Ohio
Fruit ICM News

Editor: Ted W. Gastier, Extension Educator, Agriculture
Ohio State University Extension, Huron County
180 Milan Avenue, Norwalk, OH 44857 419-668-8219
FAX: (419) 663-4233 E-mail: gastier.1@osu.edu

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Calendar

Calendar, with expanded details included for
- Central Ohio Fruit & Vegetable School
- Winter Workshop on New Approaches to Controlling Internal Fruit Feeders
- Fruit Tree Pruning Clinic
- Fruit Tree Pruning and Apple Grafting School

Dependance on Foreign Oil Imports
- (early season spray program)

Pear Psylla

February 28: Central Ohio Fruit and Vegetable School, Licking County Extension Office, 771 E. Main St., Newark, OH. Private Pesticide Recertification Core training begins at 9:00 a.m., with additional hours credit available throughout the day for Categories 3A (vegetables) and 4 (fruit). Celeste Welty will discuss insect control on fruit crops and vegetables and Jim Truex of the Ohio Department of Agriculture will outline *Fruit and Vegetable Labeling for Direct Marketing - Packaged & Non-Packaged*. Afternoon presenters include Mike Ellis, Shawn Wright, and Doug Doohan. Phone reservations to 740-349-6900 or e-mail Howard Siegrist at: siegrist.1@osu.edu.

March 1: Fourth MAAHS Annual Meeting and Employer Seminar, Wilmington, OH. See issue #3 or contact Mid American Ag & Hort Services, Inc. at 614-246-8686.

March 2: Winter Workshop on New Approaches to Controlling Internal Fruit Feeders, Gettysburg, PA. Please mark your calendars for the third bi-annual Pennsylvania State University workshop on monitoring and managing internal fruit feeders (Oriental fruit moth and codling moth). The PSU fruit entomology specialists, along with guest speakers from Rutgers University and Michigan State University, will discuss in depth the newest aspects of managing these pests. Topics will include mating disruption, pesticide resistance, and new pesticides.

The workshop is open to growers, consultants, and industry representatives from Pennsylvania and other Mid-Atlantic States. We have passed the February 14 deadline for registration, but we still have a few spots open if you would like to register. Please call Karen Weaver at 717-677-6116, Ext. 0 immediately. The registration form is also posted at <http://frec.cas.psu.edu>. Additional information is available from Dr. Greg Krawczyk at 717-677-6116, Ext. 5 or e-mail gxk13@psu.edu.

March 5: Fruit Tree Pruning Clinic, Rouster's Apple House, Milford, OH. Anyone with an interest in how to prune fruit trees, grapes, blueberries, and brambles will find this seminar to be very beneficial. Presenters are Gary Gao, OSU Extension Educator, and Dan and Donna Rouster. The program is free of charge and no pre-registration is required. The class will be held rain or shine, so dress warmly for outdoor activities (rubber boots are a great plus)! We will also have many gardening publications for sale. Call Vickie Butler or Gary Gao at Clermont County Extension, 513-732-7070.

March 11: Fruit Tree Pruning & Apple Grafting School, Legend Hills Orchard, 11335 Reynolds Road, Utica, OH. The morning session (beginning promptly at 9:30 a.m.) will feature the grafting of apples on Malling 7 and Malling Bud 9 rootstocks. Scion wood from Melrose, Honeycrisp, Cortland, Grimes Golden, Northern Spy, and Yellow Transparent will be available. Bring your "pencil size" one-year-old growth of varieties you are willing to share. There will be a charge for the rootstock that you take home to plant. The afternoon session will be devoted to pruning and training apples and peaches. Dress for the weather and bring your own pruning tools if you desire. For more information and to register, contact the Licking County OSU Extension Office at 740-670-5315.

