scaffolds

Update on Pest Management and Crop Development

F R U I T J O U R N A L

June 22, 2009 VOLUME 18, No. 14 Geneva, NY

INSECTS

WINGIN' IT

ORCHARD RADAR DIGEST
(Art Agnello, Entomology, Geneva)

MODEL BUILDING

Following are the available readings as of today.
Insect model degree day accumulations:

❖❖ Geneva Predictions:

Roundheaded Appletree Borer
RAB peak egglaying period roughly: June 28 to July 12.

Codling Moth
Codling Moth development as of June 22: 1st generation adult emergence at 85% and 1st generation egg hatch at 40%.

Obliquebanded Leafroller
Where waiting to sample late instar OBLR larvae is not an option (= where OBLR is known to be a problem, and will be managed with insecticide against young larvae):
Early egg hatch and optimum date for initial application of B.t., Intrepid, Proclaim, SpinTor, Delegate or other insecticide with comparable efficacy against OBLR (with follow-up applications as needed): June 27.

Oriental Fruit Moth
2nd generation OFM flight begins around: July 1.

San Jose Scale
First generation SJS crawlers appear: June 21.

Spotted Tentiform Leafminer
2nd STLM flight begins around: June 18.

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Codling Moth (targeted spray application at newly hatching larvae, predicted at 250–360 DD base 50°F after biofix):

Location	Biofix	DD (as of 6/21)
Sodus	May 14	386
Williamson	May 14 (lake site)	365
Albion	May 15	399
Geneva	May 18	412

continued...

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PEST FOCUS

INSECT TRAP CATCHES

UPCOMING PEST EVENTS

Plum Curculio (spray coverage required until 308 DD base 50°F after biofix; i.e., McIntosh petal fall):

Location	Biofix	DD (as of 6/14)
Sodus	May 15*	372
Geneva	May 18	412
Albion	May 18	381

* (estimated)

[NOTE: Consult our mini expert system for arthropod pest management, the **NEWA Apple Insect Models Degree Day Calculator**: http://newa.nrcc.cornell.edu/newaModel/apple_pest
Find accumulated degree days for the current date with the **Degree Day Calculator**: http://newa.nrcc.cornell.edu/newaLister/dday
Powered by the NYS IPM Program's NEWA weather data and ACIS, Northeast Regional Climate Center] ❖❖

IT'S FLYING TIME AGAIN...

A FLY IN THE SOUP
(Art Agnello and Harvey Reissig, Entomology, Geneva)

❖❖ It is once again time to anticipate the first appearance of apple maggot (AM) flies in wild apple trees and abandoned orchards, particularly in eastern N.Y.; western N.Y. could be about a week later (or not, depending on what kind of temperatures we get over the next week or so). Crop scouts and consultants have been using traps to monitor AM populations for a long time, but this tactic, useful as it is, nevertheless is not recommended in all cases. Some orchards have such high or such low AM populations that monitoring for them is not time-efficient. That is, in some blocks, sprays are needed predictably every season, and on a calendar basis; conversely, they are rarely needed at all in other blocks. However, most commercial N.Y. orchards have moderate or variable pressure from this pest, so monitoring to determine when damaging numbers of them are present can reduce the number of sprays used in the summer with no decrease in fruit quality.

Sticky yellow panels have been in use for over 40 years, and can be very helpful in determining when AM flies are present. These insects emerge from their hibernation sites in the soil from mid-June to early July in New York, and spend the first 7–10 days of their adult life feeding on substances such as aphid honeydew until they are sexually mature. Because honeydew is most likely to be found on foliage, and because the flies see the yellow panel as a "super leaf", they are naturally attracted to it during this early adult stage. A few of these panels hung in an orchard can serve as an early warning device for growers if there is a likely AM emergence site nearby.

Many flies pass this period outside of the orchard, however, and then begin searching for fruit only when they are ready to mate and lay eggs. That means that growers don't always have the advantage of this advance warning, in which case the catch of a single (sexually mature) fly indicates that a spray is necessary immediately to adequately

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protect the fruit. This can translate into an undesirable risk if the traps are not being checked daily, something that's not always possible during a busy summer.

To regain this time advantage, researchers developed traps that have the form of a "super apple" — large, round, deep red, and often accompanied by the smell of a ripe apple — in an attempt to catch that first AM fly in the orchard. Because this kind of trap is so much more efficient at detecting AM flies when they are still at relatively low levels in the orchard, the traps can usually be checked twice a week to allow a 1–2-day response period (before spraying) after a catch is recorded, without incurring any risk to the fruit. In fact, research done in Geneva over a number of years indicates that some of these traps work so well, it is possible to use a higher threshold than the old "one fly and spray" guidelines recommended for the panel traps. Specifically, it has been found that sphere-type traps baited with a lure that emits apple volatiles attract AM flies so efficiently that an insecticide cover spray is not required until a threshold of 5 flies per trap is reached.

