OILY SEASON

You don’t have to go back too far to find a time when mites were the No. 1 arthropod pest problem in NY apple orchards, and with few prospects of finding a solution. The 1995 Cornell Recommends listed just five actual acaricides in addition to oil, and all were less than optimal for one reason or another (e.g., resistance problems, toxicity to non-target species, diminished efficacy): Moresatan, Kelthane, Carzol, Vendex, and Omite. Of those products, only Carzol and Vendex are available today, mainly as footnotes, and there are now at least nine newer products registered in NY representing six different modes of action, quite effective and available for use either prebloom or during the summer. That’s in addition to oil, which has also diversified into a group of several different types of products.

The use of horticultural mineral oil as an early season pest management tactic is nowhere near as universal a practice as it used to be years ago, when mites and scales were more problematic and the options for dealing with them were less abundant. Nonetheless, those of us familiar with fruit insect and mite trends still believe it is worthwhile to consider the use of oil applications for early season mite and insect control in both apple and pear plantings, because of its effectiveness, relative affordability, and safety from a biological and pesticide resistance perspective. Exploiting the most acceptable spraying conditions to maximize tree and block coverage can be a challenge in our area, but few pest management efforts have such potentially high returns when all factors are taken into account.

Mite and scale population trends are typically not the same each year, and weather conditions are certainly among the most variable of factors in the pest scenario from one year to the next, also. Before you decide that it’s too much trouble or cost to invest in a prebloom spray of oil, be sure you’re aware of how much it could cost (biologically as well as financially) if a rescue treatment for mites or scales ends up being necessary later in the season.

continued...
Pear Psylla

We’ll soon be starting to see more of those famous early sunny days with warmer temperatures, and it won’t take long for psylla adults to get active and start laying eggs once this happens. Even though it’s impossible to make sure your pear trees are all protected by the time the first psylla adults start flying and ovipositing, several nice warm days in a row at this time of year don’t result in more than a small number of psylla eggs being laid, so you’ll be more than adequately protected if you prepare now to get out there during the first real stretch of good weather.

Early oil applications are useful against pear psylla all throughout the swollen bud stage. Although it’s capable of killing adults and nymphs that are directly contacted, oil is recommended mainly because the residue repels adult females looking to deposit their eggs, and this continues for an extended period after treatment. The objective of using oil is to delay the timing of any needed insecticide spray until as late as possible before (or after) bloom. Oil rates depend on when you start: If your buds are at the dormant stage, one spray of 3% oil, or two of 2% through green cluster are recommended; if you start at swollen bud, one spray at 2% or two at 1% up to white bud should be adequate for this purpose, especially if applied as soon as the psylla become active (50°F or above). This will also give some red mite control at the same time.

Notes from the Chappie Primer

The following advice developed from Paul Chapman’s original research is essentially unchanged from what I print every spring, which shows the durability of not only the information, but also of a crop protectant that’s still as good as it used to be:

A delayed-dormant spray of petroleum oil in apples from green tip through tight cluster can be a favored approach for early season mite control, both to conserve the efficacy of and to help slow the development of resistance to our contact insecticides. Our standard advice has been to try for control of overwintered eggs using 2 gal/100 at the green tip through half-inch green stage, or 1 gal/100 at tight cluster; this assumes ideal spraying conditions and thorough coverage. Naturally, this is not always achieved in real life, mainly because of weather and coverage challenges, coupled with the difficulty of getting to a number of blocks during a fairly brief window. It is possible for mites to start hatching when the trees are at solid tight cluster, so the suffocating mode of action tends to be compromised if the nymphs are able to pick their way through the droplets or dodge them entirely. Let practicality determine how best to use the following guidelines.

First, to be sure that mites are in the egg stage, start on your blocks as soon as the weather and ground conditions permit, even if this means using a higher rate. Depending on how heavy the snowfalls have been in certain areas, local conditions will be the prime determinant of how easily you can get through the rows early on. Also, tend toward the high end of the dosage range, especially if there’s been no frost during the 48-hour period.
before your intended spray, and no danger of one for 24–48 hours afterwards. For example, use 1.5 gal/100 if the buds linger somewhere between half-inch green and full tight cluster during your chosen spray period.

