

# QUARTERLY HIGHLIGHTS Q1 ●●●

The Cornell Vegetable Program is a Cornell Cooperative Extension partnership between Cornell University and CCE Associations in 14 counties: Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Monroe, Niagara, Ontario, Orleans, Oswego, Seneca, Steuben, Wayne and Yates in 2020.

The team of Vegetable Specialists provides educational programs and information to growers, processors and agri-business professionals, arming them with the knowledge to profitably produce and market safe and healthful vegetable crops.

**865**

farm visits and  
direct contacts

**48**

events &  
presentations  
featuring CVP  
Specialists

**2,290**

people  
attended CVP  
presentations







## Online Cole Crops School

Cornell Vegetable Program Adapts Programming to Meet Changing Learning Environment Caused by COVID-19 Pandemic

In the midst of coronavirus-related disruptions occurring in mid-March, the CCE Cornell Vegetable Program saw an opportunity. In an effort to preserve health, agricultural meetings were being cancelled in all corners of the state. A collateral impact of these socially responsible cancellations was that many of these cancelled events offered continuing education credits that are essential to maintaining an active pesticide applicator’s license. Without access to these NYS Department of Environmental Conservation approved courses, growers could struggle to maintain their licenses. Nearly all of the approved courses statewide for several months were rapidly cancelled at once, potentially leaving many growers unable to responsibly treat their fields with effective crop protection materials.

The Cornell Vegetable Program (CVP) found itself facing a choice less than 2 weeks before our Cole Crops School scheduled for March 30: Do we cancel and lose a chance to offer 3.0 DEC pesticide applicator credits to growers holding licenses in 3 different subcategories? Three credits is 30-38% of the continuing education credits growers need to renew their licenses, depending on subcategory. More importantly, this was a beginner to intermediate level class that would teach organic and integrated pest, weed, and disease management techniques – fundamental skills that new produce farmers must quickly master if they’re to be successful. If we didn’t run the course, we wouldn’t be able to offer the material until January 2021.

In true CVP style, our team rose to the occasion, got creative, and came up with an innovative way to meet the needs of our growers. We decided to push the Cole Crops School online.

The Cornell Vegetable Program had never tried online education for one of our long-format, high attendance schools before. Reaching out to our Extension colleagues in Eastern NY and New England yielded valuable guidance and support in how to set up and successfully run a long, large online class, including how to help participants rapidly become comfortable using the online meeting software. Each of our four CVP speakers brushed up on techniques for online teaching and used polling and chat features to create an engaging digital learning environment.

This was the first time we’ve tried using electronic-only advertising format that relied on social media posts and direct emails to recruit class participants. We reached over 1,400 people via social media, making this advertising campaign one of our most well-received social media outreach efforts ever. We also had to learn how to organize registration services using a third-party system instead of our own website, as we are accustomed to doing.

Of greater note, the Cornell Vegetable Program developed and received approval for a brand-new protocol to satisfy the strict NYS DEC compliance requirements for meetings offering continuing education. The new protocol describes methods to handle the DEC credit registration process, verify license-holder identity, and ensure active participation by credit-seekers, and confirm attendance throughout the entire meeting. This protocol has since been shared with other CCE Regional Ag Teams throughout the state. Overall, the CVP has created a blueprint for other teams to follow for online educational courses and offering valuable DEC credits.

What about the class itself? A whopping 48 participants joined us online for our 3.5 hour-long Cole Crops School – more than double the number we expected in-person. The format allowed us to better serve our growers across the region as the majority of our 39 NYS participants lived more than an hour away from our planned in-person location. Furthermore, we expanded our message to farmers and ag professionals in PA, NJ, MA, VA, WA, and even Canada! Response from the participants was overwhelmingly positive and supportive of this new teaching format.

On the whole, the entire Cornell Vegetable Program team adapted and overcame the programmatic challenges posed by coronavirus to provide high-quality educational content to a large and geographically diverse grower audience. As a team, the experience enhanced our program delivery skill set. Organizationally, the Cornell Vegetable Program’s work will serve as a blueprint for other teams to follow in crafting online programming well into the future.



## Cabbage Session at the Expo was “Back to the Future”

After taking a year off, the Cabbage session was **back** at the Empire State Producer’s Expo with a focus on the **future**. Almost fifty cabbage growers, allied industry representatives and research scientists attended the session, organized by CCE Cornell Vegetable Program Specialist, Christy Hoepting. Ninety-one percent rated the program as excellent!

