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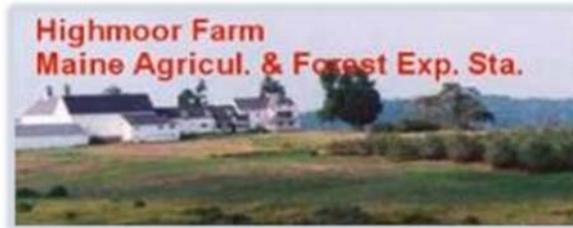
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Maine Tree Fruit Newsletter

Wednesday, August 22, 2018 Vol 25:14

Correction: The newsletter sent yesterday had a typo giving incorrect McIntosh maturity date forecast for Presque Isle. The correct date range for long-term storage harvest is September 28 to October 7. The associated ReTain application dates are online at <http://ag-radar.umext.maine.edu/MEmodel/ME-PresqueIsle-HarvestDates.htm>

Flyspeck and Sooty blotch

Research has found that the intensity of flyspeck occurrence in the fall is correlated with the total number of wetting hours during the growing season. Wetting hours accompanied by temperature in the optimum range for growth of the fungi that cause flyspeck presumably contribute more to colony growth than wetting hours with temperatures that are too cool or too hot for growth of the fungi. Wetting hours during late season when other factors such as declining fungicide residue and leakage of sugary exudates from the maturing apple into the cuticle are likely also to be more important.

At Highmoor Farm this year, the total number of temperature-adjusted wetting hours since fruits started forming after Petal Fall is expected to be about 10% above average based on observed weather through August 21 and the 10-day forecast out to the end of August, and climatic average values for dates beyond forecast range. Those weather data are used to generate the estimated dates for the earliest safe final fungicide application date shown in the table above.

The seasonal total was running below normal until rain frequency increase started July 22. Since then the total has caught up to and exceeded the average.

If a 'plausible worst case scenario' of warm wet weather is used instead of the climatic average for dates beyond forecast range, the earliest safe dates are much later. The warm temperature scenario is possible given that the current 6-10 day, 8-14 day, and 15-28 day forecasts all show increased chance for above average temperatures for August 27 – September 14. This is likely a key period for flyspeck risk as apples near maturity. After mid-September, declining temperatures progressively reduce the impact of wetting hours that occur.

Long range precipitation forecasts have less skill and therefore are more uncertain. At present the forecasts and outlooks show normal chance of rain over the coming weeks.

These relationships are approximations, and site-specific characteristics such as canopy density, air drainage, slope and sun exposure will affect flyspeck development as much or more than seasonal weather. Block history is your best guide to flyspeck risk. The weather data simply suggest that conditions so far this year are somewhat more favorable than average for flyspeck development.

Preliminary rain amount observations from Wednesday August 22 have reset the expected dates for earliest safe date for a final fungicide application to prevent visible flyspeck or sooty blotch. Estimates for these and 17 other Maine orchard locations are updated twice a day online at <https://extension.umaine.edu/ipm/ag-radar-apple-sites/>

Earliest safe final application dates for fungicide protection to prevent visible flyspeck and sooty blotch before harvest.			
Dates assume protection against flyspeck development was adequate during June and July. Dates for Monmouth (Sanford in parentheses), are based on observed weather, the 10-day forecast, and climatic averages beyond 10 days.			
Preharvest intervals are: captan and Pristine – 0 days, Topsin – 1 day, Flint – 14 days, <u>Sovran – 30 days.</u>			
For protection against visible Flyspeck through:	Earliest safe final application date for captan	Earliest safe final application date for Flint, Sovran, Topsin.	Earliest safe final application date for Pristine
Sept. 20	Sanford: August 13 Monmouth: August 10 Newport: August 10	Sanford: August 13 Monmouth: August 5 Newport: August 10	Sanford: August 12 Monmouth: August 5 Newport: August 5
Oct. 10	Sanford: August 18 Monmouth: August 16 Newport: August 19	Sanford: August 15 Monmouth: August 10 Newport: August 16	Sanford: August 15 Monmouth: August 10 Newport: August 10
Oct. 31	Sanford: August 23 Monmouth: August 22 Newport: August 22	Sanford: August 18 Monmouth: August 16 Newport: August 17	Sanford: August 18 Monmouth: August 15 Newport: August 15

Forest insect report excerpts

Adapted from: Maine Department of Agriculture, Conservation and Forestry, Maine Forest Service, <https://content.govdelivery.com/accounts/MEDACF/bulletins/205e6ef>

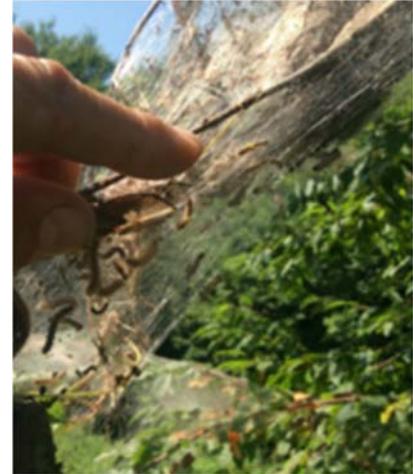
Browntail Moth (*Euproctis chrysorrhoea*) – Browntail moth eggs are hatching, and the



caterpillars have started to skeletonize the leaves that will later be enclosed in their overwintering webs.

