

# Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program

## 2018 Third Quarter Report

*July– September 2018*

### Challenge Grant Funds Help ENYCHP Purchase and Deploy Laser Scarecrows

*Charles Bornt*

Each year at our grower advisory meetings and during the growing season, growers continually are frustrated with not being able to control birds in their sweet corn and list this as one of their top 5 production issues. While at the 2017 New England Fruit and Vegetable Conference in NH, CCE ENYCHP educator Chuck Bornt learned of a new technology for



*Laser Scarecrow unit deployed in a field of sweet corn in Albany County.*

reducing bird damage in sweet corn called “laser scarecrows” that researchers at the University of Rhode Island were evaluating. These units use a small laser beam, similar to what you would see at a concert or show, attached to a rotating arm. A circuit board and programming chip varies the output of the unit so that birds do not get habituated to it. The birds can see the green laser light on the corn foliage and it creates enough uncertainty on the bird’s part that they will not enter the corn. I contacted Dr. Rebecca Brown who is the lead researcher ***Continued on Next Page***

**1720 total readers**  
currently receive the  
following ENYCHP  
newsletter and e-alerts:

**Weekly Vegetable News**

**Bi-weekly Small Fruit News**

**Monthly Tree Fruit News**

**Grape & Tree Fruit E-alerts**



working on this project and asked if we could also work with them to apply this technology here in the ENY region. She was very happy to assist us but indicated that she did not have the funds to supply us with units and that we would have to purchase them from her. With that, Laura McDermott and I wrote and submitted a Challenge Grant to the members of the ENYCHP AMG for purchasing 5 laser scarecrow units and other necessary supplies for evaluating the use of this technology in reducing bird damage in sweet corn and blueberries. Upon approval of this Challenge Grant, 5 units were purchased and built in the spring of 2018 by ENY technician Natasha Field and myself. Unfortunately, only 4 worked properly and were deployed in a blueberry planting in Ulster County and several plantings of sweet corn in Albany and Orange Counties. Preliminary results indicate that there was a slight reduction in bird damage in blueberries, but erratic laser functioning did not allow us a true picture. The units in



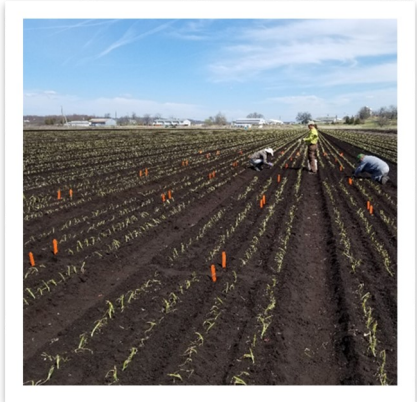
All it takes is a couple of kernels that have been bird pecked to make this ear unmarketable.

Albany and Orange Counties did however appear to reduce bird damage by an average of 70%. The interesting part is that all three growers believe that the laser scarecrows were effective in reducing damage to their crops. However, we all have concerns about the durability of the current laser scarecrow units and have reached out the researchers at URI to help improve the units for 2019. This work has also lead to the co-authoring of a Northeast IPM grant between the CCE ENYCHP and University of Rhode Island for 2019

## Biocontrols Root Dip Evaluation for Muck-Grown Onions

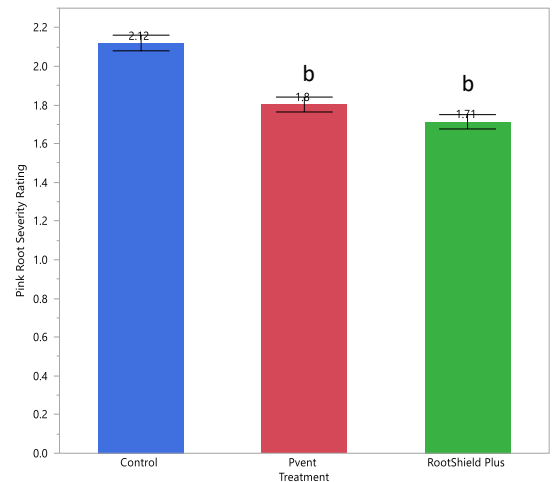
**Ethan Grundberg**

Thanks to a small research grant from the New York State Onion Research and Development Program, Ethan



