

# Orchard Outlook



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June 29, 2016

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## Fruit Development

Checking on tree development Tuesday, apple fruit generally ranged from 14 to 25+ mm with the majority in the 16-20 mm stage. Pears are 25+ mm fruit size, peaches are 1½” length, and plums and cherries are at June drop to straw-yellow stage on sweet cherries.

## 2016 Degree Day Accumulations

Degree day accumulations from March 1<sup>st</sup> to June 28<sup>th</sup> are very close to the 5- and 10-year averages (Figure 1).

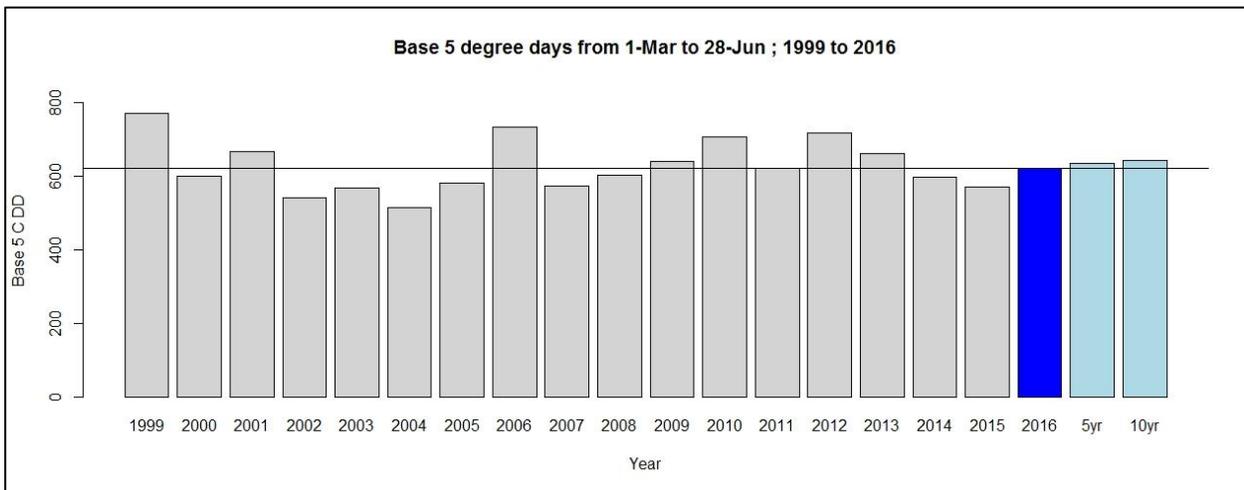


Figure 1: Degree day accumulations from March 1st for the past 18 seasons. Provided by Jeff Franklin (AAFC).

To date heat accumulation since March 1<sup>st</sup> is (Figure 1):

- About 2% fewer plant development heat units compared to the 5-year average.
- About 9% more plant development heat units compared to 2015.
- About 3% fewer insect development heat units compared to the 5-year average.

## Diseases

### Apple & Pear Scab

There were no scab infection periods recorded this week at Kentville AAFC. Evaluate your primary scab control and if no scab lesions are present, you may consider switching to cover rates of protectant fungicides for further fungicide applications.

### Fire Blight

Both blossom blight and shoot blight strikes have been reported in several locations across the Valley. Maryblyt models indicate new shoot blight infections should now be developing symptoms over the next 7-10 days. These infections have been located in blocks with a previous history of fire blight infection in the past 1-2 years. 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 in 10-14 days. An application of a copper product could help give some immediate protection while the Apogee begins to work. Antibiotic products such as Streptomycin or Kasumin will not give curative activity to visibly established infections.

Growers can begin scouting orchards for the presence of blossom, shoot, and canker blight. Young orchards with a history of fire blight infection is the preferred place to begin. Where the number of infections is light and can be manageably pruned from the orchard, removal on a dry day and discarding in the row middles will help reduce secondary inoculum production. Sanitizing pruning equipment at periodic intervals is a good practice to eliminate spreading fire blight from block to block. Removal by pruning should not be attempted where the number of infections would make the chance of accidentally spreading fire blight very high.

**With the presence of ooze a possibility in the orchard, work only in dry conditions in blocks with fire blight as ooze is spread much more easily during wet conditions!**

**PERENNIA IS COLLECTING FIRE BLIGHT SAMPLES AGAIN IN 2016 ON BEHALF OF AAFC FOR STREPTOMYCIN RESISTANCE TESTING AND OTHER RESEARCH NEEDS.**

**IF YOU LOCATE FIRE BLIGHT IN YOUR ORCHARD, PLEASE CONTACT CHRIS DUVELSHOFF AT 902-678-7722 OR [CDUYVELSHOFF@PERENNIA.CA](mailto:CDUYVELSHOFF@PERENNIA.CA) SO A SAMPLE MAY BE TAKEN FOR RESISTANCE TESTING.**

**YOUR SPECIFIC FARM OR LOCATION WILL NOT BE IDENTIFIED IN ANY PUBLICATIONS.**

### Nectria (European) Canker

Fire blight strikes can often be confused with *Nectria* (European) canker infections. I have observed *Nectria* twig blight in several orchards in the past week. *Nectria* twig blight is very often found on bourse shoots of a cluster where a fruit was picked last fall with the stem left on the tree (Figure 2).



