

Orchard Outlook



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Bud Development	2016 Degree Day Accumulations	Diseases
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Bud Development

Checking on bud development Tuesday, Idared was nearing tight cluster on the Middle Dyke Road – a historically early block (Figure 1). Blossom buds are beginning to show on pears, peaches and plums are approaching first bloom, apricots are in bloom, and sweet cherries are still at swollen bud but not yet broken.



Apple: Half-Inch Green to Tight Cluster (early cv's)



Pear: Tight Cluster



Peach: Pink



Plum: White Bud



Sweet Cherry: Swollen Bud

Figure 1: Tree fruit buds observed on May 3rd, 2016 in Greenwich and Middle Dyke Road.

2016 Degree Day Accumulations

Degree day accumulations from March 1st to May 3rd show that 2016 is currently close to the 5- and 10-year averages (Figure 2).

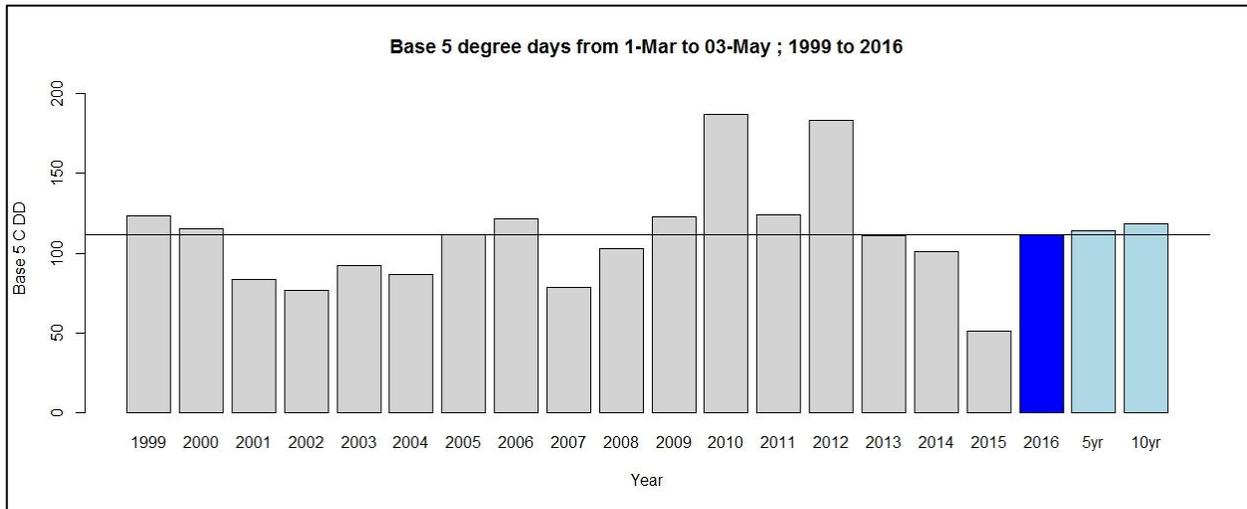


Figure 2: Degree day accumulations from March 1st for the past 18 seasons. Provided by Jeff Franklin (AAFC).

To date heat accumulation since March 1st is (Figure 2):

- About 2% fewer plant development heat units compared to the 5-year average.
- About 117% more plant development heat units compared to 2015.
- About 12% fewer insect development heat units compared to the 5-year average.

Diseases

Apple & Pear Scab

At Kentville AAFC, wetting began around 6:00 pm on Monday, May 2nd and lasted until about 10:30 am on Tuesday, May 3rd. This wetting period lasted about 16.5 hours at an average temperature of 6.4°C. At this temperature, roughly 19 hours of leaf wetness are needed for a light infection. Therefore, the wetting period on Monday through Tuesday morning was a borderline infection at worst. Other areas where rain could have started earlier or lasted longer could have easily had a light infection.

About 7% of the seasonal ascospore load had matured by this past infection period and many would have released with Monday/Tuesday wetting. However, there are still plenty of mature spores around to cause infections if Thursday develops into an infection period.

Fungicide residues should be renewed on about a 5-7 day interval at this point in the season, with the shorter interval after wet weather or rapid tissue growth. Protectant fungicide (mancozeb, captan) residues are washed off leaves with as little as a few mm of rainfall and are generally depleted after about 50 mm (2" of rain).

Pears should also be covered for pear scab regularly at this point in the season. Note EBDC's such as Manzate are not registered for pear scab. Captan as well as other single-site fungicides are effective on pear scab. See the 2016 Pome Fruit Management Guide for a complete list of products at:

Powdery Mildew & Fungicides

Overwintering inoculum of powdery mildew will begin to infect flower clusters and vegetative shoots typically around the tight cluster stage of development (Figure 3).



