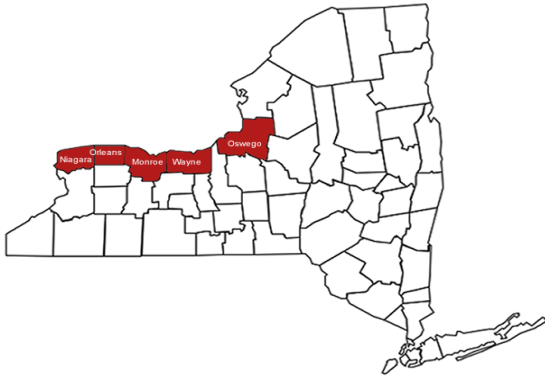


A partnership between  
Cornell University and the  
CCE Associations in these five  
counties: Monroe, Niagara,  
Orleans, Oswego & Wayne



# 2022 Annual Report Year in Review



## *Cornell Cooperative Extension* Lake Ontario Fruit Program



# Education & Research

## 2022 LOF Summer Tour

We were excited to host our annual summer tour on August 9th, featuring cutting edge farms in Eastern Orleans County. LOF and Cornell featured several applied research projects at the sites in which the research was conducted. In addition, we featured the work of 6 companies involved in the development of Precision Apple Crop Load Management (PACMAN) technologies. Five of these businesses attended the tour, including one that came all the way from England. The use of this technology is one of the most exciting developments in the ability to properly manage crop load to maximize the number of apples in a targeted fruit size category while maintaining annual crops.



## 2022 Cornell NYS Tree Conference

We held a second statewide virtual winter fruit conference on January 27-28, which we organized together with CCE-ENYCHP, due to a rise in COVID cases discouraging in-person winter programming. Once again, we received great feedback that consisted of mostly positive reviews. There were 8 sessions in 2 full days, with 3 sessions DEC credit-eligible. From 177-306 attendees were counted, depending on the session. As has become the case with the virtual format, we had a number of growers/industry attendees from out



PACMAN technologies featured on the 2022 LOF Summer Tour in Eastern Orleans County. Images to the left and below show a 4-wheel ATV and camera sensors— one of several ways companies can gather data that may include counts of buds, flowers, fruitlets, and mature fruit. These technologies have the potential to increase grower returns if the accuracy can be increased to acceptable levels.



# Cultural Practices

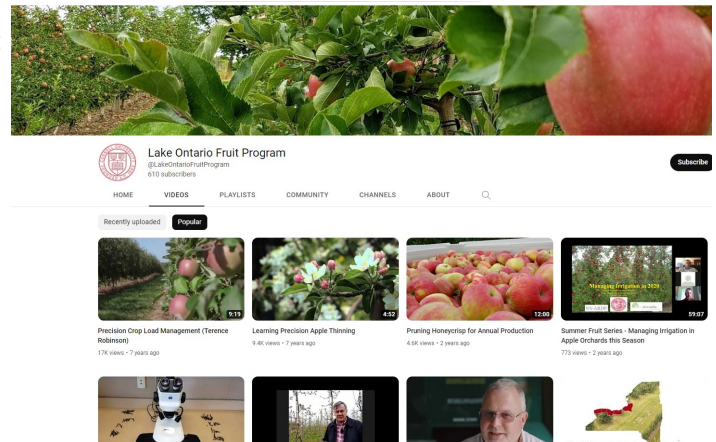
## Orchard Management Programming – Mario Miranda Sazo

**Third Consecutive Year of Successful Development and Implementation of Peel Sap Analysis for Managing Bitter Pit Risk in ‘Honeycrisp’ in New York State:** Over 500 fruit peel sap samples were received from growers in 2022. They were analyzed and recommendations were made to growers within 7 to 10 days to allow for implementation of strategies to mitigate bitter pit risk before fruit harvest. This also helped us to fine tune the “passive bitter pit” evaluation which gave even greater information prior to storage of ‘Honeycrisp’. Craig and Mario also presented their most recent extension findings at the GLFW meeting in Michigan in November 2022.



## CCE LOF YouTube Channel Continued Delivering a Robust Horticultural Science Educational Platform in 2022:

We produced several high-quality YouTube videos about precision crop load management, tree fruit nutrition, use of Geneva rootstocks, and modern pruning practices for high density apple orchards. LOF YouTube videos showed and explained how precision crop-load management and other important orchard management practices can be implemented by Cornell scientists, extension educators, and growers. All videos were produced by Elizabeth Tee and included the use of multiple visual tools, animations, sound, tables, and effective graphics to guarantee an effective tree fruit educational message. One pruning video was translated to the Spanish language to reach several hundred Spanish orchard workers in NY State. The precision crop load management videos that provide guidance on horticultural practices in apple orchard have received over 900 views as of December 8, 2022.