Figure 2: Nectria twig blight (also called European canker) can resemble fire blight strikes.

Symptoms of Nectria twig blight included wilted shoots and shepherd's crooking, similar to fire blight (Figure 3). However, Nectria shoot blight usually begins from the base upwards, and there is never ooze present. Nectria infections also often typically have orange coloured fruiting bodies near the base of last year's clusters.

In comparison, shoot blight from fire blight usually begins from the tip down, often bacterial ooze is present, and usually the midvein or petiole of the leaf appears symptomatic before the leaf blade.

Nectria infections should still be pruned and discarded where found but it is not nearly as aggressive as fire blight.

### **Powdery Mildew**

New powdery mildew infections are being observed where flag shoots were present. Check the underside of curled leaves for the powdery mycelium growth. Non-bearing trees, newly planted orchards, and nurseries should be protected from powdery mildew and apple scab. The impact of powdery mildew on bearing orchards at this point is minimal but infections can impact extension growth on young trees.

### **Brown Rot**

After shuck fall, fungicide applications for brown rot should be maintained until June drop in cherries and pit hardening in peaches which occurs early to mid-July in Nova Scotia. Fruit again become susceptible to brown rot infections in the final 3 weeks before harvest. This means that early peaches can be susceptible to brown rot infections nearly all season. Remember to check pre-harvest intervals on these products.

## **Insects**

### **Codling Moth**

June 10<sup>th</sup> is being used as the date of biofix for establishing treatment windows for codling moth products. The treatment timing for egg hatch products (Assail, Calypso, Delegate, TwinGuard, Confirm, Intrepid, Altacor, and Exirel) is 100 degree days Celcius from biofix. Jeff Franklin notes this threshold was reached on Sunday, June 26<sup>th</sup> with the Kentville weather data. Therefore, the first application of these products should be made as soon as possible if no codling moth application has been made and the number of moth catches per trap warrants treatment. Both Erika Bent (APM) and Jeff Franklin note codling moth trap catches are up this year over the past few years.

Control of codling moth with Imidan is typically slightly later at 140 degree days after biofix. This will be reached in the next couple of days in Kentville. Note Imidan is more costly than some of the other products available and has much stricter requirements on REI. Perennia has observed good efficacy of Group 28 Insecticides in trial work which also have better rainfast characteristics than Imidan with similar or lower cost. Consider getting experience with alternative chemistries if you have relied on organophosphates for codling moth control.

A single application of a codling moth product will generally give good control under light to moderate pressure. Those with moth catches of 30-40+ moths per trap may wish to consider a second application of a codling moth product 10-14 days after the initial application.

See Orchard Outlook last week June 22<sup>nd</sup> for a comparison of codling moth control products.

Wondering about rainfall and insecticide activity? The following article is well worth reading from Dr. John Wise of Michigan State University on rainfastness of various insecticide classes:

[http://msue.anr.msu.edu/news/rainfast\\_characteristics\\_of\\_insecticides\\_on\\_fruit](http://msue.anr.msu.edu/news/rainfast_characteristics_of_insecticides_on_fruit)

Some highlights discussed:

- A drying time of 2-6 hours is sufficient for most insecticides to stick the product to the leaf or fruit.
- Neonicotinoids are an exception to the above and up to 24 hours is need for optimal penetration.
- Rainfall of 25 mm (1 inch) or more is generally sufficient to remove most residues required for product efficacy on codling moth including Neonicotinoids (Assail, Calypso), IGR's (Confirm, Intrepid, Rimon), and organophosphates (Imidan). This will require re-application of the insecticide to adequately protect fruit.
- Spinosyns (Delegate, TwinGuard) and Diamide (Altacor, Exirel) insecticides are more rainfast than other products, however, will require application with 50 mm (2 inches) of rainfall.

### **Aphids**

Check the terminal growth for the presence of Rosy and Green Apple Aphid colonies. An aphid control treatment is recommended if 10% of terminals are infested.

## **Mites**

European red mite, twospotted spider mite and apple rust mite can be present at treatable levels from now on and into the fall. High numbers will result in foliar bronzing and reduced photosynthetic activity of leaves. The feeding damage can result in reduced production and fruit quality. Mites should be controlled before bronzing becomes apparent. Those growers that make use of a scouting service will need to apply miticides when population thresholds are reached. In mid-June, the presence of European red mite or twospotted spider mite on 35 of 50 leaves examined will act as threshold for treatment.

## **Horticulture**

### **Apple Thinning**

The chemical thinning window has mostly closed at this point. Late maturing areas and cultivars may still be treated with combinations of Sevin XLR & BA (Maxcel or Cilis Plus) or Sevin XLR & Fruitone L. Higher rates will be needed for fruit sizes of 15-20 mm.

