let it dry before putting it back in. Put the metering unit back together. The rubber belt should be placed back in the right direction, or your meter will malfunction. You can lubricate with graphite (NO OIL or WD-40). It is recommended to take your finger pick-up metering unit to a dealer to have it calibrated every year or every 300-400 acres. Take a bag of your own seed with you, and give him the correct speed at which you'll be driving. If you have a vacuum or air meter, check for leaks and appropriate vacuum or air pressure.
- 2) **Planter unit.** Accurate depth placement can be compromised if planter units are loose or wobbly. You should not be able to easily lift up your unit or move it sideways. Look across your planter units from the side. Are they all at the same height? If one unit is either up or down compared to the others, it needs work. A common problem is that some bolts are loose or additional bushings are needed. You also need to replace cracked or broken seed hoppers.
- 3) **Seed opener disks.** Seed opener disks need to have a minimum diameter (check operator manual) or they will not place the seed at the appropriate depth. Seed opener disks also need to come together in the front (they should usually touch for 3", but this may vary depending on planter). Stick two business cards between the openers and move them as close together as possible. If opener disks are worn too much you will get a "W" shaped seed slot instead of the desired "V" slot.
- 4) **Seed tubes.** The end of seed tubes may wear to the extent that they curl inwards, catching seeds. There is often a hook halfway up that can easily break off. Seed tube guards need to have their minimum width and be fastened correctly or damage to the seed tube is likely.
- 5) **Seed firmers.** These help to press the seed down in the furrow, guaranteeing more accurate depth placement of the seeds. The tension can be adjusted with a bolt. If the seed firmers are worn too much they need to be replaced.
- 6) **Depth wheels.** Depth wheels should run tight against disks. Change washers from in-side to outside (or vice versa) of depth wheel if necessary. If this doesn't resolve the problem, the depth wheel arm needs to be replaced.
- 7) **Coulters.** Check the diameter of the coulters, and replace them if needed. You should adjust the depth of worn coulters that are still usable.
- 8) **Row cleaners.** Check for wear. Adjust to compensate for wear or replace if worn too much.
- 9) **Closing wheels.** Closing wheels need to have an intact spring, and need to be checked for damage or wear. Bearings cannot be wobbly or too tight. The bottoms of rubber or cast iron closing wheels need to be 1.5"-2" apart. The closing wheel arm cannot have too much play or bushings or the entire arm may need to be replaced.
- 10) **Alignment of coulters, opener disks, and closing wheels.** Take a rope and pull it straight from the front coulters to the closing wheels. The firming wheels, seed openers, and coulters should all be in line. Closing wheels should not run on top of the seed furrow.
- 11) **Insecticide boxes.** The insecticide boxes should have no holes or cracks. Tubes should be blown out with air as well as the slot on bottom of meter.
- 12) **Fertilizer unit.** Fertilizer opener disks should have a minimum diameter (check manual). The bearings should not be wobbly or too tight. Hang a bucket below the tube of the unit, and do a test run of 175 feet in the field. Weigh the fertilizer in the bucket, multiply by 100, and you have the fertilizer you'll put on in pounds per acre (at 30" row spacing). Adjust as needed.
- 13) **Chains and sprockets.** Check all chains and their sprockets. If they are worn too much they need to be replaced. They need to have the appropriate tension and should be greased regularly. ●

Genetically Modified Potatoes: Where Things Stand

Walter DeJong, Cornell (from the 2014 Expo Potato Session)

At present “genetically-modified” potatoes are not grown for commercial production anywhere in the world. Monsanto in the US, and BASF in Europe, have previously produced and sold ‘Newleaf’ and ‘Amflora’ potatoes but they were withdrawn from the market in 2001 and 2012, respectively.