The recommended practice is to hang three volatile-baited sphere traps in a 10- to 15-acre orchard, on the outside row facing the most probable direction of AM migration (towards woods or abandoned apple trees, or else towards the south). Then, periodically check the traps to get a total number of flies caught; divide this by 3 to get the average catch per trap, and spray when the result is 5 or more. Be sure you know how to distinguish AM flies from others that will be collected by the inviting-looking sphere. There are good photos for identifying the adults on the Apple Maggot IPM Fact Sheet (No. 102GFSTF-I8); check the web version at: http://www.nysipm.cornell.edu/factsheets/treefruit/pests/am/am.asp. In home apple plantings, these traps can be used to "trap out" local populations of AM flies by attracting any adult female in the tree's vicinity to the sticky surface of the red sphere before it can lay eggs in the fruit. Research done in Massachusetts suggests that this strategy will protect the fruit if one trap is used for every 100–150 apples normally produced by the tree (i.e., a maximum of three to four traps per tree in most cases), a density that makes this strategy fairly impractical on the commercial level.

A variety of traps and lures are currently available from commercial suppliers; among them: permanent sphere traps made of wood or stiff plastic, disposable sphere traps made of flexible plastic, and sphere-plus-panel ("Ladd") traps. The disposable traps are cheaper than the others, of course, but only last one season. Ladd traps are very effective at catching flies, but are harder to keep clean, and performed no better than any other sphere trap in our field tests. Brush-on stickum is available to facilitate trap setup in the orchard. Apple volatile lures are available for use in combination with any of these traps. These tools are available from a number of orchard pest monitoring suppliers, among them:

- Gempler's Inc., 100 Countryside Dr., PO Box 328, Belleville, WI 53508; 1-800-382-8473, Fax, 1-800-551-1128 <http://www.gemplers.com/>
- Great Lakes IPM, 10220 Church Rd. NE, Vestaburg, MI 48891; 800-235-0285, Fax 989-268-5311 mailto:glipm@greatlakesipm.com <http://www.greatlakesipm.com>
- Harmony Farm Supply, 3244 Hwy. 116 N, Sebastopol, CA 95472; 707-823-9125, Fax 707-823-1734 mailto:info@harmonyfarm.com <http://www.harmonyfarm.com>
- Ladd Research Industries Inc., 83 Holly Court, Williston, VT 05495; 800-451-3406, Fax 802-660-8859 mailto:sales@laddresearch.com <http://www.laddresearch.com>
- Olson Products Inc., PO Box 1043, Medina, OH 44258; 330-723-3210, Fax 330-723-9977 <http://www.olsonproducts.com/>
- Suterra-Scenturion, 213 SW Columbia, Bend, OR 97702-1013; 866-326-6737, Fax 541-388-3705 <http://www.suterra.com>

By preparing now for the apple maggot season, you can simplify the decisions required to get your apples through the summer in good shape for harvest.❖❖

DOWN BY THE RIVER

HUDSON VALLEY INSECT PEST MANAGEMENT UPDATE
(Peter Jentsch, Entomology, Highland)

Apple Maggot

❖❖ The first flight of AM has been observed in Highland. Soil moisture has been more than ample to allow for ideal adult emergence. By placing baited spheres in orchard "hot spots," observations of AM flight can be recorded and insecticides applied when populations reach the 5 adults per trap threshold. This is not expected for at least two weeks.

San Jose Scale

Observations of infested fruit from SJS has been observed. Scouts should look for SJS infestations to determine if a specific application for scale

is required to reduce fruit injury from emerging nymphs. Esteem can be used without oil for SJS management when Captan use is problematic.

Obliquebanded Leafroller

Model predictions used to determine the early hatch of OBLR eggs (360 DD, base 43°F) forecast June 18 to be first larval emergence in HIGHLAND, NY. We are nearing 50% hatch as we approach 630 DD (Late June); the 2nd–3rd instar larva of the early hatch is predicted to occur at 720 DD, and 90% hatch of the eggs by 810 DD (1st–2nd week of July).

Mid-Hudson Valley temperatures are predicted to increase throughout the course of the week (mid-upper 80s) with 10–30% chance of rain throughout the earlier part of the week, clearing toward Friday. A prolonged period without rain is optimum for control. However, the heavy rains we've experienced help in reducing early instar larval numbers and increase the level of insect-related diseases. Given the extended period of OBLR hatch, control measures will most likely be needed in many Hudson Valley orchards that have experienced perennial problems managing this insect.

