Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program

Quarterly Highlights

October-December 2018

Specialists Provide Training and Support to County Educators and Master Gardener Volunteers

Laura McDermott

In 2018, over 200 Master Gardener Volunteers (MGV) were trained with the help of Eastern NY specialists who actively support county associations in this effort. The Cornell Cooperative Extension (CCE) Master Gardener Volunteer (MGV) programs are managed individually by county CCE associations. Volunteer training occurs at different intervals for each county. Counties select volunteers as needed through an application process from their pool of residents of that county. ENYCHP specialists provide portions of the core horticulture training that is the first requirement of the CCE Master Gardener Volunteer commitment.

The mission of the Cornell Cooperative Extension Master Gardener volunteer program is to support Cornell Cooperative Extension by utilizing research-based information to educate the public on best practices in consumer horticulture and environmental stewardship. While the primary stakeholder group for the ENYCH program is commercial farmers, regional specialists are frequently involved in a variety of community outreach activities, and MGV training is just one form of that community outreach.

In addition to training MGV's, specialists were involved in CCE educator training during the 2018 Ag In-service and at local workshops and webinars. These topics ranged from Minor Fruit, to Reclaiming Old Orchards, to BioControl workshops, to Invasive Species. This relationship is helpful to specialists as well because it's often the case that the horticulture educator in the county is fielding questions from new growers or advanced hobbyists and these clients often grow to commercial size with continued assistance.

New Methods for the Pre-Harvest Prediction of Bitter Pit in Honeycrisp

Daniel J. Donahue

Bitter Pit is a physiological disorder of apples due to a localized deficiency of calcium which results in a dark brown spot (or many spots) on the surface of the apple. Since consumers will reject an apple with such a blemish, marketers have a zero tolerance for the defect. Often this disorder is not visible at harvest but will make its appearance during the cold storage period. The financial losses to producers can be significant, reaching many thousands of dollars per acre. To date, researchers have struggled to provide a "cure" for this problem. An alternative, and complementary strategy, is to reduce the financial risk of storage losses to producers by developing and implementing economical pre-harvest bitter pit prediction protocols that growers could use to predict bitter pit in individual orchards.

Just such a protocol has been developed by CCE ENYCHP tree fruit specialists in collaboration with Cornell University faculty, and plans have been put forward for commercial implementation during the 2019 growing season. The Hudson Valley suffers the worst bitter pit of all apple producing regions in NYS. The implementation of this new prediction technology will save our producers many thousands of dollars in cullage of otherwise marketable apples, due to bitter pit.

Determining Fruit Maturity on New Varieties

Michael Basedow

Determining when to harvest fruit can be a difficult task. While fruit growers can use calendar dates as a rough guide, these numbers can vary drastically based on yearly weather patterns, differences in orchard sites, and management strategies. To better determine when fruit in an orchard block should be harvested, growers can test samples of their fruits' sugar levels, starch patterning within the apple, and fruit firmness. These characteristics, along with a few others, are commonly referred to as harvest maturity parameters.

Fruit growers in Northern New York are trialing new apple varieties on their farms. There is currently little information about when these varieties should be harvested in this region. To help growers determine optimal harvest timing for varieties new and old, we collected weekly fruit samples from eight apple varieties over an eleven week period. Fruit were evaluated for the following harvest parameters: color, size, firmness, percent sugar, and starch patterning. The results from these tests were emailed to growers in a weekly email, with further recommendations for picking and storage.

Our reporting was particularly helpful for new varieties. A grower in the Champlain Valley found their NY-1 apples were maturing one to two weeks earlier than the grower originally planned for based on our testing. This was likely caused by a decreased crop load in the orchard, which matured the fruit much sooner than in previous years. Our testing was also used to help growers determine the maturity of Sweet Cheeks, a new variety that ripens very late in the growing season. Our testing helped the grower determine when the fruit should be harvested, which did not occur until the first week of November. In addition to helping the grower plan his harvest of Sweet Cheeks this year, our results will allow the grower to better evaluate the future potential of growing this variety in the Champlain Valley. Growers in the Champlain Valley generally like their latest maturing varieties to ripen by mid-October, since the risk of a frost after that date is much greater. Thankfully, we did not have any major cold events until November this season, but this maturity information will likely influence the future planting of Sweet Cheeks and other new later ripening varieties.