The J.R. Simplot Company has been working for many years to develop genetically modified potatoes of their own. Central to Simplot’s strategy has been the assumption that consumers are more likely to accept GM potatoes

if the only genes added come from other potatoes. They use the word ‘Innate’ to describe their genetically engineered potatoes and have recently petitioned the USDA to deregulate them. They hope to sell limited quantities in 2014. Some of the genes that Simplot has altered include: polyphenol oxidase (turning off this gene reduces blackspot bruising); asparagine synthetase (shutting down this gene reduces acrylamide levels in fries and chips); and a starch-associated water dikinase, and an acid invertase (down-regulating these genes reduces cold-

induced sugar production. More information about Simplot’s ‘Innate’ potatoes is available on their website at: www.simplot.com/plant_sciences

A representative of Simplot will be speaking about ‘Innate’ potatoes at the **February 19 Potato Short Course** in Liverpool. For more details about the Short Course, go to: <http://cvp.cce.cornell.edu/event.php?id=177>. Contact Don Halseth to preregister by February 14 at: 607-255-5460 or deh3@cornell.edu. ●

WNY Farms Adopt New Late Blight Forecast on 4,000 Acres of Potatoes/Tomatoes

Carol MacNeil, CCE Cornell Vegetable Program

Thirteen farms and two consultants successfully used the farm/field specific Late Blight (LB) Decision Support System (DSS) forecast in 2012 and 2013 to more effectively and efficiently control LB on over 4,000 acres of potatoes and tomatoes. The Decision Support System, developed by Cornell plant pathologist William Fry, is a forecast influenced by varietal susceptibility/resistance, fungicide timing, fungicide choice and effectiveness, field location, recent weather station data, and weather forecasts for your farm. The DSS uses National Weather System forecasts on a one mile grid for predicting blight weather and fungicide weathering several days into the future. (The decades-old Blitecast system uses only recent weather station data.) The LB DSS is Internet based, but you can access it with a smart phone, or get email or text Alerts regarding action you need to take on your farm.

All DSS users in WNY in 2012 and 2013 followed the system regarding the timing of the first fungicide spray. Most used it to time later sprays for at least part of the season. The extremely wet early season resulted in some growers being limited to applying fungicides during infrequent, brief intervals dry enough to get in the field, or when an airplane was available, rather than ac-



Late Blight Decision Support System hands-on online training, 3/19/13, Rochester.
Photo: John Gibbons, Cornell Vegetable Program

cording to the DSS. It was, by all accounts, an exceptionally favorable season for LB. One DSS grower’s comment from 2013: “We did use the DSS this past year. We based our first sprays on the system. We also used it to get an idea on our later sprays for timing, and if different materials were lasting longer. We did not have potato blight this past year.”

A live, online training session on the use of the LB DSS is coming up on Thursday, **March 20, 2014** called **Forecasting Potato/Tomato Late Blight Risk on YOUR Farm**. Learn how to use this new LB forecast tool on your farm. Participants will set up their personal farm accounts on the Late Blight Decision Support System (DSS) website, defining the location of their farm/fields, and their varieties. Sign up for email/text alerts regarding when fungicide sprays are needed. Once basic farm/crop information is in a user’s account, growers can access DSS reports and input fungicide sprays by smartphone or tablet. The training is FREE but pre-registration is required by March 13, 2014. DEC pesticide credits will be available. More information about the training is available in the Upcoming Events section of this newsletter and online at cvp.cce.cornell.edu. ●

Upcoming Events

We've added topic icons to our upcoming events to make it easier for you to scan through the event list and focus on events that are of interest to you. General meetings, covering multiple topics, will not feature an icon.

We're also drawing extra attention to meetings offering DEC recertification credits. Look for the DEC logo to denote availability of DEC recertification credits.

Pesticide Training and Recertification - CCE Ontario County

Trainings on February 3, 10, 17, 24 | 7:00 - 9:30 PM

Exam on March 3 | Exam at 6:30 - 10:00 PM

CCE Ontario County, 480 N Main St, Canandaigua 14424



For anyone interested in obtaining pesticide certification who meets the DEC (Dept of Environmental Conservation) experience/education requirements **OR current certified pesticide applicators seeking recertification credits**. 2.5 recertification core credits for each class.

