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**2009 Degree Day Accumulations**

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

Table 1.0 Degree day accumulations as of May 4, 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 5°C)	149.6	97.7	132.6	135.2	120.0
Insect development (Base 10°C)	41.9	28.1	36.0	45.6	36.6

**Bud Development**

Orchard visits from Medford to Kingston on Tuesday May 5 revealed that apple fruit buds were between half inch green and the tight cluster stage of development. The most advanced apple buds I observed were Idared at tight cluster. Pear fruit buds were between the bud burst and green cluster stage of development. Plums were between green cluster and white bud however I did see a few plum flowers open in sheltered locations. Sweet cherries were at bud burst and sour cherries were near the white cluster stage. Peach flower buds were at half inch green to pink. Tuesday’s observation would indicated to me fruit bud development is advanced for the time of the year. The seven day weather forecast is predicting average temperatures (15°C) to below average temperatures so the rate of bud development may not as rapid as this past week. Should the forecast change and warmer temperatures occur then apple bud could be at tight cluster by the weekend or early next week.

## **Apple Scab**

It is felt that a scab infection period did occur this past weekend. This was a result of a wetting period that began at 7:00 am on Saturday May 2<sup>nd</sup>. It did dry off by early afternoon however there was a heavy fog Saturday night and Sunday morning which rewetted the foliage and allowed the spores to continue to develop. The combined length of the wetting periods was 18 hrs with an average temperature of 12°C. A wetting period began Tuesday evening around 8:00pm in the Kentville area and was still ongoing at the time of writing the orchard outlook. The average temperature overnight was 7.8°C and at this temperature 16hrs of wetting is required for an infection period. This means that an infection will have been established by noon or earlier on Wednesday May 6<sup>th</sup>. The long range forecast is for wet weather until Monday of next week. If you were not able to apply a fungicide prior to the start of this wet weather growers would be advised to apply a fungicide as soon as possible taking advantage of spells between rains or during periods of light mist. A fungicide applied under these conditions will provide short term protection and should carry through to the end of this forecasted stretch of wet weather. A reminder, that the spray intervals need to be shortened during period of rapid leaf development and/or periods of heavy rain.

## **Powdery Mildew**

Many growers would have made a fungicide application for apple scab the earlier part of this week. The next time a fungicide is applied there is a strong chance apple buds will be at the tight cluster stage. In orchard block where powdery mildew was severe growers would be advised to select a fungicide that controls both powdery mildew and apple scab. Obtaining early season mildew control should reduce or eliminate the need for mildew sprays after bloom. A fungicide program to control powdery mildew should be based upon disease pressure from last year and on those cultivars that are more susceptible to this fungal disease. Options for mildew control are Nova, Nustar, Sovran, Flint, Senator+Captan (if Benelate resistance was detected in your orchards you may wish to avoid this combination or only use it once), Dikar or Sulphur. Note that the rate of Nustar and Sovran are higher for mildew control than that for apple scab.

## **Fire Blight**

Two data loggers are being placed out this week, one in Medford and the other in Morristown. The data from these two loggers plus weather information from Kentville will be used to make fireblight infection prediction. It is anticipated that the same method as last year will be used to get information out to growers when there is a high risk of blossom blight infections. In most locations apple buds are at the stage of development where there is a risk of fruit russetting from copper sprays. The risk comes from copper residue washing on to the fruit.

## **Brown Rot**

Brown rot infections of stone fruit by the fungus *Monilinia fructicola* can take place during the bloom period and lead to major problems by harvest time. A fungicide program to control brown rot infections need to start when the fruit buds have reached the white bud stage of development (puffy white) which could be prior to this weekend. Depending upon the weather and length of bloom two to three sprays should provide control of the blossom blight stage of this fungus. Additional fungicide applications will be required as the fruit begins to ripen. Growers have a wide selection of fungicide for the control of brown rot, not all of the problems are registered for all of the stone fruit species. If you plan to spray more than one type of stone fruit make sure the product is registered for all of them.

## **Black Knot**

During orchard visits on Tuesday May 5<sup>th</sup> I observed black knot on stone fruit trees in several orchards. The severity of black knot infections can vary from year to year as wet weather during the bloom period is a key factor in its spread. The other variable is the ability of the producer to prune out as many of the infections as possible. These black knots are the source of spores for new infections. Fungicide applications from the white bud stage to shuck split may provide some control. Indar and Captan/Maestro will reduce black knot as well as controlling brown rot. The effectiveness of these two products can be somewhat variable. Pruning out the black knot is still the most effective control to date and this should be done prior to spore release starting around the white bud stage. Remember to remove the pruned out knot from the orchard and burn them.

