



Cornell Cooperative Extension Lake Ontario Fruit Program Quarterly Report April - June 2019



Overview: Spring brings the start of the field season. A cold winter and cool early spring delayed green tip in apples until mid-April, a very welcome timing. The start of growth for other pome, stone, and small fruit was very similar to apples in timing. A cold winter with a fair amount of precipitation in late spring meant saturated soils for the start of the growing season. The April through June timeframe brought near average rainfall totals for most of the region, but the rain was steadily distributed over most of these 90 days with cooler than normal temperatures and little chance for soils to completely dry. Wet orchards translated to high risk of scab infections and little chance for planting trees until later spring, when hot weather can stress trees. Poor drainage in waterlogged plantings meant tree damage/death in some cases. Nonetheless, the fruit set for most tree fruit was reported as good, and the crop outlook for apples is above average. Spring weather patterns meant Spotted Wing Drosophila populations building earlier than have ever been seen in NY. Most at risk are blueberries, raspberries, and tart cherries.



Dr. Lailiang Cheng of Cornell University gives nutrition recommendations for apples at the WNY Thinning Meeting at KS Dathyn Fruit Farm in Sodus.

Team News: Two candidates are finalists for our IPM Specialist position, and they will be brought in to meet growers and LOFT on July 9, in which they'll use the information learned to help prepare a seminar for their interviews. The formal interviews are in Orleans County on July 25.

Education: 90 growers and other industry personnel attended the Thinning Meetings held in Wayne and Monroe Counties on May 24. Besides thinning recommendations given by Mario and Terence Robinson, labor, US crop, pest, and disease updates were given by Cornell Faculty and industry. Plans were also nearly finalized for the annual LOF Summer Fruit Tour, to be held July 18 in Niagara County.

<i>Use of MaxCel on Whips to Induce Feathering in the Orchard and Scoring/Girdling with the Use of a Double-Bladed Clipper plus MaxCel to Promote Bud-Breaks on Two-Year-Old Blind Wood Sections</i>	<i>Fruit Notes</i>	Miranda Sazo
<i>Detailed/Timely Pruning Techniques and Flawless Execution of Orchard Tasks can Guarantee the Growing of Leaders the First Years after Grafting</i>	<i>Fruit Notes</i>	Miranda Sazo
<i>Nitrogen: A Key Element for Fruit Production</i>	<i>Fruit Notes</i>	Cheng & Miranda Sazo
<i>Try Blossom Thinning on Gala, Honeycrisp, and Fuji by Incorporating the Use of the Pollen Tube Growth Model this Year</i>	<i>Fruit Notes</i>	Robinson & Miranda Sazo
<i>Precision Chemical Thinning in 2019 for Gala and Honeycrisp</i>	<i>Fruit Notes</i>	Robinson & Miranda Sazo
<i>A Comprehensive Variety & Acreage Survey for NY</i>	<i>Fruit Notes</i>	Kahlke
<i>Strawberry Harvest & Storage/Shipping Considerations</i>	<i>Fruit Notes</i>	Kahlke

Presentations by LOF Team	Meeting:	Author/Presenter:
<i>"Draft Plans of Work for LOF"</i>	Western NY AMG, June 14	Kahlke (presenter), authors Grasswitz, Kahlke, Miranda Sazo, Wiltberger
<i>"Challenges and opportunities for adoption of Digital Technologies in modern apple production systems in the U.S."</i>	4 th Precision Agriculture Day, Genesee Community College, The BEST Center, May 21	Miranda Sazo
<i>"New Technologies for Tree Fruit Production to Reduce Risk and Increase Quality and Profits: Hail Protective Netting and Reflective Groundcovers 2018 Field Trials"</i>	Cornell Extension AMG Group, April 30 (via Zoom)	Wiltberger

Research:

Activity/Proposal/Grant	Person(s)	Funded (Y/N) or Unfunded/ Preliminary Research (UPR)
Crop Load and Harvest Management for Hard Cider Orchards	Peck, Kahlke, Tee, Miranda Sazo	ARDP (termed 3/31/2019) but finished work in May
Precision Orchard Management	Wiltberger, Miranda Sazo, Kahlke	Y, ARDP/NYVI (PI Robinson et al)
Brown Marmorated Stink Bug in US Specialty Crops	Agnello, Grasswitz, et al.	Yes-SCRI