Allium Leafminer: Extension Response to a New Invasive Pest

Teresa Rusinek

Issues/Needs and Audiences: A new invasive insect pest in the Northeast known as the Allium leafminer (ALM), Phytomyza gymnostoma Loew, damages crops in the Allium genus (e.g., onion, garlic, leek, scallions, shallots, and chives) and is considered a major economic threat to Allium growers. Originally from Europe, ALM was first detected in Lancaster County, Pennsylvania in December of 2015 and in New Jersey and New York in 2016. It has since spread throughout much of eastern Pennsylvania, eastern New York (including Broome and Tompkins County), all of New Jersey, Delaware and recently detected in western Massachusetts. There is serious concern that this pest will continue to migrate and threaten other major Allium production areas in the western New York. Onions are one of the most important vegetable crops in New York State with annual sales of approximately $52 million. New York accounts for 97% of the onion production in the North Eastern United States and ranks sixth in the nation.

Approximately 12,000 acres of yellow pungent cooking onions are grown from direct seed, predominantly on muck soils in Orange, Oswego, and Orleans Counties. Garlic production has increased significantly in New York and is now considered to be an important niche crop. In 1992, only 11 acres of garlic were reported in New York, but by 1997 the number grew to 153 acres and by 2007 it again doubled to 306 acres. Garlic is currently estimated to be a $20 million dollar crop. New York is the fifth largest garlic producing state in the country, and ten percent of all New York vegetable farms report growing garlic. Acreage of other alliums such as leeks, shallots, scallions, chives is estimated at 200 acres combined. 3 In addition to large commercial onion farms, there are many small and mid-scale diversified vegetable farms in the Northeast that rely on producing onion, garlic, leeks, scallions and chives at volumes that ensure continuous supply to local customers.

A coordinated ALM monitoring and management program with a multi-pronged outreach program geared to growers of alliums and industry professionals is needed to minimize the economic impact of ALM.

Extension Responses A number of presentations and grower meetings were held in 2018 focused on ALM identification and management. ENYCHP Vegetable Specialists Teresa Rusinek and Ethan Grundberg presented on ALM identification, lifecycle, and management to over 200 growers and industry representatives. Additional digital outreach was conducted through farmer-specific email lists. Email messages alerting growers to the beginning and end of each of the spring and fall flights were sent to over 1000 vegetable growers. Rusinek and Grundberg have taken the lead in collaborating with other researchers involved in ALM studies in the region by provided support to Dr. Brian Nault, Cornell University Department of Entomology, in carrying out conventional insecticide efficacy trials as well as regular communications and research collaboration with Penn State Extension.

Building on Dr. Nault's results based on six sequential weekly applications of insecticide, Grundberg and Rusinek designed a trial to determine if reducing the number of insecticide applications of a particular chemistry to only two, could also reduce damage from ALM in leeks. Seven timing sequences were evaluated. Preliminary results suggest that focusing two sprays of Entrust insecticide over the 3rd and 4th weeks of the ALM flight can provide comparable efficacy to six sequential sprays in reducing damage from ALM. The next step is to refine the insecticide timing trial by testing the use of reflective mulch with a single insecticide application to achieve adequate ALM control without compromising quality and yield.

Collaborators: Dr. Shelby Fleischer, Penn State University Department of Entomology; Dr. Tim Elkner, Penn State Extension; Dr. Brian Nault, Cornell University Department of Entomology.

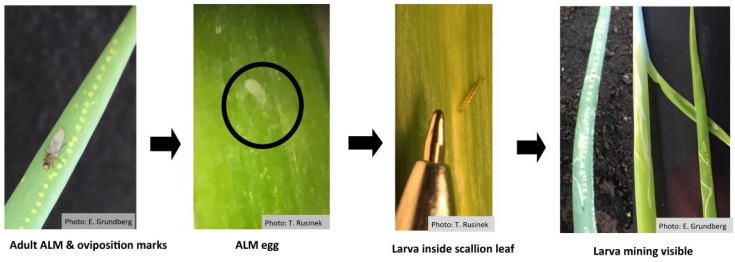
This project was supported in part through; USDA CPPM, NYS Dept. of Ag and Markets and Hudson Valley Farm Hub.

Allium leafminer (ALM) Management Trials

Teresa Rusinek

In addition to monitoring the distribution of this new invasive pest, vegetable production specialists Teresa Rusinek and Ethan Grundberg are studying the use of reflective mulch and timing of insecticide applications on several allium crops. The team aims to develop cost effective integrated methods that provide adequate control of ALM. The project will build on results from work completed in 2018.