## **Insects Activity**

To date there is not a lot to report on insect activity. Looking at fruit buds yesterday I was hard pressed to find caterpillars or aphids. I did observe winter moth/pug moth in one orchard but was still too small to distinguish between winter moth or pug moth. Growers should be able to distinguish the difference between these two caterpillars by next week. Pug moths are distinguishable from winter moth by the red strip or start of a red stripe along the upper side. Prebloom treatment based upon population assessment should be applied at bud separation which weather will determine. Growers should be prepared to have to treat for winter moth as early as next week. The Dipel + Ripcord or Bioprotect+ Ripcord are still the preferred treatment for this pest versus an OP or pyrethroid.

## **Red Mite**

Orchard observation would indicate that a number of growers have applied oil. Once again if you were planning to apply oil for European red mite control it should go on within the week. Keep an eye on the weather and do apply oil following or just prior to a frost event.

## Risk of Frost Damage

For the next three to four weeks we will all be weather watchers with regard to the risk of frost. The more advanced bud development is, the greater the potential for frost damage. It's great to have an early season but it does have its draw backs. As in previous years please find enclosed the critical temperatures with regards to percent bud damage for the various tree fruits. Here is hoping that you do not have to refer to these tables. Fruit buds become more sensitive to freezing temperatures as they approach the blossom stage. The following table provides critical temperature in Celsius and you will note how the buds become more sensitive to frost as they develop and the difference in hardiness between tree fruit species. The last frost recorded at Kentville was on April 30<sup>th</sup> with a low of -0.7°C and would not have caused any problems.

### Critical Temperatures for frost damage in degree Celsius

<b>Apple</b>	Tight Cluster	First Pink	Full Pink	First Bloom	Full Bloom	Post Bloom
10% kill	-2.7	-2.2	-2.2	-2.2	-2.2	-2.2
90% kill	-6.1	-4.4	3.9	-3.9	-3.9	-3.9
<b>Pear</b>	Tight Cluster	First White	Full White	First Bloom	Full Bloom	
10% kill	-4.4	-2.2	-3.3	-2.7	-2.2	-2.2
90% kill	-9.4	-3.9	-5.6	-5.0	-4.4	-4.4
<b>Peach</b>	Swollen Bud	Half-inch Green	Pink	First Bloom	Full Bloom	Post Bloom
10% kill	-6.1	-5	-3.8	-3.3	-2.8	-2.2
90% kill	-15	-12.7	-9.4	-6.1	-4.4	-3.8
<b>Plum</b>	Swollen Bud	Bud Burst	Green Cluster	White Bud	Bloom	Post Bloom
10% kill	-8.3	-6.7	-4.4	-3.3	-2.2	-2.2
90% kill	16.1	-13.9	-8.9	-5.6	-5	-5
<b>Sweet Cherry</b>	Tight Cluster	Open Cluster	First White	First Bloom	Full Bloom	Post Bloom
10% kill	-2.2	-2.7	-2.7	-2.2	-2.2	-2.2
90% kill	-8.3	-6.1	-4.4	-3.9	-3.9	-3.9

## Horticultural Tips

Fertilizer application can take place now. The sooner the fertilizer is applied the sooner it will be picked up by the roots. This is more critical for trees that were deficient in nitrogen last year. Fertilizer applications should be based upon last year's leaf tissue analysis. If you are going to cut back on fertilizer applications because of cost then you will need to control

vegetation under the tree canopy and regulate crop load so that fruit quality is not severely affect.

Herbicide applications; the annual sea of yellow has begun so let that service as a notice that it is not too early to begin grass and weed control programs. Controlling weed and grass growth through May and June will have the greatest impact on tree and fruit growth.

Tree training if you have not already pruned young trees you should do so asap.

### **Honeycrisp™ Planting**

Growers that will be receiving assistance for 2009 Honeycrisp™ plantings under the HOCORP will need to contact Bill Craig (678-7722) once the trees have been planted. This is so tree counts can begin. The goal is to have all tree counts completed by the end of June.

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

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