

# Orchard Outlook



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June 28, 2017

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## Fruit Development

Fruitlets of earlier cultivars are up beyond 25+ mm range while later cultivars and later areas are 16+ mm range (Figure 1). Pear fruitlets are well beyond 20 mm, while stone fruits are just beginning to show some colour development.



**Apple:** 16-25+ mm



**Pear:** 20-25+ mm



**Peach:** Start of pit hardening



**Plum:** 1"+ length

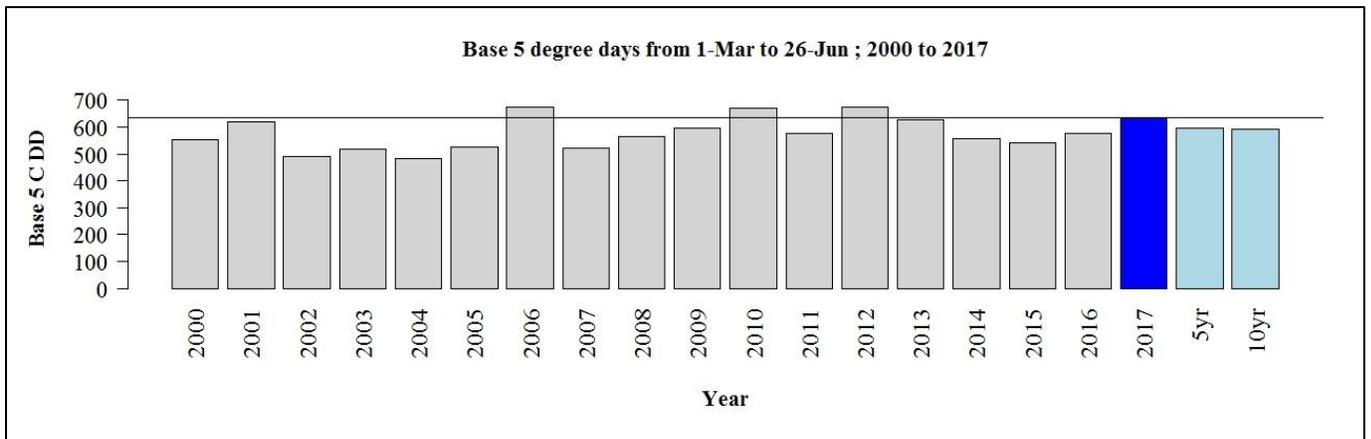


**Sweet Cherry:** Straw yellow/June drop

**Figure 1:** Tree fruits observed on June 27<sup>th</sup>, 2017 in the Kentville/Greenwich area.

### Degree Day Accumulations

Degree day accumulations from March 1<sup>st</sup> to June 26<sup>th</sup> continue to remain above the 5- and 10-year averages for this point in the season (Figure 2).



**Figure 2:** 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 2):

- About 7% more plant development heat units compared to the 5-year average.
- About 11% more plant development heat units compared to 2016.
- About 11% more insect development heat units compared to the 5-year average.

## Diseases

### Apple & Pear Scab

One secondary scab infection period was recorded this week at Kentville AAFC. Wetting began at 4:00 pm on Friday, June 23rd and lasted until 12:00 pm on Saturday, June 24th for a duration of 20 hours at an average temperature of 20.0°C resulting in a secondary conidia infection where primary infections have become established.

If you do not have primary lesions showing up in the orchard by now, it would be reasonable to begin considering reduced fungicide rates (where labels allow) and longer intervals of fungicide sprays if the orchard is clean of scab and the weather remains dry.

### 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.

### Fire Blight

Some sporadic fire blight is being reported on highly susceptible cultivars (e.g. Gala) and in areas with a previous history of the disease. All symptoms could now be present in the orchard including blossom blight, shoot blight, and canker blight.

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. Extension shoot growth is still ongoing and Apogee would still help to provide some protection for further shoot blight infections. 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 these visibly established infections.

Growers can begin scouting orchards for the presence of fire 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. Removal by pruning should not be attempted where the number of infections would make the chance of accidentally spreading fire blight very high. Periodic sanitation of pruning equipment is recommended to avoid further spread of fire blight bacteria.

**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!**

## **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**

Treatment timings for codling moth based on accumulation of 100 DD°C base 10°C after biofix were suggested in last week's Orchard Outlook to be from approximately June 19<sup>th</sup> to June 23<sup>rd</sup> based on an early or late biofix, meaning a treatment for codling moth should be applied already if trap captures indicated a treatable population was present. For areas with high codling moth pressure, a second application 10-14 days later would be recommended or if significant rainfall amounts of 1-2" has fallen within a week of your first application. A repeat application would also be recommended for those using codling moth granulovirus (Cyd-X or Virosoft CP4).

### **Apple Maggot**

It is still a bit early to hanging traps for apple maggot in commercial orchards. More information on apple maggot next week.

