

## News/What to Watch For:

Insect activity (codling moth, fruitworm, aphids, leafhopper, and beneficials) continues to be at a low due to cold weather.

Watch for powdery mildew lesions on apple, cherry, and peach leaves.

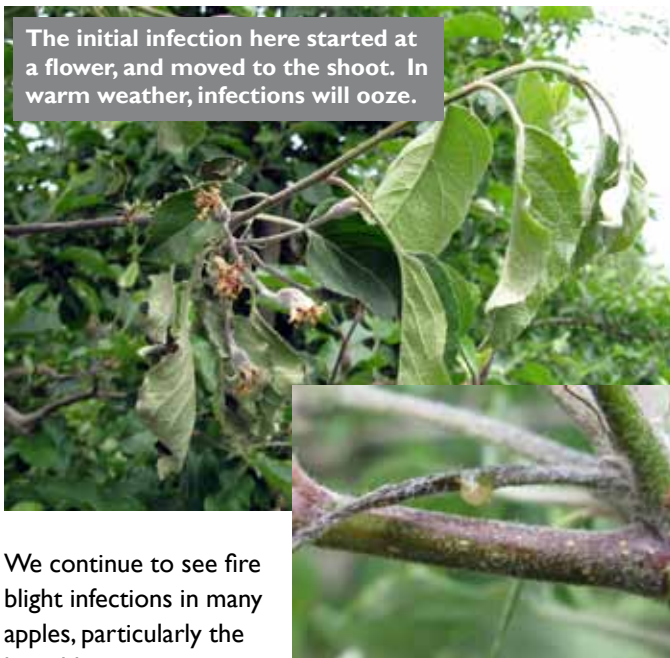
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## Insect and Disease Activity/Info

### APPLES/PEARS

#### Fire Blight

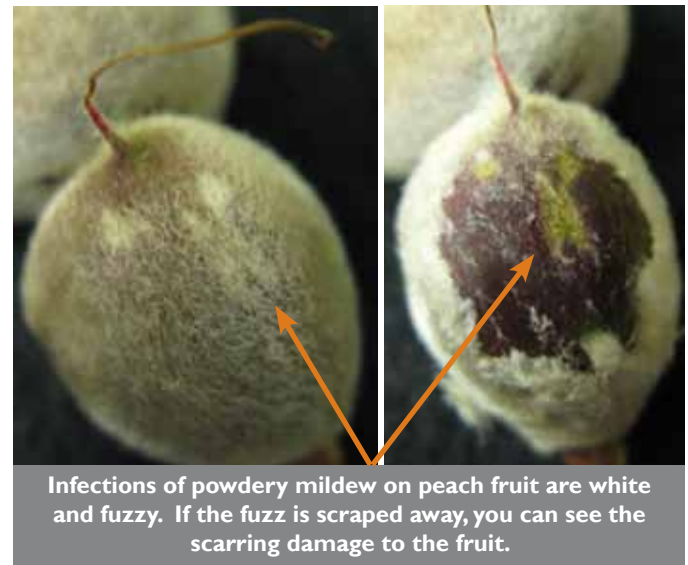


We continue to see fire blight infections in many apples, particularly the later blooming varieties. Keep ahead of infections now (by pruning them out in dry weather) to prevent a bigger fire blight problem later. If you can check your trees daily, all the better.

Young trees (up to 8 years) should get special attention. Old trees with heavy infections should probably be pruned in winter. A heavy pruning now could stimulate new shoot growth that is susceptible to infection.

### STONE FRUITS

#### Powdery Mildew



The powdery mildew that infects apple foliage can also affect peach fruit (but not peach foliage). Usually fruit is only susceptible to new infections up until pit hardening. Infected areas appear as white fuzzy lesions that eventually turn a rusty brown with a web-like pattern.

#### Pacific Flatheaded Borer

Flatheaded borers can attack all species of fruit trees, their preference being weak, stressed, or injured trees. The pacific flatheaded borer is the most common flatheaded borer in the West. In northern Utah, adults of this species will begin emerging from their pupation sites within infested trees in early to mid June, and continue for about a month.

## Insect and Disease Information, continued from previous page



Adults seek out trees that are stressed, dying, are newly transplanted, or that have large bark wounds (from sunscald, for example). They lay eggs on the lower bark surface, and larvae tunnel through the bark and then meander through the phloem and outer xylem tissue until mature. If a healthy tree is attacked, the borer will likely be killed by a vigorous flow of sap.



