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UMaine Cooperative Extension Maine Tree Fruit Newsletter 2018-06-09

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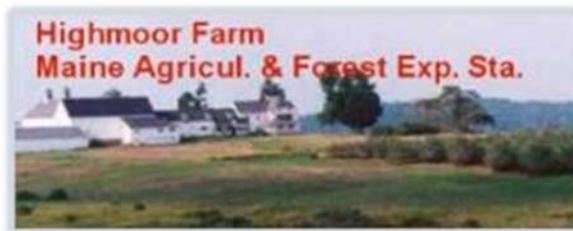
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Maine Tree Fruit Newsletter

Saturday, June 9, 2018 Vol 25:7

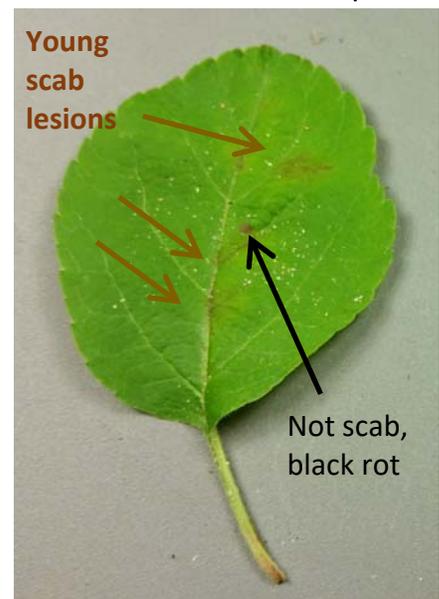
Apple Scab Update

When is primary scab season over? The lack of frequent soaking daytime rains is making it difficult to interpret the scab situation. Scab maturation is thought to stall during dry periods. Nobody knows exactly how to define "dry period." Ag-Radar uses 7 days with less than 0.12" rain. By that definition, at Highmoor Farm in Monmouth, nine days of maturation have been discounted because of dryness. Still, this late in the year, scab ascospore is considered about complete, even with the dry day delays. The rain on June 4-5 brought the percentage of released cumulative primary scab infection potential up to about 80% at locations from Bangor and south.

What about that final 20%? In this case, the model may be wrong. Scab maturation has never stretched so long after Petal fall. On Saturday, June 9, I went looking for overwintered scab leaves in an abandoned orchard to do a spore shooting test. Other than a few oak leaves, there were few overwintered leaves of any type left on the ground. I could only find a single fragment I was reasonably confident was an apple leaf. There were signs of earthworm activity. I have had caged sets of apple leaves disappear overnight presumably because of earthworm feeding. The abandoned orchard looked like every leaf had been removed. No leaves means no more overwintered primary scab. The scab maturity model does not account for leaf decay in situations like this.

That orchard has not been sprayed for years and is mostly McIntosh and Cortland. About a third of this year's scab infection potential has had time to appear as lesions. But in checking over a 100 shoots and fruit clusters I only found two leaves with early stage developing scab lesions.

Today's observations might seem to suggest that primary scab ascospore releases are done despite what the model says. That is putting a lot of weight on one overgrown orchard. The dry spell continues in the forecast, with the only elevated chance of rain showing on Wednesday June 13. And that is for less than 0.1". If it arrives, it might not be enough to release all the available remaining ascospores, if there are any.



