THE UNIVERSITY OF MAINE
Cooperative Extension
Pest Management Unit

Maine Tree Fruit Newsletter

Thursday, May 28, 2020 Vol 27:4

Fire blight

Apple and pear trees with any amount of open bloom during the next rain are at risk of fire blight blossom infections. Cultivars that have frequently been infected by fire blight in Maine include Cortland, Gingergold, Gala, Golden Delicious, Honeycrisp, and Paulared. Here is a link to the apple spray guide table for the bloom listing bactericides that are effective at killing the bacteria that cause fire blight.
https://netreefruit.org/apples/spray-table/6-bloom-apple

There are several biologically active products used to suppress fire blight that are not true bactericides. The mode of action for these products include competition with fire blight bacteria for resources to feed upon for population growth within the apple flowers, and plant resistance induction. While these products can be useful for a multi-faceted integrated approach to blossom blight suppression, they are not as effective as streptomycin for protection against a severe fire blight infection event that is in the forecast for the reliable

Ag-Radar is still not up and running. At Highmoor Farm in Monmouth, temperatures on Tuesday and Wednesday, May 26-27, and those forecast for Thursday and Friday May 28-29 are warm enough to cause extreme high risk for fire blight infection wherever inoculum is present IF there is any rain. Without rain, there is no fire blight infection. But it does not take much rain at all to launch the infection process. Even 0.01 inch is enough. There appears to be some risk even from heavy dew. However, without measurable rain, the risk is low.

Because of the sensitivity to even small amount of wetting, a common concern is if spraying is enough by itself is enough to cause infection. In general, the answer is no. Even a high volume orchard spray is less than the equivalent of 0.01" inch of rain. (Which if nothing else, gives you some appreciation for the awesome power of nature). But "in general" leaves room for costly exceptions and is not a comforting level of confidence. The primary exception is spraying in the early morning at the same time as maximum dew formation on a day when there is natural dew formation during the window after a spray application before the spray has dried off. In that case, any amount of extra water can be enough to push the amount of dew over the threshold that allows enough water to accumulate to carry the fire blight bacteria down into the floral nectaries where the infection process occurs.

Until and unless there is enough water in the flower to initiate the infection process, there is no infection. But again, it does not take much. On a dry morning, or spraying at other times of day, especially during the day with good drying conditions, the amount of spray water is not enough. But combine spray water with dew, and the combination could be enough.

If your orchard has never had fire blight it is difficult to gauge the true risk, but at these temperatures, even low-inoculum orchards are at risk. For orchards with any history of fire blight in the last five years, and especially within the last two years, risk is extremely high.

In high risk orchards, despite the understanding described above that spray water applied during good drying conditions is not enough by itself to launch infection, the risk is too great from any spray to take the chance. In that case, if you need to make a spray application, including streptomycin in the tank mix is a prudent precaution.

If there is rain in the forecast, then bactericide should be applied before the rain. Immediately before the rain starts is ideal, but that is logistically impossible for many orchards, and also unnecessary. The idea for applying the bactericide is to eliminate or at least reduce the number of bacteria available to cause infections. Doing so essentially resets the heat unit clock to start over from the time that the bactericide (e.g. streptomycin) removes the bacterial that had built up in the flowers prior to that time. The bacteria build up by being carried into flowers by flies, bees, other insects and possibly even by wind.

While it is ideal to reset the heat unit accumulation just before the rain event, it is important to not let the perfect be the enemy of the good. Restarting the heat unit clock 12 hours before the start of the rain is ideal, but doing it 36 or 48 hours before the rain is probably good enough, and definitely better than going into the rain with no protection. There is a threshold amount of heat units below which the bacteria do not have enough time to a) get carried into the flowers, and b) multiply into a sufficient quorum of bacterial density to cause infection. Resetting the heat unit clock a couple of days before a rain event is sufficient unless it is so hot that even one or two days provides enough heat units. Normally it takes three days of warm weather with daily high temperatures above 75F to provide enough heat units for bacteria to reproduce in inoculated flowers. With daily high temperatures in the 80s, like this week, it only takes two hot days to reach that threshold. When the daily high is over 90, such as it was in Gorham on Wed., May 27, it may only take one day. (Or it may be so hot and dry that bacterial growth is stunted. >90F in May is so odd I am not sure anybody really understands what that does to fire blight bacteria).