### **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. The list of products for aphid control is long: Actara, Admire, Assail, Calypso, Clutch, Closer, Sivanto Prime, Twinguard, Beleaf, Movento, and Exirel.

### **Mites**

Summer miticide options include Acramite, Kanemite, Nexter, Envidor, and Nealta. Scout your orchards or check your scouting reports to see if there is a treatable population. 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. Those growers that make use of a scouting service will need to apply miticides when population thresholds are reached. At the end of June/early July, the presence of European red mite or twospotted spider mite on 40 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). Higher rates will be needed for fruit sizes of 16-20 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 of water (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.

### **Mowing**

Regular orchard mowing will help conserve soil moisture as well as discourage the buildup of rodent populations.

### **Young Trees**

Make an effort to get young trees properly trained (single leaders, removing forking of branches, exceedingly large diameter branches) to ensure the best and most uniform growth

for your future orchard. Leaders should be securely tied to encourage growth and at minimum fruit on the top 60 cm of leaders should be removed if the planting still needs to reach the top of the trellis. Consider de-fruiting first and second year trees entirely.

## **Events & Notices**

### **2017 NSFGA Annual Orchard Tour**

The NSFGA Annual Orchard Tour will be on Thursday, August 3<sup>rd</sup> this year starting and returning to Scotian Gold Cooperative in Coldbrook. The full schedule will be finalized shortly and will include stops in both new plantings and mature orchards and also highlight trial work on herbicides and fertilizers.

### **Apple Maggot Eradication Program**

Elizabeth Nichols is the Apple Maggot Eradication Technician again this year. The apple maggot over-winters as a pupa in soil and adults emerge from late June through September, with peak flight into commercial orchards in August. Emergence is closely linked to soil moisture levels—in dry years, some pupae remain in the soil until the following growing season.

Apple Maggot flies are strong fliers and field studies indicate they fly up to 3 km from alternative hosts. Thus, controlling alternative hosts including American hawthorn or wild apple trees within 300 meters of commercial orchards helps to reduce pressure from migrating flies.

Elizabeth is here to help growers control apple maggot so if you are aware of any hawthorn or wild apple trees within that 300 m radius, please contact Elizabeth at (o) 902-678-1093; (c) 902-670-3599; or [enichols@nsapples.com](mailto:enichols@nsapples.com).

### **Brown Marmorated Stink Bug**

Researchers are on high alert for the Brown Marmorated Stink Bug which has damaged apple crops in the US. These pesky bugs have gone from 2 or 3 states in 2010 to 43 states in 2017, wreaking \$37m worth of havoc on the apple industry in the northeastern US alone. They have been found in B.C. and parts of Ontario as well as the Montreal corridor in Quebec.

Researchers in the Atlantic Provinces have been keeping an eye out for the insect since 2012. At this time, there have been no captures in Nova Scotia or New Brunswick.

Nova Scotia has one type of stink bug already and if the brown marmorated bug was to do in Canada what it did in the US, it would become a real problem for agriculture, in particular, the tree fruit industry, earning it as much of a bad reputation as the apple maggot.

This stink bug has unique characteristics: distinctive white bandings on its legs and antennae, inward-pointing white triangles between dark markings along the edge of the abdomen, and a smooth edge along the pronotum or “shoulders.”

If you think you’ve found a brown marmorated stink bug, please contact Dr. Suzanne Blatt of the Kentville Research Station, at [Suzanne.blatt@AGR.GC.CA](mailto:Suzanne.blatt@AGR.GC.CA). Dr. Blatt is asking all growers to be on the lookout for this pest.

Thank you for your attention to these destructive pests. We want to stay on top of them for the sake of our industry.

### **2017 International Fruit Tree Association Study Tour in Michigan – Registration Open**

Considering joining IFTA in Michigan this summer from July 16-July 18th for the 2017 IFTA Summer Study Tour. Our theme for the 2017 IFTA Summer Tour is:

Tree Fruit Excellence – Innovation and Success

The 2017 IFTA Summer Tour offers another fantastic educational opportunity and provides quality networking time with colleagues old and new. With visits to prime fruit-growing areas of Belding, the South Ridge, the North Ridge and Michigan State University, you'll be able to see and experience all aspects of tree-fruit production.

You'll learn how Michigan tree fruit growers are investing in new ways to remain competitive and deliver high-quality fruit to consumers at home and around the world. Discussions will touch on tree training, chemical thinning, precision thinning, frost protection, vigor management and managed varieties, among many other topics.

Network with fellow growers as you discover why Michigan is one of the world's leading tree-fruit growing areas and a seat of tree-fruit innovation.

See <http://www.ifruittree.org/Events/2017-Study-Tour> for more information.

**This Orchard Outlook has been published with the input of the Orchard Outlook Committee.**