Grundberg was able to partner with Amara Dunn, Biocontrols Specialist with the New York State Integrated Pest Management Program, to evaluate a number of commercially available biological products on bare root transplanted onions in Orange County. The project developed in response to concerns expressed by onion growers regarding the lack of fungicides that are effective at reducing damage from the soil-borne pathogen *Phoma terrestris*, the causal organism of onion pink root. After conversations with Dr. Mike Thornton, a leading pink root researcher from the University of Idaho, and industry representatives, Grundberg and Dunn selected a group of 12 biofungicides and biostimulants to measure their impacts on onion yield, nutrient uptake, and pink root severity.

Orange County onion grower, Greg Yurchuk, generously agreed to host the trial on his farm in Goshen. Pink root severity was high in the trial plot and provided Grundberg and Dunn an excellent opportunity to evaluate the performance of the 12 biological products. While Grundberg and Dunn did not find any statistically significant difference in yield parameters (bulb weight, bulb size, and root mass) or nutrient uptake across the treatments, they did find two registered biofungicides that were effective at reducing the severity of visible pink root symptoms on onions at harvest. Importantly, these biofungicides proved to be compatible with the other crop protectants being used on Yurchuk’s farm and could be easily incorporated into an integrated pest management approach to reducing yield loss from pink root. The trial also highlights the importance of ENYCHP’s ties to industry as all products and even some laboratory analysis was supported by manufacturers of agricultural biologicals.





## Reduced Tillage in Organic Systems Field Day

**Any Ivy**

On July 31, 71 growers from New York and Vermont came to the Cornell Willsboro Research Farm in Willsboro, NY to see equipment and field demonstrations of a variety of tillage equipment and discuss reduced tillage strategies in vegetable and grain production without herbicides. We broke the attendees into 3 groups and they rotated between 3 demonstration stations in the morning and 3 in the afternoon. These smaller groups allowed for more free-flowing and engaged discussions between the growers and presenters.

Demonstrations included a roller crimper with Jean Paul Courtens of Roxbury Farms and Kitty O'Neil of the North Country Regional Ag Team, a multi-tool cultivator with Bryan Brown of NYS IPM, a zone tiller with Ryan Maher of the Cornell Small Farms Program, and a variety of equipment on display. Discussions were led by John Wallace of Cornell on weed seed bank management, how a farmer transitioned to reduced tillage by Jack Lazor of Butterworks Farm in Vt and Heather Darby, agronomist with UVM, with input from Chuck Bornt on our team and Mike Davis, manager of the Willsboro Research Farm.

The first 50 attendees received a hard copy of our handbook, and the pdf is posted on line for anyone to access at [https://enych.cce.cornell.edu/submission.php?id=600&crumb=soil\\_health|soil\\_health](https://enych.cce.cornell.edu/submission.php?id=600&crumb=soil_health|soil_health) The program was coordinated by Amy Ivy and funded in part by NY Soil Health, Northern NY Agriculture Development Program and the Lake Champlain Basin Program.



## ENYCHP and Harvest New York Collaborate with CUNY and USDA-NRCS

Jim Meyers

This summer, ENYCHP's Viticulture Specialist Jim Meyers collaborated with Dr. Angelo Lampousis, a scientist in the Earth and Atmospheric Sciences department at CUNY and Olga Vargas, a soil scientist at USDA-NRCS to explore the relationships between ground-based soil measurements and aerial Normalized Difference Vegetation Index (NDVI) imagery. The research collaboration between Meyers, Lampousis, and Vargas studied a Hudson Valley vineyard, collecting data with aerial drone, electromagnetic induction sensors, and ground penetrating radar. The initial results of the experiment are being presented at the Society of Exploration – Geophysicists in Anaheim, CA in October (<https://library.seg.org/doi/abs/10.1190/segam2018-2997795.1>).