Application after the rain can be effective, but only if within 12-18 hours, 24 at most, after the start of the rain.

That leads to the one bit of good news with the current weather scenario. In addition to the unknown variables of how much inoculum is present in the orchard, and how extensively flowers have been inoculated, the weather impact on blossom blight infection is more complex than accumulation of heat units. Bacterial reproduce more proficiently, or at least can infect more proficiently, at higher relative humidity. When the air is very dry, that interferes with their multiplication and infection process capability.

The lack of rain recently has reduced the availability of moisture for the bacteria. I do not know how much effect the longer term rain deficit has had on fire blight bacterial population spread and growth. I wish I could say that relative humidity values over the last few day of heat unit accumulation, which are the reason for concern about fire blight risk at this time, have been extremely low. But the values this week do not appear to be notably low, though I don't know what that threshold RH value would be. Whatever it is, I do not think that low RH is a saving grace in this situation. I do think the lack of rain has had a suppressive influence on fire blight bacterial population growth leading up to this situation. But that is just a hunch.

So, where are we now? Except for the most southern and warm locations in Maine, most Maine orchards have plenty of bloom. And a quick check of the recent temperatures from around the state indicates there would plenty of heat units on Tue-Sat May 26-30 to cause high risk fire blight infection period IF rain arrives before cool temperatures reduce the 4-day rolling window of heat units.

Why a 4-day rolling window? Because for any one blossom, by the time 4 days goes by that blossom has had time to go from not being open (and thus not inoculated with bacteria) to too old to susceptible to infection. But if rain arrives before that 4-day rolling window is complete, and the temperatures during that window have been warm enough, and if inoculum is present, then blossom blight infection can occur. That is a lot of "Ifs". And that is why fire blight usually does not occur. Even when weather conditions appear to create the potential for infection. The problem is that when fire blight does occur, it creates lots of damage. It can kill young trees outright, especially those on susceptible rootstock. Even with resistant rootstock it can cause so much dieback that tree structure is severely damaged.

On large apple and pear trees, fire blight is rarely threatening to the life of the tree, but the number of dead shoots can be staggering. Moreover, new strikes can keep appearing for many weeks. The disease will continue to spread if rapid and thorough (and time consuming and expensive) unless thorough sanitation pruning is done. With persistent sanitation the outbreak can be brought under control, but those who have done it do not wish to do it again. And even the best sanitation program will still have more shoots showing up the next year, and most likely even a few more in the second year after the initial event. Getting rid of fire blight once it becomes established in an orchard is a long term project that costs time and money. An ounce of prevention is worth many pounds of cure.

The weather forecast as of Thursday morning shows only a small chance of rain before cooler temperatures staring on Sunday, May 31 will reduce the cumulative heat units. That small chance of rain is on Saturday May 30. The precipitation probability (weather-speak for "chance of rain") at different Maine sites becomes too high for comfort on Friday night or Saturday morning. Watch your local forecast and act accordingly. "Act" means apply streptomycin at full dose in a high volume, thorough-coverage spray if there is more than a small chance of rain before temperatures cool down on Sunday

Apple scab

Many apple orchards in Maine have scant fungicide protection at this time because growers have wisely forgone apply fungicide due to the lack of rain. No rain means no scab infection. The apple scab fungus needs much rain and longer wetting period to cause infection. It has been so dry that scab ascospore maturation must have stalled. It will resume when free water is available to resume the maturation process.

Growers should expect a high proportion of the season's ascospores to release with the next rain. And again with the next rain after that. The release from the first rain after the long dry spell may (or may not) be suppressed by that dry period. The second rain will have the advantage of renewed moisture for ascospore maturation. That second rain could also be near the end of scab spore maturation for this year. Then again, with such strange and prolonged dry spell, it may take more than two more rains to clear out the available population of primary scab spores. Renewed protection before each of the next 2 – 3 rains is needed to prevent apple scab infection on susceptible cultivars.

