QUARTERLY HIGHLIGHTS Q2 2021

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 2021.

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.

1.449 farm visits and events & people direct contacts presentations attended CVP featuring CVP presentations **Specialists**

Cornell Vegetable Program Events in Hot Demand and Provide More Than Education

The Cornell Vegetable Program (CVP) offered an exceptionally high number of educational events in spring 2021. Some of this programming, especially in April, was held online. However, online classes are just not the same as in person learning opportunities. Some educational needs, like learning hands-on skills or gaining peer-support on the finer pragmatisms of applying newly learned concepts, cannot be duplicated well online. Poor internet service in large portions of the CVP region further limited the utility of online programming. Growers wanted to return to in-person classes.

As health and safety restrictions were lifted, our team quickly planned a large number of in-person educational events throughout the region. In some cases, we creatively reached out to other agricultural organizations to pursue jointly offering early field-season events. This new way of partnering strengthened the regional team's ties with local ag service providers and grower boards.

The amount of grower interest and engagement in these in-person meetings was phenomenal! In far WNY alone, CVP offered 11 different in-person meetings on just fresh market production topics between April and June. A whopping 169 growers attended those 11 events!

Grower interest was high for many reasons. For starters, CVP planned excellent educational content and made a real push to bring out special speakers for these early events. Using varied educational formats that ranged from question-driven, peer-centric field walks, to hands-on skills workshops and from farm tours, to formalized field days fostered learning environments that were more welcoming to a wider array of learning styles.

Pragmatic and social aspects unique to our collective re-emergence from COVID-19 also helped boost grower enthusiasm for meetings this spring. Some growers needed to catch up on DEC pesticide recertification credits. Others felt they could use a skills refresher or were enticed by the opportunity to attend a class on production issues that arise in the spring and early summer. Luck with the weather, with meetings often falling on rainy days, helped too.

More importantly though, these in-person classes offered folks a chance to return to a time-honored agricultural tradition – the field meeting – and in doing so, allowed growers to regain a small sense of normalcy.

In-person meetings gather growers together around common interests. And yes, growers do learn new information at these meetings. Perhaps though, the most substantial and meaningful outcome of all these successful spring meetings was actually social. CVP events provided growers and others in the ag community a chance to visit and reconnect, a chance for new growers to find and network with peers, and a chance to take some time out of a busy season to socialize in a more normal way. And, as we all learned this past year, holding some space and time for those sorts of social activities is important in finding balance and allowing us to reach our full potential.

Ongoing Effort to Help Growers Make Improvements to Their Wash/Pack Facilities and Operations

Efficient, clean wash/pack facilities are important for food safety and for the farmer's bottom line. With this season's harvest quickly approaching, improved wash/pack practices can make a big difference. Following our off-season outreach, many growers contacted us looking for more information, additional resources, our advice relative to their ideas and concerns, and/ or for an inspection of their facilities in order to provide them with suggestions for improving their wash/pack practices.



Often we write about our extensive nutrient management work in high tunnels. We've been successful in landing hundreds of thousands of dollars of research awards and have helped growers manage nutrient inputs for a crop with a value in the millions of dollars. In addition to this large program focus, we also handle the smaller challenges that growers face on a day to day basis, helping them realize their own individual profit potential. For example, this spring we have diagnosed and helped growers overcome gas poisoning and pollination issues.

At a Yates County farm, the Cornell Vegetable Program was called in to diagnose poor flower set in greenhouse tomatoes. (It was actually no flower set at all!) The well-intentioned grower was certain that a pest or disease was to blame and actively sought a spray solution. After eliminating all possible suspects, we turned our attention to the greenhouse heater. The grower was asked to remove the outer panels from the combustion chamber and fire the burners. An internal leak was discovered that was contributing off-gases such as carbon monoxide to the greenhouse, effectively poisoning the crop which was dropping all flowers. Our intervention prevented needless pesticide applications and led the grower to saving their crop worth thousands of dollars.

