



Fruit Notes

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

Cornell Cooperative Extension
Lake Ontario Fruit Program

Volume 18 Issue 10 July 3, 2018

2018 LOF Summer Fruit Tour Featuring Wayne County

Free Thanks to Our Sponsors! Please pre-register online for lunch count at:

https://lof.cce.cornell.edu/event_preregistration.php?event=961

Our current sponsors are listed in this issue, and will be for the next several issues.

Dress for the weather (hats, sunscreen, umbrellas, and feel free to bring fold-up chairs).

Follow Cornell Fruit Event Signs.

Sorry no DEC credits.

8:30 Stop 1. Smith Brothers Farms, 5756 Brick Schoolhouse Rd., North Rose, NY 14516. Hosts Alan, Steven, and Phillip Smith. Registration/check-in. Receive your name tag and program.

9:00 Talk 1 – Growing a Successful On-farm Nursery – Alan Smith, Mario Miranda Sazo (CCE-LOF), and Marc Fuchs (Cornell). At this stop tour participants will learn how to plan, grow and manage on-farm nursery trees, including aspects related to irrigation, fertilization, rootstock selection, etc. There will be a discussion of how viruses of apple can be transmitted through propagation, grafting, and top working. The critical importance of sourcing propagation material from trees will also be discussed.
Drive to Talk 2.

9:35 Talk 2 – High Value Varieties on Geneva Rootstocks – Alan, Mario, and Gennaro Fazio (USDA-ARS). Since 2015, Smith’s Brothers began establishing several high density plantings on Geneva rootstocks.

Today, there are several tall spindle plantings of Linda Mac, Brookfield Gala, Honeycrisp, and Fuji on G.11, G.41, G.935, and G.214. The discussion will focus on three-year old Gala, Honeycrisp, and Fuji trees on two of these rootstocks. In addition, there will be an update of the Geneva rootstock breeding program to match cultural and nutrient requirements of scion varieties. Drive to Talk 3.

10:15 Talk 3 – Sudden Apple Decline on NY-1 - Alan & Tess Grasswitz (CCE-LOF). A brief update on Sudden Apple Decline (SAD) and an opportunity to view symptoms and various stages of decline in NY-1.

10:30 Drive to Stop 2, VanDeWalle Fruit Farm, 9095 Ridge Road, North Rose, NY 14516. Host Scott, Ken, and Marshall VanDeWalle.