Insects and Mite Pests

As apples reach Petal fall, they enter the period of high risk from several key insect and mite pests. Most of those pests are favored by dry conditions, so risk could be higher this year than average. European apple sawfly populations are particularly responsive to spring weather conditions, being low in cool wet springs, and more numerous in warm dry spring weather around bloom. If European apple sawfly are numerous, protection needs to be applied within a few days of Petal Fall. If that window is missed, the first fruitlet in a cluster will be damaged. Later application will prevent larvae from moving on to a 2nd or 3rd fruitlet in the cluster, but the first damage will already have occurred.

European red mites that hatched before bloom are now approaching sexual maturity when they can create a high density population to feed on foliage in June and through the rest of the summer is not controlled by natural forces (which is usually the case) or miticide application. Check leaves during the first two weeks after Petal Fall and apply miticide, preferably one of the long-acting ovicides like Apollo, Savey, Onager or Zeal.

Plum curculio is the primary pest in the post-Petal Fall period. Most of them have already moved into the orchard during bloom, though a portion of the population will arrive in the two weeks following Petal Fall. PC activity increases during warm humid nighttime conditions. An initial full block spray about 5-7 days after Petal fall, followed by a second perimeter-only spray is often sufficient to prevent noticeable damage. Insecticide application is not need right at Petal Fall even though the female PC are present because they wait until the fruitlet diameter reaches 6-8 mm (about ¼") before they lay eggs into the fruit. That egglaying leads to larvae that destroy the fruit, or more commonly the larva dies, but the egglaying cut ruins the apple for commercial sale.

Leafminers and leafhoppers can also appear in the first two weeks after Petal Fall, and are vulnerable to treatment at that time. They are less vulnerable later, so monitoring and control if needed is best done during that two-week window.

Thinning report from Monday, May 26

Highmoor Farm apple trees are in full bloom with late varieties at king bloom. Pollination conditions have been good, but we are relying on the wild bees this year. I have not seen as much bee activity without the honeybee hives, but we have had good pollination weather. The forecast indicates hot weather Wed. through Fri. followed by warm cloudy weather, conditions that favor aggressive thinning. Adjust rates of NAA or BA according to how much thinning is needed or postpone thinning.

For trees at or past petal fall, chemical thinning can be expected to work or overwork if applied during this hot spell. Temperatures above 85 °F are considered too high for light to moderate thinning. This hot spell will possibly be followed by warm, cloudy weather which could add to the thinning achieved. My plan for Highmoor Farm is to wait, and use lower rates of NAA with carbaryl, especially if this dry spell continues.

For orchards in the northern regions of the state, it is too early for good thinning.

Carbaryl, NAA, NAD and BA can be used at petal fall and fruit set. For variety-specific recommendations on rates, refer to the Tree Fruit Guide chapter on chemical thinning:
https://netreefruit.org/apples/plant-growth-regulators/apple-fruit-thinning

Easy-to-thin	Moderately difficult	Difficult-to-thin
McIntosh	Empire	Fuji
Cortland	Liberty	Golden Delicious
Enterprise	Gala	Macoun
	Honeycrisp	Paulared
	Jonagold	
	Pink Lady	
	SnowSweet	
	Zestar!	

Pears

Pears can be thinned with NAD, NAA or BA. For rates of each and product names, refer to the Tree Fruit Guide section on thinning pears:
https://netreefruit.org/pears/fruit-thinning-branching-and-stop-drop.

Retail and PYO sanitation

An apple grower contacted me to ask about sanitizing his entire PYO operation on a regular basis, (i.e. 2-4 times per week) to address customer fears about the novel coronavirus and COVID-19. He is looking ahead in case the coronavirus restrictions are still in place by August or September, or even if not, that people are still afraid of mixing in public spaces at that time.

His idea was to spray the parking lot, retail spaces, and the orchard with a sanitizing agent. Two candidate materials were Oxidate, which is registered for use on apples for fungal and bacterial disease suppression, but not necessarily at a dosage that would have effect as a viricide; and peracetic acid, a chemical approved for use as a food contact surface sanitizer, even for organic operations.

