UtahState University COOPERATIVE EXTENSION

Tree Fruit IPM Advisory

UTAH PESTS

Weekly Orchard Pest Update, Utah State University Extension, **April 28, 2009**

News/What to Watch For:

Check codling moth traps daily to get biofix (first moth flight)
Examine apple leaves for bright white powdery spores of powdery mildew
Images of bud stages, page 4
Spray information, pages 5-6

Bud Stages

This week seems like typical spring weather - for once! Bud stages are still ahead of last year, behind what they were at this time in 2007, and about the same as 2006.

Davis, Box Elder, Salt Lake, Weber counties:
Apples: open cluster - king bloom
Cherries (tart): first bloom
Peaches: petal fall
Pears: full bloom

Cache County:
Apples: tight cluster - first pink
Cherries: green tip
Peaches: pink
Pears: green cluster - white bud

Utah County:
Apples: open cluster - king bloom
Cherries (tart): first bloom
Peaches: bloom - petal fall
Pears: bloom

Insect and Disease Activity/Info

Specific spray information found on last two pages.

Codling Moth

A single adult moth was caught in Utah County, but no biofixes have been set yet for northern Utah. Adults become active when evening temperatures exceed 55-60° F.

In southern Utah (Grand County), a biofix has been set for April 26.

As a reminder, codling moth is the most destructive fruit pest in Utah, ruining many apples and pears. Adult moths emerge in spring, mate, and females lay up to 70 eggs on developing fruit. Depending on temperature, eggs hatch in approximately in 6-20 days, and larvae bore into the fruit, feeding mainly on the seeds. One to two more generations follow in northern Utah, and two-three in southern Utah.

Treatment:
If using an insecticide, consider the target: eggs or larvae (adults are not targeted). Materials that work as an ovicide (kills the eggs) include horticultural oil[H] and some insect growth regulators (Esteem, Rimon). Materials that act as a larvicide include spinosyns (Delegate, Green Light), azadirachtin[H], codling moth virus[H], and carbaryl[H]. There are others still that kill both eggs and larvae: Altacor, Assail, Calypso, and Intrepid.

With this knowledge, growers can take advantage of the CM life cycle, and save a little money as well as get good control. By applying an ovicide such as horticultural oil (which is one of the cheapest insecticides) soon after biofix (at 200 degree days;

continued on next page

Insect and Disease Information, continued from previous page

we will provide a timing), eggs that have already been laid on fruit will be smothered, and the "normal" larvicide timing at 220 DD can be delayed until 350 DD after biofix (about 1-2 weeks later). At this time, larvae are entering their "peak egg hatch" and we always stress how important it is to have good residue coverage on your fruit at that time. After this initial period, growers should then continue to apply the chosen material(s) at the interval provided on the label.

[H]residential product

Cat-facing Insects on Stone Fruit

We mostly have a problem with lygus bug on peaches in Utah, which cause deep scarring of fruit through early season feeding. Typically, these sucking insects are located in alfalfa fields, but are also attracted to a variety of flowering annual broadleaf weeds. The first step is to control flowering weeds on the orchard floor. Unfortunately, there is nothing to be done when orchards border field crops, except be especially diligent about border sprays when fields are harvested. Some lygus will feed in the orchard starting at petal fall, which is a good time to apply insecticide.

Fire Blight

Look at the table on page 3 to see the risk of infection in your area. The following is an explanation of each rating word, provided by Tim Smith, Washington State University:

No Blight: weather is not warm enough to cause infection, even with open flowers and moisture.

Low: Wetting of flowers has not led to new flower blight infections in past years.

Caution: Wetting at this point is not likely to lead to infection, except within a few yards of an actively oozing canker.

High risk: If unprotected flowers are wetted, infection is possible. If flowers are numerous, you may choose to protect every 2 – 3 days with a biological product during the HIGH risk period. Or, apply antibiotic within 24 hours before or after the infection (wetting) event.

Extreme: Outbreak may occur if blossoms are wetted, no matter the blight history of your orchard. Apply antibiotic within 24 hours before or after the wetting event. If used, biological products should already be present on flowers and may not work as well if only applied at this risk period.

