

News/What to Watch For:

Attach double-sided sticky tape to San Jose scale infested limbs to monitor for crawler activity, maintain protection of peaches from peach twig borer until harvest

Spray timing dates for codling moth and peach twig borer, page 4

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Insect and Disease Activity/Info

APPLE AND PEAR

Codling Moth

The second generation moth flight continues, and egg hatch is about 80% complete along the warmer areas of the Wasatch Front. Cache, Carbon, Davis, and parts of Utah counties are still within the time frame of maximum egg hatch (through 1780 DD after biofix), which is the period at which the majority of eggs hatch in the shortest period of time. Make sure fruit is protected during this time period.

Fire Blight



Shawn Steffan, USU Extension

Thunderstorms are predicted for the next few days. If pear or apple trees have actively growing (succulent) plant tissue, and fire blight is present in the tree, there is a slight risk of new infections occurring on shoots. If you have been pruning out visible cankers through the summer, you should be in good shape. Otherwise, keep an eye out as the summer progresses for new infections and remove them as soon as



possible. Remember to sterilize your pruning tool in 10% bleach between cuts (lubricate pruners when finished) and cut at least 14-18" below the canker. Pruning can also wait until winter, but cankers may not be as visible. At that time, cut 6-8" below (tool sterilization is not necessary).

STONE FRUITS

Stink Bug and Cat-facing insects

As peaches and nectarines ripen, they become a "tasty treat" for stink bugs, boxelder bugs, and earwigs. If you find, after scouting your orchard, that you need to apply a treatment, be aware of the pre-harvest interval of the product of choice.

Feeding by **stink bugs** at this time results in gum droplets, or strings of gum, and water-soaked lesions. Fruit can also appear dimpled from multiple probing and feeding. (Severely dimpled fruit indicates feeding earlier in the season.) Sometimes, injury does not show up until harvested fruit is

Insect and Disease Activity/Info, continued



gummosis and water-soaked lesions by stink bug feeding after pit hardening

West Virginia University Extension



Last year, **boxelder bugs** were found feeding in large numbers on ripe peaches. They pierce the fruit and feed on the juices, and damage may look similar to stink bug. Usually control will not be warranted, but monitor your peaches as they ripen.



post-harvest injury by stink bug could look like this

Shawn Steffan, USU Extension

brought out of storage. Fruit may have small brown depressions in the skin, and the inner tissue is spongy. By mid-August, stink bugs move on to overwintering sites.

Earwigs become particularly interested in very ripe peaches. They bore into the fruit from the stem end, feed



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on the flesh, and leave behind black dots of excrement. The surface damage will appear as a narrow, but deep (1/2-inch) pit. Earwigs hide during the day, so monitor them by using cardboard or rolled newspapers tucked in limb crotches. If a treatment is necessary, carbaryl (Sevin) has a 1-day PHI. Another option is to apply Tanglefoot to duct tape wrapped around the tree trunk.

Degree Day Accumulations and Insect Development

Upcoming Monitoring/Insect Activity

By Insect (in alphabetical order)		By Host (see abbrev. at left)	
Codling moth (CM)	2nd gen. flight peak at 1340-1970 DD (after biofix)	Apple	CM, FB, OBLR, SM, WALH
Fire blight (FB)	Watch for new infections		
Obliquebanded leafroller (OBLR)	2nd gen. flight begins at approx. 1500 DD (base 50)	Cherry	OBLR
Peach twig borer (PTB)	2nd gen. egg-hatch begins at 1200 DD after biofix	Peach	PTB, SM
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	Pear	FB
San Jose scale (SJS)	Second generation crawlers active at 1916 DD (base 50)		

Degree Day (DD) Accumulations and Insect Phenology

([click here](#) for more information on degree days)

March 1 - Tuesday, August 5

County	Location	*GDD50	Codling Moth - 2nd Gen.			Peach Twig Borer - 2nd gen.		
			DD (post biofix)	% Egg Hatch	% Moth Flight	DD (post biofix)	% Egg Hatch	% Moth Flight
Box Elder	Perry	1836	1707	69	92	1459	51	94
Cache	North Logan	1456	1277	8	39	961	0	4
	Providence	1539	1385	18	56	1028	0	10
	Smithfield	1489	1321	44	46	1029	0	10
Carbon	Price	1736	1522	40	77	1236	8	56
Davis	Kaysville	1799	1598	53	85	1416	41	89
Grand	Castle Valley	2485	2094	99	10	2021	1 (3rd)	17 (3rd)
Salt Lake	SLC	2001	1836	85	98	1568	75	98
	West Valley City	2035	1860	86	99	1603	80	99
Tooele	Erda	2186	1881	88	100	---	---	---
	Grantsville	2256	---	---	---	---	---	---
	Tooele	2096	1848	85	98	1661	88	100
Utah	Alpine	1650	1432	26	64	1163	3	36
	Genola	1814	1636	60	88	1372	30	82
	Lincoln Point	1678	1505	36	77	1281	13	66
	Orem	1783	1672	94	90	1397	37	88
	Payson	1860	1685	66	91	1463	51	94
	Provo	1842	1653	62	89	1398	37	88
	Santaquin	1779	1632	58	87	1396	37	88
	West Mountain	1751	1581	50	83	1327	22	76
Weber	Pleasant View	1935	1793	80	97	1515	64	97