In addition, Dr. Lampousis organized a geophysics workshop on CUNY's campus for students interested in learning about the science and technologies involved in the collaboration. Sam Anderson and Yolanda Gonzales from Harvest New York, joined the workshop to discuss their work surveying urban farm soils.



## ENYCHP Remains on Front Line of SWD Monitoring and Outreach

**Laura McDermott**

For the last 5 years eastern NY growers have been battling Spotted Wing Drosophila and Cornell Cooperative Extension has provided them with information and support. This year was no different. The team monitored SWD traps in almost every county in the 17 county region. Findings were reported in the bi-weekly Berry newsletter but also through direct text alert, the Cornell SWD blog and on EDD maps. Ongoing research includes structural design of exclusion netting systems, and also using netting to exclude pests from entering high tunnels. Berry specialist Laura McDermott teamed up with Peter Jentsch of the Hudson Valley Lab and used a NYS Berry Growers Assoc. mini grant to demonstrate the use of netting and attract and kill technology in a U-Pick raspberry planting. Three workshops were held throughout the region this quarter including an August workshop work under the direction of NYS IPM fruit specialist Dr. Juliet Carroll. Gardenworks farm in Salem, NY undertook building hummingbird populations in hopes that the birds would feed on SWD. While this trial may take several years before results can be quantified, work that Dr. Carroll is doing shows that hummingbirds do aid in keeping SWD populations manageable.



## Special Permit Training Survey

**Sarah Elone**

Once a year, the Cornell Cooperative Extension’s regional teams host a training program that allows non-certified pesticide applicator to legally apply specific federal restricted use pesticides. This training is very well attended and is a crucial part of NY’s orchard operations. However, due to a change in federal rules, Special Permit Training will not be continued beyond the 2019 season. Participants in our Special Permit Training Program were sent a link to a survey about sprayer operator communication procedures and technologies. Our goal was to collect data that we could use to develop an alternative to the current NYSDEC Special Permit Training Program. Topics include in the survey included: forms of technology used to communicate between supervisors and sprayer operators, how these technologies are used, response time during emergencies and current and future budgets for communications equipment. We received a timely response from the growers we sent links to and are currently analyzing the results.

## Corn Trap Count Reporting

**Sarah Elone**

This growing season, ENYCHP had a network of sweet corn traps at fifteen locations throughout the ENYCHP region. We covered 11 counties and trapped for five different pests. Specialists and technicians checked the traps each week and scouted the crops for signs of pests and pest damage. The traps were set out in May and removed at the end of September. Trap counts were reported in the ENYCHP vegetable newsletter and through the Sweet Corn Pheromone Trap Network Report maintained by Marion Zuefle, NYSIPM. These trap counts give the growers an indication of pest pressure in their area and helped with timing of crop protection sprays.

County	CEW	ECB-Z	ECB-E	FAW	WBC
Albany	1	0	0	0	0
Clinton 1	0	0	0	0	1
Clinton 2	0	0	0	0	1
Columbia	3	0	0	1	0
Dutchess	0	0	0	x	x
Greene	0	0	0	0	0
Montgomery	0	0	0	0	0
Orange	2	0	1	7	2
Rensselaer 1	0	0	0	0	1
Rensselaer 2	0	0	0	0	0
Schoharie	0	4	0	0	1
Ulster 1	12	2	2	x	0
Ulster 2	1	0	2	x	x
Ulster 3	4	0	2	x	0
Washington	0	0	0	0	2



## **DIY Entomopathogenic Nematodes**

**Teresa Rusinek**

ENYCHP Vegetable Specialists Teresa Rusinek and Charles Bornt have been working with Professor Elson Shields and Research Specialist Tony Testa of Cornell University on a multi-year research project at the Hudson Valley Farm Hub to test the efficacy of New York Native EPNs in the suppression of wireworms.

Shield and Testa have been working with NY native entomopathogenic (insect attacking) EPNs (nematodes) for the past 20 years. In addition to researching the efficacy of EPNs for suppression of various soil-dwelling agricultural pests, they have developed an affordable biological control procedure that has been used for on-farm rearing since 2007.