At a Steuben County farm, another grower was convinced that they were suffering from the same combustion chamber malady. The Cornell Vegetable Program inspected the situation and found that the plants were healthy, however flowers were becoming black and dropping without apparent cause. We quickly turned our attention to the bumblebees the grower had purchased to aid with pollination. Were they visiting the flowers? The growers reported they were indeed, in high numbers. Further discussion revealed there were two hives in the greenhouse, the result of an overzealous bee salesman. There were more bees than the flowers could support! As a result of excess visitation, yield was dropping fast with every dead flower. The grower immediately removed one hive, and the salesman received a curt phone call. Subsequent flower clusters were healthy and continue to produce fruit for an early, high profit market.



A leak in the combustion chamber contributes offgases resulting in flower drop and yield loss. Photo by J. Reid, Cornell Cooperative Extension



Too many bee visits cause flower drop. Photo by C. Tucker, Cornell Cooperative Extension

These are just a couple examples of the issues we troubleshoot every day in our farm visits. These farm visits form the basis of our extension work; growers look to the CVP for solutions to their individual challenges and we work on farm to address them. In the above cases properly diagnosing the challenge and providing a solution resulted in tens of thousands of dollars in revenue for the grower. Further, we prevented unnecessary pesticide applications. These growers reinvest their earnings into our local communities by purchasing farm supplies and other household goods. We are grateful for the privilege to contribute to these farm's success.

Onion Industry Back Together Again at In-Person Twilight Meeting

It sure felt good for the New York onion industry to be back together again at the Oswego County Onion Growers Twilight Meeting on June 24th. Due to COVID restrictions in 2020, all summer meetings were cancelled. The event was hosted by Oswego onion growers/packers, Sorbello and Sons near Hannibal, NY and was jointly organized by the Cornell Vegetable Program and Oswego County Vegetable Growers Improvement Association. The event drew a crowd of 51 including muck-onion growers from all three Cornell Vegetable Program (CVP) regions (Elba, Oswego and Wayne), and private industry representatives from the pesticide, seed, fertilizer and distribution businesses.

CVP Onion Specialist, Christy Hoepting began the educational program with a comprehensive review of the research highlights from her 2020 on-farm fungicide trials and rolled out the new research-based fungicide recommendations for 2021 for control of foliar leaf diseases Botrytis and Stemphylium leaf blights. Then, Cornell Weed Scientist, Lynn Sosnoskie brought in plant samples of new species of invasive pigweeds and cautioned the growers to be on the look out for them. CVP Vegetable Specialist, Elizabeth Buck used her animated teaching style to explain herbicide mode of action and CVP Technicians Emma van der Heide and Sarah Caldwell gave lightening talks on a couple of



Cornell Weed Scientist, Lynn Sosnoski shows onion growers how to identify new invasive species of pigweed at Oswego Onion Twilight Meeting. Photo by C. Hoepting, CCE

weed management projects from 2020, before Hoepting finished the educational program with a tour of a 26-treatment herbicide trial. The herbicide trial featured programs and strategies for both pre- and post-emergent herbicides for controlling heavy weed pressure from lamb's quarters, ragweed, Lady's thumb and marsh yellowcress.

Ninety percent of the attendees rated the meeting as excellent with new pigweed species and novel approaches to weed control being most commonly cited as new information learned and techniques that will be implemented on the farm.

> Christy Hoepting demonstrates several different strategies to control heavy weed pressure with pre- and post-emergent herbicide options at Oswego Onion Twilight Meeting. Photo by S. Caldwell, Cornell Cooperative Extension

Monitoring Western Bean Cutworm Numbers in Dry Beans

Western bean cutworm (WBC) is a moth pest which causes chewing damage to dry bean pods during its larval state, and is known to cause damage to beans throughout New York State. Adult WBC lay their eggs in corn and beans in July and early August, and larvae feed on the maturing pods, drilling through the pod and feeding on the beans inside causing yield loss.

The Cornell Vegetable Program has monitored WBC numbers in Western NY for the past 10 years and will continue this effort this summer with the NYS IPM program by monitoring WBC traps in 11 locations across the region. In this project, we use WBC pheromone traps to catch adult moths in order to monitor flight patterns and determine peak flight and pressure in different locations. While these traps do not give us a direct measure of damage to bean pods in a field, we can get an idea of what that pressure looks like depending on the number of adults caught in a particular area. This helps us work with dry bean growers across the region to time insecticide applications to best treat for this pest depending on the level of pressure in their area. This year, we increased our trap numbers from 8 in 2020 to 11 in 2021 in 6 counties (Genesee, Livingston, Monroe, Steuben, Wyoming, Yates), which will allow us to help more dry bean growers across a larger region.