Degree Day Accumulations and Insect Development

Upcoming Monitoring/Insect Activity

By Insect (in order of appearance)		**Host**
Black cherry aphid	Egg hatch at cherry bud break	Cherry leaves
Green peach aphid	Egg hatch at full bloom	Peach leaves; Nectarine fruit
Campylomma bug	Egg hatch begins at first pink (apples)	Apple fruit
White apple leafhopper	Egg hatch begins at first pink (apples)	Apple leaves
Western tentiform leafminer	Egg-laying at pink (apples)	Apple leaves
Codling moth	Hang traps at 100 degree days (base 50) First flight at 190-260 DD	Apple fruit

Degree Day Accumulations

March 1 - Wednesday, April 28

County	Location	Codling Moth, Peach Twig Borer (Base 50)	Western Cherry Fruit Fly (Base 41)	Fire Blight Warning (see page 2)
Box Elder	Perry	166	383	No Blight
Cache	North Logan	89	270	No Blight
	Providence	102	271	No Blight
	Smithfield	92	217	No Blight
Carbon	Price	113	321	No Blight
Davis	Kaysville	161	387	No Blight
Grand	Castle Valley	24 (after biofix)	648	---
Salt Lake	Holladay	180	410	No Blight
	West Valley City	171	424	No Blight
Tooele	Erda	162	379	No Blight
	Grantsville	273	552	No Blight
	Tooele	156	479	No Blight
Utah	Alpine	164	388	No Blight
	Genola	200	442	No Blight
	Lincoln Point	161	387	No Blight
	Orem	156	381	No Blight
	Payson	180	376	No Blight
	Provo	216	454	No Blight
	Santaquin	176	404	No Blight
Weber	Pleasant View	146	363	No Blight

"Base 41" and "base 50" refer to the lower temperature threshold at which certain insects develop. For example, no codling moth development occurs below 50 degrees.

Bud Phenological Stages

Apple

Pear

Peach

Cherry

Spray Materials - Commercial Applicators

Target Pest	Host	Chemical	Example Brands	Amount per acre	REI	Comments
Lygus bug	peaches	azadirachtin beta-cyfluthrin cyfluthrin pyrethrin	Aza-Direct Baythroid Tombstone Pyganic	1-2 pints 2-2.4 oz 2-2.4 oz 4..5-18	4 h 12 h 12 h 4 h	OMRI certified organic restricted use product restricted use product OMRI certifiec organic
Codling moth	apple, pear	hort. oil acetamiprid deltamethrin methoxyfenozide phosmet spinetoram thiacloprid rynaxypyr codling moth virus	variety Assail Battalion Intrepid Imidan Delegate Calypso Altacor Virosoft, etc	see lable 3.4 oz 7-14 oz 16 oz 5.33 lbs 6-7 oz 4-8 oz 3.5-4.5 ---	 12 h 12 h 4 h 5 d 4 h 12 h ---	• works on eggs only • ensure good coverage for effective control • virus must be applied every 7 days • has shown to have good efficacy
Thrips	light-skinned apples, nectarines	endosulfan spinosad	Thionex Success	4 lb 4-8 oz	24 h 4 h	apply just before bloom Thionex will also control lygus and campylomma; toxic to bees
Powdery mildew	apple	potassium bicarbonate myclobutanil trifloxystropin triflumizole fenarimol boscalid/pyraclostrobin	Kaligreen Rally Flint Procure Rubigan Pristine	2.5-3 lb 5 oz 2-2.5 oz 8-16 oz 12 oz 14.5-18 oz	4 h 24 h 12 h 12 h 12 h 12 h	apply starting at open cluster stage
Fire blight	apple, pear	streptomycin oxytetracycline	Agri-mycin Mycoshield	check label		apply within 24 h of a wetting event only if fire blight was present last year

Spray Timing for Codling Moth

Location	Biofix	Timing (75 DD) for Ovicides (Rimon, IGRs)	Timing (200 DD) for Hort oil	Traditional Timing (220 DD)
Castle Valley	April 26	May 6	May 19	May 21

Spray Materials - Residential Applicators

Note that these treatments are only recommended if you know you have the particular pest in your trees.

Target Pest	Host	Chemical	Example Brands	Comments
Thrips	nectarine	spinosad	Bonide, Ferti-Lome, Green Light	may require 2 applications 7 days apart; pre-bloom
Codling moth	apple, pear	azadirachtin carbaryl esfenvalerate malathion pyrethrin spinosad	Azatin Sevin, Bonide Fruit Tree Spray Ortho Bug-B-Gone Malathion Concern Multi-Purpose Green Light	• Rotate among chemical classes to prevent resistance. • Most are applied every 7 days, but read the label. • See spray timing below
Powdery mildew	apple	bayleton lime sulfur propiconazole neem oil potassium bicarbonate	Bonide Lilly Miller Ferti-Lome Garden Safe Kaligreen	do not apply lime sulfur when temperature is over 75 degrees F
Fire blight	apple, pear	biological streptomycin oxytetracycline	Blightban, Bloomtime Ferti-Lome oxytetracycline	• Biologicals should be applied at 15-20% bloom and again at full bloom • Do not use antibiotic unless necessary; apply within 24 h of a wetting event only if fire blight was present last year

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is published weekly by Utah State University Extension

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