

## News/What to Watch For:

Keep lower trunks of peach, nectarine, apricot protected from peachtree borer where necessary; trap counts are still high  
Keep peach and apple protected from internal caterpillars through harvest or until Sept. 15, whichever is earlier  
Treat walnuts for husk fly up to 1 month before harvest  
Spray timing (codling moth, peach twig borer), pages 4-5  
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## Insect and Disease Activity/Info

### APPLES/PEARS

#### San Jose Scale



San Jose scale can have up to two generations, and crawlers (the mobile, newly hatched nymphs) of the second generation will be active soon. If you have scale, and you applied a dormant oil treatment plus treated the first generation crawlers, you should be all set for the year. But for severe infestations, you should consider a single treatment soon according to the information below.

**Box Elder County:** September 7

**Cache, Wasatch counties:** no second generation

**Carbon, Uintah counties:** Sept. 12

**Davis County:** September 6

**Salt Lake County:** Aug. 26

**Utah County:** Aug. 26 (Orem) - Sept. 6 (American Fork) - Sept. 16 (Alpine)

**Weber County:** Sept. 3

### STONE FRUITS

#### Peach Twig Borer



Second generation egg hatch for most areas ends at the end of this month. About 10 days later, eggs of the third generation start hatching. If you will have harvested your peaches by then and/or have had very little damage in the past, you shouldn't need to make any treatments beyond the end of this month. But if you have a late peach variety and/or have had infestations in the past, you might consider an insecticide treatment that will last you through Sept. 15 (after which eggs will cease hatching).

You can monitor peach and nectarine fruit for injury now to determine the effectiveness of your treatment program. Look for small holes in the fruit, sometimes with a bit of frass that the larva pushes out. One larval entry per tree will warrant a spot treatment. Check the PHI (pre-harvest interval) of the product you are using as they can be up to 14 days.

## Insect and Disease Information, continued from previous page

### Western Cherry Fruit Fly

Commercial growers with fruit remaining on trees should consider a single post-harvest application (dimethoate). Cherry fruit fly emergence actually picks up later in the season, and females will continue to lay eggs in ripe/overripe fruit as long as possible. Protecting unharvested fruit is wise because you are decreasing the overwintering population in your orchard.

Homeowners should remove and destroy all fallen fruit, and if possible, pick your cherry trees clean to remove egg-laying sites for late-emerging fruit flies.

### Coryneum Blight

As peaches become softer, they are more susceptible to coryneum blight. Late infections may not show up until after fruit is picked, where you may notice circular, gray, sunken areas.



Look for current infections on your fruit, which are purplish spots with a red halo. Infections on the leaves are circular brown spots that drop out of the leaf. If you are seeing a lot of existing infections, be prepared to treat your orchard within 24 hours of rain. A single 4-hour rainfall is all that is needed.

### Phytophthora Crown and Collar Rot

Large trees that die suddenly at this time of year have probably been living with phytophthora infections much of the season. An infected tree has a limited ability to transport nutrients and the stress of heat, drought, and bearing fruit can result in a quick death. Trees that have lighter infections will show chronic symptoms, such as small, chlorotic leaves and fruit, poor growth, and early fall color.

*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 with the combination of saturated soils and a susceptible host. The following shows the susceptibility of various fruits:

**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 and Pears:** relatively resistant

**Peach and apricot:** susceptible, but not commonly seen in Utah



**Cherry:** susceptible to very susceptible; Mahaleb is the most susceptible cherry rootstock; Mazzard, Morello, and Colt are somewhat more resistant

To prevent infection, avoid planting trees in low spots 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.

Unfortunately, there is no "cure" for infected trees. Trees that show moderate symptoms may recover with a soil application of Ridomil Gold, which is usually made in spring (on non-bearing trees only). Asymptomatic trees growing adjacent to phytophthora-killed trees should be given a foliar treatment with phosphorus acid (Agri-Fos, Fosphite, others), which will help the tree(s) develop tolerance to future infection.

Removal of infected trees and sanitation is important. If possible, do not spread soil or infested debris from one area to another. Do not replant in an infested site without drenching the soil with fosetyl-AI (Aliette) as a preventative. Try to improve soil drainage, monitor soil moisture, and fix any irrigation leaks.