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- 10:50 Talk 1- Horticultural Aspects of Planting a New High Density Orchard –Scott VanDeWalle, Mario, and Lailiang Cheng (Cornell).** This spring Scott finished the planting of a big apple project that began in 2016. The most recent VanDeWalle plantings were all established at 2.5ft x 10ft and will be managed like 2 dimensional canopies (2-D) or fruiting walls. There will be a discussion (1) to learn how the new orchards will be trained and managed the following years, (2) nutritional requirements of young and mature trees, and (3) new management tips for better bitter pit control on Honeycrisp.
- 11:35 Talk 2 –Economic Aspects of Planting a New High-Density Orchard. – Scott VanDeWalle & Mark Wiltberger (CCE-LOF).** Walk to lunch & sponsor area.
- 12:00 Lunch, Sponsor Spots, and Visit with Sponsors.** Lunch courtesy of the Pultneyville Deli Company. During sponsor spots, please give your full attention to the sponsors. Without them, the tour could not be possible. There will be plenty of time for networking and conversation.
- 1:30 Travel to Stop 3, Cherry Lawn Farms, 6137 NY-14, North Rose, NY 14516.** Hosts Todd Furber, Ted Furber, Ronald Furber, and Eric Budinger. All 4 talks/demos are in the same area.
- 1:45 Talk 1- On-farm Precision Thinning Trials – 2018 Results – Poliana Francescato (Cornell), Todd, and Mario.** The objective of this trial is to determine the effect of carbohydrate balance and nozzle pattern on fruit thinning of Brookfield Gala on a dwarfing rootstock. Several thinning treatments were applied at bloom, 10-12mm, and 15-18mm. ATS applications were guided by the Pollen Tube Growth Model (PTGM). The main factors that influenced the 2018 thinning results in this trial and others across NY will be briefly discussed.
- 2:00 Talk 2– Introduction to Hail Netting Use in NY, and two ARDP-funded projects: “Evaluating a practical, simple, and cost effective hail netting system for high value apple cultivars in Western NY” & “Effect of hail netting on fruit quality & pest & disease management in high value apple cultivars in Western New York” – Mario, Craig, Tess, Mark.** Mario will be sharing his “hail netting journey experience” by initially connecting with Champlain fruit growers who first trialed the use of hail nets in NY in 2017. From these initial contacts and preliminary good results, a group of Western NY fruit growers also decided to test of use of orchard nets in 2018. Today, there are several on-farm sites (established by Wafler, Cherry Lawn, DeMarree, and Lamont Fruit Farms) trialing the use of nets from 5 to 50 acres. In addition, this spring LOF initiated two orchard netting trials with research funds awarded by ARDP. At this stop, growers will see a mature block of Minneiska trees on a dwarfing rootstock netted since May 29 and hand thinned on June 19. The specially designed machine that was used to install the nets will be at the orchard for display (the same machine used for all nets installed in WNY this season). The aims and objectives of the two projects evaluating horticultural characteristics, pest & disease management, fruit quality aspects, and economic analysis will be briefly introduced by the rest of the LOF team.
- 2:25 Talk 3-Hail Netting – Grower Panels – Experiences with Hail Netting in 2018 – A group of WNY growers.**
- 2:45 Talk 4 – Soil Health in the Orchard Setting – Greg Peck (Cornell), followed by a Demonstration of a side-discharge mulching mower for orchard use –Tess & Cherry Lawn Farms.**
- 3:10 PM ADJOURN**

Premier Apple Cooperative Estimates 2018 Apple Harvest at June Syracuse Meeting

Mark Wiltberger, LOF Business Management Specialist

At its annual forum in Syracuse on Tuesday June 26, the Premier Apple Cooperative estimated a predicted yield of 31 million bushels for the New York State 2018 apple harvest. This is a 7.8% increase from the 2017 harvest as reported by the USDA (unadjusted figure, August 2017).

Throughout the state, grower representatives believed in general they had good fruit set and on the whole thinning was effective. Some growers felt that yield could be even higher than the estimate. One factor may be that fruit size may end up higher than estimated. An increase of one fruit size results in a ten percent increase in bushels produced.

The group believed that the five-year average of 28,238,000 bushels is low because several of those years had low production due to a number of factors. The record high produced in New York State is 33.5 million bushels.

Another factor contributing to the estimate is the conversion to high-density orchards. Although many orchards have been taken out of production, they have been replaced with high-yielding, high-density blocks

which are now coming into production and will contribute to a larger crop this year.

Todd Fryhover from the Washington Apple Commission reported that Washington State is believed to have a good year for production. The forum predicted a yield for 2018 of 152 million bushels, down 4.9% from 2017. Growers in Washington are reporting lower fruit counts or lighter crops and anticipating much larger fruit size than a year ago.

With the constantly changing state of tariff policy in Washington, DC, the Washington industry is very concerned about the 2018 marketing season as 30% of their apple crop is sold outside the U.S. If exports are reduced, more fresh apples will be diverted to the domestic market, resulting in higher domestic supply and price pressure for the east.

Washington State is also feeling the labor squeeze and like last season many growers may have to make choices at harvest to pick the most profitable blocks first and then go back and pick other blocks if they have the time and labor.

