



Cornell Cooperative Extension Lake Ontario Fruit Program Quarterly Report October - December 2022

*A partnership between
Cornell University and the
CCE Associations in these
five counties:*

**Monroe, Niagara, Orleans,
Oswego & Wayne**

Overview: As mid fall arrives, the peak of apple harvest in early October transitions into meeting season and project wrap-up as fall turns into winter. The overall weather patterns for the last 4-6 weeks of harvest were characterized by cooler than average temperatures and cloudier than normal weather. In addition, rainfall amounts in all five LOF partner counties from Oct 15 - Nov 15 were 50-100% greater than average. These late rains did help fruit size that had suffered from droughty conditions during the summer. Thus, overall fruit size was good, but conditions were not ideal for fruit coloring in late season varieties. This was in contrast to fruit coloring for the first $\frac{3}{4}$ of harvest, when conditions were ideal for developing full fruit color. In fact, many growers commented that this was the best overall fruit coloring season in over a decade.

November began with the return to the of live meetings again! Craig and Janet attended the Annual Great Lakes Fruit Workers Conference at Michigan State University. The was the first live GLFW meeting in 3 years. Janet gave a presentation, as did Craig and Mario (remotely). Janet and Craig attended sessions at the CCE Agriculture, Food, and Environmental Systems In-service. Janet organized and chaired several sessions. In mid-December, we held our first advisory committee meeting live in 3 years. Grower and industry participation was strong, and it spurred several session ideas for our upcoming winter programs. In addition, some great suggestions were made regarding deeper programming reporting and feedback. Finally, all LOF specialists attended the Apple Research & Development Program (ARDP) project reporting sessions. In addition, the RFP for ARDP 2023 was released and all grants were submitted by the deadline of December 8. All specialists were cooperators in several proposals each, while Janet was also a co-PI on a continuation proposal with Mike Basedow (CCE-ENYCHP) on pre-emergent herbicide applications.



Four specialists pose for a picture at the Great Lakes Fruit Workers meeting at East Lansing, MI on Nov. 8. L to R: Mike Basedow (CCE-ENYCHP), Craig Kahlke, Janet van Zoeren (both of CCE-LOF), and the hired Fruit IPM Coordinator for Cornell, Anna Wallis, who starts Mar. 1.



Liz and Craig finishing loading a rental truck with nearly 200 sample bags of Honeycrisp and Gala destined for Cornell Agritech for postharvest evaluation.

By the Numbers:

Team Publications:	Editions:	Articles:
Fruit Notes	2	25
Email Blasts	8	N/A
Fruit Facts	none	N/A



Selected Publications by LOF Team	Periodical	Author
<i>"Fall maintenance and tips for your apple orchard"</i>	Fruit Notes, Vol. 22, Issue 15	Miranda Sazo
<i>"A few lessons learned after attending the biggest European fruit congress and trade show in apples"</i>	Fruit Notes, Vol. 22, Issue 16	Miranda Sazo
<i>"Western NY Fruit Conference February 27-28, 2023 - A LIVE 1 ½ Day Conference in Rochester, NY"</i>	Fruit Notes, Vol. 22, Issue 16	Kahlke

Selected Presentations by LOF Team	Periodical/Meeting:	Presenter:
<i>"Pre-emergent herbicide timing: efficacy and tree health impacts"</i>	Great Lakes Fruit Workers meeting (50 attendees, East Lansing MI, Nov 9).	van Zoeren & Basedow
<i>"Pre-emergent herbicide timing and trunk guards: efficacy and tree health impacts"</i>	Cumberland Shenandoah Fruit Workers meeting (30 attendees, Winchester VA, Dec 1).	van Zoeren
<i>"The Practical Use of the Peel Sap and Passive Models for Bitter Pit Prediction in 'Honeycrisp' in Western NY"</i>	Great Lakes Fruit Workers meeting (50 attendees, East Lansing MI, Nov 9).	Kahlke & Miranda Sazo
Planned/conducted/introduced Cornell Geneva® rootstock workshop and Cornell speakers	Interpoma (~100 attendees, Bolzano, Italy, Nov. 18).	Miranda Sazo



Peter Ferguson (pictured at right) introduced a very innovative and efficient Robotic picking system at Interpoma this year. He also shared a R&D cycle for virtual emulation computerized simulation or virtual reality) that facilitates continued development of his technology during offseason.

