



Vol. 5 Issue 1  
March 22, 2017

# Tree Fruit News

## March Temperature Summary

Sarah Rohwer, CCE ENYCHP

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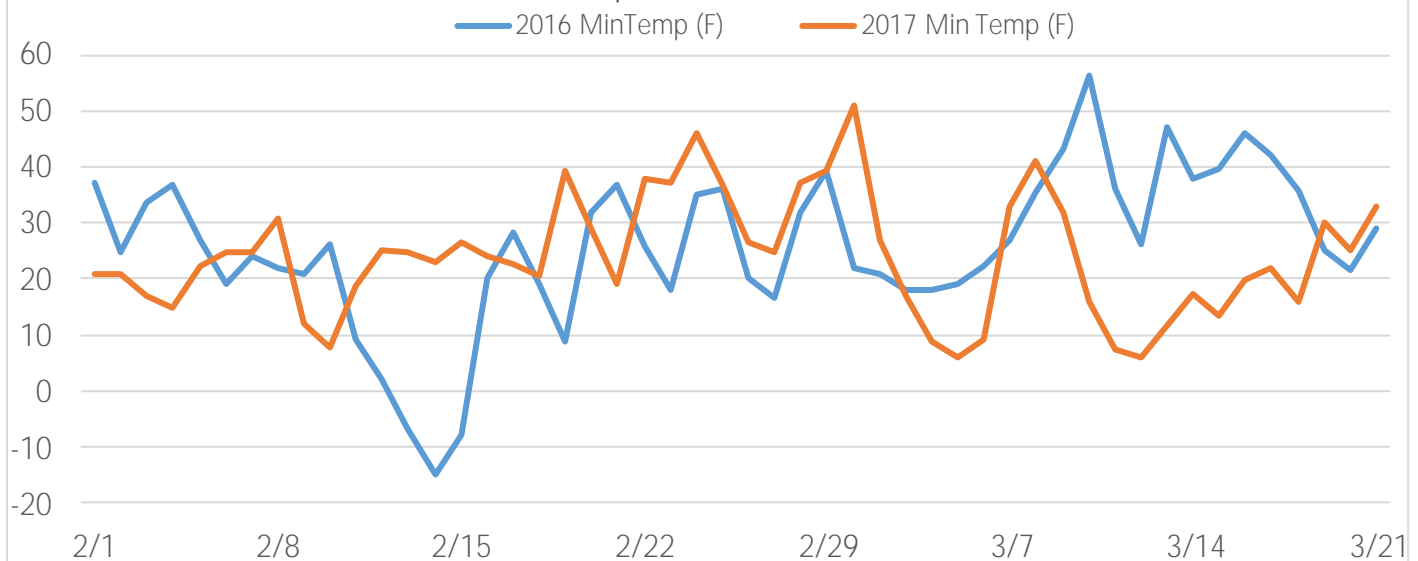
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There have been extreme temperature fluctuations in the Hudson Valley within the past month. As the graph below shows, we had a warmer than average mid-late February and early March as compared to 2016. As a result, peach and sweet cherry fruit buds had begun to swell, and many apple cultivars were observed to be in the silver-tip stage by March 10th. We saw unseasonably cold temperatures around the 5th and 12th, with a warm peak in-between on the 8th. While we haven't seen any extremely low temperatures like we had last year on February 14th (-14 °F) that caused a large loss of stone fruit crops in the Hudson Valley, we have seen lows of 6 °F in early March in that are cause for concern over bud losses in stone fruit this season due to the early break in dormancy.

Temperature and Rain 3/1/17 - 3/20/17

| Locations     | Avg Temp (F) | Max Temp (F) | Min Temp (F) | Total Rain (in) |
|---------------|--------------|--------------|--------------|-----------------|
| Chazy         | 21.7         | 57.7         | -6           | 0.44            |
| Peru          | 22.2         | 61.1         | -3.5         | 0.72            |
| Crown Point   | 23.5         | 63           | -3.9         | 0.03            |
| Clifton Park  | 27.4         | 62.9         | 2.9          | 0.45            |
| Hudson        | 29.5         | 62.9         | 5.9          | 0.63            |
| Highland HVRL | 31.8         | 63.4         | 8.2          | 0.29            |
| Marlboro      | 35.5         | 62           | 6            | 0.37            |
| Riverhead     | 37.2         | 60.4         | 17.3         | 4.95            |

