Tree Fruit IPM Advisory: April 19th, 2006

************Sprayer Calibration*************

Nozzles on sprayers wear out. As nozzles wear, the flow rate usually increases. With recent increases in pesticide costs, economics require properly applying the correct amount of spray material in the orchard. Further, materials such as plant growth regulators used for fruit thinning, fruit loosening, or stop drop have a narrow acceptable dose range, where harmful side effects may result from over application of the material. Replacing worn nozzles and properly calibrating orchard spray equipment are important for reasons of both economics and biology.

With cooperation and suggestions from crop consultant Earl Seeley, an interactive spreadsheet has been developed to assist in the calculations required for proper sprayer calibration. This program can be accessed on the web through the USU Horticulture website at http://www.hort.usu.edu/html/fruits/treeFruit.htm . Under the title "Commercial Grower Resources," click on the link titled "Sprayer Calibration." Please note that web access requires Internet Explorer version 5.5 or higher. If you do not have Explorer 5.5 or have other difficulties accessing this file, it can be sent to you by email in Microsoft Excel format. Send email requests for the Excel file to blackb@ext.usu.edu . In the spreadsheet, the numbers highlighted in red text are for your inputs. Inputs required by the user include ground speed, row spacing, desired gallons per acre, and relative distribution of spray among the nozzles on the sprayer (percent of spray to be directed to the lower vs. the upper portion of the tree canopy. The spreadsheet will then calculate gallons per minute for each nozzle. Instructions are also provided for static testing your sprayer after calibration.

************Herbicides*************

At the USU Horticulture website mentioned above, you will also find a link to a list of herbicides currently registered for use in orchard management. This list is maintained by weed scientists in Oregon, Washington and Idaho for the Pacific Northwest (http://pnwpest.org/pnw/weeds). Although a few of the materials listed are only registered in one or more of these states, most are registered for use in Utah.

***********Disease Advisory***********

POWDERY MILDEW OF CHERRY: A new compound is available to control powdery mildew of cherries (also grapes and hops). The trade name is Quintec and the active ingredient is quinoxyfen. It is a group 13 fungicide with a "CAUTION" label. The

manufacturer is Dow AgroSciences. We recommend rotating among different modes of action for the chemicals labeled to control powdery mildew on cherry. Other chemicals labeled to control powdery mildew on cherries include the following: Abound, Cabrio, Elite, Flint, Orbit Pristine, Procure, Rally, and Rubigan. Produts such as Microthiol do control powdery mildew but have the unwanted or negative effect of killing beneficial mite populations. Stylet and Supreme Oils also inhibit germination of powdery mildew spores but excessive use of these products may harm the cherry trees.

CORYNEUM BLIGHT: Spring 2006 is shaping up much like the Spring of 2005, a prolonged wet and cool season just right for Coryneum blight. This is a disease that can be actively growing on stone fruits (almonds, peaches, nectarines, and cherry) in very cold weather when you might be thinking it is too cold for any disease to get going. Depending on where you are, your peaches may be blooming or approaching petal fall soon. Chemical control recommendations for the blossom time of crop development include Abound, Captan, Indar, Rovral, Orbit, Elite, Thiram Granuflo, wettable sulfur and Pristine.

FIRE BLIGHT: Fire blight, a bacterial disease of apples and pears among other hosts, will become active as these fruits break dormancy. Be on the watch for oozing cankers. These cankers should be removed by pruning out the disease at least 18-22 inches back from the actively oozing canker. Special care should be taken to remove the diseased wood and burn it or remove it to a waste disposal area that will be buried. Removal of an infected tree may be warranted if a canker occurs on or very near the main trunk. Special care should be taken to wash the pruning tools between each cut when working around active fire blight. A 10 percent solution of household bleach can be used or even by spraying pruning tools with Lysol between each cut. Be sure to wash hands if a person comes into contact with the bacterial ooze prior to handling branches/limbs of other uninfected trees. If one must use chemicals to control the disease there are two agricultural antibiotics, streptomycin and tetracycline, that may be used to spray apples or pears during the blooming period. These chemicals are not usually needed in the home fruit orchard if homeowners keep watch for new fire blight infections (rapid wilt and shepherds crooking at the end of affected shoots) and promptly remove them by pruning the disease out before it spreads to neighbors or commercial orchards nearby.

