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## Bud Development

Temperatures improved over the past week resulting in advancement of bud development. As of Tuesday April 27<sup>th</sup> early developing apple cultivars such as Gravenstein were at the tight cluster stage (some pink showing on the king bud) and Spy at half inch green. Pears were at the green cluster stage (flower buds had separated or were beginning to). Japanese plums had started to flower. Sweet cherry bud varied between swollen bud and first bloom. Peach buds were at pink to first bloom open.

## Diseases

### Apple Scab

Although there were several wetting periods during the past week, as a result of shower activity, the only site that recorded an infection period was Kentville. Localized shower activity on Thursday April 22 resulted in a 16 hr wetting period. In the Kentville area the wetting period began at 6:00 pm and lasted until around 10:00 am on Friday April 23. The average temperature during the wetting period was 12.2°C which would class the infection period moderate. Dr Gordon Braun reported that the prediction model for ascospores maturity indicated that upwards of 40% of the spores have now matured.

### Fire Blight

Growers can determine the risk of fire blight infections on their own farms by using the Maryblyt or Cougar blight prediction models. If you do not have a copy of these prediction models they can be down loaded from the internet. Maryblyt V.7 for Windows can be obtained from <http://www.caf.wvu.edu/kearneysville/maryblyt/> and Cougar blight from <http://www.ncw.wsu.edu/treefruit/fireblight/mdl98c.htm>. The information that you need to enter on a daily bases is the maximum and minimum temperatures and wetting events once bloom begins. Dr Gordon Braun and his technician Erich Bevis have once again agreed to run the

Maryblyt program for the following areas Kentville, Morristown and Medford. When there is a high risk of infection an email will be sent out to growers advising them of the risk.

### **Powdery Mildew**

It was reported at this morning's Orchard Outlook meeting that powdery mildew has been observed on buds. These infections would have occurred last year and over wintered on buds and they will be the source of spores for new infection. The pink to post bloom period is the period when shoot growth is most susceptible to mildew infection. In orchard blocks where mildew pressure is high a fungicide program should be selected to control both mildew and apple scab. Otherwise growers can wait until pink to begin a program. Remember that mildew spreads more rapidly under warm humid conditions. It does not like cool wet weather. Fungicide options for mildew and scab control are Nova, Nustar, Sovran Flint and Dikar. To slow or prevent the development of resistance Nova, Nustar, Sovran and Flint should be mixed with a half rate of one of the following: Maestro/Captan, Manzate, Dithane or Polyram. Never use more than 2 back to back sprays of the Si's (Nova, Nustar) or strobilurin (Flint Sovran) or more than four sprays of a Si or strobilurin in a growing season

### **Brown Rot**

Bloom has begun on the stone fruits and growers should be applying sprays to control this fungus. Infections that take place will show up as infected fruit at harvest time. There is a wide selection of fungicides to control brown rot which can be found in the stone fruit production guide.

### **Insects Activity**

#### **Spring Caterpillars Complex**

During the tight cluster to calyx stage of bud development there are a number of caterpillars that can be found in fruit bud and/or vegetative buds. Winter moth, green pug moth, green fruit worm, eye spotted bud moth and obliqueband leaf roller are the main ones growers should be monitoring for. Pre-bloom pesticide applications for any one of these will need to go on during the next 7 to 14 days depending upon temperatures and speed of bud development. Growers that have their orchard blocks monitored will be told if they have to treat for any one of or a combination of these pests. The complex winter moth and pug moth are more commonly found in orchards. Growers will be able to distinguish between pug moth and winter moth by the partially developed or fully developed dark strip in the middle of the back of pug moth. Checking flower cluster from an abandon orchard I was able to find lots of inch worm but did not detect the start of a strip so it is likely a bit early to distinguish pug moth from winter moth. Growers that do their own monitoring can use the following guidelines taken from the '**IFP Guide 2001<sup>®</sup> For Apple Growers of Atlantic Canada**' Dr. Rob Smith, editor, pp 54-55. Special thanks to the expertise of Dick Rogers, Wildwood Labs Ltd.

