



Winter Weather Station Maintenance

Dan Olmstead (NEWA Coordinator, NYS-IPM)



Weather station 'maintenance'
(Photo credit: Mary Concklin,
University of Connecticut)

Keeping your weather station clean and in good working condition is a critical step when using NEWA tools. Even small errors in sensor measurements like rainfall and temperature can lead to larger NEWA model miscalculations over time. Here are some useful preventive maintenance tips. You can also [download a maintenance checklist](#).

1. Clean the rain gauge tipping bucket. Leaves, insects and other debris can clog the drain, causing an error in rainfall measurements. Do this not only in the fall but again in the spring and at least twice during each growing season. To learn more about tipping bucket maintenance, watch this YouTube video:

(<https://www.youtube.com/watch?v=7Q3xL2vvPg&feature=youtu.be>)

2. Clean the solar radiation sensor. The diffuser can be cleaned with a damp cloth. If the diffuser is yellowed, contact Rainwise support for technical assistance.

3. Check the anemometer and weather vane. Both the anemometer (spinning fan) and weather vane should move freely in all directions. Set the weather vane to zero on due North.

4. Check the leaf wetness sensor for damage. Examine the plastic board and electrodes for corrosion, cracking or weathering damage. Also look at station leaf wetness data on NEWA. If wet periods seem to be missing or incorrect based on your field observations or experience, contact Rainwise support for technical assistance.

5. Check the RH sensor. Verify that relative humidity measurements are accurate by looking at RH values on dewy or rainy mornings using the NEWA website. If values are low or missing, the temperature/RH sensor may need to be replaced. Contact Rainwise support for technical assistance Rainwise recommends a two-year calibration cycle for their

weather stations. As of October 2017, NEWA recommends that you contact Rainwise support

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at (207) 801-4039 or 1-800-762-5723 **before** dismantling and sending your station to the factory for repairs. Recent national weather events have caused a backlog of station service requests, and this will minimize station downtime.

For more information on station maintenance and troubleshooting visit the [NEWA Weather Station Guidelines page](#) or download the [NEWA Maintenance and Troubleshooting Guide](#).

Agricultural Labor Survey: Help Us to Help You!

Do you manage employees on a farm? Do you need help recruiting and retaining good staff? Please take a **brief survey** and share important feedback that will help CCE develop improved resources for farm managers. The Cornell Small Farms Program, Eastern New York Commercial Horticulture Team, the Lake Ontario Fruit Program and the Cornell Farmworker Program are partners in this initiative.

Participants can **enter to win either a \$100 gift certificate for Tractor Supply or a free Cornell Small Farms on-line agricultural course** of their choice in the coming year. One winner will be selected for every 50 participants.

Growing a great workforce can result in long-term benefits for your business. Share your management challenges and successes to help us develop effective management tools, such as on-line courses and videos, plain language guides, and workshops.

Learn about other programs and events, including the Improving Ag Labor Management Workshop series, at the Labor Ready Farmer webpage: <https://smallfarms.cornell.edu/projects/labor-ready-farmer/>

For more information, contact: Kat McCarthy (kmm485@cornell.edu. Or 607-255-9911) or Anu Rangarajan (ar47@cornell.edu).

Please Take the Survey! Available on-line at: <https://tinyurl.com/farmlabormanagement>

Thanks so much for your input!
The Labor Ready Farmer Project Team

The Washington Tree Fruit Industry

Mario Miranda Sazo

Whether you produce fruit for fresh or processing, operate a packinghouse, or are in some other fruit-related business, successful innovation and adaptation to industry changes depend on understanding what is driving the technological and business changes in your industry and anticipating what product and service consumers will value in the future. Tom Auvil, invited speaker at the 2018 NY Producers Expo in Syracuse, recently discussed the

unprecedented transformation of the Washington tree fruit industry and its future directions. The following points are some of the main remarks provided by Tom¹ about this innovative and competitive tree fruit industry.

The Washington tree fruit industry is dynamic, with a diverse set of owners and business plans. The current pace of investment in proprietary varieties, orchards and warehousing (storage,



bins, sorting, sizing and packaging technology) is unprecedented. There are shippers with capacity to pack 1 million bins. Better products, higher yields, and improved efficiencies are encouraging rapid and intensive implementation of an array of biological and mechanical technologies.

Through the tough years of 1998-2006, 50% of Washington growers left the industry. Marketing companies consolidated, and a marketing cooperative for each of the commodities was formed to allow legal discussion of market issues. The acreage of the exiting growers may have been removed, but the combined acreage was more than replaced south and east of Wenatchee and Yakima. In 2010, acreage in the older districts was purchased and replanted. The new plantings are more intensively managed, making their presence noticed by 2014. The performance and resulting success of new plantings has increased the planting rate of orchards on new land and increased the rate of renewal of existing orchard properties.

