Orchard Outlook

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Degree Day Accumulations

Degree day accumulations from March 1st to July 4th continue to remain above the 5- and 10-year averages for this point in the season (Figure 1).

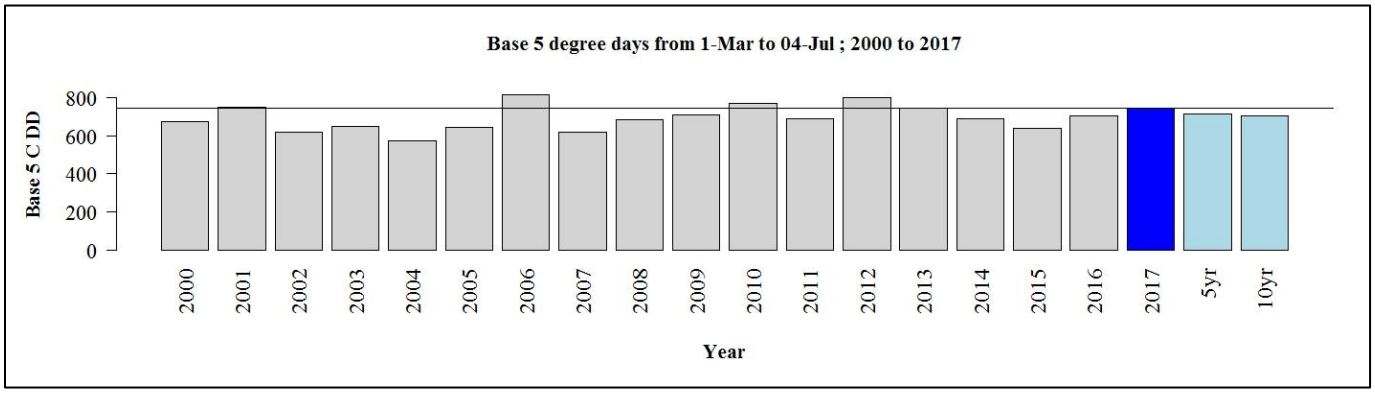

Figure 1: Degree day accumulations from March 1st for the past 18 seasons. Provided by Jeff Franklin (AAFC).

To date heat accumulation since March 1st is (Figure 1):

- About 4% more plant development heat units compared to the 5-year average.
- About 6% more plant development heat units compared to 2016.
- About 5% 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 1:00 am on Saturday, July 1st and lasted until 9:00 am on Sunday, July 2nd for a duration of 32 hours at an average temperature of 16.8°C resulting in a secondary condia 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

Continue to watch for powdery mildew in nurseries and young plantings which can interfere with terminal development and tree growth. See the Pome Fruit Management Guide for registered products for mildew control.

Fire 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. An application of a copper product could 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.

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!

Brown Rot

Stone fruits become susceptible to brown rot infections again as they start to ripen. Regular preharvest fungicide applications are critical, especially during periods of wet weather. With periods of heavy and frequent rainfall, the interval between fungicide applications may need to be as short as 3-5 days. Once brown rot has appeared on picked fruit it is too late to do anything about control. If you are treating more than one type of stone fruit make sure that the product is registered for all the crops that you are spraying. Also check the pre-harvest interval. Check the Stone Fruit Management Schedule for products and rates. Rotate fungicide classes for resistance management.

Insects

Codling Moth

For areas with high codling moth pressure, a second application 10-14 days after the initial treatment 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). If you use Imidan, Delegate, TwinGuard,

Confirm, Intrepid, Altacor, or Exirel for codling moth control you will also control any early emerging summer obliquebanded leafroller (OBLR) at this timing.

Apple Maggot

Apple maggot traps should be hung in the orchard over the next week. Jeff Franklin has reported only a single catch so far in an abandoned orchard. However, typically the first commercial catches are made this week. The economic threshold is 1 maggot fly per orchard on a yellow sticky board. Note wing pattern for identification of apple maggot (Figure 2). 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. Highly effective products for AM are limited to Imidan (2.68 kg/ha), Assail (160-240 g/ha), Calypso (440 mL/ha), and Exirel (1.0-1.5 L/ha). Delegate (420 g/ha) has also received a suppression registration for apple maggot this year.

Growers that are using Altacor or TwinGuard for CM or OBLR control will also have some suppressive activity on AM, but these products should not be relied upon for control in most situations.

In organic orchards, Surround can be used to deter egg laying and GF 120 fruit fly bait can be used for suppression of adult flies. Both Surround and GF 120 should begin to be applied as soon as flies are present in the orchard.

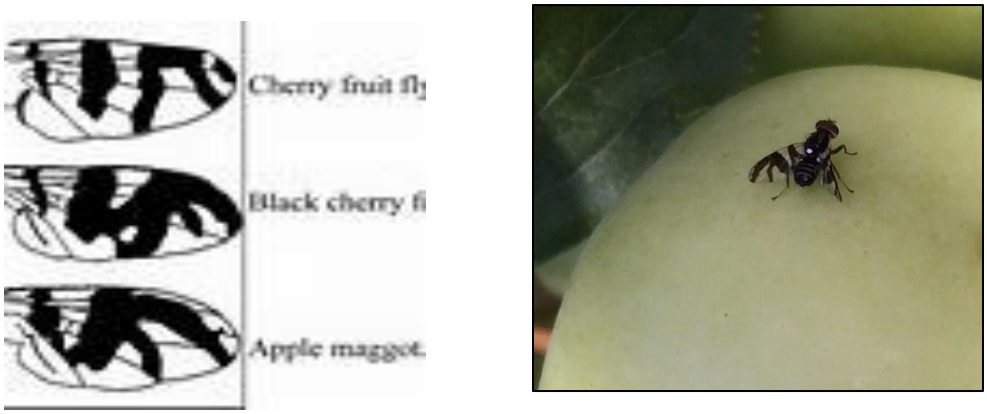

Figure 2: Wing pattern of apple maggot and adult fly on Gingergold apple.

Obliquebanded Leafroller (OBLR)

Figure 3: Surface chewing and late season pinpoint damage to Cortland from summer obliquebanded leafroller (OBLR) in Port Williams in 2014.

If you have noted damage from the obliquebanded leafroller (OBLR) last year, the summer generation of larvae will begin their prolonged hatch in the coming 1-2 weeks. These larvae will roll leaves together and feed on the surface of the fruit – especially where two apples are touching (Figure 4). Where OBLR has been a problem in the past or where there was a high overwintering population, an application of a spinosyn (Delegate, Entrust, Success), diacylhydrazine (Confirm), or diamide (Altacor, Exirel) will provide good control. TwinGuard (Delegate + Closer) could be used as well, particularly if aphids are also a target. Check your scouting reports for timing recommendations. This application would also serve as a second treatment for codling moth. Where OBLR pressure has been high in the past, a second application 10-14 days later may be required. Imidan would also have good activity on OBLR if you're applying it for apple maggot later.

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

A strong natural fruit drop seems to be occurring this year in many orchards. I don't think there is any single factor that can explain this occurrence but it probably has a lot to do with the weather during bloom and after fruit set this year. Cool, cloudy weather followed an early bloom for the earlier developing areas and varieties, and some warmer, cloudy days likely contributed to a carbohydrate deficit that led to an enhanced thinning effect. In general,

thinning seems to have been strong in most orchards this season. Fruit drop should now be mostly finished, except for in the later developing areas. Where chemical thinning didn't adequately reduce crop load, hand thinning can now begin to further reduce fruit numbers.

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.

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 3rd 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.

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. 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.

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