

Cornell Cooperative Extension Cornell Vegetable Program



Q2 2023

Quarterly Highlights

The Cornell Vegetable Program (CVP) 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.

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.



Cornell Vegetable Program Specialist Christy Hoepfing shared results from her onion herbicide trial at the Oswego Onion Twilight Meeting in June.

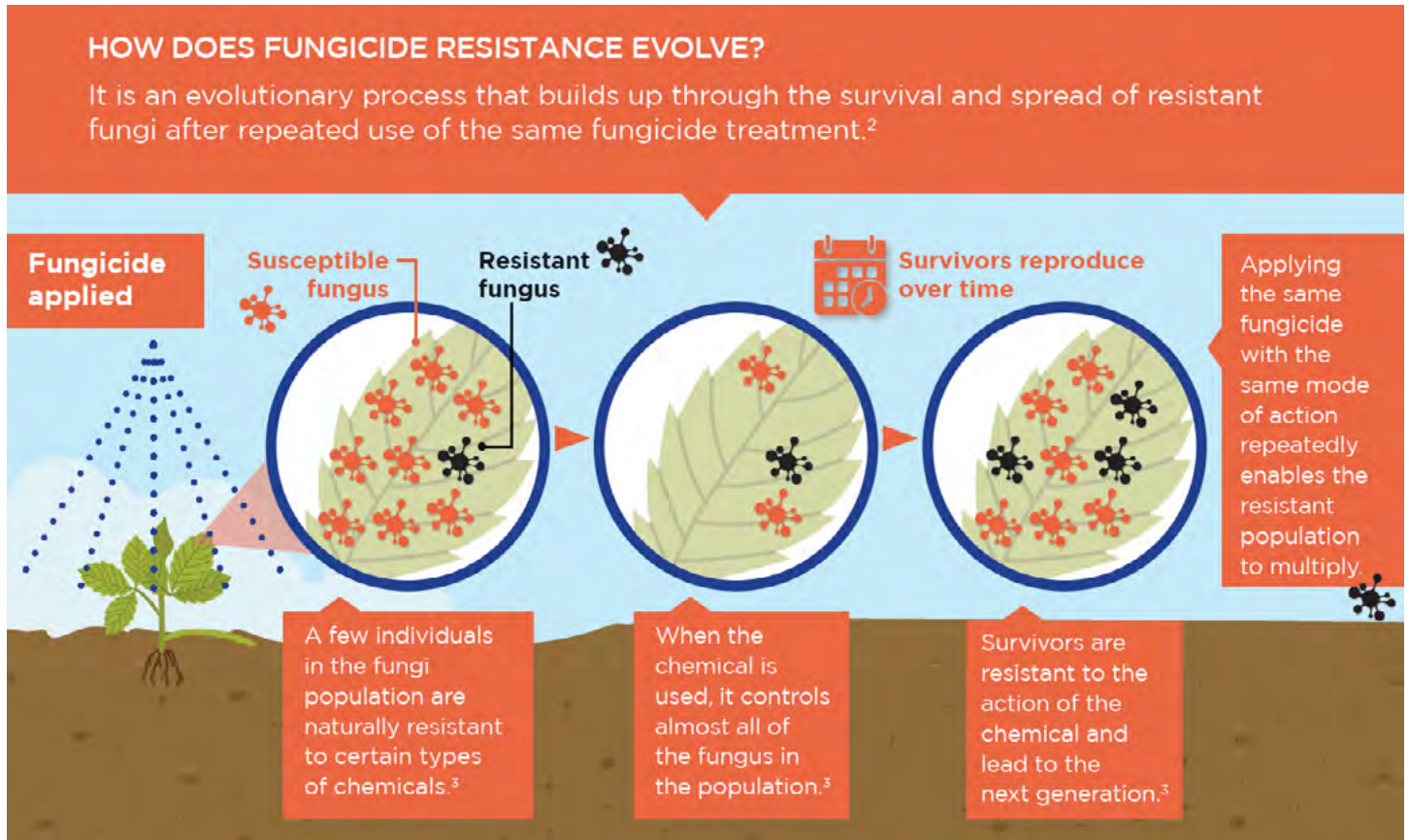
1,555
farm visits and
direct contacts

32
events &
presentations
featuring CVP
Specialists

1,483
people
attended CVP
presentations

The Results are In! Muck Onion Growers Halt Fungicide Resistance with Judicious Use

Over the past decade, *Stemphylium* leaf blight (SLB) of onion has developed fungicide resistance of varying degrees to five different modes of action or [Fungicide Resistance Action Committee \(FRAC\)](#) groups.