\$140 for certification includes the training manuals and all 4 classes. Does not include the \$100 exam fee. **Recertification is \$75 for all 4 classes or \$20 per class**. For more info or to register, contact CCE Ontario County, 585-394-3977 x427 or x436.

Small Farm Sales to Institutions and Businesses

February 5, 2014 | 9:00 AM - 12:00 Noon

CCE Ontario County, 480 N Main St, Canandaigua 14424



CCE Ontario County is hosting a special workshop to provide ideas and insights about farm-to-business sales. This workshop will offer practical facts for farmers about how to develop marketing relationships with businesses and institutions, maintain the supply contacts, and other important factors, like risk and profitability. Participants will get practical tips on the advantages and disadvantages of small-scale wholesale, grading produce, pricing, and crop planning and have a chance to network with other farms and potential buyers. Speakers include distributors looking to work with local small and mid-scale farms to move produce directly to local institutions, schools, and food service operations.

Fee: \$10.00 per person, maximum \$20.00 per farm. Pre-registration is required by February 3, 2014 by calling (585) 394-3977 x427 or e-mail Nancy Anderson with your full contact information to nea8@cornell.edu.

Produce Crop Planning Meeting (Walk & Talk Discussion Group)

February 8, 2014 | 10:00 AM - noon

Cuba Catholic Church, 50 South St, Cuba 14727



Crop planning involves looking beyond rotations and thinking about how next season's produce fits into your broader, longer term farm system. Aspects including pest/weed/ disease management, soil health, and farm business management will also be included. **\$10 per person**. All Allegany/Cattaraugus vegetable growers are encouraged to attend the monthly discussion group meetings. For more info contact: Elizabeth Buck at: emb273@cornell.edu or Robert Hadad at: 585-739-4065.

Winter Wednesday Lunch Series: Vegetable & Small Fruit Production Webinars

February 12, 2014 | Dealing with Late Blight | 1:00 - 2:00 PM

March 19, 2014 | Conventional and Organic Weed Control in Sweet Corn, Pumpkins, and Winter Squash | 1:00 - 2:00 PM

April 2, 2014 | Fertilization: Scheduling and Water Quality Considerations | 1:00 - 2:00 PM

Penn State and Cornell University have teamed up to present a series of webinars to keep you informed about critical production issues. This series provides convenient access to timely updates in commercial vegetable and small fruit production for extension educators, producers, and industry representatives in Pennsylvania, New York, and surrounding states. Cost: \$10/webinar. To register, go to <http://extension.psu.edu/vegetable-fruit/winter-webinars> or call 724-627-3745.

Storage Crops & Winter Marketing: What We've Learned Over the Past 5 Years

February 14, 2014 | 9:00 AM - 12:30 PM tentative

Bejo Seeds, 1088 Healey Rd, Geneva 14456



An intro to storage vegetable production, post-harvest, and marketing to meet the increasing demand for seasonal local food. Cost: \$10 per person includes lunch. By February 12, pre-register by contacting Robert Hadad at 585-739-4065 or rgh26@cornell.edu and pay at the door.

Local Forum on Cover Crops & Soil Health: Harvesting the Potential

February 18, 2014 | 9:00 AM - 12:30 PM

CCE Ontario County, 480 N Main St, Canandaigua 14424



Secretary of Agriculture Tom Vilsack, Howard G. Buffett, and four Midwestern cash crop farmers will discuss by webinar the benefits of cover crops and conservation tillage to improve soil health and farm profitability. Local discussion and demos before and after the webinar. Pre-register: Carol MacNeil at 585-394-3977 x406, crm6@cornell.edu.

