

# Orchard Outlook



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A wet and relatively cool week has slowed development slightly, however, fruitlet size has continued to advance at a moderate pace.

## Fruit Development

Apples are on average at 14 mm or larger on most cultivars while early blooming cultivars such as Gravenstein and Idared are approaching 20-25 mm. Some later blooming varieties such as Ambrosia and Golden Delicious still have many laterals below 12 mm.

Pears are 18-20 mm, cherries – marble size, plums – 1” length, and peach – 1” length.

## 2015 Degree Day Accumulations

Heat unit accumulation for 2015 slowed this past week because of cooler weather.

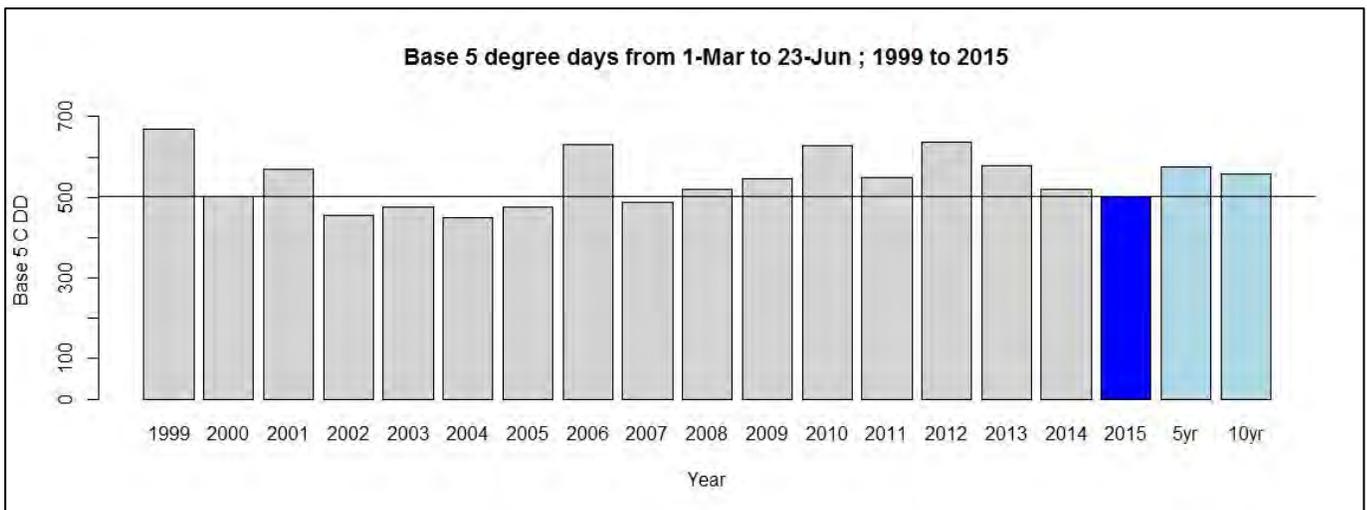


Figure 1: Degree day accumulations from March 1st for the past 17 seasons. Provided by Jeff Franklin (AAFC).

To date heat accumulation since March 1<sup>st</sup> is (Figure 2):

- About 13% fewer plant development heat units compared to the 5-year average.
- About 3% fewer plant development heat units compared to 2014.
- About 7% fewer insect development heat units compared to the 5-year average.

## Diseases

### Apple Scab

Two secondary scab infection periods, based on conidial spores, have been recorded in the past week. The first one began Sunday June 21<sup>st</sup> at 12:00 pm until Monday June 22<sup>nd</sup> at 2:00 pm. The second one began at 5 pm yesterday June 23<sup>rd</sup> and is currently ongoing.

Since Friday June 19th, about 89 mm or 3.5 inches of rainfall has occurred at the Kentville Research Centre. This means most fungicide residues will have washed off the leaves and fruit. Protection should be renewed as the weather breaks today.

While evaluating primary scab control in apple scab plots yesterday, it was evident that some primary scab was still coming through. Renew your fungicide with a full rate this week before switching to cover rates for the next spray if there are no scab lesions in the orchard.

### Fire Blight

Where fire blight infections occurred during bloom, they are now becoming very apparent in the orchard. These infections are now spreading into the spur leaves and will cause the death of that spur and spread further into the attaching branch. These active infections will provide the secondary inoculum for shoot blight.

Today I observed a managed orchard that did not receive any antibiotic sprays and was heavily infected with blossom blight. This is not

surprising given the level of pressure during bloom. If you still do not see any blossom blight infections, you have likely effectively controlled the bacteria during bloom. To date, orchards receiving antibiotics look to have almost no blossom blight. Based on these unsprayed trees, I would say that the antibiotic applications during bloom were effective and necessary this season.



