

Orchard Outlook



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*****Please note that this will be the last weekly issue of Orchard Outlook for 2018. Orchard Outlook will continue to be produced occasionally for the remainder of the season.*****

2018 Review of Disease Incidence

Apple – Apple Scab

The infection periods for the 2018 season are summarized in the table below. During early infection periods the first spur leaves were vulnerable to infection. After bloom and until terminal bud set, the leaves of the extension shoots were developing and most susceptible.

Table 1: Summary of apple scab infection periods recorded at the Kentville Agriculture Centre in 2018, based on the Modified Mills Table.

| No. | Date | Wetness Duration (hrs) | Average Temp (°C) | Type (Primary or Secondary) |
|-----|-------------------|------------------------|-------------------|-----------------------------|
| 1 | April 26 | 8 | 13.7 | Primary-None to Light |
| 2 | April 29/April 30 | 20 | 8.0 | Primary-Light to Moderate |
| 3 | May 3/May 4 | 18 | 7.0 | Primary-Light |
| 4 | May 10/May 11 | 18 | 11.4 | Primary-Moderate |
| 5 | May 15/May 16 | 12 | 12.0 | Primary-Light |
| 6 | May 20/May 21 | 25 | 13.3 | Primary-Heavy |
| 7 | May 25/May 26 | 18 | 15.6 | Primary-Moderate to Heavy |
| 8 | June 2 | 8 | 16.0 | Primary-Light |
| 9 | June 5/June 6 | 31 | 7.0 | Primary-Moderate |
| 10 | June 14/June 15 | 25 | 8.0 | Primary-Moderate |
| 11 | June 18/ June 19 | 26 | 14.5 | Primary-Heavy |
| 12 | June 25/ June 26 | 26 | 10.0 | Primary-Moderate |
| 13 | June 29 | 10 | 18.0 | Secondary-Moderate |
| 14 | July 22 | 6 | 18.2 | Secondary-Light |
| 15 | July 22/July 23 | 10 | 23.1 | Secondary-Moderate |
| 16 | July 28/July 29 | 12 | 21.5 | Secondary-Moderate |

Review of Fire Blight

The first predicted blossom blight infection event on June 1st occurred during the peak of full bloom when many blossoms were open and vulnerable to infection. Thorough coverage of blossoms with streptomycin would have been critical to prevent infection. Some blossom blight did occur on inner canopies that did not receive adequate coverage. Symptoms of blossom blight started to appear by late June.

Thereafter, EIPs remained relatively low until they rose above 100 again on June 16th and remained high for the rest of the season. The dry weather in July was a good opportunity to remove blossoms from new plantings to prevent blossom infections.

Fire blight symptoms appeared across the Valley in several locations. Some were the result of overwintering cankers that had formed in 2017 and acted as nearby sources of bacteria. Occasionally, trees with cankers have collapsed and although the canker did not have active ooze it did test positive for fire blight. A tree that has had a fire blight infection will likely always have the fire blight bacteria among its tissues. For this reason, scion wood for nurseries should not be collected from blocks with a history of fire blight. Infected shoots and full trees have been removed throughout the season to keep inoculum levels low.

Review of Powdery Mildew

The warm and humid weather has encouraged a high incidence of powdery mildew infections this year. In particular, the hot and humid weather without precipitation in periods of June and most of July allowed the fungus to spread to new growth. Powdery mildew conidia germinate in high relative humidity at temperatures between 10 to 25°C and in the absence of leaf wetting.

Powdery mildew is a recurrent problem once infections become established. Overwintering infections can lead to high levels of inoculum next season and inhibit flower bud formation and shoot growth. Powdery mildew in mature blocks will be best controlled by pruning infected branches and preventing the spread using well-timed fungicide applications next spring. On young trees and nurseries still filling space, powdery mildew protection should be maintained while terminal shoots continue to grow.

Insects

Insect management programs should be based on grower monitoring and/or scouting reports. Refer to the [July 18th Orchard Outlook](#) for more information regarding green apple aphid, woolly apple aphid, apple maggot, mites, and potato leafhopper.

Apple Maggot

Recommendations:

- Significant rainfall will wash off insecticide residues that are needed to ward off apple maggot flies. Re-treatment is required after 10-14 days or cumulative rainfall of 12.5-25 mm (0.5-1 inch). Insecticide residue should generally be maintained through the end of August.

Obliquebanded Leafroller

Recommendations:

- Scout your orchards or check scouting reports to see if there is a treatable population.
- According to Erika Bent, APM, the second generation of leafroller larvae were observed last week – indicating that egg hatch has begun. If needed, treatment can begin asap.
- Refer to the [Pome Fruit Management Guide](#) for a list of products.

