



**Vermont Apple IPM Alert**

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**May 17, 2011 - Addendum**

**2011 Apple Bud Stages at the UVM Horticulture Research Center**

*South Burlington, VT Elevation 71 m above sea level*

2011 Apple Bud Stage for Selected Cultivars							
Date	Degree Days base 50°F <sup>1</sup> from Jan 1	Ginger Gold	Honeycrisp	Liberty	Macoun	Zestar!	McIntosh
4/6	0	Dormant	Dormant	Dormant	Dormant	Dormant	Dormant
4/11	7	Silver Tip	Dormant	Dormant	Silver Tip	Silver Tip	Silver Tip
4/20	13	Green Tip	Dormant	Silver Tip	Silver Tip	Green Tip	Late Silver Tip Green Tip (4/22)
4/25	15	1/4" Green Tip	Green Tip	Green Tip	Green Tip	1/4" Green Tip	Green Tip
4/28	-	1/2" Green Tip - Early Tight Cluster	1/4" Green Tip	1/2" Green Tip	1/4" Green Tip	Tight Cluster	1/2" Green Tip
5/1	39	Tight Cluster	1/2" Green Tip	Tight Cluster	1/2" Green Tip	Tight Cluster	Tight Cluster
5/9	62	Pink	Early Pink	Early Pink	Open Cluster	Pink	Pink
5/13	-	King Bloom	Pink	King Bloom	Pink	King Bloom	Late Pink
5/15	100	Full Bloom	King Bloom	Full Bloom	King Bloom	Full Bloom	King Bloom

**Disease Management Considerations Given the Extended Rain Period of This Week --**

The following is excellent information from **Dr. Dave Rosenberger** from Cornell's Hudson Valley Lab which was written by him on May 16, 2011, on some pertinent topics considering the extended apple scab infection period that started on Saturday which was probably coupled with a major apple scab ascospore release (at least here in Vermont) plus, it includes insight into the potential impact of the wet weather on other diseases .....

"APPLE SCAB ASCOSPORE DISCHARGES DURING PROLONGED RAIN EVENTS: ...While it is true that peak releases of ascospores are usually recorded at the beginning of wetting events (or as soon as wetted leaves are exposed to light), that does not mean that nothing happens during the 2nd, 3rd, or 4th day of a long rainy period. Both ascospores and conidia continue to mature and be released during subsequent days of multi-day wetting events ...Thus, growers who lost their fungicide protection (i.e., had more than 2 inches of rain since their

last spray was applied) are still liable to get scab infections occurring during the later stages of this prolonged wetting period. Their options are to either sneak in a protectant spray of mancozeb or captan between the rains or during the rains, or to wait until the weather clears and then use something that has postinfection activity.

To me the two choices for postinfection activity are Syllit or Inspire Super. Inspire Super would be my first choice in cases where SI-resistance is not a concern and/or most infections occurred within the past 72 hr and therefore will be controllable with the Vanguard component in Inspire. Syllit may be a better choice where SI-resistance is an issue (especially for scab-susceptible cultivars like Macs) and where trees are at or past petal fall (because I don't trust Vanguard to control scab on fruitlets). Flint may also work well if you are only looking for 48 hr of kickback, but frankly I don't trust strobies to get folks out of trouble where postinfection activity is needed. We have been concerned that Inspire Super is weak on mildew, but mildew is of only secondary concern when we get this much rain."

Note: If apples treated with Syllit are used for cider, the pomace cannot be fed to animals.

*[Also, we just found the first primary scab lesion on a non-sprayed McIntosh tree at the UVM Hort. Research Center -- so the potential for conidial infection is present in addition to infection from ascospores.]*



*Primary Scab Lesion on Non-Sprayed McIntosh Leaf at the UVM Hort. Research Center*

"BLOSSOM-END ROTS: We are at petal fall in the Hudson Valley, so the extended rains we are experiencing could provide ideal infection periods for blossom end rots. I think that I last addressed this issue at length in a 2005 article in Scaffolds that you can access at <http://www.scaffolds.entomology.cornell.edu/2005/050509.html#d2....>

