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Orchard Outlook Newsletter

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This Issue Contains:

- Noon Hour Grower Meeting
- 2006 Degree Day Accumulations
- Fruit Bud Development
- Apple Scab
- Fire Blight
- Powdery Mildew
- Blossom End Rot
- Brown Rot
- Winter Moth, Green Fruitworm and Leafroller
- Rosy Apple Aphid
- Stinging Bugs
- Plum Curculio
- Pear Psylla
- Red Mite
- Sevin and Mites
- Thinning Pears
- Thinning Apples
- Pollination
- Nova Scotia Guide to Fruitlet Thinning Materials and Rates
- Grafting

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

Noon Hour Grower Meeting - June 1st

Topic: Fruit Set and Thinning -- Charlie Embree, AAFC, and Doug Nichols, NSFGA, will be on hand to discuss this year's fruit set, options for thinning and to review some thinners that have been working well in their thinning trials.

Where: Lloyd Dyck's farm, 23 Bent Road, Waterville

When: 12:00 Noon, Thursday, June 1, 2006

2006 Degree Day Accumulations

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

Table 1.0 Degree day accumulations as of May 22, 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 5°C)	198.8	227.7	185.4	290.1	200.0
Insect development (Base 10°)	75.1	93.0	46.3	101.2	68.9

Fruit Bud Development

Apple trees were in full bloom as of yesterday in the Kentville-Wolfville area. Gravenstein were at early petal fall, McIntosh were in full bloom, while Golden Delicious was just beginning to bloom. Pears were at late petal fall while stone fruit were at petal fall (all petals off). Most apple cultivars should be at calyx by mid to late next week depending on the area of the Valley and temperatures.

Diseases

Apple Scab

During the past week there were three wetting periods of which two were long enough for two scab infection periods in the Kentville area. The first infection period resulted from the wetting period that began at 4:00 PM on Thursday, May 18th and lasted until 4:00 PM on Friday, May 19th. The average temperature was 11.5°C which would have resulted in the infection being established by 4:00 AM on the 19th. The second infection period began at 9:00 PM on Friday, May 19th and lasted until 9:00 AM on Saturday, May 20th. The average temperature during the 12 hour infection period was 11.5° which was just long enough for the establishment of an infection. The pink to calyx period is a critical period for scab control and is not a period for second guessing and lengthening out spray intervals. In terms of spore maturity the models are predicting that approximately 90% of the over-wintering ascospores have matured, so staying on top of your fungicide programs for the next couple of weeks should put you in good shape for scab control for the remainder of the season. I did find a scab lesion in an unsprayed orchard, thus growers should be monitoring orchard blocks on a regular basis for scab so that control measures can be adjusted for the risk of secondary infections.

Fire Blight

To date the Maryblyt and Cougarblight prediction models for fire blight blossom infection have not predicted blossom infection. Both models have the risk of blossom infection at moderate as of May 24th. As long as the temperatures remain cool the risk will stay at moderate to low. The long range forecast is for temperatures below 20°C thus until next week the risk should stay below high. If temperatures go above 20°C then the risk will increase. Spray, to control blossom blight infection, should not be applied until there is a high risk and there is a good chance of wetting of the blossoms.

Powdery Mildew

The optimal time to control mildew is from pink to calyx period when there is a lot of new succulent vegetative growth. It also likes warm, humid weather thus the cool wet weather for the past week has been less than ideal for powdery mildew. Mildew infections are now visible on flower clusters and new shoots. If monitoring indicates a need for mildew control, select a fungicide from the *Orchard Management Schedule* that provides both mildew and scab control.

Remember to check newly planted trees for mildew. During tree counts this past week I did see mildew on new shoot growth.

Blossom End Rot

Blossom end rot infections are observed each year in orchard blocks with the extent of the infection varying from year to year. The rot can be caused by one of three fungal diseases in the North East:

Botrytis cinerea, *Botryosphaeria obtusa* (Black Rot) and *Sclerotinia sclerotiorum*. The most common infection in Nova Scotia is from the sclerotinia organism with the infection showing on the fruit shortly after petal fall. The infections from the botrytis organisms may not show up until harvest time or when the fruit is placed in storage. These infections take place during the bloom period to approximately 3 weeks after bloom. Many of the fungicides used for apple scab control do not control blossom end rot. However, Captan, Maestro and Senator do provide control. The fungicide application needs to be applied prior to rain to be effective against blossom end rot. In most cases blossom end rot does not result in significant losses, however from year to year there are situations where this can happen. Blossom end rot tends to build from year to year in the orchard thus if it was easy to find last year, then you should consider a fungicide application during bloom that will control blossom end rot as well as apple scab.

Brown Rot

Fungicide programs to control this fungal disease on stone fruit should be ongoing.

Insects

With apple trees in full bloom it will be mid to late next week when growers can start to address the complex of calyx pests. In the case of pears and stone fruit, which have completed or just about completed bloom, growers will need to assess for post bloom pests and treat when populations warrant.

Winter Moth, Green Fruitworm and Leafroller

Apple orchards should be checked for the presence of these caterpillars at the calyx period, especially if a prebloom spray was not applied for winter moth. If orchard monitoring indicates control is required, select an insecticide that is appropriate for the type of caterpillar. Insecticide treatments of Confirm, Intrepid or Success for leafroller should also provide some control of winter moth and green fruitworm.

