2023 Fruit IPM Reports

Updated every Tuesday through the season, these reports are recorded on the Fruit Pest Hotline by UNH Extension's disease diagnostician in the UNH Plant Diagnostic Lab.

Quick Links to 2023 Reports

Hear the Latest Report

DIAL FRUIT PEST HOTLINE

(603-862-3763)

PAST FRUIT IPM REPORTS

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8/21/2023

Hi everyone!

Welcome back to the NH Fruit Pest hotline, which is produced by staff members from the UNH Cooperative Extension Food and Agriculture team. Today is August 21st, 2023.

While these recordings will highlight what you need to be looking for out in the field, I highly encourage you to find the transcripts online, as they will have more details and links about many of the pests, products, and models I'll be describing in this call. Simply google "UNH Fruit IPM reports" to find them on our webpage. The transcript for this call may not be up until Wednesday afternoon.

In terms of growing degree days in Concord, NH we have accumulated 2,712 GDD in BE base 43F and 1,776 in BE base 50F.

Weekly pest and disease update:

Diseases:

Exobasidium on blueberries

Blueberry growers should keep their eyes peeled for a new disease on highbush blueberries called Exobasidium. This has primarily been known as a southern disease until recently. Last season, UNH Field Specialists found this disease in a planting near Concord, NH. This year, it has popped up again near the border of NH and Maine. Included below are a links to more information about the fungal disease, as well as pictures taken in the field in 2022 (Figures 1 and 2).

Figure 1. Exobasidium on blueberry leaf from field visit in 2022. Photo credit: Jeremy DeLisle.

Figure 2. Exobasidium on blueberry from field visit in 2022. Photo credit: Jeremy DeLisle.

More information about Exobasidium here: Exobasidium leaf and fruit spot of blueberry | NC State Extension Publications (ncsu.edu)

Bitter rot on apples

Conditions have been good for this disease with plenty of rain and humidity, and quite a bit of fruit showing some sort of injury (notably, cracking) that might allow entry to the pathogen. Captan does a pretty good job, especially at slightly elevated rates. PennState cites Merivon/Pristine, Flint/Luna Sensation, Aprovia, and Omega, mixed with Captan as being effective. Pay attention to pre-harvest intervals for fungicides as harvest approaches. Additional information about the biology and management of this disease can be found here: https://ag.umass.edu/fruit/fact-sheets/apple-ipm-bitter-rot. Figure 3 is an example of a fully developed bitter rot infection on an apple.

Figure 3. Fully developed infections of apple bitter rot on apple cultivar 'Empire' with abundant spores of fungus that allows secondary, new infections on other apple fruit. Photo credit: Aćimović S. G., 2019.

A photo comparison of apple bitter rot and bitter pit, associated with calcium deficiency of the fruit, can be found here: https://twitter.com/FruitDiseases/status/1436764151335071753

Apple Anthracnose

We have recently diagnosed symptoms on mature apple trees as caused by apple anthracnose. While more than one species of fungi can cause what we call apple anthracnose, in this case it was caused by one of the Neofabraea fungi species. This disease can cause perennial cankers as well as bull's eye rot in apples. As outlined in this blog post from Cornell University, the following control measures are recommended:

How do I prevent and control Apple Anthracnose/Bull's Eye Rot?

– Avoid planting cultivars that are highly susceptible to anthracnose (*e.g.,* 'Empire', 'Gala', 'Spartan')[1]

– Scout consistently and prune cankerous branches

– Cut out cankers with a pruning knife with several extra inches of buffer

– Remove and burn trees with extreme infections

– Screen new incoming plant material for cankers

– Keep fruit dry after harvest

– Control woolly apple aphids

Botryosphaeria Canker

For the control of Botryosphaeria canker:

(1) Remove and dispose of dead or dying branches, prune a few inches below the canker on infected tree and shrub branches. Protect healthy trees by only using sanitized pruning equipment.

(2) Irrigate at regular intervals during extended dry periods to minimize drought stress.

(3) Fertilize if soil mineral levels are inadequate, maintain a layer of well-composted organic mulch over the root zone to retain soil moisture and limit mechanical wounds.

(4) Regular satiation pruning should take place to remove low-level infections that may be present in the canopy.

(5) Avoid pruning during wet periods in the spring.

Additional details can be found here: HS1265/HS1265: Fungal Gummosis in Peach (ufl.edu)

Insects:

Spotted Wing Drosophila

While many blueberry varieties are past their peak harvest season, late-season varieties are still very much at risk. This warm, damp weather pattern we are having has been quite favorable for the development of this insect.

Captures inside plantings where control measures have been implemented have been much lower, indicating that controls are working. This is to say that the risk to ripening fruit, especially late blueberries and fall raspberries is still high.

Note: Raspberries and blueberries can tolerate cold storage temperatures close to 32° F, so don't be afraid to put your fruit in a cold storage to keep it crisp and fresh and kill or slow down SWD egg and larval development (NYS IPM).

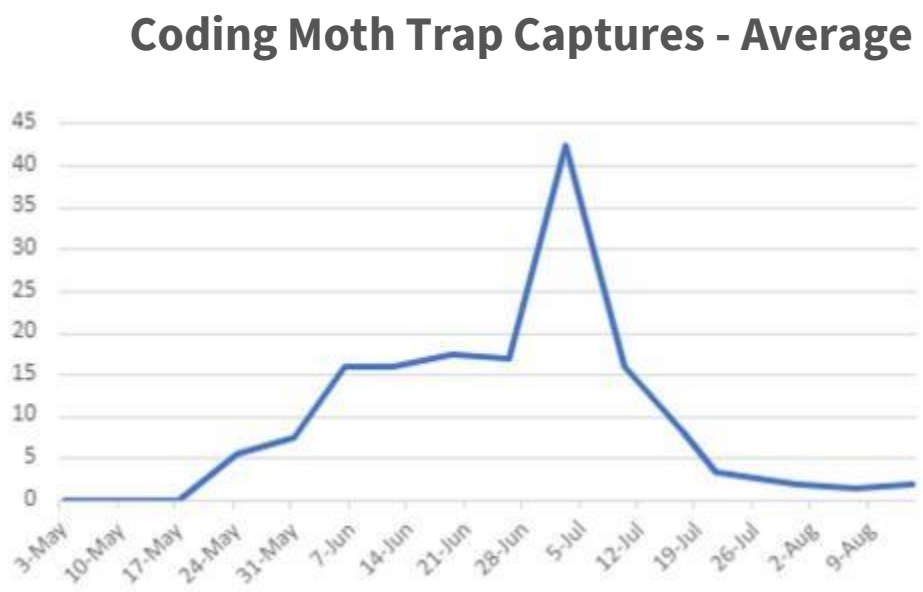
Apple Maggot Fly

AMF captures have remained low at our trapping locations in Merrimack County, averaging well below one fly per trap. The action threshold is an average of 1-2 AMF on the yellow cards or in unbaited sticky spheres, or a cumulative average of 5 AMF per trap on baited spheres. Trap captures for a week following insecticide treatment are ignored. Subsequent sprays can be applied once the threshold is reached again.

Apple Maggot Fly (AM)--New England Tree Fruit Management Guide (netreefruit.org)

Codling moth

Trap captures have remained low this week. We are currently at 1,431 DD past our biofix. Continue to monitor traps for moth captures to mark the start of the second generation flight. First egg hatch of second generation should begin 250 DD after sustained trap captures, which may be a time to treat in orchards with a crop and high captures. A second spray may be needed in high pressure orchards 10-14 days later. So far, we have not seen a significant uptick in CM captures indicating a significant flight of a second generation. We WILL continue to monitor to best inform management decisions.



Brown Marmorated Stink Bug

BMSB captures have been very low so far this season. We anticipate those numbers to start to increase over the next couple of weeks. Apple growers should monitor using either pyramid-style traps or clear stick cards, especially near areas of the orchard or in specific varieties where this insect has been documented in past seasons. A comparison of the two types of traps most commonly used can be found here: Simpler trap for monitoring brown marmorated stink bugs eyed - Fruit Growers News

Upcoming Events:

AUGUST 22, 2023 | 6:00 - 8:00PM

NH Giant Pumpkin Growers Association Twilight meeting

AUGUST 23, 2023 | 4:00 - 6:00PM

Tunnel Twilight Series: Disease ID and Management

AUGUST 23, 2023 | 5:30 - 7:00PM

Twilight Meeting for Greenhouses, Nurseries and Garden Centers

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8/8/2023

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Weekly pest and disease update:

Diseases:

Exobasidium on blueberries

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Figure 1: Exobasidium on blueberry leaf from field in 2022. Photo by Jeremy DeLisle.@ 2023 University of New Hampshire

Figure 2: Exobasidium on blueberry fruit from field in 2022. Photo by Jeremy DeLisle. @ 2023 University of New Hampshire

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https://twitter.com/FruitDiseases/status/1436764151335071753

Insects:

Blueberry Maggot Fly

The blueberry maggot degree day model predicts when to set baited traps to monitor for adult flies. This insect has patchy distribution and monitoring will determine if and when it occurs on your farm. Flies typically emerge around 913 degree days base 50˚ F from January 1. Blueberry maggot flight places the crop at risk from egg-laying females.

Continue to check blueberry traps once or twice per week, as required, and replace traps and baits every third week. If caught, begin insecticide treatment. Maintain an IPM and insecticide program to protect the crop, according to your market requirements. After harvest, remove and discard used traps and bait.

Details on monitoring and management can be found here.

Spotted Wing Drosophila

While many blueberry varieties are past their peak harvest season, late-season varieties are still very much at risk. This warm, damp weather pattern we are having has been quite favorable for the development of this insect.

Traps placed at several farms in southern NH showed high captures of over 40 male SWD flies in four locations. These high captures were in control traps, placed outside of production areas. Captures inside plantings where control measures have been implemented have been much lower, indicating that controls are working. This is to say that the risk to ripening fruit, especially late blueberries and fall raspberries, is still high.

Also of interest, our three SWD netting demonstration sites are working quite well to exclude this little insect again this year. Timing of applying the netting is critical and should occur as soon after pollination is complete as practical to increase the chances of fully excluding this pest. Growers report excellent yields and high quality berries from all three netting demonstration locations.

Note: Raspberries and blueberries can tolerate cold storage temperatures close to 32° F, so don't be afraid to put your fruit in a cold storage to keep it crisp and fresh and kill or slow down SWD egg and larval development (NYS IPM).

SWD is primarily a pest of small fruits, but also impacts stone fruits. Considering the fact that most stone fruits were lost due to severe cold this winter, controlling this pest will be generally limited to blueberries, brambles and grapes at this point in the season.

UNH Extension is trialing red sticky traps paired with the Trece Pherocon Peel-Pak lures in 2023. We also work with many growers who use the drowning traps paired with these same lures. In Figure 4, the smaller red square is the lure, while the red rectangle is the sticky trap, which gets checked weekly.

Figure 4: New red sticky traps to capture SWD. Photo credit: Jeremy DeLisle.

Japanese Beetles

Adult beetles can be found feeding on foliage and fruit currently throughout most of NH. Many of us are interested in opportunities for mass trapping this pest. Blueberries and raspberries are especially attractive to this insect. There may be hope yet for Japanese beetle traps that can actually help control populations and limit damage to fruiting crops. Visit the link here for more information.

Apple Maggot Fly

We have started to capture AMF with varying catch numbers from one farm to the next. Traps should be up now to monitor populations.

Predicted first emergence of AM occurs after approximately 796 to 1072 degree days have accumulated. Today we have accumulated **1,503** DD base 50F from January 1. Set sticky traps along vulnerable field edges. Check at least weekly and note the first date of captures. Enter this into the Apple Maggot tool on NEWA.

The action threshold is an average of 1-2 AMF on the yellow cards or in unbaited sticky spheres, or a cumulative average of 5 AMF per trap on baited spheres. Trap captures for a week following insecticide treatment are ignored. Subsequent sprays can be applied once the threshold is reached again.

Apple Maggot Fly (AM)--New England Tree Fruit Management Guide (netreefruit.org)

Codling moth

Trap captures have remained low this week (Figure 5). We are currently at 1,322 DD past our biofix. Continue to monitor traps for moth captures to mark the start of the second generation flight, which is anticipated to start soon. First egg hatch of second generation should begin 250 DD after sustained trap captures, which may be a time to treat in orchards with a crop and high captures. A second spray may be needed in high pressure orchards 10-14 days later. So far, we have not seen a significant uptick in CM moth captures indicating the flight of a second generation. We anticipate this will occur soon and continue to monitor to best inform management decisions.

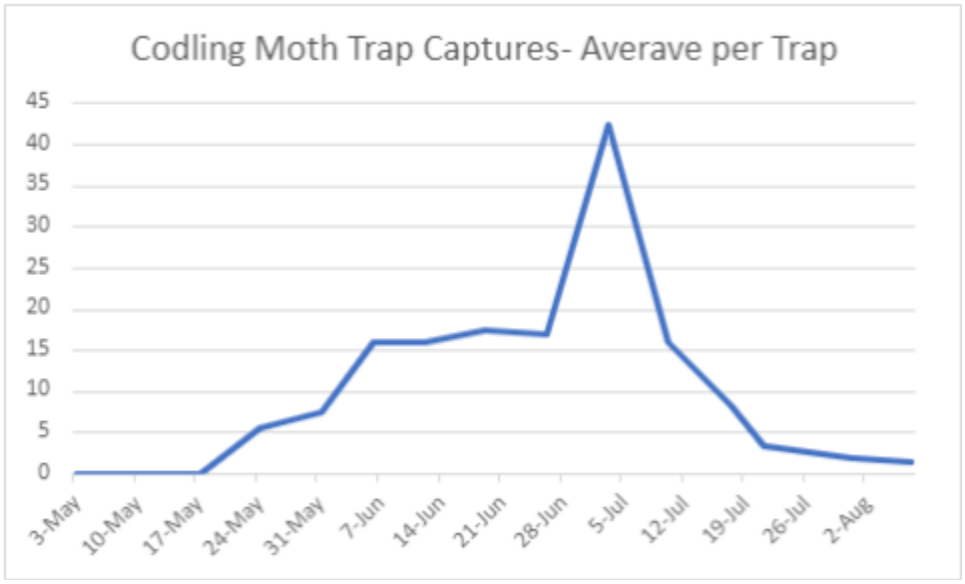

Figure 5. Average codling moth trap captures for the 2023 season provided by Jeremy DeLisle.

Brown Marmorated Stink Bug

We have yet to capture BMSB this season. We anticipate those numbers to start to increase over the next couple of weeks. Apple growers should monitor using either pyramid-style traps or clear sticky cards, especially near areas of the orchard or specific varieties where this insect has been documented in past seasons. A comparison of the two types of traps most commonly used can be found here: Simpler trap for monitoring brown marmorated stink bugs eyed - Fruit Growers News

Tissue testing time is here for some crops and coming right up for others.

Directions for taking a plant tissue leaf sample:

Tips - In general, it is usually best to sample many plants (with only a few leaves from each plant) rather than sample many leaves from only a few plants.

Select the youngest, fully developed (mature) leaves for analysis. Do not select leaves from plants which are mechanically damaged, insect damaged, diseased or dead. Avoid leaves from border plants or leaves which are fully shaded by other foliage. Do not send sample plants that have been under prolonged stress.

Avoid leaves which are contaminated with soil or dust or which have been recently sprayed. In general, plant leaves which have been exposed to normal rainfall are sufficiently clean for analysis. Samples can be washed briefly in a 2% non-phosphorus detergent solution and then rinsed carefully with clear water. However, in many situations the cleaning may do more harm than good.

If you are trying to diagnosis a problem and are sampling plants that are showing an abnormal symptom, follow the above directions, but sample only from plants showing the problem.

Crop Information

Blueberries: sample at least 40 leaves from 10 to 20 plants during the first week of harvest.

Strawberries: sample at least 40 first fully expanded leaves from 10 to 20 plants, after renovation

Brambles: sample at least 60 leaves from 10 to 20 non-fruiting canes during early-mid August.

Grapes: sample 50 to 75 of the youngest full-expanded leaves from 10 to 20 vines at veraison (70 days after bloom, as the first fruit ripens). Separate petioles (leaf stems) from leaves, and send only the petioles for analysis.

Tree fruits: sample 5 leaves from each of 10 trees from late July through early August. Select shoots at eye-level from around the outside of the trees that make a vertical angle of 45-60 degrees to the ground (avoid water shoots or suckers). Collect leaves from the mid-portion of the new shoot growth.

For other crops: call 603-862-3203 to determine the correct sampling procedures. After Collection Samples should be placed in paper bags and air dried (turn the bag frequently) or dried at 200 degrees Fahrenheit.

Access the submission form here: https://extension.unh.edu/sites/default/files/migrated_unmanaged_files/Resource002488_Rep3658.pdf

Click Here to See Upcoming Agriculture Events

See the full list of twilight meetings here:

2023 Production Agriculture Summer Twilight Meeting | Extension (unh.edu)

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8/1/2023

In terms of growing degree days in Concord, NH we have accumulated 2,209 GDD in BE base 43F and 1,393 in BE base 50F.

Weekly pest and disease update:

Diseases:

Mummy berry on blueberry:

Is being reported from some blueberry plantings. Details about this disease and management strategies can be found here.

This infects new shoots in the very early spring beginning around budbreak. Those infected shoots can then in turn release spores that infect open flowers, eventually resulting in the symptoms you are seeing in your berries. The fruit you see there will eventually shrivel and look like a little grey or black pumpkin. This lies in waiting until next spring for conditions to be just right and releases new spores to continue the cycle. You can read more about the disease here: Microsoft Word - Blueberry IPM - Mummy Berry Final.docx (umass.edu)

This year was certainly a good weather year for this fungus. We had temperatures conducive for extended persistence of apothecia. As noted in the fact sheet below, as apothecia expand, the number of ascospores released increases. Ascospore discharge depends on temperature, relative humidity, and wind speed. Apothecia can persist for about 3 to 4 weeks under cool conditions — 50° to 59°F — but are shorter-lived as temperatures rise. At 68° to 77°F (20° to 25°C), they may persist for only 1 to 2 weeks. We had damage from the freeze, which likely damaged tissues and made them more susceptible to infection. Did you see many shoot strikes? These would've been visible around the time that flowers were present. The fact sheet below gives detailed information about the disease cycle and includes photos of berries as the life cycle of mummy berry progresses. I know many of you are familiar with this, but there is good information in there and helpful pictures.

https://www.canr.msu.edu/blueberries/uploads/files/E2846%20Mummy%20Berry%20Facts.pdf

A list of fungicides and their efficacy is also included in the fact sheet above.

Mulching with at least 2" of fresh mulch in the fall can also greatly help reduce the number of spores that are able to reach susceptible tissue. This strategy can't be used year after year due to too much mulch buildup, but if you need to mulch, this fall would be a great time for this reason. Also, picking off as many of those suspicious fruits as possible will only help to reduce potential inoculum for next season.

One last tip…You could collect 10-20 of the mummies and create a "mummy garden". I know, it sounds funny, but you could place them outside the planting, possibly just nestled in some wood mulch (not fully buried), and use that to track the development of the disease next year. Once you see the little mushroom cups coming up, it will clue you in as to when you need to treat. Research shows that the fruiting bodies of the fungus (apothecia) need to be at least 1/12" in diameter to produce spores for infection.

Exobasidium

Blueberry growers should keep their eyes peeled for a new disease on highbush blueberries called Exobasiduim. This has primarily been known as a southern disease until recently and last season, UNH Field Specialists found this disease in a field near Concord, NH. This year, it has popped up again near the border of NH and Maine. Included below is a link to more information about this fungal disease, as well as pictures taken in the field in 2022 (Figures 1 and 2).

Figure 1: Exobasidium on blueberry leaf from field in 2022. Photo by Jeremy DeLisle.@ 2023 University of New Hampshire

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***Insects*:**

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Continue to check blueberry traps once or twice per week, as required, and replace traps and baits every third week. If caught, begin insecticide treatment. Maintain an IPM and insecticide program to protect the crop, according to your market requirements. After harvest, remove and discard used traps and bait.

Details on monitoring and management can be found here.

Spotted Wing Drosophila

Traps should be upfor SWD. Trap captures last week were moderate in the southern half of NH. This does not mean that the threat from this pest is over. More likely, the actions that growers took to control this pest in response to high numbers the previous week have knocked the population of adults back temporarily. Some growers report having excellent success suppressing populations by rotating insecticides from different IRAC groups.

Also of interest, our three SWD netting demonstration sites are working quite well to exclude this little insect again this year. Timing of netting application is critical, and should occur as soon after pollination is complete as is practical to increase the chances of fully excluding this pest.

To learn more about the types of systems being installed and the potential for new construction versus retrofitting existing bird netting structures, join us at our upcoming **Twilight Meeting on August 3rd at Heron Pond Farm in South Hampton, NH.** Details are available at the link at the bottom of this page.

Note: Raspberries and blueberries can tolerate cold storage temperatures close to 32° F, so don't be afraid to put your fruit in a cold storage to keep it crisp and fresh and kill or slow down SWD egg and larval development (NYS IPM).

SWD is primarily a pest of small fruits, but also impacts stone fruits. Considering the fact that most stone fruits were lost due to severe cold this winter, controlling this pest will be generally limited to blueberries, brambles and grapes at this point in the season.

You can find more information about SWD and SWD trap selection in past pest reports, refer to the ones from June 2023.

Notes of interest: UNH Extension is trialing red sticky traps paired with the Trece Pherocon Peel-Pak lures in 2023. We also work with many growers who use the drowning traps paired with these same lures. In Figure 3 below, the smaller red square is the lure, while the red rectangle is the sticky trap, which gets checked weekly.

Figure 3: New red sticky traps to capture SWD. Photo by Jeremy DeLisle.

Apple Maggot Fly

We have started to capture AMF with varying catch numbers from one farm to the next. Traps should be up now to monitor populations.

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The action threshold is an average of 1-2 AMF on the yellow cards or in unbaited sticky spheres, or a cumulative average of 5 AMF per trap on baited spheres. Trap captures for a week following insecticide treatment are ignored. Subsequent sprays can be applied once the threshold is reached again.

Apple Maggot Fly (AM)--New England Tree Fruit Management Guide (netreefruit.org)

Codling moth

Trap captures have remained low this week. We are currently at 1,213 DD past our biofix. Continue to monitor traps for moth captures to mark the start of the second generation flight, which is anticipated to start soon. First egg hatch of second generation should begin 250 DD after sustained trap captures, which may be a time to treat in orchards with a crop and high captures. A second spray may be needed in high pressure orchards 10-14 days later. Below is a resource shared by Dr. Jaime Pinero at UMass outlining a control approach based on trap captures and degree day accumulations targeting larvae at egg hatch. Great resources in report online and in the New England Tree Fruit Management Guide.

Codling moth (CM) | New England Tree Fruit Management Guide (netreefruit.org)

Figure 4: UNH Extension Field Technician, Justin Hogg, sets up delta traps to monitor for codling moth in apple orchards. Photo by Jeremy DeLisle.

Japanese Beetles

Adult beetles can be found feeding on foliage and fruit currently throughout most of NH. Many of us are interested in opportunities for mass trapping this pest. Blueberries and raspberries are especially attractive to this insect. There may be hope for Japanese beetle traps that can actually help control populations and limit damage to fruiting crops. Visit the link here for more information.