VISUAL LIFECYCLE OF ALLIUM LEAFMINER

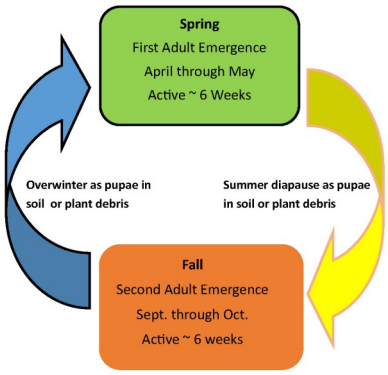


Adult ALM & oviposition marks | ALM egg | Larva inside scallion leaf | Larva mining visible

Larvae within leek tissue | Distortion of onion due to larvae mining | ALM Pupae

ALLIUM LEAFMINER

LIFECYCLE



LOOK-ALIKE DAMAGE

photos by Ethan Grundberg

Fall Weather Makes it Difficult for Potato Variety Trial Harvest!

Chuck Bornt

Members of the CCE ENYCHP rally to harvest the potato variety trial at Berber's Farm, Schoharie County.

2018 proved to be another roller coaster of a season with some wild swings in weather patterns – especially the late summer and fall rains that never seemed to stop. For nearly 15 years now, the CCE ENYCHP has been providing growers with new information on potato varieties by hosting at least one, sometimes 2 variety trials. In 2018 Chuck Bornt planted two variety trials in the region – the first one at Barber's Farm in Middleburg, Schoharie County (conventional site) and the second at Morningstar Farm in Copake, Columbia County (organic site). We continue to work with the Cornell potato breeder Dr. Walter De Jong and the University of Maine breeder Dr. Greg Porter. This year we also started to work with a new NY seed producer, Ralph Child of Childstock Farm in Malone. From these sources this spring, we planted 37 different varieties at each farm. Planting went smoothly and both trials were planted in mid-May under decent conditions.

Just an example of the different specialty potato varieties the program evaluated in 2018. The program also evaluated many other types including traditional red and whites as well as many yellow-fleshed lines.

Our cooperators did a great job of battling Colorado Potato Beetles, Potato Leafhoppers and all the other pests that attack potatoes. The crop was looking great and we suspected that we would have some of our highest yielding potatoes to date. Then, the rains started in late August and continued into September and October. Both of our cooperators struggled getting their own crops out, not just potatoes. Finally on November 26 (a couple days before temperatures dipped into the single digits), we were able to harvest the Schoharie site. Unfortunately, 3 nights of single digit temperatures proved to be too much for our Columbia County site and that potato trial was not harvested.

Alas, the Schoharie trial did prove to be one of our highest yielding trials to date and we harvested nearly 4,000 pounds of potatoes from that trial. The potatoes were stored until we were able to get them graded in early January. Samples were provided to the growers so they could evaluate and make comments on the varieties and extra potatoes that were not needed by the Barber Farm were donated to the Capital Roots Project to be used in a number of soup kitchens throughout the region. Now that they are graded and a majority of the yield and physical appearance data entered, we still have one more observation that needs to be completed which is to cook and taste each one of the 37 varieties that we grew. All of this data will be shared at the root crops session at the Empire State Producers Expo in Syracuse in mid-January and again at the Eastern NY Fruit and Vegetable Conference. We will also provide an article for the programs monthly newsletter the Produce Pages. We will also post a slide show presentation of the potatoes on our website by the end of January.

CCE ENYCHP team members Laura McDermott and Natasha Field assisting with potato grading at Barber's Farm in early January.

Farm Financial Education for Women—Annie's Project

Elizabeth Higgins

From November 2018 to January 2019, Elizabeth Higgins offered a 4-session program (Annie's Project) on farm business management for 16 women in collaboration with CCE Ulster County. Annie's Project – Education for Farm Women is a 501(c)(3) nonprofit organization dedicated to providing educational programs (Annie's Projects) designed to strengthen women's roles in the modern farm enterprise. Currently, classes are being taught in 33 states. Annie's Projects foster problem solving, record keeping, and decision-making skills in farm women. In New York, Higgins is one of about 20 trained facilitators for this program. The program also qualifies participants for USDA-FSA borrower training credits.