**Cornell Scientists, CCE LOF Extension Educators, and Ag-Tech Innovators Worked Together to Fine-Tune and Validate the Adoption of Digital Technologies in 2022:** This past season CCE LOF carried out one pruning severity study on Honeycrisp and validated two cell phone camera technologies to count and measure fruitlet diameter, which is a key value of PACMAN. Working with the Fruit Scout company, we used individual fruit pictures to measure fruit growth rate and estimate fruit set after a thinning spray. We also worked with the Farm Vision company where we used a cell phone video of several trees to identify and measure fruitlet diameter and fruit set after a thinning spray. Both cell phone technologies gave us very accurate results when compared to our manual measurements.



## CCE LOF Spanish Educational Program Established New Partnerships in 2022:

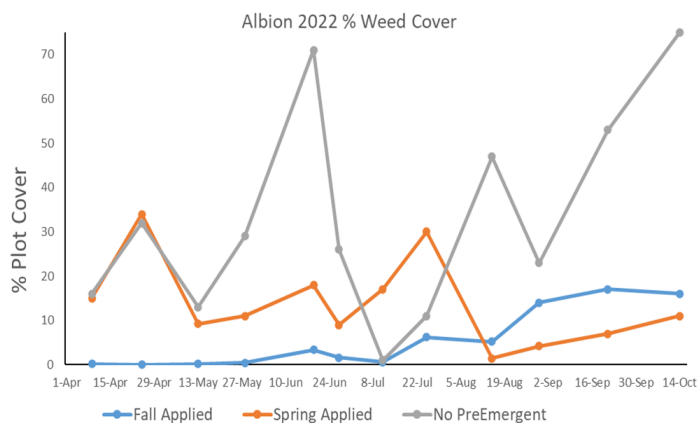
The Cornell Small Farms Program (SFP), the NYS Integrated Pest Management (NYSIPM), and the CCE LOF team collaborated closely to host more than one hundred employees during the annual Spanish summer fruit tour in an effort to strengthen Spanish education in the Lake Ontario fruit region.

# Integrated Pest Management

## Integrated Pest Management Programming—Janet van Zoeren.

**Pre-emergent Herbicide Timing:** Weeds compete with apple trees for water and nutrients. Often growers manage weeds using a spring preemergent herbicide (to prevent seed germination) with follow-up post-emergent ('burndown') applications as necessary. Mike Basedow (ENYCHP) and I conducted a study, which has been funded by the Apple Research and Development Program since 2020, to directly compare fall vs. spring vs. no application of preemergent products, and to assess the effects these different weed management programs have on tree health.

For 2022 (the third year of the three year study) we applied the preemergent herbicide Alion in either November 2021 (fall-apply treatment) or April 2022 (spring-apply treatment), and followed up with the postemergent herbicide Rely when weed cover exceeded 30% (all three treatments). We estimated weed cover across the herbicide strip eleven total times between April through October 2022.



Overall we were very impressed with the fall application timing for Alion: herbicide strips treated in the fall had less or similar weed cover than strips treated the following spring on most of the survey dates. The postemergent only program did not perform as well as either preemergent program, especially at my field site, where it required more herbicide applications and still did not control weeds as well.

Overall, we would now recommend to our growers that they consider putting preemergent herbicides on in the fall, if labor and field conditions permit. Most importantly, I would recommend to my growers that they be sure to incorporate some preemergent herbicide into their weed management regime, and to not rely on burndowns alone.

We have submitted a new proposal to evaluate systemic burndown herbicide materials for perennial weed control, and to evaluate whether consistent long-term trunk guards can minimize herbicide exposure and therefore improve tree health.

# Fruit Quality Management

## Fruit Quality Management Programming—Craig Kahlke.

### Harvest Maturity Testing of Managed & Other High-Value Apple Varieties

The commercial apple industry in NY has a lot of investment in managed or “club” varieties such as NY1 (SnapDragon™) and NY2 (RubyFrost™), the Cornell varieties licensed almost exclusively to NY (Crunch Time Apple Growers). In addition, there has been an explosion of new varieties that are being trialed in our region. Many packing-houses have developed, or have licensed the right to grow these varieties from breeding programs that are many times out of state, and in some cases in overseas. HB1 (‘Wild Twist™’), MAIA-1 (‘Evercrisp™’) and MAIA-L (‘Ludacrisp™’) are such varieties that are grown by an ever-increasing number of farms in Western NY.