I thought the idea of attempting to sanitize the entire PYO/retail operation at that frequency seemed expensive, largely ineffective and unnecessary. His reply was that the sanitation idea is as much about public perception as it is a quantitative risk. His objective is to be able to present to customers a comfort level of cleanliness and safety to allay their fears of virus risk from visiting a public space. As for expense, he estimates that the extra cost to keep customers coming is better than not having customers.

I sent the question to the UMaine Cooperative Extension food scientists: Drs. Robson Machado, Beth Calder, and Jason Bolton. And to the Maine Board of Pesticides Control director Megan Patterson and BPC toxicologist Pam Bryer. My questions are shown in bold, and their collective replies are in regular font.

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Regarding the legal questions, please keep in mind that our suggestions are not legal advice and that an attorney should always be consulted for a definitive legal answer.

We recommend the resource pages below, with links about the coronavirus.
https://extension.umaine.edu/food-health/covid-19/
https://extension.umaine.edu/beginning-farmer-resource-network/covid-19/

This page below is of special relevance for produce farmers:
https://blog.uvm.edu/cwcallah/2020/03/18/considerations-for-fruit-and-vegetable-growers-related-to-coronavirus-covid-19/

We agree with your assessment (i.e. that spraying the parking lot, orchard, etc.) with a sanitizing agent every few days is not an effective or recommended strategy at this time. We believe that the best practices are to have clear and large signage with directions for the restrooms, instructions to wash their hands before entering the farm and after using the restroom, and to potentially wear masks and gloves if appropriate. Customers should not visit the PYO operation if they have any flu or cold-like symptoms. PYO operations should clearly outline the food safety practices that the farm expects customers to follow (where not to go, how to pick, not to touch produce they will not be buying, etc.).

These are all recommendations (and some mandatory, like offering restrooms and handwashing stations) that the farmer should be following already (assuming that they are big enough and have to comply with the FDA FSMA Produce Safety Rule). Showing that you are following current food safety recommendations is more reassuring than new "just to show" activities because of the current crisis.

1) Is there any guidance about treating parking areas and retail farm stands for the purpose of minimizing viral infection risk?

Currently, we recommend that non-food contact surfaces should be cleaned and disinfected when appropriate. For example, surfaces that aren't in contact with food, but could become contaminated by customers or employees, such as door handles, credit card machines, PYO container handles, bathrooms/porta-potties, etc., should be cleaned and disinfected with EPA approved chemicals (https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2). At this time, there are no other specific recommendations for viral decontamination. All the recommendations in the Produce Safety Rule are broad and apply to bacteria, parasites, and viruses. Nonetheless, using an EPA approved sanitizer that also inactivates Coronavirus can give extra peace of mind during this pandemic.

Each disinfectant label has instructions for use that cannot be deviated from, as they represent federal law. Product label language is the first guidance that must be followed. If the specific site of the application is not listed on the label, that chemical cannot be used in that manner. If the chemical is allowed on apples, it does not mean it is allowed for use on apple trees. If in doubt on whether a product is allowed for a given use, contact the Maine Board of Pesticides Control for help interpreting pesticide labels.

2) Would Oxidate at a rate labeled for fungal and bacterial disease suppression on apple trees be effective for virus suppression?

If the chemical label does not mention the application can be used to kill viruses (in general), or coronavirus specifically, we would recommend not to use it. Also, Oxidate 5.0 is NOT on the EPA list of registered sanitizers/disinfectants for use in managing coronavirus. Therefore, you should not use Oxidate to treat fruit on the tree or fruit that will be picked/handled by the consumer to reduce the risk of coronavirus.

3) Could Oxidate or peracetic acid sanitizer be legally used to treat the parking area, retail area, and the orchard? I am aware of worker exposure concerns with peracetic acid that require personal protective equipment and safety measures.

Growers/producers must always use Oxidate or any other chemicals in accordance with the label and other official documentation. The instructions will cover pre-cleaning, dilution, contact time, the need for rinsing, etc. Not following the label instructions could be a potential legal problem, and growers/producers could be adulterating food products if not properly followed. Specific peracetic acid products can be used as a food contact surface sanitizer and food sanitizer. Again, all approved sanitizers for food contact surfaces will have an EPA registration that lists its approved uses. Growers should refer to the label of specific products and speak to the salesperson or manufacturer to address any questions. Thus far, no research or other evidence has shown that the coronavirus can be spread via food or food packaging.