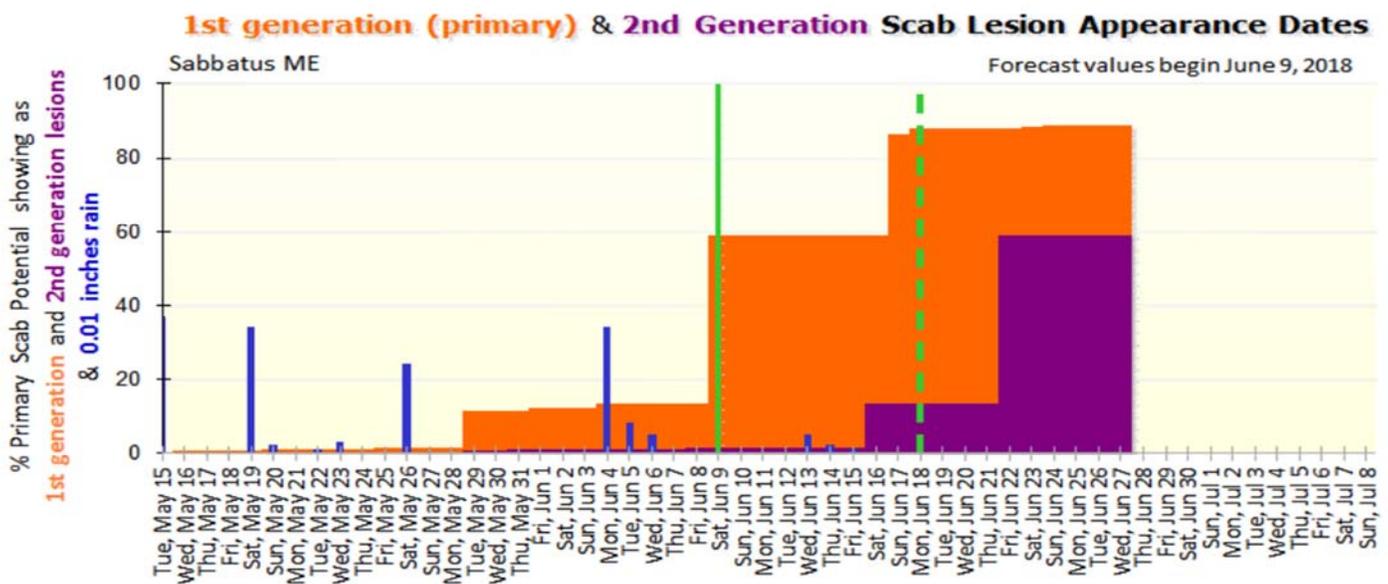
Ultimately, defining whether or not primary scab spore releases are over does not really change the recommendation for the next rain. Apple foliage should be protected with fungicide coverage because it will take until the end of June to get a reliable read on the success of primary scab prevention. If primary scab infections did get started, you do not want them to spread secondary spores onto unprotected leaves.

Getting that read on how well primary scab protection worked is not difficult. You walk around the orchard and look at 100 or more shoot and fruit clusters to see if scab lesions are developing. If you find none, then it is safe to relax fungicide protection with longer intervals between sprays targeting flyspeck prevention. If you do find active scab lesions, then you

Even in unsprayed, high scab trees, it is often not easy to find scab until over 50% of the 1st generation lesions have had time to appear. In some cases, a scab control failure is not evident until 2nd generation lesions have had time to develop.

The spotty light and infrequent rain showers in Maine since late April makes it impossible to summarize when the most important primary scab infection periods occurred. For central and southern Maine locations, the bulk of primary scab infection potential occurred between May 19 and June 5. First generation lesions from the May 26 rain would only start becoming visible on Saturday, June 9. Moreover, not all of the infections that may have started May 26 would show up on a single day, it is a rolling process.

If the dry forecast holds up, this will be the latest scab finalization year I can remember. While the dry conditions drag it out a clear-cut end of primary scab season, it also helps keep scab infection low. This should be a very low scab year. However, we will not be able to confirm that for a few more weeks.



Orange area shows the percent primary scab infection potential from which early-developing 1st generation lesions have had time to begin appearing. Absence of visible scab infections after 100% of primary scab potential has had time to begin appearing as 1st generation lesions is good news, but it is not conclusive verification of successful scab control. Light infestation of 1st generation lesions can be difficult to detect. Infections delayed but not killed by fungicide application, or by partial resistance of older leaves, may appear later.

Purple area shows the percent primary scab infection potential from which early-developing 2nd generation lesions have had time to begin appearing. Absence of visible scab after 90-100% of primary scab infection potential has had time to begin appearing as 2nd generation lesions indicates that primary scab control was successful. However, scab scouting should continue to detect later emerging lesions.

Blue columns show 100ths of inch rain for each date.

Vertical green line = today's date and beginning of forecast values. Vertical dotted green line = end of forecast range.

Fire blight

The highest risk of fire blight blossom blight infection this spring was on May 26. For blocks without any history of fire blight in or near the orchard, there were not enough heat units prior to light showers on May 26 to cause high risk of fire blight infection. But for blocks with fire blight inoculum (i.e. bacteria) present, infection risk ranged from High to Extreme.

Some locations did not receive any rain on May 26 and thus avoided the fire blight infection potential on that day. However, most locations in central and southern Maine did receive rain that day.

Apple trees in southern Maine had reached McIntosh 95% Petal Fall on May 22-23, so probably had few flowers left by May 26. In central Maine, McIntosh 95% Petal Fall was reported as May 24. At Highmoor Farm, McIntosh dropped most of their flowers on May 26. Honeycrisp and other later blooming cultivars still had a substantial portion of bloom on May 26.

Heat units were also high enough for infection with the rains on June 1-4. By then most trees except in northern Maine had lost almost all their flowers. Fire blight only needs a few remaining open blossoms during an unprotected infection period to get a foothold. Cortland, Golden Delicious, Gala and other cultivars continue to have a few flowers long after the tree as a whole has passed Petal Fall. Young trees that bloom late are especially vulnerable to fire blight.

