



ORCHARD OUTLOOK

10 Webster St., Suite 210 | Kentville, Nova Scotia B4N 1H7 | (902) 678-7722 | www.agrapoint.ca

Volume 8, No. 5

May 28, 2008

This issue contains:

- 2008 Degree Day Accumulations
- Bud Development
- Apple Scab
- Fire Blight
- Powdery Mildew
- Calyx End and Dry-Eye Rots
- Calyx Insects
- Brown Leaf Weevils
- Codling Moth
- Other Tree Fruit Insects
- APOGEE[®]
- Field Meeting on Apple Thinning
- Thinning Pears
- Grafting

2008 Degree Day Accumulations

(Temperature data provided by Jeff Franklin, AFHRC, Kentville)

Table 1.0 Degree day accumulations as of May 25, 2008 taken from Kentville weather data. Degree day accumulations are calculated using the single sine method and are based on a start date of January 1, 2008.

Category	2005	2006	2007	2008	5 year average
Plant development (Base 5°C)	204.0	312.4	220.3	250.5	237.2
Insect development (Base 10°C)	52.1	120.3	84.7	81.1	87.1

Bud Development

As was the case last week, there is quite a range of variability in the stages of fruit bud development within the Valley. Development is more advanced in orchards located on the floor of the Valley than those close to the Minas Basin and upper slopes of the north and south mountains. In the more advanced areas of the Valley, all apple cultivars had started to bloom ranging from almost full bloom on Gravenstein and Idared to early bloom on Spy and Honeycrisp. It will be the later part of this week or the weekend before full bloom occurs for apples. Pears were in full bloom with petal drop on sweet cherry and late petal fall on plums.

Apple Scab

Just one apple scab infection period was recorded this past week although there were three wetting events. The wetting period which began around 5:45 pm on Thursday, May 22 and lasted until 4:00 pm on Friday resulted in a moderate infection period. This wetting period resulted from shower activity thus the start of the wetting period would differ throughout the Valley. The wetting period that was

ongoing at the time of writing last week's Orchard Outlook was not long enough for an infection period as well as that which began around 8:30 pm on Tuesday evening. The percentage of ascospores that have matured is now around 86 per cent.

Fire Blight

The next two weeks will be critical with regards to the control of the blossom blight infection stage of this disease. The risk of infection is temperature and moisture dependant. The only good thing about the cooler temperatures that are forecasted for the remainder of the week is that the risk for blossom blight infection will likely be low to moderate. The risk will increase quite rapidly with temperatures above 20°C. As of today streptomycin sprays should not be required this week. We will inform the industry when the risk becomes high and streptomycin should be applied.

Powdery Mildew

Treatment for this fungal disease should be ongoing, use a fungicide that controls both apple scab and powdery mildew. This season growers should only be treating those orchard blocks which had a mildew problem last year.

Calyx End and Dry-Eye Rots

In orchards where either one of these fungal diseases were a problem use fungicide that controls both of these diseases as well as apple scab. In the United States, Flint and Sovran rate higher than Captan/Maestro for blossom end rot. Spray will need to be carried on into the calyx period to obtain control for both diseases.

Insects

Now that apple trees are in the bloom stage the application of insecticide should be curtailed until petal fall/calyx.

Calyx Insects

The calyx stage is likely the busiest period for insect control as there are a number of pests that may need to be controlled at this stage of apple development, including the following: Winter moth, leafrollers, green fruit worm, rosy apple aphid, string bugs (brown and mullein), apple sawfly and mites. Treatment for any of these pests should be based upon monitoring and having populations at a treatable threshold. In some cases one insecticide will control several of these pests so check your Orchard Management Schedule for the best pesticide option. In the case of OBLR and apple sawfly treatment should be timed as close to petal as possible for the best results. Dr. Mike Hardman noted that Assails has provided good control of apple sawfly in trials conducted in the States.

Green pug moth, if they have not already done so will be leaving the tree during bloom thus you may be observing chewed leaves and flowers but no caterpillar.

Brown Leaf Weevils

Brown leaf weevils were observed in one orchard by Dick Rogers in fairly high numbers. Dick stated that this is a relatively new pest to Nova Scotia which chews holes in leaves and flowers but usually does not cause stress to the leaves and flowers. It is found in the United Kingdom but there it is considered only to be a minor pest.

Codling Moth

Traps to monitor populations and determine the need for treatment can be placed in the orchard between petal fall and calyx (likely mid to late next week).

Other Tree Fruit Insects

Dick Rogers reported observing pear psylla nymphs only, no adults. Next period to control this pest is at calyx which will be next week. Growers who plan to use Agri-Mek should apply as soon as possible after petal fall. Young leaves absorb this product better than mature leaves and best control is obtained with early applications.

With stone fruit at petal fall to late petal fall consideration should be given to the control of plum curculio. This pest slits the skin of newly developing fruit and lays an egg under the skin which develops into a nice white grub. Growers that wait until fall to treat for this pest often find that they do not obtain adequate control of the pest. Timing a pesticide application at shuck split should provide better control.

