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Orchard Outlook Newsletter

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This Issue Contains:

The technical information contained in this Orchard Outlook publication is the result of the combined professional opinions of personnel from AFHRC, AgraPoint and industry.

Bud Development

As of Tuesday, May 16th stone fruit were in full bloom to petal fall, pears were at early bloom and apples were at pink to the start of bloom. King blooms were opening on Gravenstein and Idared. The odd bloom could be seen on Cortland and McIntosh in the warmer areas of the Valley. Depending on temperatures apple trees could be in full bloom by this weekend or early next week.

2006 Degree Day Accumulations

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

Table 1.0 Degree day accumulations as of May 14, 2006 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, 2006.

Category	2003	2004	2005	2006	5 year average
Plant development (Base 5ºC)	129.3	169.0	156.7	217.3	148.4
Insect development (Base 10º)	36.0	64.7	42.0	67.2	46.1

Diseases

Apple Scab

One infection period was recorded at Kentville during the past week and this resulted from the wetting period that began at approximately 2:30 PM on Tuesday, May 16th. The wetting period was still ongoing at the time of the *Orchard Outlook* meeting and it was felt that it would be mid-morning before drying occurred. The average temperature for the wetting period was 13˚C thus an infection would have been established by 1:30 AM on

Wednesday, May 17th. This wetting period would have begun earlier to the west of Kentville. The wetting period which began at 2:00 AM on Thursday, May 11th was 2 hours short of an infection period. Depending when drying occurred this may have resulted in an infection period in some areas of the Valley. Now that apple trees are in full pink to early bloom it is important that the SI fungicides, Nova and Nustar, be mixed with one of the listed products in the spray guide. Failure to apply these products as a mixture will result in fruit scab even though foliar scab is controlled.

Fire Blight

Now that we have entered the bloom period for apples and pears the spread of fire blight through blossom infection will need to be taken into consideration. Last year blossom infection occurred during the tail end of the bloom period when temperatures were warm. Nova Scotia's climate is borderline when it comes to blossom infection as we do not always have the ideal weather conditions for blossom infection to occur. The use of the MaryBlyt© and Cougarblight prediction models will predict the risk of blossom infection based on the weather conditions during bloom. At this point in the bloom period these models are predicting a low to moderate risk thus there would be no need to apply Streptomycin for the next few days if wet weather is forecast. We will be monitoring weather conditions on a daily basis during bloom and keeping the industry informed when a high risk is present. Growers who are planning to apply Streptomycin during the bloom period will need to apply the product when the risk factor is high just prior to wetting of the bloom.

Powdery Mildew

Powdery mildew has been observed on new shoot growth and fruit bud clusters. Now is the time to try and head-off the spread of this disease. The use of the SI fungicides, Nova and Nustar, and the Strobilurin fungicides, Flint and Sovran, are effective against powdery mildew. Powdery mildew will continue to spread until terminal buds have set on the vegetative shoot growth. It can spread quite quickly under warm, humid conditions when there is a lot of new soft shoot and leaf growth. Cleaning up mildew during the pink to calyx period can provide season long control. Check the more susceptible cultivars such as Idared, Cortland and Jonagold for mildew.

Powdery mildew can often come on new nursery trees especially if they have come from an area where mildew is common. Powdery mildew on the new shoots will stunt growth so you will need to address this problem if you observe it on new trees.

Brown Rot

Stone fruit are at a very susceptible stage for brown rot infection to occur thus growers will need to stay on top of fungicide applications for the next couple of weeks.

Insects

Caterpillar Complex

Bud development has been so rapid that treatment for winter moth, pug moth and fruit worm may not have been applied yet. Now that bloom has begun growers should weigh in the risk factor of killing pollinating insects with an insecticide treatment. Growers will still have a couple of days to treat for these pests in blocks of mid to late blooming cultivars, however if there are open blossoms in these blocks you should wait until the calyx period to treat for these insects.

Rosy Apple Aphids

Stem mothers are now present in orchards and if monitoring indicates that a treatable population is present then pre-bloom insecticide treatment with Pirimor or Assail can be effective in controlling this pest. A word of caution: if bloom is present treatment should be delayed until the calyx period.

Tarnished Plant Bug

The same message as above - if monitoring indicates that a treatment for tarnished plant bug is required on susceptible cultivars such as Gravenstein, Jonagold and Honeycrisp, growers will only have the next couple of days to treat Jonagold and Honeycrisp. The pre-bloom window for Gravenstein has passed.

Pear Psylla

Eggs and adults are present and the next period to treat will be at calyx when eggs have hatched and young nymphs are present.

