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Update on Pest Management
and Crop Development

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

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PRE MIX

PREBLOOM
PROBLEMAS
(Art Agnello,
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Entomology,

Geneva & Highland)



Lorsban can be applied once during the pre-bloom season, as a foliar application only through pink OR as a trunk application pre- or post-bloom, up to 28 days before harvest. Consider alternating the use of Lorsban for scale and borer management every other year.

❖❖ The few balmy days we had last week may not have represented the actual arrival of true spring weather, but they did provide the opportunity to consider the value of some well-timed pest management decisions, directed especially at some of our more challenging insect pest species.

San Jose Scale

Pre-bloom is by far the most opportune time to manage SJS. The overwintering immature stages, protected beneath the waxy covering, are least protected from a spray application, as the developing foliage increases 'spray shadowing' as the season progresses. A most effective timing during this period is delayed dormant, from the time silver tip begins to 1/2" green. We are all familiar with the use of horticultural oil, Lorsban, Supracide or Esteem 35WP directed against overwintered "black caps" during this period, as these are longtime standard control measures.

In low to moderate population levels, horticultural oil alone in a 2% dormant application or a 1% green tip (GT) application, applied to infested trees with complete coverage, has been shown to control this pest. In moderate to high populations, the oil should be applied in combination with other effective insecticides. Supracide 25WP can only be applied during the prebloom (delayed dormant) period of apple, as stated on the label.

Remember, the earlier the application against the overwintering black cap phase, the greater the likelihood of success. Coverage is critical in scale management, requiring a slow travel speed (<2.5 MPH), low wind speed (<5 MPH) and as close to a dilute application as possible. Increased foliage equates to "shadowing" and reduced coverage, which of course is the essential control component against the overwintering life stage. Softer insecticides, such as Esteem 35WP (pyriproxyfen) can be employed with or without oil, acting against the pest as an insect growth regulator (IGR), a unique mode of action for use

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against the immature scale. As the insect matures, the insecticide acts as a juvenile hormone analog to reduce the insect's capacity to molt. Centaur 0.7WDG (buprofezin), also an IGR, does require a penetrating non-ionic surfactant such as 0.25% v/v oil to be effective. Be aware that Movento (spirotetramat), a systemic insecticide, cannot be used pre-bloom as per label restrictions. Movento has been found to be most effective after PF in one to two applications, when there is sufficient foliage for effective uptake, and requires a penetrating non-ionic surfactant. Incompatibility concerns over captan use in early pest management programs for apple scab can be a formidable barrier when considering the use of oil. The possibility of phytotoxicity when using captan near oil applications should be strongly considered when searching for a weather window as an opportunity for SJS management.

White Prunicola Scale

Another scale we've been seeing in upstate NY orchards that might otherwise have been identified as white peach scale (*Pseudaulacaspis pentagona*) is almost certainly a closely related species (*P. prunicola*), which has been given the common name of white prunicola scale. According to scale authorities, this species is so closely related to *P. pentagona* that for years no



one was aware that the white peach scale was not one but two species. Evidently, the prunicola scale is more common in temperate climatic zones, and scales found in upstate NY and New England will most likely be *P. prunicola*.

Infestations on apple as well as peach are characterized by

numerous white scales that cluster on the trunk and scaffolds, giving them a whitewashed appearance (see photo). Feeding reduces tree vigor, and foliage of affected trees may become sparse and yellow; heavy infestations can cause death of twigs, branches and entire trees if left unattended. This species overwinters as an adult female and deposits eggs in the spring. Horticultural oil is recommended as a dormant spray in April, and insecticides can be used against crawlers in mid-June through early July (about 700–1150 DD base 50°F from March 1). Materials such as Movento or Centaur would be two good candidates at such a time. [Refs: Johnson & Lyon 1988, Insects that Feed on Trees and Shrubs; Davidson et al. 1983. Proc. Entomol. Soc. Wash. 85: 753-761).

Dogwood Borer

There is increasing concern throughout the Northeast about damage being caused to apple trees by borers. The species of primary concern is dogwood borer, but American plum borer can be prevalent in western New York apple orchards that are close to tart cherry and peach orchards. From our observations, DWB is very prevalent throughout many of the Eastern as well as Western NY orchards with young plantings. While we do not yet have a complete picture of the effects

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of these borers on dwarf trees, we do know that they reduce vigor and can, in time, completely girdle and kill trees.

We have tested a number of insecticides against these borers over a number of growing seasons. Lorsban is very effective for this use and we have urged growers to take advantage of it where needed. In the past, we have compared some other materials, including white latex paint and a series of alternative insecticides against Lorsban, with varying results. To make a long story short, only Avaunt, Danitol and, possibly Esteem, applied two or three times in midsummer, provided control comparable to one application of Lorsban.

