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Bud Development

Based upon orchard visits on Tuesday May 8th apple buds were at the green tip to half inch stage of development. I did see a few Gra venstein and Idared buds at the mouse ear stage. It was reported that some Golden Russett buds were at early tight cluster in the Falmouth area. With Tuesday’s warm weather and warm temperature predicted for the next few days, bud development should move along quite quickly to where apple buds could be at tight cluster by the weekend. Pear buds were at the bud burst stage as well as that of cherry and plum. I did see some pink on peach buds in the Granville area.

2007 Degree Day Accumulations

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

Table 1.0 Degree day accumulations as of May 7, 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)	122.5	133.1	163.6	109.6	128.8
Insect development (Base 10°)	45.9	36.5	42.7	31.0	36.9

Apple Scab

No apple scab infection periods were recorded during the past week. The shower activity over the weekend did not result in wetting periods long enough for an infection. I know that there are growers that have yet to apply a fungicide for scab control. The next infection period will result in a heavy spore discharge and there will be lots of green tissue, so my advice would be to apply a fungicide well in advance of the next wetting period. If weather conditions do not allow for a timely fungicide application

there is a good chance that those growers will be fighting scab all season long. Tight cluster is quickly approaching so growers that plan to use oil will need to select a fungicide that is compatible with oil.

Apple Scab Spore Maturity

Based upon a prediction model, 13% of the overwinter ascospores have matured as of May 8th.

Powdery Mildew

Powdery mildew in the past was considered to be a secondary disease of apple trees in Nova Scotia that seldom needed treatment. For the past few years the incidences of mildew infections that require treatment have been increasing. This may be a reflection of weather, changing cultivar mixtures or the combination of both. The fungus overwinters in buds that were infected the previous growing season and when these buds begin to grow in the spring the fungus become established in the new leaf tissue and begin to produce spores. Under extreme winter conditions these infected buds, which are weakened by the mildew infection can be killed, thus reducing the amount of overwintering mildew. The past few winters have been relatively mild thus most of the infected buds have likely come through the winter to infect new tissue at bud break. The mildew spores that are produced following the spring infection are moved to new leaf tissue by the wind resulting in secondary infections. The spores germinate during periods of warm (15.5-27°C) humid weather and unlike apple scab do not require a film of water. Development is slowed during periods of cool weather (4.5-10°C) or by very high temperatures (32°C +). After the spores have germinated mycelium spreads over the surface of the leaf and, putting down small "root", termed haustoria into the epidermal cells for nutrition. Once established more spores are produced and the cycle is repeated. This cycle is repeated until shoot growth is terminated in late summer. The pink to mid June period can be a peak period for the spread because of the high percentage of new tissue growth which is more susceptible to infection than that of mature leaves.

A few shoot infections in an orchard should not cause any major problem for a producer, however if the infection becomes numerous leaf drop can occur affecting tree vigour and fruit quality. The other concern is that fruit infection can result in net russetting which downgrades the fruit. Like apple scab powdery mildew can develop resistance to fungicides and therefore fungicide that controls powdery mildew should be used in a pattern that does not promote the development of resistance. To slow or prevent the development of fungicide resistance do not use more than two back to back of an SI (Nova & Nustar) or strobilurin (Flint & Sovran) fungicide with no more than four applications of a fungicide in either of these fungicide groupings. Nova, Nustar, Flint, Sovran, Dikar and Sulphur are the products listed for powdery mildew in the Nova Scotia Orchard Management Schedule and these products will also provide apple scab control. Check the rate of fungicide for powdery mildew as the range for mildew control can be higher than that for apple scab. The timing of fungicide applications for powdery mildew is very important in that controlling early season infection can often eliminate the need for post bloom mildew sprays but failure to control the early season infections can result in additional spray during the summer. In orchard blocks where mildew was a problem last year, begin sprays at the tight

cluster stage and continue through to petal fall. Depending upon the year, three to four sprays may need to be targeted at mildew.

Brown Rot

Brown rot infection of stone fruit can take place during the bloom period and lead to major problems by harvest time. The fungicide program for brown rot control needs to start when the fruit buds have reached the white bud stage of development (puffy white) which could be as early as next week.

Black Knot

Black knot is a fungus that attacks plums and cherries and if left unchecked may kill the tree. The 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 control black knot as well as 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.

Insect Report: Update by Dick Rogers, Wildwoods Labs

I have asked Dick Rogers to monitor three orchard blocks in the Valley; Greenwich, Morristown and Dempsey's Corner, to provide information on the development of orchard pests during the growing season. This week Dick reports finding the following: European Red Mite (as to be expected) all were in the egg stage; aphids hatched grain aphid (green in colour), winter/ pug moth larva were found so some hatch has taken place, OBLR larva found and these would be larger than the winter/pug moth larvae and pear psylla were still all at the egg stage.

Red Mite Control

Oil sprays for red mite control (65L/ha) should be applied during periods of good spray conditions during the upcoming week. As stated earlier apple buds could be half inch green during the latter part of this week which is considered the optimal time for oil application. Oil applications to be effective need to cover the eggs which are found on fruit spurs and crevices in the bark thus enough water has to be applied so the oil is carried to these areas. Oil should be applied with a minimum of 1000 L of water per hectare.

Winter/Pug Moth

Treatment for winter moth can begin at bud separation based upon monitoring results. There is a very strong chance that this stage of bud development will not occur prior to next Wednesday at which time options for control will be disused.

Horticultural Notes

Tree Planting

Soil dried during the past week so most sites should be suitable for planting new fruit trees. Growers should take advantage of this fine weather to set out new orchards. Trees planted in late May or early June never grow as well as those planted in late April or early May.

New Tree Maintenance

Tree training of newly planted fruit trees should begin as soon as possible after planting. Pruning of limbs after they have begun to grow is a waste of the tree's energy which could have gone to the buds left on the tree. The closer tree spacings which many producers are using does not necessitate the need for strong scaffold limbs at the base of the tree thus growers need to concentrate on the development of short fruiting limbs and not strong structural limbs. In many cases where there are only a few limbs the tree should be started over (lateral removed or stubbed back). The objective is to obtain numerous lateral limb beaks which can be trained to develop into manageable fruit limbs.

Once the soil has settled around new planted trees a light application of triple mix fertilizer can be applied. Applying fertilizer to newly planted trees where there are still cracks in the ground can result in the fertilizer coming directly in contact with the roots, which can kill the root and result in tree losses.

Notes for Organic Apple Growers

The following information has been provided by Charlie Embree, AAFC

Scab Control

This week has been scab-free and the current forecast looks as though we may not have an infection period until the middle of next week. However, it is important for organic producers to remember that Sulfur has very little "kickback" potential, so this product needs to be applied before an infection period. If an infection is predicted by the Mill's Table to occur before the rain stops or before the foliage is dry it may be necessary to spray in the rain or on wet foliage although this is not desirable. Do not apply Sulfur in bright sunlight or when temperatures exceed 27°C and the relative humidity is expected to remain high, before a night frost or within 30 days of a dormant oil or Bordeaux spray application. Under these conditions Sulfur may cause a toxic response on leaves or fruit.

Field orchard visits begin Thursday, May 17, 2007.

The first noon meeting of the Organic Grower Research Group will be at the AAFC organic block 25 on Thursday, May 17, 2007. This group is organized under the informal Maritime Organic Growers Organization (MOGO) however; anyone interested is welcome to join us. The idea is to have lunch and then have a discussion concerning current pest control and management problems followed by an orchard walk.

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