



**Vermont Apple IPM Alert**  
**Lorraine P. Berkett**  
**June 30, 2009**

**August 13, 2009 -- Please Mark Your Calendars --** There will be **presentations and a tour of the organic apple orchards** at the UVM Hort. Res. Center in South Burlington. This event is co-sponsored by NOFA-VT and the OrganicA Project. What has been learned about organic apple production will be discussed. Discussion and tour will be from **2:00 pm - 5:00 pm**. **Details are at: [http://www.nofavt.org/upcoming-event-details.php?e\\_id=1819](http://www.nofavt.org/upcoming-event-details.php?e_id=1819)** [Cost: \$10 for NOFA members, \$15 for nonmembers] ***Hope to see you there !***

**Fire Blight/Trauma Blight -** One hates to even think about fire blight coming in after hail or a severe thunderstorm where winds were high enough to damage terminals. However, if you had fire blight inoculum in the orchard this year (or last year) be prepared to apply streptomycin within 24 hours after damage.



Shoot Blight on Ginger Gold at the UVM HRC

**Flyspeck** - Included at the end of this newsletter is an article written by Dr. Dave Rosenberger on "Controlling Summer Diseases on Apples" which appeared in Scaffolds on June 22, 2009. If you have not read the article, it is recommended reading. Flyspeck is one of the summer diseases that needs to be managed. Disease development is favored by frequent showers, high humidity, prolonged cloudy weather, poor air circulation, dense tree canopies, and clustered fruit.

The **risk of flyspeck infection increases** when secondary spores come into the orchard from infected plants in woodlots and hedgerows. This occurs when approximately **270 hours of leaf wetness** have accumulated from petal fall. We have been tracking leaf wetness hours at the UVM Hort. Res. Center and as of yesterday morning, **260 leaf wetness hours** had accumulated from May 21 which was petal fall at the HRC. If your weather has been similar to the HRC, then it is a good time at your orchard to manage flyspeck.

**Silver Leaf** - Just a “heads-up” that this year seems to be a year where symptoms of silver leaf are appearing. Silver leaf is caused by a fungus that infects wounds on the tree. The fungus produces a substance that separates the leaf tissue causing a silvery appearance.



Silver leaf symptoms on leaves

A brief overview of the disease can be found at:

<http://www.hortnet.co.nz/publications/hortfacts/hf205015.htm>

**Apple Maggot Flies are Active** -- We hung apple maggot fly traps last Tuesday, June 23, at the UVM Hort. Res. Center and we had already started trapping flies by last Thursday, June 25. Flies are active !

**Obliquebanded Leafroller** -- The biofix at the UVM Hort. Res. Center for when moths started to be captured in pheromone traps was June 22. As of this afternoon, 246 DD (base 43F) have accumulated from that biofix. At 600 DD from the biofix, it is estimated that 50% of eggs have hatched and it is the time when the earliest larvae are at a stage that is large enough to be seen while scouting. A scouting procedure is outlined on page 80 of the 2009 New England Tree Fruit Management Guide. The threshold for intervention is 3% infestation sites. If you are under this threshold, it is recommended that you scout again in 3-5 days (or when approximately an additional 100 DD have accumulated).

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## “CONTROLLING SUMMER DISEASES ON APPLES”

Dr. Dave Rosenberger, Cornell University, Scaffolds, June 22, 2009

Summer diseases on apples in the northeastern United States include the sooty blotch and flyspeck complex (SBFS) and summer fruit rots that are attributable to *Botryosphaeria obtusa* (black rot), *Botryosphaeria dothidea* (white rot), and *Colletotrichum* species (bitter rot). Historically, we viewed sooty blotch and flyspeck as two distinct diseases, but research over the past decade has shown that more than 60 species of fungi may contribute to the fruit marking caused by SBFS. Many of these species occur primarily in unsprayed apple trees. Some of them are common in the southeast and midwest but are relatively rare in sprayed orchards in the northeastern US. In New York and New England, flyspeck caused by *Zygophiala jamaicensis* (= *Schizothyrium pomi*) is the predominant species that causes economic losses. However, if apples are left without fungicide protection for extended periods of time, other sooty blotch species may also appear in commercial orchards.