One of the many pitfalls of new variety development is the need to perform comprehensive maturity testing to determine the correct harvest window to maximize quality and storability, while minimizing disorders that can occur at harvest or during storage and marketing. LOF’s Harvest Maturity Program (HMP) comprehensively tests the many quality and maturity indicators, shares the data with a wide audience, and puts out informative reports.

In addition, off-patent varieties such as ‘Honeycrisp’, ‘Gala’, and ‘Fuji’ also command high returns when quality is maximized and when the bulk of the fruit is harvested at the correct maturity.



A starch-iodine test is performed to help gauge maturity—purple represents starch, and the changing to the white patterns show conversion to sugars, and ripening.



LOF’s Program Aide Liz Tee prepares to test firmness on a maturity sample of apples using a penetrometer.


LOF’s HMP is the only entity in the state who regularly uses gas chromatographs to measure internal ethylene, the primary ripening hormone that correlates to ripening in most cultivars. However, in several of these high-dollar varieties mentioned above, internal ethylene concentration does not correlate with maturity. Therefore, it is important to collect a wide number of samples from a wide area, and communicate with packers and storage operators (final fruit quality) to help time harvest in the ideal windows for these varieties.

# Team Publications

The team publishes timely information throughout the entire year for growers and industry members that enroll in the program via the county associations.

**“Email Blasts”** -Now that over 90% of our enrollees get electronic versions of our newsletter, the team continues to email more timely information and meeting announcements. We have continued to use this as a key source of key information in between *Fruit Notes* issues.

Fruit Notes Volume 22 Issue 16

 Natalie Lynn Mrzywka  
To: CCE-LOFP-COMPS-L; CCE-LOFP-SUBSCRIBERS-L

## **Fruit Notes**

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

Volume 22 Issue 16

December 22, 2022

The Fruit Notes newsletter in PDF format is accessible by clicking on the link below. The contents of the newsletter are listed in this email.

[Open the December 22nd Fruit Notes from the Lake Ontario Fruit Program in .pdf format.](#)

### Contents

- Season's Greetings!
- Western NY Fruit Conference
- CCE Statewide Tree Fruit Conference
- A Few Lessons Learned After Attending the Biggest European Fruit Congress and Trade Show in Apples
- Intent to Restrict Certain Neonicotinoid Pesticide Products
- How Profitable Will My New Orchard Investment Be? 1-day, hands-on skills class
- Precision Apple Crop Load Management series
- 2022 Census of Agriculture underway in New York
- Northeastern Region Organic Report
- PathStone Corporation is Currently Accepting Applications for their 2022-2023 Farmworker /Housing Grant
- Fire Blight Webinar Series
- USDA to conduct bee and honey production, disposition, and income
- Jared Buono to lead Cornell Hudson Valley Research Laboratory
- IFTA Young Professional Scholarship Opportunity
- Agricultural Supervisory Certificate Program
- Mark Your Calendar
- Contact Us

Cornell Cooperative Extension is an equal opportunity, affirmative action educator and employer

**“Fruit Notes”** is a comprehensive newsletter covering time-relevant information on various fruit growing topics, for fruit and berry production. (12-16 issues per year, email or mail)



**“Fruit Facts”** is a weekly email report with horticultural reminders covering the day-to-day activities that are more time sensitive and important at that moment in the growing season. This report is available by fax or email for fruit and berry production.

The **“Harvest Maturity Report”** covers fruit ripening indicators for over 20 apple varieties. This report helps growers make good harvest decisions to ensure optimal fruit quality.





# Lake Ontario Fruit Specialists



Craig Kahlke  
**Fruit Quality Management,  
Team Leader**

Email: [cjk37@cornell.edu](mailto:cjk37@cornell.edu)  
Cell: 585-735-5448



Mario Miranda Sazo  
**Cultural Practices**

Email: [mrm67@cornell.edu](mailto:mrm67@cornell.edu)  
Cell: 315-719-1318



Janet van Zoeren  
**Integrated Pest Management  
(IPM)**

Email: [jev67@cornell.edu](mailto:jev67@cornell.edu)  
Cell: 585-797-8368



**Business Management**  
The position is currently  
open.

## Team Support



**Natalie Mrzywka**  
Administrative



**Elizabeth Tee**  
Program Aide

Website: [lof.cce.cornell.edu](http://lof.cce.cornell.edu)

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