Agra Point
ORCHARD OUTLOOK
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This issue contains:

2009 Degree Day Accumulations

(Temperature data provided by Jeff Franklin, AFHRC, Kentville)
Table 1.0 Degree day accumulations as of May 25, 2009 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, 2009.

Category	2006	2007	2008	2009	5 year average
Plant development (Base 5ºC)	312.4	220.3	250.5	280.4	244.5
Insect development (Base 10º)	120.3	84.7	81.1	113.1	86.9

Bud Development

The following observations are based upon orchard visits during Tuesday, May 27th. Apple tree flower bud development varied from calyx to not quite full bloom. In the warmer areas of the Valley Gravenstein was at late petal fall to calyx. Fruit has started to size on Gravenstien and I did measure one fruit at the 7 mm. McIntosh was at mid to late petal fall while late blooming cultivars such as Golden Delicious, Honeycrisp and Spy were at full bloom. Given the temperatures that are forecasted for the next seven days, bloom on the later cultivars will likely continue on into next week. Pears for the most part are at calyx. Japanese plums and sweet cherry shucks were off larger fruit while others were at shuck split.

Apple Scab

One apple scab infection period was recorded at Kentville during the past week. This was the result of a wetting period which began around 4:00 pm on Sunday, May 24th and lasted until 8:00 am on Monday, May 25th. The average temperature during this 16 hour wetting period was 15°C and the infection was classed as light. The prediction model now has overwintering spores at 90-95% mature.
Just in case you thought you were wasting money on fungicide sprays I did find scab lesions on Tuesday, May 26th in an unsprayed block of McIntosh. I found lesions on the upper and under

side of the leaves. They were fairly new so my guess is that they resulted from the infection on May 7th.

Fire Blight

The warm temperatures that occurred last Thursday and Friday did take the risk of fire blight infection to high. The shower activity that was forecasted for Friday did not occur thus an infection did not occur according to the Maryblight model. In orchard blocks where the dew was heavy enough Saturday morning to cause water to run off the petals this would have triggered an infection. Those growers that did spray streptomycin on Friday would have reduced the risk of an infection as a result of dew. Low temperatures since last Friday reduced the risk to moderate and should stay at this level for the next few days unless the weather warms up.

Powdery Mildew

In Apple orchards which had a mildew problem last year, continue with a fungicide program that control both apple scab and powdery mildew. The one positive thing with the cool temperatures is that it will not promote mildew infections.

Insects

As apple trees enter the calyx stage of fruit development there are a number of insect that will need monitoring. Table 1 provides treatment thresholds for calyx pest. Table 2 list pesticide options for the various pest or combination of pests.

Codling Moth Traps

Codling moth traps will need to be placed in the orchard in the near future. If you ordered traps from the Nova Scotia Fruit Growers Association you will need to stop into the office and pick them up.

Pear Psylla

Growers that did not apply a dormant oil spray for pyslla control should check for psylla. Failure to control this pest can result in loss of crop and weakening of the trees resulting in poor or no return bloom. There are a number of pesticides registered for pear psylla however it is felt that psylla is resistant to the ops and pyrtheriods in many pear orchard. Agrameck+ oil is an excellent treatment for controlling this pear pest. It should be applied as close to the completion of pear petal fall as possible. The product is absorbed into new leaf tissue and has a long residual life which can control the drawn out egg hatch of psylla.
Captan should not be applied within seven days of the treatment because oil has to be used with Agrameck which could result in t toxicity damage to the trees. Other options for psylla are Movento, Assail and Actara which need to coincide with egg hatch.

Plum Curculio

The shucks have already begun to fall off sweet cherry and Japanesse plum. If you have not already applied an insecticide for this pest then it needs to go on ASAP. The longer you delay the more damage this beetle will inflict on your plums and sweet cherry.