Controlling summer diseases has become more complex in recent years for a variety of reasons:

- Topsin M, applied in combination with Captan, has been a standard fungicide for controlling SBFS and summer fruit rots. However, the Topsin label limits applications to 64 oz/A/year. In areas where SBFS inoculum is abundant and weather conditions favor disease, growers usually apply Topsin at either 12 or 16 oz/A. At those rates, Topsin can be used only 5 times (12 oz/A) or 4 times (16 oz/A) during the growing season.
- Some of the large apple retailers, especially in Europe, have imposed more stringent restrictions on use of Topsin M (e.g., by imposing a 45-day PHI or requiring no detectable residues).
- Flint, Sovran, and Pristine all provide excellent control of the summer disease complex. However, Flint and Sovran are increasingly being used in early-season scab control programs because the DMI fungicides no longer control scab in many orchards. Flint, Sovran, and Pristine all fall within the strobilurin or QoI chemistry group (fungicide group 11 on the product labels). The labels for all of these products limit applications of any grouping of these fungicides to four applications per year, with no more than two back-to-back applications. That means that if Flint or Sovran was applied twice for scab control, then only two summer disease applications of any other fungicide within this group (Flint, Sovran, or Pristine) are allowed.

Given the limits noted above and extensive June rains that are forcing shorter spray intervals this year, many growers will need summer fungicide options that do not include Topsin or strobilurin fungicides. A good alternative for controlling SBFS is the combination of Captan plus a

phosphite fungicide. Phosphite fungicides are basically generic forms of the old fungicide known as Aliette. These fungicides have been used primarily against diseases caused by *Phytophthora*. For reasons that are not fully understood, they also have some activity against the SBFS complex. They do not provide adequate control of SBFS when used alone, but they somehow "activate" Captan so that a combination of Captan + phosphite will control SBFS just as well as a combination of Captan + Topsin. Phosphite fungicides are sold under a wide variety of trade names, with each product being labeled for its own unique combinations of crops and diseases.

At the Hudson Valley Lab, we have tested a product called ProPhyt over three seasons. ProPhyt is one of the few phosphite fungicides that is labeled for controlling sooty blotch and flyspeck. (It is also labeled for controlling apple scab, but we have not found any benefits of using ProPhyt for scab control.) In our field trials, we used ProPhyt in combination with Captan-80 at 2 lb/A and found that it consistently controlled SBFS just as well as Topsin M (9–12 oz/A) combined with Captan-80 (2 lb/A). However, the Captan/ProPhyt combination did NOT control summer fruit rots, whereas the Captan/Topsin combination was effective for both SBFS and summer fruit rots. Adding ProPhyt to Pristine or to a Captan/Topsin combination (thus resulting in a 3-way mix in the latter case) also resulted in increased residual activity during the preharvest interval after the last spray in August or early September. We have verified that ProPhyt "activates" Captan in ways that cannot be duplicated with other spreader/stickers, but we have not verified that ProPhyt does more than a good spray adjuvant might do when added to Pristine or to the Captan/Topsin combination. Also, we have never tested combinations of Ziram and ProPhyt to determine if ProPhyt might enhance activity of Ziram.

Given what we know at this point, we suggest the following options for selecting fungicides for summer disease control on apples:

- On high-value cultivars like Honeycrisp, schedule strobilurin fungicides (Sovran, Flint, Pristine) so as to allow at least one preharvest spray of Pristine. That means that strobilurins can be applied no more than 3 times prior to the last spray. Pristine is very effective for controlling fruit rots that can be a problem on Honeycrisp. Pristine also has better residual activity than any other fungicide, so it can be valuable for ensuring residual activity against SBFS on late-harvested cultivars. Adding ProPhyt to Pristine can further enhance residual activity.