4) Even if legal, would it be effective to use peracetic acid as discussed here?

If an application is not stated in the label, this chemical cannot be used as a virucide. Also, most sanitizers must be used on previously cleaned, non-porous surfaces, as is the case for food-contact surfaces. The use of sanitizers on non-food contact surfaces intends to minimize cross-contamination (like powder/foam sanitizer on the floor); these chemical products are used to avoid cross-contamination brought in by boots, not to sanitize the floor itself. Disinfection is preceded by thorough cleaning because filth and organic matter degrade the effectiveness of disinfectants. Spraying a heavily soiled surface or area with disinfectants without cleaning them first ruins the effectiveness of the disinfectant. In other words, sanitizing or disinfecting porous, hard to clean surfaces such as parking areas or around the orchard is probably not effective, and will be violating the label instructions if not stated that it could be used in such surfaces.

Disinfectants have instructions in the label for non-clean surfaces. But disinfectant use is more commonly used in the healthcare industry (e.g., when there is a need to disinfect the floors because of bodily fluids). In these cases, concentrations are much higher and also the contact time is increased. Typically, these surfaces must be rinsed or cleaned and sanitized after being disinfected. When sanitizers and disinfectants are not used properly or rinsed according to directions, a food contact surface may be considered adulterated by the leftover chemical residues and not be deemed legal for sale to consumers.

5) Are there other suggestions for dealing with the coronavirus without resorting to spraying sanitizing agents?

It depends on the objective. To keep produce safe, the farmer should be already following practices according to GAP (Good Agricultural Practices) or the FSMA Produce Safety Rule. These practices should cover current suggestions and recommendations. The regulations, that are based on current science, are our best recommendations to ensure food safety at the farm. Farmers selling produce at their farms should stay in contact with the Maine Dept. of Ag, Conservation & Forestry, keep checking the current CDC and Maine state government requirements/guidance, before reopening to the public and follow their recommendations.

The most important message is clear communication to customers about properly washing hands, the use of hand sanitizers, not coming to the farm if they are sick or have been around anyone that is/has been recently sick, and frequent disinfection of non-food contact surfaces, as mentioned above. Farmers should provide training for staff and customers before working at or entering a PYO farm to ensure best practices are followed.

While not part of FSMA or pesticide regulations, there are some best practices from the risk communication field that will help in this situation. Reassurance comes from communicating honest information, giving people actions they can take, and providing outside references for additional information. Communicating your efforts to maintain a clean space is recommended and will help people understand that you have taken this situation seriously and responded in a thoughtful way. Use honest and clear language, such as: “We disinfect all basket handles”, “We have set up multiple handwashing stations and have hand sanitizer”, “During the checkout our staff wears masks” etc., or whatever established techniques CDC has recommended.

Your safety procedures should be shared with the customers, by using signs at the entrance and/or placing the guidance on your website on what your customer expectations are at your orchard. On the web, it is easy to link to a CDC website for additional information. You may want to have a sign that shows people what 6 feet looks like in the orchard. You could run a special for people who buy 6 feet worth of apples! Not all messaging has to be ominous.

The spread of the virus has physical limitations and this spread can be mitigated by following CDC guidance. Orchards are most likely lower risk environments because of their outdoor nature; however, real risk reduction comes from people remembering to wash their hands properly, not to touch their faces, and farms following Good Agricultural Practices and CDC guidance.

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UMaine Extension has a web page of Best Management Practices for U-Pick Farms During COVID-19 at:
https://extension.umaine.edu/agriculture/best-management-practices-u-pick-farms/

COVID relief financial resources

UConn Extension posted slides from a recent webinar recording about on relief programs available through the Small Business Administration.
https://sustainablefood.uconn.edu/wp-content/uploads/sites/781/2020/04/Financial-Relief-for-Small-Business-Owners-The-Road-Map.pdf

The information about agricultural enterprise eligibility shown in slides 13 and 19 is out of date as policies have evolved. A webinar recording presenting the slides is online at https://www.youtube.com/watch?v=6WLDmc3pptA&feature=youtu.be

New information came out just today May 28, so check the current regulations before making decisions based on information in the slides.

