Orchard Outlook

Vol. 17, No. 14 July 12, 2017

Degree Day Accumulations

Degree day accumulations from March 1st to July 11th continue to remain slightly above the 5- and 10-year averages for this point in the season (Figure 1).

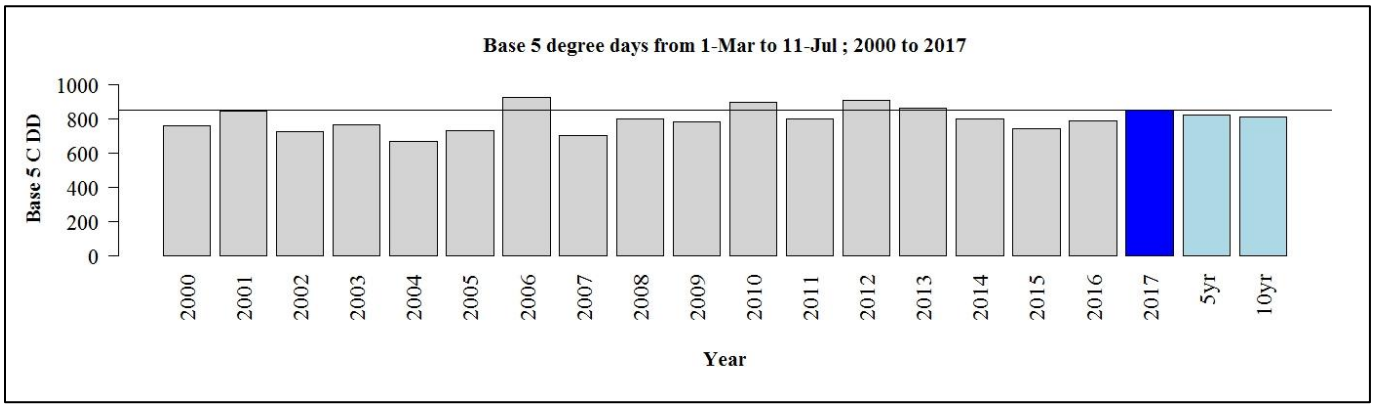

Figure 1: Degree day accumulations from March 1st for the past 18 seasons. Provided by Jeff Franklin (AAFC).

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

About 4% more plant development heat units compared to the 5-year average.
About 8% 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 8:00 pm on Friday, July 7th and lasted until 10:00 am on Saturday, July 8th for a duration of 14 hours at an average temperature of 17.6°C resulting in a secondary condia infection where

primary infections have become established. Fruit scab is now very apparent where scab control was not adequate this season.

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

Some fire blight strikes have occurred in several locations across the Valley. Terminal bud set is beginning to occur which should help to limit further spread as active shoot growth ceases. If you begin to observe fire blight infections, still have active terminal growth, 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 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

Cherries are colouring, however, it will still be another 1-2 weeks before the bulk of the cherries ripen. 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

Codling moth damage is beginning to show up where insect pressure was present. 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. If you use Imidan, Delegate, TwinGuard, Confirm, Intrepid, Altacor, or Exirel for codling moth control you will also control any emerging summer obliquebanded leafroller (OBLR) at this timing. Imidan and Exirel will also control apple maggot and Delegate will provide suppression of this pest.

Apple Maggot

Apple maggot flies have now been captured in several locations. 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).

Growers that are using Altacor, Delegate, 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. Conversely, all registered AM control products will impact both CM and OBLR as well.

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.

Yellow sticky traps should be cleaned out after application to determine the additional emergence of adult flies. Additional captures when the residual life of the insecticide is complete (14 days depending on rainfall with Imidan) will indicate a second spray is required. With the neonicotinoids (Assail or Calypso) or diamides (Exirel), insecticide residue should be maintained through the end of August and retreatment would be based on rainfall or 10-14 days residual activity. The following article from Michigan State University includes a good reference table of apple maggot insecticides and activity.
http://msue.anr.msu.edu/news/managing_apple_maggots_using_insecticides

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 this week. These larvae will roll leaves together and feed on the surface of the fruit – especially where two apples are touching (Figure 3). 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. Jeff Franklin (AAFC) noted a biofix date of June 26th for OBLR this year. Egg hatch (and treatment timing) is estimated at 240 DD^{o}C based 6.1^{o}C from biofix which will accumulate this week so treatments could begin if this pest has been an issue in your orchard. 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. In mid-July, the presence of European red mite or twospotted spider mite on 44 of 50 leaves examined will act as threshold for treatment.

Horticulture

Apple Thinning

Fruitlet drop from thinners is finishing in most areas. This is a good time to make a few notes on thinner performance. Hand thinning can begin in blocks where chemical thinning did not adequately reduce crop load.

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. See the program below.

8:00 am	**Scotian Gold Cooperative** 220 Lovett Road, Coldbrook	**Coffee and Snacks** Parking Near Pad #5
8:30 am		**Introductions & Greetings**
8:45 am	**Board Buses**	

9:05 to 9:40 am	**Pomona Farms**
	1222 Hwy #341, Canard
		• **Fall Herbicides**
		  ○ **An Effective Option?**
		  ○ **Sandy Loam vs. Clay Loam**

9:40 am	**Board Buses**	
9:55 am to 10:45 am	**Breezeway Acres @ Northville Farm** 1158 Steadman Road, Billtown	• **1st-3rd Leaf HD Plantings @ 9-10'** • **Newly Planted Tree Fertility Trial** ○ **Ambrosia on Clay Loam** • **Young Tree Crop Load Management** • **Wild Apple Tree Control**
10:45 am	**Board Buses**	
11:05 am to 11:45 am	**CAP Farms** 127 Coleman Road (Driveway to South), Grafton	• **Mature Ambrosia Fruiting Wall** ○ **11' x 2' Ambrosia in 5th-leaf** • **Crop Load Management** • **Yield Estimates**
11:45 am	**Board Buses**	
12:00 pm to 1:15 pm	**Apples & Spice** 23 Bent Road, Waterville	**Lunch** • **Irrigation Pond** • **New Plantings**
1:15 pm	**Board Buses**	
1:35 pm to 2:15 pm	**Crisp Growers Inc.** 220 Prospect Road, Morristown	• **AgWeather Atlantic Network** • **Tree Propagation in NS** ○ **Bench Grafts**
2:15 pm	**Board Buses**	
2:35-3:00 pm	**Nazinga Farms** 1405 New Road, Aylesford	• **Bud In Place – Feasible Strategy?** ○ **GYO vs. Finished Trees**
3:00 pm	**Board Buses**	
3:20-4:00 pm	**Spurr Brothers Farms** 1125 Spa Springs Road, Melvern Square	• **12x3 Plantings of Ambrosia/Gala in Production** • **Newly Planted Tree Fertility Trial** ○ **Honeycrisp on Sandy Loam** • **Topworking - Still Working?**
4:00 pm	**Board Buses**	
4:30 pm	**Scotian Gold Cooperative** 220 Lovett Road, Coldbrook	**Tour Concludes**

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.

Edited by Chris Duyvelshoff