

**This issue contains:**

- 2009 Degree Day Accumulations
- Orchard Outlook
- Fruit Bud Development
- Early Observations of Potential Crop
- Apple Scab
- Insect Activity Report
- European Red Mite
- Powdery Mildew

**2009 Degree Day Accumulations**

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

Table 1.0 Degree day accumulations as of Apr 28, 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
<b>Plant development (Base 5°C)</b>	118.3	87.1	108.7	99.3	93.3
<b>Insect development (Base 10°C)</b>	27.1	26.8	28.7	31.9	24.6

**Fruit Bud Development**

As stated in the last issue of the Orchard Outlook I am always amazed how fast fruit buds can develop. Given the weather conditions up until mid April my thoughts were that green tissue may not show up until early May. Wishful thinking by all of us. At a grower meeting last Thursday I was told that green tissue had been observed and sure enough when I had a look at Idared and McIntosh bud that afternoon I observed some fruit buds that had cracked and I could see green tissue. Warm temperatures over the week promoted bud development and Tuesday’s 30°C high moved them along even quicker. Checking apple buds in the Kentville area late Tuesday afternoon I observed McIntosh at the ¼ inch to ½ inch stage of development. I would have to say that in most areas of the Valley and on most apple cultivars the stage of bud development is beyond green tip and approaching ½ inch green. On Tuesday afternoon pears were at or near the bud burst stage and stone fruit between swollen bud and bud burst.

**Early Observations of Potential Crop**

It is very early in the season to start talking about crop size but my early observation from orchard visits this week gives me the impression that there is a very good fruit bud on apple

trees and pear trees. This impression may change with time as I visit more orchard blocks. Looking at a block of sweet cherry I did see some bud damage which appeared to be cultivar related. The two cold mornings in January likely contributed to the damage as well as bacterial canker. The Japanese plums I looked at had a light bloom which I attributed to biannual bearing; however I also observed dead buds on these trees in which the spur wood was brown. This I also attributed to winter damage.

## **Apple Scab**

There is no denying it, spray season is upon use and early season scab control is a key factor in season long control of apple scab. To date there have been no infection periods. There was some light shower activity Tuesday evening April 28<sup>th</sup> beginning sometime between 9:30 pm and 10:30 pm. This wetting period would have lasted through the evening drying off around 8:00 am Wednesday morning. The average temperature during this 11hr period was 10°C which would have required 14 hours of wetting for a light infection. The spore discharge that would have taken place at the start of the wetting period would have been light because the wetting period began in the dark. This should serve as a warning to growers because if there had been an infection period last night it would have been difficult to apply a post infection fungicide given windy conditions forecasted for Wednesday. The forecast for Friday and the weekend is for periods of rain which means the first infection period will occur over this time period. Given that three consecutive days of rain are forecasted the wise growers will have applied a fungicide prior to this Friday. Growers that are planning to apply copper for fire blight control should note that thorough cover of the entire tree is necessary for it to be effective. This means that diluted spray or a high volume of water should be used. This copper spray will serve as a scab spray. Copper should however be applied prior to fruit buds reaching the ¼ to ½ stage of development to avoid injury. Given the rate of fruit bud development this window is rapidly closing.

In the early part of the growing season the main fungicide options should be Maestro/Captan, Dithane/Manzate/Penncozeb, Dikar, Polyram, Scala, Vangard and copper. The use of Superior Oil will dictate if Maestro/Captan is an option as these products should not be applied immediately before or closely following an oil spray (7 days prior to and 7 days following should prevent any toxicity problems). Scala and Vangard options have been used sparingly by Nova Scotia growers. Scala and Vanguard both belong to Group 9 which need to be taken in to consideration for resistance management. Do not apply more than two back to back sprays and do not be used them in rotation. Scala is rated as having 48 hrs post infection activity and this is based upon the start of the wetting period.

## **Powdery Mildew**

At this point in the growing season it is too early to be applying treatments for powdery mildew. There is some concern that the resistance of mildew and apple scab to the Si and stoblin fungicides is starting to build in Nova Scotia therefore growers should be cautious on how they use this group of fungicides. Fungicide options for scab control are greater than that for mildew therefore growers should adopt a strategy to minimize mildew resistance development to fungicides. Only treat cultivars that highly susceptible to this disease which is primarily

Honeycrisp, Cortland and Idared in Nova Scotia. Obtain early season control thereby reducing the number of fungicide applications required to keep the disease in check. If mildew was a serious problem last year then starting a mildew spray program at half inch green would be advised. If it was only a moderate to light problem then wait to tight cluster to begin the program. Growers should also adopt a bit of tolerance with regards to mildew infections as a few strikes on a tree will not have a significant impact on the crop. If fungicides are applied every time a few strikes are observed the process of resistance development will be sped up.

### **Insect Activity Report**

Dick Rogers, Wild Wood Lab, in previous years has provided me with a weekly update on insect activity from three orchard blocks, Greenwich, Morristown and Aylesford. Dick has been conducting research outside of the Province since late last summer thus is not presently available to provide this information. I have however asked Dr. Rob Smith to provide me with a weekly update on insect activity. Given the fact that orchards at approximately at the same stage of bud development as they were at this date last year, insect activity should also be similar, overwintering leaf rollers, fist instar winter/pug moth, grain aphids, psylla eggs and mite eggs would be present. It is too early to be applying insecticides with the exception of oil for European red mite and pear psylla. Oil treatments for psylla control should have been applied by now.

### **European Red Mite**

Many growers make use of APM consulting services to conduct over wintering European red mite counts to determine the need for an oil spray. Those growers that do not make use of this service can use the following steps to determine the need and benefit of an oil application: Sampling for winter eggs involves collecting 30 fruit spur (3 cm of wood and spur) from 10 trees. Count the number of eggs on each spur and assign a score based upon the following:

Score	Number of Eggs
0	0
1	1-10
2	11-15
3	51-100
4	>100

You do not need to count every egg but do close examination and make an estimate. Once all the spurs have been scored individually on the Basis of ERM egg abundance, the average score is calculated by dividing the total of the scored by the number of fruit spurs. The need to treat is based upon the following scores.

Threshold (avg Score)	Recommendation	Timing
0	No treatment	-----
1	Superior oil 70 sec	Green tip-tight cluster
2.0	Miticde	Consult spray guide

The closer the oil application can be timed to the start of egg hatch the more effective it will be. Egg hatch begins just prior to or around pink however trying to apply oil to all blocks at this time is usually very difficult because of weather conditions and the time it takes to apply with a minimum of 1000 L of water per hectare. Applying oil during cold weather, just prior to or following a frost can increase the damage to the foliage. Growers would be advised to start applying oil once bud development has reached the half inch stage during periods of fine weather. The goal should be to have all blocks requiring treatment done by tight cluster. A reminder that two Spotted mite is not controlled by oil.

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

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