Business Consultation

Specialist	Site Visit	~ Phone/Texts/Emails
Kahlke	2	20
Miranda Sazo	8	55
van Zoeren	4	36



Team Lunch in October to say farewell to our temporary technician, Jennifer Duerden. Jenn did a great job for us in the 4 ½ months she was with us.

Research

Activity/Proposal/Grant	Person(s)	Funded (Y/N) or Unfunded/ Preliminary Research (UPR)
<i>"Statewide effort to manage crop load, nutrient status, and bitter pit of Honeycrisp"</i>	Kahlke & Miranda Sazo	Yes-ARDP (Robinson, PI)
<i>"Precision Orchard Management of Apple"</i>	Kahlke & Miranda Sazo	Yes-SCRI & ARDP (Robinson, PI)
<i>"Optimizing Herbicide Strategies for Weed Control"</i>	van Zoeren	Yes-ARDP (van Zoeren & Basedow, CO-PIs)
<i>"Assessing the significance of brown marmorated stink bug damage to New York apple production"</i>	van Zoeren	Yes-ARDP (van Zoeren, PI)
<i>"Precision Orchard Management- Improved Color on Premier Honeycrisp"</i>	Kahlke	Yes-ARDP (Robinson, PI)

Selected Professional Development and Training

Activity	Team Member(s)	Comments:
ARDP Project Reporting on Dec 19	Kahlke, Miranda Sazo, van Zoeren,	Heard PI presentations of projects we're involved in and others of interest. Janet co-presented her project with Mike Basedow.
CCE Agriculture, Food, and Environmental Systems In-Service, Nov 14 - Nov 16	van Zoeren, Kahlke	Several sessions, Janet organized several.
Northeast Tree Fruit IPM working group meeting (Fairlee, VT, Oct 24-26).	van Zoeren	
Great Lakes Fruit Workers meeting (East Lansing, MI, Nov 9-10).	van Zoeren & Kahlke	

Fruit Quality Management – Craig J. Kahlke

Educational Programs/Presentations

- Harvest Maturity Program (continued from 3rd quarter)
 - With Liz, sampled orchards and picked up grower and crop consultant samples on Mondays, and tested them in the maturity lab at Orleans County CCE
 - With Liz, tested Wayne County samples (growers and crop consultants collected) at K.M. Davies on Tuesdays.
 - Send data to industry reps on Tuesday evenings, had conference call on Wednesday mornings
 - Put out most maturity reports Wednesdays
 - 4 Harvest Maturity Reports were sent out in October
 - 2 Crunch Time Apple Growers Harvest Maturity Bulletin was sent out in October (for NY2 -RubyFrost™)
 - 3 Midwest Apple Improvement Association electronic maturity reports were sent out in October for MAIA-1 (Evercrisp™) and MAIA-L (Ludacrisp™)
 - 2 Regal 10-45 (Wild Twist™) electronic maturity reports were sent out in October
- Co-Presented *“The Practical Use of the Peel Sap and Passive Models for Bitter Pit Prediction in ‘Honeycrisp’ in Western NY”* at the Great Lakes Fruit Workers Meeting in East Lansing, MI on Nov. 9.
- *Grant Submission(s), Re-Submission(s), Letter(s) of Support, Proposal Meeting(s):*
 - In October & November, held several planning meetings with the rest of the team along with key Cornell faculty to prepare for our ARDP proposals submissions due Dec. 8.
 - Was a cooperator on 5 submitted proposals.
- Co-organized Precision Apple Crop Load Management (PACMAN) Show & Tell webinars for January with Mario, and cooperators from WSU, MSU, and UMass.

