Orchard Outlook Newsletter

Vol. 3 No. 5 **May 28, 2003**

This Issue Contains:

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Fruit Bud Development

Cool temperatures for the past three days have slowed fruit bud development to a crawl. Apple buds are at pink to early bloom. There were a few king buds open on Idared as early as last weekend. A couple of warm days should move buds along quite quickly. However, the present long-range forecast would indicate that full bloom on apples will not likely occur until early next week. Pear trees are at early bloom and stone fruit at petal fall to full bloom.

Our impression at this time, with regards to bloom, is that it will be spotty, particularly for the cultivars that have a biannual bearing habit. The spotty bloom is tied into last year's crop load.

2003 Degree Day Accumulations

(Information contributed by Michelle Larsen & Dr. Rob Smith, AFHRC, Kentville)

Table 1.0 Degree day accumulations as of May 25, 2003 based on Kentville weather data.

Category	2000	2001	2002	2003	5-year average
Plant development (Base 5°C)	254.8	174.1	204.8	205.0	258.7
Insect development (Base 10°C)	71.0	47.8	62.9	74.9	94.1

Up until Sunday base 5°C heat unit accumulation has been identical to that of last year.

Apple Scab

After 12 days of fine weather we have run into a stretch of wet weather with the long-range forecast calling for the chance of wet weather for Wednesday, Thursday, Friday and Sunday. This past week an infection period was recorded for the Sunday-Monday wet period. The wet period began at 7:00 am on Sunday, May 25 lasting into Monday, May 26. The infection period was established by 3:00 pm on

Sunday, based on the average temperature of 11°C. Dr. Gordon Braun reported that there was a heavy spore discharge during this wetting period. The wetting period on Tuesday was not long enough for an infection period. Growers are reminded that the pink to calyx period is quite critical for scab control. Spray intervals should be shortened with the length between sprays based on rainfall and tree development. Under warm and wet weather conditions, the interval may have to be shortened to 5 days. This is not the time of year to be gambling and trying to stretch spray intervals. In terms of the ascospore season, we have reached the half-way season. There are still lots of spores to be released.

Powdery Mildew

I observed mildew infected shoots last Friday on Idared trees. Mildew does not spread quickly under cool, wet weather condition like those of the past three days. Growers that experienced powdery mildew problems last season should be using fungicides that control both powdery mildew and apple scab. Last year it was warm during the bloom period and was ideal for mildew infections.

Calyx End and Dry-Eye Rots

These two diseases did not present any serious problems for growers this past year but under the right weather conditions and carry-over, disease pressure can result in significant fruit loss. The symptoms of these two diseases are virtually identical; however, the infections occur separately. Infections from these diseases occur from early bloom to 3 weeks after bloom. Infections take place during wet periods with suitable temperatures; the ascospores infect the blossoms and young fruitlets. Many of the broad-spectrum fungicides that are applied for scab control have activity against these diseases. It is felt that Captan-containing fungicides have provided the best control of these two minor diseases. To control the disease the fungicide application needs to be applied prior to a wetting period to provide protection.

Brown Rot Control

Growers should be applying appropriate fungicides to control the blossom stage of brown rot on stone fruit. Application intervals should be on a 7 to 10 day basis, depending on weather conditions.

Insect Control

With apple orchards beginning the bloom phase, the next opportunity to control pests will be the calyx period. Hopefully most growers that need to treat for winter moth were able to apply an insecticide late last week.

Codling Moth

Dr. Rob Smith is already monitoring for codling moth so that a biofix can be established. The biofix is used to determine treatment period. To date Dr. Smith has not caught any male moths in his traps. Once growers have received there trap orders they should be placed in the orchard. It is advisable to attach a length of flagging tape to the trap or tree with the trap so that growers can easily find the traps later. Trap orders have yet to arrive at the Fruit Growers' Office and growers may wish to check with the Office later this week to see if the order has arrived (678-1093).

Rosy Apple Aphid

Rosy apple aphid can now be found on susceptible cultivars and if growers are able to assess the population, pre-bloom control can be very effective against this insect. The pre-bloom threshold is 0.5 colonies per meter of tree height.

Bug of the Week - Mullein Bug (*Campylomma)*

The stinging bugs, brown bug, mullein bug and tarnished plant bug can cause significant damage to certain apple cultivars as a result of their feeding and egg laying activities. In the May 14th issue of the Orchard Outlook, tarnished plant bug was featured as the "bug of the week" and this week I have

selected mullein plant bug. When I first started attending Orchard Outlook meetings over 20 years ago, the only sting bug that came up for discussion was brown bug. However, in recent years discussion at meetings would lead one to believe that mullein and tarnished plant bug are more of a problem in orchards than brown bug.

