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Update on Pest Management
and Crop Development

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

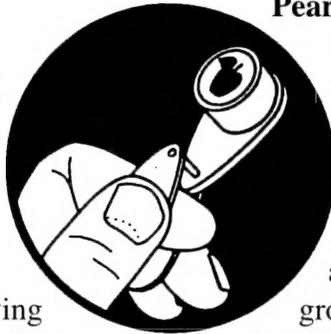
March 27, 2006

VOLUME 15, No. 2

Geneva, NY

PEAR PSYLLABUS

IN A PEAR
TREE
(Art Agnello,
Entomology,
Geneva)



Pear Psylla

Originally introduced accidentally from England into Connecticut about 1832, the pear psylla has 3–4 generations a year, depending on the length of the growing season for the area. The overwintering adults pass the winter in litter on the ground or in cracks in the tree bark. On

❖❖ Growers have been having a bit of a rough time with pear psylla recently (like last season), and this is a pest that is synonymous with a kind of double jeopardy — that is, biological difficulty in controlling the populations because of their penchant to become resistant to many insecticide groups, as well as economic difficulty in justifying some of the more effective (“\$specialty”) materials because the crop usually isn’t worth that much. This brings us to the poor man’s best recourse — pre-emptive action using something inexpensive. I’m referring, of course, to early season oil applications, and maybe even multiple sprays in a given block, weather conditions allowing. We’re not quite there yet, because the early spring temperature outlook still appears to be somewhat lower than normal, so there are likely to be still a few frost-prone periods, but I’m assuming that the milder than normal winter will usher in a similarly moderate spring, and that the daily low temps will soon climb out of the *danger zone*. (Actually, this is just part of a ploy I’m trying this year to promote more oil use in general, given the increasing problems we’ve also seen with San Jose scale, but we’ll cover that one in another issue). So, as a means of getting you to start thinking about your pear pest strategy, I’m re-running the facts on two insects of interest:

warm spring days, prior to the trees breaking dormancy, these adults can be found on the trunks, twigs, and branches. The first eggs in the spring are laid prior to bud burst, on the terminals and spurs. As the foliage appears and for succeeding generations, the eggs are laid on the new leaves. First egg hatch occurs about the time the foliage appears. The pear psylla is a “flush feeder”, meaning that the nymphs feed and develop primarily on the newer, more tender growth. By midway through the growing season, the majority of leaves are hardened off and psylla development then may be limited primarily to the water sprouts.

Once the nymph begins to feed, a honeydew drop forms over the insect; the psylla develops within this drop for the first few instars.

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Honeydew injury occurs when excess honeydew drips onto and congregates on lower leaves and fruit. Under bright sunlight and dry conditions, the honeydew can kill the leaf tissue and produce a symptom called "psylla scorch". The honeydew is a good medium for sooty mold growth. When it occurs on the fruit, it russets the skin and makes the fruit unmarketable. Excessive feeding and the injection of toxic saliva by large populations of psylla can cause a tree to wilt and lose its leaves prematurely. This reduces tree vigor, which can take the tree several years to recover.

Ladybird beetles, lacewings, syrphids, snakeflies, and predatory bugs have been recorded feeding on the psylla. There are also two wasp parasitoids of pear psylla in the U.S. However, to obtain commercially acceptable fruit in New York, pear psylla must be controlled with insecticides.

Registered insecticides for summer use on pears are historically unreliable in controlling pear psylla for extended periods because of the development of resistance in psylla populations to materials that are initially effective. In addition, N.Y. growing conditions necessitate management practices for fruit size attainment (vigorous fertilization and significant canopy pruning) that are favorable for the rapid buildup of psylla populations. Contributing to difficulty in controlling psylla is the widespread use of materials for other pests that are destructive to natural control agents, such as pyrethroids and carbamates.

