

Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program

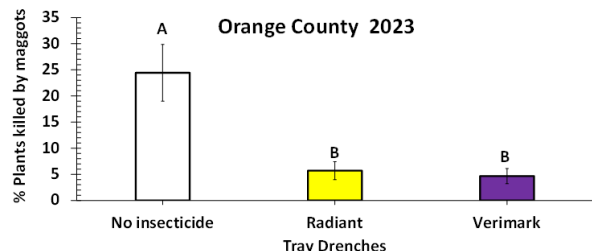
QUARTERLY HIGHLIGHTS

OCTOBER—DECEMBER 2023

Promising Research for Managing Onion and Seedcorn Maggot in Transplanted Onions

Ethan Grundberg, Vegetable Specialist

As part of their ongoing efforts to research effective alternatives to the now-banned insecticide chlorpyrifos for managing maggot pests in onion crops, ENYCHP specialist Ethan Grundberg and Cornell entomologist Dr. Brian Nault collaborated on field trials to evaluate insecticidal transplant tray drenches in 2023. Onions were treated with two different commercially available insecticides, Radiant and Verimark, before being transplanted into one of Brennan Sobiech's commercial fields in Pine Island, Orange County. The plots were inspected weekly for two months to record maggot injury and to remove maggots from infested plants for identification in Dr. Nault's lab.



Efficacy of insecticides applied as a tray drench treatment to transplant trays for protecting onion against maggots in a field in Orange, Co. 2023.

The preliminary results suggest that 1) untreated transplanted onions were subject to unacceptable levels of damage (nearly 25% of the crop affected), 2) both insecticides significantly reduced damage from both seedcorn and onion maggot compared to onions that were not treated with insecticides before planting, and 3) early season damage was caused by seedcorn maggot, while damage caused in late May into June was caused by onion maggot. Grundberg and Dr. Nault will continue to evaluate maggot management tools in 2024 and 2025 with continuing support from a Federal Capacity Fund and new support from a Specialty Crop Block Grant.

Soil Health Workshop Brings Growers Together in Essex County

Elisabeth Hodgdon, Vegetable Specialist

After a challenging growing season, vegetable growers in the North Country gathered at the Whallonsburg Grange in Essex on November 1st for a soil health workshop organized by the Eastern NY Commercial Horticulture Program. Soil health has become an important issue to many producers in recent years. With record rainfall this summer, producers have been interested in soil building practices to mediate extreme weather events. At the soil health workshop, speakers from Cornell University in Ithaca, Cornell Cooperative Extension, and the local organization Compost for Good presented on topics including basic soil health principles, tarping, cover cropping, managing soil in high tunnels, and impacts of climate change on our growing season and soil. In total, 47 vegetable producers, agricultural service providers, students, and speakers attended the workshop. Funding for the workshop was provided by a Northern NY Agricultural Development Program grant awarded to Elisabeth Hodgdon and a New York Farm Viability Grant awarded to Crystal Stewart-Courstens.



Second Year Evaluation of High Tunnel Spinach Tipburn

Teresa Rusinek, Vegetable Specialist

Leafy greens such as spinach can be prone to tipburn during winter production in high tunnels. Tipburn is often caused by inadequate transport of calcium to growing plant tissue at leaf margins. Affected tissue collapses and eventually becomes necrotic or “burned” looking. Vegetable specialists Teresa Rusinek and Ethan Grundberg have designed on farm trials located in the Hudson Valley, to test several management strategies that can reduce tip burn on spinach. The 2023 trial evaluated the potential impact of foliar Ca applications on tip burn severity. Since the foliar Ca applications did not have a significant effect on tip burn in the trial, the 2024 research focuses on two other approaches to increasing Ca availability and uptake: 1) increasing soil available Ca by amending treatment plots with gypsum pre-plant, and 2) maintaining higher soil moisture levels based on an established threshold measured with a tensiometer, to ensure that the Ca in the soil is soluble and available for plant uptake.



Bitter Pit Prediction Allows ENY Honeycrisp Growers to Store Fruit Confidently

Mike Basedow, Tree Fruit Specialist



Bitter pit is a calcium related disorder that can significantly decrease the value of Honeycrisp fruit that are stored in long-term storage. Fruit will look clean when picked, but can come out of storage with upwards of 20% bitter pit incidence, greatly reducing the value of the fruit. A team of researchers, including ENYCHP specialist Mike Basedow, is currently participating in a statewide ARDP project to predict bitter pit incidence for storage operators so growers can make more informed storage decisions.

Back in July, 30 fruit samples were collected from 30 Champlain Valley orchard blocks to assess the mineral nutrient ratios from the Honeycrisp peel sap. Earlier studies have shown the K/Ca and N/Ca ratio in the peel sap provide a rough predictor of a blocks risk of bitter pit later in the season. In addition, 100 apple samples were pulled from these blocks in late August to be used in the passive bitter pit prediction model, which can also provide a good approximation of bitter pit likelihood after storage. Growers were sent these predictions during commercial Honeycrisp harvest, so that they could adjust their storage plans accordingly. Luckily, both methods suggested the majority of blocks in the Champlain Valley were at low risk of bitter pit development, allowing growers to store their fruit long term.

Finally, 100 fruit were collected from each block during commercial harvest, and were subsequently stored for 90 days at a commercial storage in Peru. Fruit were assessed in late December for bitter pit incidence after storage. Our results showed a strong relation between both peel sap nutrient ratios and the passive prediction method with the amount of bitter pit after storage.