....The bottom line is that Topsin M is still probably the best product for controlling blossom end rot caused by *S. sclerotiorum*, especially if one needs some post-infection activity... I think that Captan also provides adequate protection against blossom-end rot on apples, but a week of cool cloudy weather will make leaves exceptionally susceptible to captan injury (at least in the Hudson Valley where we are in the middle of the spring growth flush for terminal leaves). Thus, growers will need to be very careful about tank mixing captan with other things that might enhance the phytotoxicity potential of captan (e.g., nutritional sprays, EC formulations of other products, etc.) Also, Captan will not provide any post-infection activity against blossom-end rots whereas I suspect that Topsin M does provide some post-infection activity.

The disadvantage of Topsin M is that it cannot be counted on for controlling either scab or mildew, so growers must decide if it is really worth the cost to add it to the tank just for control of blossom end rot. It could help with control of flyspeck ascospores, but flyspeck will also be controlled by mancozeb, Flint, Sovran, and Inspire Super, and all of those will benefit scab control as well. As noted in the 2005 Scaffolds article, I suspect that most of the inoculum for *S. sclerotiorum* comes from broadleaf weeds in the orchards ground cover (e.g., dandelion, etc.). Thus, orchards with a lot of broadleaf weeds may be at greater risks than orchards where growers have used 2-4D in autumn to eliminate dandelions and other weeds in the ground cover.”

“QUINCE RUST can be epidemic with prolonged wetting periods at pink or petal fall. (The open flower petals may decrease risks of infection during full bloom??) Quince rust especially benefits from intermittent wetting periods such as we are having today and are predicted to have through the end of the week. SI fungicides generally give very effective post-infection control of quince rust, so anyone applying an SI at the end of the week should come out OK provided they get adequate coverage. However, Syllit will not control rust and mancozeb will not provide post-infection activity. Thus, in the Hudson Valley, if you need Syllit in an SI-resistant orchard to get kick-back on scab, you may still need at least 4 oz/A of Rally to get quince rust and Topsin M for blossom-end rot and ..... (If I were targeting just quince rust, then I would use Rally rather than Inspire Super because Rally is cheaper and has a more proven track record against quince rust, although Inspire Super has done well against quince rust in my trials).

***Thank you Dave for sharing your knowledge and insights !***

**Insect Management at Petal Fall...** the following information appeared in the article “Petal Fall Preamble” in the May 9, 2011 issue of Scaffolds. It was written by **Dr. Art Agnello** of Cornell. It is a very timely review.

#### “Plum Curculio

Adults move into orchards from overwintering sites in hedgerows or the edges of woods and adults are active when temperatures exceed 60°F, something that will recur this week. Adult females oviposit in fruit during both day and night but feed mostly at night. Depending on temperature, overwintering adults remain active for 2–6 weeks after petal fall. Because adults are not highly mobile, orchards near overwintering sites, woodlands, and hedgerows are most susceptible to attack. Fruit damage is usually most common in border rows next to sites where adults overwinter. Although initial post-bloom sprays for plum curculio control should begin at petal fall, growers are often unsure how many additional sprays will be necessary to maintain protective chemical residues to prevent subsequent damage throughout the PC oviposition cycle, which varies according to temperatures and weather patterns after petal fall.

Following from the fact that PC activity and oviposition are largely determined by temperature, we use an oviposition model to determine when control sprays after petal fall are no longer necessary to protect fruit from PC damage. This model is based on the assumption that residues from sprays applied after petal fall need to be maintained on fruit

and foliage only until PC adults stop immigrating into orchards, which corresponds to the time when about 40% of the oviposition cycle is complete. This is predicted by the model to occur at 308 DD (base 50°F) after petal fall of McIntosh. Most probably, this strategy works because, after 40% of PC oviposition is complete, adults usually do not move into the orchard from outside sources, or within orchards from tree to tree. Therefore, by this time, adults residing in treated trees have already been killed by insecticide residues and are unable to complete the remainder of their normal oviposition cycle.

