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# **Fruit** Notes

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Cornell Cooperative Extension Lake Ontario Fruit Program

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## **Managing Fire Blight in 2021**

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**2020 Fire Blight Season Recap**. In 2020, there were devastating fire blight outbreaks in NY and much of New England. The season was characterized by hot dry weather from the end of bloom into petal fall, which were the perfect conditions for systemic shoot blight. In the second half of May, many sites experienced extreme risk for fire blight when bloom was apparently over and rainfall, dew, and humidity were scarce. Many growers were mystified with the subsequent outbreaks of shoot blight and perplexed as to how blossom infections could occur with the lack of moisture during high-risk periods. This is a common occurrence in the Pacific Northwest where fire blight devastates apple production despite a dry climate. Indeed, it may take only the slightest bit of internal canopy humidity or water from a nutritional or fungicide application to start an epidemic in exceptionally warm weather. We should remain cautious with vigorous growth during warm weather in the 2021 season, particularly as we approach petal fall and as shoots elongate.

**2021 Season Outlook.** In Western NY, king bloom could occur this week for many varieties, and there is more warm weather in high 60s/low 70s in the long-term forecast. Despite the potential for a warm bloom, weather can change suddenly, and it will be important to watch weather forecasts and follow extension specialists' alerts and fire blight risk predictions. If you are concerned with carry over inoculum from fire blight last season, consider the prohexadione-calcium (Apogee/Kudos) at pink to slow the migration of bacteria through tissues as the plants grow.

#### Forecasting Infection Events

Keep track of first blossom open dates for each of your varieties, especially those that are susceptible to fire blight. Make a note on a piece of paper or in notes on your phone. **Use your farm's open blossom dates to run the NEWA fire blight model to increase precision**. As you consider disease forecasting outputs from NEWA or other forecasting models, here are some things to consider before making applications of antibiotics or other costly materials for managing blossom blight:

- 1. **Predictions and forecasts are theoretical.** The theoretical models predicting disease risk use weather data collected (or forecasted) from the weather station location. These results should not be substituted for actual observations of plant growth stage and disease occurrence determined through scouting or monitoring.
- 2. **Consider the history of fire blight in the planting**. If there was no fire blight the previous season or if you have never had fire blight do not let excessive model predictions or extension alerts (including this article) "intimidate you" into applying unnecessary antibiotics each time an alert is released.
- 3. Consider the age and susceptibility of your trees. Age and variety can play a large role in the development of fire blight. Presently, none of the models consider these factors in a formal sense. Adjust your interpretations if you have a young planting of a highly susceptible variety, it may be more important to protect these blocks based on model predictions than a 15-year-old 'McIntosh' planting on resistant rootstocks. A listing of susceptible cultivars and rootstocks (http://newa.cornell.edu/index.php?page=fire-blight-susceptible-cultivars-and-rootstocks) is linked from the NEWA model page for fire blight.
- 4. The models only identify risk of infection based on weather conditions. This includes temperature and moisture conditions. All wetting events are now color-coded light blue in NEWA to draw attention



- 5. to the weather factors that promote bacterial ingress into the flowers. Despite the use of words like "extreme" and "infection" colored in vibrant red, the models only predict infections based on favorable weather conditions. If the apple variety is not highly susceptible, if there is no prior history of fire blight, and if the trees aren't being pushed into high vigor with nitrogen, the actual risk of fire blight infection may be low to non-existent.
- 6. Weather forecasts and predictions can change frequently. Model predictions are based on weather predictions, so when forecasts change, the model predictions and corresponding risk will also change drastically. Bacteria double about once every 20 minutes under optimal conditions; for fire blight this is warm weather >60F. The models use hourly weather data, rather than daily summaries, to accommodate the rapid growth rate of these pathogens. Check the fire blight predictions, especially those in the forecasts, frequently. The 1- and 2-day forecasts are the most reliable; those at 3-, 4- and 5-days are less accurate predictors.

# Nine general guidelines for 2021 management of fire blight in apples.

- 1. At late 'Tight Cluster' or 'Early Pink', preventative applications of prohexadionecalcium (Apogee or Kudos) for blossom blight and early shoot blight may be helpful, especially on highly vigorous plantings of highly susceptible apple varieties. If you have a low vigor block, these programs may not provide benefit as the trees need to be actively growing for the plant growth regulator to work. Also, consider applying prohexadione-calcium during warmer temperature above 65F to improve absorption and metabolism of this PGR. In all, this use practice should not be a substitute for a robust blossom blight program (see below).
  - a. An application of prohexadionecalcium at pink at 6 oz/100 gal may reduce blossom blight and subsequent shoot blight in high vigor blocks.
  - b. Applications of prohexadione-calcium of 2 oz/100 gal mixed with 1oz /100

acibenzolar S-methyl at both 'Pink' and 'Petal Fall' may similarly be effective.

 During bloom, follow a blossom blight forecasting system such as the ones offered in NEWA: <u>http://newa.cornell.edu/index.php?page=a</u> <u>pple-diseases</u>. Time applications during

high-risk weather only. Regardless of model predictions, it is rarely necessary to make more than three applications for blossom blight.