Obviously, good coverage of the trees is critical if you’re to take advantage of oil’s potential efficacy; this in turn requires adequate spray volume delivered at an appropriate speed. Experience and research have shown that a 1X concentration (300 gal/A) in large trees is clearly preferable; however, if all other conditions are optimal (weather, speed, calibration), then 3X, or 100 gal/A, is the highest concentration that should be expected to give acceptable control at any given time. Growers like to concentrate more than this to save time and the hauling of extra water, but reducing coverage too much can compromise your efforts if you end up covering only a small fraction of the egg population with the residue.

Don’t limit this mite control tactic just to apples and pears. Talks with stone fruit growers have reminded us that many cherry, peach and plum plantings can suffer equally serious European red mite infestations that weren’t given the early season attention they might have needed. We don’t have hard and fast threshold guidelines for these crops, but stone fruit plantings with a history of past ERM problems should be examined for presence of the red overwintered eggs, and if they’re numerous enough to see without a hand lens, then a prebloom application of 2% oil would be a prudent tactic to help ward off this damage, particularly if your fungicide program at this time doesn’t present any compatibility problems.

**Scales Your Grandfather Fought**

A number of growers have remarked that our changing insecticide programs seem to be promoting a return to some of the pest profiles of the past, with direct fruit pests (internal leps, apple maggot, various bugs) taking precedence over the indirect foliar feeders (like mites, leafminers, leafhoppers, even leafrollers). San Jose scale is one of those historic problems that has already responded to some of the regulatory actions of the last few years. The disappearance of products like Penncap-M and Lorsban from our list of summer spray materials has been at least partly responsible for the fact that SJS persists or has returned to pest status in a number of orchards. It’s therefore worth pointing out that a 2% oil treatment at half-inch green will control the immature forms overwintering on the trees, and this is a preferred treatment if no other problem insects need to be controlled. Combining the oil with an insecticide generally has not been shown to be more effective than using the oil (or insecticide) alone, except possibly in the case of a more recent alternative, Esteem, which has shown good efficacy when mixed with 2% oil at the pre-pink timing.

**Most pome fruit varieties have begun to show signs of early development.** The 1/4-inch green stage was observed last week in Ginger gold and McIntosh on M-26s with Bartlett pears at the swollen bud stage. Prior to this “record setting” event, the earliest date recorded for green tip here at the Hudson Valley Laboratory was 1990. A welcome cold front has descended into the Hudson Valley with continued rain forecast over the next 2 days. A dramatic change in temperatures into the mid- to upper 70s later this week will promote a flush of new growth and increases in insect activity.

Pear psylla adults reside both in and outside the orchard, with migration occurring from late March through late April. We observed the first eggs laid by resident pear psylla adults, yet this morning’s evaluations have seen only slight increases in egg

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**HUDSON VALLEY**

**PRE-BLOOM PEAR**

**PSYLLA MANAGEMENT**

(Peter Jentsch, Entomology, Highland)

 Continued...
laying over the past week. But as temperatures climb during the upcoming week, migration by incoming adults and increases in egg laying will become more frequent (a single female can produce over 600 eggs). Effective early spring control programs are crucial to successful seasonal control of this pest.

During the next 5 weeks, 3 control tactics should be considered:

- 1st, reduce the eggs being laid by adults
- 2nd, reduce adult numbers using adulticides
- 3rd, reduce remaining nymphs

The first control strategy employs multiple pre-bloom oil applications to delay and reduce egg laying. This will ‘buy’ some time to allow more adults to enter the orchard, yet keep them from ovipositing. Once the majority of adults are in the orchard, you can apply an insecticide to reduce adult numbers before significant numbers of eggs have been laid.