Horticulture

Refer to the [July 18th Orchard Outlook](#) for more information regarding nurseries, site preparation, fertilizer, shoot selection, tree training, mowing, weed control, fruit thinning, and calcium sprays.

ReTain and Harvista Preharvest Strategies

As August begins, the time is approaching to consider ReTain and or Harvista as harvest management tools. ReTain's active ingredient (aviglycine hydrochloride) inhibits the production of ethylene in plant tissues, delaying fruit maturity and preventing fruit drop. Potential benefits of ReTain include harvest management to delay the maturity in blocks of a single variety, improved fruit size (as fruit hangs longer on the tree), maintenance of firmness, and reduced greasiness and cracking. ReTain can also offer additional benefits including improved storage quality. However, Retain can also slow red colour development. Delays to fruit colour development can be minimized by lowering the rate of application or by delaying the harvest period.

Recommendations:

- Note that the amount of ethylene produced differs by apple variety and so the variety's response to ReTain will also differ. McIntosh is a high ethylene producing variety and the full rate is often needed 3 weeks before harvest to slow its maturity. Sensitive varieties like Gala, Jonagold and Honeycrisp produce low ethylene and are more sensitive and thus severely delayed by ReTain. The normal recommended rate in Michigan is half the rate.
- Review Philip Schwallier and Amy Irish-Brown's article at the [New York State Horticultural Society](#) for more information.
- Consider testing ReTain or Harvista on a small block before widescale use as we do not yet have much local information on these products.
- The effectiveness of ReTain is dose-dependent and time-dependent. Later applications and smaller doses have less effect on maturity and colour development.
- ReTain applied 3-4 weeks before harvest will delay the harvest period up to 7 to 10 days.

Harvista (1-methylcyclopropene) is another product for preharvest management that was recently registered in 2017. The mode of action is different from Retain because Harvista blocks ethylene action in fruit, even after ethylene has been produced. Therefore, Harvista can act quickly to slow maturity whereas ReTain requires a timely application to fruit before ethylene escalates.

Recommendations:

- Harvista can be applied 3 to 21 days before the anticipated harvest and at a higher rate for fruit that are more advanced in maturity.
- Lower rates are recommended for biocoloured apple varieties to allow colour development to progress.
- A customized sprayer system is required for Harvista applications and will be on display during this week's orchard tour.

Leaf Tissue Sampling for Nutrient Analysis

Nutrient levels in leaf tissues change with the growing season. The desired nutrient levels for apples were based on leaves being collected once the trees have stopped growing (late July to early August in Nova Scotia). Collecting samples prior to or after the specified period may give inaccurate nutrient level readings. Annual fertilizer applications should be based on tissue analysis reports and other factors such as pruning, vegetative growth and anticipated crop load.

Recommendations:

- Collect leaves for nutrient analysis after terminal buds set on this season's extension growth. Complete sampling by mid-August.
- **The protocol:**
 - A sample usually represents a block of orchard 1 to 2 hectares in size.
 - Sample 10 apple leaves from each of 10 representative trees of the same variety for a total sample size of 100 leaves. Sample from the same trees every year to limit the variation between years.
 - Collect leaves from the mid-point of the current year's growth from all sides of the tree.
 - Place the leaf samples in a **paper** bag.
 - If there are problem areas within the orchard, then sample trees in this area separately.
 - The leaf sample needs to be submitted as soon as possible after collection in order to obtain an accurate nutrient analysis. If the sample cannot be submitted right away, refrigerate until it can be submitted.
 - Always label samples with the grower or farm name, mailing address, phone number, farm registration number, orchard block name, variety and sample number.
- Take an accurate sample by reviewing the guidelines:
 - [How to take a plant tissue test](#)
 - [Fruit crop tissue sampling guide](#)
- For fees, contact the lab or your choice or visit the [Nova Scotia Department of Agriculture website](#).

Soil Sampling for Nutrient Analysis

Collecting a soil sample from the block will provide additional information when it comes to determining fertilizer requirements. Soil samples do not need to be collected on an annual basis but should be collected at least once every three years.

Recommendations:

- Two to four soil cores should be taken at the drip line from each of the 10 trees. The soil cores should be mixed and a representative sample placed in a soil box for analysis. Soil boxes can be obtained from the NSDA office in Kentville.
- Early August is a good time to sample orchard soil unless the soil is unusually dry or recently leached by heavy rains. If the soil is too dry it is very difficult to extract full 0-15 cm (0-6") soil samples and a better sample will be obtained by waiting until light rain has moistened the topsoil.