The variety mix has diversified from three varieties in the early 1980s to over 30 commercial varieties today, and from 3 rootstocks in the early 1980s to over 20 commercially available apple rootstocks today. The big six (Reds, Gala, Fuji, Granny, Golden, and Honeycrisp) comprise 80% of the volume. Cosmic Crisp may produce 8 to 9 million packs by 2022. There are currently 23,000 acres of Honeycrisp and they could generate 20+ million packs by 2022.

Washington State has an indexed minimum wage that pushed the minimum wage to \$9.50 in 2016. In 2017 the minimum wage was raised to \$11 per hour. The Washington minimum wage is scheduled to increase to \$13.50 by 2020 which is a 42% increase from 2016. The H-2A adverse wage rate has been about \$3 per hour above minimum wage in Washington State. In January 2017, a bill was introduced into the Washington State legislature to mandate up to 6 weeks of paid family care leave.

The leading discussions in the Northwest, after food safety audits/programs, is labor and human

resource issues. The desire to have successful implementation and integration of mechanization technologies has never been greater.

Examining revenue opportunities followed by identifying the operating costs to achieve revenue opportunities is a tactic gaining favor in the Northwest. An example is reviewing Granny Smith blocks and determining that it is possible to achieve 20+ packs per bin and 150 bins per acre by deploying shade cloth and improved water and canopy management. This high performing commodity block can generate returns from the warehouse near \$30,000 per acre. Another revenue example is choosing a high pack-out, high-yielding variety that commands \$50 per packed box. In this high value crop scenario, revenue to the farm is between \$50–60,000 per acre. A third example is a high quality Honeycrisp block that had a problem with stem bowl punctures. By improving picking techniques, an additional \$10,000 per acre was achieved.

The next 'big' technology is autonomous/robotic harvest. Proof-of-concept has been completed for one technology in the Northwest, with beta testing scheduled for the 2018 harvest. At least two other technologies are in development.

Determining exactly how orchard production will need to be positioned to drive yield, fruit quality and robotic harvest performance is currently underway. With labor becoming increasingly uncertain in cost, availability and productivity, the mechanization of pruning, thinning and harvest seem to be key technologies for fruit production in the Northwest.

Another market trend is organic production. Several technologies have been developed and are being implemented that will assist the widespread adoption of organic production. Several companies are increasing their skill in predator/parasite monitoring, along with strategies to better manage direct pests: for example, exclusion netting (aka shade-cloth, bird netting, or windscreen) is being evaluated for Brown Marmorated Stink Bug control. Two WSU

varieties, Cosmic Crisp and Sunrise Magic, offer substantial opportunities for organic production. Neither one has storages issues with bitter pit or internal browning. Their high acidity seems to slow decay.

With the steady increase in cost of operation and the competitive market place, growers in the Pacific Northwest are encouraged to evaluate the economics of planting Gala and Fuji. These two long-time favorites may not have the net revenue in the future to generate a positive net present value in a 10-year horizon. A variety will need to reliably produce an average of 50+ bins per acre starting no later than the third leaf with

a net return of \$250 per bin to 'break-even' in 10 years. Varieties with higher and more stable yields and higher prices will deliver a higher level of success. Honeycrisp is a concern because it is not a reliable product in terms of warehousing and shipping. The break-even price for Honeycrisp is above \$40 FOB. There is concern that the big volume increases yet to come to Washington Honeycrisp will drive the FOB pricing below break-even in the future.

¹Tom Auvil originally wrote this information for the 60th IFTA Annual Conference held in Washington State, February 20-22, 2017. It was slightly modified for this newsletter.

Pesticides and Worker Safety Information

Worker Protection Standard: Reminder

Facilities growing agricultural crops in the U.S.



are subject to the [Federal Worker Protection Standard \(WPS\)](#). From January 2nd, 2018, the WPS requires a new [poster](#) (left) to be used at central locations, e.g., places where employees

frequently congregate, and at certain on-site decontamination locations.

Questions about the Worker Protection Standard in New York State can be sent via e-mail to: PesticideCompliance@dec.ny.gov

Product registration and label information

Every pesticide product used, distributed, sold or offered for sale in New York State must be registered by DEC—unless it is considered a [Minimum Risk Pesticide](#). Pesticides containing certain active ingredients may not be registered,

or may be required to list New York State specific language on the label. In addition, some pesticides may only be sold to Certified Pesticide Applicators.

All registered pesticide products carry EPA Registration Numbers (EPA Reg. No.), and those sold in New York State are required to be re-registered every 2 years. You can search for New York State registered pesticides by product name or EPA Reg. No. by visiting the New York State Pesticide Administration Database ([NYSPAD](#)). The database also allows you to review the approved label for the pesticide product. All pesticides must be used according to label directions.