Horticultural Tips

APOGEE®

Nova Scotia growers that have applied this growth regulator to control vegetative shoot growth on apple trees in general have been very pleased with the results. The product does control excessive shoot vigour when applied at the correct time and rate. I have heard several growers comment on that the use of this product has significantly reduced the amount of time it took to dormant prune trees. Apogee® unfortunately will only reduce shoot vigour the year it is applied thus needs to be applied annual where excessive shoot growth is still of concern. Other benefits of Apogee® are fire blight suppression and reduction in pesticide damage.
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 a14 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% 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 2009

Written by Doug Nichols NSFGA and Charlie Embree AAFC Kentville

May 22nd and 23rd were excellent pollination days during the 2009 bloom in Nova Scotia. Under cooler conditions bees were active the first part of this week as well. With the amount of bloom present keen attention to the 2009 thinning program will be a necessity. When excess flowers are removed early, the remaining fruitlets will become larger and the potential return bloom is enhanced. Commercially blossom thinning materials with properties that disrupt flower fertilization are the most practical and economical approach to reduce blossom numbers and potential fruit set. The foliar fertilizer Ammonium Thiosulfate (ATS) will reduce fruit set through disruptive action on the flower stigma. Complete wetting of tree foliage is essential for effective response with ATS. The current rate used is 12.5 millilitres ATS per litre of Water or up to 42 litres per Hectare in an orchard with 100% tree row volume. The optimum timing for application of blossom thinners is 12-48 hours after king blossoms have set and before lateral

flowers have set. In 2009 the effective window of opportunity will soon be over. The flower must be fully open for the blossom thinners to be effective therefore growers should target 90% full bloom as the time to apply blossom thinners. It is difficult to begin thinning before the fruit set is known however if the blossom density is high (snowball bloom) only 5% of these blossoms are required as fruit for a full crop at harvest. A quick evaluation of the effectiveness following blossom thinning treatment allows growers to determine soon after fruit set if additional petal-fall or fruitlet thinner treatment is needed to further adjust crop-load.

Petal fall and early fruitlet application can begin as soon as the petals have fallen. This will be next week for most locations. Amid thin is an effective option for pear growers however, it need to be applied at petalfall therefore immediate application is necessary. Sevin XLR at petal fall and early fruit development is a great tool to initiate a thinning program followed by additional application if excessive fruit set is evident at the 10 to 15 mm fruitlet stage. As fruit size approaches 7-8 mm growers need to finalize their thinning program for the 2009 season. Fruitlet thinning options will be discussed in greater detail in the next issue.

In New York and New England considerable discussion is ongoing about an apple fruitlet thinning predictive model developed at Cornell University. The goal of the model is to use long range site specific weather forecasts and fruit set potential to determine how aggressive a grower's fruitlet thinning program should be for a given season. In addition to fruit set, temperature and cloud cover are important components in the model predictions.

Combining Sevin with Neonicotinoid Insecticides

Dr Mike Hardman pointed out that the combination of Sevin plus neonicotinoid insecticides (Admire and Actaria) will cause mite flare ups. Each applied separately does not cause the problem that the combination of the two does. Just keep this in mind when you are using Sevin for fruit thinning.

Herbicides

Now is the time to be controlling weeds in the orchard to obtain the maximum benefit. Avoid spraying herbicides on to unprotect tree trunks especially gylphosate. On young trees, gylphosate can be absorbed through the green bark and cause serious damage. There is even some research indicating that gylphosate sprayed onto the trunks of mature tree may be causing damage to the trees that does not appear as gylphosate but effect the overall health of the tree. The new herbicide Chateau should have been applied by now the next opportunity for this product will be post harvest.