On September 27<sup>th</sup>, the Farm Hub hosted a “Rear Your Own Nematodes” grower twilight meeting attended by 23 growers. Shields, Testa and Rusinek led the discussion and a step by step demonstration on how to grow and



apply EPNs with success. In addition, growers learned the biology of EPNs and the insect pests they prey on. Growers found Shields method appealing as it is a cost effective and longer lasting alternative to currently available commercial EPN products.

## **Helping Eastern New York Apple Growers Avoid Severe Losses from Apple Maggot**

**Mike Basedow**

Apple maggot is a common pest in apple orchards throughout Eastern New York. This small fly punctures the surface of the apple when it lays its egg from Mid-July through September. The egg then hatches, and the maggot tunnels through the flesh of the developing fruit, leaving an unmarketable fruit.

With funding from the Northern New York Ag Development Program, we began monitoring for apple pests, including apple maggot, in late April. We monitored orchards in four counties of Northern New

York, ranging from Chazy in Northern Clinton County, down to Rexford in Southern Saratoga. We began trapping apple maggot in early July this year, which came about a week early for the Champlain Valley. We continued to have very high trap numbers throughout July and August, with trap counts well above treatment thresholds for multiple weeks through early September.

When we began catching apple maggot in our traps, we reported the first catch date for each site in our weekly “e-alert” emails. These timely emails get sent out at least once a week during the growing season, to provide enrolled orchards timely pest management information. Trap catch numbers were presented in easy to read graphs that listed trap numbers from the current week



for each orchard being monitored. Graphs were published on Fridays, along with critical information on the pest life stages, and recommendations for treatment. We also sent text messages to growers cooperating in the study, and provided spray recommendations over the phone to ensure susceptible fruit were covered.

As part of a Northern New York Ag Development Program grant, we also

monitored insect populations underneath hail netting at orchard sites in Clinton and Essex counties, and compared trap counts under the netting with nearby rows left uncovered. Our study suggests hail netting may help deter apple maggot, and may be used as an additional physical control as part of an integrated pest management plan in some orchard situations. Netting may be most suitable for maggot suppression when netting is attached tightly to the lower limbs and trunks of high density trees, which may create a more effective barrier to insects attempting to land on fruit at the periphery of the tree canopy. The results of this study, along with a summary of this season's full scouting observations across Northern New York will be published in the October ENYCHP Tree Fruit News newsletter.



## Local Farm Gets Visit from the United States Secretary of Agriculture

**Charles Bornt**

On August 23, 2018, United States Secretary of Agriculture Sonny Perdue visited several local farms in the Eastern NY region including the farm of Columbia County vegetable grower John and Becky Altobelli. The Secretary of Agriculture was on a listening tour to hear about the major issues that are facing agricultural producers throughout the region, New York and the rest of the country. The major concern for the Altobelli's and many of the other local farms is labor, including access and the increase in minimum wage. The Altobelli's rely on migrant labor and the H2A program that allows them to bring legal, qualified migrant workers onto their farms. However, the H2A program is cumbersome for growers to negotiate and often leads to long delays in getting labor on farms when it is needed the most. Secretary Perdue indicated that his administration is working on a new program that if enacted, will be much easier for growers to navigate, increase flexibility within the program while maintaining the legality of bringing migrant laborers into the United States and New York. While on the tour, CCE educator Chuck Bornt got a chance to educate the Secretary on IPM practices the Altobelli's and

Extension work on together in the form of sweet corn insect traps. Secretary Perdue was very approachable and very interested in what was going on at the Altobelli Farm – most interestingly, he couldn't wait to sample an ear (or two) of sweet corn right off the plant in the field.



Secretary of Agriculture Sonny Perdue (center) in the packinghouse with local vegetable grower John Altobelli (right) and Senator John Faso (left).