Control measures for OBLR in most orchards will not yet have taken place, given the rainfall we've had. However, if applications of insecticides directed at OBLR have been made, reductions in residue have occurred, while severe loss of efficacy of most insecticides can be observed with 2 inches or more of rainfall. Much depends on the rainfastness of the insecticide. Many of the newer insecticides have translaminar capabilities and move into the leaf with the assistance of a penetrant such as oil, as is the case for example with Agri-Mek. Once the material enters the leaf, it tends to be less susceptible to wash-off, yet must be ingested by the insect to be effective. The neonicotinoids have translaminar movement into plant tissue and tend to be very rainfast. However, the residue remaining on the fruit surface is very water soluble and tends to be removed during rain events.

In an article on rainfastness of insecticides published in the Good Fruit Grower, Dr. John Wise, MSU entomologist, observed in studies related to codling moth insecticidal efficacy, that the residual decline by ultraviolet degradation and efficacy of the insecticide are the determining factors with regard to insecticide wash-off. The greater the effectiveness of the insecticide, the more forgiving insecticides tend to be after a rain event. He found that insecticides, allowed to dry for 24 hours, begin

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to lose efficacy after 0.5 inches of rainfall. But all insecticides applied prior to a 0.5" rain event in test studies against the codling moth, were better than no treatment at all.

The greatest risk comes when rain occurs seven days after a treatment that was exposed to ultraviolet degradation. All materials show reduced performance after two inches of rain when residues had aged seven days prior to a rain event. Based on his current data, he suggests that if the rain is 0.1 inches, the expense of re-treating is not justified unless sprays were made more than seven days ago. A half-inch of rain, specifically using Asana, Assail, and Proclaim, may justify an additional treatment for codling moth. At one inch and seven days, all treatments except Delegate (spinetoram) and Altacor (rynaxypyr, not yet registered in NY) would need re-application, while at two inches, everything would need to be reapplied.

Since we will see hatch of OBLR larvae into the second week of July, it would be prudent to apply subsequent applications with rain forecasts in mind.

Oriental Fruit Moth

Oriental fruit moth is one of three internal worm species attacking pome and stone fruit that occur in New York State. Control failures may be attributed to lower levels of susceptibility to the organophosphates. Rotation of insecticide classes to manage resistance is key to regaining control.

The first adults from the 2nd generation were observed today. OFM larvae are predicted to hatch at the end of this week in Highland, NY (Saturday, June 27) and continue into the early part of July. The management timing for OFM this season will coincide with the 2nd application for OBLR. Delegate and Proclaim will have excellent efficacy against both OFM and OBLR populations, followed by the pyrethroids and Leverage, Bts, Intrepid, and Lannate.

Products that are efficacious against both the OBLR and OFM

Product	Rate/A	REI (hrs)	PHI (days)
Delegate 25WG	4.5–7.0 oz/A	4	7
Proclaim 5SG	4.8 oz/A	12 or 48*	14
Pyrethroids including:			
Baythroid XL 1L	2.0–2.4 fl oz/A	12	7
Leverage 2.7SE	3.6–4.4 fl oz/A	12	7
Dipel 10.3DF	0.5–2 lb/A	4	0
Intrepid 2F	12–16 fl oz/A	4	14
Lannate 2.4L	1.5–3.0 pt/A	72	14

* see label restrictions

Products that are efficacious against OFM with moderate to no impact on the OBLR

Product	Rate/A	REI (hrs)	PHI (days)
Assail 30SG	4.0–8.0 oz/A	12	7
Avaunt 30WDG	5–6 oz/A	12	14
Calypso 4F	4–8 fl oz/A	12	30
Guthion 50WS	2–3 lb/A	14 days	14
Imidan 70WP	2.13–5.33 lb/A	72	7
Sevin XLR Plus or 4F	1–3 qt/A	12	3

Pear Psylla

The 2nd generation of pear psylla nymphs have been causing considerable damage to fruit and foliage in untreated trees, primarily in the form of sooty mold to foliage and fruit. Most pear growers in the Hudson Valley have used two applications of AgriMek to manage the 2nd generation.

However, if you choose not to use AgriMek in a multiple application program, and if populations are building, the options available for control include Delegate, Actara, Leverage, Portal, Assail, Provado and Calypso.