Green fruitworm and winter moth can cause considerable fruit damage to pears. Pear blocks should be checked for these two caterpillars. If a pyrethroid or organophosphate insecticide is applied for apple curculio control, these product will control winter moth and green fruitworm.

Rosy Apple Aphid

The sooner you are able to detect a rosy aphid problem the easier it will be to control. As the tree canopy becomes denser and rosy aphid colonies build, the more difficult it becomes to obtain adequate control. The options for control are Pirimor, Admire and Assail. All these products will also control white apple leafhopper while Admire will also provide stinging bug control.

Stinging Bugs

Limb tapping should take place at calyx to determine the need to treat for mullein and/or brown bug. The control measures for stinging bugs are Admire, Malathion or pyrethroids.

Stinging bugs can cause cat facing of peaches. The treatment period to control stinging bugs on peaches is at shuck fall.

Plum Curculio

Plum curculio can cause considerable damage to stone fruit and most people do not enjoy finding a big white grub once they have bitten into a juicy plum, cherry or peach. The time to control plum curculio on stone fruit is at shuck split. Waiting until shuck fall is often too late. A second treatment may be required if populations of curculio are high.

Pear Psylla

The hatch of psylla should be underway and growers should check pear blocks to see if populations of this insect need to be controlled. An Agri-mek plus oil treatment on pears now should provide long residual control. Egg laying took place from late March to early May, thus long residual control may help to control the extended hatch period.

Red Mite

The next treatment period for mites will be at calyx. The need for treatment should be based on orchard assessment. Growers who are planning to use Agri-Mek plus oil should try to time the treatment as close to calyx as possible. The early timing allows for better absorption of the product by the young leaf tissue. Apollo treatment should be timed for egg hatch which will be another 2-3 weeks. Acramite and Envidor are also options but growers may wish to reserve the use of these products for summer mite treatment, should they be required.

Sevin and Mites

Dr. Mike Hardman reports that research trials in other apple growing regions have indicated that the mixing of Sevin with other insecticides has led to a greater build-up of mites than when Sevin is applied by itself. It appears that the mixtures are a lot harder on the beneficial insects that control mites. Growers may wish to take this into consideration when they are applying Sevin as a thinner and are considering tank mixing it with insecticide treatment.

Horticultural

Thinning Pears

Thinning treatment for pears should have gone on at petal fall. Growers who have not applied a chemical thinner should do so within the next couple of days in order to obtain satisfactory results. Presently Amid-thin is the most effective thinner in Nova Scotia for pears. Amid-thin is applied at a rate of 10-20 ppm at petal. A rate of 10-12 ppm is generally adequate for Clapp's Favorite and 15-20 ppm for Bartlett.

Thinning Apples

In general the return bloom on apples has been good and to date there has been decent pollination weather and insect activity, thus apples will need to be thinned. Most growers now make use of post bloom sprays that can be applied from calyx to 12.5 mm stage of fruit growth. The use of Amid-thin by growers has declined in recent years because it is not aggressive enough on many of the cultivars. Amid-thin is generally applied during petal fall at rates of 40 to 50 ppm. Growers who will be using it on Gravenstein will need to use it at 25% petal fall which may already be occurring in some areas of the Valley. Growers who wish to use post bloom thinning treatment should consult the following tables for options.

Nova Scotia Guide to Fruitlet Thinning Materials and Rates

Stage of Application	Treatments	Product Rate [^] (per litre)	Product Rate [^] (per hectare)	Product Rate [^] (per acre)
8-12 mm+	Sevin XLR Plus (low rate)	0.87 ml	2.9 L	1.2 L
8-12 mm	Sevin XLR Plus (high rate)	1.25 ml	4.2 L	1.7 L
8-12 mm	Fruitone-N - 5 ppm	0.16 g	539 g	218 g
8-12 mm	Fruitone-N - 7.5 ppm	0.24 g	809 g	327 g
8-12 mm	Fruitone-N - 10 ppm	0.32 g	1,078 g	436 g
8-12 mm	Sevin XLR Plus (low rate) & Fruitone-N - 5 ppm	0.87 ml 0.16 g	2.9 L 539 g	1.2 L 218 g
8-12 mm	Sevin XLR Plus (high rate) & Fruitone-N - 7.5 ppm	1.25 ml 0.24 g	4.2 L 809 g	1.7 L 327 g
8-12 mm	Accel - 25 g a.i./acre	1.02 ml	3.4 L	1.4 L
8-12 mm	Accel - 30 g a.i./acre	1.22 ml	4.1 L	1.7 L
8-12 mm	Accel - 50 g a.i./acre	2.04 ml	6.9 L	2.8 L
8-12 mm	Sevin XLR Plus (low rate) & Accel - 25 g a.i./acre	0.87ml 1.02 L	2.9 L 3.4 L	1.2 L 1.4 L
8-12 mm	Sevin XLR Plus (high rate) & Accel - 30 g a.i./acre	1.25 ml 1.215 ml	4.2 L 4.1 L	1.7 L 1.7 L

[^] These are dilute rates based on 300 imperial gallons/acre, which equals 1364 L/acre or 3370 L/hectare full canopy 'big' trees.

+ Fruitlet diameter

Grafting

Growers still have a few more days to top work trees. Just make sure that you have healthy scion wood or you will find yourself re-grafting next year. Growers who top worked trees last year should take time to remove the nurse limbs and cut back shoots that are not required.

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