Sometimes the feeding activity of **fall webworm** (*Hyphantria cunea*) is confused with that of browntail moth. At this time of year, the caterpillars and webs of fall webworm are huge in comparison to those

of browntail moth. Later in the fall, the fall webworm tents will become tattered and worn, and the webs of browntail moth will become more tightly woven. Be aware that the cocoons of browntail moth that were formed on trees and shrubs are still present and contact with them could result in exposure to the toxic hairs.



Photos: Development of browntail moth caterpillars (left), development of fall webworm caterpillars and webs (right). Photos from southern Maine, week of 8/6/2018, Maine Forest Service.

Winter Moth (*Operophtera brumata*) – Winter moth, the invasive caterpillar from Europe, has continued to spread along the coast. Pupae are currently in the soil beneath defoliated trees and shrubs. These pupae remain in the soil until adults emerge beginning in November. Much of the movement and spread of this insect is due to people moving soil containing pupae. Movement of soil and plantings from infested areas should be avoided.

However, we have good news regarding this pest. For the past few years we have been releasing *Cyzenis albicans*, a parasitic fly, to control winter moth. This year, for the first time ever, we have recovered the parasite from Vinalhaven and Peaks Island. We continue to find flies at our release site in Cape Elizabeth, where the parasitism rate is now up to 20%. This means that the parasite is very well established and should spread throughout the area. We will continue to release *C. albicans* when it is available. This biocontrol program is funded by USDA and coordinated by the Elkinton Lab at the University of Massachusetts, Amherst.

Soil-dwelling insect predators are also crucial to the control of winter moth; *Cyzenis* alone has no chance of controlling this pest. This is a strong argument for applying the least toxic lawn care solutions – those that do not include broadcast use of broad-spectrum insecticides.

Minute Pirate Bug (*Orius* spp.) – Minute pirate bugs (some of which are also called insidious flower bugs), are very small insects in the true bug family. They are very important predators on a wide variety of garden and tree pests, including aphids, thrips, whiteflies, spider mites, small caterpillars and many other small insects and insect eggs. Most of the year, they are scattered throughout your yard and fields and one rarely sees them. However, in states to the south and west of Maine, they are known to congregate in very large numbers near houses and buildings in the late summer/early fall. In past years we have not received questions about this behavior, but during the last few weeks, we have had several calls about swarms of this insect. We may be seeing this behavior now because of the hot, dry weather we have had recently.



Photo: Beneficial minute pirate bugs have been reported in large numbers this year (metric ruler). Photo: Maine Forest Service

Minute pirate bugs do sometimes ‘bite’, probing your skin with their stylets. It is thought they do this to ‘taste’ their environment. They do not inject any venom, and most people just feel a small pinching sensation (although a few can experience swelling and itching similar to a mosquito bite). It is important to note that standard insect repellents do not work to keep minute pirate bugs off your skin or structures. If you find yourself being bitten, covering up with long-sleeves and pants is your best defense. We do not recommend any chemical control as these insects provide very important natural control for a wide variety of yard, garden and tree pests. As the weather gets cooler in the autumn, they will disappear and again become unnoticeable.

Fire blight (*Erwinia amylovora*) – Fire blight is a bacterial blight of trees and shrubs in the Rose family (Rosacea). Trees in Maine most commonly affected by this disease are pear, apple, hawthorn and mountain ash (pictured). On a recent trip to Aroostook County, fire blight on mountain ash was observed multiple times in several towns. Additionally, samples were received at the lab from southern parts of Maine earlier this year as well.



Photo: Mountain ash with fire blight. Maine Forest Service.

Fire blight symptoms include quite rapid wilting and darkening of branch tips resulting in a characteristic ‘shepherd’s crook’ shape. Soaked-looking, sometimes oozing cankers can be found at the base of symptoms, while other, smaller cankers may be difficult to recognize. Bacterial ooze is the main mode of spreading infection to other parts of the same tree or nearby trees. Spread can occur by rainsplash during warm and moist weather. Insects attracted to the sugary bacterial ooze exuded from cankers also effectively spread this disease. Injuries from hail, pruning or other damage can cause rapid spread of this destructive disease.

Managing fire blight is challenging and a topic of debate. Management guidelines for fruit growers can be readily found online, but for the homeowner wishing to keep their planting free of this disease, vigilance and early detection are key. Infected plant parts should be pruned away and destroyed. Pruning cuts should be made as far back as possible into older wood, which may harbor the disease, but will not show symptoms – more succulent wood is much more susceptible. Once fire blight really gets started in a tree, it may require so much pruning that the tree will no longer be aesthetically acceptable, stressing the importance of keeping a close eye on your trees.