### **Summer Return Bloom Sprays**

The application of growth regulators to increase return bloom is promoted in some production areas in the US. This strategy can be used on young trees that are slow to bear (e.g. Northern Spy) or on mature trees which are expected to have a poor return bloom (i.e. biennial trees that are currently in an "on" year). Fruitone L (NAA) has been effective in some years in US trials and is registered in Canada.

With return bloom sprays, as you are applying a growth regulator, the response can vary based on a huge number of factors including cultivar, crop load, tree age, tree vigor, nutrient status etc. Results can be as variable as thinning sprays.

Flower initiation in apple is hypothesized to start to occur during or shortly after bloom, lasting until approximately 10-12 weeks after full bloom. The strategy with NAA on a bearing tree is to wait until fruit are out of the thinning window before applying return bloom sprays. Return bloom sprays are suggested to start at 5 weeks after full bloom (WAFB), and then repeated every two weeks at 7, 9, and 11 WAFB. Return bloom products can be added directly to the cover sprays during that period. We are now at approaching 4-5 WAFB for most cultivars.

Summer NAA programs will not impact current season fruit quality and will not cause thinning at fruit sizes above 20 mm. Apply Fruitone L at 160 g per 1000 L (5 ppm).

\*\*\*This strategy has not been widely tested in Nova Scotia and should be made to limited areas until more experience is gained with summer return bloom sprays.

### **Weed Control**

Continue herbicide application where weed growth is present. The critical weed free period extends to about 30 days after full bloom for mature plantings and through July for young, non-bearing trees. Cleaning out competing vegetation now will reduce competition for soil moisture which is already becoming limiting. As a reminder, we are approaching the limit on using 2,4-D for weed control as this product has an 80 day pre-harvest interval.

## Upcoming Events and Notices

### NSFGA Annual Orchard Tour

The NSFGA Annual Orchard Tour will take place on **Thursday, August 4<sup>th</sup>** beginning at 8:30 am at the Kentville Agriculture Centre. Tour agenda will be published shortly.

### Golden Apple Award 2016 – Best Management of a First Year Planting

Today's new orchards represent the future success of the tree fruit industry in the province. To recognize the importance of successful first-year establishment on future orchard performance, the NSFGA Production Committee has chosen Best Management of a First Year Planting as the Golden Apple Award category in 2016. This award will recognize the efforts of an individual to ensure successful tree establishment and uniform growth of a first year planting. The NSFGA Production Committee would like to request nominations for a recipient of the 2016 Golden Apple Award for this category. Nominations can be forwarded to Candy O'Connor, NSFGA (902-678-1093 or [coconnor@nsapples.com](mailto:coconnor@nsapples.com)). Nominations will be judged by the NSFGA Production Committee.

Entries have to meet the following requirements to be eligible for the Golden Apple Award:

- Be nominated by a peer grower or industry representative
- The orchard is a minimum of 1 acre in area and was planted in 2016

Nominations are to be judged by the NSFGA production committee based on the following criteria:

- Tree survival rate
- Uniformity of tree growth
- Level of weed control
- Adequate insect & disease control
- Crop load management
- Orchard floor management
- Overall general appearance

### OrchardMAX Airblast Sprayer Optimization App Available for Free Download!

This handy mobile app will help you optimize airblast applications for apple orchards. It is available for both iOS and Android operating systems. See the link below for more information.

<http://sprayers101.com/orchardmax/>

### Apple Maggot Eradication Technician

The NSFGA has again obtained funding for a summer technician to aid in apple maggot control efforts.

Please contact Elizabeth Nichols to report wild trees to schedule their elimination.

Please also contact Elizabeth Nichols if you have completely removed blocks so records can be updated for apple maggot inspections.

Elizabeth Nichols

Apple Maggot Eradication Technician

Blair House, Kentville Agricultural Centre

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**Reminder: Canada-Nova Scotia Fire Blight Initiative!**

This is a reminder that all tree fruit growers with apple and/or pear acreage that required additional management as a result of fire blight occurring after tropical storm Arthur can apply for financial assistance under the Canada Nova Scotia Fire Blight Initiative – a Growing Forward 2 Agri-Recovery program.

**DEADLINE TO APPLY FOR THIS PROGRAM IS JULY 29!**

Funding includes provisions for recovery of additional chemical costs for all growers. Funding is also available for confirmed tree losses where an industry inspection report was completed prior to July 31, 2015.

For more information on the Canada-Nova Scotia Fire Blight Initiative and how to apply, see <http://novascotia.ca/programs/fire-blight-initiative/>. Questions regarding the program or eligibility should be directed to the Programs and Business Risk Management Branch of the Nova Scotia Department of Agriculture at 1-866-844-4276.

**This Orchard Outlook has been published with the input of the Orchard Outlook Committee and Erika Bent (APM).**

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