UtahState UNIVERSITY extension

Tree Fruit IPM Advisory

UTAH PESTS

Weekly Orchard Pest Update, Utah State University Extension, **August 20, 2008**

News/What to Watch For:

Maintain protection of apples until Sept. 15 for codling moth, and for peach twig borer on peaches: until harvest. Watch trees for yellowing and dieback caused by phytophthora root rot
Spray timing dates for codling moth and peach twig borer, page 4
Spray information, pages 5-6

Insect and Disease Activity/Info

APPLE AND PEAR

Codling Moth

Third generation egg hatch is underway in the warmer areas of the Wasatch Front (Salt Lake and Tooele counties), while other areas (Box Elder, Davis, Weber, and Utah counties) will see it begin in the next week. This is good news compared to last year, when at this time we were reporting the END of the THIRD generation egg hatch in Salt Lake and Tooele counties!

Temperatures this season have allowed for a somewhat typical (or slightly cooler) pattern of moth emergence. The areas listed above will all see a partial third generation, as usual. A partial generation means that only a portion of larvae from the previous generation will have completed their life cycle in time (before mid-August) for emergence. This may account for 15-50% of the second generation, depending on location (the remaining larvae enter into diapause for overwintering). This year, the larvae that hatch from the eggs laid in the 3rd generation, however, will not survive the winter because they won't have enough time to develop to a full grown larva, which is necessary for overwintering. Poor things! But remember: they can still cause damage to fruit this season.

Cooler counties (Cache and Carbon) will only have two generations this season.

All growers should continue keeping fruit protected until harvest, or until September 15, whichever is earlier.

San Jose Scale

Crawlers of the second generation of San Jose scale are

an infestation like this might require treatment of scale crawlers in the first AND second generations

active now. If you have an extremely high population, or did not treat for the first generation of crawlers, consider a single insecticide application now.

STONE FRUITS

Greater Peachtree Borer

We are still catching high numbers of peachtree borer, although damage from borers (above ground) has not been seen. Keep in mind that larvae can enter the trunk or major roots under the soil line, so entries may not be obvious. Remember that we have not observed attacks to cherries in Utah, just peaches, nectarines, and to a lesser extent, apricots.

Residential growers may want to consider an alternative to chemical treatment: killing borers by hand. This fall, remove dirt from around the base of the tree down to about 4

continued on next page

Insect and Disease Activity/Info, continued

inches. Look for oozing gum mixed with frass. In those locations, cut a small amount of bark away (vertically) to find the larva, or insert a strong but thin wire into the borer hole. Take care in using these methods and do not damage the tree more than a single borer would.

Phytophthora Crown and Collar Rot

Trees with phytophthora root rot are now showing obvious symptoms, some leading to tree death, as was observed on apple and cherry this week. Phytophthora is a fungus-like, soil-borne pathogen that kills root and crown tissue. It is present in almost all soils, but infection only occurs when conditions are optimal: saturated soils in the presence of a host. The following shows the susceptibility of various fruits:

- ***Pears***: relatively resistant
- ***Apples***: M-9, M-2, and M-4 are relatively resistant; M-7 (and M-7a), M-26, and MM-111 are moderately susceptible; MM-106 and MM-104 are highly susceptible
- ***Plums***: relatively resistant
- ***Cherry***: susceptible to very susceptible; Mahaleb is the most susceptible cherry rootstock; Mazzard, Morello, and Colt are somewhat more resistant
- ***Peach and apricot***: susceptible, but not commonly seen in Utah

Symptoms include poor growth, small leaves, a yellowish cast to the leaves, and dieback. Sudden death may also occur, and leaves will remain persistent. Trees with symptoms that are in "problem areas" such as low spots where water drains slowly, should be monitored. If you suspect phytophthora, scrape the outer bark away from the base of the tree and look for the brown, necrotic tissue. It will be in stark contrast to the healthy, cream-colored tissue (shown at lower left).

To prevent infection, avoid planting trees in low dips or in poorly drained soils. Plant new trees slightly high so that they do not settle lower than the normal soil height, and prevent water from puddling around the root collar.