Oil and Surround WP act to reduce oviposition. They should be applied at the end of this rain cycle. Since we are beyond the dormant stage, the use of 2% oil at swollen bud and 1% at green cluster to bloom, 1–3 weeks apart, depending on egg laying and weather, is advisable. To avoid the possibility of phytotoxicity, oil applications should be timed so they occur at least 48 hours after any frost and at least 24 hours before another frost is predicted.

Direct contact with dilute applications to pear psylla eggs has been shown to increase egg mortality. If you choose not to apply oil, then Surround WP at 50 lb/A or the the insecticide Esteem (4–5 oz/acre), an insect growth regulator (IGR), are options that can be applied prior to peak egg deposition. Surround WP will act as a deterrent to keep adults from ovipositing, while Esteem acts to reduce 1st generation egg hatch.

Adulticide applications should be timed for mid- to late April, or about green cluster in the Hudson Valley, where pre-bloom oil or Surround WP was applied. Some choices to manage adult psylla include the neonicotinoids Actara 25WDG (5.5 oz/acre) and Assail 30SG (4.0–8.0 oz/acre). These materials have good efficacy against the adult pear psylla. The neonicotinoids have translaminar and contact activity, and are effective on newly emerging nymphs feeding on foliage. The use of 1 quart of oil per 100 gal of finished spray (0.25% V/V) has been found to increase neonicotinoid effectiveness, but is not required by the label. The new Actara label allows for 2 applications per season.

Pyrethroid adult control options include Ambush (25WP at 12.8–25.6 oz/acre), Asana (9.6–19.12 fl oz/A), Danitol (2.4 EC at 16–21.3 fl oz/A), Pounce (25WP at 12.8–25.6 oz/acre), Proaxis (2.6–5.1 fl oz/acre) and Warrior II (2.08 at 1.28–2.56 fl oz/acre). Voliam Xpress (Syngenta), a combination of lambda-cyhalothrin (Warrior) and chlorantraniliprole (Altacor) is labeled for pear psylla with suppression only. The pyrethroids appear to be less effective at higher temperatures on many in-
sects, so their use should be considered during the cool portion of the spring, not during the heat of the summer. They are effective against the adults and nymphs IF insecticide resistance is not a factor. Researchers have found increased pyrethroid efficacy with the use of PBO (pipronyl butoxide). Incite, a PBO synergist, when applied 4–6 hours prior to, or in a tank mix with the pyrethroid, will increase pyrethroid efficacy. The PBO acts to reduce the insect’s ability to metabolize or detoxify the pyrethroid, allowing it to reach its intended target site within the insect.

The first generation nymphs will emerge during mid- to late April, beginning at green cluster, with peak hatch during bloom. Nymphs will move to succulent stems and developing leaves, feeding along the mid-veins of leaves and at the calyx end of fruit. They pass through five stages of development, called instars, each subsequent instar more difficult to control than the previous stage. If pyrethroids or neonicotinoids were applied against the adults, the residue will have some impact on emerging nymphs. However, expanding foliage and rapidly developing shoots “dilute” the residue of earlier applications. Scout for signs of nymph populations using conservative action thresholds of 0.5 to 1.5 nymphs per leaf for Bartlett or Bosc, respectively. Using multiple applications of different chemistry for each generation is an effective way to manage the insect population and reduce the potential for insecticide resistance.

Centaur 70WDG (buprofezin), with an IGR mode of action, is a newly registered insecticide in NY. Applications of Centaur can be made during peak nymph emergence (mid-April). The active ingredient acts as a chitin biosynthesis inhibitor, having activity on the nymphal stages of psylla. Although adult insects are not controlled, there is some reduction in egg laying and viability of eggs. Insect uptake of Centaur is primarily through contact, applied at 34.5 oz/acre, with a maximum of two applications on pear per year. The product has a 12-hour REI and 14-day PHI. Portal is also a new contact insecticide with anti-feeding effects (a METI or mitochondrial electron transport inhibitor), and its mode of action is to block cellular respiration. It also acts to inhibit molting of immature stages. Psylla feeding stops soon after application, with mortality occurring in 4–7 days. Formulated as a 5EC, Portal is used at the rate of 2 pints per acre. For resistance management purposes, it is recommended that these products not be applied more than once per season, and should be rotated with products having a different mode of action when additional control is needed. Delegate WG used at 6–7 oz/acre has been quite effective against nymphs and is very effective against the leafroller/internal lep complex. However, its use against psylla during the 3rd generation (mid- late June), coinciding with OBLR or CM emergence, will provide excellent control of this diverse insect
ADDITIONAL LABEL CHANGES & NOTES
(Debbie Breth, Lake Ontario Fruit Team, Albion)