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Directions for taking a plant leaf tissue sample in your orchard/garden:

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For other crops: Contact your local field specialist or county office to determine the correct sampling procedures. After collection, samples should be placed in paper bags and air-dried (turn the bag frequently) or dried at 200 degrees F.

If you wish to submit a sample to UNH for tissue testing, more information and forms can be found here:

Form: UNH Cooperative Extension - Commercial Plant Tissue Form.pdf - All Documents (sharepoint.com)

Main soil/tissue testing site: Soil Testing Services | Extension (unh.edu)

Upcoming Events

August 3 - Blueberry IPM Twilight Meeting at Heron Pond Farm | Extension (unh.edu)

August 17th - Tree Fruit Twilight Meeting at Apple Hill Farm | Extension (unh.edu)

See the full list of twilight meetings here:

2023 Production Agriculture Summer Twilight Meeting | Extension (unh.edu)

Thanks for tuning in!

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7/25/2023

Welcome back to the NH Fruit Pest hotline, which is produced by staff members from the UNH Cooperative Extension Food and Agriculture team. Today is July 25th , 2023.

While these recordings will highlight what you need to be looking for out in the field, I highly encourage you to find the transcripts online, as they will have more details and links about many of the pests, products, and models I'll be describing in this call. Simply google "UNH Fruit IPM reports" to find them on our webpage. The transcript for this call may not be up until Wednesday afternoon.

In terms of growing degree days in Concord, NH we have accumulated 1991 GDD in BE base 43F and 1231 GDD in BE base 50F.

Weekly pest and disease update:

Diseases:

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This infects new shoots in the very early spring beginning around budbreak. Those infected shoots can then in turn release spores that infect open flowers, eventually resulting in the symptoms you are seeing in your berries. The fruit you see there will eventually shrivel and look like a little grey or black pumpkin. This lies in waiting until next spring for conditions to be just right and releases new spores to continue the cycle. You can read more about the disease here: Microsoft Word - Blueberry IPM - Mummy Berry Final.docx (umass.edu)

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Moving onto the apples:

Bitter Rot:

Conditions have been good for this disease with lots of rain, and quite a bit of fruit showing some sort of injury (notably, cracking) that might allow entry to the pathogen. Captan does a pretty good job, especially at slightly elevated rates. PennState cites Merivon/Pristine, Flint/Luna Sensation, Aprovia, and Omega, mixed with Captan as being effective.

For more info: Apple and Pear Disease - Bitter Rot (psu.edu) and Bitter Rot | New England Tree Fruit Management Guide (netreefruit.org)

Apple scab:

Hopefully your orchard is clean of scab for the growing season. While visiting orchards, Extension staff have seen some scab infections present on leaves. In those orchards, growers will need to remain diligent and maintain fungicide coverage to minimize new infections.

Here is an article addressing control and resistance management strategies for scab:

https://www.canr.msu.edu/news/management_of_apple_scab_in_orchards_with_existing_scab_lesions

An excellent description of the factors to consider for best fungicide selection can be found here: https://netreefruit.org/apples/diseases/apple-scab

Our new Plant Diagnostic Lab Director, Dr. Bo Liu, has been busy along with other lab staff members diagnosing all sorts of plant diseases this summer. Below I have included his report along with microscope images provided by his lab of two fungal pathogens, apple scab and Alternaria leaf blotch.

Figure 1: Apple Scab: Leaf spots with dark brown to black lesions were on apple leaves. Several leaves collected and samples were checked under microscope, observing the microbial structure, and isolations were performed on Potato Dextrose Agar (PDA) for 10 days. A total of 5 lesions were recorded along with the fungal isolates recovered. An overall assessment was made based on the evaluations including signs and symptoms observed on leaf surfaces (Fig. 1), recovery of the organisms involved (Fig. 2)

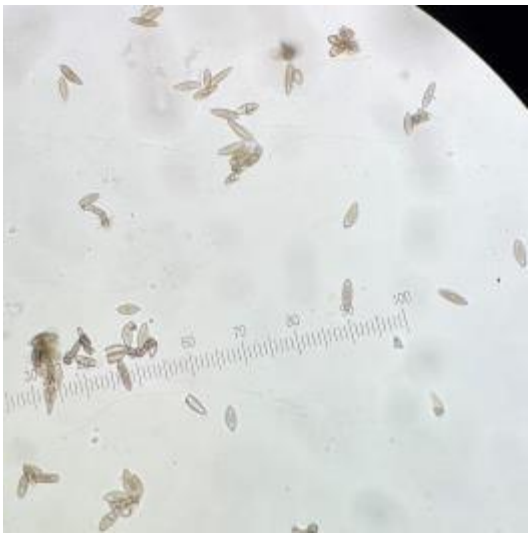

Figure 2

Alternaria leaf blotch: Lesions on leaves (figure 3) are circular, necrotic lesions with a light brown interior, and some were surrounded by a darker purple ring. Several leaves collected and samples were checked under microscope (figure 4) for observing the microbial structure, and isolations were performed on Potato Dextrose Agar (PDA) for 10 days.

Figure 3: Symptoms of Alternaria Leaf blotch on apple leaves with circular and necrotic lesions.

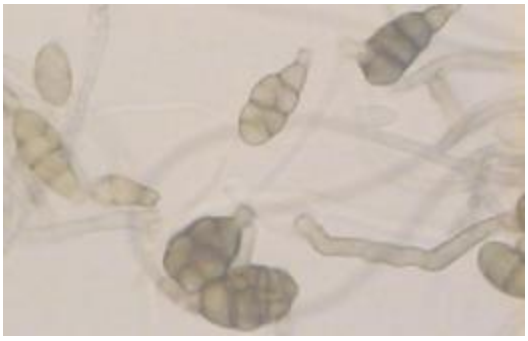

Figure 4: Conidia morphology (Alternaria mali) on the lesions of apple leaves.

A small amount of information regarding management of Alternaria can be found here**.**

Fire blight:

There has been plenty of fireblight popping up on apple orchards around the state from southern New Hampshire all the way up into Carroll County.

Continue to scout orchards for shoot blight, including rootstock sucker infections. Prune and remove infected shoots at least 12-18 inches below the infected margin during cool, dry weather.

Pruning is particularly useful when blossom blight is well controlled and canker blight infections are thus the main source of inoculum for disease spread during the summer. Pruning can help limit disease spread but will be most effective if practiced rigorously during the first few weeks after bloom; pruning will do little to slow disease spread if delayed until a large number of infections are visible.

Routine use of antibiotics to prevent shoot blight spread during the summer is not effective or recommended. However, applications to protect new wounds immediately following a hailstorm can be very beneficial. With a cool and fairly dry bloom period, some growers made in through the prime infection period with just a couple of streptomycin applications. Keep in mind that saving at least one or the four allotted strep sprays in case of hail or damaging wind events is a good insurance strategy.

In a recent report, Kathleen Leahy reminds us of an article from Good Fruit Grower highlighting recent research comparing cutting and sanitization strategies to find the best removal methods for fire blight strikes. It's definitely worth the read:

Good to Know: Take a bite out of blight - Good Fruit Grower

Another great resource on fireblight management options come from Dr. Kari Peter, Tree Fruit Pathologist at Penn State University. Her presentation from our UNH Fireblight Webinar can be accessed here.

Sooty Blotch and Flyspeck:

Now is the time to think about how you will manage Sooty Blotch and Flyspeck in your orchard.
Check out the New England Tree fruit management guide for more info (Sooty Blotch and

Flyspeck | New England Tree Fruit Management Guide (netreefruit.org)), and remember that NEWA also provides forecasting and management recommendations for this disease complex:

From NEWA: Sooty Blotch and Flyspeck | NEWA (cornell.edu)

To effectively limit fruit finish blemishes from Sooty Blotch and Flyspeck infection consider making a cover application of one of the following fungicides/tank mixes:

- 4 oz/100 gal Topsin +1 lb/100 gal. Captan 50W (or Captan-80 10 oz/100 gal); or
- 0.67 oz/100 gal Flint 50WG; or
- 1.6 oz/100 gal Sovran WDG; or
- 6.1 oz/100 gal Pristine WG; or
- 1 lb/100 gal Captan 50W (or Captan-80 10 oz/100 gal) + 21 fl. oz./100 gal ProPhyt

Figure 1: Recommendations from NEWA for Sooty Blotch and Flyspeck.

Insects:

Blueberry Maggot Fly

The blueberry maggot degree day model predicts when to set baited traps to monitor for adult flies. This insect has patchy distribution and monitoring will determine if and when it occurs on your farm. Flies typically emerge around 913 degree days base 50˚ F from January 1.

Blueberry maggot flight places the crop at risk from egg-laying females.

Continue to check blueberry traps once or twice per week, as required, and replace traps and baits every third week. If caught, begin insecticide treatment. Maintain an IPM and insecticide program to protect the crop, according to your market requirements. After harvest, remove and discard used traps and bait.

Blueberry Fruit Fly [fact sheet] | Extension (unh.edu)'

Apple Maggot Fly

Predicted first emergence of AM occurs after approximately 796 to 1072 degree days have accumulated. Today we have accumulated **1231** DD base 50F from January 1. Set sticky traps along vulnerable field edges. Check at least weekly and not the first date of captures. Enter this into the Apple Maggot tool on NEWA.

The action threshold is an average of 1-2 AMF on the yellow cards or in unbaited sticky spheres, or a cumulative average of 5 AMF per trap on baited spheres. Trap captures for a week following insecticide treatment are ignored. Subsequent sprays can be applied once the threshold is reached again.

Figure 5: Unbaited red sticky sphere for monitoring apple maggot fly in orchards. Photo: Jeremy DeLisle

Japanese Beetles:

Adult beetles can be found feeding on foliage and fruit currently throughout most of NH. Many of us are interested in opportunities for mass trapping this pest. Blueberries and raspberries are especially attractive to this insect. There may be hope yet for Japanese beetle traps that can actually help control populations and limit damage to fruiting crops. Visit the link here for more information.

SWD:

Traps should be up now. Trap captures last week were relatively low in the southern half of NH. This does not mean that the threat from this pest is over. More likely, the actions that growers took to control this pest in response to high number the previous week have knocked the population of adults back temporarily.

This morning Extension staff made a site visit to an unsprayed red raspberry planting in the Loudon area. After explaining the importance of frequent picking and cold storage (refrigeration or freezing) as part of the SWD tolerance strategy, I picked the first two ripe berries I saw and was easily able to locate SWD larvae in those ripe berries.

Note: Raspberries and blueberries can tolerate cold storage temperatures close to 32° F, so don't be afraid to put your fruit in a cold storage to keep it crisp and fresh and kill or slow down SWD egg and larval development (NYS IPM).

SWD is primarily a pest of small fruits, but also impacts stone fruits. Considering the fact that most stone fruits were lost due to severe cold this winter, controlling this pest will be generally limited to blueberries, brambles and grapes at this point in the season.

You can find more info about SWD and SWD trap selection in past pest reports, refer to the ones from this past June!

Notes of Interest:

UNH Extension is trialing red sticky traps paired with the Trece Pherocon Peel-Pak lures in 2023. We also work with many growers who use the drowning traps paired with these same lures. In the photo below, the smaller red square is the lure, while the red rectangle is the sticky trap, which gets checked weekly.

Figure 6: : New red sticky traps to capture SWD. Photo: Jeremy DeLisle

SWD Netting Project

UNH Extension, USDA Natural Resources Conservation Service and the NH Conservation Districts have been partnering on a three-year demonstration project investigating the efficacy, ease of use, cost of installation and potential return on investments associated with installing SWD exclusion netting systems on three farms here in NH. Those partner farms are Bascom Road Blueberry Farm in Newport, Stark Farm in Dunbarton, and Heron Pond Farm in South Hampton. To date, the systems have been highly effective at excluding SWD flies. To learn more about the types of systems being installed and the potential for new construction

versus retrofitting existing bird netting structures, join us at our upcoming twilight meeting on August 3rd at Heron Pond Farm in South Hampton, NH. Details are available at the link at the bottom of this page.

Apple Pests:

Codling moth:

Trap captures finally decreased significantly towards the end of last week. We are currently at 1052 DD past our biofix, indicating that first egg hatch of the second generation should begin soon. Below is a resource shared by Dr. Jaime Pinero at UMass outlining a control approach based on trap captures and degree day accumulations targeting larvae at egg hatch.

Codling moth (CM) | New England Tree Fruit Management Guide (netreefruit.org)

Key events in CM life cycle estimated by use of Biofix1 and subsequently accumulated degree days. These estimates are adapted from Michigan State University and Cornell University.		
Event	**Degree Days base 50 required following Biofix**	**Spray timing**
Biofix (1st sustained capture of moths in pheromone traps)	On this date we start accumulating DD base 50	.....
Egg hatch begins (calculated after Biofix has been established)	100 (against eggs) 220-250 (against larvae)	1st spray (after the petal fal spray)
Peak period of 1st generation egg hatch/critical control period	500-600	Timing for 2nd spray (against larvae) if monitoring indicates a treatment is needed. An 'easier' recommendation: in high-pressure blocks, 2nd spray goes 10-14 days after 1st spray
End of first-generation egg hatch	Approx. 920	.....
First egg hatch, 2nd generation	1000-1260	3rd spray (spray again 10-14 days later only if CM pressure is severe).
Peak period of 2nd generation egg hatch/critical control period	1320-1720	
End of 2nd generation egg hatch	2100	

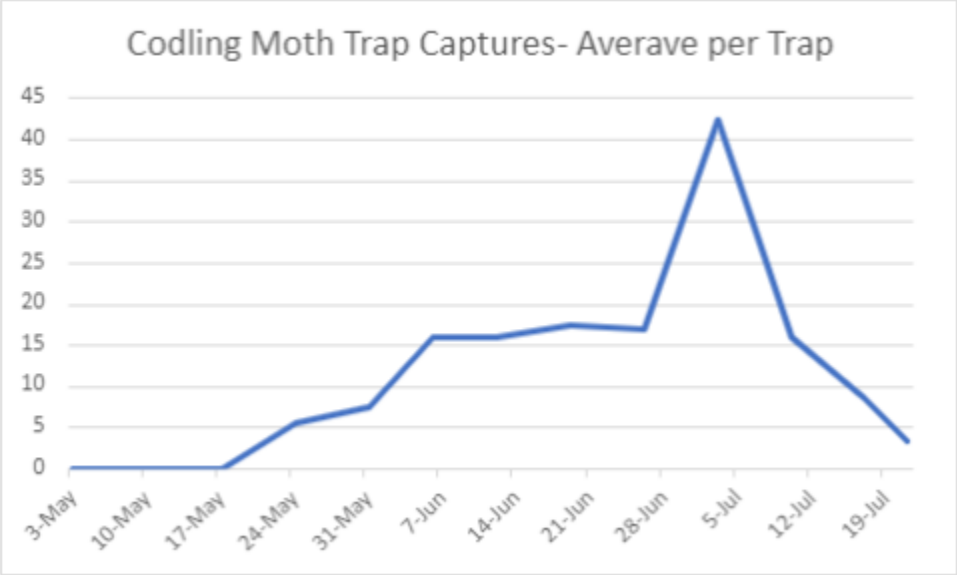

Figure 7: Codling moth trap captures for Merrimack County

Oriental Fruit Moth:

Oriental Fruit Moth (OFM) | New England Tree Fruit Management Guide (netreefruit.org)

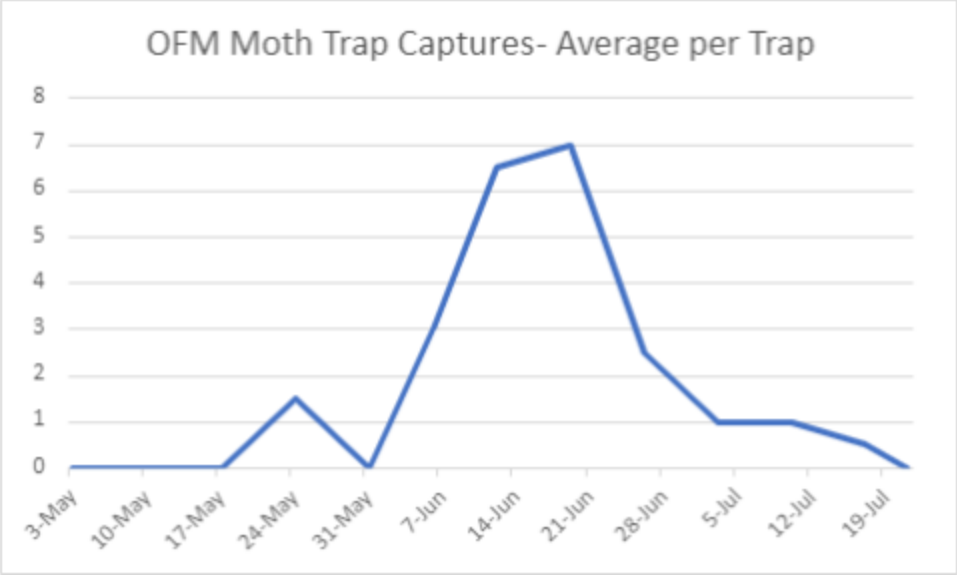

Figure 8: Oriental Fruit Moth (OFM) trap captures for Merrimack County

Figure 9: UNH Extension Field Technician, Justin Hogg, sets up delta traps to monitor for codling moth in apple orchards. Photo: Jeremy DeLisle

San Jose Scale:

Pheromone traps should be in place to record the second adult male flight. Note date of first capture of second generation for biofix in NEWA for predicting second generation crawler emergence.

San Jose scale (SJS) | New England Tree Fruit Management Guide (netreefruit.org)

Tissue testing time is here for some crops and coming right up for others.

Directions for taking a plant tissue sample leaf sample in your orchard/garden:

Tips - In general, it is usually best to sample many plants (with only a few leaves from each plant) rather than sample many leaves from only a few plants.

Select the youngest, fully developed (mature) leaves for analysis. Do not select leaves from plants which are mechanically damaged, insect damaged, diseased or dead. Avoid leaves from border plants or leaves which are fully shaded by other foliage. Do not send sample plants that have been under prolonged stress.

Avoid leaves which are contaminated with soil or dust or which have been recently sprayed. In general, plant leaves which have been exposed to normal rainfall are sufficiently clean for analysis. Samples can be washed briefly in a 2% non-phosphorus detergent solution and then rinsed carefully with clear water. However, in many situations the cleaning may do more harm than good.

If you are trying to diagnosis a problem and are sampling plants that are showing an abnormal symptom, follow the above directions, but sample only from plants showing the problem.

Crop Information

Blueberries: sample at least 40 leaves from 10 to 20 plants during the first week of harvest.

Strawberries: sample at least 40 first fully expanded leaves from 10 to 20 plants, after renovation

Brambles: sample at least 60 leaves from 10 to 20 non-fruiting canes during early-mid August.

Grapes: sample 50 to 75 of the youngest full-expanded leaves from 10 to 20 vines at veraison (70 days after bloom, as the first fruit ripens). Separate petioles (leaf stems) from leaves, and send only the petioles for analysis.

Tree fruits: sample 5 leaves from each of 10 trees from late July through early August. Select shoots at eye-level from around the outside of the trees that make a vertical angle of 45-60 degrees to the ground (avoid water shoots or suckers). Collect leaves from the mid-portion of the new shoot growth.

For other crops: Contact your local field specialist or county office to determine the correct sampling procedures. After Collection Samples should be placed in paper bags and air dried (turn the bag frequently) or dried at 200 degrees Fahrenheit.

If you wish to submit sample to UNH for tissue sampling, more information and forms can be found here:

Form: UNH Cooperative Extension - Commercial Plant Tissue Form.pdf - All Documents (sharepoint.com)

Main soil/tissue testing site: Soil Testing Services | Extension (unh.edu)

Upcoming Events

August 3 - Blueberry IPM Twilight Meeting at Heron Pond Farm | Extension (unh.edu)

August 17th - Tree Fruit Twilight Meeting at Apple Hill Farm | Extension (unh.edu)

See the full list of twilight meetings here:

2023 Production Agriculture Summer Twilight Meeting | Extension (unh.edu)

BACK TO TOP

7/18/2023

Fruit IPM Report 7/18/23

Hi all!!

Welcome back to the NH Fruit Pest hotline, which is produced by staff members from the UNH Cooperative Extension Food and Agriculture team. Today is July 18th , 2023.

While these recordings will highlight what you need to be looking for out in the field, I highly encourage you to find the transcripts online, as they will have more details and links about many of the pests, products, and models I'll be describing in this call. Simply google "UNH Fruit IPM reports" to find them on our webpage. The transcript for this call may not be up until Wednesday afternoon.

In terms of growing degree days in Concord, NH we have accumulated 1823 GDD in BE base 43F and 1105 GDD in BE base 50F.

Weekly pest and disease update:

Diseases:

Mummy berry on Blueberry:

Is being reported from some blueberry plantings. Details about this disease and management strategies can be found here.

This infects new shoots in the very early spring beginning around budbreak. Those infected shoots can then in turn release spores that infect open flowers, eventually resulting in the symptoms you are seeing in your berries. The fruit you see there will eventually shrivel and look like a little grey or black pumpkin. This lies in wait until next spring for conditions to be just right and releases new spores to continue the cycle. You can read more about the disease here: Microsoft Word - Blueberry IPM - Mummy Berry Final.docx (umass.edu)

This year was certainly a good weather year for this fungus. We had temperatures conducive for extended persistence of apothecia (spore producing structures). As noted in the fact sheet below, as apothecia expand, the number of ascospores released increases. Ascospore discharge depends on temperature, relative humidity, and wind speed. Apothecia can persist for about 3 to 4 weeks under cool conditions — 50° to 59°F — but are shorter lived as temperatures rise. At 68° to 77°F (20° to 25°C), they may persist for only 1 to 2 weeks. We had damage from the freeze, which likely damaged tissues. Did you see many shoot strikes? These would've been visible around the time that flowers were present. The fact sheet below gives detailed information about the disease cycle and includes photos of berries as the life cycle progresses. I know many of you are familiar with this, but there is good information in there and helpful pictures.

https://www.canr.msu.edu/blueberries/uploads/files/E2846%20Mummy%20Berry%20Facts.pdf

A list of fungicides and their efficacy is also included in the fact sheet above.

Mulching with at least 2” of fresh mulch in the fall can also greatly help reduce the number of spores that are able to reach susceptible tissue. This strategy can’t be used year after year due to too much mulch buildup, but if you need to mulch, this fall would be a great time for this reason. Also, picking off as many of those suspicious fruits as possible will only help to reduce potential inoculum for next season.

One last tip…You could collect 10-20 of the mummies and create a “mummy garden”. I know, it sounds funny, but you could place them outside the planting, possibly just nestled in some wood mulch (not fully buried) and use that to track the development of the disease development next year. Once you see the little mushroom cups coming up, it will clue you in as to when you need to treat. Research shows that the fruiting bodies of the fungus (apothecia) need to be at least 1/12” in diameter to produce spores for infection.

Moving onto the apples:

Bitter rot:

Conditions have been good for this disease with lots of rain, and quite a bit of fruit showing some sort of injury (notably, cracking) that might allow entry to the pathogen. Captan does a pretty good job, especially at slightly elevated rates. PennState cites Merivon/Pristine, Flint/Luna Sensation, Aprovia, and Omega, mixed with Captan as being effective.