Program Planning

- Winter Conference Planning – Western NY Fruit Conference, Hosted by CCE-LOF
 - It was unanimously decided that LOF would pursue its own, first of its kind, multi-day fruit conference in Western NY. A date was set for February 27 & 28th, 2023.
 - Planning continued with multiple Zoom and in-person Team Meetings to divvy up sessions/topics, and speaker suggestions.
 - Additional session ideas were generated from the advisory meeting on Dec. 16
 - Craig toured two conference center/hotel facilities and got quotes.
 - It was decided in early January that the RIT Inn & Conference Center in Henrietta would be the host.
 - Advertising began prior to the holiday break.
- Winter Conference Planning – Virtual Statewide Apple Conference, co-hosted by CCE-LOF & CCE-ENYCHP

- It was decided by both teams (along with industry support) that a day statewide webinar focusing on topics common to most apple-production regions of the state would be beneficial. A date was set for March 3.
- Planning began with multiple Zoom Meetings to divvy up sessions/topics, and speaker suggestions.
- Additional session ideas were generated from the advisory meeting on Dec. 16

Publications

Fruit Notes

- Articles Written: 1 Fruit Notes newsletter
- Sorted through numerous announcements about workshops/conferences/meetings/surveys and along with the pertinent on-line registration links, and sent them to Janet to put them in the newsletter.

Email Blasts

- Sorted through numerous announcements about workshops/conferences/meetings/surveys and along with the pertinent on-line registration links, put them in the email blasts.
- Sent out XXX email blasts in the quarter

Applied Research

- ARDP Project *“A Statewide Effort to Manage Crop Load, Nutrient Status and Bitter Pit of Honeycrisp”* (Robinson PI)
 - Traveled to Lake Ontario Fruit, Inc. on December 1 to help conduct bitter pit evaluations from research blocks with Mario.
- ARDP Project *“Precision Orchard Management” - Improved Color on Premier Honeycrisp*
 - Removed reflective fabric from all plots on Nov. 7.
 - Transported all 150 Honeycrisp samples from Dobbins to AgriTech on Dec. 20-21.
 - Ran fruit on Greefa™ line at AgriTech for size and color.
 - Performed external and internal defects evaluations
 - Entered data and shared on Box with the rest of the project cooperators
- ARDP Project *“Precision Orchard Management” – Precision Irrigation*
 - Transported all 42 Gala samples from Sun Orchard Fruit Co. to AgriTech on Dec. 20-21.
 - Ran fruit on Greefa™ line at AgriTech for size and color.
 - Entered data and shared on Box with the rest of the project cooperators
- SCRI Project *“Precision Orchard Management in Apple” – Pruning Severity & Crop Load on Honeycrisp*
 - Transported all 42 Gala samples from Lake Ontario Fruit Inc.. to AgriTech on Dec. 20-21.
 - Ran fruit on Greefa™ line at AgriTech for size and color.
 - Performed external and internal defects evaluations
 - Entered data and shared on Box with the rest of the project cooperators

Faculty/Industry Collaborations

- Mott’s/KDP Initiative

- Planned a 2-day GAPs and Farm Food Safety Plan-Writing Workshop targeted at Mott's growers on Feb 2-3, 2023.