**Figure 2: Several advanced blossom blight infections in an orchard that did not receive any antibiotic sprays during bloom.**

Heat unit accumulation has advanced symptom development of shoot blight very little in the past week. It will probably be another 10-14 days before shoot blight symptoms will have matured. However, based on the fact that we have observed heavy blossom blight in trees not treated with antibiotic, do not reconsider your Apogee program. Blocks should have a minimum of two sprays of Apogee with a third spray in vigorous or high risk blocks.

Risk for blossom blight development in newly planted trees has been low the past week with moderate temperatures. The coming week does not look to have sufficient temperatures to build up risk for blossom blight, however, removal of blossoms is the best protection where it is possible.

With active blossom blight and canker blight infections observed in some orchards, scout your orchards on a weekly basis to look for signs of infection and prune off these infections where feasible to reduce secondary inoculum production. Erika Bent (APM) and I have both observed active infections in Gala and Gala blocks should be monitored closely.

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

### **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.

### **Insects**

#### **Codling Moth**

June 11<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, Twinguard, Delegate, Confirm, Intrepid, Altacor, and Exirel) is 100 degree days Celcius from biofix. Note, this model is reported for Kentville Agriculture Centre and other areas of the Valley may be slightly different. In general, Kentville is usually one of the earlier areas.



**Figure 3: Blossom removal on newly planted trees in bloom to prevent blossom blight infection.**

For the Kentville model, as of today, approximately 73 degree days have accumulated since biofix. The 100 degree day threshold is currently expected to occur Saturday. Therefore, codling moth treatments could begin this weekend for the egg hatch products listed above.

The ovicide product Rimon should be applied a bit earlier, usually around 50-75 degree days. If you intend to use Rimon for codling moth control, it should be applied by the end of the week.

Control of codling moth with Imidan is typically timed for 140 degree days after biofix. This is predicted to be late next week for those intending to use Imidan. With restrictions on Imidan usage (signage, re-entry interval), consider using one of the alternative products for codling moth.

Thresholds for treatment were traditionally 40 moths per trap. However, based on high value varieties, thresholds have moved towards 10-20 moths per trap.

Given the cool and wet weather during the past week, codling moth flight and mating activity would be expected to be lower and delayed by several days compared to a warmer year. Therefore, with all products, it is expected that you have a buffer of several days to begin your control program this year. If the egg hatch products are applied sometime over the next week, they are likely to give good control.

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 insecticides:

[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 and will still provide efficacy through up to 50 mm of rainfall post-application.

## **Aphids**

Most bearing orchards were treated for aphids in the past week. It is especially important to check the terminals of young trees for green apple aphid as they can distort terminal growth and restrict tree development.

Erika Bent notes that colonies of green winged aphids at this point are still likely to be grain aphids which do not need to be controlled as they will be leaving the terminals shortly.

### **European Apple Sawfly**

If you failed to control EAS the damage is now apparent in your orchards. Fruit with direct entry from EAS typically fall off while the scarred apples will remain on the trees until harvested. It is too late to treat for this pest however take note of the amount of damage which will help to determine if a treatment is required next year.



Figure 4: European apple sawfly damage to Gingergold fruitlets.

### **Horticulture**

#### **Apple Thinning**

The thinning window has closed on many early blocks and cultivars at this point. Mid to later blooming cultivars may still be able to be treated with Maxcel at 14-18 mm. I have not yet observed much fruitlet yellowing from chemical thinner application. I would expect this will be appearing more in the next week as obvious size differential is developing in many clusters.

#### **Peach Thinning**

Peach thinning can begin now as fruit size has reached 1" in many areas. Fruit set has looked good in most blocks to date.

#### **Young Tree Training**

Young plantings should have trellis installed and trees supported and trained as soon as possible. It has been demonstrated that the earlier the support is provided, the better the tree growth.

#### **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.

#### **Apple Maggot Eradication Technician**

The apple maggot eradication technician is again available this year to control wild host trees of the apple maggot. Please contact Elizabeth Nichols to report wild trees and schedule their elimination.

Elizabeth Nichols  
Apple Maggot Eradication Technician  
Blair House, Kentville Agricultural Centre  
32 Main Street, Kentville, NS B4N 1J5

Email: [enichols@nsapples.com](mailto:enichols@nsapples.com)  
Office: 902-678-1093  
Cell: 902-670-3599

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

Editor: *Chris Duyvelshoff*  
*Perennia*