For more info: Apple and Pear Disease - Bitter Rot (psu.edu) and Bitter Rot | New England Tree Fruit Management Guide (netreefruit.org)

Apple scab:

Hopefully your orchard is clean of scab for the growing season. While visiting orchards, extension staff have seen some scab infections present on leaves. In those orchards, growers will need to remain diligent and maintain fungicide coverage to minimize new infections. . If new infections are showing up in your orchard, control measures are warranted.

Here is an article addressing control and resistance management strategies for scab:

https://www.canr.msu.edu/news/management_of_apple_scab_in_orchards_with_existing_scab_lesions

An excellent description of the factors to consider for best fungicide selection can be found here: https://netreefruit.org/apples/diseases/apple-scab

Fireblight:

There has been plenty of fireblight popping up on apple orchards around the state from southern New Hampshire all the way up into Carroll County.

Continue to scout orchards for shoot blight, including rootstock sucker infections. Prune and remove infected shoots at least 12-18 inches below the infected margin during cool, dry weather.

Pruning is particularly useful when blossom blight is well controlled and canker blight infections are thus the main source of inoculum for disease spread during the summer. Pruning can help limit disease spread but will be most effective if practiced rigorously during the first few weeks after bloom; pruning will do little to slow disease spread if delayed until a large number of infections are visible.

Routine use of antibiotics to prevent shoot blight spread during the summer is not effective or recommended. However, applications to protect new wounds immediately following a hailstorm can be very beneficial. With a cool and fairly dry bloom period, some growers made in through the prime infection period with just a couple of streptomycin applications. Keep in mind that saving at least one or the four allotted strep sprays in case of hail or damaging wind events is a good insurance strategy.

In a recent report, Kathleen Leahy reminds us of an article from Good Fruit Grower highlighting recent research comparing cutting and sanitization strategies to find the best removal methods for fire blight strikes. It's definitely worth the read:

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Sooty Blotch and Flyspeck:

Now is the time to think about how you will manage Sooty Blotch and Flyspeck in your orchard.
Check out the New England Tree fruit management guide for more info (Sooty Blotch and

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Figure 1: Recommendations from NEWA for Sooty Blotch and Flyspeck.

Insects:

SWD – Spotted Wing Drosophila:

Traps should be up now. Trap captures spiked last week in the southern half of NH. To clarify, SWD is primarily a pest of small fruits, but also impacts stone fruits. Considering the fact that most stone fruits were lost due to severe cold this winter, controlling this pest will be generally limited to very late strawberries, blueberries, brambles and grapes.

You can find more info about SWD and SWD trap selection in past pest reports, refer to the ones from this past June!

Notes of Interest:

UNH Extension is trialing red sticky traps paired with the Trece Pherocon Peel-Pak lures in 2023. We also work with many growers who use the drowning traps paired with these same lures. In the photo below, the smaller red square is the lure, while the red rectangle is the sticky trap, which gets checked weekly.

Figure 2: New red sticky traps to capture SWD. Photo: Jeremy DeLisle

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UNH Extension, USDA Natural Resources Conservation Service and the NH Conservation Districts have been partnering on a three-year demonstration project investigating the efficacy, ease of use, cost of installation and potential return on investments associated with installing SWD exclusion netting systems on three farms here in NH. Those partner farms are Bascom Road Blueberry Farm in Newport, Stark Farm in Dunbarton, and Heron Pond Farm in South Hampton. To date, the systems have been highly effective at excluding SWD flies. To learn more about the types of systems being installed and the potential for new construction versus retrofitting existing bird netting structures, join us at our upcoming twilight meeting on August 3rd at Heron Pond Farm in South Hampton, NH. Details are available at the link at the bottom of this page.

Blueberry Maggot Fly:

Traps should be up now. Flight is expected this week if not already occurring in some locations. Details on monitoring and management can be found here.

Apple Maggot

Predicted first emergence of AM occurs after approximately 796 to 1072 degree days have accumulated. Today we have accumulated 931 DD base 50F from January 1. Set sticky traps along vulnerable field edges. Check at least weekly and not the first date of captures. Enter this into the Apple Maggot tool on NEWA.

The action threshold is an average of 1-2 AMF on the yellow cards or in unbaited sticky spheres, or a cumulative average of 5 AMF per trap on baited spheres. Trap captures for a week following insecticide treatment are ignored. Subsequent sprays can be applied once the threshold is reached again.

Figure 3: Unbaited red sticky sphere for monitoring apple maggot fly in orchards. Photo: Jeremy DeLisle

Codling moth:

We continue to catch CM in Canterbury and Concord. Below is a resource shared by Dr. Jaime Pinero at UMass outlining a control approach based on trap captures and degree day accumulations targeting larvae at egg hatch.

Traps are up and we have caught very few OBLR. Controls should be timed with egg hatch. Continue to monitor traps, establish the biofix date on your farm, and enter into the NEWA model to track development based on growing degree days.

https://newa.cornell.edu/obliquebanded-leafroller

Key events in CM life cycle estimated by use of Biofix1 and subsequently accumulated degree days. These estimates are adapted from Michigan State University and Cornell University.		
Event	**Degree Days base 50 required following Biofix**	**Spray timing**
Biofix (1st sustained capture of moths in pheromone traps)	On this date we start accumulating DD base 50	.....
Egg hatch begins (calculated after Biofix has been established)	100 (against eggs) 220-250 (against larvae)	1st spray (after the petal fal spray)
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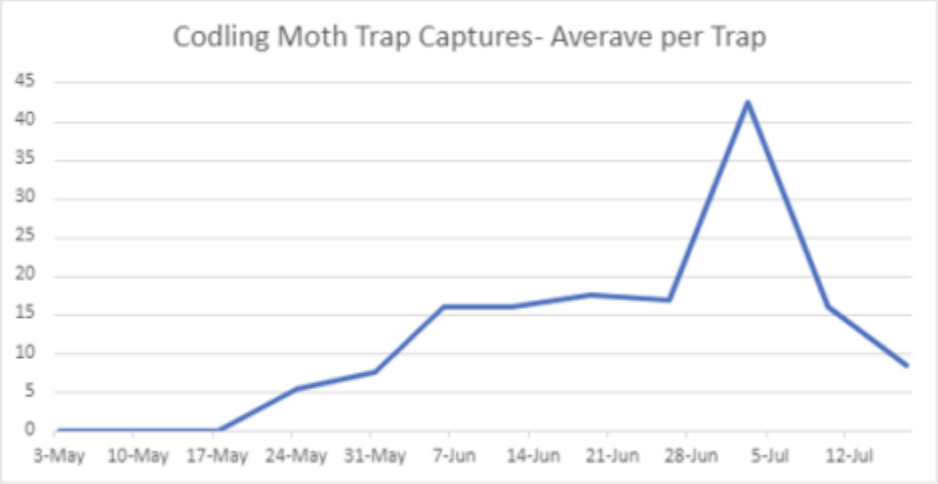
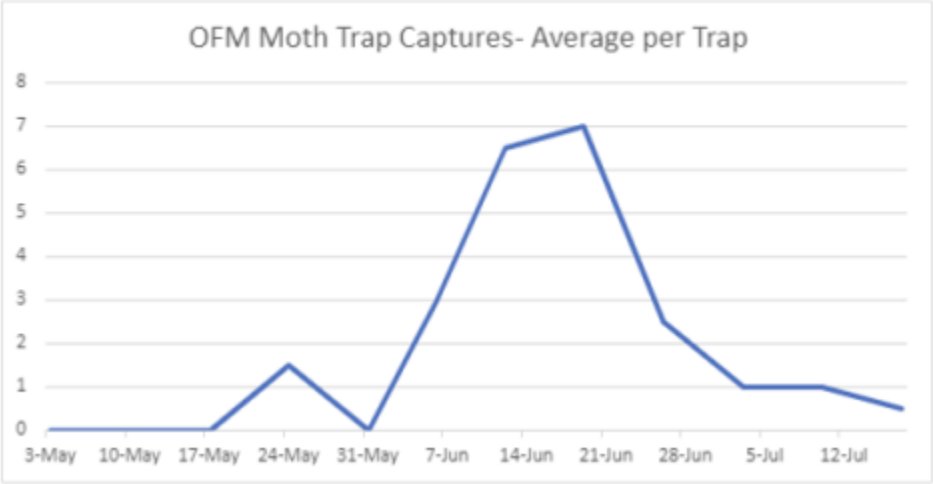


Figure 4: Codling moth trap captures for Merrimack County

Oriental Fruit Moth

Oriental Fruit Moth (OFM) | New England Tree Fruit Management Guide (netreefruit.org)



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San Jose Scale – Apples:

Pheromone traps should be in place to record the second adult male flight. Note date of first capture of second generation for biofix in NEWA for predicting second generation crawler emergence.

Tissue testing time is here for some crops and coming right up for others.

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If you wish to submit sample to UNH for tissue sampling, more information and forms can be found here:

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Main soil/tissue testing site: Soil Testing Services | Extension (unh.edu)

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August 17th - Tree Fruit Twilight Meeting at Apple Hill Farm | Extension (unh.edu)

See the full list of twilight meetings here:

2023 Production Agriculture Summer Twilight Meeting | Extension (unh.edu)

Thanks for tuning in!

BACK TO TOP

7/12/2023

Fruit IPM Report 7/11/23

Hi all!!

Welcome back to the NH Fruit Pest hotline, which is produced by staff members from the UNH Cooperative Extension Food and Agriculture team. Today is July 11th , 2023.

While these recordings will highlight what you need to be looking for out in the field, I highly encourage you to find the transcripts online, as they will have more details and links about many of the pests, products, and models I'll be describing in this call. Simply google "UNH Fruit IPM reports" to find them on our webpage. The transcript for this call may not be up until Wednesday afternoon.

In terms of growing degree days in Concord, NH we have accumulated 1600 GDD in BE base 43F and 931 GDD in BE base 50F.

Weekly pest and disease update:

Mummy berry:

Mummy berry is being reported from some blueberry plantings. Details about this disease and management strategies can be found here.

Diseases | Center for Agriculture, Food, and the Environment (umass.edu)

Bitter rot:

Conditions have been good for this fungal disease with lots of rain, and quite a bit of fruit showing some sort of injury (notably, cracking) that might allow entry to the pathogen. Captan does a pretty good job, especially at slightly elevated rates. PennState cites Merivon/Pristine, Flint/Luna Sensation, Aprovia, and Omega, mixed with Captan as being effective.

Symptoms will appear now-August, with fruit getting more susceptible as they mature. Bitter rot is more common on light or bicolored fruit such as Empire, Honeycrisp, McIntosh, Sunrise, Paula red and Jonagold.

Bitter Rot | New England Tree Fruit Management Guide (netreefruit.org)

Apple scab:

The weather this week has been conducive to infection periods. If new infections are showing up in your orchard, control measures are warranted. Most orchards are free of it, but extension staff have seem some lesions out in the field when scouting. In those orchards, growers will need to remain diligent and maintain fungicide coverage to minimize new infections.

Here is an article addressing control and resistance management strategies for scab:

https://www.canr.msu.edu/news/management_of_apple_scab_in_orchards_with_existing_scab_lesions

An excellent description of the factors to consider for best fungicide selection can be found here: https://netreefruit.org/apples/diseases/apple-scab

Fire blight:

Fire Blight | New England Tree Fruit Management Guide (netreefruit.org)

Continue to scout orchards for shoot blight, including rootstock sucker infections. Prune and remove infected shoots at least 12-18 inches below the infected margin during cool, dry weather.

Pruning is particularly useful when blossom blight is well controlled and canker blight infections are thus the main source of inoculum for disease spread during the summer. Pruning can help limit disease spread but will be most effective if practiced rigorously during the first few weeks after bloom; pruning will do little to slow disease spread if delayed until a large number of infections are visible.

Routine use of antibiotics to prevent shoot blight spread during the summer is not effective or recommended. However, applications to protect new wounds immediately following a hailstorm can be very beneficial. With a cool and fairly dry bloom period, some growers made in through the prime infection period with just a couple of streptomycin applications. Keep in mind that saving at least one or the four allotted strep sprays in case of hail or damaging wind events is a good insurance strategy.

In a recent report, Kathleen Leahy reminds us of an article from Good Fruit Grower highlighting recent research comparing cutting and sanitization strategies to find the best removal methods for fire blight strikes. It's definitely worth the read:

Good to Know: Take a bite out of blight - Good Fruit Grower

Sooty Blotch and Flyspeck:

Now is the time to think about how you will manage Sooty Blotch and Flyspeck in your orchard.
Check out the New England Tree fruit management guide for more info (Sooty Blotch and Flyspeck | New England Tree Fruit Management Guide (netreefruit.org)), and remember that NEWA also provides forecasting and management recommendations for this disease complex:

From NEWA: Sooty Blotch and Flyspeck | NEWA (cornell.edu)

To effectively limit fruit finish blemishes from Sooty Blotch and Flyspeck infection consider making a cover application of one of the following fungicides/tank mixes:

- 4 oz/100 gal Topsin +1 lb/100 gal. Captan 50W (or Captan-80 10 oz/100 gal); or
- 0.67 oz/100 gal Flint 50WG; or
- 1.6 oz/100 gal Sovran WDG; or
- 6.1 oz/100 gal Pristine WG; or
- 1 lb/100 gal Captan 50W (or Captan-80 10 oz/100 gal) + 21 fl. oz./100 gal ProPhyt

Figure 1: Recommendations from NEWA for Sooty Blotch and Flyspeck.

Insects

Apple Maggot

Predicted first emergence of AM occurs after approximately 796 to 1072 degree days have accumulated. Today we have accumulated 931 DD base 50F from January 1. **Set sticky traps along vulnerable field edges.** Check at least weekly and note the first date of captures. Enter this into the Apple Maggot tool on NEWA.

The action threshold is an average of 1-2 AMF on the yellow cards or in unbaited sticky spheres, or a cumulative average of 5 AMF per trap on baited spheres. Trap captures for a week following insecticide treatment are ignored. Subsequent sprays can be applied once the threshold is reached again.

Apple Maggot tool on NEWA: Apple Maggot | NEWA (cornell.edu)

Apple maggot fly (AM) | New England Tree Fruit Management Guide (netreefruit.org)

SWD – Spotted Wing Drosophila:

Traps should be up now. Trap captures spiked last week in the southern half of NH. To clarify, SWD is primarily a pest of small fruits, but also impacts stone fruits. Considering the fact that most stone fruits were lost due to severe cold this winter, controlling this pest will be generally limited to very late strawberries, blueberries, brambles and grapes.

For more information about making your own SWD traps or purchasing them, refer to past reports or refer to: Fruit: Spotted Wing Drosophila Management | Center for Agriculture, Food, and the Environment at UMass Amherst.

Point of Interest: SWD Exclusion Netting Systems

UNH Extension, USDA Natural Resources Conservation Service and the NH Conservation Districts have been partnering on a three-year demonstration project investigating the efficacy, ease of use, cost of installation and potential return on investments associated with installing SWD exclusion netting systems on three farms here in NH. Those partner farms are Bascom Road Blueberry Farm in Newport, Stark Farm in Dunbarton, and Heron Pond Farm in South Hampton. To date, the systems have been highly effective at excluding SWD flies, with zero trap captures reported to date, along with no loss due to infested fruit. To learn more about the types of systems being installed and the potential for new construction versus retrofitting existing bird netting structures, join us at our upcoming twilight meeting on August 3rd at Heron Pond Farm in South Hampton, NH. Details are available at the link at the bottom of this page.

Blueberry Maggot Fly:

Traps should be up now. Flight is expected this week if not already occurring in some locations. Details on monitoring and management can be found here.

Fruit: Blueberry IPM - Blueberry Maggot Fly | Center for Agriculture, Food, and the Environment at UMass Amherst

Codling moth:

Key events in CM life cycle estimated by use of Biofix1 and subsequently accumulated degree days. These estimates are adapted from Michigan State University and Cornell University.		
Event	**Degree Days base 50 required following Biofix**	**Spray timing**
Biofix (1st sustained capture of moths in pheromone traps)	On this date we start accumulating DD base 50	.....
Egg hatch begins (calculated after Biofix has been established)	100 (against eggs) 220-250 (against larvae)	1st spray (after the petal fal spray)
Peak period of 1st generation egg hatch/critical control period	500-600	Timing for 2nd spray (against larvae) if monitoring indicates a treatment is needed. An 'easier' recommendation: in high-pressure blocks, 2nd spray goes 10-14 days after 1st spray
End of first-generation egg hatch	Approx. 920	.....
First egg hatch, 2nd generation	1000-1260	3rd spray (spray again 10-14 days later only if CM pressure is severe).
Peak period of 2nd generation egg hatch/critical control period	1320-1720	
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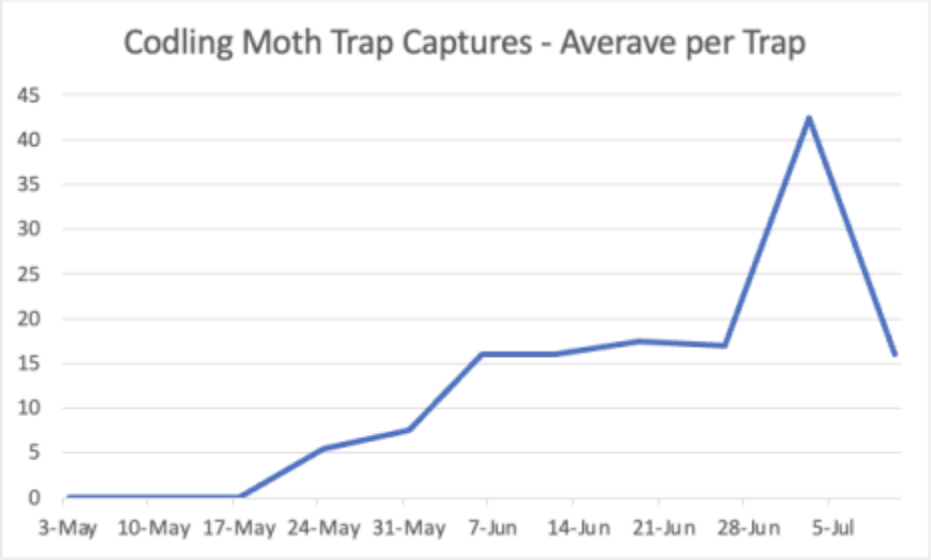

Figure 2: Codling moth trap captures for Merrimack County

Oriental Fruit Moth:

Oriental Fruit Moth (OFM) | New England Tree Fruit Management Guide (netreefruit.org)

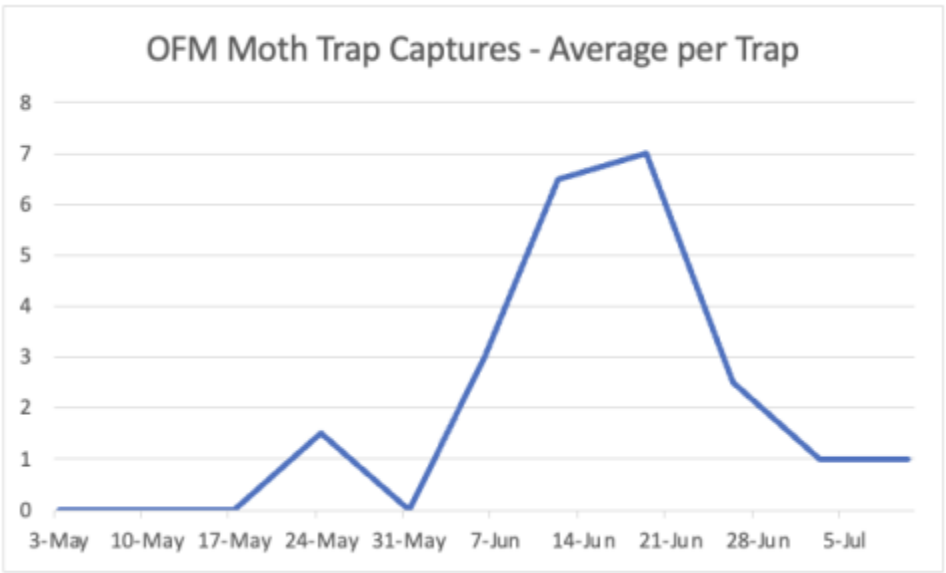

Figure 3: Oriental Fruit Moth (OFM) trap captures for Merrimack County

Extension traps are continuing to catch Codling moths in Canterbury.

The chart below summarizes control recommendations based on monitoring, biofix date and seasonal weather (DD accumulations). This chart was summarized by Dr. Jaime Pinero, UMass Extension Entomologist.

Oblique Banded Leaf Rollers:

Traps are up and we have **finally caught our first and only OBLR.** Controls should be timed with egg hatch. Continue to monitor traps, establish the biofix date on your farm, and enter into the NEWA model to track development based on growing degree days.

https://newa.cornell.edu/obliquebanded-leafroller

San Jose Scale: (Apples)

First generation nymphs should soon be secreting new scale covers and developing into adults. The time for controlling first generation nymphs is ending. Pheromone traps should be in place in time to record the second adult male flight.

San Jose scale (SJS) | New England Tree Fruit Management Guide (netreefruit.org)

Tissue testing time is here for some crops and coming right up for others.

Directions for taking a plant tissue sample leaf sample in your orchard/garden:

Tips - In general, it is usually best to sample many plants (with only a few leaves from each plant) rather than sample many leaves from only a few plants.

Select the youngest, fully developed (mature) leaves for analysis. Do not select leaves from plants which are mechanically damaged, insect damaged, diseased or dead. Avoid leaves from border plants or leaves which are fully shaded by other foliage. Do not send sample plants that have been under prolonged stress.

Avoid leaves which are contaminated with soil or dust or which have been recently sprayed. In general, plant leaves which have been exposed to normal rainfall are sufficiently clean for analysis. Samples can be washed briefly in a 2% non-phosphorus detergent solution and then rinsed carefully with clear water. However, in many situations the cleaning may do more harm than good.

If you are trying to diagnosis a problem and are sampling plants that are showing an abnormal symptom, follow the above directions, but sample only from plants showing the problem.

Crop Information

Blueberries: sample at least 40 leaves from 10 to 20 plants during the first week of harvest.

Strawberries: sample at least 40 first fully expanded leaves from 10 to 20 plants, after renovation

Brambles: sample at least 60 leaves from 10 to 20 non-fruiting canes during early-mid August.

Grapes: sample 50 to 75 of the youngest full-expanded leaves from 10 to 20 vines at veraison (70 days after bloom, as the first fruit ripens). Separate petioles (leaf stems) from leaves, and send only the petioles for analysis.

Tree fruits: sample 5 leaves from each of 10 trees from late July through early August. Select shoots at eye-level from around the outside of the trees that make a vertical angle of 45-60 degrees to the ground (avoid water shoots or suckers). Collect leaves from the mid-portion of the new shoot growth.

For other crops: Contact your local field specialist or county office to determine the correct sampling procedures. After Collection Samples should be placed in paper bags and air dried (turn the bag frequently) or dried at 200 degrees Fahrenheit.

If you wish to submit sample to UNH for tissue sampling, more information and forms can be found here:

Form: UNH Cooperative Extension - Commercial Plant Tissue Form.pdf - All Documents (sharepoint.com)

Main soil/tissue testing site: Soil Testing Services | Extension (unh.edu)

Upcoming Events

August 3 - Blueberry IPM Twilight Meeting at Heron Pond Farm | Extension (unh.edu)

August 17th - Tree Fruit Twilight Meeting at Apple Hill Farm | Extension (unh.edu)

See the full list of twilight meetings here:

2023 Production Agriculture Summer Twilight Meeting | Extension (unh.edu)

Thanks for tuning in!