ANNIE'S PROJECT
EMPOWERING WOMEN IN AGRICULTURE

The women in the Ulster County session came from 5 counties across the region and represented a variety of commodities. There was a mix of new farms, next-gen farms and farms where a woman was taking an increased role in farm management. The Ulster Annies Project program covered risk management, understanding farm financial records, insurance, accessing credit, business planning, working with lenders, federal agencies and municipalities, zoning and ag assessment and land use assessment. Attendees received over 20 hours of training and also had the opportunity to network with other farms. Farm Credit, USDA FSA and USDA NRCS presented on their programs.

The program finished on January 10th. This program can be offered in other parts of the ENYCH region if there is sufficient demand.

Amy Ivy, Regional Extension Specialist and Long-time Cornell Cooperative Extension Educator, Retires

Laura McDermott

Amy Ivy ended her thirty-one plus year career working for Cornell Cooperative Extension in early January 2019. Amy began her career as a general horticulture educator first in Essex county, then Clinton county was added to her program responsibilities. In that role, she covered Natural Resources, Master Gardener Volunteer coordination and training, commercial ornamental horticulture and, in time, commercial vegetable production. She became the voice of North Country Public Radio gardening with a weekly call-in show that she kept up for her entire CCE tenure. She assumed the executive directorship at CCE in Clinton County for nearly a decade but still did horticulture programming. During this time, the Eastern NY Commercial Horticulture program was created, with critical support from Clinton County CCE thanks to Amy's advocacy. Amy was the regional vegetable specialist and executive director until just a few years ago when she resigned as the ED and assumed full time responsibility for commercial vegetable and berry programming.

Amy Ivy's research and outreach efforts focused on extending the season for commercial vegetable farmers primarily in the realm of high tunnel production and management. She researched vegetable variety performance and production techniques that were appropriate for high tunnel environments. Additionally she focused on insect pest management and was a key investigator for Swede Midge, Leek Moth and Spotted Wing Drosophila – all important and destructive invasive pests. Her work on behalf of Beginning Farmers will continue after her retirement as she plans to teach Beginning Farmer on-line courses for the Cornell Small Farms Program.

The ENYCHP staff and farmers will miss Amy's knowledgeable enthusiasm, but look forward to hearing about her future endeavors.

CCE ENYCHP team members join Amy at her retirement party in Whallonsburg on January 11, 2019.

Cornell Cooperative Extension Eastern NY Commercial Horticulture Program Welcomes Two New Members to the Team

Elisabeth Hodgdon, Vegetable Specialist

I grew up on a small beef farm in rural Vermont, where my interest in agriculture began. My family always had a large vegetable garden, and I grew to appreciate vegetable crops for their biodiversity and culinary possibilities. I went on to study plant science and agricultural economics at McGill University at the Macdonald Campus, where I was interested in learning about how farms can grow their crops sustainably from both an environmental and economic standpoint. I supplemented my college years working on a diversified small fruit and vegetable farm in New Hampshire, where I was able to witness extension in action, inspiring me to pursue a career as an extension specialist. I went on to earn my Masters at the University of New Hampshire, comparing the abilities of various cover crop species for weed suppression in vegetable cropping systems. I also spent time there working as a research assistant for vegetable variety trials, season extension, and high tunnel projects. After earning my Masters, I returned to Vermont to pursue my PhD at the University of Vermont, where I studied ecological pest management and behavior of swede midge, an invasive pest of broccoli. I am excited to join Cornell Cooperative Extension and share what I have learned during my studies, and to continue learning from growers and my peers in extension in New York. My programming areas will include topics in which I have the most experience, such as brassica crops, season extension and high tunnel production, and integrated pest management. As part of my position I will also play a role in food safety programming, an area of increasing importance in vegetable production.

Chelsea Truehart, Administrative Assistant

Agriculture has always been a large part of my life as I grew up in the small, rural town of Hartford, NY. My family has always raised our own beef cows, pigs, and chickens and I was raised with an extreme appreciation for all things ag-related. Working for Cornell Cooperative Extension is a new field for me because I most recently was the Workforce Coordinator and Graphic Designer for the Adirondack Health Institute, a non-profit organization supporting hospitals, physician practices, behavioral health providers, and community-based organizations in a 9-county region in upstate NY. I received my Bachelor of Arts degree in Studio Art and my Master's in the Science of Teaching from SUNY Potsdam. I very much look forward to working with the team and learning all I can about the ENYCHP and its coverage area.

Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program

October—December 2018 Statistics

Phone Consults: 242

E-mail Consults: 196

Farm Visits: 163

Field Meetings: 25

Meeting Attendees: 600

Webinars/Distance Learning: 5

Participants in Distance Learning: 150