



Vol. 20, No. 16

July 2, 2020

In this Issue

| | |
|---|---|
| 2020 Degree Day Accumulations | 2 |
| Precipitation | 2 |
| Diseases..... | 3 |
| Apple – Scab..... | 3 |
| Apple & Pear – Fire Blight | 3 |
| Brooks Spot | 4 |
| Black Rot/Frog-Eye Leaf Spot..... | 4 |
| Flayspeck and Sooty Blotch..... | 5 |
| Powdery Mildew – Young Trees..... | 5 |
| Stone Fruit – Brown Rot and Peach Scab..... | 5 |
| Insects..... | 6 |
| Apple Insects..... | 6 |
| Mites | 6 |
| Apple Maggot..... | 6 |
| Pear Insects | 6 |
| Stone Fruit Insects..... | 7 |
| Horticulture | 7 |
| Fertilizer | 7 |
| Calcium Nutrition | 7 |
| Irrigating Young Plantings and Nurseries..... | 7 |
| Young Plantings..... | 7 |
| Nursery Trees | 8 |
| Herbicide..... | 8 |
| Mowing | 8 |
| Stone Fruit – Hand Thinning | 8 |
| 2020 Pest Management/Spray Guides | 8 |
| Hyperlinks to Tree Fruit Management Guides..... | 8 |

****UPDATE: Currently I am not conducting drop-in farm or site visits due to COVID. Please contact me if you have a specific question or a concern and now I may be able to visit.****

You can reach me by email at mcortens@perennia.ca or by mobile phone at 902-679-7908. Agriculture Specialists are beginning limited restart scenarios for on-farm visits under strict guidelines: [Learn more.](#)

2020 Degree Day Accumulations

The heat wave has now essentially closed the gap between this season's degree day accumulations and the 10-year average.

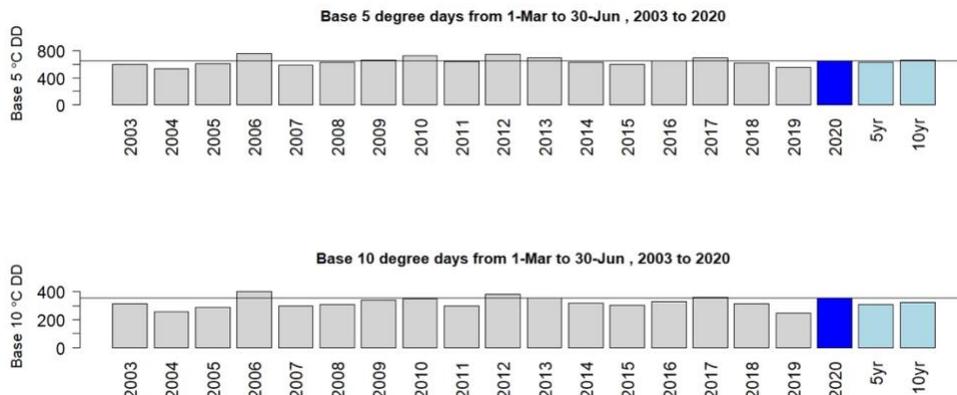


Figure 1: Heating degree day accumulations for plant (above 5°C) and insect (above 10°C) development from March 1st to June 30th for the past 17 seasons. Provided by Jeff Franklin (AAFC).

- 4% more plant development heat units compared to the 5-year average, and 1% less compared to the 10-year average
- 16% more plant development heat units compared to 2019, and 5% more compared with 2018
- 14% more insect development heat units compared to the 5-year average, and 9% more compared to the 10-year average

Precipitation

The AAFC Agroclimate map shown in Figure 2 is reporting the percent of average precipitation over the past 30 days since June 28th. Areas in red have received less than 40%, regions in orange received 40-60% and one dot of yellow recorded 60-85% of the average precipitation. Recommendations are in the horticulture section.