If fire blight infections did occur on May 26, symptoms of dying flower clusters would be apparent as discolored leaves and wilting shoot tips by June 13 (and earlier with close inspection). Infection starting on June 1-4 would become apparent by June 20.

Apple pith moth causes dieback of flowers that looks similar to fire blight. The lower 3 photos are of damaged caused by apple pith moth, not fire blight.



Fire blight on apple. Photo: R. Moran



Apple pith moth photos: left G. Koehler, middle D. Lambert, right M. DellaRoman.

Apple pith moth damage is “dryer”, i.e. it does not show the collapse of internal tissues caused by bacterial infection. It is also limited to the very end of shoots and does not progress down the branch. Apple pith moth larvae feed inside the core of the shoot. If you cut across a twig and the core is hollowed out, then the damage was almost certainly caused by apple pith moth, not fire blight. You might find the larva still inside, or sawdust like chewings inside the pith. Apple pith moth is rarely ever seen in orchards receiving full block insecticide applications for apple maggot in late July and August. But it does show up in backyard and organic plantings. I suppose the risk of apple pith moth could be higher in orchards receiving only perimeter sprays for apple maggot.

If fire blight strikes do show up in the next couple of weeks, here is information on how to respond by Dr. Kari Peter, Penn State University.

From Disease Update: Dealing with Fire Blight Infections. By.
<https://extension.psu.edu/disease-update-dealing-with-fire-blight-infections>

What to do if you see fire blight in dwarf and semi-dwarf orchards:

To minimize spread in young and dwarf plantings, I would recommend growers use Cueva at 2 quarts/A, especially if you see active infections. We observed a decrease in incidence with shoot blight when we used Cueva. Folks have asked about tank mixing Cueva and Double Nickel since it was reported a few years ago there was an added benefit of including Double Nickel. We have not been able to repeat those results.

Depending on the disease pressure, growers may want to apply Cueva weekly, or every 10 days depending on conditions. Copper sprays will only be needed while the shoots remain green and succulent (until terminal bud set). Once shoots harden off, they are no longer susceptible to fire blight. It is advised Cueva be applied as a separate spray, if possible, to avoid phytotoxicity when tank mixing with other products that may influence the pH of the tank mixture. Lower pH will make copper more phytotoxic. In addition, there is no need to include any kind of adjuvant with Cueva. To date, we have observed minimal fruit russetting when using Cueva as a standalone spray.

Multiple applications of Apogee or Kudos may be necessary for semi-dwarf varieties prone to fire blight. Due to the amount of rain the region has been receiving, trees want to really grow. This will impact how well Apogee or Kudos will kick in to harden off the shoots. In 2015, we received a lot of rain, and I heard reports of trees growing out of Apogee treatments in a short period. It is important to monitor your orchard site for conditions.

The 4-1-1 for cutting out fire blight infections:

If it's a bad fire blight year, we recommend a “triage” method when it comes to pruning decisions once fire blight has struck, going from highest to lowest priority:

- * Young orchards 3–8 years old with just a few a strikes. (highest priority)
- * Young orchards 3–8 years old with severe strikes.
- * Older orchards with a few strikes.
- * The “walk away” group: orchards with so many strikes that most of the tree would need to be removed; severe pruning can stimulate new growth that can become infected. (lowest priority)

Folks have been told all along to prune out fire blight during the season when they see it; however, there can be too much of a good thing: It is very important to avoid excessive cutting when pruning out fire blight. Excessive cutting will encourage more shoot growth and make your fire blight problem even worse. This is especially true for older orchards where cankers may be lurking about in the tree.

Paint application of Actigard after cutting out fire blight:

Another option for limiting the spread of fire blight is to paint the cut region below the infection with an “Actigard paint.” According to the label, mix 1 oz Actigard in 1 quart of a 1% penetrant. The penetrant suggested on the label is Pentrabark (an organosilicone); however, a similar penetrant can be used. Apply the “Actigard paint” to the branch area immediately after cutting. Apply the Actigard to the open cut only and avoid leaf tissue. Do not apply as a spray since the leaves will be adversely affected by the high concentration of the solution. One quart will treat approximately 500 cuts. Do not apply within 60 days of harvest.

Additional items to keep in mind when pruning out fire blight infections:

Do not cut out infections during wet weather since bacteria move via water. Cut out active infections early - before necrosis develops (limits the spread of bacteria). Pruning is most effective when incidence is low. Focus on salvaging tree structure and young high-density plantings when incidence is high. Bacteria can invade healthy tissue up to ~3 feet in advance of visible symptoms, which makes tool sterilization not effective. Practice the ugly stub method: cut 6 -12 inches below the margin of visible infection and remove later during winter pruning. Bacteria can live very well outside the plant and, to be certain you are getting rid of all sources of bacteria, it best to burn infected tissue that has been removed from the tree.