DEC recommends taking inventory of all the pesticides you have, making a list and checking the registration of these pesticides on a regular basis. For questions about pesticide registration, e-mail the NYSDEC Pesticide Product Registration Section at ppr@dec.ny.gov or call 518-402-8768.

Pyriofenon 300 SC Fungicide

The New York Department of Environmental Conservation (DEC) recently approved the registration of Pyriofenon 300 SC Fungicide (EPA Reg. No. 71512-24), containing the active ingredient pyriofenone. This is the first product

registered in New York State containing this active ingredient.

Pyriofenon 300 SC is registered for use against powdery mildew on several crops including caneberries, bushberries, grapes, and low-growing berries (except cranberries). A copy of

the approved label can be found at the NYSDEC's product registration website.

Flint Extra Fungicide A new liquid SC formulation of trifloxystrobin (replacing Flint WG and Gem SC) is now registered in New York for use in various crops including grapes, apples and stone fruit. See label for further details.

Industry Notices

Apple orchard available for rent

A fourteen acre apple orchard located one mile from Lake Ontario is available for rent. The address is 2032 Bailey Rd. in the town of Ontario. Production in recent years has averaged about 470 bins of Ida Red, Cortland, Greening, Mac, Empire and several other varieties. For further details please contact Steve at 315-524-9658, 315-690-9128 or sbaa9@yahoo.com.

Position vacancy

The Dr. Pepper Snapple Group has an opening for a Sr. Apple Buyer position at the Williamson, NY facility. Reporting to the Sr. Manager of Procurement & Field Operations, the person in this position will be responsible for the field purchases, blending, storage and movement of apples for the production of apple-related products as well as maintaining positive grower relations. For more information, please visit <https://www.drpeppersnapplegroup.com/careers> (job number **1724299**).

Mark Your Calendars

Meeting Title	Navigating Labor Issues and the H-2A Minefield
Date	February 12 th , 2018
Time	2–3 PM
Location	Webinar
Cost	Free
Brief Description of Meeting	Hear the latest insights from a panel of experts regarding labor issues, regulations, legislation and navigating H-2A. Presenters: Ann Margaret Pointer – Attorney, Fisher & Phillips; Michael Marsh – President & CEO, National Council of Agricultural Employers; Fred Leitz – Immediate Past Chairman, National Council of Agricultural Employers
Registration/Contact for Information	https://cc.readytalk.com/registration/#/?meeting=r1gzlryb7w6u&campaign=rsouli1h4v7p

Meeting Title	Farm Transition/Succession Planning
Date	February 15 th , 2018
Time	1–2 PM
Location	Webinar
Cost	Free
Brief Description of Meeting	Farm Transition Planning is a topic that every agricultural business/farm owner/operator will have to face as they wind down their careers. It is also an easy topic to put off to “someday”. Addressing this topic in a timely, proactive manner will allow you to guide the future of your operation – and <i>YOUR</i> future – in a more positive way.
Registration/Contact for Information	Chris Laughton, Farm Credit East, 860-741-4380 x 8153 christopher.laughton@farmcrediteast.com

Meeting Title	Eastern New York Fruit and Vegetable Conference
Date	February 20 th –21 st , 2018
Time	8 AM–4.15 PM
Location	Desmond Conference Center, 660 Albany Shaker Road, Albany, NY 12211
Cost	\$60.00 (Pre-registration). At the door: \$70.00 (ENYCHP Enrollees), \$80.00 (Non-enrolled)
Brief Description of Meeting	Sessions include 2 days of tree fruit programming, 1 day of vegetable programming, a half day of berry sessions and a half day of agricultural business management. DEC credits available for some sessions.
Registration/Contact for Information	Full agenda and registration information: https://enych.cce.cornell.edu/event.php?id=881 Pre-register by February 13 th for the discounted rate.

Meeting Title	Biological Control of Spotted Wing Drosophila
Date	February 23 rd , 2018
Time	Noon–1 PM EST
Location	On-line webinar
Cost	Free
Brief Description of Meeting	Update on research related to biological control of spotted wing drosophila
Registration/Contact for Information	Register on-line at: https://ncsu.zoom.us/webinar/register/WN_DIM6fWNATK6N-6YKZ2NrCA

Meeting Title	Water Summit
Date	February 27 th –28 th , 2018
Time	All Day
Location	Covington, KY – In-person registration is full, but the remote option is still available
Cost	Free
Brief Description of Meeting	Discussion of the water requirements for the FSMA Produce Safety Rule. This two-day Water Summit is an opportunity for growers, regulatory personal, industry representatives, educators, and researchers to increase understanding and work collaboratively to develop ideas that support risk reduction related to water.
Registration/ Contact for Information	https://producesafetyalliance.cornell.edu/water-summit#remote