#### 3. Operations with No Recent History (> 3 Seasons) of Streptomycin Resistance.

- At 'Bloom' begin antibiotic applications for blossom blight with a single application of streptomycin at 24 oz/acre. Consider including the penetrating surfactant Regulaid (1 pt/100 gal of application volume) in the first streptomycin spray to enhance the effectiveness of streptomycin. Regulaid would be especially beneficial when applied under rapid drying conditions. Regulaid can be omitted from subsequent applications to minimize the leaf yellowing that is sometimes associated with repeated applications of streptomycin.
- b. If later antibiotic applications are needed, streptomycin or kasugamycin (Kasumin 2L 64 fl oz/A in 100 gallons of water) should be used. Consider making at least one application of Kasumin 2L for resistance management purposes. If there are concerns about the effectiveness of streptomycin or kasugamycin, contact one of the people listed on the last page to discuss the product failure and determine if it would be necessary to submit a sample for antibiotic resistance testing. The presence of shoot blight later in the season isn't necessarily an indication that antibiotics applied during bloom failed due to resistance.
- 4. Operations with Streptomycin Resistance.
  - a. At 'Bloom' begin antibiotic applications for blossom blight with a single application of kasugamycin (Kasumin

2L) at 64 fl oz/A in 100 gallons of water. Consider including the penetrating surfactant Regulaid (1 pt/100 gal of application volume) to enhance the effectiveness of kasugamycin. Regulaid would be especially beneficial when applied under rapid drying conditions. Do not use alternate row middle spraying and apply after petal fall. (The PHI is 90 days and REI is 12 hours).

- b. If a later antibiotic application is needed, Blossom Protect (1.25 lbs/A + 8.75 Buffer Protect; OMRI listed) or Oxytextracycline at the highest rate should be used.
- c. If three application are needed, consider using Kasumin 2L for the first and last application. Use Blossom Protect during bloom and avoid using it as trees go into petal fall.
- 5. In the two weeks following bloom, scout for and prune out fire blight strikes promptly. Destroy pruned strikes by **burning or leaving them out to dry**. It is best to prune well back into healthy wood, at least 12 inches behind the water-soaked margin. Take care as summer pruning may stimulate active shoot growth leading to new susceptible tissues that could later become infected. If fire blight reaches the central leader, the tree should be removed. However, **the spot may be safely replanted**.
- Preventative applications of prohexadionecalcium (Apogee or Kudos) for shoot blight should be seriously considered, especially on vigorous blocks of highly susceptible apple varieties during shoot elongation which begins in late bloom.
  - a. For maximum effectiveness, prohexadione-calcium should be

applied at 6-12 oz/100 gal (3-6 oz/100 gal for tree <5 years) when trees have 1-2" of shoot growth. A second application should be made 14-21 days later.

- 7. Preventative applications of copper can be used post-bloom and during the summer to protect against shoot blight infections. Copper must be applied before infection occurs as it will only reduce bacteria on the surface of tissues. It will have no effect on existing shoot blight infections and may cause fruit russet in young developing fruit. Apply with adequate drying time and use hydrated lime to safen copper. Terminal shoots can outgrow protective residues of copper. A low rate fixed copper program consists of applications on a 7-10 day schedule during high-risk weather until terminal bud set.
- 8. It may be possible to save plantings on resistant rootstocks that have a moderate amount of shoot blight. Apply prohexadione-calcium at the highest rate for the planting (6-12 oz/100 gal) and allow 5 days for the product to take effect. Afterwards, prune out existing and newly developing shoot blight every two weeks for the rest of the season and remove any trees where fire blight has reached the central leader. If pruning stimulates additional shoot growth, a second application of prohexadione-calcium could be warranted.
- 9. If you need to interplant apple trees in existing orchards where trees were killed by fire blight and removed, replant these missing trees 'skips' in late fall to synchronize next season's bloom with established trees.

## Problematic Weeds and Guidelines for their Management

Janet van Zoeren (CCE-LOF), Mike Basedow (CCE-ENYCHP) and Lynn Sosnoskie (Cornell University)

During the weed management session of the 2021 Cornell Tree Fruit Conference, we asked attendees to type in their most problematic weed species. We tallied up the responses, and below are the most commonly named weeds that received more than one mention:

Weed	Number of people who mentioned it as being a problem
Canada thistle	32
Field bindweed	25
Quackgrass	11
Poison Ivy	8
Horsenettle	7
Yellow nutsedge	6
Rootsuckers	3
Wild Buckwheat	2
Horseweed	4
Milkweed	2

Figure 1. List of problematic weeds from our winter tree fruit conference.

This informal survey suggests Canada thistle, field bindweed, and quackgrass present the strongest management challenges for those that responded. With this in mind, we will discuss management strategies for these three species.

#### Canada Thistle

Canada thistle is a common broadleaf perennial weed. It produces an extensive root system, which can spread up to 17 feet across and reach 20 feet

deep. It forms a rosette of spiny, lobed leaves (Figure 2A), which will emerge from its roots (vegetative reproduction, leading to large stands dense with thistle) during both a spring and fall flush of growth. Canada thistle can also spread through seed dispersal. Seeds germinate about the same time as the spring flush. A single large seed head can produce up to 5000 seeds (Figure 2B), and a new plant can sprout from as little as a single inch of root segment.



Figure 2. Canada thistle rosette of spiny lobed leaves (A), flowers, and seed head (B). Photos courtesy Dr. James Altland, Oregon State University.