# Degree Day Accumulations and Insect Development

## Upcoming Monitoring/Insect Activity

Pest	Host(s)	DD/Monitoring Action
Spider mite	all	Look for stippled leaves closest to ground first; populations build in the heat
Western cherry fruit fly	cherry	Adults continue emerging through early fall (beyond harvest)
White apple leafhopper	apple, cherry	Look for nymph and adult activity; look for stippling on leaves
San Jose scale	apple mostly	Treat in late August - mid-September for 2nd generation crawlers
Codling moth	apple, pear	Third generation egg-hatch begins late August/early September
Peach twig borer	peach, nectarine	Third generation egg-hatch begins late August/early September

## Degree Day Accumulations and Insect Phenology

March 1 - Tuesday, August 10

County	Location	Codling Moth, 2nd Gen.			Peach Twig Borer, 2nd Gen.		
		DD (post biofix)	% Moth Flight	% Egg Hatch	DD (post biofix)	% Moth Flight	% Egg Hatch
Box Elder	Perry	1672	91	66	1521	97	65
	Tremonton	1388	56	18	1311	74	20
Cache	North Logan	1268	36	7	992	8	0
	Providence	1435	66	27	1078	19	1
	Smithfield	1281	39	8	1051	16	0
Carbon	Price	1683	91	66	1472	95	56
Davis	Kaysville	1633	88	60	1496	96	61
Grand	Castle Valley	2447	40 (3rd est.)	9 (3rd est.)	2295	68 (3rd)	22 (3rd)
Juab	Tintic	1328	46	11	1148	32	2
Salt Lake	Holladay	1735	94	74	1617	99	83
	West Valley City	1867	99	86	1737	0 (3rd)	95
Sevier	Richfield	1682	91	66	1611	99	83
Tooele	Erda	1568	81	46	1568	98	73
	Tooele	1720	93	71	1590	99	80
Uintah	Vernal	1590	85	53	1436	92	46
Utah	Alpine	1467	69	30	1253	61	11
	American Fork	1656	90	63	1484	95	56
	Genola	1675	91	66	1498	96	61
	Lincoln Point	1639	88	60	1475	95	56
	Orem	1790	97	81	1588	98	77
	Payson	1609	85	53	1467	94	51
	Provo	1768	95	76	1585	98	77
	Santaquin	1551	81	46	1376	84	32
	West Mountain	1491	77	36	1330	78	23
Weber	Pleasant View	1705	92	69	1469	94	51
Wasatch	Heber City	1205	26	3	966	4	0
Wayne	Capitol Reef	2053	8 (3rd)	97	1878	4 (3rd)	99

## Spray Timing - Codling Moth

Please check these chart each week for updated dates. These dates are forecasted using the average temperature for each site. Fruit should remain protected through each generation according to interval provided on pesticide label.

### Codling Moth, Second and Third Generations

The period of greatest egg hatch of the second generation occurs at 1320-1720 DD. End of egg hatch is at 2100 DD. A few eggs of the third generation will start to be laid at 2160 DD, a few days after the end of the second generation. Fruit in all areas should remain protected through approximately Sept. 15.

County	Location	Period of Greatest Egg Hatch	Egg Hatch Ends	Begin protecting fruit (if necessary)
<b>Box Elder</b>	Perry	July 28 - August 12	August 31	September 3
	Tremonton	August 7 - August 25	September 15	none
<b>Cache</b>	N. Logan	August 12 - September 3	September 15	none
	Providence	August 5 - August 25	September 15	none
	Smithfield	August 12 - August 30	September 15	none
<b>Carbon</b>	Price	July 25 - August 12	September 5	September 10
<b>Davis</b>	Kaysville	July 29 - August 14	August 30	September 2
<b>Grand</b>	Castle Valley	past	September 15 (3rd gen)	July 31
<b>Juab</b>	Tintic	August 9 - August 30	September 15	none
<b>Salt Lake</b>	Holladay	July 25 - August 9	August 23	August 26
	West Valley City	July 22 - August 5	August 19	August 21
<b>Sevier</b>	Richfield	July 26 - August 12	September 2	September 6
<b>Tooele</b>	Erda	August 1 - August 16	September 2	September 5
	Tooele	July 27 - August 10	August 25	August 28
<b>Uintah</b>	Vernal	July 29 - August 16	September 8	September 13
<b>Utah</b>	Alpine	August 3 - August 21	September 12	none
	American Fork	July 27 - August 13	August 30	September 2
	Genola	July 27 - August 12	August 29	September 1
	Lincoln Point	July 29 - August 13	August 31	September 3
	Orem	July 24 - August 7	August 22	August 25
	Payson	July 30 - August 15	August 31	September 4
	Provo	July 24 - August 8	August 23	August 26
	Santaquin	July 31 - August 17	September 5	September 8
	West Mountain	August 2 - August 19	September 7	September 10
<b>Weber</b>	Pleasant View	July 27 - August 11	August 26	August 29
<b>Wasatch</b>	Heber City	August 17 - September 13	September 15	none
<b>Wayne</b>	Capitol Reef	past	September 15 (3rd gen)	August 14