March 23 & 30: New Fruit and Vegetable Grower and Marketer Workshop, Rural Services Building, 225 Underwood Street, Zanesville, OH. For information call OSU Extension, Muskingum County at 740-454-0144 or e-mail mechling.1@osu.edu. The March 23 session will focus on the production and marketing aspects of fruit and vegetable enterprises; the March 30 session will discuss some of the regulatory and human resource components of speciality crops.

March 29: Deer Control Strategies, Rural Services Building, 225 Underwood Street, Zanesville, OH. For information call OSU Extension, Muskingum County at 740-454-0144 or e-mail mechling.1@osu.edu. Topics to be discussed include exclusion, repelling, hunting, and fencing for deer management.

March 30: North Central Fruit Crops Breakfast, MAW's Restaurant at Avery, US Rte 250, Milan, OH. Breakfast is at 8:00 a.m., discussion begins at 9:00. Private applicator's credit for CORE and Category 4 have been applied for and are expected.

Dependence on Petroleum Imports

Source: Art Agnello, Entomology, Geneva, Scaffolds Fruit Journal, Volume 11, No. 2, March 25, 2002

Editor's Note: This article is probably a bit early, but I wanted it in your hands before March. That is the date that I will rejoin you on these pages. Until then, my wife and I will be leading a Work Team to Escuela El Sembrador, Catacamas, Honduras.

As predictable as the gasoline price increases each spring, are our annual recommendations for relying on one of the less volatile distillation by-products, horticultural mineral oil, in your early season spray program. The use of oil as a delayed dormant application for mite and insect control in fruit trees continues to be a wise tactic, despite the fact that a number of newer and capable contact miticides are available for early season use.

For as many of the blocks as you can find the time and application window to devote to a thorough treatment, oil retains a justifiably preferred position because of its effectiveness, affordability, and relative safety from a biological and 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 everything falls properly into place.

Pear Psylla

It's nearly impossible to be sure your pear trees are all protected by the time the very first psylla adults start flying and (presumably) laying eggs during the first warm temperatures of the spring. However, even a few nice warm days in a row don't waken more than a small percentage of the total population, so you'll be more than adequately psylla-ready if you prepare a little ahead of time, provided your orchard floors aren't too soggy from spring snows.

Early oil applications can be useful against pear psylla all throughout the swollen bud stage. Although it's capable of killing adults and nymphs that are contacted directly, oil is recommended mainly because the residue has a repellent effect on female psylla looking to deposit their eggs, and this lasts for an extended period after treatment. The strategy behind the use of 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.

European Red Mite

A delayed-dormant spray of petroleum oil 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 miticides. 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, real life doesn't always measure up, mainly because of weather and coverage challenges, coupled with the difficulty of getting to a number of blocks during this transient 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 wade through or avoid the droplets. 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. Snows and rains have been variously heavy in certain locations, so local conditions will be a 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.

Good coverage of the trees naturally is critical if you're to take advantage of oil's potential efficiency; 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 larger 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 wipe out your efforts if you end up getting only a small fraction of the egg population under the residue.

Don't limit this mite-control tactic just to apples and pears. Talks with stone fruit growers over the winter have reminded us that many cherry, peach, and plum plantings can suffer equally seriously from European red mite infestations that weren't given the early season attention they might need. 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 measure to help stave off this damage.

The Way to San Jose

We've been discussing how some of the recent insecticide withdrawals and restrictions may induce a return to the pest profiles of the past, with direct fruit pests taking precedence over the indirect foliar feeders. San Jose scale is one of those old standbys that already has been responding to some of the regulatory actions of the last few years.

The recent disappearance (or restriction) of products like Penncap-M and Lorsban from our list of spray materials has been at least partly responsible for the fact that SJS still presents a challenge in a number of orchards. It's therefore worth pointing out that a 2% oil treatment at half-inch green will control the nymphs, and this is a preferred treatment if no other problem insects need to be controlled. Combining the oil with an insecticide has not been shown to be more effective than using the oil (or insecticide) alone, except in the case of one new alternative, Esteem, which has shown good efficacy when mixed with 2% oil at the pre-pink timing.