OSHA Respiratory Protection Standard

Kerry Bernard, UMaine Extension Pesticide Safety Education Program Professional, created this resource guide for respirator and cartridge selection, fit testing, and respirator maintenance at https://extension.umaine.edu/ipm/pesticide-safety/respirator-and-pesticide-information-brochures/

The OSHA Small Entity Compliance Guide for the Respiratory Protection Standard is available at http://www.pesticideresources.org/wps/hosted/PERC-WPS-Respirator-Guide.pdf

"You should read this guide if it is likely that you will need to establish and implement a respiratory protection program for your business. This guide is intended to assist employers who need to develop a program," and "…employees who may be required to wear respirators"

"Generally, you are required to establish a respiratory protection program whenever you or OSHA requires your employees to wear respirators."

Jason Lilley, UMaine Extension Sustainable Agriculture Professional provided these comments and excerpts:

Until 2015, farm operations had been exempt from the OSHA respirator requirements. At that time, the EPA's updated Worker Protection Standards put in place these requirements for anyone using a farm product (pesticide) that requires the use of a respirator. (From pg. 8 of the Compliance Guide linked above).

"What Are The Requirements For Respiratory Protection In The 2015 Revised Worker Protection Standard?

On the effective date, handler employers must provide the following protections for handlers when using agricultural pesticide products that require the use of a respirator:

The handler employer must ensure the requirements of this section are met before the handler performs any handling activity where a respirator is required to be worn."

"**1)** A medical evaluation by a physician or other licensed health care professional that conforms to the provisions of… " [the Worker Protection Standard, section 29 CFR 1910.134(e)] "… for each handler — to ensure the handler's physical ability to safely wear the respirator specified on the pesticide product labeling.

2) Annual fit-test for each type of respirator required by the pesticide product(s) label that the handler will be using. The fit-testing must be done in a manner that conforms to the provisions of 29 CFR 1910.134, including Appendix A.

3) Annual training on how to properly use the respirator(s) specified on the labeling of the pesticide products the handler will be using. The training must conform to the provisions of 29 CFR 1910.134(k)(1)(i) through (vi).

The handler employer must maintain records that document the completion of the requirements in the WPS — for at least two years from the dates conducted."

Jason provided a fit testing recordkeeping document that he developed with the Maine Board of Pesticides Control (BPC) (attached to this newsletter). There is no guidance about what the "training" has to look like. It seems that handler would have to be able to be able to answer the 8 questions on the recordkeeping document to the satisfaction of an inspector.

Here is the OSHA Small Farm Exemption Designation:

"If a farmer had ten or fewer employees at all times during the previous 12 months, the farmer would be considered exempt from OSHA enforcement. They would not be considered exempt if they had more than 10 employees at any one time during that period. However, if such a farmer has a temporary labor camp under 1910.142, the employer would not be exempt from the enforcement of the OSH Act."

Larger farms with additional OSHA obligations may have more that they need to do for respirator compliance. However the BPC and its inspectors are considering the 3 steps listed above as sufficient for now.

Pesticide Applicator Recertification

The testing procedure for Maine pesticide applicator licenses has been altered because of the COVID-19 precautions. The building housing the Maine Board of Pesticides Control (BPC) is closed to the public and employees are trying to protect themselves through social distancing and remote work.

The BPC is beginning to offer drive-up exams next week. You must be pre-scheduled by sending an exam request to pesticides@maine.gov. They can only test 8 people at one time, and there are no bathroom facilities. Priority is given to folks testing for category 7c (Microbial Pest Control) and agriculture.

Orchard Scouting Co-op

Thanks to support from the UMaine Extension IPM Program, the USDA invasive species survey program, and the Maine State Pomological Society, there will be a scouting program this summer with two scouts – Justin Trottier and Harrison West. Hurdles created by the COVID pandemic caused some delays, and will affect operations somewhat, but the scouting visits will begin next week. We accommodate as many growers as possible, but cannot visit everybody.