**Premier Apple Cooperative 2018 Apple Production Estimate
June 2018 Meeting Syracuse
(Units of bushels (42 lbs))**

State	USDA 2017 Crop (unadjusted figure, August 2017)	Premier 2018 Estimate	% Change from 2017
New York	28,571,000	31,000,000	+7.8%
Pennsylvania	11,667,000	11,700,000	+0.3%
Virginia	5,238,000	5,123,000	-2.2%
North Carolina	2,500,000	2,500,000	+0.0%
West Virginia	2,238,000	2,100,000	-6.6%
Other Eastern States	5,572,000	4,960,000	-10.9%
Total East Region	55,786,000	57,383,000	+2.8%
Michigan	19,048,000	33,500,000	+43.1%
Other Midwest States	3,452,000	3,850,000	+11.5%
Total Midwest Region	22,500,000	37,350,000	+39.8%
Washington State	159,524,000	152,000,000	-4.9%
Other Western States	10,857,000	11,200,000	+3.2%
Total West Region	170,381,000	163,200,000	-4.4%
Total U.S.	248,667,000	257,933,000	+3.6%

(Other Eastern States: New Jersey, Maryland, Vermont, Maine, Massachusetts, Connecticut. Other Midwest States: Ohio, Wisconsin, Illinois, Minnesota. Other Western States: California, Oregon, Idaho.)

Herbicide Damage to Fruit Crops: Diagnosis and Avoidance

In the wake of several recent incidents of suspected herbicide-related damage to fruit crops, a reminder that herbicides, by definition, are intended to kill plants and that extra care should be exercised in their use to avoid



unintended damage to crops. Depending on the timing, severity and frequency of accidental exposure, herbicide-related crop injury may be visible on shoots, leaves, flowers or fruits, and may reduce yields, distort growth, reduce plant vigor and/or increase susceptibility to pests, diseases, and winter damage. As with any issue affecting plant health, however, correct diagnosis is the critical first step in addressing the problem.

Diagnosis

Depending on the specific product and crop, symptoms of herbicide damage can be very similar to those caused by other factors, including various diseases, nutrient imbalances, and environmental stressors. Incorrect diagnosis can result in costly and ineffective management interventions that may be completely inappropriate. In the case of suspected herbicide injury, the symptoms and extent of damage can be influenced by the timing and rate of application, by plant growth stage, and by weather conditions; in the case of woody

- Try to determine the exact date and time of any 'suspect' herbicide applications, as well as the herbicide name and formulation, and other pertinent information such as application rate, nozzle type, and spray pressure.
- If you are able to obtain the information above, consider submitting samples of damaged plant

plants, damage from an application made late in the season may not even become apparent until the following spring. Some pictorial resources to help with symptom identification are included at the end of this article; keep in mind that, as a general rule, herbicides with the same mode of action tend to produce similar symptoms.

Drift

In the case of herbicide damage suspected to be caused by drift (as opposed to other routes of exposure such as via contaminated spray tanks [see later]), diagnostic characters to look for include:

- Patterns of injury: close examination may indicate the possible source of the problem. For example, is damage more severe on one side of the planting, or even on one side of affected plants (particularly larger plants such as mature blueberries or fruit trees)? Do symptoms decline along an obvious gradient within the planting?
- On individual plants, look for 'drift shadows' where outward-facing leaves may have intercepted part of the drift, leaving the fruit or foliage beneath undamaged.
- Examine the ground flora in the damaged area, and in areas lying between the damaged site and the suspected source of drift: is there obvious damage to weeds in these areas?

To help with possible insurance claims:

- Notify and seek advice from your insurance provider as soon as possible.
- Create a timeline of the incident to try to further identify the source. Keep in mind that while drift is most likely to come from adjacent areas, under some weather conditions, it may have originated some distance away. Try to obtain records of temperature, humidity, wind speeds and direction for the day(s) on which the damage was thought to occur.

material to a reputable analytical laboratory for analysis of residues of the active ingredient. Collect and submit such samples (from areas showing the most obvious damage) as soon as possible after the injury is apparent. Keep in mind that residues will decline over time, and that even though tissue damage may be visible,

residues may not be present at levels detectable by some analytical methods.