**Fungicides**

- Cabrio (pyraclostrobin) has a supplemental label for use in apples for apple scab and powdery mildew. This strobylurin has no phytotoxicity to sweet cherries. Use pattern is exactly like Flint and Sovran. It will not be effective where resistance to strobys is an issue. Use: 12 oz/A, 4 applications per season allowed, with only 2 consecutive applications.
- Indar (fenbuconazole) has an expanded label for use in apples for scab, powdery mildew, rusts, flyspeck/sooty blotch. There is a 14-day PHI. As this is an SI, it may fail to control scab where the fungus has become resistant to SIs.
- Inspire Super MP (difenoconazole), was registered in NY last year for control of apple scab, powdery mildew, and sooty blotch/flyspeck. It comes in a multipack with Vangard WG and must be used in combination. It has been shown in research trials to control apple scab where SI resistance is established, but you should not rely on this material for control specifically in SI-resistant orchards.

**Insecticides**

- Centaur WDG (buprofezin) is registered for use in NY as a Group 16 insecticide IGR, in pome fruit and stone fruit. It is active for control of San Jose scale at the early crawler stage, leafhoppers and mealybugs, and early season pear psylla/mealybug control in pears. 34.5–46 oz/A is allowed in 1 application for apples, 2 in pears and stone fruits, not less than 14 days apart. The leafhopper rate in apples is 9–12 oz/A. The PHI is 14 days for all crops. The REI is 12 hours.
- Altacor (chlorantraniliprole), labeled for use in pome fruit, stone fruits, grapes, and for raspberry crown borer in caneberry crops. This product cannot be applied within 100 feet of a water body in NY. The REI is 4 hours, and PHI is 14 days.
- Voliam Xpress (chlorantraniliprole plus lambdacyhalothrin) is labeled for use in NY for apple and stone fruit. The PHI on apples is 21 days; stone fruit 14 days; the REI is 24 hours. The PIMS website refers to the registration with a 100 foot buffer with any body of water.
- Danitol (fenpropatrin) has been granted a supplemental label for stone fruit and bushberries, beyond the originally labeled apples, pears, and grapes.
- Portal (fenpyroximate) was newly registered for use in pome fruit in 2009, and the label has been expanded to non-bearing deciduous fruit (includes non-bearing stone fruit). Portal is recommended at 1–2 pts/A, with 1 application at the 2 pt rate.

**Herbicides**

- Rely has changed from Rely 200 to Rely 280. Rely 200 has 18.9% glufosinate ammonium, and is applied to weeds in apples at 77–115 oz/treated acre, broadcast. Rely 280 (24.5% ai or 2.34 lb/gallon) is labeled for use in apples, grapes and bushberries, 48–82 oz/A, depending on weed height. The taller the weeds, the higher the rate. Rely is not a safe product for use on green bark in tree fruit. Do not use Rely 280 for control of suckers in apples, as the label warns of injury to the trunk. This is a change from the first Rely Herbicide (11% or 1 lb./gallon). Although Rely has been registered for use in apples for several years, it has been overlooked in making corrections in the Cornell Guidelines under Weed Control Section for apples. Please add it to the list of options for applying to weeds that have already emerged in apples. It is not labeled for other tree fruit crops.
- Matrix (rimsulfuron) is a pre-emergence, early post-emergence herbicide in pome and stone fruit. The PHI in pome fruit is 7 days, in stone fruit 14 days. Rainfall is needed to incorporate; it breaks down rapidly if not incorporated. Can be applied as a single application at 4 oz/A or 2 times at 2 oz/A. See the label to review the list of grasses and broadleaf weeds. If weeds are emerged, include a burn-down material such as glyphosate, paraquat or glufosinate.
Optimizing fungicide programs for apple scab gets more complicated every year as new fungicides gain registrations, fungicide resistance diminishes the reliability of some key chemistries, and changes in fungicide pricing necessitate annual reassessment to determine the most cost-effective programs. The difficulties are compounded by the fact that scientists still do not fully understand all of the intricacies of how new products work. Additionally, we cannot accurately predict when and where fungicide resistance will occur and how fungicide-resistant populations will respond to various mixtures and seasonal alternations in fungicide chemistry.