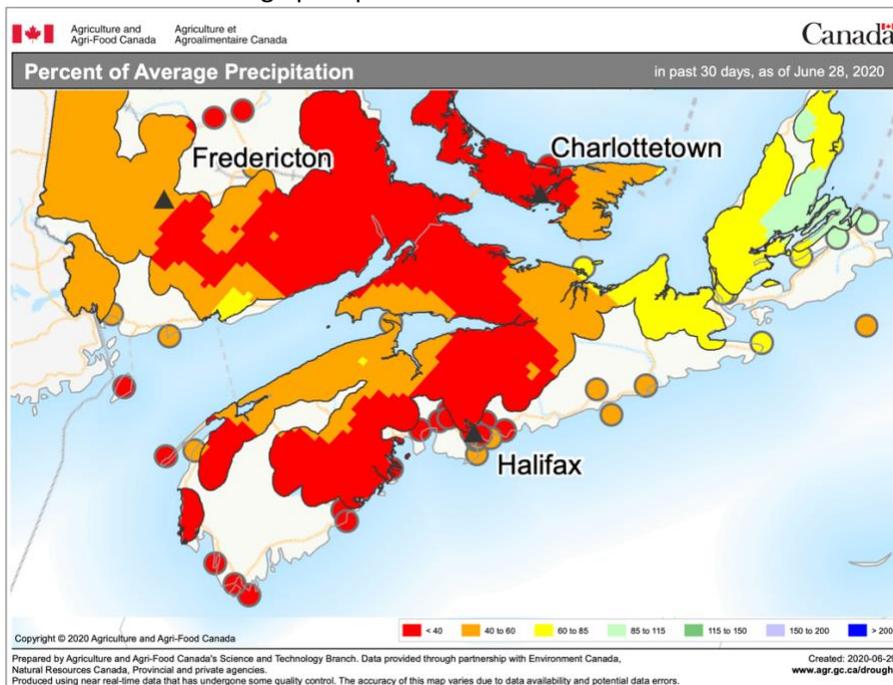


Figure 2: AAFC Agroclimate map reporting the percent of average precipitation over the past 30 days since June 28th.

Diseases

Apple – Scab

Table 1: Apple scab infection events in Kentville from June 24th to July 2nd, based on the Modified Mills Table.

| No. | Start of wetting | End of wetting | Infection period (hrs) | Average Temp (°C) | Rainfall (mm) | Type (Primary or Secondary) | Ascospore maturity | Notes |
|-----|-------------------------|-------------------------|------------------------|-------------------|---------------|--|----------------------------|---|
| 1 | 7:00 PM Fri, June 26 | 9:00 AM Sun, June 27 | 14 | 20.8 | 14.0 | Primary – Moderate <i>Light = 10 hrs, moderate = 13 hrs, heavy = 21 hrs</i> | 100% (released 3.3%) | Very scattered showers throughout the Valley. Depending on location this could have started sooner. |

Recommendations:

- According to the model, ascospores have reached 100% maturity. Regions that received scattered showers saw a release of the remaining 3.3% of ascospores. Regions that haven't had rain this week still have spores available for release.
- Do not reduce fungicide spray intervals until you can identify your pressure from secondary scab lesions.
- The pre-harvest interval for EBDC fungicides (e.g. Manzate, Dithane, Polyram) for fruit destined for the United States is 77 days versus 45 days for the domestic market. An application of EBDC on July 2nd would require until Sept 17th to meet pre-harvest requirements for the United States.

Apple & Pear – Fire Blight

Blossom Blight Management

Blossom blight symptom development is showing up in multiple regions of the Valley.

Recommendations:

- If blossom blight infections are extensive then past experience has shown that cutting it out can unintentionally spread the infections further. Apply Apogee and remove infections during dormant pruning.
- Focus on young trees for management of blossom blight infections. Cut out infections when a period of 2 dry days are in the forecast. Drop shoots in the laneways to let dry thoroughly. Don't make piles that will prevent the wood from drying.
- When pruning, remove fire blight strikes at least 2-4 ft below active infections. Being aggressive at the first sign of symptoms will help prevent the re-occurrence of symptoms and the need for continuous cutting back. Disinfect tools between blocks.
- Avoid the temptation to rip off infections by hand when passing by. Ooze is present and rough removal could transfer bacteria to the new wound.
- Make absolutely sure trees are dry before cutting anything. Dew or moisture should not be present on trees.
- Pay careful attention to nurseries or young trees planted this year that might be in bloom and follow recommended practices for blossom blight prevention if a wetting event occurs.

Other General Management Practices

Recommendations:

- Monitor for symptoms, including shoot blight on suckers that can infect the rootstock.
- For on-farm nurseries, consider applying a copper product at the lowest labeled rate prior to training trees and follow the labeled REI. Make cuts on only dry and sunny days.
- Be cautious when applying post-emergent herbicides to prevent injury to young trees.
- If you begin to observe fire blight infections and have not yet made any Apogee treatments to the infected and/or neighbouring blocks, you may wish to treat these areas with Apogee immediately to provide some resistance to shoot blight infection after 10-14 days.



Figure 3: Symptoms of blossom blight infection (left) and shoot blight infection on a sucker (right) in 2020.

Brooks Spot

Brooks spot is caused by a fungus that creates sunken, dark green lesions on the fruit. It is a minor disease that has been an issue on Honeycrisp in the past.