In Nova Scotia hatch of over-wintering mullein bug eggs, which are laid in the bark of fruit trees, occurs during the bloom period of McIntosh. It is interesting to note that hatch of mullein bug in the warmer apple growing areas of North America can begin during the pink period continuing into petal fall. This would indicate that warm temperatures can advance the hatch of mullein bug and influence the extent of damage. The nymphs of mullein bug are noticeably smaller than other apple mirid species, pale yellow green in colour and fast moving. The nymphs pass through five stages before becoming adults. The nymphs of mullein bug can be confused with those of apple brown bug and to the inexperienced eye may be even confused with green aphids.

The nymphs of mullein bug feed on the developing fruit with their piercing-sucking mouth parts. The feeding induces a physiological reaction in sensitive cultivars, such as Red Delicious and Spartan, causing dimples and corky warts to form. The cultivars Northern Spy, Empire, Cortland, Gala, Jonagold and Golden Delicious can also be affected by mullein bug. McIntosh and other cultivars are relatively unaffected. Stung or damaged fruit often drop prematurely, however it is the damaged fruit that stays on the tree until harvest that causes the most problem for growers and packhouses.

Orchards should be monitored on an annual basis for the presence of stinging bugs and to determine the need for control. Knowing the block history is a key factor in managing mullein bug. Mullein bug damage the previous season in an orchard block is cause to be concerned this year. Limb tapping can be used as an effective tool for monitoring for the presence of mullein and brown bug and the need and timing of pesticides. Tapping should be done at the calyx stage, just as soon as the petals are off the tree. The warmer the temperature, the more critical it is to determine stinging bug thresholds. The threshold suggested in the Pest Management Fact Sheet for treatment is 8 or more nymphs (both mullein and brown) per 20 limbs taps.

Selection of an appropriate insecticide to control stinging bugs can be a bit challenging for producers, as there is a limited number of insecticides that will control mullein and brown bug without disrupting the beneficial insect complex. In the 2003/2004 Orchard Management Schedule, Admire and the pyrethroids Ripcord, Matador, Warrior and Decis are listed for stinging bug control in the calyx period. The use of pyrethroids however can be very disruptive on beneficial orchard insects and lead to mite problems. The organophosphates Imidan and Guthion are not very effective on mullein bug, however Malathion 25 W applied to control mites, aphids and bud moth at the calyx period would also control mullein and brown bug.

Tree Health

We are seeing some signs of poor tree health that may be tied into last winter's cold weather and the heavy crop load. We have observed a number of dead trees on M 26 and O3 rootstocks that may be related to early winter damage or canker. Poor leaf colour has also been noted, which is a sign of stress. If it is only related to cool temperatures and lack of reserves in the tree, than pre-bloom and post bloom foliar applications of urea will be of benefit. The poor leaf colour may also be related to cambium injury.

NSFGA Summer Orchard Tour

There has been a change of date for the annual summer Orchard Tour. This year the Orchard Tour will be held on the second Tuesday of August, on August 12th. The change is to accommodate delegates to the CHC Summer Apple Meetings that will be held in Nova Scotia.

Pear Psylla

Looking at the black wood in a number of pear blocks gives a good indication that pear psylla did present a problem for certain growers last year. The first line of defense for psylla is a dormant oil spray to discourage egg laying. The second line of defense is the use of a fungicide that controls pear scab, as well as psylla. Dikar is registered for the control of both scab and psylla, while Manzate and Dithane have a registration for psylla. Both of these products applied for psylla control will also provide pear scab control. Pear psylla eggs have begun to hatch and thus it would be appropriate to use a pesticide that will help control both pear scab and psylla. Pears have begun to bloom, thus calyx would be the appropriate time to apply an insecticide where warranted.

Blossom Thinning

When the earlier fruit are removed, the larger the remaining fruit will become and the greater the potential return bloom. In some countries on particular cultivars a certain percentage of these blossoms are actually removed by hand. Blossom thinning materials with effective corrosive properties that disrupt flower fertilization are however the most practical and economical approach to reduce blossom numbers and potential fruit set. The foliar fertilizer Ammonium Thiosulfate (ATS) will reduce fruit set through corrosive action on the flower stigma. Complete wetting of tree foliage is essential for effective response with ATS. The current rate used is 12.5 millilitres ATS per litre of water or 42 litres per hectare. The optimum timing for application of blossom thinners is 12-48 hours after king blossoms have set and before lateral flowers have set. The flower must be fully open for the blossom thinners to be effective, therefore growers should target 90% full bloom as the time to apply blossom thinners. It is difficult to begin thinning before the fruit set is known, however if the blossom density is high (snowball bloom) only 5% of these blossoms are required as fruit at harvest for a full crop. A quick evaluation of the effectiveness following blossom thinning treatment allows a grower to determine soon after fruit set if additional fruitlet thinner treatment is needed to further adjust crop-load.

Written and published through a Nova Scotia Fruit Growers' Association/AgraPoint /Agriculture and Agri-Food Canada partnership.