

## News/What to Watch For:

- Continue protecting peach trunks from greater peachtree borer through September.
- Commercial growers: Good Luck on tart cherry harvest

## Insect and Disease Activity/Info

### STONE FRUITS

#### Peach Twig Borer



Most areas are still in between generations for egg hatch, and now is a good time to assess the population by looking for damage in peach trees. Larvae of the first generation feed in succulent shoots, so look for shoots where the top few leaves are wilted or dried up (called "shoot strikes"). Only the very top 0.5" or less of a shoot may be damaged. Two shoot strikes per tree will warrant treatment for the second generation.

If you are not seeing any injury on your peaches, you may be able to avoid late season sprays. In our monitoring traps in Box Elder and Utah counties, we have caught very few moths in most of the traps for the last several weeks.

In the warmer areas of northern Utah, sprays for the second generation egg hatch begin from today to the end of next week. Cooler areas (Cache, northern Box Elder counties) won't need to start until the third week of August.

#### Spider Mites



The spider mite species that cause damage to fruit trees in Utah are twospotted and McDaniel, with twospotted being the most common. They share the same life cycle and appear similar.

We are finding that spider mites are still low in numbers this year, mainly due to the long, cool spring we had and the presence of predatory mites. In Utah, the western predatory mite (*Galendromous occidentalis*) can provide a consistent level of biological control. They are very sensitive to chemicals such as pyrethroids, which is why we recommend keeping pyrethroid sprays to a minimum (especially early in the season).

Predatory mites are teardrop shaped, translucent in color, and usually have longer legs. They can be spotted easily with a hand lens because they move rapidly through the slower-moving spider mite colonies.

Continue to monitor for damage in the tree canopy. Leaves will be stippled with tiny white spots. Look at the undersides of leaves with a hand lens. If you can estimate approximately one predatory mite per leaf and/or fewer than 5-10 damaging mites per leaf, then there is no need to spray. At this time of year, apples can tolerate a higher population.

## Insect and Disease Information, continued from previous page

### Pear Sawfly



The pear sawfly is also called the pear slug because the larva is slug-shaped, and covered with a slimy green ooze. The adult is a small, shiny black fly. There are two generations per year of this pest, and larvae of the second generation are feeding now and into early September. After feeding, they drop to the ground to pupate for the winter.

Pear sawfly can sometimes be a pest in certain areas, but is mostly pretty rare. It feeds on pear, cherry, peach, or plum leaves. They typically only feed on the upper surface of the leaf, leaving the veins intact, skeletonizing the leaves. They generally do not cause economic harm, and do not need treatment, especially when they are feeding late in the season when the tree will be dropping the leaves soon, anyway. Larvae are very susceptible to most insecticides, and overwintering pupae can be killed in high numbers in cold winters.

### Stink Bugs



Most cat-facing bugs enter the orchard as adults in mid to late summer to feed. They breed in other habitats (primarily weeds, field crops or wooded areas). If possible, remove weed hosts in the orchard (mullein, ironweed, horse-weed) or keep them mown within and on orchard edges.

The newer products for peach twig borer control (Intrepid, Delegate, Altacor, Belt) are not as effective on cat-facing bugs. Unfortunately, the broad spectrum insecticides (carbaryl and pyrethroids) are the most effective on the adults. You just need to balance cost of injury versus cost of spray versus cost of killing beneficial insects.

Feeding by stink bugs in mid-season will cause strings of oozing gum and a water-soaked appearance. Fruit can also appear dimpled from multiple probing and feeding. (Severely dimpled fruit indicates feeding earlier in the season.) Feeding closer to harvest does not cause gumming, and may not be noticeable until seeing the damaged flesh, which will appear as brown and corky or even decayed. Sometimes, injury does not show up until fruit is brought out of storage.

It is difficult to determine the presence of stink bugs because of their elusive nature, but if you have had damage in the past, consider keeping a close eye out for adults in the orchard. By late-August, stink bugs move on to overwintering sites.

### Western Cherry Fruit Fly



Tart cherry harvest began this week, and will continue for another few weeks. If sprays need to be applied, consider spinosad (or GF-120) or carbaryl (Sevin) where the pre-harvest interval is short (0 days or 3 days).