Despite these uncertainties, this article will summarize some factors to consider in selecting apple fungicides to control scab, rust, and mildew during the period between green tip and first cover. We start by reviewing broad categories of fungicides and then suggest some early season strategies at the end of the article.

Contact fungicides include the mancozeb (Dithane, Penncozeb, and Manzate), Polyram, Captan, Ziram, sulfur, and copper. They are sometimes called “protectant fungicides” because they protect leaves by killing spores before or during germination. They do not penetrate leaves and therefore cannot arrest infections after fungi have entered leaves or fruit. However, they are still effective when applied after the start of a wetting period, so long as they are applied before a Mills infection period has been completed. Thus, these products are sometimes listed as having a “kickback” of 12–24 hr from the start of a rain, depending on temperature. However, their reach-back is directly correlated with the times required for completing a Mills infection period.

Copper is both a bactericide and a fungicide, but its usefulness on apples is limited because applications after quarter-inch green tip can cause phytotoxicity to apple fruit. Except for sulfur, none of the contact fungicides control powdery mildew. Mancozeb, Polyram, and Ziram are effective against rust diseases, but Captan and sulfur are not. Both Ziram and sulfur are rapidly removed by rainfall, so these are not the best choices for scab control where residual activity through rains is important. Captan controls black rot, whereas the other contact fungicides are less effective.

Fungi cannot develop resistance to any of the contact fungicides because these fungicides attack multiple metabolic sites in germinating spores. As a result, fungi would need to develop simultaneous mutations to bypass all of these action sites, and that has not occurred during the more than 60 years that some of these chemistries have been in use. Fungicides in all of the other groups discussed below work by arresting fungal metabolism within a single pathway, and they have therefore been called single-site inhibitors. Fungi can develop resistance to all single-site inhibitors.

Strobilurin fungicides include Sovran, Flint, and the pyraclostrobin component found in Pristine. Sovran and Flint are often called stroby fungicides and are very effective for controlling scab, mildew, and black rot. They provide adequate control of rust diseases when applied ahead of rains, but they have very little post-infection activity against rust diseases. For apple scab, they can provide roughly 48 hr of post-infection activity, but they are not effective for arresting apple scab after lesions are visible on foliage.

All stroby-containing fungicides carry labels stating that combined usage for any product in this group is limited to four applications per year.
Thus, one can apply a maximum of four sprays per year that contain Sovran, Flint, or Pristine. For example, if Flint is applied three times to control scab, then Pristine can be used only one time during summer.

Anilinopyrimadine or AP fungicides include Scala and Vangard. These fungicides are useful for apple scab, but not for mildew, rust, or black rot control. They do not protect fruit, do not redistribute very well, and work best in cool weather. As a result, they are most useful from green tip to bloom. They provide 48 to 72 hr of post-infection activity, counting from the start of rains and depending on temperatures during the wetting period. This attribute makes them especially useful where post-infection activity is needed during the very early part of the season. The AP fungicides should always be combined with a protectant fungicide, because the latter is needed to maintain coverage on expanding leaf surfaces during the week following the application.

