



Tree Fruit IPM Advisory: September 13th, 2006

Note: This is final planned tree fruit pest advisory for the 2006 growing season.

Past IPM advisories are archived at:

<http://extension.usu.edu/cooperative/ipm/index.cfm/cid.610/>

Notes from a Sep 12 visit to Utah Co. orchards: Fruit orchards generally look good with healthy leaves and nice-looking fruit for those trees that still have fruit.

I saw very little mite burn (mite feeding injury).

Some peach, cherry, and apple orchards showed symptoms of iron chlorosis – yellow leaves with green veins. Apply a chelated form of iron next spring at the first flush of leaf growth to correct this deficiency.

Some apple and cherry orchards had light leafhopper burn (white apple leafhopper feeding injury), but none appeared to exceed economic injury thresholds.

In the Genola area, leaf-notching was observed in apple and cherry orchards. In some orchards, the leaf-notching was heavy. This is caused by the adult of the strawberry root weevil. The larvae of the root weevil feed on the roots of trees. This is only a concern for young orchards where trees have small root systems. Heavy root weevil feeding can stunt young trees. If root weevil damage is a concern, apply a soil or foliar insecticide in the spring to reduce populations feeding on trees.

Fireblight strikes were observed in numerous apple orchards. Strikes should be pruned out and trunks checked for cankers. Trees with cankers are the primary source for fire blight inoculum next spring when orchards are in bloom.

*******Insect Advisory*******

CODLING MOTH (Apple and Pear) and Peach Twig Borer (Peach and Nectarine):

A celebration is in order as Sep 15 marks the end of the 2006 season for protecting fruit from “worms” caused by codling moth (CM) and peach twig borer (PTB). This date corresponds to the point when daylength decreases below a minimum needed to prompt

egg hatch. In other words, no more CM or PTB should hatch after Sep 15. So hip-hip-hooray – you made it through another season and hopefully have some beautiful fruit to enjoy and/or sell!

Some questions and answers on fruit insect biology and IPM recommendations:

Why did some sites have a 3rd generation of CM this year and other sites didn't?

The signal for this year's larvae exiting fruit to spin cocoons and diapause (rest) for the winter came back on August 22nd. The daylength on Aug 22 is the minimum to prompt larvae to pupate versus resting for the winter. If 1920 DD was reached by Aug 22, then you saw a 3rd generation of CM because a 3rd generation of moths had already been active and laid eggs that continued to hatch until this week.

How does CM overwinter and why doesn't the IPM program recommend dormant sprays in the spring for CM control? CM overwinter as late-instar (mature) larvae wrapped in silken cocoons under bark and in other protected sites on or nearby apple and pear trees. When temperatures warm next spring, codling moth larvae will pupate inside the cocoons and then emerge as adults to begin the 1st generation of the 2007 season. The mature larvae inside cocoons are protected from early-season (dormant) sprays and this is why they are not advised for CM control. The first opportunity to control CM is in the late spring to early summer when the 1st generation of moths lay eggs and these eggs begin to hatch.

How does PTB overwinter and when is my first opportunity to control populations next year? PTB overwinter as early-instar (young) larvae in small cells they form from silk, frass (poop), and bark on peach, nectarine, and apricot tree limbs. When temperatures warm next spring these young larvae emerge from their cells (hibernacula) to feed on newly emerging bud and leaf tissue. The 1st generation of larvae will tunnel or bore into new shoot growth. This is why delayed dormant (oil + insecticide) and/or bloom-time sprays (Bt, spinosad, Dimilin, others) control 1st generation PTB because they are active against early larvae before they can damage shoots and develop into a 2nd generation that will attack maturing fruits.

Late-season pests to watch out for:

BOXELDER BUGS and EARWIGS: Boxelder bugs and earwigs can be late-season threats to peaches and other fruits. If there is a problem with large numbers of boxelder bugs or earwigs in the canopy, then a treatment of Pyganic, Lannate, Ambush/Pounce, or Sevin should provide some suppression (Lannate will also take care of problematic thrips populations, which may be a concern for nectarine or plum growers). Remember that Ambush, Pounce, and Sevin are toxic to predatory mites and may reduce overwintering populations that will contribute to mite control next season. Earwigs and boxelder bugs can feed directly on fruits, but these insects usually don't become interested in the fruit until it's nearly ripe. Fruit injury from earwigs is typically small, deep pits (1/4-1/2 inch deep) in the surface of the peach, usually with some relatively large frass pellets scattered

within the pit (and no webbing present). Beat-samples or close examinations of fruit (especially split-pits) will determine if earwigs are present.