*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 Generation (begin protection at 1100 DD; period of greatest egg hatch is 1380 - 1780 DD, and end of 2nd gen. egg hatch is 2100 DD after biofix)

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

Peach Twig Borer, Second Generation If you had moderate to severe PTB damage last year, use the earlier spray date; if you had very little PTB damage last year, use the later date to start sprays. These two dates correspond to 1200 and 1360 degree days after biofix, or 5% and 28% egg hatch. Ending egg hatch corresponds to 1900 DD.

County	Location	Start Protection (large pop.-2nd gen.)	Start Protection (small pop.-2nd gen.)	End Protection (egg hatch)
Box Elder	Perry	July 26	August 3	Aug. 23
Cache	All locations	August 13	August 21	after Sept. 30
Carbon	Price	August 3	August 10	Sept. 5
Davis	Kaysville	July 28	August 4	Aug. 25
Grand	Castle Valley	Aug. 9 (3rd)	Aug. 16 (3rd)	Sept. 12 (3rd)
Salt Lake	Salt Lake City	July 22	July 28	Aug. 18
	West Valley City	July 21	July 27	Aug. 16
Tooele	Tooele	July 20	July 26	Aug. 14
Utah	Alpine	August 6	August 13	Sept. 9
	Genola	July 29	August 5	Aug. 27
	Lincoln Point	July 31	August 7	Aug. 30
	Orem	July 28	August 4	Aug. 25
	Payson	July 26	August 2	Aug. 25
	Provo	July 29	August 5	Aug. 31
	Santaquin	July 29	August 5	Aug. 27
	West Mountain	July 29	August 4	Aug. 29
Weber	Pleasant View	July 25	July 31	Aug. 21

Spray Materials - Commercial Applicators

Target Pest	Host	Chemical	Example Brands	Amount per acre	REI	Comments
Apple aphids	apple, peach, cherry	imidacloprid acetamiprid	Provado Assail	4-8 oz 1.7 oz	12 h 12 h	
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 ---	<ul style="list-style-type: none"> ensure good coverage for effective control virus must be applied every 7 days
Powdery mildew	apple	potassium bicarbonate myclobutanil trifloxystrobin 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	
Spider mites	apple, peach	abamectin bifenazate difocol fenpyroximate spiroticlofen	Agrimek Acramite Kelthane Fujimite Envidor	10-20 oz .75-1 lb 4 lb 32 oz 16-18 oz	12 h 12 h 4 h	
Woolly apple aphid	apple	endosulfan diazinon	Thionex Diazinon	3-4 lbs 4 lbs	24 h 4 d	
Box-elder bug	peaches, nectarine	carbaryl pyrethrin	Sevin 4F Prentox Pyronyl	see label 1-12 oz		3-day PHI
Earwigs	peaches, nectarine	carbaryl	Sevin 4F	see label		3-day PHI
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	use Lorsban only once/year; keep trees protected until mid-Sept.
Green peach aphid	peach	imidacloprid	Provado	2 oz	12 h	
Peach twig borer	peach, nectarine, apricot	Bt methoxyfenozide phosmet spinosad spinetoram tebufenozide	Dipel Intrepid Imidan Entrust Delegate Confirm	see label 2 pints 4 lbs 4-8 oz 4.5-7 oz 16-30 oz	4 h 4 h 5 d 4 h 4 h 4 h	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-day PHI 7-day PHI 14-day PHI 14-day PHI 4-day PHI
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	

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	azadiractin 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.	<ul style="list-style-type: none"> • Rotate among chemical classes to prevent resistance. • to reduce number of sprays, time them so that none are applied in between generations
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	bifenthrin 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.	<ul style="list-style-type: none"> • 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 Bulls-eye Ortho Bug-B-Gone (old) malathion Bayer Advanced Dust	Most are every 7 days. Continue until harvest.	

Precautionary Statement: Utah State University Extension and its employees are not responsible for the use, misuse, or damage caused by application or misapplication of products or information mentioned in this document. All pesticides are labeled with ingredients, instructions, and risks. The pesticide applicator is legally responsible for proper use. USU makes no endorsement of the products listed herein.

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