Cornell Ph.D. student, Zoe Dubrow, kicked off the session with news that a new molecular discovery in genome editing technology could result in cabbage varieties that are totally resistant to black rot. After a century of nothing but copper bactericides, which barely manage potentially devastating crop losses from this disease, growers in attendance were thrilled to learn that resistant varieties were in the near future.

Next was the “Lors**BAN BAN** by **B.A.N.**” where Cornell Vegetable Entomologist, Brian A Nault (with initials B.A.N.) addressed the pending New York State ban of Lorsban/chlorpyrifos, which is the cornerstone for control of cabbage maggot. Sadly, Nault reported that the only effective and currently available alternatives to Lorsban cost 10 to 35 times as much as chlorpyrifos (compare \$8-14/acre to \$63-284/acre). The most important outcome of this presentation was Nault’s announcement that he was going to immediately divert some of his research efforts to finding effective and affordable alternatives to Lorsban for cabbage growers.

Hoepting finished the program with exciting results from her 2019 on-farm cabbage herbicide trial, which featured control of the problematic lambsquarters weed. With no new herbicide mode of actions in the pipeline, Hoepting got creative with existing herbicides. She experimented with new tank mixes, timings and strategies with the ambitious goal of eliminating the need for hand weeding, which can be cost-prohibitive in the current farm labor climate. An impressive 28% of the survey respondents indicated that they were going to alter their herbicide program based on her presentation. Additionally, the registrant of Spartan herbicide, which performed very well in the trial, told her that in response to requests from cabbage growers, they now want to pursue getting Spartan labeled in cabbage in New York!



Cabbage plant infected with black rot.  
Photo by Christy Hoepting, CCE Cornell Vegetable Program



Cabbage maggots causing root damage.  
Photo by Faruque Zaman, CCE Suffolk County

## Precision Ag Educational Program

Agriculture producers have quickly adopted precision agriculture (PA) technologies over recent years. New emerging technologies on farms and technological advancements have created education and training opportunities in the field of precision agriculture.

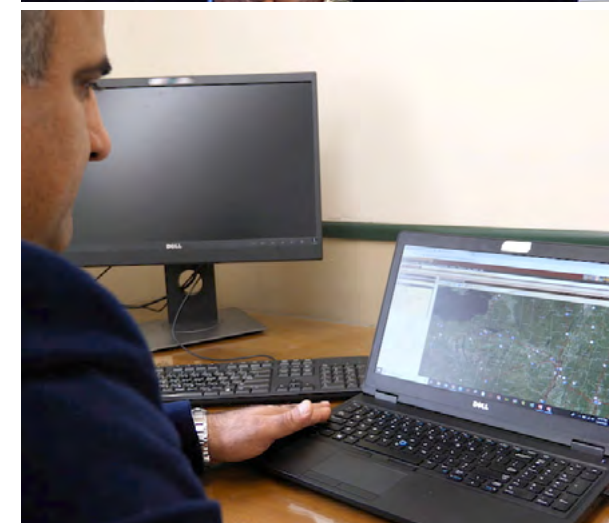
The 2020 Empire State Producers Expo Stand Uniformity session, held January 14, 2020, was organized to provide Extension and educational materials to help farmers to learn more about the available cutting-edge technologies related to stand uniformity. About 20 people attended the session.

Furthermore, a Precision Agriculture Series was developed to answer the questions of producers, address precision ag topics such as data management, zone management, site-specific management, soil EC maps, generating prescription maps, calibrating machinery, and to introduce new technologies. Regional workshops were offered in five WNY counties – Niagara, Erie, Genesee, Seneca, Steuben – with collaboration from the CCE Associations in each of those counties. The Precision Ag educational workshops started in February, deemed to continue through April, but due to the uncertainty surrounding COVID-19, the latter workshops were postponed.

## NYS Dry Bean Meeting a Success

In early March, the 2020 NYS Dry Bean Meeting in Batavia, NY brought together 30 dry bean growers and industry members from around Western NY and the Great Lakes region to discuss research results and dry bean production outcomes from the 2019 growing season.