BACK TO TOP

6/27/2023

Fruit IPM Report 6/27/23

Hi all!!

Welcome back to the NH Fruit Pest hotline, which is produced by staff members from the UNH Cooperative Extension Food and Agriculture team. Today is June 27th , 2023.

While these recordings will highlight what you need to be looking for out in the field, I highly encourage you to find the transcripts online, as they will have more details and links about many of the pests, products, and models I'll be describing in this call. Simply google "UNH Fruit IPM reports" to find them on our webpage. The transcript for this call may not be up until Wednesday afternoon.

In terms of growing degree days in Concord, NH we have accumulated 1193 GDD in BE base 43F and 622 GDD in BE base 50F.

Tissue Testing: Blueberry Leaf tissue testing: now & over the next few weeks is a good time to submit a sample to get an idea of any changes you may need to make to your fertilization scheme.

Soil Testing Forms | Extension (unh.edu)

Jumping into the disease update:

Apple scab:

Hopefully your orchard is clean of scab and this week will mean the end of required control measures for the growing season. While visiting orchards over the past week, scouts have spotted some scab infections present on the leaves. In those orchards, growers will need to remain diligent and maintain fungicide coverage to minimize new infections.

Here is an article addressing control and resistance management strategies for scab:

https://www.canr.msu.edu/news/management_of_apple_scab_in_orchards_with_existing_scab_lesions

The weather this week has been conducive to infection periods. If new infections are showing up in your orchard, control measures are warranted. The NEWA model for Concord shows infection events each day from June 25th through June 30th.

An excellent description of the factors to consider for best fungicide selection can be found here: https://netreefruit.org/apples/diseases/apple-scab

Fire blight:

Continue to scout orchards for shoot blight, including rootstock sucker infections. Prune and remove infected shoots at least 12-18 inches below the infected margin during cool, dry weather.

Pruning is particularly useful when blossom blight is well controlled and canker blight infections are thus the main source of inoculum for disease spread during the summer. Pruning can help limit disease spread but will be most effective if practiced rigorously during the first few weeks after bloom; pruning will do little to slow disease spread if delayed until a large number of infections are visible.

Routine use of antibiotics to prevent shoot blight spread during the summer is not effective or recommended. However, applications to protect new wounds immediately following a hailstorm can be very beneficial. With a cool and dry bloom period, some growers made it through the prime infection period with just a couple of streptomycin applications. Keep in mind that saving at least one or the four allotted strep sprays in case of hail or damaging wind events is a good insurance strategy.

In a recent report, Kathleen Leahy reminds us of an article from Good Fruit Grower highlighting recent research comparing cutting and sanitization strategies to find the best removal methods for fire blight strikes. It is worth the read:

Good to Know: Take a bite out of blight - Good Fruit Grower

Fire Blight | New England Tree Fruit Management Guide (netreefruit.org)

Sooty Blotch and Flyspeck:

Now is the time to think about how you will manage Sooty Blotch and Flyspeck in your orchard. Check out the New England Tree fruit management guide for more info (Sooty Blotch and Flyspeck | New England Tree Fruit Management Guide (netreefruit.org)), and remember that NEWA also provides forecasting and management recommendations for this disease complex:

From NEWA: Sooty Blotch and Flyspeck | NEWA (cornell.edu)

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- 1 lb/100 gal Captan 50W (or Captan-80 10 oz/100 gal) + 21 fl. oz./100 gal ProPhyt

Moving onto the Insects:

Apple Maggot

By the end of today we are predicted to have accumulated 706 DD base 50F from January 1, and the predicted first emergence of apple maggot occurs after approximately 796 to 1072 degree days have accumulated… **indicating that traps should be up this week**. The first apple maggot flies were captured in Massachusetts this week.

Apple maggot fly (AM) | New England Tree Fruit Management Guide (netreefruit.org)

SWD – Spotted Wing Drosophila:

For the second week in a row our IPM scout has reported **zero trap captures** in seven traps spread over four farms in southern NH. **Traps should be up now, as we typically start to catch this insect this week into next in the southern half of NH.** To clarify, SWD is primarily a pest of small fruits, but also impacts stone fruits**. Considering the fact that most stone fruits were lost due to severe cold this winter, controlling this pest will be generally limited to very late strawberries, blueberries, brambles and grapes.**

Codling moth:

In Canterbury, we established the biofix date of 5/26/23 to start the codling moth model within NEWA for apples and have reduced the frequency of trap checking for this insect to once a week. Once sustained trap captures have been observed, enter the biofix date for your farm into the NEWA model to track development of the pest.

Egg hatch is well underway. Control sprays critical, apply a second spray 10-14 days after the initial egg hatch spray. In Codling moth high-risk orchards, you can also consider choosing products that also target OFM and Plum curculio.

The chart below summarized control recommendations based on monitoring, biofix date and seasonal weather (DD accumulations). This chart was summarized by Dr. Jaime Pinero, UMass Extension Entomologist.

Key events in CM life cycle estimated by use of Biofix1 and subsequently accumulated degree days. These estimates are adapted from Michigan State University and Cornell University.		
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Codling moth (CM) | New England Tree Fruit Management Guide (netreefruit.org)

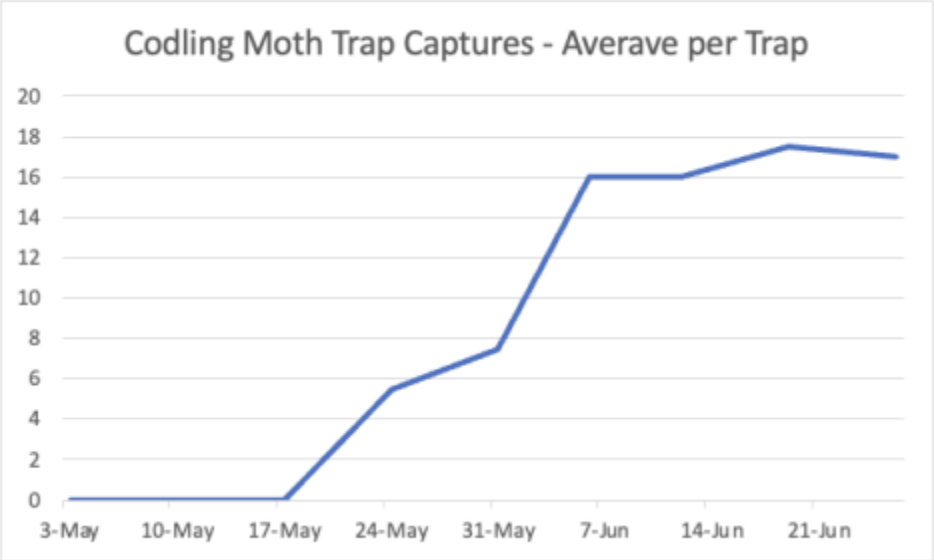

Figure 1: Codling moth trap captures for Merrimack County

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Oriental Fruit Moth (OFM) | New England Tree Fruit Management Guide (netreefruit.org)

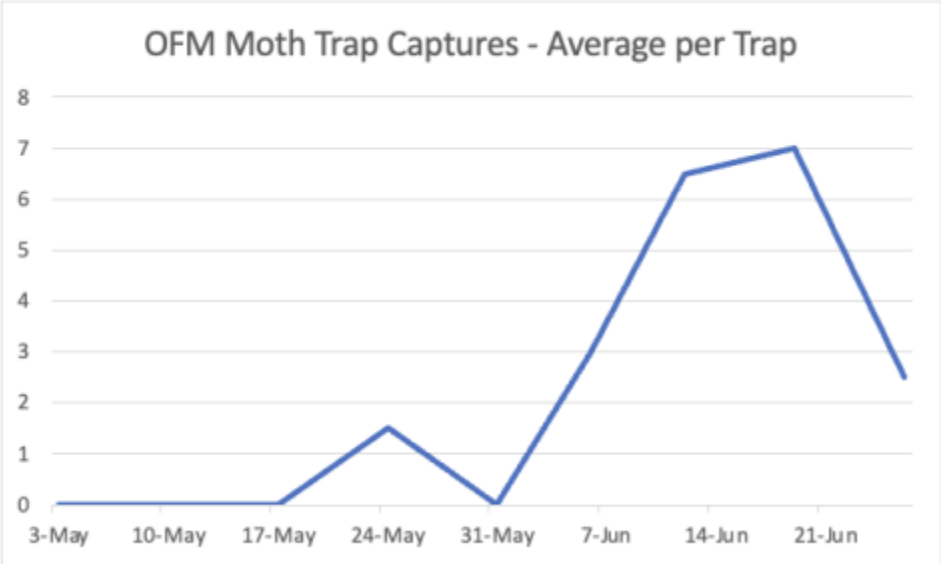

Figure 2: Oriental Fruit Moth trap captures for Merrimack County

Oblique Banded Leaf Rollers:

Traps are up but we have yet to catch OBLR. Controls should be timed with egg hatch. Continue to monitor traps, establish the biofix date on your farm, and enter into the NEWA model to track development based on growing degree days.

https://newa.cornell.edu/obliquebanded-leafroller

Obliquebanded leafroller (OBLR) | New England Tree Fruit Management Guide (netreefruit.org)

San Jose Scale

First generation nymphs should soon be secreting new scale covers and developing into adults. The time for controlling first generation nymphs is ending. Pheromone traps should be in place in time to record the second adult male flight.

San Jose scale (SJS) | New England Tree Fruit Management Guide (netreefruit.org)

Upcoming meetings:

All Production Ag Twilight Meetings**:** 2023 Production Agriculture Summer Twilight Meeting | Extension (unh.edu)

Tree Fruit Twilight Meeting at Apple Hill Farm | Extension (unh.edu)

Apple Hill Farm, Concord, NH

August 17th 5:30-7:30 pm

Produce Food Safety and Insurance Twilight Meeting | Extension (unh.edu)

June 29th 6-8 pm in Lancaster NH – Register online.

Mid-Season Corn Checkup and Pest Scouting, Stuart Farm | Extension (unh.edu)

June 29th 11 am – 1 pm

Stratham, NH

Thanks for sticking around!

Monitoring Spotted Wing Drosophila (SWD) with Traps (recently updated by Anna Wallingford, Assistant State Specialist, Associate Research Professor, and excellent entomologist)

Spotted wing drosophila (SWD) attacks ripening and ripe raspberries, blackberries, blueberries, grapes, cranberries, late cherries, fall strawberries, plums and peaches, plus fruit of many wild hosts. If you wish to protect your fruit from becoming infested, it is critical to set up traps for the insects, and to monitor those traps weekly when you have ripening crop present. The first flies will probably be trapped between July 2 and 12, and numbers will peak in September or October.

These traps ARE NOT TO CONTROL the flies! Once you detect flies, the crop should be protected with insecticides. Most of the good insecticides should give about seven days of protection, but can be washed off by rain. After you spray, set out fresh traps to determine when crops become at risk again.

Commercial vs. Home-Made Traps

When SWD first appeared in NH, the commercial traps that existed were not effective in comparison with home-made traps. However, effective commercial traps and baits are now available from both Scentry and Trécé, that are hung in jar traps full of soapy water as drowning solution. More recently, Trécé has marketed their lure with red sticky traps as a “dry trap” alternative to traps with water drowning solutions. All trapping types have their own pros and cons in terms of logistics of use but all are excellent at determining presence or absence of flies in susceptible crops.

In our UNH Cooperative Extension monitoring program, we are now using Trécé traps and lures for SWD. These traps are reusable, and are available from standard suppliers of IPM products (e.g. Great Lakes IPM).

When to set up the traps? Do this as soon as fruit starts to ripen. Fruits that ripen before July 1 are not likely to be at risk. You can stop monitoring when harvest of susceptible crops is over for you.

Where to set the traps? Set the traps IN the crop, in the shade, AMONG THE FOLIAGE near fruit. We recommend checking traps every 5-6 days at first, moving to every 3-5 days in August (hot weather). As the weather cools, you can lengthen the check interval. Keep checking as long as you have ripe fruit to protect.

Which crops need protection? The most susceptible crops seem to be raspberries, blueberries and strawberries that ripen in August-September; thin-skinned, dark-colored grapes; and some peaches and plums (especially white-fleshed peaches). We don't know how heavily currants and cranberries are attacked.

How many traps do I need? For most plantings, **three** well-placed traps should be enough and you should base management actions on an average of the number of flies you trap in each block. If you have different crops, you'll want traps in each crop, because the pattern of attack varies crop-to-crop. If you have different varieties of the same crop, begin monitoring in the first variety to ripen, and move the traps to others with ripe fruit when harvest wanes on that first variety. If your crop is in several blocks that are managed (e.g. sprayed) separately, you will need traps in each block.

How do I check the traps? Check traps at least once per week. To check the trap, remove the lid, and pour the liquid bait into a shallow white pan or saucer. In bright light, look for the male flies (they are about 2mm long, with light tan body, red/orange eyes, and have a dot near the tip of each wing) with a 2X magnifying glass. When done counting the male SWD's, write the number down. If you find male flies, your crop is at risk. If your threshold for risk is a little higher, you can wait until you find an average of 5 male SWD in all three traps. Find this example of a sliding scale of risk for SWD infestation in wild blueberry https://extension.umaine.edu/blueberries/factsheets/insects/210-spotted-wing-drosophila/

Making Your Own Traps

From 2012-2016, we and many colleagues across the Northeast set out hundreds of traps, and learned what combinations worked well enough to make trapping a useful tool. Most of these baits relied on odors from fermentation to attract flies, including apple cider vinegar, wine, grape juice, yeasts, sugars, bread doughs, etc. Many of these bait recipes are messy, smell, and trap many non-target insects that make detection of SWD difficult. Poorly set or designed traps do not work well enough to predict when you need to protect crops. If you prefer to make your own traps rather than purchase traps, the following tips may help.

This trap design works well: We use red plastic 18 oz Solo cups with transparent lids. We placed a black band of electrician's tape a bit below the rim. We used a heated nail to melt 1/8 inch holes in the cup, to allow the insects to get in, and the odor to escape. We don't make those holes too large, or wasps will get in. We placed the entrance holes in and around that band, about 30 to 35 holes per trap. We leave one sector of the cup without holes, to make it easy to pour out and examine the liquid bait, without spilling any.

Add just a drop or two of liquid soap to the bait. Non-scented soap is preferable as flowery-scented soaps might decrease bait effectiveness. The soap decreases the surface tension of the bait, making it easier for the small flies to fall in and drown.

When we used the dough baits, the solid yeast/dough bait was placed inside a smaller 4-oz lidded cup within the larger 18-oz trap. We cut a hole (1-inch diameter) in the lid. Over the hole we placed fine insect netting, and fastened it with a hot glue gun. The netting is to allow the yeast odor out, but not let flies in. So the assembled trap is a large red cup. Inside that is 2 oz of liquid bait, and floating upright in the liquid bait is the smaller cup with the netted lid.

When check traps containing attractive baits, make sure to collect the old liquid bait in a waste container, and add fresh bait to the trap. Don't pour the old bait on the ground in your fruit planting, or it will compete with your traps for the flies' attention.

Point of interest:

UNH Extension, USDA Natural Resources Conservation Service and the NH Conservation Districts have been partnering on a three-year demonstration project investigating the efficacy, ease of use, cost of installation and potential return on investments associated with installing SWD exclusion netting systems on three farms here in NH. Those partner farms are Bascom Road Blueberry Farm in Newport, Stark Farm in Dunbarton, and Heron Pond Farm in South Hampton. To date, the systems have been highly effective at excluding SWD flies, with zero trap captures reported to date, along with no loss due to infested fruit. To learn more about the types of systems being installed and the potential for new construction versus retrofitting existing bird netting structures, join us at our upcoming twilight meeting on August 3rd at Heron Pond Farm.

Figure 3: SWD netting being installed for the second year in a row at Heron Pond Farm in South Hampton, NH. Photo by Jeremy DeLisle, Field Specialist, Food and Agriculture, UNH Extension

BACK TO TOP

6/20/2023

Fruit IPM Report 6/20/23

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In terms of growing degree days in Concord, NH we have accumulated 1020 GDD in BE base 43F and 499 GDD in BE base 50F.

We are in a bit of a lull right now – so I have a shorter update for all of you!

Jumping into the disease updates:

Apple scab:

While primary infection is over at this point, some orchards are still seeing scab on leaves and fruitlets.

An excellent description of the factors to consider for best fungicide selection can be found here: https://netreefruit.org/apples/diseases/apple-scab

Figure 1: Apple scab infection on upper and lower leaf surface, Photo, Jeremy DeLisle, UNH Extension

Fire blight:

Continue to scout orchards for shoot blight, including rootstock sucker infections. Prune and remove infected shoots at least 12-18 inches below the infected margin during cool, dry weather.

Pruning is particularly useful when blossom blight is well controlled and canker blight infections are thus the main source of inoculum for disease spread during the summer. Pruning can help limit disease spread, but will be most effective if practiced rigorously during the first few weeks after bloom; pruning will do little to slow disease spread if delayed until a large number of infections are visible.

Routine use of antibiotics to prevent shoot blight spread during the summer is not effective or recommended. However, applications to protect new wounds immediately following a hailstorm can be very beneficial. With a cool and fairly dry bloom period, some growers made in through the prime infection period with just a couple of streptomycin applications. Keep in mind that saving at least one or the four allotted strep sprays in case of hail or damaging wind events is a good insurance strategy.

In her most recent report, Kathleen Leahy reminds us of an article from Good Fruit Grower highlighting recent research comparing cutting and sanitization strategies to

find the best removal methods for fire blight strikes. It's definitely worth the read:

Good to Know: Take a bite out of blight - Good Fruit Grower

Moving onto the insect pests:

Plum curculio

Pest status: Plum curculio activity is beginning to decline and any curculio remaining in trees will usually not move to other locations.

Plum curculio only need to be controlled until 308 DD have accumulated after petal fall. Make sure that the predicted residual coverage (10-14 days) from the last spray will protect fruit until DD accumulation reaches this value.

In Concord the petal fall date we are using is 5/19/23. From that date, we have accumulated 388 degree days base 50F. Egg laying typically stops around 308 degree days after petal fall, at which time the need for targeted control generally stops. According to the models, we can consider PC control for the season done – in Concord.

For this week into next, continue to monitor growing degree days from petal fall using the PC model within NEWA to know when you are approaching the end of oviposition and the need for control. Northern orchards are slightly behind in degree day accumulations, so oviposition might be extended a bit longer, but you should be there soon.

An observation from the field is that in some orchards with very few viable fruits remaining on the trees after the frost, PC seems to be laying high numbers of eggs in those fruits. This is the behavior that we anticipated. It seems targeted perimeter application of insecticides targeting PC adults at this point in the season is still warranted as we think about reducing this population of insects for next season.

Remember, if you have applied an effective insecticide with residual activity still present on the trees, that application may take you through the end of oviposition depending on the date of application and the material used.

Codling moth:

In Canterbury, we established the biofix date of 5/26/23 to start the codling moth model within NEWA and have reduced the frequency of trap checking for this insect to once a week. Once sustained trap captures have been observed, enter the biofix date for your farm into the NEWA model to track development of the pest. For most orchards in NH, codling moth flight is well underway and egg laying is currently happening.

Today we have accumulated 303 DD base 50F from our biofix and reached 250 DD by June 16th, marking the prime window of egg hatch and the most effective time for controlling the emerging larvae using many of the recommended insecticides.

We are still seeing high trap captures for the first generation of codling moth in Merrimac county (see Figure 2). This means that egg laying is still occurring, and controls will need to be applied for an extended time period. Southern NH established the biofix of codling moth as of 5/22/23. Southern growers without traps on their farms could enter this date to start the degree day clock running for egg hatch by this pest.

Trapping in the orchard is the best way to know what is happening with populations of insects in your specific location. Consider adding a few traps to your orchard to better understand the dynamics of key insect pests from one season to the next.

More information from Cornell about codling moth Degree Day calculations:

Time insecticide applications based on trap data and degree day (DD) models for egg hatch. Spray timing for these pests is directed at newly hatched larvae, since most insecticides are not effective at controlling adults. There is a lag period for egg hatch after the moths fly. The first spray for CM is recommended at first egg hatch, which occurs 220-250 DD (base 50°F) after sustained trap catch. Timing depends on insecticide choice. Calypso, Assail, Delegate, Altacor, Belt, or Voliam Xpress or Voliam Flexi are most effective when applied at 200-250 DD 50°F after biofix. An additional option is to apply a granulosis virus formulation at 200-250 DD 50°F. High moth pressure requires 2-3 sprays for the first generation, but in lower pressure orchards (with counts of less than 5 moths per trap per week), you can control CM with a single spray timed at 350 DD 50°F.

In apples, 1st generation OFM can be controlled with the petal fall spray. In summer, sprays for OFM in apples are applied 3-4 days after peak trap catch, or 7 days after the start of the 2nd flight. In peach orchards, look for flagging shoots from larval activity in tips of new shoots. Full resource available here: doc_72.pdf (cornell.edu)

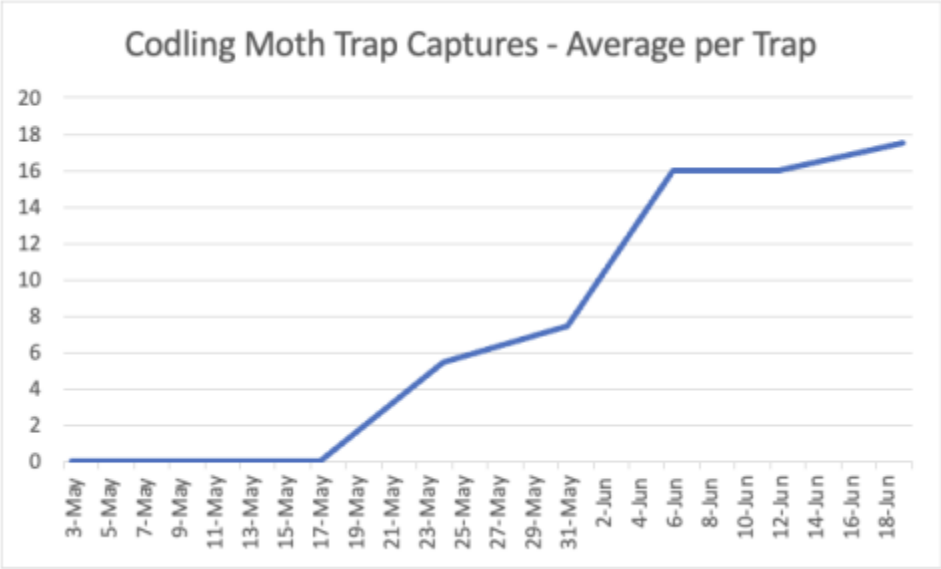

Figure 2: Codling moth trap captures for Merrimack County

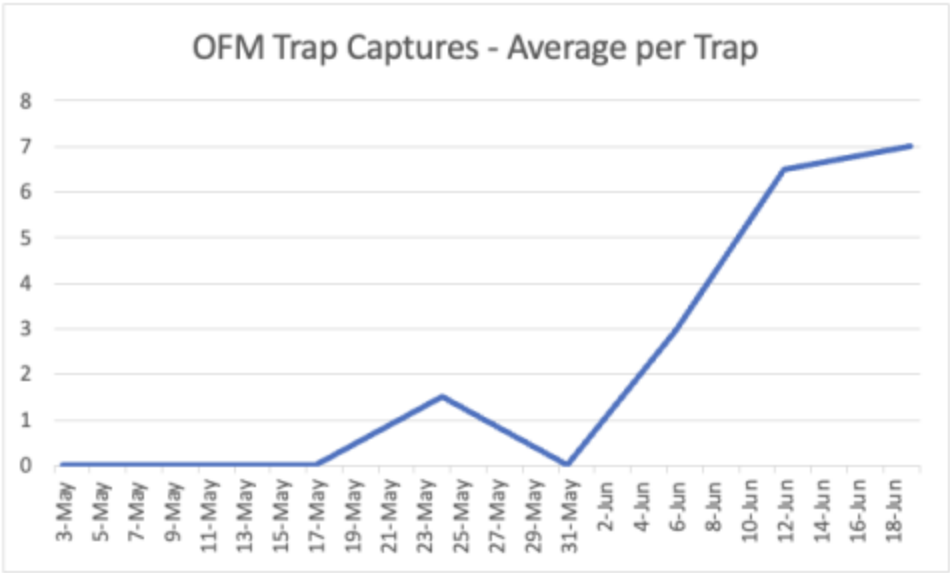

Figure 3: Oriental Fruit Moth (OFM) trap captures for Merrimack County

San Jose Scale:

First generation crawlers are produced beneath female scale covers during this period. If monitoring for crawlers, double-sided sticky tape traps should be placed around tree limbs at this time.