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

DEGREE-DAY (DD) ACCUMULATIONS:

	DD Since March 1	
Location	Codling Moth/Peach Twig Borer	Western Cherry Fruit Fly
Utah County	105-148	277-348
Salt Lake County	141	346
Davis/Weber Counties	103-111	269-289
Box Elder County	105	264

Cache County	57-87	129-193
Set traps by	CM: 125/ PTB: 250	WCFF: 700
First adults expected	CM: 200-250/ PTB: 400	WCFF: 900-950

REQUEST FOR HELP WITH BIOFIX INFORMATION: For anyone setting and monitoring insect traps (for codling moth, peach twig borer, cherry fruit fly, greater peachtree borer) in orchards this year, please send in your biofix dates (dates of first insect catch) by email (respond to this email message). Include your location, insect species, and biofix date. This will help us with determining insect biofix dates for a wider range of locations. Thank you.

CODLING MOTH (Apple and Pear): Set codling moth traps this week in orchards along the Wasatch Front, south of Cache County. Set codling moth traps in Cache County by next week. It is best to have several days of no catch before the first moths are caught. This will ensure that you can identify the beginning of adult emergence. At any given site, at least two traps should be set (unless it's just a backyard scenario). To increase the chance of getting an accurate biofix (= first moths caught at a site), try to set 1 trap per 3-5 acres. It has been shown that a greater trap density translates into a more accurate biofix. This makes sense when you consider that the traps are like "beacons" out there in the orchard—the more beacons, the greater the probability of attracting moths. If you are using mating disruption, it is still recommended that you determine a biofix for your orchards. Optimal timing of supplemental sprays to coincide with peak egg hatch periods of first and second generations can be determined based on the original biofix date. Without this information, you are left guessing.

Codling moth biology: Codling moth over winter as mature larvae in cocoons in crevices on trunks and in other protected sites. The larvae form pupae as temperatures warm in the spring and adults emerge from these pupae during bloom. Good control of codling moth is dependent on killing eggs before or as they hatch or newly emerged larvae before they enter fruits. Timing of control sprays is determined by measuring heat units, degree-days, and accumulations of degree-days are initiated at first adult emergence (biofix).

PEACH TWIG BORER (Peach, Nectarine, and Apricot): First peach twig borer moths generally emerge 10-14 days after codling moth, and control of the summer generations are timed based on first moth catch (biofix). Placement of PTB traps in orchards is still 2-3 weeks away.

Peach twig borer control options now: To control the over wintering larvae, bloom-time sprays for this pest are very effective because the larvae are exposed as they feed. At this time of year, there are not any succulent shoots for the larvae to burrow into, so they are forced to feed on young leaves and petals. Insecticide residues on the surface of leaves and petals are more likely to get ingested, which makes materials such as Bt (DiPel), spinosad (Success, Entrust, Conserve), or diflubenzuron (Dimilin) very effective at this

time. Bt (1 lb./acre) and spinosad (7 oz. Success) should be applied twice during bloom for maximum effect.

GREEN PEACH APHID: Green peach aphid densities were high in the spring of 2005. A delayed dormant spray of dormant oil + esfenvalerate (Asana) or other effective insecticide is recommended if peach aphids are a concern this spring. Timing for the delayed dormant application is when buds begin to open and flower color is visible, but before flowers are completely open.