To begin, Matt Stawowy from Steele & Co. presented an overview of the 2019 growing season (photo to right), suggesting that markets should continue to be strong for NYS dry bean growers. Marion Zuefle, NYS IPM program, shared research on the Western bean cutworm seasonal trap numbers and management. Cornell plant pathologist Frank Hay stepped in to present Sarah Pethybridge’s ongoing research in white mold management in NY dry beans. The CVP’s Julie Kikkert shared information from Cornell weed scientist Lynn Sosnoskie on the identification and management of Palmer amaranth, a difficult weed that was found for the first time in NYS this past year. Cornell plant breeder Phillip Griffiths shared on his work in breeding, evaluation and development of dry bean varieties for NYS growers, and Michael Rosato presented the results of the 2019 dry bean variety trials at Cornell AgriTech. Lastly, Amie Hamlin from the NY Coalition for Healthy School Food shared on promoting and using NYS dry beans in NY school lunches, and provided bean burgers and black bean brownies for a dry bean lunch following the meeting for all meeting attendees.





# Growers, Processors, Industry Members Convene at Statewide Table Beet Workshop

Table beets have emerged as a popular and profitable crop for New York farms in recent years. More than 3,000 acres of table beets are grown in Western NY making it the second largest production region in the United States. The number of farms in New York that grew beets more than doubled from 2012 (257 farms) to 2017 (610 farms), according to the Census of Agriculture. In response, the CCE Cornell Vegetable Program organized a full-day Table Beet Workshop in January at the Empire State Producers Expo in Syracuse. Most of the major table beet growers from Western NY along with representatives from Love Beets (Rochester, NY), Seneca Foods (Geneva and Leicester, NY) and Dewey Produce (beet broker from Byron, NY) attended the workshop.

The morning session kicked off with a presentation by Dr. Irwin Goldman, University of Wisconsin-Madison on the revival of the table beet, which according to post workshop evaluations was the highlight of the workshop. A grower panel followed with a discussion of how beets fit into the farm operation and tips on production and marketing of beets. The grower panel included Jason Gaylord, MY-T Acres Farm, Batavia, NY, Ethan Ball, Schoharie Valley Farms, Schoharie, NY and Raymond Luhrman, Fox Creek Farm, Schoharie, NY. “Down & Dirty” was the theme of the afternoon session with practical information for table beet production. Cornell University faculty and graduate students discussed the latest research in basic beet agronomy, identification of leaf diseases, best management practices for Cercospora leaf spot, and Rhizoctonia root rot. The CCE Cornell Vegetable Program table beet specialist provided tips on management of weeds and insect pests. Distinguished table beet breeder, Dr. Goldman, discussed 70 years of table beet breeding and efforts to develop new varieties for flavor, color, and disease resistance. Representatives from the two major beet seed companies, Sakata Seeds America, Inc. and Bejo Seeds, Inc. highlighted the attributes of currently available varieties, and described how they are best suited for different markets. There has not been such a large gathering of beet experts and industry members in recent history nationwide. All of the evaluations that were handed-in rated the workshop as good to excellent. Growers gained knowledge that will help them produce a profitable crop, using the best varieties and management tools to tackle weed, disease, and insect problems.



# Promising High Tunnel Cover Crop Data Shared Across the Region

High tunnels are an effective technology for farmers that desire to extend their growing season, protect their crops from weather and pests, and enhance the productivity and quality of specialty crops. However, frequent tillage, excess fertility, and continuous vegetable cropping without rotation or precipitation has resulted in a number of soil issues that require research for long-term high tunnel sustainability. The Cornell Vegetable Program was awarded \$10,000 from the Towards Sustainability Foundation to research and promote the nitrogen scavenging properties of grain cover crops and nitrogen-fixation properties of legume cover crops in high tunnel systems.

Year 1 results indicate that In our early planted tunnel we could capture over 70 lbs of nitrogen with our cover crops. This could be nearly half of the required nitrogen for a tomato crop! It was interesting to note that the later planted tunnel had about 50 lbs less nitrogen fixed than the earlier planted treatments. The value of the best performing treatment could be over \$900 per tunnel in reduced fertilizer cost for the farmer. Furthermore, less nutrients are entering the environment.

Project results and updates have been shared with growers, fellow Extension educators, and legislators at over 8 events/presentations: 2020 Finger Lakes Produce Auction Winter Educational Meeting, 2020 Empire State Producers Expo High Tunnel Session, and the NOFA-NY 2020 Winter Conference. To date, 5 project-related articles have been published in VegEdge newsletter, CVP Quarterly Highlights, and the ENY Commercial Horticulture Produce Pages. A total of 45 project-related updates have been shared across Facebook, Instagram, and Twitter accounts associated with the PI and project team leading to a total of 941 likes, 1,654 views, and 3 retweets.