Summer Pruning

Terminal buds have set in many bearing orchards and therefore summer pruning can begin. Removing a shoot at this time in the season will not stimulate vegetative growth. The most important objective of summer pruning is to increase light penetration into the canopy to improve fruit colour.

Recommendations:

- Summer pruning can help control excessive vegetative growth in orchards with reduced crop load.
- Pruning should only be done when leaves are dry to prevent spreading fire blight. Blocks with a history of severe fire blight pressure could be avoided.
- Sanitizing pruning equipment at periodic intervals is a good practice to eliminate spreading fire blight between blocks.
- Strong uprights that are tipped back will only promote several breaks to occur next spring causing more shading in the canopy. Therefore, completely remove strong uprights.

Events & Notices

NSFGA Summer Orchard Tour

Please join us on Thursday, August 2, 2018 when the tour will travel to the east side of the Valley. Come and ride the double-decker Wolfville Magic Winery bus for the whole tour. The final agenda is below:

8:30 – Stirling Fruit Farms – Coffee and Snacks

10317 Hwy #1, Wolfville

- Parking lot near new farm market

8:30-9:00 – Introductions and Greetings

- Phil Schwallier, Michigan State University, will be joining us for the day

9:00 – Board Buses

9:15-10:00 – Canard Orchards

1489 Hwy #341, Centreville

- Nursery trees

10:00 – Board Buses

10:15-11:45 – Eisses' Farms

1190 Thorpe Road, Centreville

- Ridging

- Chemical fruitlet thinning trial with Brevis (Metamitron)

- Precision thinning

11:45 – Board Buses

12:00-1:15 – Van Meekeren Farms – Lunch

237 Thorpe Road, Lakeville

- Harvista equipment showcase

1:15-2:45 – Van Meekeren Farms

- Cover crop biofumigant – an option for replant disease?

- Alleyway cover crops. Can we use them to our advantage?

- Soil pit with Amy Sangster, Perennia

2:45 – Board Buses

3:00-3:45 – Stirling Fruit Farms @ Woodville

5566 Hwy #221, Woodville

- Soil pit with Amy Sangster, Perennia
- New planting

3:45 – Board Buses

4:00/4:30 –Stirling Fruit Farms @ Wolfville – Tour Concludes

10317 Hwy #1, Wolfville

Apple Maggot Inspection Program

The Apple Maggot Inspection team, led by Elizabeth Nichols, will be starting up for another season on **August 6th, 2018**. As you are aware, in order to export apples, there is to be zero apple maggot found in any blocks that are to be shipped; therefore, the inspections must take place to determine this result. If you have blocks that are not for export, please let Candy (NSFGA) know as these blocks do **not** have to be inspected.

The Apple Maggot Inspection team does recognize that this is a crucial period of time for spraying, especially for the control of Apple Maggot; however, the inspection process must take place during August due to the availability of inspectors. In order for the Apple Maggot Inspection team to cover all the growers listed, there must be co-operation by both parties. They ask that you note if, where, and when you last sprayed anything that could be considered a label violation to the inspection team, when you are contacted about inspections. If you have changed your cell number, home number, or email, please let them know immediately so that the inspection team can reach you to set up inspections. Candy M. O'Connor can be reached at 902-678-1093.

Canadian Agricultural Partnership (CAP) Nova Scotia Cost-Shared Programs

There have been more programs launched under the Canadian Agricultural Partnership Program for Nova Scotia. In total, the programs are:

- [Advancing Innovative Technologies](#)
- [Bee Biosecurity Program](#)
- [Business Advisory Services](#)
- [Crop and Livestock Management Trials Program](#)
- [Industry Driven Research and Innovation Program](#)
- [Market Expansion and Export Readiness](#)
- [Missions and Investigative Travel](#)
- [Small Farm Accelerator Program](#)
- [Soil and Water Sustainability](#)
- [Technologies for Value Added Agriculture Program](#)

After clients apply through Programs and get approved, eligible costs toward approved projects can be claimed retroactively to April 1, 2018. Deadlines are approaching. Visit the [Nova Scotia Department of Agriculture CAP website](#) to apply.

10th Annual Environmental Farm Plan Stewardship Award: Open for Applications!

The Environmental Farm Plan Team is once again looking for nominations and applications for our annual Stewardship Award. **The deadline for applications is August 6th, 2018**. Please visit our website: nsfa-fane.ca/efp or talk to an EFP coordinator at (902) 893-2293.

Edited by Michelle Cortens, Tree Fruit Specialist, Perennia Food and Agriculture Inc.