Treatment: Unfortunately, there is no "cure" for infected trees. Removal and prevention of spread is the only option. If possible, do not spread soil or infested debris from one area to another. Try to improve soil drainage, monitor soil moisture, and fix any irrigation leaks. When replanting in infested areas, drench the soil with fosetyl-Al (Aliette) as a preventative (for nonbearing trees only).

OTHER

Walnut Husk Fly

Flies are still being trapped in large numbers (up to 120 in a single week), so those who wish to treat their walnuts should continue treatments until harvest. Flies are known to continue emerging until October.

Keep in mind that the flies do not affect the nutmeats, just the husk, so treatments of backyard trees is not always necessary. For more information, see the July 23 advisory.

Degree Day Accumulations and Insect Development

Upcoming Monitoring/Insect Activity

By Insect (in alphabetical order)	
Codling moth (CM)	3nd gen. egg hatch begins at 2160 DD (after biofix)
Fire blight (FB)	Watch for new infections
Peach twig borer (PTB)	3rd gen. egg-hatch begins at 2000 DD after biofix
San Jose scale (SJS)	Second generation crawlers active at 1916 DD (base 50)
Spider mite (SM)	Look for damage on leaves closest to ground first
White apple leafhopper (WALH)	Look for nymph and adult activity; look for stippling on leaves

By Host (see abbrev. at left)	
Apple	CM, FB, SM, WALH
Cherry	
Peach	PTB, SM
Pear	FB

Degree Day (DD) Accumulations and Insect Phenology

(click here for more information on degree days)

March 1 - Tuesday, August 19

			Codling Moth - 2nd/3rd Gen.			Peach Twig Borer - 2nd/3rd gen.		
County	**Location**	***GDD50**	**DD (post biofix)**	**% Egg Hatch**	**% Moth Flight**	**DD (post biofix)**	**% Egg Hatch**	**% Moth Flight**
Box Elder	Perry	2166	2038	97	6 (3rd)	1789	97	1 (3rd)
Cache	North Logan	1718	1540	43	79	1224	6	51
	Providence	1773	1606	53	85	1314	18	73
	Smithfield	1852	1698	69	92	1340	23	78
Carbon	Price	2057	1844	85	98	1558	73	98
Davis	Kaysville	2132	1931	91	2 (3rd)	1749	96	100
Grand	Castle Valley	2886	2494	~20 (3rd)	~55 (3rd)	2422	44 (3rd)	85 (3rd)
Salt Lake	SLC	2365	2200	3 (3rd)	20 (3rd)	1932	100	7 (3rd)
	West Valley City	2422	2246	4 (3rd)	24 (3rd)	1989	100	13 (3rd)
Tooele	Erda	2584	2279	7 (3rd)	29 (3rd)	2584	---	---
	Grantsville	2640	---	---	---	2640	---	---
	Tooele	2441	2194	3 (3rd)	20 (3rd)	2007	1 (3rd)	14 (3rd)
Utah	Alpine	1945	1726	70	92	1457	51	94
	Genola	2125	1947	92	2 (3rd)	1682	90	100
	Lincoln Point	1969	1796	81	97	1572	75	98
	Orem	2137	2025	96	5 (3rd)	1750	95	100
	Payson	2169	1994	95	4 (3rd)	1772	97	1 (3rd)
	Provo	2132	1944	92	2 (3rd)	1689	91	100
	Santaquin	2076	1929	91	1 (3rd)	1692	91	100
	West Mountain	2053	1883	88	100	1629	84	99
Weber	Pleasant View	2294	2152	100	15 (3rd)	1874	99	4 (3rd)

*GDD50 (growing degree days base 50) are degree days since March 1, calculated using 50 F as the lower threshold value. This number is used for insects that develop at temperatures above 50 F only.

Spray Timing

Codling Moth, Second and Third Generations (period of greatest egg hatch of 2nd generation is 1380 - 1780 DD, and end of 2nd gen. egg hatch is 2100 DD after biofix; third generation egg hatch begins at 2160 DD after biofix)