Potato Short Course - Disease Management, Variety Development & New Breeding Technology

February 19, 2014 | 9:30 AM - 3:30 PM

Holiday Inn, I-90, exit 37 / 441 Electronics Parkway, Liverpool 13088



Simplot: genetic engineering for higher quality, disease resistance; Amanda Gevens, U WI: field/storage disease management; Cornell potato breeding, and licensing varieties; Using the Late Blight Decision Support System (bring a laptop; let us know if you need one). For full agenda, visit <http://cvp.cce.cornell.edu/event.php?id=177>. DEC pesticide credits available! Free event! Pay for lunch off menu. *Sponsored by the Empire State Potato Growers, Inc.*

For more info and to pre-register, contact Don Halseth at deh3@cornell.edu or 607-255-5460.

Potato Grower-Processor Meeting

February 20, 2014 | 12:30 PM - Dinner

Club 57, Rt. 21, south of I-86, north of Hornell



Cornell potato updates and grower-processor discussion. Contact Bob or Gary Mahany: 585-738-7391 or 607-725-1956; or Stephanie Melenbacher: 607-664-2307. Cost: \$50 for growers and agribusiness input suppliers.

NY Farm Show

February 20-22, 2014 | 8:30 AM - 4:00 PM

NYS Fairgrounds, Syracuse

Go to www.newyorkfarmshow.com.

Niagara County Winter Meeting: Increase Productivity Through Soil Environment Management

February 21, 2014 | 9:00 AM - 12:30 PM

CCE Niagara County, 4487 Lake Ave, Lockport 14094



The winter meeting will include reduced tillage, cover cropping for improved plant health, and improved fertility management in vine crops. 1.5 DEC credits will be available and CCA credits have been applied for. Cost: \$20 Cornell Vegetable Program enrollees; \$35 all others. Lunch is included. Pre-register by February 17 at <http://cvp.cce.cornell.edu/event.php?id=166> or call Karen Krysa at 716-433-8839 x221.

Orleans County Produce Auction Growers Meeting

February 25, 2014 | 1:00 - 3:00 PM

CCE Orleans County, 12690 State Route 31, Albion 14411



This course will educate growers on weed and disease management in fresh market vegetable grown for auction; as well as storage crop management and food safety concerns. Free event! For more information, contact Judson Reid at 585-313-8912 or Elizabeth Buck at emb273@cornell.edu. Go to <http://cvp.cce.cornell.edu/event.php?id=180> for the agenda.

Farm Food Safety Training with GAPs

February 27-28, 2014 | 8:30 AM - 4:00 PM

Civil Defense Center, 7220 Sate Rte 54, Bath 14810

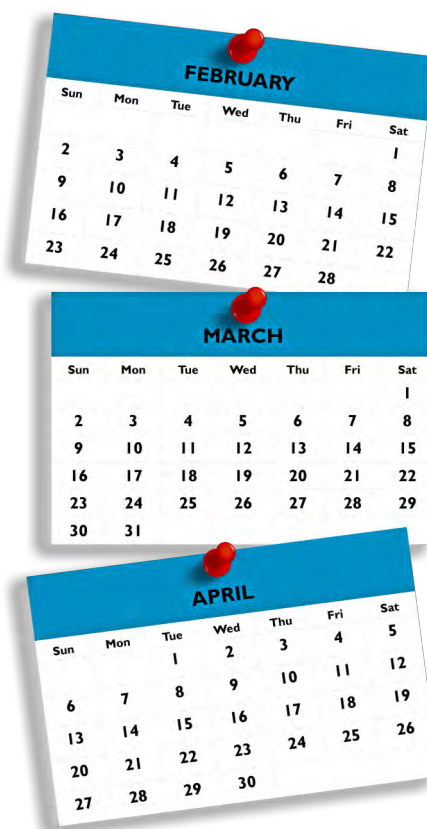


Cornell National GAPs Program, Cornell Vegetable Program, Cornell Lake Ontario Fruit Team, and Cornell Cooperative Extension, along with assistance from NYS Dept. Ag & Markets, will be presenting farm food safety training/GAPs (including Harmonized GAPs) this winter. *These workshops are partially funded through a grant by the Genesee Valley Regional Marketing Authority.*

This training is for those farmers who are being required by buyers to provide third party verification of their food safety practices and for farmers thinking about moving in this direction.