Low Temperatures in Hudson, NY



## FSMA Water Testing Resources

Erik Schellenberg, CCE-Orange County

| <b>Water Testing Labs in NYS That Currently Offer Method 1603 (Modified mTEC) as of June 2016</b> |               |       |              |              |
|---------------------------------------------------------------------------------------------------|---------------|-------|--------------|--------------|
| Lab Name                                                                                          | City          | State | Phone        | County       |
| LIFE SCIENCE LABORATORIES INC - NORTH                                                             | WADDINGTON    | NY    | 315-388-4476 | St. Lawrence |
| LIFE SCIENCE LABORATORIES INC - FINGER LAKES                                                      | WAYLAND       | NY    | 585-728-3320 | Steuben      |
| ERIE COUNTY PUBLIC HEALTH LABORATORY                                                              | BUFFALO       | NY    | 716-898-6100 | Erie         |
| LOZIER ENVIRONMENTAL CONSULTING, INC                                                              | ROCHESTER     | NY    | 585-654-9080 | Monroe       |
| LIFE SCIENCE LABORATORIES - CENTRAL                                                               | EAST SYRACUSE | NY    | 315-445-1105 | Onondaga     |

*As of March, 2017, there are no water testing laboratories in eastern New York offering the federal FDA-approved testing protocol*

### Microbial Water Quality Profile Calculators

**Western Center for Food Safety – UC Davis**

[http://ucanr.edu/sites/Western\\_Center\\_for\\_Food\\_Safety/](http://ucanr.edu/sites/Western_Center_for_Food_Safety/)

Excel tool to calculate MWQP

**University of Arizona**

<http://agwater.arizona.edu/>

Ag Water Online Toll & App

<sup>1</sup> Compliance dates for certain aspects of the agricultural water requirements allow an additional two years. Provisions with extended compliance dates include:

- ✦ The specific microbiological criteria that apply to agricultural water
- ✦ Corrective measures that must be taken if agricultural water does not meet requirements
- ✦ The frequency of testing agricultural water

Records associated with data to support a microbial die-off rate, corrective measures, test results from a public water

system, or data used to support alternative die-off rates, criteria, or sampling strategies




<sup>2</sup> Guidance published 8/24/16 indicates that a farm has the option of collecting surface water samples over two to four years. For example, a farm that is not small or very small would begin sampling in 2018 and complete the water quality profile in 2020, 2021, or 2022.

<sup>3</sup> A farm eligible for a qualified exemption must notify consumers as to the complete business address of the farm where the food is grown, harvested, packed, and held.

<sup>4</sup> A farm is a small business if, on a rolling basis, the average annual monetary value of produce sold during the previous 3-year period is greater than \$250,000 but no more than \$500,000.

<sup>5</sup> A farm is a very small business if, on a rolling basis, the average annual monetary value of produce sold during the previous 3-year period is greater than \$25,000 but no more than \$250,000.

## Compliance Dates

| Business Size                                    | <br>Compliance Dates for Sprouts | <br>Compliance Dates For All Other Covered Produce | <br>Water Related Compliance Dates <sup>1-2</sup> | Compliance Date for Qualified Exemption Labeling Requirement <sup>3</sup> | Compliance Date for Retention of Records Supporting a Qualified Exemption |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------|
| All other businesses (>\$500K)                   | 1/26/17                                                                                                             | 1/26/18                                                                                                                               | 1/27/20                                                                                                                               |                                                                           |                                                                           |
| Small businesses (>\$250K-500K) <sup>4</sup>     | 1/26/18                                                                                                             | 1/28/19                                                                                                                               | 1/26/21                                                                                                                               | 1/1/20                                                                    | 1/26/16                                                                   |
| Very small businesses (>\$25K-250K) <sup>5</sup> | 1/28/19                                                                                                             | 1/27/20                                                                                                                               | 1/26/22                                                                                                                               |                                                                           |                                                                           |

## Respirator Fit Testing Resources

Dan Donahue, CCE ENYCHP

NYS DEC Region 3 has provided us with the following contacts for OSHA respirator training services in the region:

<http://www.mobilehealth.net/locations/new-york/>

<http://www.midhudsonregional.org/the-workplace-occupational-health>

If growers do contact these providers they should make sure they are compliant with OSHA 1910.134.