County	Location	Period of Greatest Egg Hatch	End of Protection (egg hatch ends)	Begin Protection (3rd gen. egg hatch)
Box Elder	Perry	July 24 - Aug 8	Aug. 21	Aug. 24
Cache	North Logan	Aug. 10 - Aug. 31	Sept. 27	---
	Providence	Aug. 5- Aug. 25	Sept. 16	---
	Smithfield	Aug. 8 - Aug. 29	Sept. 23	---
Carbon	Price	July 30 - Aug. 16	Sept. 1	Sept. 4
Davis	Kaysville	July 28- Aug. 12	Aug. 26	Aug. 29
Grand	Castle Valley	July 13 - July 25	Aug. 5	Aug. 6
Salt Lake	SLC	July 20 - Aug. 3	Aug. 15	Aug. 18
	West Valley City	July 19 - Aug. 2	Aug. 14	Aug. 16
Tooele	Erda	July 19 - Aug. 2	Aug. 13	Aug. 15
	Tooele	July 20 - Aug. 2	Aug. 15	Aug. 18
Utah	Alpine	Aug. 3 - Aug. 20	Sept. 5	Sept. 11
	Genola	July 26 - Aug. 11	Aug. 24	Aug. 29
	Lincoln Point	July 30 - Aug. 15	Aug. 29	Sept. 4
	Orem	July 23 - Aug 9	Aug. 22	Aug. 25
	Payson	July 25 - Aug. 10	Aug. 25	Aug. 27
	Provo	July 25 - Aug. 11	Aug. 28	Aug. 31
	Santaquin	July 26 - Aug. 11	Aug. 26	Aug. 30
	West Mountain	July 28 - Aug. 13	Aug. 29	Sept. 1
Weber	Pleasant View	July 21 - Aug. 4	Aug. 17	Aug. 20

Peach Twig Borer, Second and Third Generations Second generation spray date begins at 1360 degree days after biofix, or 28% egg hatch. Ending egg hatch corresponds to 1900 DD. Third generation egg hatch (5%) begins at 2140 DD after biofix.

County	Location	Start Protection	End Protection (egg hatch ends)	Begin 3rd. Generation Treatment (if necessary)
Box Elder	Perry	August 3	Aug. 23	Sept. 4
Cache	All locations	August 21	after Sept. 30	---
Carbon	Price	August 10	Sept. 5	---
Davis	Kaysville	August 4	Aug. 25	Sept. 6
Grand	Castle Valley	Aug. 16 (3rd)	Sept. 12 (3rd)	---
Salt Lake	Salt Lake City	July 28	Aug. 18	Aug. 28
	West Valley City	July 27	Aug. 16	Aug. 25
Tooele	Tooele	July 26	Aug. 14	Aug. 25
Utah	Alpine	August 13	Sept. 9	---
	Genola	August 5	Aug. 27	Sept. 11
	Lincoln Point	August 7	Aug. 30	Sept. 16
	Orem	August 4	Aug. 25	Sept. 5
	Payson	August 2	Aug. 25	Sept. 7
	Provo	August 5	Aug. 31	Sept. 17
	Santaquin	August 5	Aug. 27	Sept. 12
	West Mountain	August 4	Aug. 29	Sept. 14
Weber	Pleasant View	July 31	Aug. 21	Aug. 31