Delegate is quite effective against psylla when used with a penetrant such as horticultural mineral oil or penetrant rates of LI-700. For purposes of resistance management, applications of Delegate should be made against a single generation only. Timing of Delegate for 2nd generation should be made to coincide with OBLR hatch (this week) OR as a 3rd generation psylla control option in mid-July (this occurred on July 18 in 2008). This option should be made as codling moth larvae begin to emerge. Delegate provides a residual of 14 to 21 days and a broad degree of insecticidal activity against both codling moth and the obliquebanded leafroller.

The neonicotinoids Actara, Assail, Provado and Calypso in combination with 0.25–1% oil should increase insecticidal efficacy. Actara is an excellent choice against the adult psylla as they emerge. It is also a strong rescue material for nymph populations. Leverage (imidacloprid, the a.i. in Provado, + cyfluthrin, the a.i. in Baythroid) and Portal are two newly registered insecticides providing control of psylla and rust mite.

Portal (fenpyroximate) will stop psylla feeding within hours after the application. Mortality can be observed within 4–7 days after application. For purposes of resistance management, no more than one application of this insecticide can be made per season. Portal is in IRAC class 21, has a 12-hour REI and can be applied up to 14 days before harvest. ❖❖

DISEASES

WET FEET

HEAVY RAINS RAISE RISKS FOR PHYTOPHTHORA ROOT AND CROWN ROT

(Dave Rosenberger, Plant Pathology, Highland)

❖❖ At the Hudson Valley Lab, we have recorded more than 7.5 inches of rain in the last two weeks. Some parts of the Hudson Valley have received even more rain than we did. Having saturated soils over an extended period of time raises the possibility that Phytophthora root and crown rot could cause tree decline later this year.

Phytophthora species are present in most of our orchard soils, but this pathogen rarely causes problems unless soils remain saturated for extended periods. In saturated soils, *Phytophthora* can release zoospores that swim through water between soil particles and attack tree roots.

The deluges of the past two weeks remind me of the situation in 1982 when a very wet June stimulated an exceptionally severe outbreak of *Phytophthora* root rot that killed many young apple trees and some older ones as well. At that time, Dr. Steve Jeffers was a grad student with Dr. Herb Aldwinckle at Geneva and was working on *Phytophthora* on apples. He showed that drought stress followed by flooding triggered huge releases of *Phytophthora* zoospores in the soil. Spring of 1982 had been extremely dry in our area, with only 1.19 inches of rain from green tip on April 21 to petal fall in mid-May, and then about 3.7 inches of rain between mid-May and June 4 of that year. Then from June 5–22 of 1982, we got 6.86 inches of rain, and the June rains apparently triggered massive zoospore releases that resulted in crown rot. Crown rot was killing trees in orchards throughout the Hudson Valley by mid-September. Even trees on relatively resistant rootstocks such as M.9 and M.7 were killed in some orchards in 1982.

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This year, we had less droughty prebloom conditions, so the preconditioning for root rot is presumably less than it was in 1982. Here at the Hudson Valley Lab, we had 3.82 inches rain from green tip to petal fall this year and 2.59 inches of rain from petal fall to June 4. Nevertheless, the 7.5 inches of rain we received in the past two weeks could still trigger root rot in some orchards.

A simple but effective precaution for preventing root rot would be to include a phosphite fungicide in the next cover spray. Numerous phosphite fungicides are available, but their labels vary widely. Some are labeled for apples but not stone fruits. Follow label directions for rates and repeated application timing on the product labels.

Phosphites can be sprayed on leaves and are quickly translocated from leaves to the root system. So far as I know, the phosphite fungicides can be tank-mixed with most pesticides. However, do NOT mix phosphite fungicides with copper sprays because the phosphites acidify the spray water, and copper fungicides should never be applied in acidic solutions.

Perhaps *Phytophthora* will not cause problems this year despite our heavy rains. However, infections occurring now could be girdling younger trees by September, and by then it will be too late to save severely affected trees. Small trees with trunk diameters of less than 2 inches are at greatest risk because an infection on one side of the tree can quickly girdle the entire crown. Because of their natural susceptibility to *Phytophthora*, orchards of any age on MM.106 or M.26 rootstocks should receive a phosphite treatment if they have been exposed to saturated soils over the past two weeks.

Phytophthora can also attack stone fruit trees, although we seldom see major root rot problems on stone fruits in New York State. As noted earlier, some of the phosphites (e.g., Phostrol, but not Pro-Phyt) are labeled for this disease on stone fruits and could be used to protect young stone fruit plantings. ❖❖

IT'S A COMPLEX ISSUE

CONTROLLING SUMMER DISEASES ON APPLES

(Dave Rosenberger, Plant Pathology, Highland)

❖❖ 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).