## Young Grower Perspective on the Future of the Apple Industry

An Interview by Anna Wallis (CCE ENYCHP) with Jenna and Jesse Mulbury, Northern Orchards - March 3, 2017

*Jenna and Jesse Mulbury are the children of Al & Cindy Mulbury, and the most recent generation at Northern Orchards in Peru, NY. Recently they attended the IFTA tour in Washington State. We asked them a few questions about their trip and how things are going on their farm.*

**Q: How was your trip to WA? Was this your first time visiting the industry there?**

A: Yes! First time out west for me [Jenna]. Jesse has been to Seattle before and he's been on some previous IFTA tours in other regions, so he was much more prepared than I was to ask questions and record information—he took lots of notes and pictures. We had a great time, although with travel, cold, rainy weather, and the time change, the schedule was rigorous. It was absolutely on my bucket list though, and I'm happy we went; I'm excited for more tours too. I learned a lot about the state, the area we visited was a complete desert. Beautiful scenery. People spoke quite openly on tours and in meeting sessions, I had access to an incredible wealth of information and experts. And the other growers were diverse and friendly, too. I would recommend IFTA to anyone in the industry.

**Q: What was your impression of the Washington Apple industry? What were the most impressive things you saw? What were some of the biggest innovations? What challenges do you see the industry confronting?**

A: Though I hate to admit it, there's a reason Washington is the apple growing capital of the country. All of these growers are incredibly informed about their farms. There is no guesswork. The owners know their numbers to the apple, and to the cent. They have a manager for each "ranch", someone in charge of a spray regiment, pruning, harvesting. They pay people to blossom thin by hand! I guess the most shocking innovation was that farms we visited were already preparing their orchards for mechanical harvesting. A few people mentioned that this technology was only about 18 months off and we saw videos of two company's harvesters. That, and the sheer number of farms we visited that have every gadget we could possibly want. Every farm has overhead and ground irrigation, shading, trellises with 8 or 10 wires, plenty of water. One of the orchards we visited was 3500 acres. That's about all of the apples in our local region in NY on one farm.

**Q: You've talked a lot about technology, robotics, and 'taking nature out of the equation'. Can you describe some of specific things you saw? Do you think any of these things will transfer well back to the NY industry?**

A: These growers are extremely fortunate to live in a climate that is not conducive to most insect or disease survival. It really is a desert: bare ground, no trees aside for those on the farms. It's dry. Which gives them so much more time and effort to devote to transitions as new technologies arrive on the market, since they're not fighting the elements quite so much. In the East, everyone is beginning to invest seriously in irrigation as our climate gets less predictable. But out west, it's not even a consideration, just a

necessary part of a farm. We visited a few farms that were beginning to prune their trees to a hedge, just taking a big machine and cutting branches so there are just a few inches left on any growth. They have acres and acres of shade cloth or overhead misters, and irrigators/fertigators. They also just have an incredible wealth of labor to devote to projects. Farms we visited thin exclusively by hand: they score the tree by hand to encourage growth deliberately along trellis lines. Organic growing is popular. When speaking to some of the growers, they asserted that they don't grow anything below an 88 size. "We just don't" they said. They have that much control and leave nothing to chance.

**Q: You mentioned that WA State has offered a lot of support to the apple industry financially. How is this different from NY State? How could we improve our system to support the level of innovation WA is experiencing?**

A: It seemed to me like these farms have access to resources to combat any issue they might have. Enormous, state-of-the-art equipment companies are right in town, nurseries are also right there. They have enough labor that the idea of something not being accomplished in a season (pruning/getting a spray on) is unlikely. They have huge dams and reservoirs for cheap electricity and an abundance of water. Their only concerns involve growing the newest varieties and doing it cheaper than the year before. It even extends to cultural things like buildings and streets being named for apples. The state is dedicated to and proud of their apple industry – they hold it on a pedestal and it shows. In NY and the Champlain Valley, our marketing should focus on our exceptional fruit and local production in the East. We have to continue to modernize our farms and prepare for the technological overhaul right on the horizon. Efficiency is key to keeping up with WA.

**Q: Jesse- you're going to DC to lobby as a young grower with US Apple next week. What issues are you going to focus on communicating to lawmakers?**

A: I am hoping to learn and speak with our counterparts in Washington about topics such as agricultural labor and the security of labor programs for the future. Apple export markets - how our current government may potentially change trade deals how that could stand to benefit or harm our industry nationally, which always has major repercussions on the NY apple industry. Health care and how current policy is affecting our business as well as others in our region and what to expect in the next few years to come. I want to learn about how people in D.C. perceive the apple industry - if they think we are being dutiful with our current industry practices as far as sustainability and maintaining healthy ecosystems are concerned. I am interested in the future of federal subsidies for the apple crop insurance programs throughout the state as insurance provides an integral safety net to the seemingly ever more unpredictable weather we are seeing. These are a few of the topics on my mind and I am sure I will be exposed to a lot of interesting conversation and ideas beyond these few topics.

