

News/What to Watch For:

Examine apple fruit for first generation codling moth damage; monitor spider mite populations; watch for pear psylla (honeydew, browning foliage)

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



Jay Brunner, Washington State University

Second generation egg hatch has begun for most areas of northern Utah except Cache and Carbon counties, so if you are not using mating disruption, residual materials should be on fruit now. Remember (for commercial growers) that some materials such as the insect growth regulators Intrepid and Esteem, will kill eggs as well as larvae. Residual material on the fruit will kill existing eggs, as well as newly laid eggs. These products work well for an early generation treatment.

This week, we sampled fruits from a variety of orchards and found average to higher-than-average percentage of “stings” on apple fruit. A sting is a type of injury that occurs when newly hatched larvae start feeding on the fruit and are then either killed, or move to another location. The slightest feeding leaves small scars that look like small brown dots. As the apple skin expands, the small wound splits and re-heals. Sometimes tiny stings from first generation larvae will “disappear” but mostly, the scar remains.

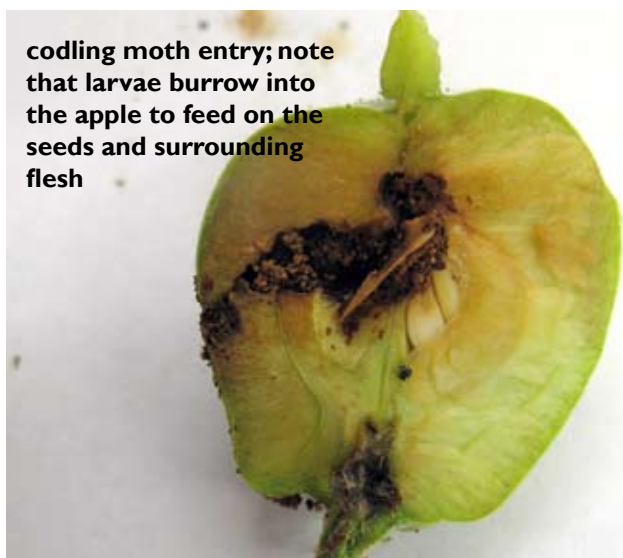
If you are not sure if you have a “sting” or an “entry,” cut your fruit in half. Successful entries will show tunnels to the seeds on which the developing codling moth larvae feed. If there is no larva inside, they have exited to pupate.

Right now, stings are small and not immediately obvious. Growers should take a close look at their crop at this time to evaluate your control program. See last week’s advisory ([click here](#)) for information on finding out when damage may have occurred. Use that information to guide you for choosing materials for second generation control.

STONE FRUITS

Damage to Nectarines

The Utah Plant Pest Diagnostic Lab has received inquiries of nectarine fruit damage. There are a few insects or other factors that can damage nectarine fruit.



Insect and Disease Activity, continued

Western flower thrips



If you are noticing random, lumpy scarring on the fruit surface, this is caused by the insect western flower thrips. Thrips are minute insects that require a hand lens to see. Adults emerge in spring and lay eggs on and near developing buds and flowers in spring. It is feeding by larvae from petal fall through shuck split that causes the above damage. The thrips feed by piercing the plant cells. As the nectarine develops, the skin splits and heals at the feeding sites. Sometimes gumming can be seen at the scarred sites during rapid expansion of the skin.

Treatments must be applied at petal fall. Spinosad (Success, Entrust) is an excellent option.

Green peach aphid



Green peach aphid is a common pest of peach and nectarine in Utah. Although they primarily feed on foliage, they can sometimes feed on flowers and fruit. Early and heavy feeding nectarine fruitlets will result in severely deformed and cracked fruit.

Treatment early in the season will help to prevent this problem.

Lygus Bug (shown on peach)



Oozing gum on the skin of nectarine (peach is shown above) could be caused by puncture feeding of lygus bug, especially if your orchard is near an alfalfa field or pasture. See previous advisory ([click here](#)) for biology and control information.

Frost damage (shown on peach)



Since several late frosts occurred this spring, do not be surprised to find frost damage on your fruits this year. On peaches and nectarine, the damage is distinguished from thrips injury in that the scarring will usually form a pattern that often encircles the fruit. Again, some gummosis may accompany the damage during the period of rapid fruit expansion.

Degree Day Accumulations and Insect Development

Upcoming Monitoring/Insect Activity

By Insect (in alphabetical order)		By Host (see abbrev. at left)	
Cherry powdery mildew (CPM)	Look for small white lesions on new foliage near the base and interior of the tree	Apple	CM, FB, SM, WALH
Codling moth (CM)	2nd gen. egg-hatch begins at 1100 DD (after biofix)		
Obliquebanded leafroller (OBLR)	First flight ends at approx. 1300 DD (base 50)	Cherry	CPM
Fire blight (FB)	Prune out strikes in July 18-24" down	Peach	PTB, SM
Peach twig borer (PTB)	2nd gen. egg-hatch begins at 1200 DD after biofix		
Spider mite (SM)	Look for damage on leaves closest to ground first	Pear	FB
White apple leafhopper (WALH)	Look for nymph and adult activity		

Degree Day (DD) Accumulations and Insect Phenology

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

March 1 - Tuesday, July 15; Insect phenology information unavailable this week; will be available next week.