#### Management

- Casoron (dichlobenil, WSSA Group 20) provides control of some perennial weeds, including Canada thistle. Casoron 4G (granular formulation) must be applied between November 15 and February 15, which is not always practical in our region. The CS formulation provides somewhat more flexibility, as it must be applied when air temperatures are less than 70°F and before seedlings are two inches tall in the early spring.
- Matrix (rimsulfuron, WSSA Group 2) can provide partial control of Canada thistle.

Matrix should be applied to small actively growing Canada thistle only once it has emerged.

Stinger (clopyralid, WSSA Group 4) is another post-emergent material for the control of thistle. It should be applied to Canada thistle from the rosette to the bud stage to keep plants from setting seed. It cannot be applied during apple bloom. Clopyralid can also be applied to thistle postharvest, but should go on prior to the first frost while the plant is still actively growing and healthy.

- 2,4-D (another WSSA Group 4) will also provide partial control when used at similar timings as clopyralid.
- Contact products such as Rely (glufosinate, WSSA Group 10), Gramoxone (paraquat, group 22) and group 14 products like Venue (pyraflufen-ethyl) and Treevix (saflufenacil) will also burn down emerged foliage.
- Mowing while the plant is flowering will keep Canada thistle from setting new seeds, but no mowing should be done for at least ten days following a systemic herbicide application to ensure chemical movement out of the treated tissues.
- Multiple seasons of good management practices will be necessary to gain control of this difficult weed.

#### Field Bindweed

Field bindweed (*Convolvulus arvensis*) is a perennial broadleaf that spreads by seed and through its large, creeping root system (Figure 3A). Bindweed's tap roots, which can grow to more than 30 feet long below ground, facilitates its persistence and tolerance of environmental stress and most weed control tactics. Bindweed has arrowhead-shaped leaves that are simple and alternate with a flattened base and a rounded tip (Figure 3B). It has white or pink, funnel-shaped flowers that are one to two inches across (Figure 3C). The species can be confused with another perennial bindweed, *Calystegia sepium* (hedge bindweed), which produces larger leaves (with a deeply lobed base and pointed tips) and flowers.



Figure 3. Field bindweed has a creeping root system (A), produces arrowhead-shaped leaves that are simple and alternate (B) and has white or pink, funnel shaped leaves (C). Photos by Dr. Lynn Sosnoskie.

#### Management

- Field bindweed is best controlled prior to planting, through frequent cultivations and systemic herbicide applications.
- Once the orchard is planted, late fall/early spring applications of Casoron (dichlobenil, WSSA Group 20) can provide control when seedlings are small. Be mindful of the timing limitations associated with these products, as spring applications must be made between Nov 15 and Feb 15 for the 4G formulation, and when air temperatures are less than 70°F and before seedlings are two inches tall for the CS formulation.
- Early applications should be followed up with spot treatments of a systemic product. Remember that **2,4-D**, an auxinic

herbicide, and cannot be applied at apple bloom.

- Contact products like Rely (glufosinate, WSSA Group 10), Gramoxone (paraquat, Group 22) and group 14 chemistries such as Aim (carfentrazone-ethyl) and Venue (pyraflufen-ethyl) may also be used to burn back foliage.
- Mowing is rarely an effective strategy for controlling field bindweed as the prostrate vines often grow under the height of a mower deck.

#### Quackgrass

Quackgrass is a perennial grass that reproduces by seed and through underground stems. The plant reaches 20 to 40 inches tall, with leaves 2 to 13 inches long and 1/8 to ¾ inches wide. It is found in most cultivated fields, and is very difficult to eradicate once it becomes established (figure 4).



Figure 4. Established quackgrass in an orchard row middle spreads both by seed and through underground stems.

#### Management

- Casoron (dichlobenil, WSSA Group 20) is labelled for controlling quackgrass. The CS formulation lists quackgrass as moderately susceptible. Again, note the 4G formulation must be applied between Nov 15 and Feb 15 and the CS should be applied early spring when air temperatures are less than 70°F and before seedlings are two inches tall.
- Matrix (rimsulfuron, WSSA Group 2) will provide postemergence quackgrass control when applied to plants that are 4 to 8" tall. Quackgrass not emerged at the time of application will not be controlled or suppressed, and would require a second post-emergent application for acceptable control.
- Sinbar (terbacil, WSSA Group 5) usually provides partial control of quackgrass.

- Poast (sethoxydim, WSSA Group 1) can provide control of quackgrass. It should be applied to quackgrass in the spring before the grass reaches a height of 8 inches. Up to 7 applications can be made per season, with at least 14 days between each application.
- **Rely** (glufosinate, WSSA Group 10) can also provide burndown control of quackgrass.
- Kerb W and Kerb SC (pronamide, WSSA Group 3) will provide some pre and post emergent control of quackgrass, but applications must be in the fall, after the fruit is harvested and prior to soil freeze-up.
- Mowing can also be used to help suppress quackgrass. It should be mowed as close to the ground as possible to deplete the reserve of carbohydrates within the rhizomes. Wait to mow following any systemic application, to allow the product to fully move out of the treated tissues.

#### A Note on Glyphosate Use for Perennial Weed Management

Glyphosate can be an important tool in a perennial weed management program, as it is both nonselective and systemic, allowing it to be translocated from the foliage down into the storage tissues. There are a few key points to keep in mind if you plan to use glyphosate.