# Farm Food Safety Resources Update

The Northeast Center to Advance Food Safety (NECAFS) invited CCE Cornell Vegetable Program Specialist Robert Hadad to their annual conference in Philadelphia, PA in early February. Hadad spoke on his project developing in-depth training for produce farmers and their workers on the hygiene and sanitation practices for wash/pack facilities, funded by the Northeast Extension Risk Management Education Center of USDA.

After the presentation, Hadad was approached by an FDA official asking how to clean onion packing equipment. Evidently, inspectors are having difficulty dealing with onions because the “wash” process doesn’t use water. Cleaning equipment with water would pose greater risk of microbial contamination. They asked for input on how to integrate food safety sanitation into the onion industry of the Northeast.

Working with NY onion growers, we have begun to examine the steps onion farmers go through and the challenges they face. The project should finish by late spring providing a checklist growers can follow and food safety inspectors can use as reference when they visit the farms.



Dr. Irwin Goldman, University of Wisconsin-Madison, discusses the development of new beet varieties with processors and growers. Photo by Julie Kikkert, CCE Cornell Vegetable Program



Grower panel, L to R: Ethan Ball, Raymond Luhrman, Jason Gaylord. Photo by Courtney Llewellyn, Lee Newspapers, Inc.

# Newly Funded Grants & Projects

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This quarter, we are pleased to have received the following grant funds allowing us to advance our commitment to the New York vegetable industry.

**Determine the Magnitude and Distribution of Western Bean Cutworm and the Risk to Dry Beans in the Major Production Areas in New York**, Dry Bean Endowment, 7/1/20-6/30/21, \$2320 (Lund, Zuefle, Wise)

**Weed Control in Processing Vegetables**, New York State Vegetable Research Association/Council, 4/1/20-3/31/21, \$31,484 (Sosnoskie, Kikkert)

**Manipulating Carrot Growth Through Plant Growth Regulators**, New York State Vegetable Research Association/Council, 4/1/20-3/31/21, \$9,924 (Pethybridge, Kikkert)

**Evaluation of Alternatives to Quadris for Early Season and Root Disease Control of Table Beet in New York: Year 2 (2020/21)**, New York State Vegetable Research Association/Council, 4/1/20-3/31/21, \$22,922 (Pethybridge, Branch, Kikkert)

**Evaluation of Table Beet Growth and Health Through Plant Growth Regulators**, New York State Vegetable Research Association/Council, 4/1/20-3/31/21, \$24,294 (Pethybridge, Kikkert)

**Towards a Durable Management Strategy for White Mold in Dry Beans in New York in Year (2020/21): Sclerotial Survival**, NYS Dry Bean Endowment, 4/1/20-3/31/21, \$7,000 (Pethybridge, Kikkert, Lund)

**Optimizing Herbicide Weed Control and Crop Safety in Transplanted Cabbage**, New York Cabbage and Research Development Program (NY CRDP), 4/1/20-3/31/21, \$10,200 (Hoepting, Sosnoskie)

**Winter Cover Cropping for Northeast High Tunnel Systems**, Towards Sustainability Foundation, \$10,500 (Reid, Tucker)

Through collaborative efforts between NYS commercial high tunnel farmers, the Cornell Vegetable Program, Dilmun Hill Student Farm, and other regional based CCE educators, the project team will develop and disseminate best management practices for winter cover cropping in high tunnel systems. The implementation of these BMPs will positively impact high tunnel environmental and economic sustainability by reducing excess nitrogen inputs.

Our outreach plan includes a minimum of 45 in-person farm visits, on-farm demonstration meetings, winter conferences, and a consistent social media presence. Results will be published as farmer-oriented articles in print newsletters.

By establishing best management practices for winter cover cropping in high tunnel systems, we will be able to help farmers decrease excess nutrients (particularly P, Ca, and Mg) while increasing yields. Through the adoption of improved nitrogen management practices, we anticipate New York State farmers will realize an increase of \$5000 in profit per acre through decreased inputs and/or increased yields.

**Cornell Cooperative Extension | Cornell Vegetable Program**



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