- The safest time to use phosphite/Captan combinations may be from mid-June through mid-July because my own field observations suggest that risks from summer fruit rots increase as the season progresses. Thus, unless marketing restrictions prohibit late-season use of Topsin M, I

would reserve at least some of the Topsin/Captan sprays for later summer by using phosphite/Captan combinations earlier in the summer.

- Where controlling summer fruit decays is a concern, make up the phosphite/Captan combinations using higher rates of Captan (e.g., 4 lb/A of Captan-80). All of our tests were done with low rates of Captan (30 oz/A), but higher rates should provide better activity against the summer fruit rot pathogens that are not controlled by phosphite fungicides. Higher rates of Captan may be especially important for cultivars such as Cortland and Honeycrisp that retain a lot of thinned fruitlet mummies and that therefore may be exposed to high levels of black rot inoculum throughout the season.

- Another option for minimizing risks from summer fruit rots while using phosphite/Captan combinations is to alternate phosphite/Captan combinations with Topsin/Captan combinations rather than apply phosphite/Captan in back-to-back sprays.

- Given the excessive rainfall that has occurred in some locations over the past two weeks, some orchards may be at risk for developing *Phytophthora* root rot. Phosphite fungicides are translocated from leaves to roots and are very effective against *Phytophthora*. Thus, a side-benefit of using a phosphite/captan combination in the next spray will be the protection that the phosphite will provide against *Phytophthora*.

- In two years of trials at the Hudson Valley Lab, we tested Captan/ProPhyt combinations using ProPhyt at the equivalent of either 24 or 48 fl oz/A (i.e., 8 fl oz or 16 fl oz/100 gal of dilute spray). The lower rate of ProPhyt was just as effective as the higher rate in 11 of the 13 data sets where we compared the two rates in combination with Captan. However, the higher rate of ProPhyt was more effective than the lower rate in two of the comparisons involving Captan, in one of seven data sets involving combinations with Pristine, and in two of eight data sets involving the 3-way combination of Captan/Topsin/Prophyt. All of our trials were conducted by spraying trees to drip with a handgun, so spray coverage was never an issue. The labeled rate of ProPhyt is 2 qt/A (= 64 fl oz/A), and that full rate should be used if the application is intended to control *Phytophthora*. Although reduced rates of ProPhyt worked well for controlling SBFS in our field trials, it might be wise to use full rates in combinations with Captan where sprays are applied with airblast sprayers and when conditions favor SBFS as has been the case with our recent rains.

- Ziram can also be used either alone or in combinations with Captan to control SBFS and summer fruit rots. Ziram used alone has generally given better residual protection against SBFS than Captan used alone. However, Ziram is not very rain-fast and, in the absence of rain, it can leave an objectionable white residue on fruit if it is applied close to harvest.

Regardless of the fungicide or fungicide combination that is applied, our field trials have shown that residual protection is exhausted after 2.0–2.5 inches of accumulated rainfall. For most fungicides, we have not evaluated the effect of spray "stickers" (e.g., Bond, Tactic, etc.) on residual activity, but it is possible that some of spray adjuvants may enhance residual protection during periods of heavy rain. Nevertheless, summer spray intervals will need to be shortened when heavy rainfall removes fungicide residues.

Although shortened spray intervals are needed when rains remove fungicide residues, it is worth noting that fruit can be left unprotected for a few days here and there during summer. SBFS infections that become established during periods when fruit lack fungicide residues will be arrested when fungicide coverage is renewed, but not all of the pre-existing SBFS infections will be killed. As a result, SBFS that becomes established during summer can appear on fruit more quickly after spray residues are exhausted in September than would be the case for fruit that had no incubating SBFS infections at the start of September. Thus, orchards that are left unprotected periodically during a wet summer may require an extra spray in September so as to sustain fungicide residues into October and prevent the appearance of SBFS on late-harvested cultivars.

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Where trade names or commercial products are used for identification, no discrimination is intended and no endorsement is implied. Always read the label before using any pesticide. **The label is the legal document for the product use. Disregard any information in this newsletter if it is in conflict with the label.**

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