The key for borer management is prevention:

- keeping trees at optimal health
- remove infested trees
- protect trunks from winter sunscald with paint or wrap
- keep weeds and grass away from the base of the trunk
- According to Washington State University, females will only lay eggs in direct sun on the lower trunk. Using something that shades the trunk most of the summer will prevent egg laying. Options include tree wrap, cloth, or burlap, applied loosely.

Trees at risk such as young fruit trees near infested trees, trees stressed by drought, and trees with wounded bark may require preventive insecticide sprays. The spray is applied to the bark to kill hatching larvae. Spray the trunk up to the lower limbs about June 1 and again on July 1.

# Degree Day Accumulations and Insect Development

## Upcoming Monitoring/Insect Activity

Pest	Host(s)	DD/Monitoring Action
Apple powdery mildew	apple	Look for small white lesions on new foliage
Cherry powdery mildew	cherry	Look for small white lesions on new foliage near the base and interior of the tree
White apple leafhopper	apple	Look for nymph and adult activity on undersides of leaves
Codling moth	apple, pear	Egg-hatch continues through late June/early July
Western cherry fruit fly	cherry	First flies appear on yellow sticky traps in early June; treat when fruit develops salmon blush color
Peach twig borer	peach, nectarine	First flight early to mid June
Flatheaded appletree borer	apple, pear (uncommon)	Adults start emerging early June
San Jose scale	apple mostly	Crawlers hatch early June; treat in late June

## Degree Day Accumulations and Pest Phenology, through June 2

County	Location	GDD (50)	Codling Moth		
			DD (post biofix)	% Moth Flight	% Egg Hatch
<b>Box Elder</b>	Perry	---	121	19	0
	Tremonton	229	---	---	---
<b>Cache</b>	North Logan	220	---	---	---
	Providence	---	80	10	0
	Smithfield	196	---	---	---
<b>Carbon</b>	Price	---	145	24	0
<b>Davis</b>	Kaysville	---	124	19	0
<b>Grand</b>	Castle Valley	---	396	77	30
<b>Juab</b>	Tintic	---	68	8	0
<b>Salt Lake</b>	Holladay	---	162	29	0
	West Valley City	---	178	35	0
<b>Sevier</b>	Richfield	---	127	21	0
<b>Tooele</b>	Erda	---	15		---
	Tooele	---	98	15	0
<b>Uintah</b>	Vernal	---	138	24	0
<b>Utah</b>	Alpine	---	92	13	0
	American Fork	---	158	29	0
	Genola	---	161	29	0
	Lincoln Point	---	131	22	0
	Orem	---	165	30	0
	Payson	---	128	21	0
	Provo	---	167	30	0
	Santaquin	---	144	25	0
West Mountain	---	146	25	0	
<b>Weber</b>	Pleasant View	---	152	27	0
<b>Wasatch</b>	Heber City	204	---	---	---
<b>Wayne</b>	Capitol Reef	---	287	56	4

## Spray Timing

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, First Generation

Most residential growers should start sprays at the “traditional start date,” unless you choose to use horticultural oil at 200 DD. The period of greatest egg hatch occurs from 340 DD - 640 DD.

County	Location	<i>If using oil for early ovicide</i>		Traditional Start Date (1% egg hatch)	Period of Greatest Egg Hatch (340-640 DD)
		Apply Oil (200 DD)	Apply delayed 1st cover (350 DD)		
Box Elder	Perry	June 7	June 17	June 8	June 16 - July 2
	Tremonton				
Cache	N. Logan				
	Providence	June 11	June 22	June 13	June 21 - July 8
	Smithfield				
Carbon	Price	June 7	June 19	June 9	June 19 - July 7
Davis	Kaysville	June 6	June 15	June 7	June 14 - June 29
Grand	Castle Valley	---	---	---	May 29 - June 13
Juab	Tintic	June 11	June 21	June 13	June 20 - July 6
Salt Lake	Holladay	June 3	June 11	June 4	June 11 - June 25
	West Valley City	June 2	June 12	June 4	June 11 - June 26
Sevier	Richfield	June 7	June 17	June 8	June 17 - July 4
Tooele	Erda	June 14	June 22	June 15	June 22 - July 4
	Tooele	June 8	June 16	June 9	June 16 - June 30
Uintah	Vernal	June 6	June 16	June 7	June 15 - July 2
Utah	Alpine	June 9	June 19	June 10	June 18 - July 4
	American Fork	June 4	June 14	June 5	June 13 - June 29
	Genola	June 4	June 14	June 5	June 13 - June 29
	Lincoln Point	June 8	June 16	June 8	June 15 - July 1
	Orem	June 3	June 11	June 4	June 11 - June 25
	Payson	June 6	June 14	June 7	June 14 - June 28
	Provo	June 3	June 12	June 4	June 11 - June 26
	Santaquin	June 5	June 15	June 7	June 14 - June 30
West Mountain	June 5	June 13	June 6	June 13 - June 28	
Weber	Pleasant View	June 4	June 13	June 6	June 13 - June 28
Wasatch	Heber City				
Wayne	Capitol Reef	May 27	June 5	May 28	June 4 - June 19