The Co-op provides the scouts, the vehicles, and traps and lures used to monitor for major apple insect and disease pests. In addition, in some orchards, additional traps are placed to monitor for exotic insect pests that are not previously known to occur in Maine. Information from each orchard is shared with the grower and with the IPM program for tracking and reporting on the statewide pest situation. Observations are not shared with other growers beyond geographically nonspecific reports in this newsletter.

To participate an orchard must have at least 1 acre of bearing apple trees producing fruit for commercial sale. Participating growers must be willing to provide an email message before their regular scouting day each week confirming that pesticide REI status is clear for scouts to enter the orchard without early-entry personal protective equipment. Please contact me at glen.koehler@maine.edu if you would like your orchard to considered for inclusion in the list.

Phone Contacts

Highmoor Farm is continuing with research, but is closed to the general public until further notice. The Soil Testing Lab in Orono is still operating and is busier than normal.

If you have any questions, feel free to call Renae on her personal phone between 9am and 6pm, Monday through Saturday. You can also leave a message at her office phone anytime (207) 933-2100. Due to radiation burn from staring at computer screens too long, I have temporarily entered a new dimension of space and time, where phone calls at any time or day are as good as any other time or day, at (207) 485-0918. Messages left on my office phone at 581-3882 are sent to my email if I am working from home.

