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Bud Development

After all these years working with tree fruits I am still amazed at how quickly fruit buds can develop with warm temperatures. Last week bud development went from a crawl to light speed in a matter of a couple of days. On Tuesday May 14th, apple buds were at tight cluster to bud separation. There is some pink showing on buds of McIntosh, Idared and Gravenstein in the warmer areas of the Valley but the pink stage of bud development is when the flower buds have separated and the flowers are puffy pink. Temperatures for the remainder of this week are not forecasted to be above average so my guess is that by the weekend there may or may not be a few flowers in open stage. Pear buds were at green cluster (flower buds separated) and I wouldn't be surprised if there were a few pear flowers open by the end of this week. As of last Friday there were some plum and cherry blossom open and some of the Japanese plums were in full bloom on Monday May 14th. Peaches and cherries were at early bloom. Temperature over the next few days will dictate how fast fruit buds develop.

2007 Degree Day Accumulations

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

Table 1.0 Degree day accumulations as of May 14, 2007 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, 2007.

Category	2004	2005	2006	2007	5 year average
Plant development (Base 5°C)	169.0	156.7	216.8	168.3	162.5
Insect development (Base 10°C)	64.7	42.0	67.0	62.7	48.9

At this time of the year it is interesting how fast degree day's accumulation can go from behind average to above average in a matter of seven days. On May 7th, base 5°C degree days were 19.2 days behind the five year average while on the 14th they were 5.8 days ahead of average.

Apple Scab

There were no apple scab infection periods recorded at Kentville during the past week. Shower activity early Saturday morning May 12th resulted an eight hour wetting period which ran from 2 am until 10 am which was not long enough for an infection. Spectrum weather stations in Aylesford, however did predict infection period. Rain began in Kentville around 6:30 am on Wednesday May 16, and looking at the weather forecast for the next few days this will turn into an infection period. The spore discharge should also be very heavy for this infection period given the warm weather that occurred over the past week. I hope that all producers have put a fungicide on the new tissue that grew this past week. Those growers using Scala need to remember that it is a pre-bloom fungicide and is not registered for use after bloom. Nova and Nustar should be applied as a fungicide mixture from now on.

Fire Blight

As apple bloom draws near, producers and growers should have a strategy on how they will approach blossom blight control. The past two growing seasons saw a sharp increase in the number of fire blight infections that occurred during the bloom period. These infections thus translated into considerable expense for producers, in terms of lost trees and added labour cost removing shoot infections. My thoughts are that all orchards in the Valley are at risk when it comes to bloom blight infection. Those orchards with the highest risk are the ones that had infection in the 2006 followed by orchards neighboring those that had fire blight in 2006. Above average temperature will also increase the risk while cool temperature will lessen it. There have been considerable discussions over the past year on the life cycle and control of this bacteria and I hope that producers understand how serious a problem this disease can become under the right weather conditions. Temperatures will determine how quickly the bacteria multiply in overwintering cankers and produce ooze on the surface of these cankers. Once the bacteria ooze is present it can be spread to the blossom by insects (flies, honeybees etc) and splashing rain. Once the bacteria lands on a flower, it will continue to multiply and the warmer the weather the more rapid it multiplies on the flower. In order for the bacteria to enter the flower moisture is required in a sufficient volume of water to the bacteria spore to the base of the flower where it enters through natural opening. The water requirement can be met by heavy dew, mist or rain showers. If it stays dry during bloom, infection will not occur even though the bacteria is present. Fire blight prediction models which are based upon daily temperature can indicate when orchards are at risk of blossom infection should a wetting period occur. Once the models predicts a high risk a close watch needs to be kept on the weather and if a wetting period is forecast Streptomycin should be sprayed just prior to the wetting period. Streptomycin breaks down quick and thus sprays may need to be applied every 2-3 days under conditions that favour fire blight infections. Streptomycin should be applied with a minimum of 1000 L of water per hectare to ensure that good coverage of the blossoms is obtained and preferably at temperature above 18°C. The rate of streptomycin is 600 g/1000L. The number of applications is restricted to three per year. Streptomycin applied within 24 hours after an infection has taken place can also provide control but it will not be as effective as those applied just prior to the infection. We all know that the bloom period varies within the Valley thus the risk also varies. During the bloom period every effort will be made to keep growers informed on the risk of an infection.

Powdery Mildew

The next fungicide application should be directed at powdery mildew as well as apple scab in those orchard blocks which have mildew susceptible cultivars and particularly those that had a powdery

mildew during last year's growing season. Nova, Nustar Sovran, Flint Dikar and Sulphur are fungicide options for powdery mildew control. At this point in the growing season Nova or Nustar are two of the better options but will need to be mixed with Captan, Maestro, Manzate for Nustar and with either Dithane, Ployram or Maestro for Nova for apple scab control. Note that the rate of Nustar 200g/ha and Sovran 240-450g/ha is higher for mildew control than apple scab and if you use the low end of these rates listed for scab control you will not obtain adequate powdery mildew control.

Brown Rot

Now that stone fruit are in bloom growers should be applying fungicides for brown rot control. In the case of plums and cherries select a fungicide such as Indar, Captan or Maestro that will provide brown rot control as well as black knot v control. Brown rot infection takes place during periods of wet weather and the length of wetting for an infection to occur is temperature dependent. At 10°C it will require 18 hours of wetness while at 25°C it only takes 5 hours. Depending on weather conditions and length of bloom 2 to 3 fungicide application may be required to control this disease. There are a number of new fungicides for brown rot control which are listed in the stone fruit guide. Some of these products are not registered for all the stone fruits so make sure that the spray you are using on peaches, plum sweet cherry or sour cherry is registered for that crop.