San Jose scale (SJS) | New England Tree Fruit Management Guide (netreefruit.org)

Monitoring Spotted Wing Drosophila (SWD) with Traps (recently updated by Anna Wallingford, Assistant State Specialist, Associate Research Professor and excellent entomologist)

Spotted wing drosophila (SWD) attacks ripening and ripe raspberries, blackberries, blueberries, grapes, cranberries, late cherries, fall strawberries, plums and peaches, plus fruit of many wild hosts. If you wish to protect your fruit from becoming infested, it is critical to set up traps for the insects, and to monitor those traps weekly when you have ripening crop present. The first flies will probably be trapped between July 2 and 12, and numbers will peak in September or October.

These traps ARE NOT TO CONTROL the flies! Once you detect flies, the crop should be protected with insecticides. Most of the good insecticides should give about seven days of protection, but can be washed off by rain. After you spray, set out fresh traps to determine when crops become at risk again.

Commercial vs. Home-Made Traps

When SWD first appeared in NH, the commercial traps that existed were not effective in comparison with home-made traps. However, effective commercial traps and baits are now available from both Scentry and Trécé, that are hung in jar traps full of soapy water as drowning solution. More recently, Trécé has marketed their lure with red sticky traps as a “dry trap” alternative to traps with water drowning solutions. All trapping types have their own pros and cons in terms of logistics of use but all are excellent at determining presence or absence of flies in susceptible crops.

In our UNH Cooperative Extension monitoring program, we are now using Trécé traps and lures for SWD. These traps are reusable, and are available from standard suppliers of IPM products (e.g. Great Lakes IPM).

When to set up the traps? Do this as soon as fruit starts to ripen. Fruits that ripen before July 1 are not likely to be at risk. You can stop monitoring when harvest of susceptible crops is over for you.

Where to set the traps? Set the traps IN the crop, in the shade, AMONG THE FOLIAGE near fruit. We recommend checking traps every 5-6 days at first, moving to every 3-5 days in August (hot weather). As the weather cools, you can lengthen the check interval. Keep checking as long as you have ripe fruit to protect.

Which crops need protection? The most susceptible crops seem to be raspberries, blueberries and strawberries that ripen in August-September; thin-skinned, dark-colored grapes; and

some peaches and plums (especially white-fleshed peaches). We don't know how heavily currants and cranberries are attacked.

How many traps do I need? For most plantings, **three** well-placed traps should be enough and you should base management actions on an average of the number of flies you trap in each block. If you have different crops, you'll want traps in each crop, because the pattern of attack varies crop-to-crop. If you have different varieties of the same crop, begin monitoring in the first variety to ripen, and move the traps to others with ripe fruit when harvest wanes on that first variety. If your crop is in several blocks that are managed (e.g. sprayed) separately, you will need traps in each block.

How do I check the traps? Check traps at least once per week. To check the trap, remove the lid, and pour the liquid bait into a shallow white pan or saucer. In bright light, look for the male flies (they are about 2mm long, with light tan body, red/orange eyes, and have a dot near the tip of each wing) with a 2X magnifying glass. When done counting the male SWD's, write the number down. If you find male flies, your crop is at risk. If your threshold for risk is a little higher, you can wait until you find an average of 5 male SWD in all three traps. Find this example of a sliding scale of risk for SWD infestation in wild blueberry https://extension.umaine.edu/blueberries/factsheets/insects/210-spotted-wing-drosophila/

Making Your Own Traps

From 2012-2016, we and many colleagues across the Northeast set out hundreds of traps, and learned what combinations worked well enough to make trapping a useful tool. Most of these baits relied on odors from fermentation to attract flies, including apple cider vinegar, wine, grape juice, yeasts, sugars, bread doughs, etc. Many of these bait recipes are messy, smell, and trap many non-target insects that make detection of SWD difficult. Poorly set or designed traps do not work well enough to predict when you need to protect crops. If you prefer to make your own traps rather than purchase traps, the following tips may help.

This trap design works well: We use red plastic 18 oz Solo cups with transparent lids. We placed a black band of electrician's tape a bit below the rim. We used a heated nail to melt 1/8 inch holes in the cup, to allow the insects to get in, and the odor to escape. We don't make those holes too large, or wasps will get in. We placed the entrance holes in and around that band, about 30 to 35 holes per trap. We leave one sector of the cup without holes, to make it easy to pour out and examine the liquid bait, without spilling any.

Add just a drop or two of liquid soap to the bait. Non-scented soap is preferable as flowery-scented soaps might decrease bait effectiveness. The soap decreases the surface tension of the bait, making it easier for the small flies to fall in and drown.

When we used the dough baits, the solid yeast/dough bait was placed inside a smaller 4-oz lidded cup within the larger 18-oz trap. We cut a hole (1-inch diameter) in the lid. Over the hole we placed fine insect netting, and fastened it with a hot glue gun. The netting is to allow the yeast odor out, but not let flies in. So the assembled trap is a large red cup. Inside that is 2 oz of liquid bait, and floating upright in the liquid bait is the smaller cup with the netted lid.

When check traps containing attractive baits, make sure to collect the old liquid bait in a waste container, and add fresh bait to the trap. Don't pour the old bait on the ground in your fruit planting, or it will compete with your traps for the flies' attention.

Point of interest:

UNH Extension, USDA Natural Resources Conservation Service and the NH Conservation Districts have been partnering on a three-year demonstration project investigating the efficacy, ease of use, cost of installation and potential return on investments associated with installing SWD exclusion netting systems on three farms here in NH. Those partner farms are Bascom Road Blueberry Farm in Newport, Stark Farm in Dunbarton, and Heron Pond Farm in South Hampton. To date, the systems have been highly effective at excluding SWD flies, with zero trap captures reported to date, along with no loss due to infested fruit. To learn more about the types of systems being installed and the potential for new construction versus retrofitting existing bird netting structures, join us at our upcoming twilight meeting on June 20th at Stark Farm. Details are available at the link at the bottom of this page.

Figure 4: SWD netting being installed for the second year in a row at Heron Pond Farm in South Hampton, NH. Photo by Jeremy DeLisle, Field Specialist, Food and Agriculture, UNH Extension

Upcoming meetings:

All Production Ag Twilight Meetings**:** 2023 Production Agriculture Summer Twilight Meeting | Extension (unh.edu)

June 20th, 2023

Blueberry IPM Twilight Meeting at Stark Farm | Extension (unh.edu)

RMA Apple Insurance Listening Session:

June 27, 2023 : Goffstown, New Hampshire

10:00 a.m. to 12:00 p.m., Hillsborough County Extension Office (Large Conference Room)

329 Mast Rd., Goffstown, NH 03045

No RSVP Required

Thanks for sticking around!

BACK TO TOP

6/13/2023

Fruit Pest Hotline IPM Report 6/13/23

Hi all!!

Welcome back to the NH Fruit Pest hotline, which is produced by staff members from the UNH Cooperative Extension Food and Agriculture team. Today is June 13th , 2023.

While these recordings will highlight what you need to be looking for out in the field, I highly encourage you to find the transcripts online, as they will have more details and links about many of the pests, products, and models I'll be describing in this call. Simply google "UNH Fruit IPM reports" to find them on our webpage. The transcript for this call may not be up until Wednesday afternoon.

In terms of growing degree days in Concord, NH we have accumulated 875 GDD in BE base 43F and 403 GDD in BE base 50F.

Before we get into the pathogens:

Many questions are arising as to management decisions for the season ahead considering the frost damage to fruiting crops throughout New Hampshire.

You can access the suggestions from UNH Extension Staff and Terry Bradshaw up at UVM in previous IPM reports (6/6/23) or here: May 2023 – UVM Fruit Blog

Moving on to the disease updates:

Apple scab:

The rains this week should certainly promote the last of the ascospores to be released. Maintain protection and continue to scout over the next couple of weeks. Hopefully your orchard is clean of scab and this will mean the end of required control measures for the growing season. While visiting orchards over the past week, Jeremy Delisle spotted some primary scab infections present on leaves. Now is the time to remain diligent and maintain fungicide coverage over the next two weeks with the goal of wiping out these initial infections and putting an end to the need for control through the remainder of the season due to secondary infections.

An excellent description of the factors to consider for best fungicide selection can be found here: https://netreefruit.org/apples/diseases/apple-scab

Figure 1: Apple scab infection on upper and lower leaf surface, Photo, Jeremy DeLisle, UNH Extension

Marssonina (Apple Blotch):

While we are currently at the very end of primary apple scab season, you should remember that this fungus is also a concern and can be controlled with many of the same fungicides that control apple scab. The period of primary concern is really at the tail end of apple scab season, read up more about it here: Apple Disease - Marssonina Blotch (psu.edu).

Fire Blight:

Continue to scout orchards for shoot blight, including rootstock sucker infections. Prune and remove infected shoots at least 12-18 inches below the infected margin during cool, dry weather.

Pruning is particularly useful when blossom blight is well controlled and canker blight infections are thus the main source of inoculum for disease spread during the summer. Pruning can help limit disease spread, but will be most effective if practiced rigorously during the first few weeks after bloom; pruning will do little to slow disease spread if delayed until a large number of infections are visible.

Routine use of antibiotics to prevent shoot blight spread during the summer is not effective or recommended. However, applications to protect new wounds immediately following a hailstorm can be very beneficial. With a cool and fairly dry bloom period, some growers made in through the prime infection period with just a couple of streptomycin applications. Keep in mind that saving at least one or the four allotted strep sprays in case of hail or damaging wind events is a good insurance strategy.

In her most recent report, Kathleen Leahy reminds us of an article from Good Fruit Grower highlighting recent research comparing cutting and sanitization strategies to find the best removal methods for fire blight strikes. It's definitely worth the read:

Good to Know: Take a bite out of blight - Good Fruit Grower

Fire Blight | New England Tree Fruit Management Guide (netreefruit.org)

Moving onto the insect pests:

Plum curculio:

Plum curculio activity is beginning to decline and any curculio remaining in trees will usually not move to other locations.

Plum curculio only need to be controlled until 308 DD have accumulated after petal fall. Make sure that the predicted residual coverage (10-14 days) from the last spray will protect fruit until DD accumulation reaches this value.

In Concord the petal fall date we are using is 5/19/23. From that date, we have accumulated 263 degree days base 50F, and are predicted to have accumulated 307 DD by Friday, June 16th. Egg laying typically stops around 308 degree days after petal fall, at which time the need for targeted control generally stops. With this season progressing slowly so far with these cool temperatures, we are gaining degree days slowly. It looks like we will be nearing the end of oviposition by the end of this week, at which point, we will be able to consider PC control for the season done.

For this week into next, continue to monitor growing degree days from petal fall using the PC model within NEWA to know when we are approaching the end of oviposition and the need for control. Northern orchards are slightly behind in degree day accumulations, so oviposition will be extended into next week. **An observation from the field is that in some orchards with very few viable fruits remaining on the trees after the frost, PC seems to be laying high numbers of eggs in those fruits. This is the behavior that we anticipated. It seems targeted perimeter application of insecticides targeting PC adults at this point in the**

season is still warranted as we think about reducing this population of insects for next season.

Remember, if you have applied an effective insecticide with residual activity still present on the trees, that application may take you through the end of oviposition depending on the date of application and the material used.

Plum curculio (PC) | New England Tree Fruit Management Guide (netreefruit.org)

Codling moth:

In Canterbury, we established the biofix date of 5/26/23 to start the codling moth model within NEWA and have reduced the frequency of trap checking for this insect to once a week. Once sustained trap captures have been observed, enter the biofix date for your farm into the NEWA model to track development of the pest. Southern NH established the biofix of codling moth as of 5/22/23. Southern growers without traps on their farms could enter this date to start the degree day clock running for egg hatch by this pest. **NEWA data predicts that the required 220 DD was reached on Sunday, June 11th, and in most orchards in NH, codling moth flight is well underway and egg laying is currently happening.** Today we have accumulated 206 DD base 50F from our biofix and predict we will have reached 250 DD by June 16th, these DD calculations mark the prime window of egg hatch, and the most effective time for controlling the emerging larvae with many of the recommended insecticides.

The take home message: Now, or later this week, is the time to be targeting those emerging codling moth larvae.

Codling moth (CM) | New England Tree Fruit Management Guide (netreefruit.org)

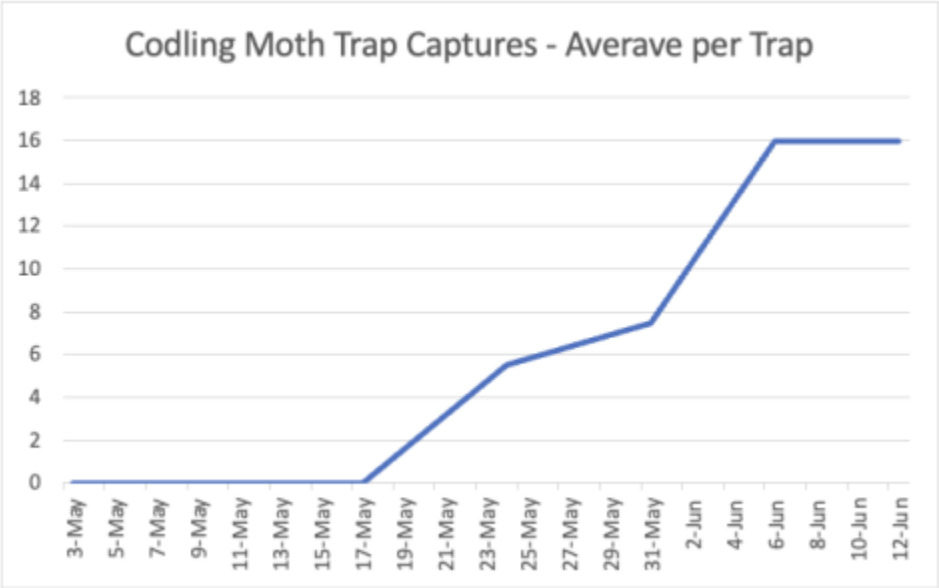

Figure 2: Codling moth trap captures for Merrimack County

Want to learn more about DD calculations and how they relate to the codling moth control recommendations?

Full resource available here: doc_72.pdf (cornell.edu) , see below for the shorter version!

Time insecticide applications based on trap data and degree day (DD) models for egg hatch. Spray timing for these pests is directed at newly hatched larvae, since most insecticides are not effective at controlling adults. There is a lag period for egg hatch after the moths fly. The first spray for CM is recommended at first egg hatch, which occurs 220-250 DD (base 50°F) after sustained trap catch. Timing depends on insecticide choice. Calypso, Assail, Delegate, Altacor, Belt, or Voliam Xpress or Voliam Flexi are most effective when applied at 200-250 DD 50°F after biofix. An additional option is to apply a granulosis virus formulation at 200-250 DD 50°F. High moth pressure requires 2-3 sprays for the first generation, but in lower pressure orchards (with counts of less than 5 moths per trap per week), you can control CM with a single spray timed at 350 DD 50°F.

In apples, 1st generation OFM can be controlled with the petal fall spray. In summer, sprays for OFM in apples are applied 3-4 days after peak trap catch, or 7 days after the start of the 2nd flight.

Oriental Fruit moth:

Be on the lookout, trap captures are increasing in Merrimac county!

Oriental Fruit Moth (OFM) | New England Tree Fruit Management Guide (netreefruit.org)

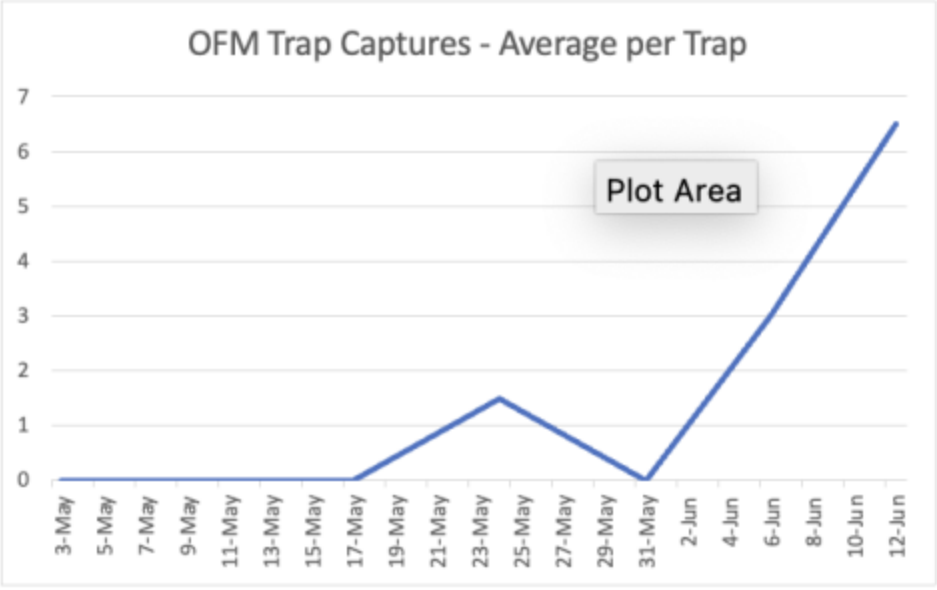

Figure 3: OFM trap captures for Merrimack County

San Jose Scale

First generation crawlers are produced beneath female scale covers during this period. If monitoring for crawlers, double-sided sticky tape traps should be placed around tree limbs at this time.

San Jose scale (SJS) | New England Tree Fruit Management Guide (netreefruit.org)

Something a little different, but still very good to know:

Monitoring Spotted Wing Drosophila (SWD) with Traps

recently updated by Anna Wallingford, Assistant State Specialist, Associate Research Professor and excellent entomologist

Note: No SWD caught in UNH traps as of today, 6/14/2023

Spotted wing drosophila (SWD) attacks ripening and ripe raspberries, blackberries, blueberries, grapes, cranberries, late cherries, fall strawberries, plums and peaches, plus fruit of many wild hosts. If you wish to protect your fruit from becoming infested, it is critical to set up traps for the insects, and to monitor those traps weekly when you have ripening crop present. The first flies will probably be trapped between July 2 and 12, and numbers will peak in September or October.

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When to set up the traps? Do this as soon as fruit starts to ripen. Fruits that ripen before July 1 are not likely to be at risk. You can stop monitoring when harvest of susceptible crops is over for you.

Where to set the traps? Set the traps IN the crop, in the shade, AMONG THE FOLIAGE near fruit. We recommend checking traps every 5-6 days at first, moving to every 3-5 days in August (hot weather). As the weather cools, you can lengthen the check interval. Keep checking as long as you have ripe fruit to protect.

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Add just a drop or two of liquid soap to the bait. Non-scented soap is preferable as flowery-scented soaps might decrease bait effectiveness. The soap decreases the surface tension of the bait, making it easier for the small flies to fall in and drown.

When we used the dough baits, the solid yeast/dough bait was placed inside a smaller 4-oz lidded cup within the larger 18-oz trap. We cut a hole (1-inch diameter) in the lid. Over the hole we placed fine insect netting, and fastened it with a hot glue gun. The netting is to allow the yeast odor out, but not let flies in. So the assembled trap is a large red cup. Inside that is 2 oz of liquid bait, and floating upright in the liquid bait is the smaller cup with the netted lid.

When check traps containing attractive baits, make sure to collect the old liquid bait in a waste container, and add fresh bait to the trap. Don't pour the old bait on the ground in your fruit planting, or it will compete with your traps for the flies' attention.

Point of interest:

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Figure 4: SWD netting being installed for the second year in a row at Heron Pond Farm in South Hampton, NH. Photo by Jeremy DeLisle, Field Specialist, Food and Agriculture, UNH Extension

Upcoming meetings:

June 14th, 2023

NH Veg and Berry Growers Association Twilight Meeting: New Farm Technology for Veg and Fruit Producers Field Day

June 15th, 2023

Tree Fruit Twilight Meeting at DeMerritt Farm | Extension (unh.edu)

June 20th, 2023

Blueberry IPM Twilight Meeting at Stark Farm | Extension (unh.edu)

RMA Apple Insurance Listening Session: June 27, 2023 : Goffstown, New Hampshire

10:00 a.m. to 12:00 p.m., Hillsborough County Extension Office (Large Conference Room)

329 Mast Rd., Goffstown, NH 03045

No RSVP Necessary!

Summer 2023 Apple Grower Meetings | RMA (usda.gov)

Thanks for sticking around until the end! See you all next week!

BACK TO TOP

6/06/2023

Fruit Pest Hotline IPM Report 6/6/23

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While these recordings will highlight what you need to be looking for out in the field, I highly encourage you to find the transcripts online, as they will have more details and links about many of the pests, products, and models I'll be describing in this call. Simply google "UNH Fruit IPM reports" to find them on our webpage. The transcript for this call may not be up until Wednesday afternoon.

In terms of growing degree days in Concord, NH we have accumulated 758 GDD in BE base 43F and 334 GDD in BE base 50F.

Recommendations for frost-damaged orchards and small fruit crops will be gone over at the end of this call. Similar information can be found in last week's report!

Jumping into the plant pathogen updates:

Apple scab:

The rains this week should certainly promote the last of the unreleased ascospores to be released. Maintain protection and continue to scout over the next couple of weeks. Hopefully your orchard is clean of scab and this will mean the end of required control measures for the growing season. While visiting orchards over the past week, I have seen some primary scab infections present on leaves. Now is the time to remain diligent and maintain fungicide coverage over the next two weeks with the goal of wiping out these initial infections and putting an end to the need for control through the remainder of the season due to secondary infections.

An excellent description of the factors to consider for best fungicide selection can be found here: https://netreefruit.org/apples/diseases/apple-scab

Figure 1: Apple scab infection on upper (left photo) and lower (right photo) leaf surface. Credit: Jeremy DeLisle, UNH Extension

Marssonina (Apple Blotch):

While we are currently in the tail end of primary apple scab season, you should remember that this fungus is also a concern and can be controlled with many of the same fungicides that control apple scab. The period of main concern is really at the tail end of apple scab season, but be aware and read up here about when and how to best control it. Keep an eye on any

brown lesions beginning to form on your leaves – could be apple scab, could be marssonina! Apple scab resistant varieties tend to be the most susceptible to marssonina.