Table 1 Insect Thresholds

Pest	Sampling method	Susceptible varieties	Thresholds
Stinging Mirids (Apple Brown Bug, Mullein Bug)	Tapping tray - tap 20 limbs	Red Delicious/Spy/Spartan/ Jonagold	Total of 8 Stinging Mirids per 20 limbs
Tarnished Plant Bug	Visual and white sticky cards		
Winter Moth	Tapping tray - tap 20 limbs	Any	3 or 4
Speckled Green Fruitworm	Tapping tray - tap 20 limbs	Any	1
Rosy Apple Aphid	Search 3 trees; divide number of living colonies seen by total meters of tree height scanned	Gravenstein/Idared/Cortland	1.0 colony/meter of tree height
White Apple Leafhopper	Scan the underside of 100 leaves near tree trunk	Any	Average of 1 leafhopper/leaf
Pale Apple Leafroller Obliquebanded Leafroller	Check 100 terminals	Any	50 terminals infested (young trees)
European Fruit Tree Borer	Based on traps	Any	Not established

Decision Table 2: Determining the most effective pesticides in order of preference for control of pests at the calyx stage of apples in Nova Scotia (rev. June 2007)

Insect Complex	Products and Rate per hectare	Ratings*and comments
1. Stinging bugs: mullein, apple brown & tarnished plant bug	Actara 160 g, Calypso145-290 ml, Admire 380 mL, *** synthetic pyrethroids*	Actara- **4;** Calypso- **4**; Admire- **3**; Synthetic pyrethroids- **4** but pyrethroids are disruptive to IPM programs;
2. Rosy Apple Aphid	Pirimor 50 DF 850g-1.7 kg or Admire 230mL, Actara 160 g, Assail 70 WP 80-120g or Movento 365-435 ml	Actara- **4**; Admire- **4**; Assail- **3 to 4**
3. White Apple Leafhopper	Pirimor 50 DF 1.7 kg or Admire 200 mL Calypso 145-290 ml or Sevin XLR 2.3L or Assail 80-120 g	Sevin XLR applied for chemical thinning will provide control.** Admire- **4**; Actara- **4**; Assail- **4;** Calypso- **3 to 4**.
4. Rosy Apple Aphid, stinging bugs, White Apple Leafhopper	Admire 380 mL, Actara 160 g, Calypso 145- 190 ml	Each of these products is rated **4** for some of these pests and **3** for others
5. Pale Apple Leafroller, Obliquebanded Leafroller	Intrepid 1.00 L or Confirm 1.00 L Delegate 210-420 g or Success 182 ml	Ratings for OBLR for caterpillar kill are: Intrepid- **4**; Success- **4**; Confirm- **3**
6. Winter Moth, Fruitworm	An organophosphate (eg Imidan 4.12 kg or Zolone F 2.0L)	Imidan 4.12 kg or Zolone F 2.0L are the least disruptive to IPM and IFP
7. Stinging bugs, Rosy Apple Aphid, White Apple leafhopper, Leafroller and European Apple Sawfly	Assail 120 g, Calypso 145-290 ml	Each of these products is rated **4** for some of these pests and **2**-**3** for others
8. Winter Moth/Fruitworm, White Apple Leafhopper and/or stinging bugs	*** synthetic pyrethroids*	Synthetic pyrethroids are disruptive to IPM programs and their use should be avoided when possible. Not a permitted product in NSFGA IFP program post bloom
9. Winter Moth, Leafroller and Fruitworm	Confirm or Intrepid 1.0L or ***synthetic pyrethroid* or an organophosphate (eg Imidan 4.12 kg or Zolone 2.0L)	Synthetic pyrethroids, see above note.

10. European Apple Sawfly	Guthion or Sniper 2 kg/ha	
11. European Red Mite	Apollo 300-600ml or Agri-Mek 750 + 10 L Superior Oil	Both products are compatible with use of typhs for biological control

* Ratings based on trials in US and Canada: 1- Poor 2- Fair 3- Good- very good 4- Excellent and Provide by Dr. Mike Hardman AAFC Kentville

** Tank mixing Sevin with other insecticides such as Actara, Admire, Assail, or Calypso causes mite flare-ups.

*** Apogee reduces risk from obliquebanded leafroller and green apple aphid

Contributions and consultations were made in the preparation of this newsletter with the Orchard Outlook Committee and Dr. Rob Smith

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