These aphids are ever-present and are often fed upon heavily by a variety of predators such as lacewing larvae, lady beetles, and hoverfly larvae (all of which have been found in Utah peach orchards). However, tremendous aphid populations (100+ per beat-sample or 4-10 nymphs per leaf) present a difficult situation because it may be a while before the aphids are reined in by predators. In the meantime, the first leaves of the season, as well as some of the fruit, will be fed upon heavily and ultimately deformed. It is highly recommended that growers monitor their aphid and predator populations in the spring. High green peach aphid populations might warrant a spray with insecticidal soap (M-Pede, Safer's) before leaves become curled upon themselves (contorted leaves shield aphids that are feeding within). Alternatively, growers who will be spraying for peach twig borer, powdery mildew, and/or coryneum blight at shuck-split may want to consider tank-mixing insecticides that suppress aphids as well as twig borers (eg, Bt + narrow range oil, Success + narrow range oil, or Asana).

FLATHEADED BORERS: Emerging adults cause the flattened, oval shaped holes in tree trunks. Adults are expected to begin emerging in mid- to late-May. Larvae tunnel in the cambial tissue and can girdle and kill young trees. We have observed large populations in older, declining tart cherry and apple orchards. Young orchards, especially 1-2 year-old trees, near older orchards with flatheaded borers are at risk for infestation. Removal of infested trees and preventive insecticide treatments applied to trunks of young trees are primary management tactics. Remove dead or dying trees that can attract borers to attack and initiate a borer population in a susceptible orchard. The timing is late May to first of June after adults begin to emerge, mate, and females will lay eggs on tree trunks. Recommended insecticides include Lorsban (not registered post-bloom on apple), Thiodan, permethrin, and esfenvalerate. Young tart cherry and apple orchards surrounded by infested trees are at greatest risk and you may want to consider protecting these with preventive trunk treatments.

ROOT BORERS: Ten-lined June beetle and Prionus root borer larvae have been observed killing young and old cherry (and probably other types) of fruit trees. Problems have been most prominent on lighter, sandy soils. Root borers can cause replant problems and kill newly planted trees. When an orchard is replanted without at least a 1-2 year fallow period, soil fumigation or other practices to reduce root borer populations should be employed. Replant problems are generally most severe when the same species of tree is replanted without a fallow period.

ROOT WEEVILS: Root weevil adults cause notching of lower leaves and larvae feed on the crown and roots of trees. In recent years, leaf notching has been observed on tart cherry and peach trees. Prolonged drought conditions experienced before last year may have contributed to their population increase. Young trees with small root systems are especially prone to decline caused by root weevils. If heavy leaf notching is observed in an orchard, an insecticide treatment timed with when notching first begins in the late spring to early summer (May to early June) may be warranted. Insecticides applied to the lower canopy should reduce adult populations. Recommended insecticides include Lorsban, Thiodan, Actara, Provado, Calypso, Guthion, and Diazinon. Check the label for registered tree crop sites. Insect parasitic nematodes have been shown to be effective in controlling root weevil larvae when applied to the soil under ornamental trees and shrubs.

FOR MORE INFORMATION ON TREE FRUIT PEST MANAGEMENT:

For a posting of archived and current pest advisories and orchard spray timing tables, see the USU Extension IPM web page at:
http://extension.usu.edu/cooperative/ipm/

For home orchards pest management recommendations, see the Utah "Home Orchard Pest Management Guide" (USU Extension Publication HG 137) at:
http://extension.usu.edu/files/publications/HomeOrchardGuide2004.pdf

For Utah commercial orchard insect control guides (peach and cherry), see:
http://extension.usu.edu/cooperative/ipm/index.cfm/cid.1424/

For one-stop shopping for information on Utah insects, plant diseases, IPM, and the Plant Pest Diagnostic Laboratory, go to our umbrella web site at:
http://extension.usu.edu/cooperative/ipd/

A NOTE ABOUT SOURCES OF INFORMATION FOR UTAH IPM PEST ADVISORIES:

We are currently searching to fill our Utah IPM Project Leader position. In the absence of someone in this position, Mike Olsen, our student assistant in the IPM Office and Utah Plant Pest Diagnostic Lab, is downloading the weather data and sending out the weekly IPM Pest Advisories. USU Extension Specialists are using the degree-day information to provide pest activity predictions. If you have any questions about this information, just respond to this email and Mike Olsen will refer your inquiry to the appropriate person.