**Q: You both have come back to work on your family's farm**

*continued on next page*

relatively recently—it must feel like both a daunting responsibility and an extremely exciting opportunity.

**What are the biggest challenges on your farm right now?**

Making the transition from the planting styles and packing facility that my grandfather and father put in, to more modern methods that will keep our farm efficient. Especially after visiting Washington and after the past couple of seasons on our farm, I am extra anxious to have some new equipment. The packing line I saw out there was quite literally jaw dropping. Unlike anything else I had ever seen. I am very proud of our history, but it puts us at a disadvantage next to younger, more modern farms.

**What have been your biggest challenges in coming back to your family’s business?**

I live and work with my family 24/7! As a 21 year old (&25y/o), that gets pretty tiring. I don’t think most people are settled into their career at 20 like I was. Some people scoff at my desire to come right back so soon, but it’s a unique opportunity. I think it’s and an effective choice so that I can master my farm as early as possible. We can butt heads sometimes (like any family). There are generational differences in terms of farming philosophies, modern regulations, new or different methods we learned in school, etc. But we have a lot of things going for us: the combination of our luck and the unparalleled experience of working under our father Al, who has 45 harvests under his belt. He is a wealth of knowledge and a walking encyclopedia. He always knows how to fix it, or has an answer, or an explanation. Also, our mother is extremely tough and always on top of her game. The farm wouldn’t run without her expertise, knowledge base, and dedication to safety. We have the potential to be an extremely effective team together. I’m excited for the future.

**What goals do you have for the future? What roles do you see yourselves taking on going forward?**

Because I’m still new to the farm, and we’re still feeling things out together as a family, I’m not really sure where I’ll end up. I’ll have the opportunity to fill a position wherever I thrive. I prefer to be out in the field but I’m quite well suited to dealing with people and our packing house. For now, I play a strong role in the retail gardens, meet every day with our outdoor crew, and spend time in the packing house, jumping in wherever I’m needed. I try and learn and understand everyone’s jobs and the issues that come along with them so that I might mitigate those problems in the future. I’ll gradually continue to take on more responsibility as I spend more time here. Jesse is already into sales and is well on his way to having a solid foundation of how *everything* works. He’s as capable as any other manager on the farm. He guides us in food safety along with our mother Cindi, and is my teacher and mentor.

**What changes do you expect to make on your farm based on the things you learned on your trip? (Short and long term ideas)**

Irrigation and a new packing line are big infrastructure plans on my mind, as well as making our plantings more uniform. Ours is a farm with a lot of history, we are constantly in need of updates. Whereas people who are starting from scratch get to begin with everything state-of-the-art. But, technological innovation happens so quickly these days, things be obsolete in a year or two. My only goal as a future business owner is to do everything I can to continue to make Northern Orchard as efficient as possible while still being a good steward of our land and producing fruit that I, and our customers have confidence in.

**Navigating the NYS DEC: How to Get Your Certified Pesticide Applicator License**  
*Anna Wallis, CCE ENYCHP*

As a grower in New York State, one of your biggest challenges is combating the insects, diseases, and other pests invading your orchard. Although you do not need a license to purchase or use all pesticides, obtaining your certified pesticide applicator license will give you access to more materials that you can add your pest combatting-arsenal.

**Do I need a license?** Pesticides are divided into two groups:

- **General use pesticide:** A pesticide that may be purchased and used by the general public.
- **Restricted use pesticide (RUP):** Only certified pesticide applicators are allowed to buy these materials, and only certified applicators or persons under their direct supervision may apply them. RUPs may be designated by the federal government (EPA) or the state (DEC).

In short, to apply RUPs you will need a certified pesticide applicator license.