Insect Report: Update by Dick Rogers, Wildwood Labs

Dick reported the following from orchard monitoring on Monday 13th: winter moth and pug moth larvae present with stripes beginning to become visible on pug moth, rosy apple aphid stem mother but no brood, grain aphid, European Red mite at egg stage in two of three locations but a couple of hatched mites were observed in the Aylesford area, and pear psylla still at the egg stage.

Winter/Pug Moth

There are two treatment windows for winter moth should monitoring indicate a population requiring treatment, pre-bloom and calyx. The ideal pre-bloom treatment time is at bud separation before the larvae get into the blossom. There are a number of products listed for winter moth control of which Dipel + Ripcord, 260g +12, 5 ml/ha, Bioprotec + Ripcord 700ml+12.5 ml/ha, Confirm 1L/ha and Intrpid 0.75L/ha would be the preferred options for IPM. Insecticide treatments applied for OBLR would also control winter/pug moth. The threshold for pug moth is much higher than that for winter moth and should only be treated when levels reach a point where yield could be reduced from fed on flowers. A few chewed buds is good for crop load management.

Obliquebanded Leafroller

OBLR is one of several types of leafroller that can be present in Nova Scotia orchards. It is a major pest in Ontario, Quebec and the United States and its population has been building in Nova Scotia. There are two generations of the caterpillar in Nova Scotia. OBLR overwinters as larvae, maturing to an adult around mid June. Egg laying the later part of June is the start of the second generation. The treatment windows for this pest are pre-bloom and late petal fall for the first generation and the later part of July to early August for the second generation. Success 567-850g/ha, Confirm 1.0L/ha and Intrpid 0.75L/ha fit best into an IPM program and treatments should be based upon monitoring.

Rosy Apple Aphid

Rosy apple aphid populations can vary from year to year and we are never too sure at the beginning if it will be a rosy apple aphid year or not. It is a pest you may mist until high populations become visible in your orchard at which time obtaining adequate control can be difficult. If early season monitoring indicates the rosy apple aphid is present at a treatable stage you should obtain better results with a prebloom spray than a post bloom spray. Assail 80-120 g/ha, Actara 25 WG 160 g/ha and Pirimor 850-1.7 g/ha are prebloom options for rosy apple aphid control. Actara is toxic to bees and should not be applied when bees are visiting blooming weed within an orchard.

Pear Psylla

I received a report today that pear psylla had started to hatch in the Wolfville area. The next treatment window for this pear pest is at calyx. There are a number of pesticides listed at calyx for psylla control. Growers have been very pleased with the results they have obtained with Agri-mek(750-1500 mL/ha plus Oil 10L/ha) applied just after petal fall. Just remember if are planning to use this mixture that Captan or Maestro should not be applied within 14 days of an oil treatment. Actara (315-385 g/ha) may be another option for growers as it controls psylla as well as plum curculio.

European Apple Sawfly

A pest that is found in Eastern Canada and the US is starting to appear in Nova Scotia. In the past growers have not had to treat for this pest in Nova Scotia and hopefully it will stay that way. I am however aware of one orchard that had a treatable level of European Apple Sawfly last year. The treatment period for this pest is just prior to or just after bloom.

European Fruit Tree Borer

It was reported at the Orchard Outlook meeting that the beetle has been on the fly. Several years ago there were a number of orchard blocks where this beetle caused significant tree losses, however for the past couple of years it has not caused any major problems. Quite often insecticide application for other pests at this time of the year will control the adult beetle. Sap weeping from small holes on the trunks of trees is the indicator that this pest is present in your orchard.

Horticultural Notes

Grafting

Growers that are planning to top work apple tree over to a new cultivar can start that process now. The pink to bloom period has proven to be a very successful period for top working trees.

Pear Thinning

There could be some pear flowers open by the weekend and by mid next week they could be in full bloom. There appears to be a very good flower bud and therefore with good pollinations, condition overset could be a problem. The optimal time for thinning pears is at petal fall which can pass quickly by before growers get around to thinking about thinning. Amid-thin and Fruitone are the two main thinners for pears with Amid-thin being the most commonly used in Nova Scotia. Amid-thin should be

applied at petal fall. The recommended rate is 10 to 12 ppm for Clapps' Favorite and 15 to 20 ppm for Bartlett.

Mouse

Growers that use hay or straw mulch for weed control should check young tree for signs of mouse damage. There is always a risk of mouse damage to trees when mulches are used. To reduce the risk mulch should be applied in the spring so that it has a chance to mat down and not provide an ideal habitat for mice. Also do not apply the mulch hard up against the tree trunk. Leaving an open area around the trunk will expose mice to predators.

Deer Control

As terminal growth begins on young trees the risk of deer browsing these shoot will increase. To control deer browsing steps need to be taken prior to the start of feeding. Outside the option of deer fencing which is the most effective control, growers can attach a small bar of soap to the tree support or tree, apply Thiram to the foliage on a 10 to 14 day cycle or commercial deer repellent spray such as Hinder.

Newly Planted Tree

Growers who were able to plant trees last week should prune as soon as possible. Delaying the pruning process until after growth starts is just wasting the tree's energy that could be directed to the buds that are left on the tree. Fertilizer can be applied once the ground has settled. Apply evenly around the tree.

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