Fire Blight:

Important: Any open blossoms still on trees should be considered vulnerable to infection from fire blight. At this point we are mainly just seeing open blossoms on newly planted trees from the nursery. These blossoms should have been removed prior to opening to prevent the risk of infection, especially since we don't want the trees putting energy towards fruit production as this early age. Rather, we want them focused on vegetative growth to fill their allotted space in the orchard. Choose a cool dry day to remove blossoms when risk of infection is lowest.

Consult the NEWA fireblight model to assess risk levels. Consider an application of copper to reduce bacteria in the surface of the tree prior to blossom removal. Clean pruning shears between trees to minimize risk of spreading bacteria from one tree to the next.

Continue to scout orchards for shoot blight, including rootstock sucker infections. Prune and remove infected shoots 12 inches below the infected margin during cool, dry weather.

Pruning is particularly useful when blossom blight is well controlled and canker blight infections are thus the main source of inoculum for disease spread during the summer. Pruning can help limit disease spread but will be most effective if practiced rigorously during the first few weeks after bloom; pruning will do little to slow disease spread if delayed until a large number of infections are visible.

Routine use of antibiotics to prevent shoot blight spread during the summer is not effective or recommended. However, applications to protect new wounds immediately following a hailstorm can be very beneficial. With a cool and fairly dry bloom period, some growers made in through the prime infection period with just a couple of streptomycin applications. Keep in mind that saving at least one or the four allotted strep sprays in case of hail or damaging wind events is a good insurance strategy.

Fire Blight | New England Tree Fruit Management Guide (netreefruit.org)

Powdery mildew:

Keep an eye out for any infections in the next few weeks.

Powdery Mildew | New England Tree Fruit Management Guide (netreefruit.org)

Insects:

Plum curculio:

In Concord the petal fall date we are using is 5/19/23. From that date, we have accumulated 195 degree days base 50F, and are predicted to have accumulated 238 DD by Sunday, June 11th. This cool weather this week has us accumulating degree days very slowly. Hearing reports from New York and Pennsylvania, I suppose we should be thankful we are not dealing with the heat they currently are. Egg laying typically stops around 308 degree days after petal fall, at which time the need for targeted control generally stops. With this season progressing slowly so far with these cool temperatures, we are gaining degree days slowly. It looks like we will be nearing the end of oviposition by the end of next week, at which point, we will be able to consider PC control for the season done. For this week into next, continue to monitor growing degree days from petal fall using the PC model within NEWA to know when we are approaching the end of oviposition and the need for control.

An observation from the field is that in some orchards with very few viable fruits remaining on the trees after the frost, PC seems to be laying high numbers of eggs in those fruits. This is the behavior that we anticipated. It seems targeted perimeter application of insecticides targeting PC adults at this point in the season is still warranted as we think about reducing this population of insects for next season.

Plum curculio (PC) | New England Tree Fruit Management Guide (netreefruit.org)

Figure 2: Plum Curculio damage to Honeycrisp fruitlet, 6/2/23, Photo credit: Jeremy DeLisle, UNH Extension

Codling moth:

Codling moth –In Canterbury, we established the biofix date of 5/26/23 to start the codling moth model within NEWA and have reduced the frequency of trap checking for this insect to once a week. Southern NH established the biofix of codling moth as of 5/22/23. Southern growers without traps on their farms could enter this date to start the degree day clock running for egg hatch by this pest. If you do you're your own traps, once sustained trap captures have been observed, enter the biofix date for your farm into the NEWA model to track development of the pest. For most orchards in NH, codling moth flight is well underway and egg laying is currently happening.

Today we have accumulated 138 DD base 50F from our biofix and predict we will have reached 181 DD by June 11th.

We will likely have reached the beginning of egg hatch by late next week, at which time the emerging larvae are most susceptible to control using many of the recommended insecticides**. NEWA data predicts that the required 220 DD will be reached by Sunday, June 11th**, beginning the period of egg hatch for the first generation of codling moth.

Codling moth (CM) | New England Tree Fruit Management Guide (netreefruit.org)

Interested in more details on how degree days are used to inform codling moth management practices?

Cornell has a wonderful fact sheet that talks about this, check out the entire resource at this link: doc_72.pdf (cornell.edu)

Figure 3: Codling moth trap captures showing sticky trap bottom insert along with pheromone lure, Photo credit: Jeremy DeLisle, UNH Extension

Figure 4: Close up of a codling moth from the sticky trap, Photo credit: Jeremy DeLisle

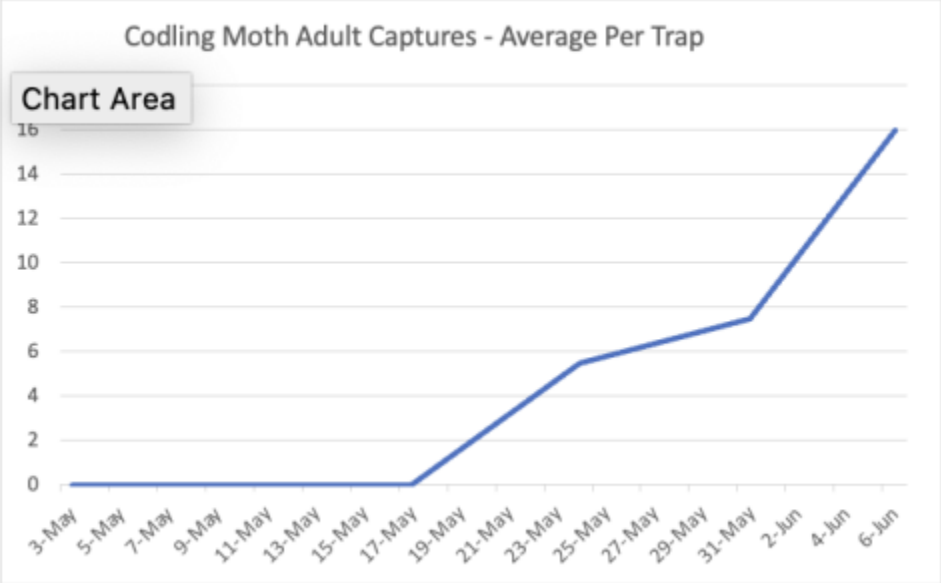

Figure 5: Codling moth trap captures for Merrimack County (Credit to Jeremy DeLisle)

Oriental Fruit Moth:

Keep an eye out for them, we are seeing more of them in traps captured in Merrimack County.

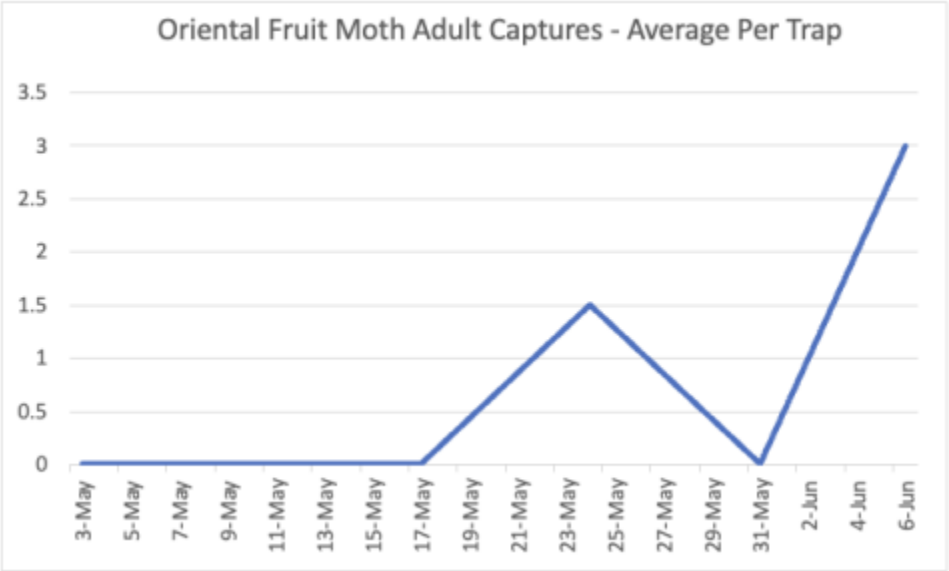

Figure 6: Oriental Fruit Moth (OFM) trap captures for Merrimack County

A few updates about upcoming events:

RMA Apple Insurance Listening Session:

June 27, 2023 : Goffstown, New Hampshire

10:00 a.m. to 12:00 p.m., Hillsborough County Extension Office (Large Conference Room)

329 Mast Rd., Goffstown, NH 03045

No RSVP required.

Details here: Summer 2023 Apple Grower Meetings | RMA (usda.gov)

Twilight Meetings:

The schedule is out for all of extension's summer twilight meetings, and I wanted to highlight a few that may be of interest to the folks that tune into this call – the full list of Extensions event offerings this summer can be found on our website!

Tree Fruit meeting at Demeritt Hill Farm, July 15th, 2023 5:30-7:30 pm

Tree Fruit Twilight Meeting at DeMerritt Farm | Extension (unh.edu)

Tree Fruit meeting at Apple Hill Farm, August 17th, 2023 5:30-7:30 pm

Tree Fruit Twilight Meeting at Apple Hill Farm | Extension (unh.edu)

Blueberry IPM Twilight Meeting at Stark Farm, June 20th, 2023

Blueberry IPM Twilight Meeting at Stark Farm | Extension (unh.edu)

All of the Production Agriculture Twilight meetings:

2023 Production Agriculture Summer Twighlight Meeting | Extension (unh.edu)

Let's dive into the frost event everyone has been talking about:

While you all have probably done this already, producers should document damage, contact their insurance providers, and connect with their Extension specialists to evaluate and document damage, and develop appropriate IPM plans for the season based on the situation at their specific locations.

Many questions are arising as to management decisions for the season ahead considering the damage to fruiting crops throughout New Hampshire. Included below are a few suggestions as a start that may be helpful for some crops:

I'll jump into frost damage control/considerations first: *This is a repeat from the last report, but still valuable!

Managing berry planting after frost: (*Northeast Berry Call Recommendations – thanks to all the folks offering advice to the region!)

Pest control:

Plantings with total fruit loss still need to be actively managed for pests and weeds. Potential for botrytis is greater in all affected berries with dead tissue on the plant (black strawberry blossoms, blighted tips of blueberry canes, black bramble flowers). It would be a good idea to spray now for botrytis, especially in strawberries. Other fungal pathogens don't live in dead tissue as botrytis does, so we only worry about botrytis.

Diseases | Center for Agriculture, Food, and the Environment (umass.edu)

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Pruning:

In bush and cane-berries that have a big percentage of crop lost, anticipate summer thinning because extra energy will be allocated to vegetative growth. Perhaps due to the lost crop this year, next year's crop will be larger.

June-bearing strawberry plantings should not be renovated now if they had total crop loss. They should be renovated in July or August as usual. Additional Nitrogen applications may be helpful in the case of total crop loss by helping the plants put on biomass. Crowns should be cut in half and checked for damage from frost. Depending on the degree of damage there, may have diminishing returns on inputs.

Watering:

Plantings should be watered to minimize drought stress. This might help remaining fruit recover instead of senescing.

Fertility:

At this point in the season most blueberries have had 1 round of fertilizer applied already. A second round of fertilizer at this point in the season is important because it helps set the fruiting buds. Foliar nutrient sprays are popular amongst growers. Some have seen good results from Megafol (3-0-8). Some growers do 2 applications at a pint/acre each (mid-April and post-bloom), while others do 1 big application at 1 quart/acre each. Some growers also spray potassium on blossoms and developing fruit for winter protection. This is especially done in apples, sometimes on raspberries too. The K+ (potassium) ions prevent the growth of ice-nucleating bacteria; copper sprays work too.

Managing tree fruit after frost (Advice from Terence Bradshaw, UVM Extension)

This is just a quick recap, please check out his full post: VT Apple IPM: Management in light of a difficult crop situation – UVM Fruit Blog

Thinning:

· For orchards that have no fruit or heavily damaged fruits (+ 75%) do not consider thinning this year.

· For orchards with less than 20%, consider thinning as normal this year.

· For orchards that have moderate damage between 25 and 75%, the answer is a bit more site-specific. Not thinning those orchards may result in heavy set of small fruit that could promote biennialism, but trees are likely to respond well to thinners applied in the next week, given both the cold damage and the warm sunny, weather that we are expecting coming up.

· At the UVM Orchard, which experienced moderate fruit damage between 20 and 70%, depending upon cultivar, they decided to apply a low rate of NAA thinner with a low rate of carbaryl insecticide. They have 70 varieties across the whole orchard, and it is difficult to thin based upon variety even in a 'normal' year, which is not too different from what many other retail orchards might be dealing with. It is difficult to provide blanket recommendations to growers given the state of the crop this year.

· In the end, Dr. Bradshaw recommends trusting your gut – if you have a good crop thin it, if you have a moderate crop consider thinning it lightly as you could always come back in later next week and be better able to visualize the effects of both the frost and any thinner applications you may have applied.

Full post: VT Apple IPM: Management in light of a difficult crop situation – UVM Fruit Blog

More on thinning:

The opportunity to thin potential fruit load begins at bloom and lasts until 3-4 weeks post petal fall. Consider using the Carbohydrate Thinning Model in NEWA to help make the best thinning management decisions based on factors such as localized weather patterns and other site-specific factors. This UMass resource outlines the best options and key considerations for chemical thinning: Fruit: HRT-Thinning Apples Chemically | Center for Agriculture, Food, and the Environment at UMass Amherst

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· This will differ depending upon the state of the crop in your orchard.

· For orchards with a full or even a moderate crop, plan to manage your insect pests as normal this year. Petal fall insecticide sprays should have already gone on in most orchards.

· Normally petal fall sprays are targeted at European apple sawfly, early emerging codling moth, and plum curculio. All of those pests are fruit feeders so orchards that have no fruit or are assumed to have very little fruit may consider omitting all insecticide applications targeted toward protecting fruit.

· The difficult situation comes where orchards have a low set of fruit where the expense of the application on a per bushel basis could be quite high but the value of the few apples you have is also high. If there's any question about whether or not you have sufficient crop set in your orchard, it is recommended to go ahead and treat as usual. If you have no crop or nearly no crop, then you may consider omitting those insecticides.

· However, it is worth it to consider maintaining some coverage primarily for shoot and leaf feeding, lepidopterous caterpillar larvae. That may mean including BT sprays in petal fall, scab, thinning, or other sprays in order to keep down leps like the obliquebanded leaf roller and tent caterpillar.

· In orchards with little to no crop, the great reduction insecticides used this year may allow beneficial populations to increase substantially, setting you up for a better IPM program next year.

· It is not recommended to ignore trunk applications of Assail or another appropriate insecticide in young plantings to avoid issues with dogwood and other borers.

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Nutrients: (Advice from Terence Bradshaw, UVM Extension)

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· For trees with normal or moderate crop load, fertilize as you normally would.

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· For trees with little to no crop this year potassium is not likely to be removed in any significant amount because that is usually removed in harvested fruit. However, it is important to maintain or improve the potassium status in your orchards to ensure that you have an appropriate amount of that nutrient going into next year when it is likely that orchards will have a heavy crop load.

· He does recommend thinking about applying magnesium potassium fertilizers in the next month or so regardless of crop status.

Thank you for sticking around until the very end! See you next week!

BACK TO TOP

5/30/2023

Hi all!!

Welcome back to the NH Fruit Pest hotline, which is produced by staff members from the UNH Cooperative Extension Food and Agriculture team. Today is May 30th , 2023.

While these recordings will highlight what you need to be looking for out in the field, I highly encourage you to find the transcripts online, as they will have more details and links about many of the pests, products, and models I'll be describing in this call. Simply google "UNH Fruit IPM reports" to find them on our webpage. The transcript for this call may not be up until Wednesday afternoon.

In terms of growing degree days in Concord, NH we have accumulated 634 GDD in BE base 43F and 260 GDD in BE base 50F.

Lets dive into the frost event everyone has been talking about:

The frost event that occurred very late Wednesday, May 17th and into the late morning hours of May 18th caused extensive and quite variable damage across New Hampshire farms. While we had already lost our peach crop back on a single night in February, apples, pears, blueberries, strawberries and grapes were relatively undamaged until last week. While initial assessments are still underway, and damage varies considerably across locations and varieties, there was significant damage to apples, blueberries, and unprotected strawberries. We are not as certain about grapes and brambles at this point, but some potential damage is expected. Producers should document damage, contact their insurance providers, and connect with their Extension specialists to evaluate and document damage, and develop appropriate IPM plans for the season based on the situation at their specific locations.

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Managing berry planting after frost: (*Northeast Berry Call Recommendations – thanks to all the folks offering advice to the region!)

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Plantings with total fruit loss still need to be actively managed for pests and weeds. Potential for botrytis is greater in all affected berries with dead tissue on the plant (black strawberry blossoms, blighted tips of blueberry canes, black bramble flowers). It would be a good idea to spray now for botrytis, especially in strawberries. Other fungal pathogens don't live in dead tissue as botrytis does, so we only worry about botrytis.

Pruning:

In bush and cane-berries that have a big percentage of crop lost, anticipate summer thinning because extra energy will be allocated to vegetative growth. Perhaps due to the lost crop this year, next year's crop will be larger.

June-bearing strawberry plantings should not be renovated now if they had total crop loss. They should be renovated in July or August as usual. Additional Nitrogen applications may be helpful in the case of total crop loss by helping the plants put on biomass. Crowns should be cut in half and checked for damage from frost. Depending on the degree of damage there, may have diminishing returns on inputs.

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· He does recommend thinking about applying magnesium potassium fertilizers in the next month or so regardless of crop status.

Included below are some other great resources you may find helpful:

Apple Thinning Recommendations After the Frost: A Case-by-Case Scenario – Wisconsin Fruit

After the Freeze 2020 | Purdue University Facts for Fancy Fruit

Disease management after bad frost events? – Virginia Grape Disease Updates (grapepathology.org)

Strawberry Disease Management | Purdue University Facts for Fancy Fruit

Jumping into the plant pathogen updates:

Apple scab:

We are now essentially in the very tail end of primary scab season. All but the very last of the ascospores should be release with the next rain. Maintain protection and continue to scout over the next couple of weeks. Hopefully your orchard is clean of scab and this will mean the end of required control measures for the growing season.

An excellent description of the factors to consider for best fungicide selection can be found here: https://netreefruit.org/apples/diseases/apple-scab

Marssonina (Apple Blotch):

While we are currently in the tail end of primary apple scab season, you should remember that this fungus is also a concern and can be controlled with many of the same fungicides that control apple scab. The period of main concern is really at the tail end of apple scab season,

but be aware and read up here about when and how to best control it. Keep an eye on any brown lesions beginning to form on your leaves – could be apple scab, could be marssonina! Apple scab resistant varieties tend to be the most susceptible to marssonina.

Fire Blight:

Much of the state is past bloom with apples and pears ranging from late bloom to fruit set depending on location and variety. Check the NEWA models for infection risk in relation to the crop development stage at your orchard. Continue to watch the weather forecast and cross-reference NEWA to best time applications.

Important: Any open blossoms still on trees should be considered vulnerable to infection from fireblight.

Fire Blight | New England Tree Fruit Management Guide (netreefruit.org)

Now is the time to scout for shoot strikes. 1-2 weeks after petal fall, scout orchards for shoot blight, including rootstock sucker infections. Prune and remove infected shoots 12 inches below the infected margin during cool, dry weather.

Pruning is particularly useful when blossom blight is well controlled and canker blight infections are thus the main source of inoculum for disease spread during the summer. Pruning can help limit disease spread, but will be most effective if practiced rigorously during the first few weeks after bloom; pruning will do little to slow disease spread if delayed until a large number of infections are visible.

Routine use of antibiotics to prevent shoot blight spread during the summer is not effective or recommended. However, applications to protect new wounds immediately following a hailstorm can be very beneficial; check current recommendations.

Powdery mildew:

Dry periods during scab season can be a prime time for infection by powdery mildew. Group 3 fungicides used for scab control will also control PM. Consider saving the group 11 fungicides until petal fall for control of summer diseases. Sulfur is also a good choice for PM control in conventional and organic orchards. This week may be the best opportunity to control PM, so consider choosing a fungicide with good efficacy against both this disease and scab.

Powdery Mildew | New England Tree Fruit Management Guide (netreefruit.org)

Insects:

Plum curculio:

In Concord the petal fall date we are using is 5/19/23. From that date, we have accumulated 117 degree days base 50F, and are predicted to have accumulated 198 DD by Sunday, June 4th.

Control typically begins at petal fall with a whole block spray, followed by 1 or 2 perimeter row sprays depending on the weather and progression of this insect through its' life cycle. Egg laying typically stops around 308 degree days after petal fall, at which time the need for targeted control generally stops. With this season progressing slowly so far with these cool temperatures, we are gaining degree days slowly. This means that the egg laying period for PC may be extended unless the temperatures drastically warm up. Some southern NH orchards already have fruit at a susceptible stage for PC damage, as the insect prefers fruit at the 3-5 mm size for egg laying. Temperatures this week will certainly be warm enough for PC activity, so blocks of trees that are past petal fall should be protected. **While few egg laying scars have been found while scouting orchards, Plum curculio will certainly be active this week.**

Plum curculio (PC) | New England Tree Fruit Management Guide (netreefruit.org)

Codling moth:

In Canterbury we finally established the biofix date of 5/26/23 to start the codling moth model within NEWA. We will now reduce the frequency of trap checking for this insect to once a week. Once sustained trap captures have been observed, enter the biofix date for your farm into the NEWA model to track development of the pest as egg laying approaches. You would need to be trapping yourself to have the most accurate date for your farm.

Southern NH established the biofix of codling moth as of 5/22/23. Southern growers without traps on their farms could enter this date to start the degree day clock running for egg hatch by this pest, which is expected at 220 –250 DD base 50F from sustained catch.

Codling moth (CM) | New England Tree Fruit Management Guide (netreefruit.org)

Interested in more details on how degree days are used to inform codling moth management practices?

Cornell has a wonderful fact sheet that talks about this, check out the quick summary below or check out the entire resource at this link: doc_72.pdf (cornell.edu)

Time insecticide applications based on trap data and degree day (DD) models for egg hatch. Spray timing for these pests is directed at newly hatched larvae, since most insecticides are not effective at controlling adults. There is a lag period for egg hatch after the moths fly. The first spray for CM is recommended at first egg hatch, which occurs 220-250 DD (base 50°F) after sustained trap catch. But the timing depends on insecticide choice. Rimon (which is more ovicidal) should be applied at 75-100 DD 50°F after CM biofix; for Calypso, Assail, Delegate, Altacor, Belt, or Voliam Xpress or Voliam Flexi, 200-250 DD 50°F after biofix. An additional option is to apply a granulosis virus formulation at 200-250 DD 50°F. High moth pressure requires 2-3 sprays for the first generation, but in lower pressure orchards (with counts of less than 5 moths per trap per week), you can control CM with a single spray timed at 350 DD 50°F. Research in Washington and Michigan has shown that codling moth mating and egg laying activities take place primarily during a four-hour period, beginning around dusk, if temperatures are above 60°F during that period. Temperatures below 60°F impede male activity and prevent mating, so a cooler spring will delay significant egg hatch for the first generation. If weather data is available to predict this, it can be incorporated into the degree day model as egg hatch will occur 220 DD 50°F after the first flight when evening temperatures >60F. The first insecticide spray for OFM in peaches is recommended at 175 DD (base 45°F) after biofix (petal fall) and a second spray 10-14 days later, until trap counts subside; in apples, 1st generation OFM can be controlled with the petal fall spray. In summer, sprays for OFM in apples are applied 3-4 days after peak trap catch, or 7 days after the start of the 2nd flight.