**What type of license do I need?**

| Don’t need a license                 | Private Applicator License                                                            | Commercial Applicator License                                          |
|--------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Applying ONLY General Use Pesticides | Applying RUPs to property you own or lease, or property your employer owns or leases. | Any pesticide application not covered under Private Applicator License |

**How do I get my license? First, make sure you meet the eligibility requirements**

| Private Applicator                                                                                                                                                                                                                                                                                                                              | Commercial Applicator                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Be at least 17 years of age</li> </ul> <p>AND at least one of the following:</p> <ul style="list-style-type: none"> <li>• Have at least 1yr relevant full time experience</li> <li>• Have completed a 30-hr training course</li> <li>• Have an associate degree or higher in relevant field</li> </ul> | <p>Have at least one of the following:</p> <ul style="list-style-type: none"> <li>• 1yr experience as a commercial technician, plus 12hrs of category-specific training</li> <li>• 2yrs experience as a commercial technician</li> <li>• 3yrs experience as an apprentice</li> <li>• 3yrs experience as certified private applicator</li> </ul> |

**Please be aware of the following “fine print.” In order to sit for the exam, you must first prove your identity**

1. At the DEC office A NYS driver’s license is acceptable. A PASSPORT, foreign or USA, IS NOT. If the exam applicant does not have either a NYS Driver’s License, or a NYS ID Picture ID card issued by the NYS DMV, (for example, an H2A guest worker might not have this document), then the applicant must get a photo taken at their local DMV office.
2. Visit your local DMV and ask that your photo be taken (there is no charge for this).
3. You must be able to provide proof of your name and date of birth. Your documents must be original with not alterations, photocopies are not acceptable. The applicant is required to prove their name and date of birth according to the **DMV six point system** that all of us have had to deal with at some point. The complete NYS DMV list of acceptable documents and their point values can be found at <https://dmv.ny.gov/driver-license/prove-identity-age-permitlicense>.

Here are some suggestions for two common situations, consult the NYS DMV website for additional options:

For **H2A guest workers** who do not already hold a valid NYS Driver’s license or NYS DMV Photo ID Card, the following three documents will add up to 6 points:

- Foreign passport w/H2A visa
- Original social security card
- Original computer-printed pay stub (the original that came attached to your computer-printed paycheck, NOT a re-printed on-line copy).

For other non-US citizens who are permanent residents:

- Foreign passport
- US Green Card

**The 30 hour training course requirement**

If attempting to qualify to sit for the private applicator’s exam by taking an approved 30 hour course, be aware that **there are no 30 hour training courses available for private applicators.**

The DEC-acceptable solution is to take a 30 hour “commercial” applicators course in category 1a, and then accumulate an additional 4 re-certification credits in fruit (category 22) by attending an appropriate educational event. At such an event, the applicant must complete the DEC re-certification roster, but write-in “pending” in place of their official DEC applicator’s number. Be certain to retain the credit certificate(s) issued after the event and bring along to the DEC exam as proof of the extra training.

**Qualifying by Experience**

If attempting to qualify to sit for the private applicator’s exam in NYS DEC Region 3 by proving at least one growing season’s worth of actual pesticide application experience, the **ELIGIBILITY LETTER FOR PRIVATE APPLICATOR EXAM**, the signatures on the letter (supervisor and applicant) must be **DOUBLE NOTARIZED** for certain regions. Check with your local DEC representative.

If you need a commercial license, but do not meet the requirements, you can be a technician or apprentice first, then upgrade to certified applicator later. (Requirements on the NYS DEC Website)

- **Technician:** may use most general use pesticides without direct supervision and RUPs under direct supervision of a certified commercial pesticide applicator. May NOT supervise.
- **Apprentice:** a person engaged in commercial application of pesticides but does not meet the technician or certified applicator requirements.

**Next, take the appropriate exam.**

Find your DEC Region here: <http://www.dec.ny.gov/about/50230.html>

Find an exam here (search by your region): <http://www.dec.ny.gov/nyspad/find?3&tab=EXAMS>

To pass the exam, study the CORE and Category Manuals. You can purchase them here:

<https://store.cornell.edu/p-189394-core-certification-training-manual-for-pesticide-applicators-and-technicians.aspx>

**\*\*Study tip:** To pass the exam, read the Learning Objectives at the beginning of each chapter, and be able to provide answers to them\*\*

**How do I maintain my license?**

After receiving your pesticide applicator license, you’ll have to maintain it by proving you are continuing to get updated education on proper use of pesticides. You can do this by earning recertification credits or by taking the recertification exam at the end of your certification cycle.

| Private Applicator            | Commercial Applicator        |
|-------------------------------|------------------------------|
| Earn 10 credits every 5 years | Earn 8 credits every 3 years |

All of the information above on how to obtain and maintain a license is available in more detail on the NYS DEC website <http://www.dec.ny.gov/permits/45618.html>

**Most important advice**

Please directly contact a representative from the DEC region where you wish to take the exam to discuss your particular circumstances so that you’re not surprised with unexpected requirements.