Current management recommendations call for prebloom oil applications to deter early egg-laying and early hatch, which may be combined with Esteem for added efficacy, and insecticide sprays to manage nymphal populations that build beyond 1–2 per leaf, starting anytime after petal fall and throughout the summer. Agri-Mek used shortly after petal fall had given good control if applied correctly (well-timed, adequate coverage, combined with an oil adjuvant), but this product's efficacy has been flagging lately. Dick Straub's trials in the Hudson Valley have shown the utility of split

applications of Nexter or Provado, also starting soon after petal fall. Actara is another good in-season alternative for maintaining populations below damaging levels, and Assail, our newest neonicotinoid, has also given good results in some studies (at least initially). Regrettably, however, most of these in-season products are relatively expensive, especially if more than one intervention is needed, which it often is. Pyrethroids are quite affordable, but even new ones tend to have a short efficacy life, since psylla seem to have a knack for getting around their mode of action after about one exposure. This is further argument for doing your best to be pro-active early in the season.

Pear Midge

The pear midge is an old pest not often seen in blocks under a "conventional" spray schedule. This insect is usually controlled by chemical applications for other pests, and in most cases of fruit infestation (whether commercial or homeowner), the problem comes down to the proper timing of an insecticide spray. The pear midge overwinters as a pupa in the soil, and the adults emerge in the lake plains area of N.Y. in early May. The first

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is published weekly from March to September by Cornell University—NYS Agricultural Experiment Station (Geneva) and Ithaca—with the assistance of Cornell Cooperative Extension. New York field reports welcomed. Send submissions by 3 pm Monday to:

scaffolds FRUIT JOURNAL
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This newsletter available on CENET at: news://newsstand.cce.cornell.edu/cce.ag.tree-fruit
and on the World Wide Web at:
<http://www.nysaes.cornell.edu/ent/scaffolds/>



flies will generally appear when Bartletts and Clapps are in the tight cluster bud stage, but no successful egg-laying occurs until the flower buds are a little more developed. The critical period for chemical control in

problem orchards begins at the late swollen bud to green cluster stage, and continues until just before most of the blossoms are open. The flies disappear by the time of Bartlett full bloom. Larvae may be present inside the fruitlets on the tree, and do not affect fruitlet color, so they are difficult to detect until later on. Infested pears enlarge more rapidly than normal, and are distorted in shape, turning black and dropping by early summer. Full-grown larvae may leave the fruit or remain inside until it drops to the ground. In June and July, the maggots exit from the fruit (on the tree or the ground) and burrow into the soil as much as 3 inches to pupate later.

There is really no practice, either chemical or cultural (such as roto-tilling), that is effective enough to recommend for controlling the insects in the ground. These insects emerge in very large numbers, especially in a block continuously infested from year to year, and it is much easier to protect the fruit than to eliminate the pests at their source. If your pear block has a history of midge infestation and you wish to limit the area requiring chemical sprays, concentrate on those portions of the orchard most protected from the wind by trees, high ground, or buildings, as the midges tend to be most numerous in these spots. The most effective materials to use for midge sprays are organophosphates like azinphos-methyl. A spray should be applied as soon as the fruit buds reach the swollen bud to green cluster stage; a second spray may be necessary 7–10 days later, particularly if cool weather delays the white bud stage. ❖❖

PHENOLOGIES

Geneva: All dormant

Highland:

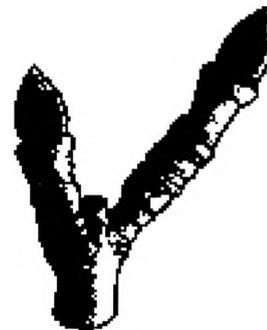
Apple (Ginger Gold): Silver tip

Apple (McIntosh): Dormant

Pear (Bartlett, Bosc): Dormant

Peach: Swollen bud

Plum: Dormant



PEST FOCUS

Highland:

Green fruitworm flight began 3/27. **Pear psylla** egg laying has begun.

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UPCOMING PEST EVENTS

	<u>43°F</u>	<u>50°F</u>
Current DD accumulations (Geneva 1/1-3/27/06):	73	18
(Geneva 1/1-3/27/2005):	21	5
(Geneva "Normal"):	53	20
(Highland 3/1-3/27/06):	43	16
<u>Coming Events:</u>	<u>Ranges(Normal±StDev):</u>	
Green fruitworm 1st catch	50-122	12-54
Pear psylla adults active	2-121	0-49
Pear psylla 1st oviposition	25-147	1-72
McIntosh at silver tip	53-103	15-41

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.

This material is based upon work supported by Smith Lever funds from the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.

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