After harvest is finished, commercial growers that still have fruit remaining on the trees may want to consider a post-harvest application (dimethoate is one option). 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 (including sweet cherries), and if possible, pick your cherry trees clean to remove egg-laying sites for late-emerging fruit flies.

# Degree Day Accumulations and Insect Development

## Upcoming Monitoring/Insect Activity

Pest	Host(s)	DD/Monitoring Action
Spider mite	all fruit trees	Populations build in hot, dry weather
Codling moth	apple fruit	Second generation begins late July/early August
Peach twig borer	peach, nectarine, apricot	Second generation egg hatch begins late July/mid-August
Peach powdery mildew	peach	Look for powdery lesions (peach powdery mildew) or rust-colored lesions (apple powdery mildew)
Cherry powdery mildew	cherry	Look for small white lesions on new foliage at shoot terminals
Western cherry fruit fly	cherry	Adult flies will be emerging and laying eggs through September (after harvest)

## Degree Day Accumulations and Pest Phenology, through July 28

Click [here](#) for information about degree days.

County	Location	Codling Moth (1st Generation)			Peach Twig Borer (1st Generation)		
		DD (post biofix)	% Moth Flight	% Egg Hatch	DD (post biofix)	% Moth Flight	% Egg Hatch
Box Elder	Perry	1245	34	5	1013	12	0
	Tremonton	974	3	99	---	---	---
Cache	River Heights	1020	6	100	684	0	96
	Smithfield	953	2	99	625	0	91
Carbon	Price	1126	16	1	821	0	0
Davis	Kaysville	1187	24	3	990	7	0
Grand	Castle Valley	1997	4	95	1597	99	80
Iron	Cedar City	1126	16	1	977	6	0
Salt Lake	Holladay	1197	26	3	1008	8	0
	West Valley City	1345	51	14	1156	35	2
	West Jordan	1254	34	6	---	---	---
Tooele	Erda	1159	26	3	1063	17	0
	Tooele	1254	34	6	1184	42	4
Uintah	Vernal	1162	21	2	918	2	0
Utah	Alpine	986	4	99	611	89	0
	American Fork	1132	16	1	970	5	0
	Genola	1284	40	8	927	2	0
	Goshen	807	100	95	560	0	80
	Lincoln Point	1194	25	3	1060	16	0
	Lindon	1248	35	7	993	7	0
	Provo	---	---	---	1047	14	0
	Payson	1160	20	2	---	---	---
	Santaquin-West	1147	19	2	718	0	98
West Mountain	1129	16	1	---	---	---	
Weber	Pleasant View	1246	34	6	1039	13	0
Wasatch	Heber City	844	0	97	---	---	---
Wayne	Capitol Reef	1077	11	0	---	---	---

## Spray Timing

**Codling Moth** - Continue to apply your chosen material(s) at the interval provided on the label. Make sure fruit is well protected during the period of greatest egg hatch. You do not need to spray between generations.