Team and Other Duties

- Team Leader Administrative Duties
 - Approved invoices and vouchers as needed.
 - Reviewed budget and monthly financials.
 - Approved timesheets/vacation/sick leave hours for team members as needed.
 - With Craig Trowbridge, started the process for advertising the position, screening applicants, and putting together a search committee for the Business Mgmt Specialist position with CCE-LOF.
 - The first round of applicants only yielded one marginally qualified candidate
 - The second round of applicants yielded several qualified candidates. As of this writing, there are 2 finalists to be interviewed in-person on Feb. 17.
 - Disseminated pertinent info to rest of team as needed from:
 - Monthly Team Leader Zoom™ on Oct. 20 and Dec. 15
 - Group and other email lists
- Organized and led a team meeting CCE-Monroe on Oct. 7
- Organized and led weekly team (Zoom™) meetings on Nov. 30, Dec. 7, and Dec. 15
- Submitted July-September 2022 quarterly report.
- Reviewed specialist's PowerPoint™ presentations prior to the Dec. 16 annual advisory meeting.
- Attended the Produce Safety Alliance's Executive & Steering Committee Quarterly Zoom on Oct. 26.
- Attended the CCE-Niagara/Niagara County Annual Meeting on Oct. 19.
- Attended the CCE-Orleans County Annual Meeting & Dinner on Dec. 6.
- Attended WNY AMG on Oct. 14. Gave team update.
- Completed CCE Annual Program Reporting by late November.
 - Collaborated with other LOF specialists to divide up workload.
 - Signed off on all LOF program reporting.

Professional Development

- Attended the Great Lakes Fruit Workers Meeting on Nov. 6-8 in East Lansing, MI.
- Attended multiple sessions at the CCE Agriculture, Food, and Environmental Systems In-Service on campus, Nov 14 - Nov 16
 - Dealing with Difficult Situations workshop by Marcus Brooks
 - Tree Fruit PWT co-chaired by Janet and Jason Londo
 - Statistics co-chaired by Janet & Mike Basedow
 - Climate change modeling using NEWA by Dan Olmstead
- Attended ARDP Project Reporting at AgriTech on Dec 19
 - Heard PI presentations of projects I'm involved in and others of interest

Stakeholder Contacts

- 2 site visits to assist packinghouses (Niagara, Orleans).
- Assisted ~20 stakeholders via texts (~5), phone (~10), and email (~5).

Horticulture – Mario Miranda Sazo

Educational Programs/Presentations

2022 Interpoma (Bolzano, Italy), International Collaboration for the Research & Development & Adoption of Cornell Geneva® Rootstocks in Europe – Nov. 18

- This was a collaboration between Cornell U., CCE LOF, and Agromillora, Spain, for the planning and delivery of an intensive 4-hours workshop that covered propagation, tree nursery production, and commercialization aspects of Geneva® rootstocks in Europe to more than one hundred European nurserymen, fruit growers, and industry representatives. In the last years, Geneva® apple rootstocks have been introduced in Europe by the European Fruit Tree Rootstocks (EFTR), a French limited liability company equally held by four nurseries. Today, Agromillora is developing the Geneva® series, through the “micro-propagation” technique to supply both rootstocks and micro-grafted plant nurseries in the European market.

Presentations Given – Conference Presenter/Organizer:

- Planned/conducted/introduced Cornell Geneva® rootstock workshop and Cornell speakers at Interpoma – Nov. 18
- “Horticulture Review” – presented at the CCE LOF Advisory on Monday Dec. 19, 2022.

Other Presentations Given – Invited Presentations:

- “The importance of Spanish orchard employees for the WNY Fruit Industry.” Presentation given to a Multicultural Human Resource Management in Ag class at SUNY Cobleskill on Wednesday October 5, 2022.
- “Applications and Barriers to Adoption when Trialing the Use of Ag-technologies in Tree Fruit Perennial Systems.” Presentation and roundtable discussion presented at the ‘2022 CIDA Symposium - Development, translation, and adoption of digital agriculture in NYS and beyond’ on Thursday October 6, 2022.
- “Current Advances in NY Fruit Production.” Presentation given to a Fruit Science class at SUNY Cobleskill on Monday Nov. 7, 2022.

Publications

Fruit Notes

CCE LOF Fruit Notes newsletter: Wrote/modified/summarized/requested articles including:

- “Fall maintenance and tips for your apple orchard” (M. Miranda Sazo), pages 1-3, Vol. 22, Issue 15, Nov. 3, 2022.
- “A few lessons learned after attending the biggest European fruit congress and trade show in apples” (M. Miranda Sazo), pages 3-5, Vol. 22, Issue 16, Dec. 22, 2022.