Horticulture

Some apples cultivars are at the shoot development stage when APOGEE[®] applications can begin. The following two articles discuss the use and benefits of APOGEE[®].

APOGEE[®]

(Charlie Embree AAFC, Douglas Nichols NSFGA and Julia Reekie AAFC)

APOGEE[®] (Prohexadione Calcium) is a plant growth regulator that inhibits the biosynthesis of gibberellin in current season growth. Vegetative growth is inhibited by a reduction in cell elongation resulting in shorter shoot internode length. In addition to growth control Apogee[®] will suppress secondary fire blight (*Erwinia amylovora*) infections.

Since 1999 we have conducted trials with Apogee[®]. The cultivars we treated included Cortland, McIntosh, Gala and Northern Spy in Nova Scotia. Since the initial experiment, Apogee[®] trials have been a part of the NSFGA annual Bioregulator program until its registration in 2005.

Apogee[®] has consistently reduced terminal vegetative growth by 30 -50 per cent. This material has the potential to replace pruning the year following application. Apogee[®] will suppress vigor each year it is applied however; vigor will rebound to some extent with extra terminal growth in the season no application is used. In young high density orchard systems where vigour is

excessive, an application of Apogee® will help to reduce tree vigor. It can be considered as a tool to provide a balance between canopy development and fruit production.

Timing of the first application and spray coverage of the canopy are both critical for best results. For adequate vegetative growth control the first application should be applied before terminal shoots are 8.0 cm (3.5 inches) in length. Vigour reduction will be proportionately diminished if applied to longer terminal shoots.

Two applications at a rate of 27 grams 100 litres of dilute spray solution (810 per hectare) for a 100% canopy at a 14 day interval will provide adequate growth control in most orchard systems. Where extreme vegetative growth exists the higher rate of 45 grams per 100 liters of dilute spray solution (1350 grams per hectare) for a 100 per cent canopy will be necessary. The adjunct Agral 90® at a rate of 50 ml per 100 liters of water will ensure uptake of Apogee® by the foliage. Additional late season application may be necessary for water sprout growth control following aggressive spring pruning.

Thinning treatment responses for McIntosh were not altered by Apogee® in Nova Scotia. Suppressed thinning responses were reported from other growing regions.

Benefits of Apogee for Insect and Disease Control

(J. M. Hardman AAFC)

Recent articles in Acta Horticulturae, HortScience and the Journal of Economic Entomology have shown the benefits of applying Apogee in apple and pear orchards. First, Apogee enhances resistance to fire blight and black spot infections by altered flavonoid metabolism. But Apogee also reduces the growth of longitudinal shoots by blocking the late steps in gibberellin synthesis. This action assists control of diseases such as fire blight and powdery mildew by reducing tree canopy density thereby allowing better coverage by fungicides and shorter periods of leaf wetting. Insect damage is also reduced: slower shoot growth reduces growth dilution of insecticide residues sprayed on foliage and a less dense canopy allows better penetration of sprays. Moreover, Apogee reduces the quantity of young, succulent growth that favours foliage-feeding insect pests. Thus, Apogee applications were followed by reduced damage from apple leaf-curling midge in New Zealand, by spirea aphid and oblique-banded leafroller on apple, and by pear psylla on pear in Pennsylvania, and by reduced damage from potato leafhopper in Massachusetts and West Virginia. The first four species are economic pests on apples or pears in Nova Scotia. Because potato leafhoppers are vectors for fire blight, Apogee also reduced incidence of that disease in the US study.

Field Meeting on Apple Thinning

It would appear that there is a pretty good return apple blossom in Valley orchards and with reasonable pollinating conditions during the next ten days most growers will need to regulate crop load with the use of thinners. There will be a field meeting at Tim Pearson's Farm in Woodville on Friday June 6th at 1:00 pm to discuss the need and options for fruit thinning. Doug Nichols and Charlie Embree will be on hand to take part in this discussion.

Thinning Pears

Pears should be at petal fall by early next week and this is the stage of development when a thinner can be applied. For the past 20 years growers in Nova Scotia have relied on Amid-thin for thinning purposes. This thinner is most effective when applied at petal fall with the thinning response varying by cultivar and rate of application. Amid-thin can tend to under thin Bartlett while over thinning Clapp Favorite. The recommended rates for Amid-thin are 10 to 20 ppm. The lower rates, 10 to 12 ppm, are suggested for Clapp Favorite while 15 to 20 ppm is suggested for Bartlett.

Grafting

Growers who have yet to complete bark grafting trees over can continue to do so, even though apple trees are at bloom. As long as you have good dormant scions and the bark slips on the trees there is no reason for stopping.

Written and published by AgraPoint in partnership with Agriculture and Agri-Food Canada and Industry representation.