ERIOPHYID MITES: Peach silver mite; cherry, apple, and pear rust mites; and apple and pear leaf blister mites are in the group of mites called eriophyids (air-e-o-fy-ids). High populations of eriophyids can cause leaf and/or fruit injury, but low to moderate populations can be “good” for trees because they serve as alternate food sources for predatory mites when spider mites aren’t around. As an alternate food source, they keep predatory mite numbers high so they can more effectively exploit spider mites. Pear leaves are especially sensitive to rust and blister mites, so control of eriophyid mites on pears may be necessary when they occur. Adult female eriophyid mites move from leaves and fruits to hide under bud scales in September and October where they will spend the winter. As leaves senesce and change color, the mites will crawl to the buds. Effective miticides that can be applied at this time include lime-sulfur + horticultural mineral oil, flowable/micronized sulfur, carbaryl (Sevin), endosulfan (Thionex), or 2% (by volume) horticultural mineral oil alone. Propargite (Omite) can be used on nectarines only. The next opportunity to treat eriophyid mites will be in the spring when buds open and the first leaves emerge.

SHOTHOLE BORER: Shothole borer is a type of bark beetle that tunnels in the cambial tissues under the bark. Shothole borer is most commonly seen attacking tart cherry, peach, and apple trees in Utah. They usually attack trees that are already under stress and decline. We have observed shothole and other boring insects attacking trees stressed by drought in recent years. Once populations increase in an orchard, nearby trees are at greater risk for attack. Late summer and early autumn is a time when adult shothole borers emerge from infested trees and fly to new trees to lay their eggs. To protect trees that are at risk for shothole borer attack (i.e., trees already infested or trees near other infested trees), an application of protectant insecticide can reduce infestation. Carbaryl (Sevin), endosulfan (Thionex), and permethrin (Ambush, Pounce) are effective in protecting trees from shothole borer infestation.

VERTEBRATE PESTS: We are approaching the time of year when various vertebrate pests (gophers, voles, mice, squirrels, and rabbits) increasing rely on tree cambium to supplement their diets. In winter, mice and voles will tunnel under snow, weeds, and mulch to get to the fruit trees. In fact, the cover of vegetation and snow around tree trunks is preferred because it provides cover during feeding. Maintaining approximately 3 feet of clear ground around each tree will help reduce trunk girdling by some vertebrate pests. Young trees are especially susceptible to girdling because the trunk circumference is so small. Trapping, baiting, fumigation, and other rodent control methods will help reduce local rodent populations. Physical barriers (to 6 inches deep) and deep plowing may also help.

Other IPM items of interest:

NEW IPM PROJECT LEADER: The Utah IPM Project has hired a new project leader. Ms. Marion Murray will join us September 18th. Marion received her MS degree in Plant

Pathology and Forest Science from Oregon State University and has worked as a horticulturist, garden conservancy preservationist, nursery manager, and research and forest pathologist over the last 12 years. She is moving from Bristol, RI to Logan. We are pleased and excited to have new expertise and enthusiasm join the USU IPM Team. Marion will assume responsibility for the IPM Pest Advisories beginning next spring.

REQUEST FOR HELP: Have you ever wondered how USU has near-real-time access to in-orchard weather data from across the Wasatch Front? Maybe not, but it is an important issue as relates to our ability to predict insect, disease, and tree development for northern Utah commercial and home orchard growers. USU Horticulture and IPM Projects financially support 10 weather stations placed in northern Utah orchards. Costs to support these stations are higher than you might think. In addition to purchase of the data loggers and sensors, part of a technician's time is required to maintain the stations. Also, purchase of cell phones and monthly cell phone charges (which average about \$100 per month for the 10 stations) must be supported. The stability of future funding for the weather stations is uncertain due to possible changes in the technician's appointment and reduced experiment station support for horticulture. **How can you help us? Please send an e-mail (by responding to this advisory) briefly stating how the IPM pest advisory service helps you better manage your fruit trees and pests. Do you think you've reduced your pesticide use by following recommendations of the advisory? If so, please let us know.** I will compile these e-mails and present them to the new Utah Climate Center (UCC) Director. We are seeking continued support for the orchard weather stations through the UCC, USU Extension, and USU Agricultural Experiment Station. If you know your local state representative, please let him or her know how much this advisory service means to you and that we need their vote for funding of Utah Climate Center, USU Extension and Experiment Station initiatives in this next budget year. Please help us so we can better serve you.

!EXOTIC PEST ALERT!

Over 600 Japanese Beetle adults have been trapped since mid July 2006, in an approx. 2-square mile area in Orem, Utah Co. The Japanese Beetle can be a highly destructive pest to ornamentals, trees, shrubs, and turfgrass. First discovered in North America in the eastern U.S. in 1916, the Japanese Beetle has slowly moved south and west. This population is the first detected in Utah. Fruit trees, especially apple, are preferred food hosts for adults. The Utah Department of Agriculture and Food has an active Japanese Beetle detection survey underway. You can learn more about this new pest to Utah at the UDAF web site (<http://www.ag.state.ut.us/>) and by reading a new USU fact sheet at: <http://extension.usu.edu/cooperative/ipm/files/PDFDocs/japanese%20beetle%202006.pdf>.

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