Recommendations:

- Include a product for cover sprays that is labelled for brooks spot such as Inspire Super and Aprovia Top.
- The symptoms of Brooks Spot can resemble lenticel breakdown and bitter pit which are also common on Honeycrisp.

Black Rot/Frog-Eye Leaf Spot

Recommendations:

- Include a product for cover sprays that is labelled for black rot such as Captan, Maestro, and Pristine. Where there is a history of black rot, do not reduce rates of Captan after bloom.
- In dry weather, prune out and destroy diseased and dead wood. The black rot fungus can survive on dead tissue that is left in orchard alleyways.
- Check for nearby brush or wood piles because they serve as a major source of inoculum. Remove the brush pile to reduce the chance of infection.

Flyspeck and Sooty Blotch

These summer diseases develop on the surface of the fruit in midsummer until harvest. They are caused by fungi that overwinter in dead twigs and the fungi tend to cause more infections under conditions of moderate temperature, high humidity and rainfall.

Recommendations:

- Include a product for cover sprays that is labelled for flyspeck and sooty blotch such as Captan, Maestro, Inspire Super, Aprovia Top, Allegro, and Pristine.

Powdery Mildew – Young Trees

Recommendations:

- Infections that emerged in the spring are not eradicated by fungicides (Figure 4, left). The goal is to protect new growth only (Figure 4, right). Check new terminal growth for signs of infection. On young trees, monitor for active mildew as terminal shoots continue to grow.
- On young blocks consider using sulfur, which is a group M product for powdery mildew management that will not develop resistance. However, mite flare ups may occur.
- Pay particular attention to susceptible and high-value varieties such as Honeycrisp and Gala.



Figure 4: Symptoms of powdery mildew on overwintered buds that cannot be eradicated (left) and on new growth signifying active mildew and new infections (right).

Stone Fruit – Brown Rot and Peach Scab

Recommendations:

- Fungicide protection from brown rot should be maintained, especially during periods of warm, wet weather.
- Peaches are susceptible to peach scab infections from shuck fall to 4-6 weeks before harvest. Symptoms are visible on the bark. The shuck fall application is particularly important for disease control. Periods of wet weather will require additional applications until 4-6 weeks before harvest.

Insects

Apple Insects

Recommendations:

- Monitor for white apple leafhopper. Sevin XLR applications on mature blocks will control leafhopper but monitor non-bearing plants for leafhopper. If treatment is required, a neonicotinoid, Sivanto Prime, or Exirel would control leafhopper and also pick up aphids.
- Monitor for rosy apple aphid and green aphid. In young trees the aphids can disrupt shoot growth. Monitor nursery plantings as well. Now that leaves are curling high water volumes are needed for effectiveness. Be cognisant of REIs if installing trellis.

Mites

European red mite, two spotted spider mite and apple rust mite are the prominent species that affect apple trees. Although not directly damaging to the fruit, these mites in all their motile life stages can drain the nutrients from the trees and dramatically degrade fruit quality.

Recommendations:

- Scout your orchards or check your scouting reports to see if there is a treatable population.
- Both European red mite and two-spotted spider mite are controlled by the products Acramite, Apollo, Kanemite, and Nealta.
- All three mite species are controlled by Nexter and Envidor.
- Mites have many generations per year and therefore have a high potential to develop resistance. For resistance management, it is critical to rotate miticide classes. The use of dormant oil applications will also help to delay resistance selection for European Red Mite.

Apple Maggot

The adults emerge in early July from the soil where they overwintered as pupae. About 10 to 14 days later they begin to lay eggs. The eggs are laid just under the skin of the apple fruit and the larvae hatch and mine the fruit.

Recommendations:

- If monitoring your own traps they can be hung in the orchard. The economic threshold is 1 maggot fly per orchard on a yellow sticky board. Apply a treatment 7-10 days after the first fly is captured on a yellow sticky board or immediately after a female is captured on a red sphere.

Pear Insects

Recommendations:

- **Pear psylla:** Agri-Mek may cause fruit injury if temperatures are expected to exceed 30°C within 24 hrs of application. Neonic products are another option.
- **Pear rust mite:** Can go unnoticed until heavy russetting extending from the base to the top of the fruit. Growers that apply Agri-mek for pear psylla control would also obtain pear rust mite control. Nexter or Envidor would be other options for pear rust mite control.

Stone Fruit Insects

Recommendations:

- Monitor mite and aphid populations. Prolonged feeding especially in early- to mid-summer can affect next year's fruit set.

Horticulture

Fertilizer

- If granular fertilizer is applied now, the risk is that any dry weather in July will slow the release. Late release will prevent trees from hardening off before the winter. Be especially careful not to add more fertilizer if no rain has occurred since the last granular was applied.