Meeting Title	Lake Ontario Fruit Team Communications Focus Group Save the Date – Further details to follow
Date	February 27 th , 2018
Time	AM
Location	Blue Barn Cidery, 928 Manitou Rd, Hilton, NY 14468
Cost	Free. Lunch served, with cider tasting & sensory evaluation for apple growers in the afternoon (see below)
Brief Description of Meeting	How should the Fruit Team best communicate with its stakeholders? Technology and information overload is upon us – LOFT wants to use the platforms that best serve our clientele. We need your feedback and ideas!
Registration/ Contact for Information	Look for further details via e-mail from LOFT in mid-February. For questions, contact Craig Kahlke at 585-735-5448, or cjk37@cornell.edu

Meeting Title	Cider Tasting and Sensory Education for Apple Growers
Date	February 27 th , 2018
Time	1-2:30 PM (Lunch served at Noon). Combined lunch with LOFT’s Communication Focus Group Meeting (AM)(Details above)
Location	Blue Barn Cidery, 928 Manitou Rd, Hilton, NY 14468
Cost	No charge, sponsored by Angry Orchard, Glynwood and the New York Cider Association
Brief Description of Meeting	This tasting, led by grower-cider makers from the Finger Lakes and Lake Ontario, will give an overview of the components of orchard-based cider, and illustrate why older varieties and cider apples are prized in fermentation.
Registration / Contact for Information	https://docs.google.com/forms/d/e/1FAIpQLSfIzzyNZCQPQGs4gF4zcyuKCOwt9gme2gaLNN126yXUqNIw/viewform Jenn Smith, Executive Director, New York Cider Association, msjenniferbsmith@gmail.com or Craig Kahlke, cjk37@cornell.edu , 585-735-5448

Meeting Title	Candidate Interviews for LOFT Business Management Position. Save the Date – Further details to follow
Date	March 2 nd , 2018
Time	All day
Location	CCE-Wayne county, 1581 NY-88, Newark, NY 14513
Cost	Free, lunch served
Brief Description of Meeting	We have 2 strong candidates for this critical position. Come and hear their seminars, ask questions and evaluate the candidates.
Registration/ Contact for Information	Look for further information via e-mail and newsletter in mid-February. For questions, contact Craig Kahlke at 585-735-5448, or cjk37@cornell.edu

Meeting Title	Pre-Exam Training & Test to become a Certified Pesticide Applicator
Date	Training: March 13 th & 15 th 8:00 AM–12:30 PM Exam: March 19 th 9:00 AM–12:00 Noon
Time	As above
Location	CCE-Orleans county, 12690 NY-31, Albion, NY. 14411
Cost	Workshop cost: \$50. Certification Exam (administered by DEC) \$100 payable to DEC
Brief Description of Meeting	Intensive training to prepare candidates for DEC certified pesticide applicator exam. Exam administered separately by DEC.
Registration/ Contact for Information	<u>Workshop</u> registration: contact Kim Hazel at: 585-798-4265 ext. 26. PRE-REGISTRATION IS REQUIRED BY FEBRUARY 26th. For registration for the <u>exam</u> (or for exam-related questions), please contact Justin Schoff (DEC) at: 607-622-8290

Meeting Title	FSMA PSA Grower Training Courses
Date	March 16 th , 2018 – last of the season in Western NY
Time	All Day
Location	CCE-Wayne county, 1581 NY-88, Newark, NY 14513
Cost	TBD, registration information to be posted shortly.
Brief Description of Meeting	Federal requirement for most fruit and vegetable growers. See events listing on our website for dates/times/registrations/more information: https://lof.cce.cornell.edu/events.php Other courses outside of our region: https://producesafetyalliance.cornell.edu/training/grower-training-courses/upcoming-grower-trainings
Registration/Contact for Information	For questions, contact Craig Kahlke at 585-735-5448, or cjk37@cornell.edu

Meeting Title	Special Permit Training for Pesticide Applicators
Date	April 4 th (Newark) & April 5 th (Albion)
Time	TBD
Location(s)	April 4 th : CCE-Wayne county, 1581 NY-88, Newark, NY 14513 April 5 th : CCE-Orleans county, 12690 State Route 31, Albion, NY. 14411
Cost	TBD
Brief Description of Meeting	Training on the use of selected restricted use pesticides
Registration	TBD

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

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

Cornell Cooperative Extension

Lake Ontario Fruit Program

12690 Rt. 31

Albion, NY 14411

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,

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



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

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