DMI or SI fungicides can be subdivided into 1st generation products (Rally, Rubigan/Vintage, Procure) and 2nd generation products (Inspire Super, Indar, Tebuzol). The 1st generation products were very active against scab, mildew, and rust diseases, but they provided very weak protection against fruit scab and were ineffective against black rot. The 2nd generation group generally has greater toxicity against scab and black rot, but slightly reduced activity against mildew. The 2nd generation group is moderately effective for protecting fruit from scab and black rot, and they also suppress early season flyspeck infections, whereas the 1st generation DMIs did not. Some of the differences between these two groups of DMIs may be attributable to differences in actual toxicity of the products to various pathogens. However, I suspect that much of the difference in the way that these two groups of DMIs perform is attributable to how quickly the products penetrate host tissues after they are applied. The 2nd generation DMIs tend to remain more “surface active”, whereas the 1st generation products are rapidly translocated through leaves after application.

Syllit (dodine) is an older fungicide that really does not fit well within any of the categories noted above. Syllit is primarily a protectant scab fungicide. It was widely used in the 1960s until fungicide-resistant strains of scab reduced its effectiveness. Although Syllit was rated as having only about 48 hr of kickback activity, it proved very effective for arresting early season scab infections even when applied more than 48 hr after the start of rains. Its ability to arrest scab development was probably attributable to the fact that it redistributed very well, it moved into leaves to arrest mycelial growth within leaves, and it inhibited sporulation on leaves. Syllit can still be useful as a prebloom spray in many orchards, but it should always be combined with mancozeb or captan as a precaution for cases where dodine-resistant scab may be present. For post-infection activity, Syllit rates must be adjusted to above the mid-point of the rate range listed on the product label.

Designing a coherent scab program requires careful selection of the best combinations and sequences of fungicides based on past weather, predicted weather, and the diseases expected in specific orchard sites.

1. For early season sprays, combinations of mancozeb plus captan are highly recommended, except where the captan component interferes with oil sprays. (Oil and captan are not compatible!) Mancozeb fungicides will stick to trees better during heavy rains, whereas captan will redistribute better than mancozeb during periods of light, misty rain. The latter capability is especially critical when warm temperatures cause rapid leaf expansion between sprays. However, if sprays are applied just ahead of weather fronts that are predicted to bring 3–4 inches of rain (such as the current wetting period), then higher rates of mancozeb alone may perform better than lower rates of mancozeb mixed with captan.

continued...
2. Mancozeb plus Vangard or mancozeb plus Scala should be used if there is a need for 48–72 hr of reach-back activity at the time the sprays are applied. Based on trials conducted at the Hudson Valley Lab, it appears the lower rates of Vangard and Scala listed on product labels for tank-mix combinations will provide about the same level of reach-back activity as the high end of the label rates. The higher rates are needed for protectant activity if Vangard and Scala are applied alone, but we do not recommended using these products alone because of their limited redistribution capabilities.

3. Work in Michigan more than 20 years ago showed that 1st generation DMI fungicides sometimes provide disappointing results when applied under cool conditions at the green tip to half-inch green bud stages. This probably occurs because there is very little green tissue available to absorb the fungicides at those early growth stages. We don’t know if 2nd generation DMIs will show the same limitations. However, Inspire Super may work better at low temperatures than the other products because Inspire Super contains both a DMI (difenoconazole) and Vangard, and the latter works well early in the season.

4. The DMI and stroby fungicides should always be used in combinations with either mancozeb or captan to slow selection for resistance to the at-risk fungicides and to ensure some degree of protection where resistance may already be present in the population. Where Inspire Super is used, this means that three fungicides will be combined in the tank, since Inspire Super itself is composed of two active ingredients.

5. There is ongoing debate about how to position DMI and stroby sprays during the interval between tight cluster and first cover. My initial thinking was that DMI applications should be delayed until petal fall and first cover because of concerns about using them during the peak scab season (tight cluster to bloom) in orchards that may have DMI-resistant scab. However, Inspire Super is more effective against scab than first generation DMI fungicides, and field experience last year in western NY showed that the best scab control was obtained where Inspire Super plus mancozeb was applied at tight cluster and pink, with stroby fungicides (plus mancozeb) being used in later sprays. The benefit of this approach is that the power of the DMI fungicide is applied before any scab infections missed in early sprays can begin to produce conidia. When DMIs are applied before bloom, they will be acting on a smaller population of spores than would occur if applications are delayed until petal fall when at least a few sporulating lesions are often present.