Western bean cutworm damage to dry beans. Photo by M. Lund, Cornell Cooperative Extension

Research to Deter Birds in Sweet Corn Continues

Sweet corn is a delicious treat for people, birds, racoons, and other critters from roughly the 4th of July through Labor Day. In 2020, there were 27,000 planted acres in New York, with a farm gate value of \$36.9 million (NY Ag Statistics). Birds flock to sweet corn fields as it ripens, and they peck at the ears and make them unmarketable. In a 2016-2017 WNY survey, 84% of sweet corn growers reported bird damage. The estimated yield loss ranged from a value of \$102 to \$1,300 lost revenue per acre. On-farm research was conducted by the CCE Cornell Vegetable Program to compare four different control options: chemical control, air-dancers, scare-eye balloons, and detasseling. Each method provided some level of bird control, but varied in effectiveness, price, and ease of use. Propane cannons are another option used by some growers but cannot be deployed when there are neighboring homes nearby.

During the second quarter of 2021, the CCE Cornell Vegetable Program was busy with fabrication and preparations to deploy laser scarecrows into local sweet corn fields. A laser beam has been demonstrated by other researchers to disorient birds, keeping them away from crops. CVP Precision Agriculture Specialist Ali Nafchi constructed five units of his novel design before he departed Cornell in April to take a position elsewhere. CVP Vegetable Specialist, Julie Kikkert took over as project lead and is working with Marion Zuefle from the NYS IPM program and Chuck Bornt from the Eastern NY Commercial Horticulture Program to field-test the devices. In a similar project, Kikkert obtained two kits for the University of Rhode Island designed laser scarecrow and she constructed them and performed initial operational tests. Deployment into local fields will commence in July and August. This research is supported by grants from the New York Farm Viability Institute and the USDA NIFA Multistate Specialty Crop Block Grant Program.

A Cornell Cooperative Extension partnership between Cornell University and CCE Associations in western and central NY counties.

Evaluating Fresh Market Potato Varieties in Two Trial Locations

After a crazy spring of hot, cold, wet, dry conditions, we finally set out a potato trial in two locations. The larger trial, in Genesee County, has 20 varieties planted, while a small organic trail in Monroe County has 10 varieties. We will review the potatoes primarily for qualities desired by customers of farmers markets, CSAs, and restaurants. Unique color, texture, and flavor are the key components under observation, as well as cultural considerations. After harvest, the growers will provide us feedback on how these potato varieties did in the marketplace.



Newly Funded Grants & Projects

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Manipulating Carrot Growth Through Plant Growth Regulators: PHASE 2

NYS Vegetable Research Council/Association (NYSVRC/A), 4/1/2021 – 3/31/2022, \$22,821 (Pethybridge, Kikkert).

Management of Table Beet Growth and Health Through Plant Growth Regulators: PHASE 2 NYS Vegetable Research Council/Association (NYSVRC/A), 4/1/2021 – 3/31/2022, \$22,408 (Pethybridge, Kikkert).

Weed Management in Muck-Grown Onion

NY Onion Research and Development Program (ORDP), 4/1/2021 – 3/31/2022, \$17,901 (Hoepting).

Evaluating Alternatives to Lorsban with Beneficial Nematodes

New York Cabbage and Research Development Program (NY CRDP), 4/1/2021 – 3/31/2022, \$9,500 (Hoepting).

Identifying Alternatives to Chlorpyrifos to Control Maggot Pests in Cabbage and Onion, Two of New York's Most Valuable Vegetable Crops

New York State Farm Viability Program – transferred to NYDAM "Identifying alternatives to chlorpyrifos and neonicotinoids for controlling insect pests in New York's specialty crops", 10/1/2021 – 9/30/2023, \$99,928 (Nault, Hoepting, Gilrein, Zaman).

An Imperative Look at Botrytis Leaf Blight, The Forgotten Leaf Disease of Onion

HATCH Federal Capacity Funds, 10/1/2021 - 9/30/2024, \$81,233 (Hoepting, Hay).

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