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• 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 combina-

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tions 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. ❖❖

CHEM NEWS

ADVANCED NOTICE

LORSBAN ADVANCED FOR APPLE BORERS

❖❖ If you'll recall the overview article we published on the uses of the different Lorsban formulations in issue No. 5 (April 20), you may have noted that Lorsban Advanced (EPA reg. no. 62719-591) was not labeled at that time for postbloom use against apple boring insects. Since then, Dow AgroSciences has brought out a Supplemental Label, valid in NY, that covers all of those uses. To summarize, here is the section of the table from the April 20 Scaffolds that lists the particulars of Lorsban Advanced use in apples, now reprinted with the new uses included:

LORSBAN ADVANCED (This is a Restricted Use Pesticide)

Crop	Application Timing/Type	Rate	Maximum Applics	PHI	Pests labeled (primary)
Apple	Dormant/Delayed dormant; canopy OR trunk spray	1½–4 pt/A	1 per yr TOTAL*	—	Tarnished plant bug, OBLR, Rosy apple aphid, San Jose scale
	Postbloom, trunk spray ONLY	1½ qt/ 100 gal	1 per yr TOTAL* (Pre- or Postbloom)	28 d	Borers (American plum, dogwood, roundheaded and flatheaded appletree, tilehorned prionus, broad-necked root borer, apple bark)

*Per the restriction, apply no more than the allowed application(s) of any chlorpyrifos-containing product per year. The application(s) can be either a pre-bloom dormant/delayed dormant spray to the canopy or to the trunk.

EVENT REMINDER

Tomorrow, June 23, there will be a field meeting sponsored by Nichino America as a kickoff to the release and registration of Portal miticide/insecticide in NY (refer to Scaffolds No. 6, April 27, 2009 for product details). The meeting is being hosted by agr.assistance and will take place at S&L Farms Shop, west of Dufloo Rd in Sodus (the former Cornell Cohn Farm), starting at 11:00 a.m. There will be a brief overview of this miticide, some general tips on mite management, a demonstration of a Raven spray monitoring system, plus lunch and door prizes. Contact Lindsay Lamora Lindsay at 585-734-8904 or lindsaylamora@agrassistance.com for RSVP details.

PEST FOCUS

Highland:
1st **apple maggot** trap catch, 6/22. **Oriental fruit moth** 2nd flight beginning.

INSECT TRAP CATCHES (Number/Trap/Day)

Geneva, NY

	6/11	6/19	6/22
Redbanded leafroller	0.0	0.0	–
Spotted tentiform leafminer	0.3	0.9	4.0
Oriental fruit moth	0.3	0.1	0.0
Lesser appleworm	0.8	0.1	0.7
Codling moth	1.0	0.3	0.0
San Jose scale	0.0	0.0	–
American plum borer	1.2	0.1	0.0
Lesser peachtree borer	1.3	0.3	0.0
Peachtree borer	0.0	0.0	0.0
Pandemis leafroller	0.7	0.1	0.3
Obliquebanded leafroller	0.0	0.0	0.0
Dogwood borer	0.2*	0.9	–

* first catch

Highland, NY

	6/15	6/22
Redbanded leafroller	0.0	1.4
Spotted tentiform leafminer	49.5	145
Oriental fruit moth	0.0	0.1
Lesser appleworm	15.9	8.6
Codling moth	1.9	1.8
Lesser peachtree borer	0.1	0.0
Obliquebanded leafroller	6.6	1.4
Dogwood borer	0.0	0.1
Peachtree borer	0.2*	0.0

UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1–6/22/09):	1111	644
(Geneva 1/1–6/22/2008):	1226	747
(Geneva "Normal"):	1164	714
(Geneva 1/1–6/29 Predicted):	1313	797
(Highland 3/1–6/22/09):	1551	957

Coming Events:	Ranges (Normal ±StDev):	
Cherry fruit fly 1st catch	755-1289	424-806
Lesser appleworm 1st flight subsides	975-1453	595-927
Obliquebanded leafroller 1st flight peak	843–1139	491–707
Obliquebanded leafroller summer larvae hatch	1038–1460	625–957
Pandemis leafroller flight peaks	869-1159	497-703
Pear psylla 2nd brood hatch	967-1185	584-750
Peachtree borer 1st catch	768–1346	437–829
San Jose scale 1st gen crawlers present	1033-1215	619-757
Spotted tentiform leafminer 2nd flight starts	980-1154	582-720
American plum borer 1st flight subsides	1225–1413	769–907
Apple maggot 1st catch	1228–1620	784–1034

NOTE: Every effort has been made to provide correct, complete and up-to-date pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly, and human errors are possible. These recommendations are not a substitute for pesticide labelling. Please read the label before applying any pesticide.

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