Graphic from CropLife International. [Fact Sheet: Fungicide Resistance Management](#), 2017.

Cornell Vegetable Program Onion Specialist, Christy Hoepting worked diligently with muck onion growers to preserve the useful longevity of FRAC 3 fungicides for SLB control. Her research showed that tank mixes with two FRAC 3 fungicides were more effective than just one. In the laboratory, Cornell also found this strategy to be more effective at preventing highly insensitive SLB isolates (i.e. resistant to fungicides) from occurring. The Cornell recommendation was to minimize FRAC 3 fungicide use to only two applications of two FRAC 3 products in a tank mix per season. To encourage the implementation of these strict practices, Hoepting made customized fungicide recommendations for 19 individual muck onion spray programs every week during the spray season. She produced a 2-page [“cheat sheet”](#) as a popular resource to make informed spray decisions, which was accompanied by detailed newsletter articles and trial tours. To monitor FRAC 3 fungicide resistance, the Cornell Vegetable Program collected samples of SLB-infected leaves from each of the 19 muck onion fields in the onion scouting program and submitted them to Cornell for testing.

The FRAC 3 fungicide sensitivity results for the 2022 SLB isolates collected from the onion scouting fields were revealed in June at the Oswego Onion Twilight Meeting. **For the third consecutive year—2020, 2021 and 2022—the proportion of sensitive (i.e. no fungicide resistance) and insensitive (i.e. resistance to fungicide) SLB isolates to three FRAC 3 active ingredients remained relatively unchanged in Elba and Wayne muck onion growing regions, which were in alignment with the growers’ judicious use of FRAC 3 fungicides.** As an example, in 2022 in Elba, 87.5% of eight spray programs used two or fewer FRAC 3 fungicide sprays, of which 75% of them were tank mixes of two FRAC 3 fungicides.

Management Strategies for High Organic Matter Soils

Spring Update

Maple Lane Produce in Penn Yan, NY is an important project partner for a multi-year high tunnel cover crop trial. At this site, Cornell Vegetable Program Specialist Judson Reid and Program Assistant Lori Koenick are exploring the optimal ratio of field peas to triticale and the effect of row cover on increasing cover crop biomass over the winter in a high tunnel.

In this quarter, tomatoes were planted on April 10 and foliar testing began to monitor plant health. Soil samples were taken from 24 plots and submitted to several labs including Cornell Soil Ecologist Jenny Kao-Kniffin's lab and Dairy One Agronomic Services. With these samples, we are assessing denitrification potential, microbial biomass C and N content, soil microbial community composition and function, and plant available nutrient levels, soluble salt levels, soil microbe active respiration, and quality of soil structure.

This project also has an urban component, with cover cropping demonstrations taking place on an urban farm in Buffalo where oats and an oats/hairy vetch mix have been planted. In this quarter, cover crops were incorporated and beds were prepped on April 12. On May 17, pre-plant soil samples were collected and submitted to Dairy One Agronomic Services to assess plant available nutrient levels, soluble salt levels, soil microbe active respiration, and quality of soil structure. Sweet corn and okra were planted in the treated and non-treated plots on May 30. We look forward to sharing the results of these tests!

On April 22, project team members tabled and offered soil pH testing at the Buffalo community Soil Health Day organized by the Greater Buffalo Urban Growers (GBUG). Project team members discussed the importance of soil health and safe growing practices. This event reached over 100 people.



Tomatoes planted in high tunnel cover crop trial in Yates County on 4/10/23.



Six weeks make a big difference! Tomatoes and baskets at our cooperating Yates County site on 5/22/23.



Collecting a bulk density sample at an Urban Farm in Buffalo, NY on 4/28/23.