Now just a few updates about upcoming events:

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June 27, 2023 : Goffstown, New Hampshire

10:00 a.m. to 12:00 p.m., Hillsborough County Extension Office (Large Conference Room)

329 Mast Rd., Goffstown, NH 03045

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Thank you for sticking around until the very end! See you next week!

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many of the pests, products, and models I'll be describing in this call. Simply google "UNH Fruit IPM reports" to find them on our webpage. The transcript for this call may not be up until Wednesday afternoon.

In terms of growing degree days in Concord, NH we have accumulated 519 GDD in BE base 43F and 196 GDD in BE base 50F.

Lets dive into the frost event everyone has been talking about:

The frost event that occurred very late Wednesday, May 17th and into the late morning hours of May 18th caused extensive and quite variable damage across New Hampshire farms. Low temperatures reported ranged from 31F in Farmington to as low as 23F in Lebanon. While we had already lost our peach crop back on a single night in February, apples, pears, blueberries, strawberries and grapes were relatively undamaged until last week. While initial assessments are still underway, and damage varies considerably across locations and varieties, there was significant damage to apples, blueberries, and unprotected strawberries. We are not as certain about grapes and brambles at this point, but some potential damage is expected. Producers should document damage, contact their insurance providers and connect with their Extension specialists to evaluate and document damage, and develop appropriate IPM plans for the season based on the situation at their specific locations. Many questions are arising as to management decisions for the season ahead. Included below are a few resources as a start that may be helpful for some crops:

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Strawberry Disease Management | Purdue University Facts for Fancy Fruit

Jumping into the plant pathogen updates:

Apple scab:

50% Macintosh green tip date was established on 4/12 in Concord. This is the biofix to start the apple scab model in NEWA. Enter the date that this occurred in your orchards for the best accuracy from the model. The rains last week triggered a large ascospore release with 85%

mature and ready to go prior to the rain event. Dry weather leading up to that point allowed for the accumulation of ascospores that were just waiting for moisture to be released. This is the time to use your more effective systemic materials along with a multisite such as Captan or Mancozeb. FRAC group 7 fungicides are preferred during this time of peak scab activity. Details on rotational options with other FRAC groups can be found here: https://extension.psu.edu/2023-disease-update-scab-and-fire-blight-infections-forecasted-for-the-weekend. We are now nearing the end of the primary scab season, with approximately 94% of ascospores mature as we head into a predicted infection event on Wednesday May 24th. Once this event has passed, maintain protection for approximately two weeks to ensure the last of the ascospores are controlled.

Consider some of the single site fungicides with the ability to translocate within leaf tissue for added control and some ability to kill very recent infections. An excellent description of the factors to consider for best fungicide selection can be found here: https://netreefruit.org/apples/diseases/apple-scab

Marssonina (Apple Blotch):

While we are currently in the tail end of primary apple scab season, you should remember that this fungus is also a concern and can be controlled with many of the same fungicides that control apple scab. The period of main concern is really at the tail end of apple scab season, but be aware and read up here about when and how to best control it. Keep an eye on any brown lesions beginning to form on your leaves – could be apple scab, could be marssonina! Apple scab resistant varieties tend to be the most susceptible to marssonina.

Fire Blight:

Much of the state is past bloom with apples and pears ranging from late bloom to fruit set depending on location and variety. We had infection events on May 11,12 and 13. Many growers elected to make a streptomycin application during that timeframe. Temperatures have been too cool beyond that event to worry much about infection. With warm temperatures predicted next week, any open flowers should be protected. Check the NEWA models for infection risk in relation to the crop development stage at your orchard. The take home message is that blossoms that have opened since your last application need to be covered with your material of choice. Continue to watch the weather forecast and cross-reference NEWA to best time applications.

Important: Any open blossoms still on trees should be considered vulnerable to infection from fireblight. Jeremy Delisle spoke with Penn State Tree Fruit Pathologist, Kari Peter on 5/22/23, and she explained that the nectaries on remaining flower blossoms are still open and present a potential infection pathway for fireblight. Continue to watch NEWA models until petal fall is complete and protect flowers as usual based on predicted risk and infection events.

Fire Blight | New England Tree Fruit Management Guide (netreefruit.org)

Powdery mildew:

Dry periods during scab season can be a prime time for infection by powdery mildew. Group 3 fungicides used for scab control will also control PM. Consider saving the group 11 fungicides until petal fall for control of summer diseases. Sulfur is also a good choice for PM control in conventional and organic orchards.

Powdery Mildew | New England Tree Fruit Management Guide (netreefruit.org)

Insects:

Plum curculio:

Control typically begins at petal fall with a whole block spray, followed by 1 or 2 perimeter row sprays depending on the weather and progression of this insect through its' life cycle. Egg laying typically stops around 308 degree days after petal fall, at which time the need for targeted control generally stops. With this season progressing slowly so far with these cool temperatures, we are gaining degree days slowly. This means that the egg laying period for PC may be extended unless the temperatures drastically warm up. Some southern NH orchards already have fruit at a susceptible stage for PC damage, as the insect prefers fruit at the 3-5 mm size for egg laying. Temperatures this week will certainly be warm enough for PC activity, so blocks of trees that are past petal fall should be protected. **While few egg laying scars have been found while scouting orchards, Plum curculio will certainly be active this week.**

Plum curculio (PC) | New England Tree Fruit Management Guide (netreefruit.org)

Codling moth:

In Concord we have yet to establish the biofix to start the codling moth model within NEWA. Southern NH has established the biofix from sustained trap captures of codling moth as of 5/22/23. Southern growers without traps on their farms could enter this date to start the degree day clock running for egg hatch by this pest, which is expected at 220 –250 DD at 50F from sustained catch.

Traps should be up and monitored daily in order to best track the development of this insect. Once sustained trap captures have been observed, enter the biofix date for your farm into the NEWA model to track development of the pest as egg laying approaches.

Codling moth (CM) | New England Tree Fruit Management Guide (netreefruit.org)

Interested in more details on how degree days are used to inform codling moth management practices?

Cornell has a wonderful fact sheet that talks about this, check out the quick summary below or check out the entire resource at this link: doc_72.pdf (cornell.edu)

Time insecticide applications based on trap data and degree day (DD) models for egg hatch. Spray timing for these pests is directed at newly hatched larvae, since most insecticides are not effective at controlling adults. There is a lag period for egg hatch after the moths fly. The first spray for CM is recommended at first egg hatch, which occurs 220-250 DD (base 50°F) after sustained trap catch. But the timing depends on insecticide choice. Rimon (which is more ovicidal) should be applied at 75-100 DD 50°F after CM biofix; for Calypso, Assail, Delegate, Altacor, Belt, or Voliam Xpress or Voliam Flexi, 200-250 DD 50°F after biofix. An additional option is to apply a granulosis virus formulation at 200-250 DD 50°F. High moth pressure requires 2-3 sprays for the first generation, but in lower pressure orchards (with counts of less than 5 moths per trap per week), you can control CM with a single spray timed at 350 DD 50°F. Research in Washington and Michigan has shown that codling moth mating and egg laying activities take place primarily during a four-hour period, beginning around dusk, if temperatures are above 60°F during that period. Temperatures below 60°F impede male activity and prevent mating, so a cooler spring will delay significant egg hatch for the first generation. If weather data is available to predict this, it can be incorporated into the degree day model as egg hatch will occur 220 DD 50°F after the first flight when evening temperatures >60F. The first insecticide spray for OFM in peaches is recommended at 175 DD (base 45°F) after biofix (petal fall) and a second spray 10-14 days later, until trap counts subside; in apples, 1st generation OFM can be controlled with the petal fall spray. In summer, sprays for OFM in apples are applied 3-4 days after peak trap catch, or 7 days after the start of the 2nd flight.

Thinning

After the frost event on 5/18/23, most growers are holding off on thinning for now. We are at an interesting spot, still assessing fruit damage, while still waiting to see how much of the apple crops will survive and remain on the trees to be considered “set”. More information is expected this week. UNH Extension has been in communication with Dr. Duane Green of

UMass, and anticipate recommendations and considerations given the conditions experienced in New Hampshire and New England this spring.

The opportunity to thin potential fruit load begins at bloom and lasts until 3-4 weeks post petal fall. Consider using the Carbohydrate Thinning Model in NEWA to help make the best thinning management decisions based on factors such as localized weather patterns and other site-specific factors. This UMass resource outlines the best options and key considerations for chemical thinning: Fruit: HRT-Thinning Apples Chemically | Center for Agriculture, Food, and the Environment at UMass Amherst

RMA Apple Insurance Listening Session:

June 27, 2023 : Goffstown, New Hampshire

10:00 a.m. to 12:00 p.m., Hillsborough County Extension Office (Large Conference Room)

329 Mast Rd., Goffstown, NH 03045

No RSVP required.

Details here: Summer 2023 Apple Grower Meetings | RMA (usda.gov)

Twilight Meetings:

The schedule is out for all of extension's summer twilight meetings, and I wanted to highlight a few that may be of interest to the folks that tune into this call – the full list of Extensions event offerings this summer can be found on our website!

Tree Fruit meeting at Demeritt Hill Farm, July 15th, 2023 5:30-7:30 pm

Tree Fruit Twilight Meeting at DeMerritt Farm | Extension (unh.edu)

Tree Fruit meeting at Apple Hill Farm, August 17th, 2023 5:30-7:30 pm

Tree Fruit Twilight Meeting at Apple Hill Farm | Extension (unh.edu)

All of the Production agriculture Twilight meetings:

2023 Production Agriculture Summer Twighlight Meeting | Extension (unh.edu)

Thank you for sticking around until the very end! See you next week!

BACK TO TOP

5/16/2023

Hi all!!

Welcome back to the NH Fruit Pest hotline, which is produced by staff members from the UNH Cooperative Extension Food and Agriculture team. Today is May 16th , 2023.

While these recordings will highlight what you need to be looking for out in the field, I highly encourage you to find the transcripts online, as they will have more details and links about many of the pests, products, and models I'll be describing in this call. Simply google "UNH Fruit IPM reports" to find them on our webpage. The transcript for this call may not be up until Wednesday afternoon.

In terms of growing degree days in Concord, NH we have accumulated 439 GDD in BE base 43F and 161 GDD in BE base 50F.

Frost: Potential for Frost Wednesday night (5/17) across most of the state. Strawberries and potentially blueberries could be at risk of frost damage. Frost protection measures should be taken, especially for the early strawberry varieties!

Lets jump right into plant pathogen updates for the apple growers.

Apple scab:

When using NEWA, make sure you are putting in the most accurate green tip date and weather station into the models to get the most accurate predictions for your orchard. My predictions are based off of the concord weather station, with April 12th as the biofix date.

Keep an eye out for any lesions from past infection events on your leaves.

Ascospores are developing slowly under these cool conditions, with 84% of ascospores mature and awaiting our next rain event. The forecast currently shows potential rain on Friday and Saturday, May 19th and 20th. Thursday, May 18th looks dry with low winds, so

consider making a fungicide application then. This is the time to use your more effective systemic materials along with a multisite such as Captan or Mancozeb. FRAC group 7 fungicides are preferred during this time of peak scab activity.

Details on rotational options with other FRAC groups can be found here: https://extension.psu.edu/2023-disease-update-scab-and-fire-blight-infections-forecasted-for-the-weekend

As we progress through the pink and bloom stages across the state, consider some of the single site fungicides with the ability to translocate within leaf tissue for added control and some ability to kill very recent infections. An excellent description of the factors to consider for best fungicide selection can be found here: https://netreefruit.org/apples/diseases/apple-scab

Marssonina (Apple Blotch):

This is a bit of a newcomer in this area but this fungal pathogen is also a concern and can be controlled with many of the same fungicides that control apple scab. The period of main concern is really at the tail end of apple scab season, but be aware and read up here about when and how to best control it.

2023 Disease Update: Disease Conditions Favored for Marssonina Blotch and Apple Scab April 28–May 1 (psu.edu)

Fire blight:

Much of the state is in bloom with apples and pears ranging from late pink to petal fall depending on location and variety. We had infection events on May 11,12 and 13. Many growers elected to make a streptomycin application during that timeframe. Those who have experienced high fire blight pressure in recent years may also have included Apogee/Kudos to slow down shoot development and thicken cell walls to prevent against infection. They may also have applied and/or continue to apply the SARs (systemic acquired resistance) inducers Actigard or Regalia.

More information about the use of PGRs and SARs can be found here: Applying Apogee and Actigard to young apple trees - Apples (msu.edu)

As well as here: Fire Blight | New England Tree Fruit Management Guide (netreefruit.org)

The take home message is that blossoms that have opened since your last application need to be covered with your material of choice. Continue to watch the weather forecast and cross-reference NEWA to best time applications.

Using the fire blight model in NEWA begins with selecting the current infection pressure from the drop-down menu in the fire blight model. Choose between the three various scenarios based on your specific conditions.

Note about the NEWA Models for fire blight:

Blossom blight infection risk is tracked by the accumulation of 4-day degree hour totals beginning at bloom. NEWA begins degree hour accumulation on the date of full pink or "first blossom open" for McIntosh apple. It is best if you enter your start date based on blossom dates in your apple or pear orchards and recalculate Cougarblight risk predictions.

Typically, the first few blossoms that open are a few days ahead of true first bloom because they are close to sunny large scaffolds or trunks. Fire blight bacteria are rarely active at the very early bloom time, so getting the "first blossom open" date exact is not critical. Continue monitoring the fire blight risk predictions and watching your orchards for secondary bloom because, although infection of secondary bloom may be less dangerous than that of primary bloom, infection of secondary bloom leads to continued high disease activity and higher risk in subsequent years.

Powdery mildew:

Dry periods during scab season can be a prime time for infection by powdery mildew. Group 3 fungicides used for scab control will also control PM. Consider saving the group 11 fungicides until petal fall for control of summer diseases.

Powdery Mildew | New England Tree Fruit Management Guide (netreefruit.org)

Now moving onto the insect pests:

Just a reminder: With bloom, no insecticide sprays should be going out to protect our native pollinators!

Plum curculio:

Control typically begins at petal fall with a whole block spray, followed by 1 or 2 perimeter row sprays depending on the weather and progression of this insect through its' life cycle. Egg laying typically stops around 308 degree days after petal fall, at which time the need for targeted control generally stops. With this season progressing slowly so far with these cool temperatures, we are gaining degree days slowly. This means that the egg laying period for PC may be extended unless the temperatures drastically warm up. Some southern NH orchards already have fruit at a susceptible stage for PC damage, as the insect prefers fruit at the 3-5 mm size for egg laying. Temperatures this week will certainly be warm enough for PC activity, so blocks of trees that are past petal fall should be protected.

Plum curculio (PC) | New England Tree Fruit Management Guide (netreefruit.org)

Tarnished Plant Bug:

Tarnished Plant Bug captures in white sticky traps have remained very low. Numbers have been suppressed due to cold temperatures. We have yet to capture our first TPB in Concord or Lebanon

Tarnished Plant Bug (TPB) | New England Tree Fruit Management Guide (netreefruit.org)

Oriental Fruit Month:

Pheromone traps and mating disruption dispensers should be deployed now. The first catch of moths from the overwintering generation is expected to be soon but none have been caught in our traps**.** OFM flight usually begins when trees are in the pink or bloom stage. No insecticides need to be applied until eggs begin to hatch; since OFM flight usually begins at bloom, it is not possible to apply an initial spray to kill adults.

Oriental fruit moth (OFM) | New England Tree Fruit Management Guide (netreefruit.org)

Oblique banded Leaf roller and Red Banded Leaf Roller:

No updates on trap numbers of there, but note that the emergence of overwintering larvae is typically completed by the end of bloom.

Obliquebanded leafroller (OBLR) | New England Tree Fruit Management Guide (netreefruit.org)

Redbanded Leafroller [fact sheet] | Extension (unh.edu)

Codling Moth:

In Concord we have yet to establish the biofix to start the codling moth model within NEWA. The biofix was established on Friday, May 12th in Belchertown, MA. Traps should be up and monitored daily in order to best track the development of this insect. Once sustained trap captures have been observed, enter the biofix date for your farm into the NEWA model to track development of the pest as egg laying approaches.

Altacor, Exirel, Verdepryn are worth considering as control options at first hatch for codling moth. These group 28 insecticides have efficacy against many lepidopteran species as well as plum curculio. CM becomes driver for insect sprays after petal fall along with plum curculio.

Codling moth (CM) | New England Tree Fruit Management Guide (netreefruit.org)

Rosey Apple Aphid:

Control can start at pink. Petal fall may be best timing. Be scouting now to be aware of possible aphid hot spots.

Aphid: Rosy Apple Aphid | New England Tree Fruit Management Guide (netreefruit.org)

European Red Mite:

Look for overwintering eggs now. Treatment windows range from green tip to pink, and then resume after petal fall. Generally, some control before pink combined with concentrated control around petal fall will provide best season-long control.

Mites (European Red Mite [ERM] and Two-spotted Spider Mite [TSSM]) | New England Tree Fruit Management Guide (netreefruit.org)

Additional Notes:

Thinning

The opportunity to thin potential fruit load begins at bloom and lasts until 3-4 weeks post petal fall. Consider using the Carbohydrate Thinning Model in NEWA to help make the best thinning management decisions based on factors such as localized weather patterns and other site-specific factors. This UMass resource outlines the best options and key considerations for chemical thinning: Fruit: HRT-Thinning Apples Chemically | Center for Agriculture, Food, and the Environment at UMass Amherst

We received a question recently about **boron applications for apples**. This is an important nutrient for apples for pollen tube development, feeder root growth and translocation of calcium, among other functions. Details about the roles of various macro and micronutrients in apples can be found here: http://fruitadvisor.info/tfruit/clements/articles/nutrientrecs.pdf

Upcoming meetings:

Carbon Capture for Agricultural Producers (Online): Thursday May 18th, 5:30-7:30 p.m.

Details here: Carbon Capture Seminar for Agricultural Producers | Extension (unh.edu)

RMA Apple Insurance Listening Session:

June 27, 2023 : Goffstown, New Hampshire

10:00 a.m. to 12:00 p.m., Hillsborough County Extension Office (Large Conference Room)

329 Mast Rd., Goffstown, NH 03045

No RSVP required.

Details here: Summer 2023 Apple Grower Meetings | RMA (usda.gov)

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Tree Fruit meeting at Demeritt Hill Farm, July 15th, 2023 5:30-7:30 pm

Tree Fruit Twilight Meeting at DeMerritt Farm | Extension (unh.edu)

Tree Fruit meeting at Apple Hill Farm, August 17th, 2023 5:30-7:30 pm

Tree Fruit Twilight Meeting at Apple Hill Farm | Extension (unh.edu)

All of the Production agriculture Twilight meetings:

2023 Production Agriculture Summer Twighlight Meeting | Extension (unh.edu)

Thank you for sticking around until the very end! See you next week!

BACK TO TOP

5/09/2023

Hi all!!

Welcome back to the NH Fruit Pest hotline, which is produced by staff members from the UNH Cooperative Extension Food and Agriculture team. Today is May 9th , 2023.

While these recordings will highlight what you need to be looking for out in the field, I highly encourage you to find the transcripts online, as they will have more details and links about many of the pests, products, and models I'll be describing in this call. Simply google "UNH Fruit IPM reports" to find them on our webpage. The transcript for this call may not be up until Wednesday afternoon.

In terms of growing degree days in Concord, NH we have accumulated 347 GDD in BE base 43F and 159 GDD in BE base 50F.

Lets jump right into plant pathogen updates for the apple growers.

Apple scab:

With all of that rain we got last week, most of you probably got a spray on last week, and potentially with a kickback product and a multisite spray. This upcoming week we are drying out a bit and NEWA is not showing any infection events, but remain vigilant and keep an eye out for any lesions on the leaves that could be forming from the infection events we had last week. Remember that this time of year can be tricky with the rapidly expanding leaves and getting the right amount of coverage to combat the apple scab – spray as close as you can to infection events to cover the most surface area of the leaves as possible.

As always, when using NEWA, make sure you are putting in the most accurate green tip date and weather station into the models to get the most accurate predictions for your orchard.

Refer to the New England Tree Fruit Guide more information: https://netreefruit.org/apples/diseases/apple-scab

Marssonina (Apple Blotch):

This is a bit of a newcomer in this area but this fungal pathogen is also a concern and can be controlled with many of the same fungicides that control apple scab. The period of main concern is really at the tail end of apple scab season, but be aware and read up here about when and how to best control it.

2023 Disease Update: Disease Conditions Favored for Marssonina Blotch and Apple Scab April 28–May 1 (psu.edu)

Fire blight:

Remember that using the fireblight model in NEWA begins with selecting the current infection pressure from the drop-down menu in the fireblight model. Choose between the three various scenarios based on your specific conditions.

Blossom blight infection risk is tracked by the accumulation of 4-day degree hour totals beginning at bloom. NEWA begins degree hour accumulation on the date of full pink or "first blossom open" for McIntosh apple. It is best if you enter your start date based on blossom dates in your apple or pear orchards and recalculate Cougarblight risk predictions.

The MacIntosh trees in the concord area are blooming, so now is the time to be ready for fire blight infection events.

If your orchard has a history of fire blight infections in previous years, the models show that you have a moderate/high risk for a fire blight infection this week, especially as we get towards the end of the week (around Friday May 12th). This is because there are probably some lingering cankers in your orchards that will produce the next round of bacteria to infect your trees if they are not treated properly. If you don't have a history of fire blight, your risk is lower this week. Be sure to check out NEWA's forecast and set the parameters for your specific orchards.

If you are interested in using SAR, or Systemic Acquired Resistance products, now could be a good time to apply those ahead of the infection event. These materials get the trees to activate their own defenses against fire blight ahead of the infection event and can be a good "tool in the toolbox" to fight fire blight in your orchards. SAR products include Actigard, Lifegard and others. Check out the New England Tree fruit guide for more info!

Fire Blight | New England Tree Fruit Management Guide (netreefruit.org)

Powdery mildew:

Dry periods during scab season can be a prime time for infection by powdery mildew. Group 3 fungicides used for scab control will also control PM. Consider saving the group 11 fungicides until petal fall for control of summer diseases.

Powdery Mildew | New England Tree Fruit Management Guide (netreefruit.org)

Related Disease note:

Blueberry growers: if the fungal pathogen mummy berry is present in your fields (essentially if you had problems with it last year) it was probably sporulating last week/into this week with that rainy weather we had. Keep an eye out for the symptoms if you have had issues with it in the past.

For more info, check out:

Over-informed on IPM - Episode 020: Mummy berry and Pollinator Protection | Extension (unh.edu)

Now moving onto the insect pests:

Just a reminder: With bloom, no insecticide sprays should be going out to protect our native pollinators!

Tarnished Plant Bug:

Tarnished Plant Bug captures in white sticky traps have remained very low. Numbers have been suppressed due to cold temperatures. Be sure to have your traps out.

Tarnished Plant Bug (TPB) | New England Tree Fruit Management Guide (netreefruit.org)

Oriental Fruit Month:

Pheromone traps and mating disruption dispensers should be deployed now. The first catch of moths from the overwintering generation is expected to be soon but none have been caught as of last week**.** No insecticides need to be applied until eggs begin to hatch; since OFM flight usually begins at bloom, it is not possible to apply an initial spray to kill adults.