The first day of training will focus on the details of what GAPs is, how it works and what it means for your farming operation. The second day will be devoted to helping you write a food safety plan as required for audit certification. A laptop computer is required for the second day. After attending the 2-day workshop, growers are invited to a mock audit during the growing season so they know what to expect from a third party audit.

Cost: \$60. Pre-register by February 24, 2014. For more info or registering online, go to cvp.cce.cornell.edu or contact Craig Kahlke at cjk37@cornell.edu or 585-735-5448.





Tune Up Your Farm Business and Increase Net Profits with Richard Wiswall

February 27, 2014 | 9:00 AM - 4:30 PM
CCE Ontario County, 480 N Main St, Canandaigua 14424



An all-day financial sustainability workshop featuring Vermont farmer and author Richard Wiswall, hosted by CCE Ontario County. Richard will explain how to find your farm's actual profit centers, effectively organize your office, read financial statements critically, enhance employee performance, and practice top financial tips for success. Richard's top-selling book, *The Organic Farmer's Business Handbook*, has been advising other farmers for years. Open to all farmers looking to focus a little more on the business side of farming.

Cost: \$35 per person. Register by February 20. To register or for more information, contact CCE Ontario County at 585-394-3977 x427 or email nea8@cornell.edu with your name, address, and phone number.

This workshop is supported by USDA's Sustainable Agriculture Research and Education program, in an award to CCE Ontario County.

Farmers Market Manager Training Conference - "Navigating the Local Food Scene"

February 27 - March 1, 2014
Doubletree by Hilton, Binghamton



Go to: www.nyfarmersmarket.com/work-shop-programs/annual-conference-ditto-with-the-annual-conference/program.html or contact the Farmers Market Federation of NY at: deggert@nyfarmersmarket.com or 315-637-4690.

Farming as Part of Your Retirement and Estate Plans

February 28, 2014 | 9:00 AM - 2:00 PM
CCE Ontario County, 480 N Main St, Canandaigua 14424



CCE Ontario County is hosting a seminar dedicated to clearing up the realities of farming in retirement and estate planning. Financial advisors Carl Lutz and John Montague from Lutz and Associates will explain some of the best practices a farm family can take approaching and after retirement to manage their assets for longevity. Topics will include organizing personal and farm finances, understanding personal income needs, how and when to consider an LLC as part of the asset transfer process within the family, and long term care options for farmers and how to choose which are the best fit. This in-depth farm money seminar is open to all farm families.

Cost: \$25 per person. Register by February 25. To register or for more information, contact CCE Ontario County at 585-394-3977 x427 or email nea8@cornell.edu with your name, address, and phone number.

Farm Food Safety Training with GAPs

March 6-7, 2014 | 8:30 AM - 4:00 PM
NYS Ag Experiment Station, Food Research Lab, Rm 251, 630 W North St, Geneva 14456



This training is for those farmers who are being required by buyers to provide third party verification of their food safety practices and for farmers thinking about moving in this direction. The first day of training will focus on the details of what GAPs is, how it works and what it means for your farming operation. The second day will be devoted to helping you write a food safety plan as required for audit certification. A laptop computer is required for the second day. After attending the 2-day workshop, growers are invited to a mock audit during the growing season so they know what to expect from a third party audit.