County	Location	Keep Fruit Protected up To: (1020 DD)	Second Generation (1120)	Period of Greatest Egg Hatch: 2nd Generation (1320-1720)	Keep Fruit Protected up To: (2140 DD)
<b>Box Elder</b>	Perry	past	---	Aug 3 - Aug 21	Sept 10
	Tremonton	past	Aug 2	Aug 11 - Aug 29	Sept 29
<b>Cache</b>	River Heights	past	Aug 1	Aug 10 - Aug 31	Oct 13
	Smithfield	July 31	Aug 3	Aug 12 - Aug 31	Oct 7
<b>Carbon</b>	Price	past	Aug 2	Aug 6 - Aug 30	Oct 28
<b>Davis</b>	Kaysville	past	---	Aug 2 - Aug 18	Sept 7
<b>Grand</b>	Castle Valley	past	---	---	Aug 2
<b>Iron</b>	Cedar City	past	---	Aug 5 - Aug 22	Sept 16
<b>Salt Lake</b>	Holladay	past	---	Aug 1 - Aug 15	Sept 1
	West Valley City	past	---	July 27 - Aug 11	Aug 27
	West Jordan	past	---	July 30 - Aug 14	Sept 1
<b>Tooele</b>	Erda	past	---	Aug 3 - Aug 18	Sept 7
	Tooele	past	---	July 30 - Aug 14	Sept 2
<b>Uintah</b>	Vernal	past	---	Aug 4 - Aug 24	Sept 26
<b>Utah</b>	Alpine	past	Aug 2	Aug 11 - Aug 30	Sept 30
	American Fork	past	---	Aug 4 - Aug 21	Sept 12
	Genola	past	---	July 29 - Aug 14	Sept 3
	Goshen	Aug 5	Aug 9	Aug 18 - Sept 7	Oct 13
	Lincoln Point	past	---	Aug 2 - Aug 18	Sept 9
	Lindon	past	---	July 30 - Aug 15	Sept 1
	Payson	past	---	Aug 2 - Aug 18	Sept 8
	Santaquin	past	---	Aug 4 - Aug 20	Sept 12
West Mountain	past	---	Aug 4 - Aug 20	Sept 10	
<b>Weber</b>	Pleasant View	past	---	July 30 - Aug 14	Sept 2
<b>Wasatch</b>	Heber City	Aug 6	Aug 12	Aug 24 - Sept 26	Oct 30
<b>Wayne</b>	Capitol Reef	past	July 29	Aug 6 - Aug 21	Sept 9

## Spray Timing

**Peach Twig Borer** - End of egg hatch, where you should “keep fruit protected up to” is at 800 degree days. The second generation egg hatch (5%) starts at 1200 DD. End of second generation egg hatch, where you should “keep fruit protected up to” is at 1900 degree days.

County	Location	Keep Fruit Protected Up To: (800DD)	Start sprays, 2nd Generation (1200 DD)	Keep Fruit Protected Up To: (1900 DD)
<b>Box Elder</b>	Perry	past	Aug 5	Sept 9
<b>Cache</b>	River Heights	Aug 2	Aug 21	Oct 30
	Smithfield	Aug 4	Aug 21	Oct 31
<b>Davis</b>	Kaysville	past	Aug 5	Sept 4
<b>Grand</b>	Castle Valley	past	---	Aug 8
<b>Iron</b>	Cedar City	past	Aug 6	Sept 10
<b>Salt Lake</b>	Holladay	past	Aug 3	Aug 29
	West Valley City	past	July 29	Aug 25
<b>Tooele</b>	Erda	past	Aug 2	Aug 30
	Tooele	past	---	Aug 25
<b>Uintah</b>	Vernal	past	Aug 10	Sept 26
<b>Utah</b>	Alpine	Aug 5	Aug 22	Oct 21
	American Fork	past	Aug 6	Sept 7
	Genola	past	Aug 7	Sept 10
	Goshen	Aug 6	Aug 24	Oct 14
	Lincoln Point	past	Aug 2	Sept 2
	Lindon	past	Aug 4	Sept 2
	Provo	past	Aug 2	Aug 30
	Santaquin	July 31	Aug 16	Sept 27
<b>Weber</b>	Pleasant View	past	Aug 3	Sept 1

## Spray Materials - Commercial Applicators

The options provided below are not all-inclusive and are not endorsements of USU. Please check the label before mixing.