Oriental fruit moth (OFM) | New England Tree Fruit Management Guide (netreefruit.org)

Oblique banded Leaf roller and Red Banded Leaf Roller:

No Oblique banded Leaf rollers caught as of last week. We did catch a single Red Banded Leaf Roller, but no biofix date for that yet.

Obliquebanded leafroller (OBLR) | New England Tree Fruit Management Guide (netreefruit.org)

Redbanded Leafroller [fact sheet] | Extension (unh.edu)

Codling Moth:

No captures yet. The average 1st catch 475 DD base 43, mating disruption with granulosis virus is a good option, Altocor for 1st gen, Assail for 2nd gen will also control apple maggot. Altacor, Exirel, Verdepryn are worth considering as control options at first hatch for codling moth. These group 28 insecticides have efficacy against many lepidopteran species as well as plum curculio. Codling moth becomes the driver for insect sprays after petal fall along with plum curculio.

Codling moth (CM) | New England Tree Fruit Management Guide (netreefruit.org)

In General:

Bt (Dipel is a good choice early) in the development of lepidopteran pests. Avoid applications during bloom.

Rosey Apple Aphid:

Control can start at pink. Petal fall may be best timing. Be scouting now to be aware of possible aphid hot spots.

Aphid: Rosy Apple Aphid | New England Tree Fruit Management Guide (netreefruit.org)

European Red Mite:

Look for overwintering eggs now. Treatment windows range from green tip to pink, and then resume after petal fall. Generally, some control before pink combined with concentrated control around petal fall will provide best season-long control.

Mites (European Red Mite [ERM] and Two-spotted Spider Mite [TSSM]) | New England Tree Fruit Management Guide (netreefruit.org)

Additional Notes:

We received a question recently about **boron applications for apples**. This is an important nutrient for apples for pollen tube development, feeder root growth and translocation of calcium, among other functions. Details about the roles of various macro and micronutrients in apples can be found here: http://fruitadvisor.info/tfruit/clements/articles/nutrientrecs.pdf

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The schedule is out for all of extension's summer twilight meetings, and I wanted to highlight a few that may be of interest to the folks that tune into this call – the full list of Extensions event offerings this summer can be found on our website!

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All of the Production agriculture Twilight meetings:

2023 Production Agriculture Summer Twighlight Meeting | Extension (unh.edu)

Thank you for sticking around until the very end! See you next week!

BACK TO TOP

5/02/2023

Hi all!!

Welcome back to the NH Fruit Pest hotline, which is produced by staff members from the UNH Cooperative Extension Food and Agriculture team. Today is May 2nd, 2023.

While these recordings will highlight what you need to be looking for out in the field, I highly encourage you to find the transcripts online, as they will have more details and links about many of the pests, products, and models I'll be describing in this call. Simply google "UNH Fruit pest hotline transcripts" to find them on our webpage.

In terms of growing degree days in Concord, NH we have accumulated 191 GDD in BE base 43F and 73 GDD in BE base 50F.

Lets jump right into plant pathogen updates for the apple growers.

Apple scab:

The 50% Macintosh green tip date was established on 4/12 in Concord. This is the biofix to start the apple scab model in NEWA. Enter the date that this occurred in your orchards for the best accuracy from the model. Ascospores are developing slowly under these cool conditions, with around 31% of spores expected to be discharged by the end of the predicted infection event running through Thursday, May 4th. The forecast currently shows a break in the rain by the afternoon of May 4th. This will be a good time to reapply fungicides and possibly use one of the materials with kickback activity depending on how well you were going into this rainy stretch and your scab pressure from last season.

Preventative fungicides such as Captan, Mancozeb or combinations of these and similar multi-site products are good choices at this stage in the season. Captan 80 and Mancozeb at 2.5 and 3 lbs/ac respectively, reapplication if more than 1". Consider mixing these materials with a single site fungicide from group 3 as we approach pink into bloom, as this is when the maximum amount of ascospores are released. With warmer temperatures coming in on Saturday, May 6th, a wetting event will require fewer hours to cause an infection. Hopefully we will start to dry out in time for bloom in most locations.

As we get reach pink and bloom stages with long periods of leaf wetness, consider some of the single site fungicides with the ability to translocate within leaf tissue for added control and some ability to kill very recent infections. An excellent description of the factors to consider for best fungicide selection can be found here: https://netreefruit.org/apples/diseases/apple-scab

Marssonina (Apple Blotch):

While we are currently in the first half of apple scab season, you should remember that this fungus is also a concern and can be controlled with many of the same fungicides that control apple scab. The period of main concern is really at the tail end of apple scab season, but be aware and read up here about when and how to best control it.

2023 Disease Update: Disease Conditions Favored for Marssonina Blotch and Apple Scab April 28–May 1 (psu.edu)

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Remember that using the fireblight model in NEWA begins with selecting the current infection pressure from the drop-down menu in the fireblight model. Choose between the three various scenarios based on your specific conditions.

Blossom blight infection risk is tracked by the accumulation of 4-day degree hour totals beginning at bloom. NEWA begins degree hour accumulation on the date of full pink or "first blossom open" for McIntosh apple. It is best if you enter your start date based on blossom dates in your apple or pear orchards and recalculate Cougarblight risk predictions.

Typically, the first few blossoms that open are a few days ahead of true first bloom because they are close to sunny large scaffolds or trunks. Fire blight bacteria are rarely active at the very early bloom time, so getting the "first blossom open" date exact is not critical. Continue monitoring the fire blight risk predictions and watching your orchards for secondary bloom because, although infection of secondary bloom may be less dangerous than that of primary bloom, infection of secondary bloom leads to continued high disease activity and higher risk in subsequent years.

Reports from southern NH indicate that the first king blossoms on early varieties such as Zestar! are just barely starting to open as of May 1. Pay attention to those Macintosh trees as we enter the beginning of next week to get an accurate date for the biofix for this model in NEWA. Temperatures will be just warm enough by the middle of next week to start paying attention for infection events. One good thing about this cool weather is that it has ruled out fireblight infections up until now. Next week we should start to pay attention in earnest.

Fire Blight | New England Tree Fruit Management Guide (netreefruit.org)

Powdery mildew:

Dry periods during scab season can be a prime time for infection by powdery mildew. Group 3 fungicides used for scab control will also control PM. Consider saving the group 11 fungicides until petal fall for control of summer diseases.

Powdery Mildew | New England Tree Fruit Management Guide (netreefruit.org)

Now moving onto the insect pests:

Tarnished Plant Bug:

Tarnished Plant Bug captures in white sticky traps have remained very low. Numbers have been suppressed due to cold temperatures.

Tarnished Plant Bug (TPB) | New England Tree Fruit Management Guide (netreefruit.org)

Oriental Fruit Month:

Pheromone traps and mating disruption dispensers should be deployed at the beginning of the pink bud stage. The first catch of moths from the overwintering generation is **expected to be soon**. Flight of OFM usually begins when trees are in the pink or bloom bud stages. No insecticides need to be applied until eggs begin to hatch; since OFM flight usually begins at bloom, it is not possible to apply an initial spray to kill adults.

Oriental fruit moth (OFM) | New England Tree Fruit Management Guide (netreefruit.org)

Oblique banded Leaf roller and Red Banded Leaf Roller:

high numbers in NY. This isn't necessarily an indicator of what we will see in NH, but we should have our traps out and eyes open.

Obliquebanded leafroller (OBLR) | New England Tree Fruit Management Guide (netreefruit.org)

Redbanded Leafroller [fact sheet] | Extension (unh.edu)

For the Oblique banded Leaf roller, almost all overwintering larvae have emerged by the end of the pink bud stage. Overwintering larvae can be sampled starting at the pink bud stage. A control spray can be applied during pink if larval populations exceed a threshold of 3% clusters infested with live larvae.

Codling Moth:

The average 1st catch 475 DD base 43, mating disruption with granulosis virus is a good option, Altocor for 1st gen, Assail for 2nd gen will also control apple maggot. Altacor, Exirel, Verdepryn are worth considering as control options at first hatch for codling moth. These group 28 insecticides have efficacy against many lepidopteran species as well as plum curculio. Codling moth becomes the driver for insect sprays after petal fall along with plum curculio.

Codling moth (CM) | New England Tree Fruit Management Guide (netreefruit.org)

In General:

Bt (Dipel is a good choice early) in the development of lepidopteran pests. Avoid applications during bloom.

Rosey Apple Aphid:

Control can start at pink. Petal fall may be best timing. Be scouting now to be aware of possible aphid hot spots.

Aphid: Rosy Apple Aphid | New England Tree Fruit Management Guide (netreefruit.org)

European Red Mite:

Look for overwintering eggs now. Treatment windows range from green tip to pink, and then resume after petal fall. Generally, some control before pink combined with concentrated control around petal fall will provide best season-long control.

Mites (European Red Mite [ERM] and Two-spotted Spider Mite [TSSM]) | New England Tree Fruit Management Guide (netreefruit.org)

Finally:

We received a question recently about **boron applications for apples**. This is an important nutrient for apples for pollen tube development, feeder root growth and translocation of calcium, among other functions. Details about the roles of various macro and micronutrients in apples can be found here: http://fruitadvisor.info/tfruit/clements/articles/nutrientrecs.pdf

Thank you for sticking around until the very end! See you next week!

BACK TO TOP

4/25/2023

Hi all!!

Welcome back to the NH Fruit Pest hotline, which is produced by staff members from the UNH Cooperative Extension Food and Agriculture team. Today is April 25, 2023.

While these recordings will highlight what you need to be looking for out in the field, I highly encourage you to find the transcripts online, as they will have more details and links about

many of the pests, products, and models I'll be describing in this call. Simply google "UNH Fruit IPM Reports" to find them on our webpage or visit: https://extension.unh.edu/resource/fruit-ipm-reports

In terms of growing degree days in Concord, NH we have accumulated 222 GDD in BE base 43F and 98 GDD in BE base 50F.

Home | NEWA (cornell.edu)

Lets jump right into plant pathogen updates for the apple growers.

For Apple Scab:

The 50% Macintosh green tip was established on 4/12 in Concord, so 4/12 is the biofix date to start using the scab model in NEWA if you are located around Concord. Enter the date that this occurred in your orchards for the best accuracy from the model.

The rain the past few days meant that most folks around the state had an apple scab infection period over the weekend, definitely on Sunday, and NEWA predicts that infection period will extend into tomorrow, April 26th. Now is the time to consider if you need to spray any kickback products on your trees to address the spores released during this infection event – remember, the closer to the actual day of infection, the more effective that kickback product will be.

An excellent description of the factors to consider for best fungicide selections can be found the New England Tree Fruit Management Guide, which can be found online at: https://netreefruit.org/apples/diseases/apple-scab

For Fire Blight:

Right now, you want to be scouting for oozing cankers left in the orchards – these cankers indicate ongoing infections and will be a source of inoculum this spring.

Copper applications between silver tip and ½' green tip are used to reduce overwintering fire blight bacteria (and apple scab).

NEWA's fire blight forecasting model begins with selecting the current infection pressure from the drop-down menu in the fire blight model. Choose between the three various scenarios based on your specific conditions at your orchard for the most accurate predictions. You will also want to input the start date of the first blossom open for your own orchards to make sure the model is accurate.

The cooler temperatures this week mean that the fire blight infection risk is low – but remember that risk with increase significantly once the temps warm up and more blossoms open – so make sure that you have plan for infection events in the near future.

Moving on from the pathogens, and onto the insect pests:

I don't have too many updates from last week, **and just as a reminder, much more information on these pests (including recommended chemical controls) can be found in the transcripts posted online of this call. Simply google "UNH Fruit IPM Reports" to find them on our webpage.**

Pear psylla:

Should be addressed early, scout for eggs on buds and leaves, new eggs light yellow, older are darker yellow. Nymphs are showing up in NY, so they are on their way.

Pear psylla | New England Tree Fruit Management Guide (netreefruit.org)

San Jose Scale:

Consider the treatment of blocks where populations are building. An application of dormant oil or an effective insecticide directed against the overwintering immatures under the 'black cap' scale covers on trunks and scaffold branches between the half-inch green and tight cluster stages will effectively reduce the potential for serious infestations later in the season. Prebloom sprays are more effective if applied dilute, at high volume; for severe infestations, follow up with summer applications of appropriate materials. Suggested action threshold: 3-6 encrusted areas per tree. Esteem/Centaur and oil is a good combo early.

San Jose scale (SJS) | New England Tree Fruit Management Guide (netreefruit.org)

Dogwood Borer:

Reminder that mating disruption works well for this pest. Trunk sprays are recommended between pink and mid-June.

Borers | New England Tree Fruit Management Guide (netreefruit.org)

European Red Mite:

Minimal numbers found to date. Look for overwintering eggs around the base of limbs on main trunk. Treatment windows range from greet tip to pink, and then resume after petal fall. Generally, some control before pink combined with concentrated control around petal fall will provide best season-long control.

Mites | New England Tree Fruit Management Guide (netreefruit.org)

Tarnished plant bug:

Sticky traps should be out now, broadleaf weeds in orchard and along perimeter are common. Look for feeding damage to buds now.

Tarnished Plant Bug (TPB) | New England Tree Fruit Management Guide (netreefruit.org)

Red Banded Leaf Roller:

Are laying eggs and larvae beginning to hatch in NY. RBLR causes damage at feeding sites under leaves resting on fruit.

Redbanded Leafroller [fact sheet] | Extension (unh.edu)

Codling Moth:

Currently overwintering in the pupal stage. First adult capture usually occurs at 220 DD – 50F BE. Concord is at roughly 98 DD 50 BE at the this time, so not quite there. Pheromone traps should be in place before the first apple blossoms open. Mating disruption dispensers should also be put in the orchard before the first blossoms open for seasonal disruption programs.

Codling moth (CM) | New England Tree Fruit Management Guide (netreefruit.org)

Spotted Tentiform Leaf Miner:

Moth flight beginning. The first flight of STLM adults usually begins between the green tip and half-inch bud stage. No control measures are recommended against adults. It is very difficult to predict larval infestation levels from adult catches in pheromone traps. Sometimes catches may be very high, but if conditions are unfavorable for oviposition during the flight in the spring (cold, rainy, and windy weather – just like we had this week!), very few eggs are laid and subsequent larval populations will be low.

Leafminers (LM) | New England Tree Fruit Management Guide (netreefruit.org)

Green speckled fruit worm:

Are laying eggs and larvae beginning to hatch in NY.

Speckled green fruitworm | New England Tree Fruit Management Guide (netreefruit.org)

Oriental Fruit Moth:

No OFM flight is expected currently. Pheromone traps and mating disruption dispensers should be deployed at the beginning of the pink bud stage.

Oriental Fruit Moth (OFM) | New England Tree Fruit Management Guide (netreefruit.org)

Oblique banded leaf roller (OBLR):

Overwintering OBLR larvae usually begin to emerge at the half-inch green growth stage. No control measures are recommended at this time because most overwintering larvae have not yet emerged and will escape residual effectiveness of most insecticides.

Obliquebanded leafroller (OBLR) | New England Tree Fruit Management Guide (netreefruit.org)

That's all that I have for the hotline this week!

As always, refer to the tree fruit guide for more info and recommendations:

New England Tree Fruit Management Guide | (netreefruit.org)

See you all next week!

BACK TO TOP

4/18/2023

Hi all!!

Welcome back to the NH Fruit Pest hotline, which is produced by staff members from the UNH Cooperative Extension Food and Agriculture team.

While these recordings will highlight what you need to be looking for out in the field, I highly encourage you to find the transcripts online, as they will have more details and links about many of the pests, products, and models I'll be describing in this call. Simply google "UNH Fruit pest hotline transcripts" to find them on our webpage.

In terms of growing degree days in Concord, NH we have accumulated 126 GDD in BE base 43F and 70 GDD in BE base 50F.

Home | NEWA (cornell.edu)

Lets jump right into plant pathogen updates for the apple growers.

For Apple Scab:

The 50% Macintosh green tip was established last week on 4/12 in Concord, so 4/12 is the biofix date to start using the scab model in NEWA if you are located around Concord. Enter the date that this occurred in your orchards for the best accuracy from the model.

Ascospores are developing slowly, with around 3% of spores expected to be discharged by the end of the predicted infection event running through Tuesday, April 18th. More rain is predicted later in the week through Monday, April 24th, so protection going into that stretch with a rain-fast product is advisable.

Preventative fungicides such as Captan, Mancozeb or combinations of these and similar multi-site products are good choices at this stage in the season. Captan 80 and Mancozeb at 2.5 and 3 lbs/ac respectively, reapplication if more than 1".

Remember that Captan and oil should not be applied within 7-10 days of one another to prevent phytotoxicity, particularly after a frost or slow drying conditions.

As we get reach pink and bloom stages with long periods of leaf wetness, consider some of the single site fungicides with the ability to translocate within leaf tissue for added control and some ability to kill very recent infections.

It is also worth noting is that some fungicides such as the groups 3, 7, 9 and 11 have activity on other fungal pathogens of controlled during this time of year, such as powdery mildew, rusts, black and white rot. Single site fungicides should be added around bloom or if several days of rain are predicted.

An excellent description of the factors to consider for best fungicide selection can be found here: https://netreefruit.org/apples/diseases/apple-scab

For Fire Blight:

Scout for oozing cankers left in the orchard after dormant season pruning as these cankers are an indicator of ongoing infections. Copper applications between silver tip and ½' green for reduction of overwintering fire blight bacteria (and apple scab).

NEWA's fire blight forecasting model begins with selecting the current infection pressure from the drop-down menu in the fire blight model. Choose between the three various scenarios based on your specific conditions.

Blossom blight infection risk is tracked by the accumulation of 4-day degree hour totals beginning at bloom. NEWA begins degree hour accumulation on the date of full pink or "first blossom open" for McIntosh apple. It is best if you enter your start date based on blossom dates in your apple or pear orchards and recalculate Cougar blight risk predictions.

Typically, the first few blossoms that open are a few days ahead of true first bloom because they are close to sunny large scaffolds or trunks. Fire blight bacteria are rarely active at the very early bloom time, so getting the "first blossom open" date exact is not critical. Continue monitoring the fire blight risk predictions and watching your orchards for secondary bloom because, although infection of secondary bloom may be less dangerous than that of primary bloom, infection of secondary bloom leads to continued high disease activity and higher risk in subsequent years.

More info can be found here: Fire Blight | New England Tree Fruit Management Guide (netreefruit.org)

Now moving onto the insect pests.

As a reminder, much more information on these pests (including recommended chemical controls) can be found in the transcripts posted online of this call. Simply google "UNH Fruit pest hotline transcripts" to find them on our webpage.

Pear psylla:

Should be addressed early, scout for eggs on buds and leaves, new eggs light yellow, older are darker yellow. Nymphs are beginning to show up this week in NY, which is an early indicator of development for us here in NH.

Pear psylla | New England Tree Fruit Management Guide (netreefruit.org)

San Jose Scale:

Consider the treatment of blocks where populations building. An application of dormant oil or an effective insecticide directed against the overwintering immatures under the 'black cap' scale covers on trunks and scaffold branches between the half-inch green and tight cluster stages will effectively reduce the potential for serious infestations later in the season. Prebloom sprays are more effective if applied dilute, at high volume; for severe infestations, follow up with summer applications of appropriate materials. Suggested action threshold: 3-6 encrusted areas per tree. SJS – Overwintering. Esteem/Centaur and oil is a good combo early.

San Jose scale (SJS) | New England Tree Fruit Management Guide (netreefruit.org)

Dogwood Borer:

Reminder that mating disruption works well for this pest. Trunk sprays are recommended between pink and mid-June.

Borers | New England Tree Fruit Management Guide (netreefruit.org)

European Red Mite:

Minimal numbers found to date. Look for overwintering eggs around the base of limbs on main trunk. Treatment windows range from greet tip to pink, and then resume after petal fall. Generally, some control before pink combined with concentrated control around petal fall will provide best season-long control.

Mites | New England Tree Fruit Management Guide (netreefruit.org)

Tarnished plant bug:

Sticky traps should be out now, broadleaf weeds in orchard and along perimeter are common. Look for feeding damage to buds now. 3 timings beginning at TC, P, PF, pyrethroids work well.

Tarnished Plant Bug (TPB) | New England Tree Fruit Management Guide (netreefruit.org)

Red Banded Leaf Roller:

Are laying eggs and larvae beginning to hatch in NY. RBLR causes damage at feeding sites under leaves resting on fruit.

Redbanded Leafroller [fact sheet] | Extension (unh.edu)

Codling Moth:

Currently overwintering in the pupal stage. First adult capture usually occurs at 220 DD – 50F BE. Concord is at roughly 84 DD 50 BE at the this time, so not quite there. Pheromone traps should be in place before the first apple blossoms open. Mating disruption dispensers should also be put in the orchard before the first blossoms open for seasonal disruption programs.

Codling moth (CM) | New England Tree Fruit Management Guide (netreefruit.org)

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Moth flight beginning. The first flight of STLM adults usually begins between the green tip and half-inch bud stage. No control measures are recommended against adults. It is very difficult to predict larval infestation levels from adult catches in pheromone traps. Sometimes catches may be very high, but if conditions are unfavorable for oviposition during the flight in the spring (cold, rainy, and windy weather), very few eggs are laid and subsequent larval populations will be low.

Leafminers (LM) | New England Tree Fruit Management Guide (netreefruit.org)

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Speckled green fruitworm | New England Tree Fruit Management Guide (netreefruit.org)

Oriental Fruit Moth:

No OFM flight is expected currently. Pheromone traps and mating disruption dispensers should be deployed at the beginning of the pink bud stage.

Oriental Fruit Moth (OFM) | New England Tree Fruit Management Guide (netreefruit.org)

Oblique banded leaf roller (OBLR):

Overwintering OBLR larvae usually begin to emerge at the half-inch green growth stage. No control measures are recommended at this time because most overwintering larvae have not yet emerged and will escape residual effectiveness of most insecticides.

Obliquebanded leafroller (OBLR) | New England Tree Fruit Management Guide (netreefruit.org)

Notes on the control of Lepidopteran Pests:

Bt (Dipel is a good choice early) can be helpful, but avoid applications during bloom.

Altacor, Exirel, Verdepryn are worth considering as control options at first hatch for codling moth. These group 28 insecticides have efficacy against many lepidopteran species as well as plum curculio. Codling moth becomes driver for insect sprays after petal fall along with plum curculio.

Rosey Apple Aphid control can start at pink. Petal fall may be best timing.

As always, refer to the tree fruit guide for more info and recommendations!

New England Tree Fruit Management Guide | (netreefruit.org)

One Final announcement:

SEEKING PARTICIPANTS FOR A STATEWIDE NATIVE BEE PROJECT!

Shyloh Favreau, a M.S. student at UNH (you may know him as the Extension Program Manager for our Soil Testing Service) is looking for apple orchards across New Hampshire to participate in his thesis project investigating the native bee

communities **during peak apple bloom, 2023.** This project would involve a couple (4 people at most) of Extension staff and undergraduate students coming to your orchard once or twice during peak bloom to collect bees in nets and bowls with a follow up survey later in the season. Please reach out to Shyloh for more details and if you would like to participate in his study. Cell phone: 828-964-8404,
Email: Shyloh.Favreau@unh.edu.