Cost: \$60. Pre-register by March 3, 2014. For more info or registering online, go to cvp.cce.cornell.edu or contact Craig Kahlke at cjk37@cornell.edu or 585-735-5448. *This workshop is partially funded through a grant from the Genesee Valley Regional Market Authority.*

Building Fertility Through Cover Crops

March 11, 2014 | 9:00 AM - 12:30 PM tentative
CCE Ontario County, 480 N Main St, Canandaigua 14424



The keystone of agricultural sustainability is growing your own fertility which not only benefits the crops being grown but also improves the soil. Cost: \$10 for Cornell Vegetable Program enrollees; \$20 all others. Register by March 9. For more information or to register, contact Robert Hadad at 585-739-4065 but pay at the door.

Hot Water Seed Treatment Clinic

March 14, 2014 | Save the date! More info will be available soon.

NYS Dry Bean Meeting

March 18, 2014 | 9:00 AM - 3:00 PM
LeRoy Country Club, 7759 E Main Rd/Rt 5, 1 mile east of LeRoy



All growers and those interested in the NYS dry bean industry are invited to attend. Lots of dry bean dishes to taste! The NYS Dry Bean Industry Advisory Committee will meet at the end of the educational meeting. DEC and CCA credits available. Pre-registration cost: \$20 CVP enrollees; \$30 all others. Pre-register or find more details online at cvp.cce.cornell.edu or call 585-394-3977 x426 by March 10.

Forecasting Potato/Tomato Late Blight on Your Farm

March 20, 2014 | 1:00 - 4:00 PM

CCE Monroe County, 249 Highland Ave, Rochester 14620



Learn how to use this new LB forecast tool on your farm. Participants will set up their personal farm accounts on the Late Blight Decision Support System (DSS) website, defining the location of their farm/fields, and their varieties. They can sign up for email/text alerts regarding when fungicide sprays are needed. Once basic farm/crop information is in a user's account they can access DSS reports and input fungicide sprays by smartphone or tablet.

A laptop computer capable of wireless internet access is needed for the workshop. Be sure to indicate if you need to borrow one! If you have questions about the workshop or the LB Decision Support System contact [Carol MacNeil](#) at 585-313-8796.

Free - but pre-registration is required by March 13. [Pre-register online](#) or by calling Carol MacNeil at 585-313-8976. DEC pesticide credits will be available.

Trickle Irrigation / Fertigation Workshop

March 20, 2014 | 9:00 AM - 12:30 PM

NYSAES, Jordan Hall, 630 W North St, Geneva 14456

This workshop will provide details on "how-to" for size and setting up trickle irrigation and fertigation set-up and operation. Dr. Bill Lamont (Penn State) will give an in depth look at setting up and using a trickle irrigation system. Dr. Steve Reiners (Cornell) will walk participants through the math and other considerations related to fertigation systems.

Cost is \$15 for Cornell Vegetable Program enrollees, \$25 otherwise. Please pre-register by calling Karen Krysa at 716-433-8839 x221 so organizers can adequately prepare, but note that payment will be at the door.

Garlic School

March 28, 2014

Save the date! More info will be available soon.



Legal Guide for Direct Farm Marketing

Cornell Small Farms Update, Dec 3, 2013

The Drake Agricultural Law Center developed their online legal resource as a way of making their free publication "The Legal Guide for Direct Farm Marketing" more accessible, providing regular updates on direct farm marketing law and policy, and allowing readers to ask questions directly to Center staff and law students. The website is available at: <http://directmarketersforum.org/>

The Small Farms Update is intended as a resource for farm-ers and agricultural service providers in New York and the North-east, and is provided to you by Cornell Small Farms Program. The Cornell Small Farm Program is a joint effort of the College of Agri-culture & Life Sciences and Cornell Cooperative Extension. You can subscribe to the Small Farms Update list at: <http://smallfarms.cornell.edu/contact/e-news-sign-up/>. ●

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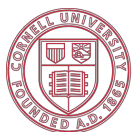
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VegEdge is the award-winning newsletter produced by the Cornell Vegetable Program in Western New York. It provides readers with information on upcoming meetings, pesticide updates, pest management strategies, cultural practices, marketing ideas and 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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