- Create a photographic record to document the damage over the course of the growing season, being sure to note the date and location of each picture.
- If possible, estimate yield loss at harvest by comparing the yield from damaged areas of the planting to that of undamaged parts of the same planting. If the complete block has suffered comparable levels of damage, try to use a similar planting (ideally of the same cultivar, rootstock, and age) for comparative purposes.

Avoiding accidental herbicide damage

While some precautions should be routine, there are other, less obvious, factors that can affect the risk of accidental herbicide damage. Included in the former category is the necessity to use and apply only those products that are registered for the intended use in New York, and to make applications in strict accordance with the label directions, paying particular attention to rates, timing, and additional information relating to application conditions (including wind speed, temperature, nozzle type, spray pressure, pH, adjuvants, buffer zones, etc.).

Some of the more subtle things to keep in mind include the following:

- The risk of accidental herbicide toxicity tends to increase with both temperature (above approx. 77°F) and humidity (above 80%).
- Some herbicide residues may persist in the soil for more than a year after application and may affect susceptible following crops (e.g. strawberries). Herbicide labels generally give some guidance on these intervals, but keep this mind when considering herbicide use on rotational or break crops.
- Crop sensitivity to herbicide residues in the soil will depend on the plant, the herbicide, and soil properties (including pH, texture, soil moisture and temperature).

Additional resources:

(i) Pictorial guides to symptoms

1. University of California database of herbicide damage symptoms; searchable by crop and herbicide. Available on-line at:

<http://herbicidesymptoms.ipm.ucanr.edu/index.cfm>

- Rates of herbicide breakdown in the soil can be influenced by factors such as drought, organic matter and pH (tending to be slower under more alkaline (over pH 7.5) or acidic conditions (below pH 6.0).
- Always consult and follow product labels for the best methods and cleaning agents for cleaning spray equipment. Water alone may be not be adequate to remove all residues, with the risk that subsequent applications of other herbicides (with different adjuvants, etc.) may release residues remaining in the tank, lines or nozzles, increasing the risk of damage to susceptible crops. In such cases, damage symptoms are likely to be worse in the area where the spray is first applied, decreasing in areas sprayed after successive re-filling of the tank.
- Some herbicides can persist as residues in straw, manure, or compost in levels high enough to damage susceptible crops. If purchasing such materials as inputs (mulches or soil amendments), check the management history of the materials with the supplier.
- Be pro-active in avoiding contamination by drift: identify herbicide-sensitive crops and coordinate with neighbors in planning herbicide applications. Notify nearby greenhouse growers of impending applications to allow them to close vents if necessary. Consider installing windbreaks or creating other buffer areas between vulnerable crops.
- If the worst should happen, keep in mind that perennial plants tend to suffer less long-term damage from herbicides than do annual crops, in part because translocation of the herbicide tends to be slower and also because their larger biomass helps 'dilute' the effect. Perennials also seem to have a greater capacity to breakdown herbicides, and woody perennials in particular (i.e., trees and shrubs) seem to have a considerable capacity to recover from damage, often surviving even after suffering a significant degree of die-back.

2. Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). Herbicide damage picture gallery and further information. Available on-line at:

<http://www.omafra.gov.on.ca/IPM/english/apples/herbicide-injury/index.html>

(ii) Further reading

1. Herbicide Damage. Author: Kassim Al-Khatib (University of California IPM Program). Available on-line at:

<http://herbicidesymptoms.ipm.ucanr.edu/HerbicideDamage/>

2. Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). Herbicide injury in apples. Available on-line at:

<http://www.omafra.gov.on.ca/IPM/english/apples/herbicide-injury/herbicide-injury.html>

Resource Round-Up

1. Spotted wing drosophila (SWD) resources

(i) A good video demonstration of how to check ripening fruit for larvae using a salt flotation test is available at:

https://www.youtube.com/watch?v=2X_F3bHiOSg). (ii)

Updated versions of the insecticides currently registered in NY for this pest are now available at:

<http://fruit.cornell.edu/spottedwing/management/>. (iii)

