Orchard Outlook

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Please note that this will be the last weekly issue of Orchard Outlook for 2015. Orchard Outlook will continue to be produced occasionally for the remainder of the season.

Fruit Development

Apple growth continues and the first signs of blush are beginning to appear. Sweet cherry harvest is now into the late-season cultivars. Protected peaches are now being harvested and early plums should be maturing soon.

2015 Degree Day Accumulations – July 20

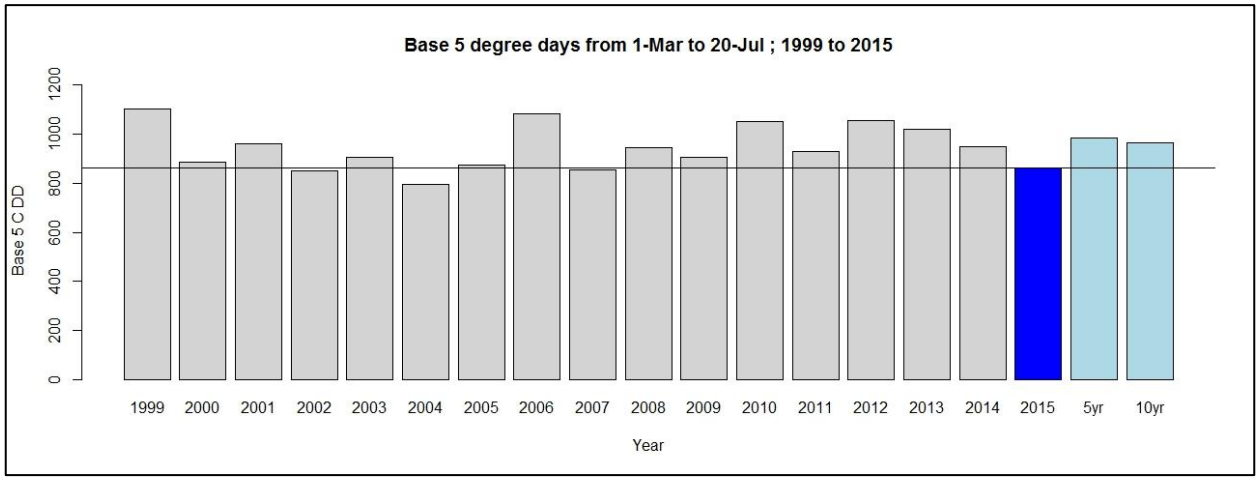

Figure 1: Degree day accumulations from March 1st for the past 17 seasons. Provided by Jeff Franklin (AAFC).

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

- About 12% fewer plant development heat units compared to the 5-year average.
- About 9% fewer plant development heat units compared to 2014.
- About 13% fewer insect development heat units compared to the 5-year average.

Diseases

Apple Scab

Two secondary infection periods were recorded at Kentville during the past week. The first began the morning of Saturday, July 25th and lasted 18 hours at 15°C. The second one began around noon on July 28th and lasted 24 hours until noon on July 29th at 18°C.

Secondary scab infection periods can occur up to harvest time, however, developing fruit and mature leaves become less susceptible to infection. With terminal bud set and no new leaves developing, the concern for new scab infections decreases. With frequent wetting recently, it would be wise to continue with fungicide application for the current week. With the increased prevalence in summer diseases such as black rot, a couple of August fungicide applications would be advisable to prevent summer diseases showing up at harvest. Any orchards with scab, and there are a few, should continue to have regular fungicide sprays applied until preharvest intervals no longer allow their application.

Table 1 below summarizes the seasonal scab infection periods. The primary ascospore release began quite slowly but a very big release coincided with a very long and heavy infection period from May 31 to June 3 and much of the primary scab lesions could be traced back to this infection period. A wet June led to a number of secondary infection periods and though July rainfall has been low to date, light rains have caused several secondary infection periods in July as well. This season could be classified as moderate overall in terms of scab pressure.

Table 1: Summary of apple scab infection periods recorded at the Kentville Agriculture Centre in 2015.

No.	Date	Wetness Duration (h)	Average Temperature (°C)	Type (Primary or Secondary)
1	May 11 to May 12	17 h	9	Primary – Light
2	May 12 to May 13	14 h	15	Primary – Moderate
3	May 31 to June 3	76 h	8	Primary – Heavy
4	June 6 to June 7	22 h	10	Primary – Moderate
5	June 16 to June 17	14 h	15	Primary – Moderate Secondary
6	June 21 to June 22	26 h	13	Secondary
7	June 23 to June 24	17 h	13	Secondary
8	June 28 to June 29	18 h	12	Secondary
9	July 5 to July 6	12 h	15	Secondary
10	July 15 to July 16	9 h	16	Secondary
11	July 18 to July 20	37 h	17	Secondary
12	July 25 to July 26	18 h	15	Secondary
13	July 28 to July 29	24 h	18	Secondary

Fire Blight

Generally, excellent fire blight control was observed this season in orchards that employed all management techniques to control the disease. Orchards not treated for fire blight sustained a high level of blossom blight infection this spring. Where preventative fire blight controls were

applied, blight typically appeared where overwintering cankers were still active in the tree. With terminal growth starting to finish for the season on both mature and young orchards, the risk for new shoot blight infections will be coming to a close. On young orchards less than 5 years old with a few strikes, I do feel it is worth removing active strikes to prevent possible rootstock blight. On older orchards where terminal buds are setting, there would be less advantage to removal at this time because rootstock blight is much less prevalent. The industry should be very proud of the cleanup effort in 2015. There were some heavily infected orchards in 2014 that have very little to no fire blight in 2015!