Our tests have shown that borers can be controlled season-long by applying Lorsban at various times in the spring and summer. While a postbloom trunk application of Lorsban is still allowed, enabling growers to spray at the peak of the dogwood borer flight, applying this material prebloom as early as half-inch green works well, too, and may be more convenient. Fall also may be a good time to control dogwood borer. Results from 2002 indicated that Lorsban applied postharvest the previous year (sprays went on in October 2001) controlled both the overwintering and the summer generations of dogwood borer. An October 2002 application of Lorsban similarly provided season-long control of dogwood borer in 2003. Lorsban works when applied in the spring or fall because it infiltrates burrknot tissue and kills larvae concealed within. It is also very persistent in wood so it continues to work for a considerable time after it is applied (apparently 9–12 months in our trials). Fall application may offer growers a more convenient alternative for applying borer control sprays. Recall that current Lorsban label restrictions allow only ONE application of any chlorpyrifos product in apples, whether as a foliar or trunk spray, so these recommendations pertain only if no earlier applications have been made. Bear in mind that we now also have a mating disruption option available, Isomate-DWB, which we have found to be very effective in interfering with these insects' pheromone communication process. Use of this product would be recommended as a tactic in mid-May to

early-June, before the first adult catch of the season.

In a survey we conducted in the mid-1990s, we observed some relationships between borer infestation and various orchard parameters such as the proportion of trees with burrknots, proximity to stone fruit orchards and presence of mouseguards. Conventional wisdom has held that borer problems are worse where mouseguards are in place. Mouseguards can contribute to increased expression of the burrknots that borers invade, and may shield borers from predators and insecticide sprays. This has led some growers to contemplate removing mouseguards under the premise that mice are easier to control than the borers. However, results of our survey indicate that dogwood borer larvae may be found as readily in trees without mouseguards as in those with them. (American plum borer may be a different story in orchards near tart cherry or peach trees.) A number of orchards in which we have conducted borer control trials have never had mouseguards and there is no shortage of dogwood borers in them. If mouseguards are deteriorated and no longer protect the tree, there may be some small advantage, in terms of borers, to removing them. But, in orchards where mouseguards still provide protection against rodents, removing them for the sake of borer control is probably not worth the risk. Instead, we would recommend the use of trunk sprays to control borers. Even with mouseguards on, insecticides will give adequate control if they are applied carefully (i.e., a coarse, low-pressure, soaking spray with a handgun).

Ambrosia Beetles

The recent emergence of black stem borer (*Xylosandrus germanus*) as a cryptic but devastating pest of apple trees in our region has focused more attention on early spring insect activity that could have serious consequences for tree health as the season progresses. Although we do not have sufficient experience in dealing with this insect to make reliable control recommendations, we would note that growers considering the use of Lorsban trunk sprays against San Jose scale and/or dogwood borer at this time may also see some benefit against ambrosia beetles, particularly in trees that might be under stress from flooding or cold injury. ❖❖

IPM
PRIMER

OFF TO A GOOD
START
(Deb Breth, Lake
Ontario Fruit
Program, Albion)

❖❖ "Apple IPM for Beginners" is a new guide for beginner growers who want to grow apples. This series of fact sheets (.pdfs) will help you address the major apple pests, but does not guarantee perfect fruit. These fact sheets and scouting guides are a compromise between the most accurate, complex information researchers have to offer and the amount of information a beginner can take in. Read the first four chapters carefully to start this new venture, then follow the Scouting Calendar as apple stage of growth advances week-by-week. Go to our website to order a hard copy: <http://lof.cce.cornell.edu/submission.php?id=271&crumb=pests|pests> OR go to <http://www.fruit.cornell.edu/orchard-ipm/> to download the pdf version by chapter.

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PEST FOCUS

Highland: 1st **rebanded leafroller** trap catch.
Pear psylla egg laying continues.

PHENOLOGIES

Geneva:

	<u>4/27, predicted</u>
Apple (McIntosh, Empire): green tip	half-inch green
Apple (Red Delicious): silver tip	green tip
Sweet cherry: swollen bud	bud burst
Peach: swollen bud	swollen bud–bud burst

Highland:

Apple(McIntosh, Red Delicious , Ginger Gold, Empire):	half-inch green
Pear (Bartlett, Bosc):	bud burst
Plum (Stanley):	swollen bud
Peach (Early):	swollen bud
Apricot:	first white bud

UPCOMING PEST EVENTS

	<u>43°F</u>	<u>50°F</u>
Current DD accumulations (Geneva 1/1–4/20/15):	110	55
(Geneva 1/1–4/20/2014):	118	58
(Geneva "Normal"):	193	79
(Geneva 1/1–4/27, predicted):	148	70
(Highland 1/1–4/20/15):	175	84

<u>Coming Events:</u>	<u>Ranges (Normal ±StDev):</u>	
Green fruitworm peak catch	51–151	12–70
Pear psylla adults active	31–99	8–34
Pear psylla 1st oviposition	40–126	11–53
Redbanded leafroller 1st catch	112–178	40–82
Green apple aphid present	127–297	38–134
Rosy apple aphid nymphs present	91–291	56–116
Pear thrips in pear buds	137–221	50–98
Spotted tentiform leafminer 1st catch	81–274	44–102
McIntosh half-inch green	136–221	63–93

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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