Spray Materials - Commercial Applicators

Target Pest	Host	Chemical	Example Brands	Amount per acre	REI	PHI	Comments
Aphids	all	imidacloprid acetamiprid	Provado Assail	4-8 oz 1.7 oz	12 h 12 h	7 d 7 d	
Codling moth	apple, pear	acetamiprid deltamethrin methoxyfenozide phosmet spinetoram thiacloprid codling moth virus	Assail Battalion Intrepid Imidan Delegate Calypso Virosoft, etc	3.4 oz 7-14 oz 16 oz 5.33 lbs 6-7 oz 4-8 oz ---	12 h 12 h 4 h 5 d 4 h 12 h ---	7 d 21 d 14 d 7 d 7 d 30 d 0 d	• ensure good coverage for effective control • virus must be applied every 7 days
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	1 d 14 d 14 d 14 d 30 d 0 d	
San Jose scale	apple, cherry	acetamiprid buprofezin imidacloprid lambda-cyhalothrin hort. oil	Assail Talus Provado Warrior variety	3.4 oz 34.5 oz 8 oz	12 h 12 h 12 h	7 d 14 d 7 d 21 d 0 d	
Spider mites	apple, peach	abamectin bifenazate difocol fenpyroximate spirodiclofen	Agrimek Acramite Kelthane Fujimite Envidor	10-20 oz .75-1 lb 4 lb 32 oz 16-18 oz	12 h 12 h 4 h	28 d 7 d 7 d 14 d 7 d	
Woolly apple aphid	apple	endosulfan diazinon	Thionex Diazinon	3-4 lbs 4 lbs	24 h 4 d	21 d 21 d	
Box-elder bug	peaches, nectarine	carbaryl pyrethrin	Sevin 4F Prentox Pyronyl	see label 1-12 oz		3 d 0 d	
Earwigs	peaches, nectarine	carbaryl	Sevin 4F	see label		3 d	
Greater peachtree borer	peach, nectarine, apricot	chlorpyrifos endosulfan esfenvalerate	Lorsban 4EC Thionex Asana	see label see label see label	4 d 24 h 12 h	14 d 21 d 21 d	use Lorsban only once/year; keep trees protected until mid-Sept.
Green peach aphid	peach	imidacloprid	Provado	2 oz	12 h	7 d	
Peach twig borer	peach, nectarine, apricot	Bt methoxyfenozide phosmet spinosad spinetoram	Dipel Intrepid Imidan Entrust Delegate	see label 2 pints 4 lbs 4-8 oz 4.5-7 oz	4 h 4 h 5 d 4 h 4 h	0 d 14 d 14 d 0 d 7 d	Continue until harvest
Stink bug	stone fruits	flonicamid cyfluthrin esfenvalerate lambda-cyhalothrin methomyl	Beleaf Baythroid Asana Warrior Lannate	2.0-2.8 oz 5-12 oz 2.5-5 oz 3 pints	 12 h 12 h 12 h 4 days	14 d 7 d 14 d 14 d 4 d	
Walnut husk fly	walnuts	cyfluthrin phosmet spinosad spinetoram permethrin	Baythroid Imidan GF-120 Delegate Ambush	2.4-2.8 oz 4.33-8.5 lb. 20 oz 3-7 oz 16-24 oz	12 h 5 d 4 h 4 h 12 h	see label for all	

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	How Often	Comments
Aphids	apple, pear, peach, plum, cherry	azadiractin hort. oil imidacloprid insecticidal soap malathion	Azatin variety Bayer Advanced Safer, M-Pede Malathion	once as necessary	
Codling moth	apple, pear	azadirachtin bifenthrin carbaryl esfenvalerate malathion permethrin pyrethrin spinosad	Azatin Ortho Bug-B-Gone (new) Sevin, Bonide Fruit Tree Spray Ortho Bug-B-Gone (old) Malathion Bayer Advanced Dust Concern Multi-Purpose, Green Light	Most are applied every 7 days, but read the label. Continue through harvest or until Sept. 15.	• Rotate among chemical classes to prevent resistance. • to reduce number of sprays, time them so that none are applied in between generations
San Jose scale	apple, cherry	bifenthrin carbaryl hort. oil imidacloprid neem oil	Ortho Bug-b-Gone Sevin variety Gordon's Professional Concern FTE	single application to crawlers	
Spider mites	most trees	hard spray of water fenbutatin-oxide horticultural oil insecticidal soap	 Vendex variety variety	repeat only as necessary	
Woolly apple aphid	apple	carbaryl hort. oil malathion	Sevin variety Malathion		
Peachtree borer	peach, nectarine	binfenthrin esfenvalerate	Ortho Bug-b-Gone (new) Ortho Bug-b-Gone (old)	once, or as directed on label	treat lower trunk only until mid-Sept.
Peach twig borer	peach, nectarine	Bt carbaryl esfenvalerate malathion pyrethrin pyrethrum spinosad	Dipel Sevin Ortho Bug-B-Gone (old) Malathion variety Pyganic Entrust	Most are every 7 days. Continue until harvest.	• Rotate among chemical classes. • to reduce number of sprays, time them so that none are applied in between generations
Walnut husk fly	walnuts	spinosad esfenvalerate malathion permethrin	GF-120, Gardens Alive Bullseye Ortho Bug-B-Gone (old) malathion Bayer Advanced Dust	Most are every 7 days. Continue until harvest.	

Tree Fruit IPM Advisory
is published weekly by Utah State University Extension

Editor: Marion Murray, marion.murray@usu.edu

click here for archived advisories