Your regional DEC person welcomes any questions you have as you navigate the application process.

Information on the DEC Regions website <http://www.dec.ny.gov/about/50230.html>

# Never too Early to Prepare for Fire Blight

Dr. Srdjan Acimovic, HVRL

For all the growers who had fire blight occur in their orchards in 2016, with even a few limited strikes here and there, you should have stocked copper, streptomycin and prohexadione-calcium products in your pesticide sheds by now. If not, call now to order these products and expedite the order (better safe than sorry).

What should be done before kick-off of the 2017 growing season:

- Pay special attention to removal of fire blight cankers and strikes during dormant pruning
- Apply dormant copper spray to reduce bacterial populations in any bacterial ooze on the surface of the canker bark, as close as possible before bloom but safely enough to avoid toxic effect to green tissues: this is the period from silver tip up to but not later than 1/2-inch green – also make sure to read the label for specific growth stage limitation (for exp. do not apply later than 1/4 inch green). Application later than half-inch green can or will russet the fruit, and exacerbate it at slow drying weather conditions.
- Remove all root suckers and continue to do so throughout the 2017 growing season

If possible, do not plant orchard with M.26 and M.9 (all clones) or any other rootstock susceptible or highly susceptible to fire blight

**What should be done during 2017 and in the years to follow to prevent fire blight outbreak**

### During Bloom:

- Keep in mind that if you had fire blight any time in the past in a still-standing orchard, it is present and poses a realistic threat for apple bloom infections

Use fire blight prediction models – Maryblyt and Cougarblight to decide on exact time(s) to apply streptomycin during bloom and take into account the periods of  $\geq 85\%$  relative air humidity (weather forecast) on top of the predictions reported by these models. If the risk for fire blight infection is high or extreme, treat the predicted  $\geq 85\%$  relative air humidity period(s) same as a rain event(s)

Follow NEWA weather data and several other weather forecast sources at the same time to forge your own inference on how certain are the predicted rain events and/or  $\geq 85\%$  relative air humidity periods. Remember that predictions of fire blight models on infection occurrence are only as good as the weather predictions are - if the weather predictions are inaccurate, disease forecast model will function according to the “garbage in - garbage out” principle.

- Apply streptomycin only in accordance to the infection risks predicted by the models – Maryblyt and Cougarblight (NEWA), treating the predicted  $\geq 85\%$  relative air humidity period(s) and heavy dew period(s) same as a rain event(s).
- Apply streptomycin with Regulaid just before or within 24 h after the rain event that is predicted by Maryblyt and Cougarblight to allow fire blight infection in bloom (Regulaid allows some absorption of streptomycin into the green tissue).
- Repeat streptomycin spray/s during bloom after each subsequent and predicted rain event (just before or within 24 h after rain event) when you are in high or extreme risk of fire blight infection based on Maryblyt and Cougarblight models.
- Keep in mind that streptomycin protects only blossoms that are open at the time of spraying. Once the spray deposit dries it will not redistribute with re-wetting. To protect newly opened flowers repeated sprays are necessary if rain events or  $\geq 85\%$  air humidity periods are predicted to occur during high or extreme

risk of fire blight infection based on Maryblyt and Cougarblight.

- Use NEWA fire blight prediction model to enter the first streptomycin spray you applied to calculate the need for additional treatment/s..
- If more than two sprays of streptomycin will be applied during bloom, Regulaid should be avoided from further use or used at a much lower rate for subsequent sprays. This will prevent leaf chlorosis associated with this surfactant and antibiotic combination (excessive absorption).
- Due to the unique characteristics of high density plantings such as the use of tall spindle and super tall spindle training systems and dwarfing rootstocks, smaller apple trees that are produced by nurseries are prone to suckering. Fire blight infections of susceptible rootstock suckers should not be allowed because they lead to tree death.

There is almost no room for error in fire blight management of high density orchards.

High density orchards, especially with susceptible rootstocks and cultivars, are a "lollipop" for fire blight and if conditions are right this disease can spread fast in them. If infection happens, it can quickly progress through short-length scaffold branches into the trunk, then rootstock, and kill these small trees in the same year.

Pay special attention in preventive fire blight control on late bloom varieties (including cider apples) and in

young apple orchards from 1-8 years. Young trees naturally bloom later and are prone to lingering bloom. All flowers – from first opened flower in spring to the last opened flower – can be infected. Flowers opened late in the season are extremely prone to fire blight infections since bacterial ooze is most of the times readily available from cankers at this time of the year (warm weather allows bacteria to multiply and exude ooze on cankers).