## Spray Timing - Peach Twig Borer

**Peach Twig Borer, Second and Third Generations:** Treatment for second generation egg hatch starts at 5% hatch, which is 1200 DD, and ends at 1880 DD. Third generation 5% egg hatch starts at 2140 DD. Maintain protection through Sept. 15.

County	Location	SECOND GENERATION		THIRD GEN
		Begin protecting fruit	Keep Fruit Protected Up Through this Date	Begin protecting fruit (if necessary)
<b>Box Elder</b>	Perry	past	August 27	September 12
	Tremonton	past	September 6	none
<b>Cache</b>	All Locations	August 17	September 15	none
<b>Carbon</b>	Price	past	September 4	none
<b>Davis</b>	Kaysville	past	August 26	September 8
<b>Grand</b>	Castle Valley	past	past	August 4
<b>Juab</b>	Tintic	August 12	September 15	none
<b>Salt Lake</b>	Holladay	past	August 20	August 30
	West Valley City	past	August 15	August 26
<b>Sevier</b>	Richfield	past	August 24	September 10
<b>Tooele</b>	Erda	past	August 23	September 4
	Tooele	past	August 22	September 3
<b>Uintah</b>	Vernal	past	September 4	none
<b>Utah</b>	Alpine	past	September 12	none
	American Fork	past	August 27	September 11
	Genola	past	August 27	September 10
	Lincoln Point	past	August 28	September 12
	Orem	past	August 22	September 2
	Payson	past	August 28	September 10
	Provo	past	August 22	September 2
	Santaquin	past	September 2	none
West Mountain	past	September 3	none	
<b>Weber</b>	Pleasant View	past	August 27	September 9
<b>Wasatch</b>	Heber City	August 24	September 15	none
<b>Wayne</b>	Capitol Reef	past	August 10	August 20



## Spray Materials - Commercial Applicators

Target Pest	Host	Chemical	Example Brands (Classification)	Amount per acre	REI	PHI	Comments
Codling moth	apple, pear	acetamiprid methoxyfenozide phosmet spinetoram thiacloprid rynaxypyr	Assail (4) Intrepid (18) Imidan (1) Delegate (5) Calypso (4) Altacor (28)	3.4 oz 16 oz 5.33 lbs 6-7 oz 4-8 oz 3.5-4.5	12 h 4 h 5 d 4 h 12 h 4 h	7 d 14 d 7 d 7 d 30 d 14 d	<ul style="list-style-type: none"> <li>for all products, ensure good coverage for effective control</li> <li><b>Altacor</b> and <b>Delegate</b> have shown to have good efficacy, and target eggs and larvae</li> </ul>
San Jose scale	apple	acetamiprid buprofezin imidacloprid lambda-cyhalothrin hort. oil	Assail Talus Provado Warrior variety	3.4 oz 34.5 oz 8 oz 1.3-2.5 oz 1%	12 h 12 h 12 h 24 h 4 h	7 d 14 d 7 d 21 d 0 d	
Woolly apple aphid	apple	acetamiprid diazinon endosulfan flonicamid	Assail Diazinon Thionex Beleaf	1.7 oz 4 lb 3-4 lb 2-2.8 oz	12 h 4 d 4 d 12 h	7 d 21 d 21 d 21 d	<b>Beleaf:</b> 21 day PHI
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 48 h 12 h 4 h	28 d 7 d 7 d 14 d 7 d	
Earwigs	peaches, nectarine	carbaryl	Sevin 4F	2-3 qts	12 h	3 d	
Greater peachtree borer	peach, nectarine, apricot	chlorpyrifos endosulfan esfenvalerate pemethrin	Lorsban Thionex Asana Pounce	see label see label see label 4-8 oz	4 d 4 d 12 h 12 h	14 d 21 d 14 d 14 d	<b>Lorsban:</b> max once/season; do not allow spray to touch foliage/fruit <b>Thionex:</b> max twice/season
Peach twig borer	peach, nectarine	chlorantraniliprole spinetoram spinosad methoxyfenozide phosmet	Altacor Delegate Success, Entrust Intrepid Imidan	3-4.5 oz 4.5-7 oz see label 8-16 oz 4 lb	4 h 4 h 4 h 4 h 4 d	 7 d 0 d 14 d 14 d	maintain residual through Sept. 15 <b>Delegate, Altacor:</b> apply at 14 day intervals