CCE LOF YouTube Videos – Other social media efforts and collaborations

- This Q4 we produced educational video content at the Interpoma Cornell Geneva® rootstock workshop with Agromillora, Spain. The videos have not been yet posted in our CCE LOF YouTube channel.

Applied Research Projects/Collaborations

Statewide effort to manage crop load, nutrient status, and bitter pit of Honeycrisp (ARDP/Robinson)

- Conducted/submitted BP evaluations data to L. Cheng
- Planned/organized a Honeycrisp/peel sap zoom with WNY industry on Dec.1

Course: 'Futuro Financiero' (NYS Agriculture and Markets, Yes! Apples, Rangarajan, Miranda Sazo, Waters)

- This course is an improved version of the Master Class training offered through the project titled *"Labor readiness: Pathways for farmworkers to start up and advanced beginners to scale up new farm business"*
 - Initiated the idea of how/to whom we should provide travel funds for Latinos' professional development during the winter months of 2023

Ph.D. related course/research work in Ithaca campus (SCRI and ARDP/Cheng and Miranda Sazo)

- Registered PLSCI 9900 Ph.D. Dissertation research
- Started dry matter accumulation graphics for Grad Review in January 2023

SCRI – POM project (T. Robinson)

- Attended SCRI PACMAN planning meetings for January virtual meetups
- Plan/conducted Farm Vision yield estimations with E. Tee for Fuji and Evercrisp in late October/early November

Team and Other Duties

- Attended LOF team meetings and conference calls as needed
- Attended zoom meetings as needed for the planning of:
 - 2022 Cornell Geneva® rootstocks in Europe
 - WNY Fruit Conference (Feb. 27-28) and Statewide Fruit Conference (March 3)
 - CALS Moonshot
 - Cornell soil health initiative in tree fruit perennial systems - ongoing
 - SCRI POM project
- Met with Basedow and Londo via zooms for the submission of a NESARE full proposal
- Met with Y. Jiang and M. Weigert (in person/via zooms) for the planning of Cornell DATA initiative, Smith Lever/ARDP proposals
- Met with Robinson, Jiang, Cheng, Kahlke for the submission/syncing of multiple ARDP proposals (budget request strategies)
- Met with A. Wallis, B. Sallato, D. Weber, and K. Grigg-McGuffin, for the planning of virtual meetup series in June/July 2023
- Met with Londo and a company representative of CID Bio-Science (California) for Beta-testing of an apple root scanner (ongoing effort to include more Cornell scientists)
- Reported fleet mileage as needed during this quarter, changed oil, etc.
- Authored/submitted two articles to LOF newsletter editor
- Attended CALS Extension Town Hall – Oct. 13
- Represented LOF/displayed poster at the CCE Wayne annual meeting – Oct. 7
- Submitted July-Sept. 2022 quarterly report
- Continued working closely with Basedow, van Zoeren, Aller, and more recently, with K. Wickings, D. Obregon, J. Petzoldt, and J. Mallon for the SH initiative in tree fruits
- Communicated and strategically worked with Cornell Small Farm Program (N. Waters and M. Alvarado), proposed travel fund support to qualified WNY Spanish orchard managers
- Continued partnering strategically with Alejandro Calixto (Director NYSIPM)

Professional Development

- Attended INTERPOMA Conference, Italy – Nov. 16-18

Stakeholder Contacts

- Assisted 8 growers via farm visits (4 Wayne, 4 Orleans), 15 emails, 20 phone communications, 20 texts (pics, videos, voice messages, etc.).

Ph.D. Related Course/Research Work in Ithaca (Cheng)

- Analyzed/summarized data for ARDP progress report in December.