Drought stress and hardwoods – Prolonged periods of drought during the growing season have occurred during the past three years. The accumulation of this drought stress has been increasingly affecting many trees statewide and may continue to affect trees in the years to come. Hardwoods, decline in various, not always obvious ways depending on the degree of drought and the drought tolerance of a particular broadleaf tree species.

All tree species struggle to carry out photosynthesis during times of drought, slowing growth significantly and limiting the production of chemicals used in tree defense against insects and pathogens. Some tree species may show scorching of leaf tissue on the leaf margin, while other species may drop their leaves from a portion of a crown or even the whole tree. Leaves may also become chlorotic (yellow) since the tree lacks resources to replenish chlorophyll. Branch dieback, typically in a top downward progression is common following prolonged drought and loss of leaves.

Trees will continue to react to this stress in the coming years, so it is important to monitor the health of your trees and forests. When and where possible, efforts to support tree health like fall watering and supplemental fertilizer in early spring are important to helping trees recover from drought stress and some of its impacts.

White rot and branch dieback

This note from the *2018 Cornell Pest Management Guidelines for Commercial Tree Fruit Production* may be relevant to some of the cases of branch and apple tree dieback seen this summer.

“Black rot and White rot cankers develop primarily after wood has been weakened by other factors (e.g., drought, winter injury). The white rot fungus may establish superficial cankers on trees that receive only mancozeb and/or sterol inhibitor sprays during the primary scab period. Those superficial cankers can suddenly girdle limbs if trees become severely drought-stressed. Using a copper fungicide at green tip and/or including a fungicide with activity against black rot/white rot (e.g. Captan, Sovran, or Flint) in the prebloom scab control program should help to control superficial white rot cankers.”

Apple Management Calendar

Dates are for Highmoor Farm in Monmouth. Calendars for other sites at <https://extension.umaine.edu/ipm/ag-radar-apple-sites/>

August 13, Mon

2nd generation **Codling moth** 7% egg hatch. If control needed, and Bt or other material requiring repeated applications for control is being used, this is best date for first application. See Codling moth tables for follow-up spray dates to maintain protection through 2nd generation CM egg hatch.

No reliable threshold: Go by block history. Another risk indicator is pheromone trap capture above 5 to 14 codling moths per week.

August 21, Tue

2nd generation **White apple leafhopper** nymphs present.
Threshold: 2 per leaf, lower if leafhoppers were a problem at harvest last year.

August 21 to August 28

Rough estimate of 28 to 21 days before start of normal harvest period for untreated McIntosh fruit. Applying ReTain 3 to 4 weeks before start of harvest will delay fruit maturity for 7 to 10 days for single pick harvest.

August 25, Sat

2nd generation Codling moth - best treatment date where single spray is adequate (estimated 30% egg hatch).

Preharvest

Harvest preparations to optimize fruit quality, to reduce bruising and to prevent postharvest rots:

Repair and disinfect bins; monitor fruit maturity; make arrangements for harvest management; smooth travel lanes; check rapid cooling capacity; packing shed sanitation; set criteria for determining if postharvest dip needed.

August 29, Wed

Rough guess at latest recommended date to begin starch iodine index monitoring for non-spur McIntosh. See 'Harvest dates' table for rough estimates of McIntosh maturity dates.

August and September

Most effective timing for controlling **persistent weeds** (bindweed, brambles, dandelion, goldenrod, vetch etc.) with carefully targetted glyphosate (Roundup). But there is also increased risk of systemic tree damage from misdirected spray and on trees with root suckers with late-season application. Requires extra caution for application method and wind. Trees with root suckers removed at least one week prior to application and with trunks protected with white paint are less susceptible. Also note preharvest interval.

Green apple aphid populations are typically under biocontrol by this time. If abundant, see threshold comments in the mid-June entry. Also, high aphid population near harvest can result in honeydew staining of fruit. The sticky honeydew is relatively easy to wash off, but can lead to sooty mold growth and be a problem for harvest operations and pick-your-own marketing. Threshold stated as 10% of fruit stained, but actual threshold is farm-specific.

Rural Energy Grants

The 2019 Rural Energy for America Program grants are open to rural small businesses and agricultural producers only. Application deadlines are:

Renewable Energy Systems (RES) and Energy Efficiency Improvements (EEI) grants of \$20,000 or less - October 31, 2018 and April 1, 2019.

RES and EEI Grants over \$20,000 - April 1, 2019.

Energy Audit and Renewable Energy Development Assistance grants - January 31, 2019.

For more information see: <https://www.rd.usda.gov/programs-services/rural-energy-america-program-renewable-energy-systems-energy-efficiency>

Closing Words

"Resentment is like drinking poison and then hoping it will kill your enemies."

"I learned that courage was not the absence of fear, but the triumph over it. The brave man is not he who does not feel afraid, but he who conquers that fear."

"No axe is sharp enough to cut the soul of a sinner who keeps on trying, one armed with the hope that he will rise even in the end."

~ Nelson Mandela

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