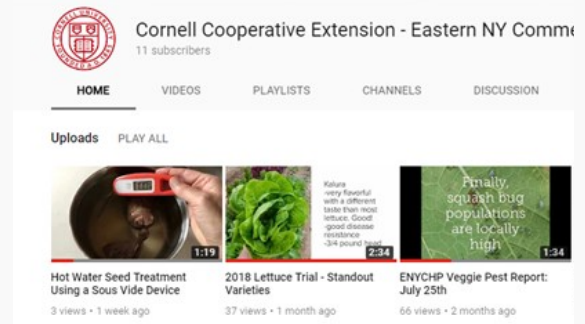
## An Old Disease Found on a New Apple: Blister Spot on Snapdragon.

**Dan Donahue**

A grower stopped by the Hudson Valley Lab back in July with a handful of NY-1 “Snapdragon” apples that were afflicted with numerous pinpoint purple spots. Upon inspection, CCE Tree Fruit Extension Specialist Dan Donahue, HVRL Plant Pathologist Dr. Srdjan Acimovic, and HVRL Entomologist Peter Jentsch all agreed that the damage strongly resembled that caused by the “Blister Spot” pathogen, a bacterium called *Pseudomonas syringae* pv. *Papulans*. Blister Spot is a common, and potentially destructive disease which favors the apple variety ‘Mutsu’, and is also occasionally found infecting ‘Cortland’. The small purple spots become larger in cold storage, resulting in otherwise acceptable fruit being culled into the juice bin, with an 80% loss in value.

Dr. Acimovic and his HVRL associate, Dr. Ricardo Delgado Santander isolated and cultured bacteria in the lab that were sampled from the purple spots. Using modern PCR technology and gene sequencing technology, the bacteria were positively identified as being the known Blister Spot pathogen, *P. Syringae* pv *Palulans* . In the meantime, CCE ENYCHP Tree Fruit Specialist Donahue and technician Sarah Elone evaluated the afflicted grower orchard, determining that 95% of sampled trees had infected apples, an extremely high rate of incidence.

While the field symptoms appeared to be serious, and a potential pathogen had been identified, to be completely certain it’s necessary to establish pathogenicity through the application of a protocol termed “Koch’s Postulates”. To conclusively establish pathogenicity, the isolated pathogen must have the ability to re-infect new host tissue, grow on the new host, and its progeny determined to be pathogenic. The challenge here was that the bacteria can only infect relatively young leaf and fruit tissue (that found in June), and by now it was early August. CCE ENYCHP staff, by virtue of membership in a regional extension team that covered all of Eastern New York, were able to quickly acquire ‘Snapdragon’ samples from NYS trees near the Canadian border, which were the least mature of all available in the state. In addition, CCE ENYCHP staff, having a detailed knowledge of local conditions, was able to collect samples of actively growing ‘Snapdragon’ shoots from an orchard in Northern Columbia County. These shoots were still active because the trees were growing on the more vigorous M.26 rootstock, the only Snapdragon/M.26 planting in the Hudson Valley. As a result, Koch’s Postulates were successfully met in the lab, and Blister Spot was conclusively identified as the pathogen causing the purple spots. Cornell research and extension staff will now work towards establishing a set of management recommendations for NYS growers to follow during the 2019 season.



Recently, ENYCHP has been increasing our efforts to make brief educational videos to provide useful content to growers. These videos allow our team to connect with growers who are increasingly getting information online. Growers can use these videos to obtain quick, easily accessible information from our specialists on a variety of topics. Some of the topics we have covered include a mulch lifter demonstration, a technique for heat treating seeds, results from a lettuce variety trial, a thrips scouting how-to, and reports on pests seen in the field.

ENYCHP’s videos are posted on our YouTube channel ([https://www.youtube.com/channel/UCSk\\_E-ZKqSCLcas49Cnvxkw/featured](https://www.youtube.com/channel/UCSk_E-ZKqSCLcas49Cnvxkw/featured)), allowing growers to access videos at any time. We also post videos on our Facebook page (<https://www.facebook.com/CCEENYCHP/>). We will continue to expand our video content, so stay tuned for future videos!