## HOW TO SAMPLE:

- Collect 20 clusters at random from each of at least three standard trees. ON SMALL TREES, COLLECT 5 OR 10 CLUSTERS FROM EACH TREE AND GROUP THE BUDS IN SAMPLES OF 20. YOU NEED A MINIMUM OF 60 BUDS IN TOTAL.
- Empty a sample of 20 buds onto a table and examine them by teasing the leaves apart with a fine-tipped knife or noodle probe. Inspect the bud carefully with a hand lens or microscope as you tease it apart.
- Record the number of larvae found and what kind they are (i.e. winter moth, green pug moth, eye-spotted bud moth, leaf roller, fruit worm, or other).
- When you are finished, you should have a record for each orchard block of how many trees were sampled (a sample of 20 buds is considered a tree), and how many winter moth larvae were found.
- NOTE: The buds do not have to be collected; they can be examined on the trees. However, it is easy to overlook the small larvae, and this method can actually be more time consuming.

## HOW TO INTERPRET WHAT YOU OBSERVE:

Winter moth larvae can be tolerated at low abundance. Therefore, using the sampling technique described above, an action threshold of a light-moderate population has been established.

Use the table to determine if a treatment is required. You should note that if the number of winter moth larvae is low, you may need to sample more trees before you are confident enough to make a decision.

Number of trees examined (20 buds/tree)	Total number of winter moth larvae					
	Treat				Continue	No treat
	H	M-H	M	L-M	L	VL
3	>4	4	3	2	0-1	--
4	>5	5	3-4	2	0-1	--
5	>6	6	4-5	3	0-2	--
6	>7	6-7	4-5	3	1-2	0

CONTROL PRODUCTS: Check your copy of the 'the N.S. Orchard Management Schedule 2009/2010. When treating for just winter moth the Dipel or Bioprotec plus a one tenth rate of Ripcord still remains the better option when it comes to control and impact on beneficial insects. If a pyrethroid is being applied to control tarnished plant bug then this treatment should pick up most of the caterpillars. Likewise if any one of the following products, Altacor, Delegate, Confirm or Success is applied for obliquebanded leafroller they should pick up winter moth, and pug moth.

## Rosy Apple Aphid

This insect is problematic for some growers each year. Growers either wait too long to determine the need to treat or they fail to get adequate covering to control the population.

Pesticide choice has also contributed to some of the problems as the new products take longer to knock the populations down compared to Pirimor which is no longer manufactured or registered on apples. Assail, Actara and Movento are registered as prebloom insecticide to control rosy apple aphid. Actara is toxic to bees and should not be applied to flowering crops or weeds if bees are visiting the area to be treated. Control of rosy aphid can be related to spray coverage and using a minimum of 1000 L of water per hectare should improve control.

## **European Red Mite**

Hatch of European red mite eggs often coincides with the Pink stage of apple bud development. Some cultivars are now at the tight cluster stage of development which means the window for oil application is closing. If you plan to apply Superior Oil 70sec as a mite control it should go on ASAP.

## **Horticulture**

### **Frost Damage**

The story on frost damage has not changed much from the article in last week's Orchard Outlook. The most severe damage that I have observed to date has been in the Woodville/ Grafton area with Gravenstein, McIntosh and Cortland having the most extensive damage. With the exception of sweet cherry the stone fruits have fared pretty well. Pears in general appear to be in good shape. It will not be until after bloom that a proper assessment of the damage to the 2010 crop can be made.

### **Things to Do:**

- 1) Prune young trees:** Same message as last week growers should now have their young trees pruned in order to maximize tree growth.
- 2) Support young trees:** The sooner support systems are up in new planting and the trees tied to them the better the tree growth. Terminal shoot growth is reduced when newly planted tree are left unsupported and whip around in the wind. Under high winds tree on dwarf rootstock can break off at the union if they are unsupported.
- 3) Apply Fertilizer.** The sooner the fertilizer is applied the sooner it will be picked up by the tree and available for growth.
- 4) Weed Control.** Weeds are growing and herbicide programs can begin. If growers plan to use Chateau by itself it needs to be applied as a preemergence treatment and if applied postemergence the higher rate is required and it will need to be tank mixed with glyphosate.

## **Compensation for Wildlife Damage**

In last week's Orchard Outlook I stated that funding from this program was provided by the DNR however this was incorrect. This program is administered by the Nova Scotia Crop and Livestock Insurance Commission on behalf of the Nova Scotia Department of Agriculture. This program is

jointly funded by AAFC and NSDA under the Growing Forward Framework Agreement. The program guidelines require that notice of wildlife damage be given within 72 hours of occurrence (ie. the damage must be "fresh" or "ongoing" when our claim adjustors view it). If damage is observed call the Kentville office (679-6015 or 679-6028), or Truro office (toll free: 1-800-565-6371).

*Contributions and consultations were made in the preparation of this newsletter with the Orchard Outlook Committee*

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