Insects

Apple Maggot

Apple maggot trap captures began to rise last week and adults have been caught in many areas now. The first treatments are being made this week or have been made in the past week. Registered products for control are limited to Imidan (2.68 kg/ha), Assail (240 g/ha), Calypso (440 mL/ha), or Exirel (1.5 L/ha). Avoid tank-mix combinations with Exirel and Captan.

Traps should be cleaned out within a day of 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, Calypso) or diamides (Exirel), insecticide residue should be maintained through the end of August and retreatment would be based on 25 mm (1 inch) rainfall or 10-14 days residual activity. The following article from Michigan State University has a good reference table of apple maggot insecticides.
http://msue.anr.msu.edu/news/managing_apple_maggots_using_insecticides

Other things to consider based on Dr. John Wise of Michigan State University:
http://msue.anr.msu.edu/news/rainfast_characteristics_of_insecticides_on_fruit

- 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 including Neonicotinoids (Assail, Calypso) 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, should be reapplied after 25 mm or 1 inch of rainfall for apple maggot control.

Mites

All mites are currently active in the orchard. Continue to monitor for or check scouting reports for the presence of mites. If you are doing your own monitoring, motile European red or Twospotted spider mites present on 44 out of 50 leaves examined would indicate a treatment is required. Note, as leaves mature and trees have maximum leaf surface area, their tolerance to mite activity increases. The same level of mite pressure in mid-August will have less of an effect on fruit size and colour than in mid-July. By early to mid-August, thresholds increase to 48 of 50 leaves examined.

Horticulture

- Hand thinning can be conducted where necessary
- Summer pruning can be conducted where terminals have set - be careful in blocks with fire blight
- Tree training, tying, and trellis construction work should be conducted in young blocks

Tissue and Soil Analysis

The collection of leaves for nutrient analysis can begin shortly as the terminal buds set on shoots. Sampling should be completed by mid-August. Nutrient levels in leaf tissues change with the growing season and the desired nutrient level ranges for apples were based on leaves being collected once the trees have stopped growing (late July to early August in Nova Scotia). Collecting samples prior to or after the specified period may give inaccurate nutrient level readings. Annual fertilizer applications should be based on tissue analysis reports and other factors such as pruning, vegetative growth and anticipated crop load.

The following information is for growers who will be collecting their own samples or giving instruction to hired staff. A sample usually represents a block of orchard 1 to 2 hectares in size. The sample consists of 100 apple leaves collected from 10 trees of the sample cultivar. It is suggested that the trees be marked, and that they represent a typical tree within the block, so that the same trees can be sampled on a routine basis. This will help to eliminate some of the variability in yearly reports. If there are problem areas within the orchard, then sample trees in this area separately. Ten leaves per tree are collected from the mid-point of this year's terminal growth with terminals being sampled from all sides of the tree. Place the leaf samples in a paper bag (in the past 10 lb brown paper bags were used). The leaf sample needs to be submitted as soon as possible after collection in order to obtain an accurate nutrient analysis. If the sample cannot be submitted right away, refrigerate until it can be submitted.

Collecting a soil sample from the block will provide additional information when it comes to determining fertilizer requirements. Soil samples do not need to be collected on an annual basis but should be collected at least once every three years. Two to four soil cores should be taken at the drip line from each of the 10 trees. The soil cores should be mixed and a representative sample placed in a soil box for analysis.

The cost per sample including HST for registered farms is $13.54 for tissue and $13.67 for soil. Boxes and bags need to be clearly identified with the following information: grower or farm name, mailing address, phone number, farm registration number, orchard block name, cultivar and sample number Soil boxes can be obtained from the NSDA office at the Kentville Agriculture Centre.

Events

Orchard Tour – Wednesday, August 5th

The **NSFGA Annual Orchard Tour will be taking place on Wednesday, August 5th**. The tour will begin at Scotian Gold Cooperative in Coldbrook at 8:30 am and will return to the same location at approximately 4:30 pm. **Registration is appreciated to confirm food and bus numbers. Confirm with Helen Arenburg harenburg@perennia.ca or call Gail Walsh at 902-678-7722 to register**. See below for schedule.

Farm Youth Workers

Wayne Adams is looking to connect unemployed youth from his community with Valley farms needing workers. If you think there is a potential opportunity for a youth on your farm, please contact Wayne Adams at wadams@perennia.ca.

AVCC Agriculture Innovation Accelerator Award

To recognize and support the agriculture and agri-food sector's innovation in business, the Annapolis Valley Chamber of Commerce created the AVCC's Agriculture Innovation Accelerator Award. This annual award program recognizes outstanding agriculture and agri-food related innovators including producers, processors, suppliers and organizations. The award is intended to help the successful applicant move their project forward to the next phase of development.

The deadline for applications to be eligible for this award is July 31. Consider applying for this award; the winner will receive a prize estimated to be $30,000 or more in total value, which will be a combination of cash and in-kind services, counseling and other sponsor contributions (these services will include but not be limited to; business planning, legal, mentoring, advisory, etc.).

For more information, please contact the Annapolis Valley Chamber of Commerce at 902-678-4634, or executivedirector@annapolisvalleychamber.ca

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

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