- Due to glyphosate's broad spectrum and systemic properties, it must be used with caution to prevent injury to the apple trees. It should only be used in the spring, not beyond early July. Later applications risk uptake by the trees, increasing the potential for sub-lethal damage and winter injury. Every measure should be taken to keep the herbicide from contacting the tree foliage, root suckers, and trunks.
- To get the most out of glyphosate's systemic properties, timing is critical. For many weeds, it is best to apply in the spring prior to bud formation up through the flowering period, as this is the period

when plants are actively growing and when phloem-mobile products are most likely to be translocated to the roots. Check the label for specific use instructions for the weed species you are looking to treat so that you are treating at the optimum timing.

- Pay close attention to the weed's growth status, and to any adjuvant recommendations. Stressed plants do not uptake systemic products as readily as rapidly growing plants. In hot, dry conditions, control will likely be more limited than in years where there is a healthy flush of weed growth.
- Look closely at the recommended adjuvants. Pay close attention to adjuvant recommendations for the particular weed species you are looking to control with glyphosate. Many species require the addition of ammonium sulfate to the mix to optimize weed control.

For a full review of the effects glyphosate can have on the apple orchard, we recommend the following Fruit Quarterly article from 2013: http://nyshs.org/wp-

#### content/uploads/2016/10/Pages-23-28-from-NYFQ-Winter-12-12-2013.cmc\_.pdf

Always read the label before choosing a product and making an application. Each product has specific product use and tree age restrictions that are pertinent to your operation. Many herbicides can cause damage to trees if they come into contact with sensitive tissues, check labels regarding safe spraying requirements. While some pre-emergence herbicides can control small, emerged, annual weeds, a burn-down herbicide may be required to achieve complete vegetation control. Active ingredients vary with respect to their spectrums of control; reference product labels regarding tank-mixing recommendations. While we make every effort to provide up to date information, remember that ultimately the label is the law.

#### Fertilization of Honeycrisp with consideration of Rootstock to Manage Bitter Pit

Terence Robinson & Lailiang Cheng (Cornell University), Gennaro Fazio (USDA-ARS) and Mario Miranda Sazo (CCE-LOF)

In the last few years, we have studied nutrient levels in Honeycrisp fruit as influenced by rootstock and found that some rootstocks impart higher potassium and nitrogen levels in the fruit than others. It does not seem that they have less Ca in the fruit, but the ratio of K/Ca or N/Ca is elevated with some rootstocks more than others. It appears that some rootstocks are more efficient at taking up K and N than others. This leads to more bitter pit with some rootstocks than others.

The issue of K fertilization is interesting because we found in the 1990's that K was essential for large fruit size and high yield of 'Empire'. Our work in 2008-2009 on 'Gala', another smallfruited variety also showed that high K levels in leaves (1.6%) and fruit (0.8%) are needed for fruit size and yield. Thus, we promoted its annual use with both varieties and had high targets for leaf K level (1.5-1.8%). It worked well with all other varieties until 'Honeycrisp' came along. We found that 'Honeycrisp' requires less K to have large fruit size and high yield than 'Gala'. Thus, it should need lesser amounts of annual K<sub>2</sub>O than 'Gala'. We continue to recommend annual applications of K fertilizers to 'Gala'. Our work also showed with 'Gala' that a high yield of 1500 bu/acre will remove about 100 lbs of K<sub>2</sub>O per acre with the fruit. Thus at least that amount of annual K should be applied to 'Gala' to sustain that high yield. With the new data we recommend much lower amounts of K fertilizers with 'Honeycrisp'. In addition, we also have a much lower target for leaf K level of (1.0-1.3%) with 'Honeycrisp' than with 'Gala' (1.5-1.8%).

Another factor is the efficiency of K uptake by different rootstocks. Some rootstocks such as B.9 do not take up as much K as other rootstocks. M.9 is intermediate while G.41 and G.11 are very efficient in K uptake. The low vigor of B.9 and low uptake of K is good for bitter pit, but B.9 trees almost never fill their space well enough for high yields, while G.11 and G.41 have slightly more vigor to fill the space but are very efficient at taking up K and thus can have more bitter pit in some years. Recently, we found that G.214 has similar vigor to G.41 but poorer uptake of K and thus has low bitter pit risk (the best of both worlds).

We still don't know why some rootstocks are more efficient at taking up K and Ca than others. Probably it has a lot to do with vigor and root system size. Higher vigor usually means a greater volume of soil is explored by roots and thus the plant has access to more N and K.

Lastly, for managing 'Honeycrisp' and 'Gala' we recommend using leaf analysis, and for 'Honeycrisp' we also suggest fruit peel sap analysis, to evaluate how much K and N to add or not add. Honeycrisp by itself seems to be less efficient than other scions in the ability to transport calcium to fruit, while it is able to be very effective with potassium and nitrogen. If leaf K and N levels of 'Honeycrisp' are above 1.3% and 2.2%, respectively, then we suggest a reduction in the annual K and N applications to zero for a year. For 'Gala', if leaf K levels are less than 1.5%, we suggest additions of 100 lbs K<sub>2</sub>O per acre per year until that level is achieved. However, for 'Honeycrisp' if K level is between 1.0 to 1.3%, reduce the K rate by 25~30% that was recommended for 'Gala' at the same yield level. In addition, with Honeycrisp fruit peel sap analysis has been very helpful in deciding how to fertilize that variety. If the peel sap K/Ca ratios are above 25 then that is also a signal to reduce K applications to zero. If peel sap levels of the K/Ca ratio are below 25 then 'Honeycrisp' should receive about 40 to 50 lbs K<sub>2</sub>O/acre at a yield level of 1000 bushels per acre. Because 'Honeycrisp' often has 15 to 30% lower yield than 'Gala', the annual maintenance K application rate is often only about 50 to 60% of what was recommended for 'Gala'.