In order to use this strategy: (1) Treat the entire orchard at petal fall with a broad spectrum insecticide. (2) Start calculating the accumulation of DD after petal fall of Macs (base 50°F); this is easily done from the NEWA Apple Insect Models page (<http://newa.cornell.edu/index.php?page=apple-insects>) by entering the petal fall date for your area. (3) No additional sprays are necessary whenever the date of accumulation of 308 DD falls within 10–14 days after a previous spray.... Recall that, in addition to the industry standard broad-spectrum materials, some additional options may be considered: Lorsban 75WG can still be used at petal fall in tart cherries, but is no longer labeled for this use in apples; also, Calypso, Avaunt and Actara are effective for plum curculio in apples and pears, and Avaunt is also labeled in stone fruit as another PC option. Delegate and Altacor both have some activity on this pest, but should not be considered as the first choices in high-pressure blocks.”

#### “European Apple Sawfly

This primitive bee and wasp relative shows a preference for early or long-blooming varieties with a heavy set of fruit. This insect is generally a pest mainly in eastern N.Y., although it has been gradually making its presence known in the more western sites, recently progressing as far as Wayne Co. (or beyond). The adult sawfly emerges about the time apple trees come into bloom and lays eggs in the apple blossoms. Young larvae begin feeding just below the skin of the fruits, creating a spiral path usually around the calyx end. This early larval feeding will persist as a scar that is very visible at harvest. Following this feeding, the larva usually begins tunneling toward the seed cavity of the fruit or an adjacent fruit, which usually causes it to abort. As the larva feeds internally, it enlarges its exit hole, which is made highly conspicuous by a mass of wet, reddish-brown frass. The frass may drip onto adjacent fruits and leaves, giving them an unsightly appearance. The secondary feeding activity of a single sawfly larva can injure all the fruit in a cluster, causing stress on that fruit to abort during the traditional "June drop" period.

Certain insecticides that control this pest also adversely affect bees, which can pose a problem at petal fall because certain apple varieties lose their petals before others. In blocks of trees where petal fall has occurred on one variety but not the others, the variety that has lost its petals is likely to sustain some curculio or sawfly injury until the insecticide is applied. Some newer insecticides with activity against both plum curculio and sawfly -- Calypso, Avaunt and Actara -- may have a slight advantage over conventional OPs in this case. Assail represents another option for controlling sawfly; it's not very active against plum curculio, but will do a good job against rosy apple aphid and spotted tentiform leafminer, as well as sawfly, at this timing. To minimize the hazard to honey bees, apply any pesticide only when no bees are actively foraging on blooming weeds (evening is better than early morning).”

“Obliquebanded Leafroller

Larvae overwintering as 1st or 2nd stage caterpillars may have had the ability to grow to a noticeable size, although we haven't actually seen any up to this point, so most are likely still relatively small. It would be prudent to have a quick look for later-stage larvae in problem blocks to determine whether a treatment against the overwintered brood should be included in your petal fall plans. Scout the blossom clusters or foliar terminals for larvae feeding within both the flowers and rolled leaves; a 3% infestation rate could justify an application to minimize overwintered fruit damage and help reduce summer populations.

Among the selective insecticides available, Intrepid has been successful at this timing, and B.t. products, which can be used while blossoms are still present, include Dipel, Deliver, Agree, Biobit and Javelin. More recently, Proclaim has been shown to be very effective at the petal fall timing, and also provides activity against early season mite populations. Delegate, Altacor, and now also Belt, all offer very good efficacy against not only OBLR, but also the internal leps. Pyrethroids such as Asana, Baythroid, Danitol, Warrior, Proaxis or Leverage may also be effective, depending on past use history, but be aware of their broad-spectrum effects, which can work both for and against you, according to how many beneficial mites and insects you can afford to lose.”

***Thank you Art !***

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***Reminder --***

***The 2011 New England Tree Fruit Management Guide*** -- The order form for the 2011 New England Tree Fruit Management Guide has been posted on the UVM Apple website at: <http://orchard.uvm.edu/2011NETFMGOrderForm.pdf> .

Please download and mail in your order. The price is the same as last year -- \$35.00 per Guide.

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