We plan to continue this work for another two seasons, which will allow us time to find a commercial lab to offer the peel sap service, and to continue helping growers conduct and interpret the passive method.

Continuing the Search for the Perfect Sweet Potato!

Chuck Bornt, Vegetable Specialist

Since 2010, CCE ENYCHP Vegetable Specialist Chuck Bornt has been evaluating and researching sweet potatoes in eastern NY. Since then, the acreage and number of sweet potatoes being grown in the region has increased significantly and he continues to work with this crop to bring more improvements to root quality by variety testing and cultural practices. In 2023, the CCE ENYCHP evaluated 13 varieties, including two all purple varieties that show the most promise in this category since first seeing purple sweet potatoes in 2015. Research is also continuing answering the question of whether growing sweet potatoes on black plastic mulch improves root quality and total marketable yields. All 13 varieties being evaluated were produced on plastic mulch and bare ground raised ridges to see how this effects their production. 2023 marked the second year of this research sponsored by the Hudson Valley Farm Hub. Roots from the 2023 season are currently in storage and will be evaluated for quality and overall marketable yield in January of 2024 and results of the research trials will be shared with eastern NY growers in February and March .



Assisting Commercial Orchardists and USDA Farm Service Agency Staff with the Implementation of the Federal Tree Assistance Program (TAP)

Dan Donahue, Tree Fruit Specialist

The United States Department of Agriculture Farm Service Agency administers a tree-loss financial reimbursement program called “Tree Assistance Program” or TAP for short. The objective of this program is to provide financial assistance to producers who have lost trees entirely, or lost production from trees that have been damaged by severe weather events. With assistance from CCE-ENYCHP specialists, the TAP program was expanded in 2015 to include losses due to weather-related Fire Blight disease outbreaks. A challenge when assessing the full economic consequences of tree damage in a perennial orchard system is defining the “economic mortality” of a damaged tree in contrast to the obvious mortality of a tree snapped-off at the base due to a severe windstorm.

The small trees planted in modern high-density orchard systems utilize size-controlling rootstocks such as the M.9 or more recent Cornell-Geneva series two assist in maintaining mature tree height below 11’ and allow for tree spacings as close as 3’ X 11’ (1,320 trees/acre). The small trees possess graft unions that are easily damaged, and root systems which are shallow and brittle, all are factors that will greatly reduce tree productivity and survival after being even partially tipped over in a severe windstorm. Furthermore, the trellis systems necessary to support these fragile trees can also experience damage. Trellis support systems are engineered to be at maximum load bearing capacity when all posts are vertical. An apple trellis in a high-density orchard that is tipped to one side even 5 degrees is now out-of-column with a substantial horizontal force vector that the system was not designed for. A full apple crop can exceed 21 tons per acre with substantial weight distributed 11’ or more above the orchard floor, resulting in severe stress on the system.

Furthermore, even if attached to a trellis system, trees can be displaced following high winds, and tilted in-line with the row. Such displacement damages the graft union and root system resulting in reduced productivity and even tree mortality in subsequent years. Just such a localized windstorm was experienced by a Hudson Valley apple producer during the summer of 2023. Tree damage in selected high density orchard blocks on this farm was severe, but not always expressed as acute tree mortality. A majority of the damaged trees remained technically “alive”, but were effectively rendered economically useless due to the horticultural realities explained earlier. The local USDA FSA office based in Millbrook, Dutchess County, requested the assistance of the Hudson Valley CCE-ENYCHP Regional Extension Specialist to better define the losses by providing a horticultural rationale to support the inclusion of damaged trees in the loss assessment. CCE-ENYCHP staff met with the USDA FSA NYS Specialist out of Syracuse, toured the afflicted farm, and made the argument for an expanded definition of “economic mortality” in cases such as this. As a result, the producer was able to qualify for additional financial support from the TAP program and was pleased with the settlement received. As an additional consequence of this local effort, an apple producer in Western New York who experienced a similar loss contacted CCE-ENYCHP regional staff requesting horticultural support. Since the NYS FSA office in Syracuse had already been involved in this type of claim, our extension success in the Hudson Valley led to a positive statewide impact which will be carried on into the future.

SAVE THE DATE

2024 ENYCHP Winter Conference

Wednesday February 21, 2024 and Thursday February 22, 2024

The Desmond Hotel and Conference Center, Albany NY

Session Topics:

**- Tree Fruit - Agritourism - Berries and Small Fruit - Grapes and Viticulture -
Vegetables - Cut Flower -**

Register today for two days packed with research updates, pesticide recertification credits, trade show, and more!

<https://bit.ly/2024-eny-winter-conference>

October—December 2023

161 Phone Consults

171 E-mail Consults

129 Farm Visits

22 Field Meetings

471 Field Meeting Attendees

5 Webinars/Distance Learning

143 Distance Learning Participants

15 Tree Fruit E-Alert reports were delivered to **734** growers, including **4** maturity reports and **9** grower alerts



The Eastern NY Commercial Horticulture Program is a Cornell Cooperative Extension partnership between Cornell University and the CCE associations in Albany, Clinton, Columbia, Dutchess, Essex, Fulton, Greene, Orange, Montgomery, Putnam, Rensselaer, Saratoga, Schoharie, Ulster, Warren, & Washington.

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