Michigan State university has recently released new guidelines for SWD control in organic berry crops: Please see:

<http://www.ipm.msu.edu/uploads/files/SWD/SWDOrganicBerryCrops.PDF>

2. “Biocontrol Bytes”

New York State Integrated Pest Management biocontrol specialist Amara Dunn is producing a new blog on the subject: “Biocontrol Bytes” (available on-line at: <https://blogs.cornell.edu/biocontrolbytes/>). Short articles on biological control are posted approximately

once a month to share information, answer stakeholder questions, and connect readers to other relevant resources. Subscribe using the green button on the right-hand side of the page in order to receive e-mail updates when new articles are posted.

3. Brown Marmorated Stink Bug: Nationwide Management Survey for Commercial Producers

A nationwide survey is underway to gather information from growers on the economic impact of the brown marmorated stink bug (BMSB). The objective of the survey is to better provide growers with the help needed to manage this pest. Survey questions address the level of damage caused by BMSB on your farm, your use of—and interest in—various management practices, and your input on biological control methods and their potential for your operation.

The results of the survey will be used by Extension programs across the United States to fine-tune management advice for the BMSB and help prioritize research and outreach activities.

The survey is available on-line at:

<http://stopbmsb.org/go/BfxA> and should take about 20–25 minutes to complete. Individual survey responses will be kept confidential and the data collected will only be reported in summary form. Participation is voluntary and you can decide not to answer specific questions if you so choose.

Please address any questions on the survey to: Jayson Harper (by e-mail at jkh4@psu.edu or by telephone at (814) 863-8638).

Schedule Your DEC Region 8 Respirator Fit Tests Today

Counties served: Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne, Yates

Date: July 16-17, 2018 Location: Fulkerson Winery, 5576 State Route 14, Dundee, NY 14837

Appointments accepted: Monday, June 18 - Friday, July 13, 2018

The **New York Center for Agricultural Medicine and Health (NYCAMH)** is pleased to provide respirator fit testing clinics in your region in 2018.

During the clinics NYCAMH will provide **medical evaluations; respirator fit tests; and WPS compliant trainings** on how to properly inspect, put on, take off, fit, seal check, use, clean, maintain, and store respirators.

Clinic appointments are one hour long, and groups of 4 workers can be seen at a time. Medical evaluations, fit

tests, and trainings are available in both English and Spanish.

If you are unable to attend the clinic in your DEC region you may schedule an appointment at another clinic location.

To schedule an appointment please call the NYCAMH office during the **date range listed above** and ask to speak with farm respirator clinic scheduler. They can be reached at **607-547-6023** or toll-free **800-343-7527**, Monday-Friday, 8:00 AM-4:30 PM

When calling to schedule an appointment please have the following information available:

Total number of people attending from your farm

Name of each person being scheduled

Language spoken by each attendee

Make and model of each respirator to be tested

Thank You to Our Current Sponsors for Our LOF Summer Meetings!

TO sponsor online or for more info, go to: <https://lof.cce.cornell.edu/sponsorship.php>

Note: The sponsorship says “LOF Young Fruit Farmer Study Tour 2018” and “LOF Young Fruit Farmer Study Tour 2018- More Sponsor Levels”, but the link is to sponsorship of the LOF Summer Tour and/or the LOF Young Fruit Farmer Tour

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Roger Bannister

Sun Orchard Fruit Company
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Adams County Nursery
Phil Baugher

Mark Your Calendar

Meeting Title	LOF Summer Tour
Dates	Thursday, July 12
Time	All Day
Location	Wayne County
Cost	Free, Thanks to our Sponsors. Sponsors, online sponsorship here: https://lof.cce.cornell.edu/sponsorship.php
Brief description of meeting	See detailed agenda in this issue
Registration/ Contact information	Free, thanks to our sponsors, please pre-register here for lunch counts: https://lof.cce.cornell.edu/event_preregistration.php?event=961