Taking soil samples at an Erie County Urban Farm on 5/17/23.

Feedback on Bird Control Provides Direction for Research

As part of a multistate research project on the use of laser beams to deter birds in crops, 37 farms from 9 states responded to a survey about bird damage and control on their farm. In 2022, the farms used laser scarecrow units designed by the [University of Rhode Island URI Laser Scarecrow](#). The farms either purchased kits for \$650 each and installed them in their fields or cooperated in research trials by Cornell Cooperative Extension. The CCE Cornell Vegetable Program installed and maintained laser scarecrows in sweet corn fields on 7 WNY farms in 2022. When asked if they were interested in continued use of laser scarecrows on their farm the responses were as follows: 67% definitely yes; 9% probably yes; 12% might or might not; 9% probably not; and 3% definitely not. Additionally, 51% said they would purchase or recommend a fellow grower to purchase a URI laser scarecrow if commercially available. Comments on the lasers ranged from “very effective” and “we had good results with it after terrible bird damage in the past” to “we still received damage in the field...due to the uneven fields the birds flew under the laser” and “didn’t work well enough to justify the cost of the unit and the labor.” Most growers utilized the lasers in combination with other bird deterrents (scare-eye balloons, noise makers, etc.) and consider the lasers as another tool in the toolbox for bird control.

Several suggestions for improvement to the device were made such as a way to better calibrate the laser beam to the edge of the fields, a Bluetooth remote for adjusting the laser angle and speed, a notification for when the units are not operating due to problems, and additional research to inform the placement and aim of the laser within fields. This project funded by the New York Farm Viability Institute and a USDA NIFA Multistate Specialty Crop Block Grant will continue with on farm research and outreach efforts through April 2024.

Increased Monitoring of Western Bean Cutworm in Dry Beans

The western bean cutworm (WBC) is a moth pest to dry beans which causes direct damage to dry bean pods in its larval 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 been monitoring WBC numbers since 2011 in various locations across western NY in order to track changes in WBC pressure and flight times. This year, the CVP is increasing its WBC monitoring from 12 fields in 2022 to 24 fields in 2023, in order to test different trap types, lure types, and field positions to ensure our trapping efforts are most effective for NY farmers. In this project, we will be testing four different traps, three different lures, and three trap placement locations around a field to see which factors might influence the number of moths caught in a field. 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 will help us work with dry bean growers across the region to better understand how heavy WBC pressure is in their region, and more confidently report on WBC pressure so that farmers can make more informed management decisions.



CCE Cornell Vegetable Program Specialist Julie Kikkert next to a URI laser scarecrow in a sweet corn field.

Newly Funded Grants & Projects

Your Trusted Source for Research-Based Knowledge

Weed Management in Muck-Grown Onion

New York Onion Research and Development Program (NY ORDP), 4/1/2023 – 3/31/2024, \$19,787 (Hoepting).

Keeping Our “Fingers on the Pulse” of Insecticide Resistance in Onion Thrips

New York Onion Research and Development Program (NY ORDP), 4/1/2023 – 3/31/2024, \$8,400 (Hoepting).

Assessing and Reducing the Impact of Plant-Parasitic Nematodes on Onion Production in New York

New York Onion Research and Development Program (NY ORDP), 4/1/2023 – 3/31/2024, \$23,103 total (Hay and Hoepting - \$9,180).

Exploring Novel Management Tactics for Onion Maggot, Onion Thrips and IYSV

New York Onion Research and Development Program (NY ORDP), 4/1/2023 – 3/31/2024, \$28,739 total (Nault, Taylor and Hoepting - \$4,238).

Ground Barriers as Pragmatic Management Strategy for Swede Midge in Small Organic Brassica Production: Final Step Before Grower Adoption

Cornell Vegetable Program Challenge Grant, 4/1/2023 – 3/31/2024, \$2,400 (Hoepting and Caldwell).



Fresh Market Specialists Robert Hadad, Elizabeth Buck, and Judson Reid (left). Processing Crops Specialist Julie Kikkert and Dry Bean & Potato Specialist Margie Lund (middle). Cabbage & Onion Specialist Christy Hoepting (right).

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