Figure 3: Overwintering inoculum of powdery mildew on terminal shoots of Idared (left), new infection (red arrow) on underside of young leaf of expanding terminal (centre), and infected flower cluster (red arrow) – note reduced expansion compared to neighbouring healthy cluster (right).

The critical period for control of new powdery mildew infections on bearing trees is between tight cluster and petal fall. The main reason to control mildew infections on bearing trees is avoiding any potential issues with powdery mildew-induced fruit russet. However, severe infections can reduce vegetative growth, which is particularly a concern for non-bearing orchards. During the tight cluster to petal fall period, using a fungicide or a combination that provides control of both powdery mildew and apple scab would be recommended.

SDHI fungicides (Group 7) generally offer excellent control of apple scab and good control of powdery mildew. Aprovia (500 mL/ha), Fontelis (1.0-1.5 L/ha), Sercadis (333 mL/ha), Luna Tranquility (800 mL/ha), and Pristine (1.0-1.2 kg/ha) are all SDHI options which will provide control of both powdery mildew and apple scab at the listed rates. Note some SDHI's require a full or half rate of protectant on the product label for resistance management and/or to improve fruit scab control. Even if the label does not require any protectant, including at least a half rate of protectant with single-site fungicides (which are anything besides Group M) is a good practice for resistance management. The SDHI's are effective and offer little resistance at this point – their use should be managed to minimize resistance development.

Resistance testing done in 2011-2013 indicated little resistance to DMI fungicides (Group 3) in powdery mildew samples in Nova Scotia. Therefore, the use of both Nova (340 g/ha) or Fullback (950 mL/ha) will provide excellent control of powdery mildew. Fullback's active ingredient flutriafol (marketed as Topguard in the United States) is a very potent mildewcide in Cornell test trials, outperforming Nova, and is a worth a look if you have heavy powdery mildew pressure. However, as resistance to DMI fungicides has been observed in apple scab in Nova Scotia, DMI products must be mixed with a full rate of protectant to ensure adequate protection from apple scab. Note solupacks (e.g. Nova) may not dissolve properly with the presence of oil or boron in the spray tank.

Strobilurin fungicides (Group 11) also have activity on both powdery mildew and apple scab. However, resistance testing done in Nova Scotia indicated some resistance to both Flint and Sovran in powdery mildew samples. Therefore, the strobilurins should not be your top choice for powdery mildew control. In addition, in apple scab samples from Nova Scotia, just 1 out of 18 orchards had apple scab isolates with indications of reduced sensitivity to Flint. Therefore, the strobilurins remain as excellent materials for apple scab control and also offer uniquely long post-infection activity – Flint 72-96 hours; Sovran 48-72 hours – compared to most other fungicides available. Therefore, their use is most justified prior to or following long scab infection periods with heavy rainfall when other fungicide residues may have been depleted. Strobilurins also provide activity on many of the summer diseases as a secondary benefit when used after petal fall.

As a final note on powdery mildew, Vivando, a Group 8 fungicide, is no longer recommended to be used on pome fruits, though it is still registered for use on stone fruits.

Fire Blight

Bill Craig has reported seeing at least one oozing fire blight canker as of last week. Delayed dormant copper application for fire blight suppression should be applied before Half-Inch Green to avoid any issues with fruit russeting later on. Early cultivars/areas have passed this stage already and copper application would now be risking possible phytotoxic effects to developing fruit surfaces at petal fall. Later areas still have an opportunity for this application but this will quickly be coming to an end in the next few days.

Brown Rot

With peaches and plums at pink and white bud respectively, fungicide protection from brown rot will be required on early blocks this week. Brown rot infection of the flowers during bloom provides secondary inoculum for fruit infections later on. Fungicide protection from brown rot should begin just prior to bloom and be maintained during periods favourable to infection. Warm, wet weather is particularly conducive for brown rot infection. Two to three fungicide applications may be required from pink/white bud to petal fall if weather remains warm and wet. There are 8 different fungicide groups and over a dozen products registered for brown rot control. See the 2016 Stone Fruit Management Guide for more information at <http://perennia.ca/Pest%20Management%20Guides/Fruits/2016/Stone%20Fruit%20Management%20Guide%202016.pdf>

Insects

European Red Mite

With trees approaching Half-Inch Green to Tight Cluster in early areas, this coming week will be a good opportunity to apply oil for control of overwintering European red mite eggs. The closer an oil treatment is applied to egg hatch, which usually begins around tight cluster to pink, the more effective it is. However, as oil applications need to go on with high volume, it may be wise to start a bit earlier if it will take several days to get through all the required blocks. Oil application needs to go on with a minimum of 1000 L of water per hectare in order for the oil to find the cracks and crevices where the overwintering eggs are located. The oil has to smother the eggs in order for it to work. Larger trees can benefit from 2000-3000 L of water per hectare with oil treatment.

