







2020 Annual Report Year in Review



Cornell Cooperative Extension Lake Ontario Fruit Program

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



Education

The COVID-19 pandemic that arrived in mid-March changed the world as we know it. Among the many, many impacts that all of us felt, it forced CCE-LOF and other regional teams and county associations to have to completely reinvent their educational **programming.** Prior to the pandemic, we only used Zoom[™] for internal meetings. By late spring, most of our stakeholders were using Zoom[™] for their personal and professional lives. From late March through mid-August, CCE-LOF hosted or co-hosted 13 separate Zoom[™] webinars that were converted to YouTube videos and posted on our website/YouTube channel shortly after the live meetings. Webinar topics included COID-19 guidance for specialty crop producers (3 webinars), a large series on precision crop load management (4 webinars), spring bloom meeting, bitter pit prediction/mitigation in Honeycrisp, summer insect management in cherry, irrigation, and preharvest plant growth regulators. The meetings had live attendance ranging from 30-95 attendees. Views on YouTube ranged from 30-815. They can all be seen on our YouTube channel here: https://www.youtube.com/channel/ UC6PXjEkx7nLDY1A81Ek5brQ/

6) What happens if one of my crew members develops symptoms or tests positive for COVID-19?

(Legal isolation vs. legal quarantine vs. self-quarantine)

Symptom MONITORING above baseline, including body temperature

- IfYES to new symptoms or temperature of 100.0 F, seek medical advice as to whether COVID-19 testing is advised
 - If test is advised, do not allow work until negative test result is obtained
 - If not advised, return to work when feeling better (as normal)
 - If test is positive, worker must be isolated (separate sleeping and bathroom facility)
 Sick and isolated workers can only return to work after released from isolation (min. 10 days)
 - ... continued on next page

Dr. David Bell, Public Health Emergency Preparedness Coordinator for Orleans and Genesee Counties, addresses a question about a worker testing positive.







Beth Claypoole, Mark Wiltberger, and Gary Orbaker hand out face coverings and sanitizer at Orbaker's fruit stand.



Mario Miranda-Sazo harvests Honeycrisp in an Orleans County orchard.

Cultural Practices

Cultural Practices Programming—Mario Miranda Sazo.

Rootstock Effects on Nutrient Uptake

- Rootstock, the part of the tree below ground, is a key component of the high density, yield- and labor-efficient production system for apple. Currently, the most widely used rootstocks for commercial apple production in the US are susceptible to replant disease and soil abiotic stresses, leading to an estimated annual loss of \$300M to the apple industry.
- Fruit quality problems associated with inefficiency of these rootstocks in calcium uptake and delivery cause additional losses particularly for high value cultivars such as 'Honeycrisp'.

Extension Work

- In the last four years, we have focused our efforts on studying the nutrient uptake and partitioning (especially calcium) of rootstocks to improve fruit quality of high value cultivars such as 'Honeycrisp'.
- We have extended the new nutritional formation to all WNY apple growers via the LOF newsletter, Fruit Facts, farm visits, and orchard tours.





A New Cornell Diagnostic Tool for Honeycrisp

- In 2020, the LOF program developed and implemented an interdisciplinary research and extension team with several Cornell University Faculty, key industry partners, and more than 40 growers from 4 counties, to develop and launch a new diagnostic tool (Cornell peel sap test).
- Grower collaborators got for the first time a Cornell prediction of bitter pit and storability for their Honeycrisp fruit in 2020.



Fruit Quality Management

Fruit Quality Management Programming—Craig Kahlke. As with all other aspects of the year—fruit quality had to be managed in the orchards as much as possible, rolling with the abrupt changes in weather patterns during the growing season. A mild late spring led to crop growth ~2 weeks earlier than normal. A very cold April and 1st 2 weeks of May led to king bloom frost damage in strawberries and apples. Therefore, crop load management in apples via chemical thinning became very difficult. To complicate matters, it turned from "winter" to "summer" on Memorial Day weekend with temperatures near 90.

For much of the summer, most of the region was mired in a drought. Some timely thunderstorms brought much needed rain to some parts of the region, but many areas remained very dry until October, well into harvest. Therefore, overall fruit size was small. Crop size was variable. A blessing was great fall-like conditions in September and early October that brought good fruit color to early and mid-season varieties. Cloudy and rainy weather patterns in the last 2-3 weeks of October brought sub-par fruit color to later varieties, however. Craig 's harvest maturity testing and subsequent maturity reports contained critical guidance in a year that was difficult to predict harvest dates. Through harvest, Craig released 10 Harvested Maturity Reports that covered most of the standard commercial varieties for Western NY commercial growers. In addition, he released 6 Crunchtime Apple Growers Harvest Maturity Bulletins, that covered maturity for the NY-grown managed varieties SnapDragon™ and RubyFrost™. Craig also released several electronic harvest maturity reports for two other managed varieties that are grown by a large number of Western NY growers— EverCrisp™ and Wild Twist ™. Harvest timing is critical for predicted storage length and marketing plans. Many of the newer high-value and managed varieties have narrow harvest windows , and testing is critical.