Table 1. New potassium recommendations and plant tissue levels for 'Honeycrisp' to mitigate incidence of bitter pit.

Honeycrisp orchard	K Fertilization Program for Honeycrisp	K/Ca levels in Leaves and Fruit Peel Tissues
New planting	Pre-site preparation: Reduce the input of K during pre-	Leaf K level
	plant soil preparations to maintain a ratio of K to Ca at 6-7.5% instead of 9.5-10% for most varieties	Keep a low value of 1.0-1.3% (years 1-2)
Mature planting	Maintenance application: Reduce the K rate by 25~30% that	Leaf K level
	was recommended for 'Gala', 'Empire' and 'McIntosh' at the	Keep a low value of 1.0-1.3%
	same yield level. If your soil analysis indicates that there is over 350 lbs of K in the top 6" of soil per acre, we suggest skipping K fertilization for one to two years to draw down the soil K reserves and then make a decision based on leaf analysis.	Peel sap K/Ca ratio (July timing) Keep a ratio below 25

Table 2. Predicted removal rates of macro-nutrients by fruit harvest in relation to fruit yield in commercial 'Gala' orchards in New York.

Yield(bu/acre)	N	Р	К	Са	Mg	S
500	10.3	2.6	30.6	3.7	1.8	1.0
1000	20.3	5.0	57.9	7.6	3.5	2.1
1500	30.3	7.4	85.1	11.5	5.3	3.1
2000	40.3	9.7	112.4	15.4	7.1	4.2

Macronutrients (lbs/acre)

Maintenance  $K_2O$  application rate is the K removal rate in the table at a given yield multiplied by 1.2. For example, at a fruit yield of 1500 bushels per acre, the maintenance  $K_2O$  rate is: 85.1 X 1.2 = 102 lbs/acre.

#### Employee COVID-19 Vaccinations in the LOF Region Mark Wiltberger (CCE-LOF)

The article below (*How to Talk About COVID-19 Vaccination with Your Employees*), covers a number of important points about COVID-19 vaccinations for employees. I spoke to a grower a few days ago who already has a sizable H-2A crew here for pruning. He contacted the county health department to see about vaccinations, and they arranged for a pop-up location and date for his employees.

Vaccines and appointments are becoming more available. Employee vaccination may be more a

matter of awareness and logistics at this point. Employees from other countries may not be aware of what a vaccine is. Some may never have been vaccinated before – they may never have received those childhood vaccines we are all so familiar with. As far as logistics, whether you contact a local health department, health clinic, or pharmacy, your efforts can help ensure your employees have a place to go plus the necessary documents to get vaccinated.

## How to Talk About COVID-19 Vaccination with Your Employees

Mary Kate MacKenzie (CCE-SCNYDLF); Richard Stup, Agricultural Workforce Specialist; and Mary Jo Dudley, Director of the Cornell Farmworker Program (both of Cornell University)



<u>This article</u> with all the hyperlinks is also available at <u>https://blogs.cornell.edu/scnydairyandfieldcrops/</u>

The decision to receive the COVID-19 vaccine is a highly personal one, yet each individual's decision has profound implications for public health. At the farm level, that makes farmer and farm worker vaccination an important risk management issue. The more people on your farm who are fully vaccinated against COVID-19, the lower your risk of experiencing a COVID outbreak with consequences for employee health and farm operations.

As a manager, your words and actions have potential to influence employee attitudes about the vaccine. How can you communicate effectively about COVID-19 vaccination with your family members and employees? Here is a list of Do's and Don'ts to help you have productive conversations that lead to more vaccinations.

#### DO

#### 1. Be the first person on your farm to get the COVID-19 vaccine.

Actions speak louder than words. Leading by example is an easy way to demonstrate that you take the threat of COVID seriously and you view the vaccine as an important tool to reduce COVID risk. It also gives you the ability to speak from your own experience about the process of getting vaccinated and any side effects that you experienced. If one person on the farm gets vaccinated, that may make others less hesitant about receiving the vaccine. According to a survey conducted by the <u>Kaiser Family Foundation's COVID-19 Vaccine Monitor</u> (<u>https://www.kff.org/report-section/kff-covid-19-vaccine-monitor-january-2021-vaccine-hesitancy/</u>), individuals who were eager to get the vaccine were 79% more likely to know someone who was already vaccinated compared to individuals who said they would get the vaccine "only if required".