For newly planted apple blocks:

It is best to be vigilant and scout regularly, especially in newly planted blocks.

Be sure newly planted blocks that are blooming are protected with streptomycin since our conditions are perfect for blossom blight infection. Do not manually manipulate (“hairdress,” pinching off blossoms, etc.) young trees during wet weather. Any kind of manipulation should be done in dry weather. If you will be pinching off blossoms, it is recommended apply streptomycin before blossom removal to limit any kind of spread of the bacteria. After any kind of manipulation or pruning in newly planted blocks, be sure to cover the trees with copper. Copper should protect any kind of wounds made and limit infection. If you are using tools to remove blossoms, I would recommend disinfecting your tools between trees. If bacteria are in the blossoms, there is a risk of spreading the bacteria to other trees via tools. This is a different situation than when you are cutting out active infections as described previously.

If you are experiencing rattail bloom:

Hard cider varieties are especially prone to having some kind of bloom for a long time. I’ve observed oozing blossom blight on Dabinett blossoms in late June. Since fruit finish is not critical for hard cider varieties, folks could try NuCop XLR at 4 qt/A on varieties still experiencing bloom. Of all of the coppers we have tested to date, NuCop XLR has provided the best control for blossom blight (approximately 80% control). However, NuCop XLR at this rate can significantly russet fruit and is not recommended for use on fruit where fruit finish is a priority.

Plum curculio

The NY plum curculio degree-day model to estimate the earliest safe final insecticide application to maintain protection plum curculio oviposition indicates that date to be June 3 in Sanford and June 11 in Newport. That model may overestimate the duration of how long protection is needed. Shorter duration windows were not tested. Other research by Pinero and Prokopy found that most if not all plum curculio had already immigrated into orchard much earlier. At Highmoor Farm this year, plum curculio immigration is estimated to have ended by around June 16, about a week earlier than the NY DD model protection period date of June 23. Thus, the NY model says your insecticide coverage needs to remain effective until June 23. But if insecticide coverage remains effective through June 16, then presumably all of the plum curculio immigrants had arrived in time to be exposed to the insecticide, and thus killed before they could lay eggs. Of course, this is supposition unproven by field testing.

More on codling moth in next newsletter. Keep an eye on European red mites. Dry weather favors mite population increase. The second generation eggs are still being laid, and the earliest developing second generation mites will begin maturing to start laying 3rd generation eggs beginning around June 14 – June 24 (south to north).

Connecting Producers with Buyers

Forager (<https://goforager.com/>) is a free service for connecting producers with buyers. Forager provides a digital procurement-to-payment platform designed to reduce the costs and complexity of the sourcing process for grocers, distributors and institutions so they can purchase and offer more local food.

Ag Commodity Trucking Regulation

Attached to this email are two regulatory guidance notices on requirements for commercial vehicle use for transporting agricultural commodities from the Federal Motor Carrier Safety Administration (FMCSA).

The first guidance addresses required use of Electronic Logging Devices (ELDs) for drivers engaged in trips beyond 150 air-miles from the source of an agricultural commodity as of June 18, 2018. This guidance is effective immediately and has been forwarded to the ME State Police. The second guidance is about reporting requirements for a driver authorized to operate a commercial vehicle for personal, or non-business reasons.

The FMCSA webpage at www.fmcsa.dot.gov/ag provides resources to clarify the applicability of the regulations to agriculture.

Pomological Society Summer Meeting

The summer meeting of the Maine State Pomological Society and orchard tour will be at Dole Orchard on July 18. Jim Schupp, Penn State University, will be the featured speaker. Presentations in the morning, catered lunch, orchard tour in the afternoon. Details coming soon.

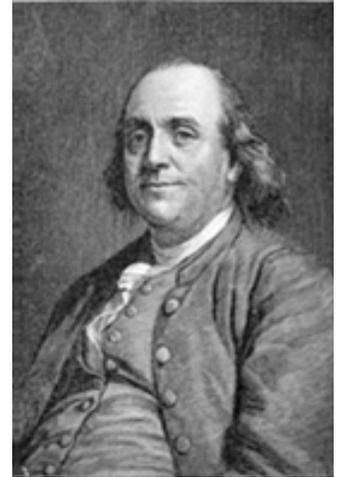
Closing Words

"Your audience will forget 90% of what you say within 24 hours.
What stays with them is your attitude, your emotion, the feelings you convey."

~ Carlos Ghosn

"Tell me and I forget, teach me and I may remember,
involve me and I learn."

~ Benjamin Franklin



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