As of this writing, movement and prices are good, and many marketers expect to sell most of their crop earlier than normal, which is advisable considering the variable storage

quality in a lot of fruit that was harvested late. This was mainly due to shortages/late arrivals of H2-A labor (COVID-19 delays).



NY2 (RubyFrost[™] as packed fruit) samples await harvest maturity testing.



Craig evaluates Honeycrisp apples for bitter pit incidence using the passive model developed by Dr. Chris Watkins.

Integrated Pest Management

Integrated Pest Management Programming—Janet van Zoeren.

Although always troubling, 2020 was a particularly bad year for fire blight.

Across New York state, spring weather led to extreme fire blight risk for several straight days during bloom. The timing and intensity of the risk meant that complete control was impossible in many orchards. Combined with isolated incidences of Streptomycin resistance, led to high incidence of both blossom and shoot blight.





Fire blight shoot strikes.

In close collaboration with faculty and other extension specialists, we:

- collected samples at 12 western NY orchards, to test for streptomycin resistant fire blight strains
- provided on-site or one-on-one phone or email advice to many growers, across the region
- published a 3-part Fruit Facts special, pertaining to managing fire blight this summer, resistancemanagement, and what to expect in 2021
- are collaborating with Dr. Cox's lab to investigate the use of Apogee to provide another tool against fire blight
- Will continue to remind growers next year to be aware of increased levels of fire blight inoculum.



It is the heart of the 2020 summer fruit growing season in WNY. Our region experienced very warm weather and extremely high risk of fire blight (FB) infection during the end of bloom, leading to high levels of fire blight throughout the region. The remainder of the season may continue to bring hot, humid weather conducive to more fire blight. In this series we provide you with some horticultural and IPM management information to help keep your orchards safely flourishing through the rest of the summer. This is our second CCE LOF Fruit Facts collaboration, for a series of three short articles focused on fire blight and related sound IPM/horticultural management practices.

Part II: Controlling fire blight for the remainder of 2020

The hot weather, humidity, and storms the past two weeks likely exacerbated any existing fire blight in orchards from earlier in the season. With a few months remaining in the growing season, and potentially more fire blight to manage, what materials can be applied now and for the rest of this season? How effective are they? severe thunderstorm with wind and rain). Streptomycin is locally systemic and must be applied within 24 hours before or after the infection event. Note that Streptomycin has a 50 day PHI and Kasumin has a 90 day PHI.

If SmR Ea is present in your orchard, streptomycin will not be effective at controlling FB. Instead, we recommend using



Janet is examining apple fruitlets for insect and disease damage.

Business Management

Business Management Programming — Mark Wiltberger.

Helping Growers Access COVID-19 Funding

In response to the COVID-19 pandemic, the federal CARES Act quickly rolled out disaster relief packages for farm businesses —SBA EIDL, PPP, CFAP 1, and CFAP 2. To help farms navigate these packages, Mark extended outreach through email announcements, newsletter articles, phone calls, and webinars. Farms in LOF counties received \$4.7 million for the CFAP 1 program alone. (New York apple farms received \$8 million in total for CFAP 1.)





Jill & Jeremy Wolfe, Blue Barn Cidery

Providing COVID-19 Safety Guidance and BMPs for Farms

Early in the spring, all farm businesses were required to create and implement a "NY Forward" Business Safety Reopening Plan. A Cornell team was formed to create a guide tailored to farms to reopen all aspects of the business— retail and field operations—safely during the COVID-19 pandemic. Mark worked on the team to create the NY Forward Template for Farms. Over 300 hundred participants attended the instructional webinars for the template. Mark continued to provide individualized recommendations, including the use of the Cornell U-Pick Best Management Practices (BMPs). Using the recommendations, Jill and Jeremy Wolfe of Blue Barn Cidery, Monroe County, were able to reopen their cidery, farm market, and two U-Pick operations.

Farm Harvest Preparations for COVID-19

Each year hundreds of workers arrive in LOF counties in August and September to harvest the apple crop. This year it was uncharted territory for farm businesses to know how to safely conduct harvest, packing , and retail operations. LOF organized a series of Question and Answer webinars in June and July, including experts such as Dr. David Bell, Public Health Emergency Program Coordinator for Orleans & Genesee Counties, and Dr. Elizabeth Bihn, director of the Produce Safety Alliance at the Cornell Department of Food Science.





Analyzing Farm Profitability with the Fruit Farm Business Summary

Each year Mark conducts the LOF Fruit Farm Business Summary (FFBS). Individual farms are consulted to analyze their businesses for profitability and financial health. The FFBS also serves as a financial benchmark for the fruit industry. This year the farm consultations went fully virtual with Zoom

instead of the usual on-farm meetings. The movement of the LOF fruit industry to high-density, high-value varieties dictates attention to production costs, with labor expenses amounting to 49% of cash operating expenses.

Team Publications

The team publishes timely information throughout the growing season 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 began emailing more timely information and meeting announcements when the pandemic began, as we did not have access to commercial printing. We have continued to use this as a more timely source of key information in between *Fruit Notes* issues.

"Fruit Notes" is a comprehensive newsletter covering time-relevant information on various fruit growing topics. (~16-18 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.



Building Strong and Vibrant New York Communities

Lake Ontario Fruit Specialists



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