#### 2. Discuss COVID-19 vaccination early and often with your employees.

Encourage employees to get the COVID-19 vaccine and discuss how vaccination is good for the farm. Share your reasons for getting vaccinated and describe your experience with the vaccination process. Provide information about COVID-19 risks and the benefits of vaccination from trusted sources, including the <u>CDC</u> (<u>https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html</u>), the <u>Cornell Farmworker Program</u> (<u>https://cals.cornell.edu/global-development/our-work/our-initiatives/cornell-farmworker-program</u>), and the <u>Institute for Food Safety at Cornell (https://instituteforfoodsafety.cornell.edu/coronavirus-covid-19/food-industry-resources/)</u>. Be sure to provide information in your employees' native language. Share the <u>English</u> (<u>https://cals.cornell.edu/covid-19-vaccines-farmworkers-should-i-get-it-and-what-are-side-effects</u>) and <u>Spanish</u> (<u>https://cals.cornell.edu/las-vacunas-para-el-covid-19-deberia-obtenerla-y-cuales-son-sus-effectos</u>) recordings of a recent webinar featuring medical providers discussing "COVID-19 vaccines for farmworkers: Should I get it and what are the side effects?"

# 3. Share the fact that vaccines have a long and effective history of controlling and eradicating diseases in both humans and animals.

Measles, mumps, diptheria, whooping cough, and polio are just a few of the devastating human diseases that we <u>control routinely with vaccines</u> (<u>https://www.cdc.gov/vaccines/parents/diseases/forgot-14-diseases.html</u>). <u>Smallpox ( https://www.cdc.gov/smallpox/history/history.html</u>)</u>, an historic scourge of humanity that killed 3 in 10 of its victims and left others scarred and blinded, was eradicated worldwide by vaccines. Similarly, <u>animal agriculture industries (https://extension.umn.edu/beef-cow-calf/cattle-vaccine-basics</u>) have long used vaccines to prevent disease in livestock. Farmers and farm employees should be very familiar with vaccines and understand the import role they play in controlling disease and promoting health.

#### 4. Help employees navigate the logistics of getting vaccinated.

Make sure your workers know that, in New York State, vaccination is free and available to <u>anyone age 16 and</u> <u>up who lives or works in the state</u> (<u>https://covid19vaccine.health.ny.gov/</u>). Share information with your employees about clinic locations, dates and times, and how to register. Make sure employees know they are <u>eligible for up to four hours of paid leave to get a COVID-19 vaccination</u> (<u>https://agworkforce.cals.cornell.edu/2021/03/29/paid-leave-required-for-covid-vaccinations/</u>). Discuss transportation options and whether the farm is able to transport employees to a vaccination site.

Once your employees have registered for the vaccine, make sure they have all necessary documentation ready for their appointment, including photo identification. This can include documents from another country, such as passports, voter registration cards and consular IDs, or photo identification from another state. Everyone should bring proof that they live or work in New York State. Those that do not have a New York State ID can bring a paystub showing the farm address. Health insurance is not required for vaccination. However, people who have health insurance should bring their insurance policy information to their appointment.

#### 5. Listen to employee concerns and consider whether you can do anything to alleviate them.

Listening without judgement to employee questions and concerns is one of the best ways to build confidence in the COVID-19 vaccine. Some employees may voice concerns stemming from a lack of information or misinformation about the vaccine. Others may worry about missing work after getting the vaccine due to potential side effects. In response, be prepared to share your own reasons for getting vaccinated, provide information about vaccine safety from reliable sources, and communicate your farm's sick leave policy. Discuss staggering vaccination dates for workers to avoid the possibility of everyone experiencing side effects at the same time.

#### 6. Continue sharing information about new opportunities to get vaccinated.

Farmworker vaccination efforts across New York State are gaining momentum. Now that eligibility is based on age, farmers and farm workers may access the vaccine through multiple channels, including sites run by New York State, county health departments, and pharmacies. According to <u>the Governor's April 13 announcement</u> (<u>https://www.governor.ny.gov/news/governor-cuomo-announces-new-targeted-effort-vaccinate-workers-new-york-state-farms-and-food</u>) the state is devoting additional resources to increase vaccine delivery to farmers and farm workers through convenient pop-up vaccination sites. As you learn about new vaccination opportunities, be sure to share them with your employees. If you have workers who are not ready to get vaccinated now, they may be interested in a few weeks or months.

## DON'T

1. Repeat doubts about the safety of COVID-19 vaccinations from unreliable sources.

The scientific community is strongly in support of the vaccines that are approved for use in the U.S. because they are <u>safe and effective (https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/safety-of-vaccines.html</u>). This was demonstrated both through large scale trials while the vaccines were being developed and now by the hundreds of millions of people who have safely received them. Rumors and doubts expressed by leaders can make employees afraid of the vaccine. There are actual risks from vaccines, such as rare allergic reactions, but these risks are far outweighed by the risk of not getting vaccinated and the danger that unvaccinated individuals present to themselves and to everyone with whom they come into contact.

#### 2. Disregard or judge employees when they ask questions or share their concerns.

These are truly uncertain times and the pandemic has provoked historic levels of fear in our society. Stress and anxiety can hinder good decision-making and leave people vulnerable to unfounded rumors and misinformation. Do not dismiss employees' concerns with a quick judgement. Instead, listen and ask questions. A listening ear can help people unpack their concerns and hold them up for examination against the facts. You might then have an opportunity to follow up with reliable information from trusted resources after listening.