6. The strategy of using prebloom sprays of Inspire Super plus mancozeb will probably work in most orchards, but it should NOT be applied in blocks of highly susceptible cultivars (e.g., McIntosh) with known resistance to DMI fungicides. For those cases, Flint or Sovran should be used with mancozeb in prebloom sprays and then a DMI plus contact can be used in petal fall and first cover sprays to control mildew and rust.

7. Using DMIs at petal fall and first cover may also be desirable where maximum protection against quince rust and cedar apple rust is needed. In some cases, it might make sense to apply Inspire Super plus mancozeb at tight cluster and pink, and then follow up with Rally plus mancozeb or Rubigan plus mancozeb at petal fall and first cover, to get maximum activity against mildew and rust diseases with those post-bloom sprays.

8. As noted earlier, the 2nd generation DMIs are slightly less effective against mildew than the 1st generation DMIs. In western NY last year, several consultants noted that Inspire Super failed to provide the mildew control expected of a DMI fungicide. It seems likely that populations of powdery mildew in some orchards have shifted toward DMI resistance. This fits with the observation that Bayleton was initially effective at 1.5 oz/A, whereas rates of 4 oz/A were required in the last years that Bayleton was available. Thus, Rally at
5–6 oz/A may still control mildew, but Inspire Super, with slightly less activity, may perform less well. Given this scenario, it makes sense to use Inspire Super during the prebloom, when there is less mildew pressure, and then use strobby fungicides at petal fall and first cover when mildew pressure reaches its peak.

9. Inspire Super MP is sold as a unit that contains one jug of Inspire (difenoconazole) and one jug of Vangard. The label requires that both of these products be combined in the tank. Separating these two products and using them at different times is a violation of pesticide law and also negates the built-in resistance management strategy that derives from using the products together.

A MATTER OF FORM

✦✦ Some readers reported that the print quality of last week’s pdf file of Scaffolds was poor and difficult to read. This occurred because we switched the computer (Dave Kain’s) on which the newsletter is laid out, and we didn’t know the process for formatting the pdf on this machine, which of course is different. Now that we’ve been properly re-trained, your copy of Scaffolds should look the same as it always has; for those desiring a normal version of Issue No. 1, it is available online. ✦✦

PHENOLOGIES

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<tr>
<th>Location</th>
<th>Variety</th>
<th>Stage</th>
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<tbody>
<tr>
<td>Geneva</td>
<td>McIntosh</td>
<td>silver tip.</td>
</tr>
<tr>
<td>Highland</td>
<td>McIntosh</td>
<td>1/2 inch green. Red Delicious at green tip.</td>
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PEST FOCUS

Highland: **Oriental fruit moth** 1st catch today (3/29).
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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<table>
<thead>
<tr>
<th>UPCOMING PEST EVENTS</th>
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<td><strong>Current DD accumulations (Geneva 1/1–3/29/10):</strong></td>
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<td>70</td>
</tr>
<tr>
<td>(Geneva 1/1–3/29/2009):</td>
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<tr>
<td>66</td>
</tr>
<tr>
<td>(Geneva &quot;Normal&quot;):</td>
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<tr>
<td>66</td>
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<tr>
<td>(Highland 3/1–3/29/10):</td>
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<td>128</td>
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**Ranges (Normal ±StDev):**

- Green fruitworm 1st catch: 58–130 ±16–58
- Pear psylla adults active: 31–99 ±8–34
- Pear psylla 1st oviposition: 40–126 ±11–53
- Redbanded leafroller 1st catch: 107–175 ±38–78
- Spotted tentiform leafminer 1st catch: 111–197 ±41–91