County	Location	*GDD50	Codling Moth	Peach Twig Borer
			DD (post biofix)	DD (post biofix)
Box Elder	Perry	1268	1140	891
Cache	North Logan	1003	825	509
	Providence	1033	866	573
	Smithfield	1051	896	539
Carbon	Price	1223	1008	723
Davis	Kaysville	1282	1080	898
Grand	Castle Valley	1854	1462	1390
Salt Lake	SLC	1431	1233	998
	West Valley City	1468	1292	1035
Tooele	Erda	1588	1282	---
	Grantsville	1616	---	---
	Tooele	1497	1249	1068
Utah	Alpine	1140	922	652
	Genola	1265	1087	822
	Lincoln Point	1166	992	769
	Orem	1237	1226	851
	Payson	1320	1146	924
	Provo	1301	1112	857
	Santaquin	1227	1080	843
	West Mountain	1223	1053	799
Weber	Pleasant View	1357	1215	937

*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

Please check this chart each week for updated dates. These dates are forecasted using the average temperature for each site.

Codling Moth, First Generation (end first generation at 1020 DD; begin 2nd at 1100)

County	Location	End Protection (1st Generation)	Begin Protection (2nd Generation)
Box Elder	Perry	July 10	July 14
Cache	North Logan	July 22	July 27
	Providence	July 21	July 26
	Smithfield	July 24	July 28
Carbon	Price	July 16	July 20
Davis	Kaysville	July 13	July 16
Grand	Castle Valley	July 2	July 4
Salt Lake	SLC	July 7	July 11
	West Valley City	July 6	July 9
Tooele	Erda	July 6	July 10
	Tooele	July 9	July 13
Utah	Alpine	July 17	July 21
	Genola	July 10	July 14
	Lincoln Point	July 13	July 17
	Orem	July 10	July 14
	Payson	July 10	July 14
	Provo	July 18	July 22
	Santaquin	July 12	July 16
	West Mountain	July 12	July 15
Weber	Pleasant View	July 7	July 11

Peach Twig Borer (Ending protection (egg hatch) date corresponds to 800 DD. For 2nd 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.

County	Location	End Protection (1st gen.)	Start Protection (large pop.-2nd gen.)	Start Protection (small pop.-2nd gen.)
Box Elder	Perry	July 11	July 27	August 3
Cache	All locations	July 27	August 15	August 23
Carbon	Price	July 20	August 5	August 12
Davis	Kaysville	July 11	July 25	July 31
Grand	Castle Valley	June 25	July 9	July 15
Salt Lake	Salt Lake City	July 9	July 23	July 29
	West Valley City	July 8	July 23	July 28
Tooele	Tooele	July 8	July 24	July 30
Utah	Alpine	July 20	August 5	August 12
	Genola	July 13	July 28	August 3
	Lincoln Point	July 13	July 28	August 4
	Orem	July 12	July 28	August 3
	Payson	July 10	July 26	August 2
	Provo	July 14	August 1	August 8
	Santaquin	July 13	July 29	August 5
	West Mountain	July 13	July 29	August 4
Weber	Pleasant View	July 10	July 24	August 1

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"> • see table on page 4 for timing • 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	
San Jose scale	apple, others	acetamiprid pyrproxyfen	Assail Esteem	3.4 oz 4-5 oz	12 h 12 h	treat crawlers at 600-700 dd after codling moth biofix
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	
Western cherry fruit fly	cherry	carbaryl malathion imidacloprid spinosad spinosad	Sevin Malathion Provado Success, Entrust GF-120	1 pint 12 oz 2 oz see label see label	12 h 12 h 12 h 4 h 4 h	GF-120, when applied every 7 days, can provide 100% control.
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	

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 carbaryl esfenvalerate malathion permethrin pyrethrin spinosad	Azatin Sevin, Bonide Fruit Tree Spray Ortho Bug-B-Gone 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
Flat-headed appletree borer	apple	carbaryl esfenvalerate imidacloprid permethrin	Sevin Ortho Bug-B-Gone Bayer Advanced Spectracide	1 to 3 applications 2 weeks apart, depending on severity	imidacloprid is applied as soil drench; others to trunk and scaffolding
Powdery mildew	apple	bayleton propiconazole neem oil potassium bicarbonate	Bonide Ferti-Lome Garden Safe Kaligreen	repeat every 7-10 days as necessary until new growth stops	
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		
Western cherry fruit fly	cherry	carbaryl esfenvalerate malathion pyrethrin spinosad spinodad	Sevin Ortho Bug-B-Gone Malathion Concern Multi-Purpose Ferti-Lome, Green Light, etc. GF-120	Most are every 7 days. Continue until harvest.	
Greater peachtree borer	peach, nectarine	esfenvalerate	Ortho Bug-b-Gone		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 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

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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