Meeting title	New York Soil Health Summit
Date	Wednesday, July 18 th , 2018
Time	9:30 am–5 pm
Location	Empire State Plaza, Albany, NY. 12210
Cost	\$17.98 (includes lunch)
Brief description of meeting	This event is organized by the New York Soil Health project, and is for farmers, researchers, agriculture service providers, government agency employees, non-profits and policy-makers interested in advancing soil health efforts in across the state. Don't miss this opportunity to contribute critical input to the NY Soil Health Roadmap
Registration/ Contact for information	Available on-line at: https://www.eventbrite.com/e/new-york-soil-health-summit-tickets-46697539598

Meeting Title	IFTA 2018 Summer Tour
Dates	July 22-25
Time	All Day
Location	Kelowna, British Columbia
Cost	Varied, see website at : https://www.ifruittree.org/
Brief description of meeting	Annual Summer tour featuring cutting edge farms in an outstanding location
Registration/Contact information	See website at : https://www.ifruittree.org/

Meeting Title	LOF Young Growers Tour
Dates	August 2-4
Time	Depart (via bus) WNY Thursday morning, travel home Saturday AM
Location	Adams County Region, Pennsylvania
Cost	TBA, subsidized by sponsors. Sponsors, online sponsorship here: https://lof.cce.cornell.edu/sponsorship.php
Brief description of meeting	See more details in newsletter issue # 7 or on our website... Annual tour to other commercial tree fruit production regions for future farm owners and leaders
Registration/ Contact for information	Please PRE-REGISTER with Kim Hazel , at krh5@cornell.edu or 585-798-4265, ext 26, then she will notify you in a few weeks with the cost estimate and when online registration is open. Stay tuned to our website and newsletter. For more info or to be put on the Young Growers email list, contact Craig at cjk37@cornell.edu , 585-735-5448
Meeting Title	Western NY Hard Cider Tour
Dates	Monday, August 6
Time	All Day
Locations	Wafler Nursery in Wolcott (Bill Pitts, commercial nursery production of hard cider varieties) , Lagoner Farms & Embark Ciderworks (Jake & Mitzi Lagoner, new hard cider plantings, and lunch), DeFisher Fruit Farm and Rootstock Ciderworks (Dave DeFisher, hard cider plantings at more traditional densities). After the conclusion of the educational program, there is an optional stop to taste local ciders at Müllers Cider House, Rochester.
Cost	Orchard Tours and Lunch at a minimal cost with Pre-registration
Brief description of meeting	Come visit the nursery and orchards of some of the first NY growers of European and American Hard Cider varieties.
Registration/ Contact for information	TBA, Stay tuned to our website and newsletter. For more info or to be put on the Cornell Hard Cider list, contact Craig at cjk37@cornell.edu , 585-735-5448

For additional information about upcoming events and registrations visit our website at

<http://lof.cce.cornell.edu>

Fruit Notes

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

Fruit Specialists



Craig Kahlke | 585-735-5448 | cjk37@cornell.edu

Team Leader, Fruit Quality Management

Areas of Interest: Fruit Quality and factors that affect fruit quality before, during, and after storage,



Mario Miranda Sazo | 315-719-1318 | mrm67@cornell.edu

Cultural Practices

Crops: Blueberries, Raspberries / Blackberries, Strawberries, Apples, Apricots, Asian Pears, Cherries, Currants, Gooseberries, Nectarines, Peaches, Pears, Plums



Tessa Grasswitz | 585-261-0125 | tg359@cornell.edu

Integrated Pest Management (IPM)

Areas of Interest: IPM of tree fruit and berry pests, biological control, pollinators, and impact of climate change.

Crops: Blueberries, Raspberries / Blackberries, Strawberries, Apples, Apricots, Asian Pears, Cherries, Currants, Gooseberries, Nectarines, Peaches, Pears, Plum



Mark Wiltberger | 315-272-8530 | mw883@cornell.edu

Business Management

Crops: Apples, Cherries, Nectarines, Peaches, Pears, Plums

For more information about our program visit us at lof.cce.cornell.edu