If you choose not to use oil against the scale nymphs, or if you have Rosy Apple Aphid or other early season insects to be controlled, an insecticide would be more appropriate. For both of these pests, Lorsban 4EC or Supracide have proven very effective during the green tip to tight cluster stage. Check the opening buds for infestations of Rosy Apple Aphid; treatment would be advisable upon finding one colony per 100 clusters.

Pear Psylla

Source: 2004-2005 Pennsylvania Tree Fruit Production Guide, < http://tfpg.cas.psu.edu/part2/part22bx.htm>

Pear psylla, *Cacopsylla pyricola*, can be a limiting factor in pear production. It is a native species that produces abundant honeydew, which allows a sooty fungus to grow on the fruit surface. The result can be severe tree injury.

Description and life cycle

Pear psylla adults look like dark reddish brown, 1/10-inch-long cicadas. Eggs, just visible to the naked eye, are pear-shaped, yellowish, and are laid in cracks in the bark and around the buds. They become dark yellow before hatching. Nymphs have sucking mouthparts and feed on plant sap. The young nymphs are soft-bodied and creamy yellow. As they mature, they become dark brown and more oval in shape, with distinct wing pads present on the late instars. These late-instar nymphs are commonly referred to as "hard shells."

There are generally four generations per year. The adults, which overwinter on trees or other sheltered places, become active anytime the temperature is above 40°F. Females begin laying eggs in late March and continue through the white bud stage. One female can produce as many as 650 eggs. The peak of egg laying is green tip to green cluster bud. Egg hatch begins at the green cluster bud to white bud stage, with peak hatch occurring about petal fall.

Nymphs move to succulent stems and developing leaves to feed, with the heaviest concentration along the midveins of leaves and at the calyx end of fruit. They pass through five instars, each subsequent stage becoming more difficult to control. The early nymphal stages produce more honeydew than the later, larger stages. The first summer adults mature about 20 to 25 days past full bloom. They begin laying eggs on growing shoots as the population shifts from spur leaves to the more succulent shoot leaves. Late-season infestations are typically found on water sprouts.

The pear psylla secretes large amounts of honeydew, which runs down over foliage and fruit and in which a sooty fungus grows. This causes the skin of the fruit to become blackened and scarred and the foliage to develop brown spots. Heavy infestations may cause partial to complete defoliation of trees, reducing vitality and preventing the formation of fruit buds. Return bloom and fruit set are often reduced the following season. Overall tree growth can be stopped or stunted with heavy psylla injury. These combined effects are often termed "psylla shock." There is also limited evidence that psylla inject some type of toxin into the tree, causing a disease known as pear decline. In addition, pear psylla have been implicated in the transmission of fire blight.

Monitoring

Growers should monitor for the presence of pear psylla using their most sensitive pear variety (i.e., "Bartlett"). To sample for pear psylla nymphs in the early season, examine at least 10 leaves (five spur and five recently expanded shoot leaves) per tree on a minimum of five trees per block. The action threshold at this time is 0.5 nymphs per leaf. For summer generations, again examine at least 10 leaves (recently expanded shoot leaves) per tree on a minimum of five trees per block. The action threshold now is 1.5 nymphs per leaf. When the psylla population is primarily in the adult stage, examine the leaves for the presence of adult activity and egg laying.

Cultural management

Several cultural control practices will reduce psylla populations and dependence on insecticidal control.

- First minimize heavy pruning, which encourages the proliferation of terminal shoot growth. An overabundance of terminals provides more feeding sites for the psylla.

- Second, pear trees should receive the minimum amount of nitrogen fertilization necessary for proper tree and fruit growth. Overfertilization can cause extended terminal growth and delay hardening off, allowing optimal feeding conditions.

- Third, and most important, is to remove water sprouts during late June and early July. Because water sprouts provide one of the only sources of succulent leaves at this time of the year, this technique can eliminate a large portion of the psylla population.