### During Petal Fall:

- As long as you have any opened flowers during petal fall, use the same guidelines outlined above for fire blight management during bloom.
- If no antibiotic was applied in previous 3-4 days and the DH accumulation over 65°F is currently exceeding or is expected to exceed 145 (MaryBlyt ver. 7.1 EIP of 75) within the next few days, apply streptomycin. Spray streptomycin right before or 24 h after the predicted hail-storm event(s)



*continued on next page*

**During Shoot Growth:**

I am repeating a very thoughtful and succinct strategy communicated to many of you by Deborah Breth, Dr. David Rosenberger and Dr. Kerik Cox (with emphasis on bold bullet 4 below for shoots):

- Step 1: Prune out infected wood removing cankers a foot behind bark discoloration.
- Step 2: Spray spring copper at 1/4 inch green but this will not prevent bacterial dissemination throughout bloom.
- Step 3: Assume bacterial sources are present and run models starting at first opened flower. Use streptomycin when models say so. Do not underestimate risk if only a few blossoms left on the trees.

**Step 4: Apply Apogee (prohexadione-calcium) when you have shoots 1-3 inches long (mid-late bloom) without concern for blossom blight pressure because Apogee is used to protect from shoot blight which can happen from left over cankers. There will be leftover cankers because the active ones will not be visible when pruning. Do not use Apogee or Kudos (prohexadione-calcium) on Empire.**

Remember, even if you (luckily) pass through bloom with no major fire blight infection periods, or you sprayed effectively and controlled fire blight in bloom, there is always some chance that fire blight bacteria will directly be transferred from cankers to growing shoots by ooze. In other words fire blight can “appear out of nowhere” on shoots during summer. Finally, remember that until terminal bud set is done across all apple varieties,

shoots are definitely susceptible to fire blight infections. Please re-read my blog on terminal bud set [When and How Terminal Bud Set Occurs on Apples and Reduces Susceptibility to Fire Blight?](http://blogs.cornell.edu/acimoviclab) posted at <http://blogs.cornell.edu/acimoviclab> on Sept. 30, 2016. Refresh your knowledge on all fire blight management considerations on by lab page <http://blogs.cornell.edu/acimoviclab> by reading: [Fire Blight in Champlain Valley 2016 \(II\) – Management Options in 2016 & 2017](http://blogs.cornell.edu/acimoviclab)



**During Summer:**

Use streptomycin sprays for management of fire blight during the summer ONLY just before or 24 h after the predicted or occurred hail-storm event(s), respectively. Low-rate copper sprays are also an option as previously described in my blog [Fire Blight in Champlain Valley 2016 \(II\) – Management Options in 2016 & 2017](http://blogs.cornell.edu/acimoviclab) available on <http://blogs.cornell.edu/acimoviclab>

**2017 ENYCHP Tree Fruit – Calendar of Events**

**Mar.**

|         |                                                                                                                                                           |                         |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 3/28    | Effective Orchard Spraying & NEWA Workshop<br><a href="https://enych.cce.cornell.edu/event.php?id=680">https://enych.cce.cornell.edu/event.php?id=680</a> | Miner Institute, Chazy  |
| 3/28    | Finger Lakes Craft Beverage Conference<br><a href="https://reg.cce.cornell.edu/FLCBC2017_245">https://reg.cce.cornell.edu/FLCBC2017_245</a>               | Holiday Inn, Waterloo   |
| 3/30    | NEWA Modeling & Orchard Scouting Workshop                                                                                                                 | HVRL, Highland          |
| 3/30-31 | FSMA & GAPS Training Workshop<br>To register contact Nancy Halas at 845-677-8223 x115 or <a href="mailto:nh26@cornell.edu">nh26@cornell.edu</a>           | CCE Dutchess, Millbrook |

**Apr.**

|       |                                                                                                                                                               |                            |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| 4/3   | Hudson Valley Special Permit Training                                                                                                                         | FDR Museum, Hyde Park      |
| 4/4-5 | Produce Safety Alliance Grower Training Course<br><a href="https://enych.cce.cornell.edu/event.php?id=703">https://enych.cce.cornell.edu/event.php?id=703</a> | Ramada Plaza Hotel, Albany |
| 4/10  | Champlain Valley Special Permit Training                                                                                                                      | St. Augustine’s, Peru      |