#### 3. Fail to encourage your employees to get vaccinated.

It is not enough to rely on public messages to encourage your employees to get vaccinated. As a business manager, you are a trusted source of information and guidance. Your silence about COVID-19 vaccination might be read by employees as indifference or, worse, hostility toward vaccination. The safety of your employees and their families, the future of your business, and the health of our communities depends in part on your positive communications about vaccination.

#### Conclusion

Leadership matters. Your efforts to encourage vaccination for your employees and their families could have far-reaching effects in protecting health and life. Please do your part to encourage the people you lead to get the vaccine, get protected, and help snuff out COVID-19.

#### Resources

Here are the full web addresses for the two webinar recordings referenced above, hosted by the Cornell Farmworker Program and <u>Finger Lakes Community Health</u> (<u>https://www.localcommunityhealth.com/</u>):

- COVID-19 vaccines for farmworkers: Should I get it and what are the side effects? (English): <u>https://cals.cornell.edu/covid-19-vaccines-farmworkers-should-i-get-it-and-what-are-side-effects</u>
- Las vacunas para el COVID-19: ¿Debería obtenerla y cuáles son sus efectos? (Español): https://cals.cornell.edu/las-vacunas-para-el-covid-19-deberia-obtenerla-y-cuales-son-sus-efectos

A set of FAQs, based on farmworker questions during the webinars, is available through the Cornell Farmworker Program (<u>farmworkers@cornell.edu</u>).

The Cornell Farmworker Program also has emergency resources available to assist farm workers whose families have been affected by COVID-19. Information about the farmworker emergency relief fund in both Spanish and English can be found at: <u>http://www.trabajadores.cornell.edu/</u>

## Introducing NEWA 3.0: Updated Models and Resources for Fruit Growers

Dan Olmstead, Extension Associate and NEWA Coordinator at the New York State IPM Program

The Network for Environment and Weather Applications (NEWA) is an important resource in the IPM toolbox for apple growers. 2021 is bringing long-awaited updates and improvements that were designed specifically with grower needs in mind. This article will quickly get you started with NEWA 3.0 during this period of transition. Where can I find the updated NEWA 3.0 website? NEWA 3.0 is at <u>https://dev.newa.cornell.edu</u>. Note this website address has **dev** in the front indicating it is a 'development' website, meaning there could be some occasional bugs or issues. If you discover a glitch, have a problem, or want to ask questions, contact the NEWA Help Desk right away by sending an email message to <u>support@newa.zendesk.com</u>. We need your help to catch these last bumps in the road.

#### Is the old NEWA website still available?

YES. The old NEWA is available for all of 2021 at <u>http://newa.cornell.edu</u>. Note this website address

does not have **dev** in the front. This old version will not be retired until after the 2021 growing season because we want to minimize frustration or anxiety that comes with learning new technology. For example, please feel free to rely on old NEWA for day-to-day management while you set aside time off-hours to learn NEWA 3.0.

#### How do I get started with NEWA 3.0?

There are three important steps to complete before using NEWA 3.0 apple models. Quickstart video tutorials are available for each on the NEWA Help Desk. See Table 1 for details and links.

Table 1. Watch these short Quickstart video tutorials to get started with NEWA 3.0.

Title	Link
How to start using NEWA	https://newa.zendesk.com/hc/en-us/articles/360054268454
How to customize your NEWA	https://newa.zendesk.com/hc/en-us/articles/360054268354
dashboard	
How to use your NEWA dashboard	https://newa.zendesk.com/hc/en-us/articles/360057357553

#### I found a glitch! What do I do?

Please report a NEWA 3.0 bug or issue to https://newa.zendesk.com/hc/enus/requests/new?ticket\_form\_id=1500000353601. Or send a message to support@newa.zendesk.com with lots of details and a screenshot or two of your problem. We need your help finding and working out these final bugs.

# Are all the same NEWA apple models and resources available?

A majority of apple models are available now on NEWA 3.0 at <u>https://dev.newa.cornell.edu</u>. Plans are in place to complete the rest by June of this year. Be sure to create and sign in to your NEWA 3.0 user account for the best experience (see above). Table 2 provides a complete listing of availability.

#### Table 2. Availability of NEWA Apple models on NEWA 3.0.

Model	Available	Model link	Tutorial link
Apple maggot	Yes	https://dev.newa.cornell.edu/a	https://newa.zendesk.com/hc/en-
		pple-maggot	us/articles/1500003972962
Codling moth	Yes	https://dev.newa.cornell.edu/c	https://newa.zendesk.com/hc/en-
		odling-moth	us/articles/1500003853361
Obliquebanded	Yes	https://dev.newa.cornell.edu/o	https://newa.zendesk.com/hc/en-
leafroller		bliquebanded-leafroller	us/articles/1500003852501
Oriental fruit moth	Yes	https://dev.newa.cornell.edu/o	https://newa.zendesk.com/hc/en-
		riental-fruit-moth	us/articles/360062425274
Plum curculio	Yes	https://dev.newa.cornell.edu/p	https://newa.zendesk.com/hc/en-
		lum-curculio	us/articles/1500003851361
San Jose Scale	Yes	https://dev.newa.cornell.edu/s	https://newa.zendesk.com/hc/en-
		an-jose-scale	us/articles/1500003973622
Spotted tentiform	Yes	https://dev.newa.cornell.edu/s	https://newa.zendesk.com/hc/en-
leafminer		potted-tentiform-leafminer	us/articles/1500003971902
Apple scab	Pending	June 2021	June 2021
Fire blight	Pending	June 2021	June 2021
Sooty blotch fly	Pending	June 2021	June 2021
speck			