## Spray Materials - Residential Applicators

Note that these treatments are only recommended if you know you have the particular pest in your trees. We recommend learning about specific pests, and scouting your trees at least once/week.

Target Pest	Host	Chemical	Example Brands	Comments/Insecticide Mode of Action Group (group)
Codling moth	apple, pear	<i>Conventional</i> acetamiprid carbaryl malathion gamma-cyhalothrin bifenthrin  <i>Soft/organic</i> spinosad  codling moth virus	Ortho Max Flower, Fruit, and Veg. Sevin, Bonide Fruit Tree Spray, etc. Malathion Spectracide Triazicide Ortho Max Lawn and Garden  Green Light Lawn and Garden Spinosad; Gardens Alive Bull's Eye; Ferti-Lome Borer, Bagworm, Leafminer & Tent Caterpillar; Monterey Garden Insect Spray Virosoft, Cyd-X	maintain protection through Sept. 15  <b>acetamiprid:</b> every 14 days; group 4 <b>carbaryl:</b> every 14 - 21 days; group 1 <b>malathion:</b> every 7 days; group 1 <b>gamma-cyhalothrin:</b> every 14 days; group 3 <b>bifenthrin:</b> every 14 days; group 3 <b>spinosad:</b> every 7 days; group 5 <b>codling moth virus</b> can only be purchased online
San Jose scale	apple	bifenthrin carbaryl hort. oil imidacloprid neem oil	Ortho Bug-b-Gone Sevin variety Gordon's Professional Concern FTE	single application to crawlers
Greater peachtree borer	peach, nectarine, apricot	permethrin, bifenthrin  carbaryl	Bonide Eight, Ortho Bug-b-Gone, Green Light Borer Killer, Bonide Borer-Miner Killer, Enforcer Outdoor Insect Killer, Hi-Yield Broad Use Including Gardens; Lilly Miller Multi-Purpose Insect Spray, Spectracide Bug Stop Sevin, Bonide Fruit Tree Spray	<b>permethrin:</b> apply every 14-21 days until mid-September in highly infested areas; apply twice (now and one month later) in low infestations  <b>carbaryl:</b> must be applied every 7 days
Peach twig borer	peach, nectarine	<i>Conventional</i> acetamiprid carbaryl malathion permethrin  <i>Soft/organic</i> spinosad kaolin clay	Ortho Max Flower, Fruit & Veg Sevin, Bonide Fruit Tree Spray, etc. Malathion Basic Solutions Yard & Garden, Bonide Eight  see 'codling moth' above Surround	maintain protection through Sept. 15  <b>permethrin:</b> every 14 days; this ingredient is becoming less available in stores  <b>Surround:</b> every 3-5 days; works to repel, not kill insects; only moderate control; must purchase online
Walnut husk fly	walnut	carbaryl malathion pyrethrin spinosad ( <i>Soft/Organic</i> )	Sevin Malathion Concern Multi-Purpose see above	start applications now (as of July 14) and repeat every 7-14 days until 1 month before harvest.  mixing molasses with the Sevin or spinosad will be more effective

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### Tree Fruit IPM Advisory

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