# FSMA Flow Chart

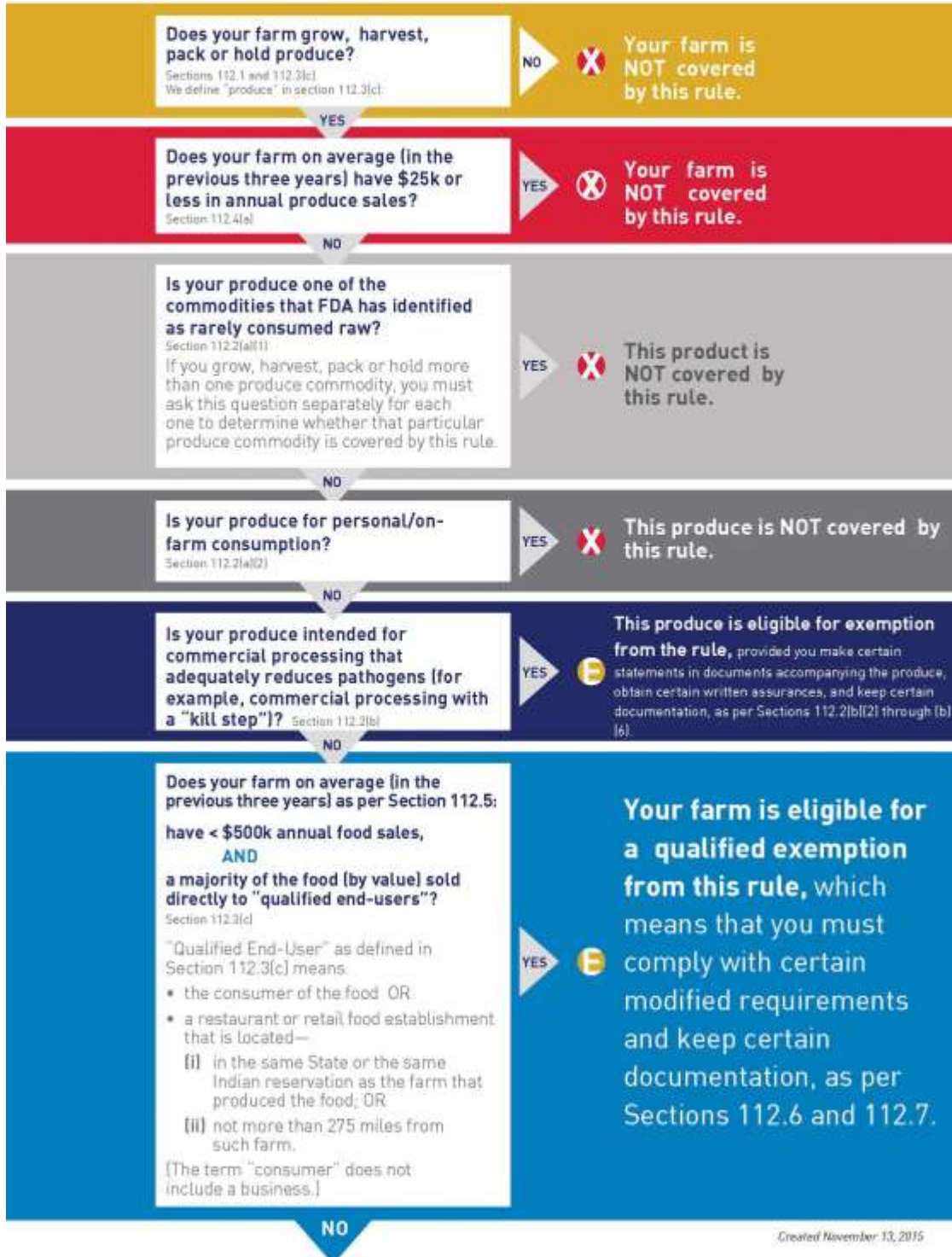
Maire Ulrich, CCE-ENYCHP



## STANDARDS FOR PRODUCE SAFETY

### Coverage and Exemptions/Exclusions for 21 PART 112

The Preventive Controls for Human Food rule clarified the definition of a farm to cover two types of farm operations, primary production farms and secondary activities farms. The same definition is used in the Produce Safety rule (section 112.3(c)). Below are basic criteria that determine whether an operation that meets the definition of "farm" is subject to the produce rule.



**YOU ARE COVERED BY THIS RULE.**

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