Apple carbohydrate thinning	Yes	https://dev.newa.cornell.edu/a pple-carbohydrate-thinning	May 2021
Pollen tube growth model	Yes	https://dev.newa.cornell.edu/p ollen-tube-growth-model	May 2021
Apple irrigation	Yes	https://dev.newa.cornell.edu/a pple-irrigation	May 2021
Blueberry maggot	Yes	https://dev.newa.cornell.edu/b lueberry-maggot	https://newa.zendesk.com/hc/en- us/articles/1500003972722
Strawberry diseases	Pending	May 2021	May 2021
Strawberry diseases Grape berry moth	Pending Yes	May 2021 https://dev.newa.cornell.edu/g rape-berry-moth	May 2021 https://newa.zendesk.com/hc/en- us/articles/360062426534
Strawberry diseases Grape berry moth Grape diseases	Pending Yes Pending	May 2021 https://dev.newa.cornell.edu/g rape-berry-moth May 2021	May 2021 https://newa.zendesk.com/hc/en- us/articles/360062426534 May 2021
Strawberry diseases Grape berry moth Grape diseases Degree day calculator	Pending Yes Pending Pending	May 2021 https://dev.newa.cornell.edu/g rape-berry-moth May 2021 June 2021	May 2021 https://newa.zendesk.com/hc/en- us/articles/360062426534 May 2021 June 2021

# I still have questions or concerns. Who can I contact?

Please reach out to the NEWA Help Desk with a message to <u>support@newa.zendesk.com</u> or by submitting a request here <u>https://newa.zendesk.com/hc/en-us/requests/new?ticket\_form\_id=360003631693</u>. We generate a unique work ticket number and try to respond within 1 or 2 business days at most.

to respond within 1 or 2 business days at most. Your ticket will remain open until we find a solution for you.

#### Where can I learn more?

Be sure to follow NEWA on Twitter @NetworkforEnvi2 and Facebook @nysipm.newa. Also check out the NEWA blog at

#### https://dev.newa.cornell.edu/blog.

NEWA is part of the New York State IPM Program and Cornell Cooperative Extension at Cornell University. NYSIPM partners closely with the Northeast Regional Climate Center to make NEWA available to growers statewide

# Mark Your Calendar- Statewide Virtual Bloom Thinning Meeting!

Our Next Statewide Virtual Meeting (CCE-LOF & CCE-ENYCHP) will be Monday, May 3, from 3-4 PM via Zoom. Dr. Terence Robinson (Cornell) and others will continue to present the detailed and practical implications for bloom thinning with and without the use of the Pollen Tube Growth Model in apples. There will be ample time for questions and discussion. At meeting time, please click this link, there is no need to pre-register: Join Zoom Meeting

https://cornell.zoom.us/j/95697849291?pwd=K0JJc0ZLb2JoaVg5VXR4YTloK2N5QT09

Meeting ID: 956 9784 9291 Passcode: 061465 One tap mobile +16468769923,,95697849291# US (New York) 16465189805,,95697849291# US +(New York) Dial by your location +1 646 876 9923 US (New York), +1 646 518 9805 US (New York)

Please see the introduction to bloom thinning by Dr. Robinson and much more (Nutrition by Dr. Cheng, Fire Blight Management by Dr. Cox, and Insect Mgmt at Pink from Dr. Jaime Pinero (UMass) from **Our Statewide** <u>Virtual Pink Meeting</u> that was held 4/27 Here: <u>https://www.youtube.com/watch?v=fnF6y\_fCdqw</u> from 4-5:30 PM via Zoom. All of our educational videos are on our <u>YouTube Channel</u> at: https://www.youtube.com/channel/UC6PXjEkx7nLDY1A81Ek5brQ

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**Figure 1.** A screenshot of the NEWA 3.0 user dashboard from which you can choose preferred stations and models. A Quickstart video for dashboard navigation is available at <u>https://newa.zendesk.com/hc/en-us/articles/360057357553</u>.

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**Figure 2.** A screenshot of the NEWA 3.0 codling moth user interface. A Quickstart guide for this model is available at:

https://newa.zendesk.com/hc/en-us/articles/1500003853361.

### **Cornell Cooperative Extension**

Lake Ontario Fruit Program 12690 Rt. 31 Albion, NY 14411

#### Contents

Managing Fire Blight in 2021

Problematic Weeds and Guidelines for their Management

Fertilization of Honeycrisp with consideration of Rootstock to Manage Bitter Pit

Employee COVID-19 Vaccinations in the LOF Region

How to Talk About COVID-19 Vaccination with Your Employees

Introducing NEWA 3.0: Updated Models and Resources for Fruit Growers

Mark Your Calendars –Statewide Bloom Thinning Zoom Monday, May 3, 4-5 PM.

Contact Us

# **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



Janet van Zoeren 1 585-797-8368 I jev67@cornell.edu Integrated Pest Management (IPM)

Areas of Interest: IPM of tree fruit and berry pests, biological control, and pollinators. Crops: Blueberries, Raspberries / Blackberries, Strawberries, Apples, Apricots, Asian Pears, Cherries, Currants, Nectarines, Peaches, Pears, Plum



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

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