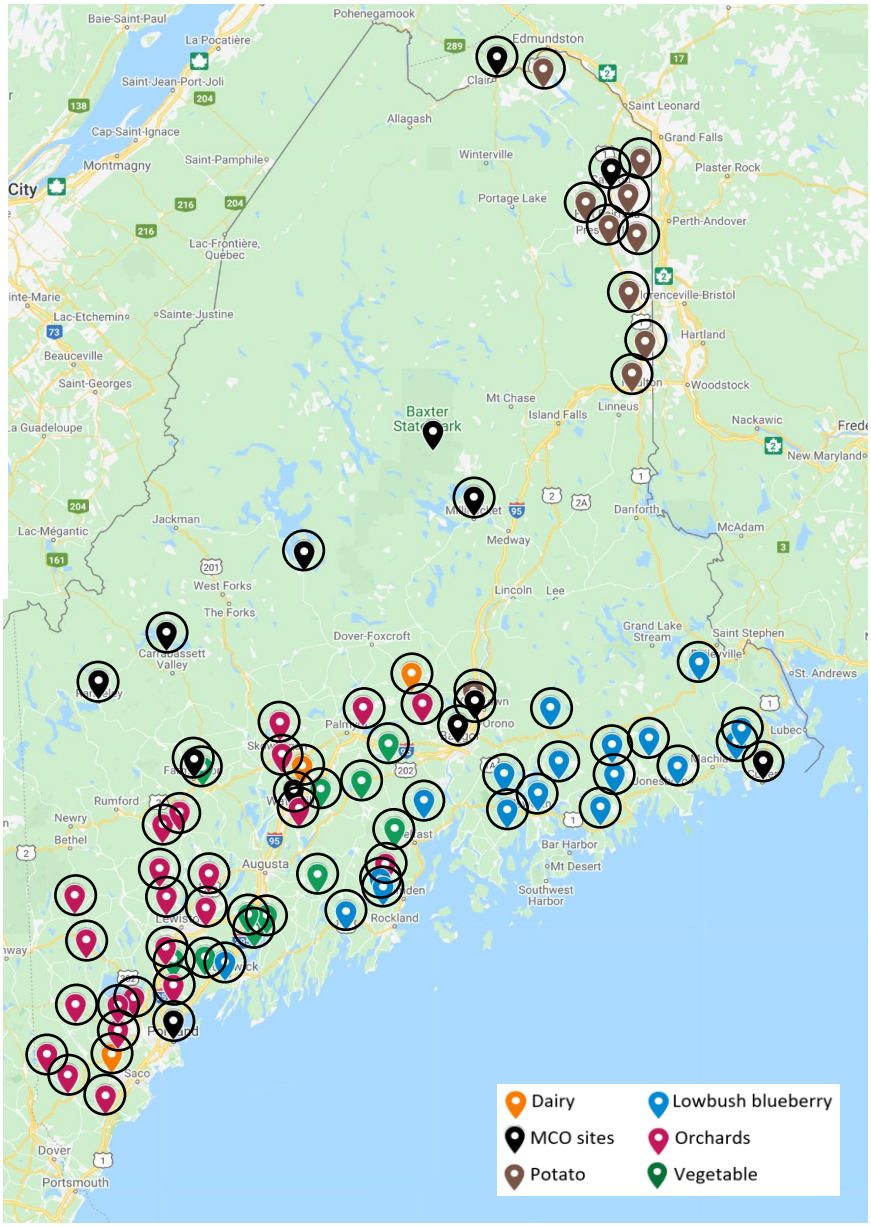
Ag-Radar

Oy, this is a one-time process to develop a new weather system and connect everything back up after we had to replace the data feeds that were lost when the vendor we used previously was bought out by a large corporation that shut down that aspect of the business. Now we do it ourselves. In the long run that is good news because we can do it for less cost and much better with the rapidly evolving weather monitoring and data technologies that have become available. But a chain is only as strong as its weakest link. That link is finishing the automation process. It is getting close, as in days, not weeks. You will be the first to know as operational availability will be announced in this newsletter.

Site specific twice-daily ag-focused weather forecast and observation reports are currently available for the following list of sites in Maine. Locations in the second list going online next week. The Ag-Radar sites for those weather locations will begin with about 18 apple, vegetable and lowbush blueberry locations, 9-10 of which are apple orchards. If you would like to receive twice daily emails (ca. 2pm and 2am) with weather reports for a location, send me your email address.

Auburn	Gorham	Portland
Bigelow	Greenville	Presque Isle
Buckfield	Hope	Rangeley
Caribou	Levant	Sabbatus
Cornville	Limerick	South Bridgton
Cumberland Center	Millinocket	Springvale
Cutler	Monmouth	Sweden
Fairfield	New Gloucester	Thorndike
Farmington	Newport	Vassalboro
Fort Kent	Old Town	Waterville

The full set of sites coming online this summer is show below



AgEye Weather site-specific locations for agricultural weather in 2020.
MCO = Maine Climate Office non-farm sites. Colored sites are farm locations. More than one commodity is produced at some sites. The hourly weather data from each site can be used for Ag-Radar decision support models for multiple commodities. For a closer view and information on individual sites, see the active map at https://tinyurl.com/AgEyeME2020

Locations are marked with the 5-mile radius area of very similar weather around each site. Most weather variables (temperature, relative humidity, solar radiation etc.) will usually be very similar within the 5-mile radius around a site. Precipitation from frontal systems is also likely to be similar, but summer convective rains (thunderstorms) can vary across a short distance, and even between fields on the same farm. Surface wind, frost risk, leaf wetness and soil moisture are affected by within-site characteristics of topography, air drainage, wind blocks, soil type etc.

Closing Words

We had an apartment in the city
Me and Loretta liked living there
Well, it'd been years since the kids had grown
A life of their own left us alone
John and Linda live in Omaha
And Joe is somewhere on the road
We lost Davy in the Korean war
And I still don't know what for, don't matter anymore

Ya' know that old trees just grow stronger
And old rivers grow wilder ev'ry day
Old people just grow lonesome
Waiting for someone to say, "Hello in there, hello"

Me and Loretta, we don't talk much anymore
She sits and stares through the back door screen
And all the news just repeats itself
Like some forgotten dream that we've both seen
Someday I'll go and call up Rudy
We worked together at the factory
But what could I say if asks "What's new?"
"Nothing, what's with you? Nothing much to do"

So if you're walking down the street sometime
And spot some hollow ancient eyes
Please don't just pass 'em by and stare
As if you didn't care,
say, "Hello in there, hello"

~ John Prine, 1946-2020.

On a lighter note, sometimes orchard scouts have to negotiate tight corners get around in orchards (actually we usually walk, but let's not have facts ruin a good story).

So we developed a new driver skill test for the scouts:
https://tinyurl.com/ScoutDrivingTest

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