Grant Submissions, Re-Submissions, Letters of Support, Proposal Meetings

- Collaborated with Mike Basedow (main PI) and Jason Londo for the submission of one full proposal titled “Determining if Beneficial Fungi Increase Tree Growth and Reduce the Need for Fertilization and Irrigation of Newly Planted Apple Trees,” which was submitted to 2023 Northeast SARE Research for Novel Approaches
- Provided initial framework/ideas/collaborated with Jocelyn Ross (main PI) for the submission of a CALS Moonshot proposal titled ‘Strategic Wild Card Moonshot: “*CALS Alive!*”’
- Collaborated with Robinson, Cheng, Jiang, Londo, and Kahlke for the submission of several ARDP proposals

Integrated Pest Management – Janet van Zoeren

Educational Programs/Presentations

- Co-presented talk with Mike Basedow “Preemergent Herbicide Timings: Year 2 Updates” at Northeast Tree Fruit IPM working group meeting (45 attendees, Fairlee VT, Oct 25).
- Co-presented talk with Mike Basedow “Pre-emergent herbicide timing: efficacy and tree health impacts” at Great Lakes Fruit Workers meeting (50 attendees, Lansing MI, Nov 9).
- “Pre-emergent herbicide timing and trunk guards: efficacy and tree health impacts” at Cumberland Shenandoah Fruit Workers meeting (30 attendees, Winchester VA, Dec 1).

Applied Research Projects/Collaborations

- ARDP funded Project “*Optimizing Herbicide Strategies for Weed Control*” (PI-Mike Basedow)
 - Weed assessments (Oct 14)
 - Tree health, canker presence and size, and tree growth measurements (Oct 14)
- ARDP funded Project “Assessing the significance of brown marmorated stink bug damage to New York apple production” (PI-van Zoeren)
 - Weekly trap monitoring in Wayne county (Oct)

- At harvest damage assessment – Wayne county (Oct 24)
 - After storage damage assessments – Oswego county (Oct 17), Ontario county (Oct 20), Niagara county (Oct 27), Wayne county (Dec 1)
 - Comprehensive photos of damage from caged study (Oct 20)
- USDA NIFA funded Project “*Root Traits and Rapid Apple Decline in High-Density Orchards*” (PI-Khan)
 - Meet as part of advisory committee (Nov 21)

Team and Other Duties

- Served as Fruit Program Working Team Co-chair, including planning “Ag Inservice”.
- Helped to organize and coordinate four sessions during the Ag Inservice.
- Led Fruit PWT meeting (Nov 17).
- Planning and organization for LOF Winter Fruit School.
- Editor for Fruit Notes newsletter (Oct-Dec; 3 issues).
- Attended Advisory Committee Meeting (Dec 16).
- Attended team meetings.

Professional Development

- Attended Northeast Tree Fruit IPM working group meeting (Fairlee, VT, Oct 24-26).
- Attended Great Lakes Fruit Workers meeting (East Lansing, MI, Nov 9-10).
- Attended Cornell Ag Inservice (Ithaca, NY, Nov 14-17).

Stakeholder Contacts

- 4 site visits to assist growers (1 Orleans, 2 Monroe, 1 Wayne).
- Assisted stakeholders via texts, phone, and email (36).

Grant Submissions, Re-Submissions, Letters of Support, Proposal Meetings

- Resubmitted ARDP proposal for another year of funding: “*Assessing the significance of brown marmorated stink bug damage to New York apple production*”.
- Submitted ARDP proposal for new “*Comparing multi-species dispensers for mating disruption of codling moth and oriental fruit moth*” project.
- Submitted ARDP proposal for new “*Evaluating Systemic Herbicide Uses to Control Problematic Perennial Weeds in New York*” project.

Other Area-Wide Education and Advocating

- Weekly insect trapline (Oct).
- Collaborated with the Motts facility to help identify internal lepidoptera and stink bug problems in incoming processing fruit (Oct-Nov).
- Served as NY grower/extension advocate in nationwide mating disruption grant-writing and research development panel (Dec 12-13; Chicago IL).