Calcium Nutrition

- The goal of Ca sprays is to increase the concentration of Ca in the fruit and reduce bitter bit incidence. Foliar calcium applications can begin early at 7-10 days after petal fall to be most effective. Regular calcium chloride applied at two-week intervals is better than occasional, high-rate applications.
- The recommended rate is 4 to 14 pounds of elemental calcium per acre in a season spread over six to eight cover sprays. The percentage of elemental calcium will be listed on the label.
- Ca has very low movement within the tree and needs to be applied directly to the fruit surface to be absorbed. Therefore, thorough coverage is important to cover developing fruit.
- Calcium chloride flake (77% Ca) is the most economical Ca material to use but also the highest risk for foliar burn. Apply calcium chloride flake at no more than 4.5 kg per 1000 L of spray solution. The risk of leaf or fruit damage from calcium is highest in hot and dry weather. Susceptible varieties can develop lenticel spotting if damaged.
- Risk of leaf injury may be enhanced by Captan. Incompatibility has been observed with Epsom salts, and liquid or emulsifiable pesticide formulations in some cases. Do not apply calcium with apogee.

Irrigating Young Plantings and Nurseries

- If capable, it is advisable to water young trees and nurseries that have underdeveloped root systems before they show signs of water stress. Trees planted before the heat wave are most susceptible.
- Watering can be a significant investment in time so ensure that enough water gets down to the roots where it will be accessible long-term.
- The purpose of drip irrigation is to prevent rather than relieve moisture stress. Typically, 1 inch (25 mm) of water is applied each week unless indicated otherwise through soil moisture monitoring.
- The frequency of irrigation depends on the soil type. In clay soils that will hold water the application can be supplied twice per week whereas for sandy soils the water is applied more frequently about every other day.

Young Plantings

- Remove root suckers. Suckers compete with the main tree for water and nutrients. They harbour pests, and they are an entry point for fire blight. Pull or break off suckers because otherwise cutting them would let them rebound.
- Ensure that deer fencing is installed as soon as possible to protect new growth on young trees. Even leaving gates open during the day has allowed deer to graze.
- Newly planted trees should be pruned for tree structure and supported as early as possible after planting.

- Select strong terminals on 2- to 3-year-old trees and remove competing terminals.
- Tie leaders to trellis before the weight of some fruit or high winds break the new growth.
- Practice weed control because weeds will use plenty of moisture.

Nursery Trees

- Avoid sleepers by removing the rootstock leaves a few at a time over a couple of weeks to ease the bud into growing. The new shoot will be about a foot tall before all leaves are removed from the rootstock.
- For bench grafts, leave some shoots on the rootstock to feed the scion as the callus tissue develops. Locally, rootstock leaves have been stripped when the scion has 8-10 leaves. Early in the season, leave at least an extra scion leader for insurance.
- Scion leaders will need support. Staking late could increase the chance of breaking the leader.
- Aim is registered for nurseries but it is a hot product and caution is recommended around green tissue.
- Monitor for aphids, leafhoppers, and tarnished plant bug.

Herbicide

- Weeds compete for moisture. Weed control becomes especially important when moisture is a limiting factor.
- Maintaining weed free strips from bud break to 30-days after full bloom has the greatest impact on tree growth and yield. Refer to the [2020 Tree Fruit Weed Management Guide](#) for options.
- If weeds are becoming an issue, consider a treatment of burndown herbicide. A clean floor is needed in the case of any residuals.

Mowing

- As grass becomes long the extra surface area increases transpiration. Keep grass mowed to conserve moisture.
- Keeping the orchard floor cover mowed will minimize dandelion flowers that attract bees, which increases the safety of insecticide applications.

Stone Fruit – Hand Thinning

- Hand thin peaches to 6-7 inches apart.

2020 Pest Management/Spray Guides

Hyperlinks to Tree Fruit Management Guides

All changes new to the 2020 guides are in red text to make it clear to you what changes have been made. If you do not wish to have the red text in your copy, please print it in black and white.

- Download the [2020 Pome Fruit Guide](#)
- Download the [2020 Organic Apple Guide](#)
- Download the [2020 Stone Fruit Guide](#)
- Download the [2020 Thinners and Growth Regulators Guide](#)
- Download the [2020 Tree Fruit Weed Management Guide](#)

This Orchard Outlook has been published with the input of the Orchard Outlook Committee including Erika Bent, Suzanne Blatt, Bill Craig, Danny Davison, Jeff Franklin, Joan Hebb, Dale Hebb, and Larry Lutz.

Edited by Michelle Cortens, Tree Fruit Specialist

Perennia Food and Agriculture Inc. Email: mcortens@perennia.ca