Target Pest	Host	Example Brands	Chemical	Amount per acre	REI	Comments
Codling Moth	apple	Altacor 35WDG	chlorantraniliprole	3.0-4.5 oz	4 h	re-apply based on product interval through each generation until harvest on Sept. 15
		Assail	acetamiprid	1.7-3.4 oz	12 h	
		Belt SC	flubendiamide	5 oz	12 h	
		Delegate 25WG	spinetoram	6-7 oz	4 h	
		Imidan 70W	phosmet	3.5-5.3 lbs	3 d	
		Voliam Flexi	thiamethoxam + chlorantraniliprole	4-7 oz	12 h	
Woolly apple aphid	apple	Assail	acetamiprid	1.7 oz	12 h	apply post bloom only if scouting shows that this pest is present
		Beleaf	flonicamid	2-2.8 oz	12 h	
		Calypso	thiacloprid	2-4 oz	12 h	
		Clutch	clothianidin	2-3 oz	12 h	
		Admire Pro; generics	imidacloprid	see label	12 h	
Peach twig borer	peach, nectarine	Belt	flubendiamide	3-4 oz	12 h	reapply based on protection interval until harvest
		Altacor	chlorantraniliprole	3.0-4.5 oz	12 h	
		Delegate	imidacloprid	4.5-7.0 oz	12 h	
		Imidan	phosmet	4.25 lbs	12 h	
		Voliam Flexi	thiamethoxam+ chlorantraniliprole	4-7 oz	12 h	
Greater peachtree borer	peach, nectarine, apricot	chlorpyrifos	Lorsban	see label	4 d	<b>Lorsban:</b> max once/season; do not allow spray to touch foliage/fruit <b>Thionex:</b> max twice/season
		endosulfan	Thionex	see label	4 d	
		esfenvalerate	Asana	see label	12 h	
		pemethrin	Pounce	4-8 oz	12 h	
Powdery mildew	peach	Adament	tebuconazole+ trifloxystrobin	4-8 oz	4 h	monitor fruit and leaves for powdery mildew and only apply if necessary; chance of fruit infection decreases after pit hardening
		Abound	azoxystrobin	11-15 oz	12 h	
		Orbit, Tilt	propiconazole	4 oz	4 h	
		Pristine	boscalid+ pyraclostrobin	2-2.4 oz	12 h	
Stink Bugs	apple, peach	Asana	esfenvalerate	see label	12 h	apply as needed after scouting; Asana PHI: 14 d peach, 21 d apple Beleaf PHI: 14 d peach, 21 d apple
		Beleaf	flonicamid	2-2.8 oz	12 h	
Western Cherry Fruit fly	cherry	GF-120	spinosad+bait	10-20 oz	4 h	apply as needed up to 0 days (GF-120) or 3 days (Sevin) to harvest
		Sevin	carbaryl	see label	12 h	

## 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
Codling moth	apple, pear	<i>Conventional</i>		<b>acetamiprid:</b> every 14 days <b>carbaryl:</b> every 14 - 21 days <b>malathion:</b> every 7 days <b>gamma-cyhalothrin:</b> every 14 days <b>bifenthrin:</b> every 14 days <b>hort. oil:</b> lasts 5-7 days for killing eggs; use at beginning of each generation; apply at 1% rate only when temperatures are below 80; follow up with a different product <b>spinosad:</b> every 7 days
		carbaryl	Sevin, Bonide Fruit Tree Spray, etc.	
		acetamiprid	Ortho Max Flower, Fruit, and Veg.,	
		malathion	Malathion	
		gamma-cyhalothrin	Spectracide Triazicide	
		bifenthrin	Ortho Max Garden Insect Killer	
		<i>Soft/organic</i>		
		hort. oil (1%)	Many products	
	spinosad	Green Light, Gardens Alive Bull's Eye		
Peach twig borer	peach, nectarine	<i>Conventional</i>		see comments under Codling Moth  <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
		acetamiprid	Ortho Max Flower, Fruit & Veg	
		carbaryl	Sevin, Bonide Fruit Tree Spray, etc.	
		malathion	Malathion	
		permethrin	Basic Solutions Yard & Garden	
		<i>Soft/organic</i>		
		spinosad	see 'codling moth' above	
	kaolin clay	Surround		
Greater peachtree borer	peach, nectarine, apricot	permethrin, bifenthrin	variety	<b>permethrin:</b> apply every 14-21 days until mid-September <b>carbaryl:</b> must be applied every 7 days
		carbaryl	Sevin, Bonide Fruit Tree Spray	
Powdery mildew	all fruit trees	bayleton	Bonide	do not apply lime sulfur when temperature is over 75 degrees F. <b>Neem oil</b> and <b>Kaligreen</b> are organic options
		lime sulfur	Lilly Miller	
		propiconazole	Ferti-Lome	
		neem oil	Garden Safe	

**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.

### Tree Fruit IPM Advisory

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