Sensitive cultivars to oil treatment such as Red Delicious and Ambrosia (i.e. bark measling symptoms) should be oiled first.

There is currently no frost in the forecast for the coming week. However, when using oil, remember that **oil applied to frost-damaged tissue will greatly amplify any injury so wait 48 hours before and after frost if possible**. Never apply captan and oil together or Captan within 7 days (preferably 14) prior to or following an oil treatment. Sulphur applications (e.g. Kumulus) are also not compatible with oil and should not be used within 30 days of oil. For European Red Mite control, use either Superior Oil 70 or Purespray Green Spray Oil at 60 L/ha or 20 L of oil per 1000 L of spray. Oil will not affect two-spotted spider mite or apple rust mite as they overwinter as adults.

Horticulture

- Tree/Rootstock Planting
 - A substantial amount of trees have been planted in the past week with the dry soil conditions. Rainfall on Monday/Tuesday really didn't amount to much overall (just 10 mm in Kentville) so ground conditions should still be reasonably dry. Early planting will help trees (and rootstocks) initiate root growth before consistently warm weather arrives. Newly planted trees should be pruned for tree structure as soon as possible after planting. Also ensure newly planted trees are supported as early as possible to avoid tree breakage and to encourage maximum growth.
- Fertilizer
 - Fertilizer application is best between bud break to bloom. Many blocks have received fertilizer applications in the past week.
- Herbicides
 - Maintaining weed-free strips from bud break to 30-days after full bloom has the greatest impact on tree growth and yield. Timely herbicide application will ensure you make the most of the weed free window. Residual herbicides such as Chateau and Alion can offer a longer weed control than products such as Ignite, Gramoxone, and glyphosate, as long as surface residues do not interfere with their application. See labels for details.

Airblast Sprayer Calibration Workshop

Chris Duyvelshoff of Perennia will be hosting a workshop on airblast sprayer calibration on Friday, May 6th at 8 am-11 am with an alternate date of Tuesday, May 10th given weather unsuitable for spraying (rain or high wind speeds). The workshop will be held at Van Meekeren Farms in Lakeville. An address, map, and directions are provided here: <http://givethemawink.com/contact/>

This workshop will review the principles of Crop Adapted Spraying, developed by Dr. Jason Deveau of the Ontario Ministry of Agriculture, Food, and Rural Affairs. This will include measuring spray coverage, nozzle selection, determining appropriate water volume, and a review of the Orchard Max mobile app for sprayer calibration.

Attendance will qualify for 3.0 PCRP credits.

Get A Free Night's Stay in Halifax! – Growers Needed For 1-Day Meeting to Develop Competency Profiles for Apple Farm Workers – June 23rd

The Canadian Agricultural HR Council is currently developing a number of tools for apple producers. We have consulted with farm producers from across Canada and have developed National Occupation Standards for apple production.

We understand how busy you are at this time of the year but we are hoping that you can find the time to participate. We are presently setting up a final working session during which the critical competencies for success for key roles will be identified. It is the final meeting in the development process – competency profiling.

We would like to invite you to participate in the competency profiling session for Apple to be held on **Thursday, June 23rd, 2016 in Halifax, Nova Scotia**. The meeting is scheduled for 8:00 AM to 4:30PM (continental breakfast and lunch will be served).

To assist with your participation, the Canadian Agricultural HR Council will cover your travel expenses to attend the session (travel expenses and one night hotel). As per the Government of Canada Treasury Board Guidelines, the Council will reimburse each participant their roundtrip mileage (see attached Travel expense claim). Once you confirm your participation, we will send you the name of the travel agency you will be using to book a flight. CAHRC will ensure your booking at the hotel.

This 1-day workshop will bring 10-15 people together who work in Apple production to develop a competency profile for each of the following roles: Entry Level Farm Worker, Experienced Farm Worker, Farm Supervisor, Farm Manager (outlined below). Competency profiles complement National Occupational Standards. While Occupational Standards describe what the worker needs to be able to do, the competency profile identifies the underlying knowledge, skills and abilities to do so. During the session, you will choose the competencies that are most critical for successful performance for incumbents in those roles.

A human resource management professional will lead the group and make the process very easy and stress-free for participants. Materials to review prior to the session will be sent a few days prior.

We take the opportunity to thank those of you who provided insights during the focus groups and hope you will join us for this final working session.

Please confirm your participation ASAP to Tracy below.

Thanks,

TRACY BIERNACKI-DUSZA

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

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