Biological Control of the Brown Marmorated Stink Bug in New York State	Jentsch, Grasswitz, et al.	Yes
Cornell University Crop Insurance and Risk Management and Education Program	Ifft, Wiltberger	Yes-USDA-RMA
Survey of Apple Tree Decline in NY	Grasswitz & Donahue	Yes-ARDP
Prediction and Prevention of Ambrosia Beetle Infestations in NY Apple Orchards	Agnello & Grasswitz	Yes- Cornell Federal Capacity Fund
Labor Readiness: Pathways for Farmworkers to Start Up and Advanced Beginners to Scale Up New Farm Business	Rangarajan & Miranda Sazo	Yes- USDA-NIFA
Testing the Role of Latent Viruses in the Decline of Apple Trees on G.935 in a Commercial Apple Nursery	Fuchs & Miranda Sazo	Yes-ARDP
Managing Nutrient Balance for Effective Mitigation of Bitter Pit	Cheng & Miranda Sazo	Yes- ARDP
A Comprehensive Variety & Acreage Survey	Kahlke	Yes-ARDP
Implementing the Pollen Tube Growth Model on NEWA and Validating the Model in NY Orchards	Peck, Miranda Sazo, Kahlke, et. al.	No

Business Consultation:

Specialist	Site Visit	Phone/Texts/Emails
Kahlke	13	85
Miranda Sazo	40	100
Wiltberger	20	55



Selected Professional Development and Training:

Activity	Team Member(s)	Comments:
<i>CCE Systems Conference, April 9-11, Ithaca & Remotely (via Zoom)</i>	Wiltberger	
<i>Senate Hearing on Overtime Labor Law, SUNY Morrisville, April 25</i>	Wiltberger	
<i>NYS Department of Labor Webinars, June 4 & 6</i>	Wiltberger	
<i>Annual Premier Apple Forum, June 24-25, Syracuse, NY</i>	Kahlke, Wiltberger	Kahlke ran PowerPoint Presentations. Both specialists networked with industry
<i>CCE Regional Agriculture Team Retreat, June 26-28, Ellicottville, NY</i>	Kahlke, Miranda Sazo, Wiltberger	Specialized Professional Development, once ~ 2 years

Quarterly Highlight for Production Economics & Business Management– Mark Wiltberger

Reflective Ground Cover for Coloring Apples at Harvest: Could Yield Quality and Revenue.



Fuji apples colored with the use of reflective groundcover at DeMarree Fruit Farms, 2018 harvest.

Photo credits: Alison DeMarree, DeMarree Fruit Farms.

Need/Opportunity: Modern high-density orchards will still have shading issues that adversely affect the coloring of apples. Coloring of apples is the big money-maker for fresh apples. Apples making extra-fancy grade, with red coloring greater than 50% of each apple, will make the difference between an apple being packed for fresh fruit or being sent for juice. Juice apples get pennies on the dollars, effectively a loss for the fresh apple grower. Increasing extra fancy packout rates by ten or twenty percent means potentially thousands of dollars of revenue per acre for fresh apple growers. Reflective groundcovers have the potential to increase coloring by reflecting white light off of the ground and underneath and onto the shaded sides of apples.

LOF Response: I conducted a statistical and economic analysis of the data from the Lake Ontario Fruit Team's field research in 2018 at DeMarree Fruit Farm. For poorly coloring blocks reflective groundcover was shown to increase percentage of extra fancy grade as much as 20% or more, with treated blocks resulting in percent extra fancy at 93%. Yield by weight was also shown to have increased dramatically. For a typical return and yield for fresh apples, an increase in 20% extra fancy grade would mean an increase in revenue of \$2000 per acre. In addition, the grower could visually perceive a dramatic difference in their orchard and in the financial returns from the packing house.

I summarized the results in an infographic (see reference above and at this link: <https://lof.cce.cornell.edu/submission.php?id=657>) that has basic information about reflective groundcovers, including how to procure them. I published the results in the Fruit Notes newsletter, and scheduled an information session at the upcoming Summer Fruit Tour in July, which includes a summary by the grower of her experience, at which approximately 150 growers attend. I will continue to distribute the infographic and talk about the technology at opportunities of grower contact.