## Spray Materials - Commercial Applicators

**NOTE:** If your trees are in bloom, we do not recommend applying any pesticides unless you are controlling fire blight with antibiotics. Although it is OK to use “softer” materials such as Bt or spinosad during bloom, we still recommend either: waiting until the petal fall stage or applying at dawn or dusk when pollinators are not active.

Target Pest	Host	Chemical	Example Brands	Amount per acre	REI	Comments
Codling moth	apple, pear	hort. oil acetamiprid deltamethrin methoxyfenozide phosmet spinetoram thiacloprid rynaxypyr codling moth virus	variety Assail Battalion Intrepid Imidan Delegate Calypso Altacor Virosoft, etc	see label 3.4 oz 7-14 oz 16 oz 5.33 lbs 6-7 oz 4-8 oz 3.5-4.5 ---	12 h 12 h 4 h 5 d 4 h 12 h ---	<ul style="list-style-type: none"> <li>for all products, ensure good coverage for effective control</li> <li><b>hort. oil</b> works on eggs only</li> <li><b>codling moth virus</b> must be applied every 7 days</li> <li><b>Altacor</b> and <b>Delegate</b> have shown to have good efficacy, and target eggs and larvae</li> </ul>
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	rotate among chemical classes to prevent resistance
Green peach aphid	peach, nectarine	acetamiprid imidacloprid	Assail Provado	8 oz 4-8 oz	12 h 12 h	
Lygus bug	peaches	azadirachtin beta-cyfluthrin cyfluthrin pyrethrin	Aza-Direct Baythroid Tombstone Pyganic	1-2 pints 2-2.4 oz 2-2.4 oz 4..5-18	4 h 12 h 12 h 4 h	OMRI certified organic restricted use product restricted use product OMRI certified organic
Powdery mildew	peach	azoxystrobin potassium bicarbonate trifloxystrobin pyraclostrobin + boscalid sulfur products	Abound Kaligreen Gem Pristine  variety	11-15 oz 2.5-3 lb 4-8 oz 10.5-14.5 oz  see label		
Pacific flatheaded appletree borer	all fruit trees	esfenvalerate pyrethrin	Asana Pyganic	see label see label	4 h	sprays usually not necessary in commercial orchards  Pyganic: OMRI organic

## 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> carbaryl acetamiprid malathion gamma-cyhalothrin bifenthrin  <i>Soft/organic</i> hort. oil (1%) spinosad  codling moth virus	Sevin, Bonide Fruit Tree Spray, etc. Ortho Max Flower, Fruit, and Veg., Malathion Spectracide Triazicide Ortho Max Lawn and Garden Insect Killer  Many products Green Light, Gardens Alive Bull's Eye Virosoft, Cyd-X	<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 <b>codling moth virus</b> can only be purchased online
White apple leafhopper	apple	imidacloprid acetamiprid	Ortho Max Tree and Shrub Ortho Max Flower, Fruit and Veg.	one application when nymphs are first noticed in spring
Powdery mildew	apple	<i>Conventional</i> bayleton propiconazole  <i>Soft/organic</i> lime sulfur neem oil potassium bicarbonate	Lilly Miller Ferti-Lome  Bonide Garden Safe Kaligreen	do not apply lime sulfur when temperature is over 75 degrees F
Fire blight	apple, pear			Do not use antibiotics on trees after bloom; they are ineffective. Management for fire blight through the summer entails pruning out new infections only.
Pacific flatheaded borer	all fruit trees	<i>Conventional</i> carbaryl imidacloprid permethrin	Sevin Bayer Advanced Tree & Shrub Spectracide	<b>carbaryl and permethrin:</b> apply 1 to 3 applications at 2-4 weeks apart, depending on severity  <b>imidacloprid:</b> only on apples; apply once as a drench in spring

**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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