Stinging Bugs on Pears

Pear trees could be at calyx by mid to late next week depending upon temperatures. Growers who have a problem with sting damage on pears will need to treat for this problem at calyx. Apple curculio has been a problem in a number of blocks and treatment for this pest should be done in consultation with your monitoring service.

Red Mite

Newly hatched red mite can be found now that apple trees are at pink to early bloom. The window for oil treatment has passed and the next opportunity to treat for mites will be at the calyx period. A miticide applied at calyx will not only pick up the red mite it will also control two-spotted spider mite that have over-wintered in the trees or those that have moved up off the ground and into the trees. Growers who will be using Agri-Mek plus oil should time the treatment right at calyx. Remember that oil and Captan/Maestro are not compatible thus you will need to abide by the 14 day rule. Do not apply these fungicides within 14 days prior to or after an oil treatment.

Horticultural

Pollination

Hopefully growers have made arrangements to have hives placed in their orchards during the bloom period. Placing hives in an orchard block prior to bloom can result in the bees foraging off site and not paying full attention to the apple bloom. **Do not apply insecticides to orchards when bees and pollinating insects are present.**

Blossom Thinning

The following four paragraphs were published in the May 22, 2002 issue of the *Orchard Outlook* and were provided by Charlie Embree and Doug Nichols, Agriculture and Agri-Food Canada, Kentville, NS. Given the fact that the Honeycrisp™ bloom is 'off' in many of the older blocks I felt it would be appropriate to stress the importance of blossom thinning for cultivars that have a biennial bearing tendency. Research has shown that blossom thinners are more effective in promoting return bloom than post bloom thinning treatments.

Improvement in apple and pear fruit size is an important goal of crop-load management. The number of flowers produced is often greater than the number of fruit of acceptable size the tree can support. In general a crop of large apples is worth more than the same weight of small apples. The challenge for apple producers is to reduce fruit numbers per tree and improve fruit size, without reducing total dollar value per hectare. Only 4 to 7% of the blossoms on an apple tree full of blossoms are required for a commercial crop of apples or pears.

Developing a strategy for consistent annual production, although not related to fruit size directly, is an important consideration when reducing fruit numbers per tree. Consistent cropping is also the first requirement for effective control of vegetative growth.

Spur renewal pruning and hand thinning are major costs for apple producers, and as the costs of fruit production increase, effective economical methods of early season fruit removal are needed. Ammonium thiosulphate (ATS) is an effective blossom thinner available to apple producers. ATS is a liquid fertilizer and if applied during bloom period reduces fruit set. Relative to some other chemical thinning products available to producers it is inexpensive. This early season treatment provides greater potential for annual cropping as well.

Chemical-thinning practices give unpredictable results. This inconsistency is at least partly caused by weather factors, such as temperature and air humidity. The narrow window for application time (24-48 hrs) after full bloom is also critical for effective thinning results. The timing of an application of ATS is important in order to stop the pollination process (pollen tube growth) occurring in the flower. Leaf burn damage is a common undesirable side effect of ATS applications. Some apple cultivars such as McIntosh are sensitive to leaf burn caused by ATS application, while cultivars such as Gravenstein, Red Delicious, Spartan, Jonagold, Honeycrisp™, and Northern Spy are less sensitive. If producers have limited experience with ATS it is recommended to begin cautiously with cultivars such as Red Delicious and Northern Spy.

In the Crop Load Regulation Report 2005, Agriculture and Agri-Food Canada, the report on "Effect of Blossom and Fruitlet Thinners on Honeycrisp™", states that the blossom treatment of ATS on Honeycrisp™ did reduce crop load and improve fruit size. It was not the most effective treatment however when combined with a fruitlet thinning treatment it was one of the most effective treatments. The ATS was applied at a rate of 12 L/1000 L of water. ATS should be applied as a dilute spray and tree-row-volume will need to be taken into consideration to reduce foliar burn in high density orchards. ATS is not effective when applied during wet weather and if rain follows immediately after application the treatment should be reapplied once dry weather occurs. On difficult to thin cultivars, ATS will serve as the first step in thinning and it should be followed with a fruitlet thinning treatment of Accel.

Apogee®

Growers who plan to use Apogee® to control vegetative shoot growth will need to keep a close watch on shoot growth. Bud development and shoot growth has been quite rapid these past two weeks and with warm temperatures the extent of shoot growth may catch growers off guard when it comes to the application of Apogee®. Apogee® should be applied as a foliar spray when the current season's vegetative growth is between 2.5 and 7.5 cm in length. Two applications at a rate of 27 grams per 100 litres of dilute spray solution (810 grams per hectare) for a 100% canopy at a 14 day interval will provide adequate growth control in most orchard systems. However timing of first application and canopy coverage are critical for desired results.

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