

News/What to Watch For:

Watch for two-spotted spider mites starting in the lowest leaves when warmer weather comes
Watch for powdery mildew lesions on peach fruit
When the first cherries start coloring to a salmon blush color, start treating for cherry fruit fly
Spray timing (codling moth and peach twig borer), pages 3-4
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Insect and Disease Activity/Info

APPLES/PEARS

Woolly Apple Aphid



Woolly apple aphids (WAA) are starting to show up in the lower canopy of trees in northern Utah. (Last year, we started seeing them on May 28). They overwinter in the tree canopy as well as on the roots. As they form colonies, they excrete a white waxy coating that appears cotton-like. Colonies right now are small, but if left untreated, they will start to become more noticeable toward the end of July. When their populations have increased to large colonies, they are more difficult to treat because the wax protects them from chemicals and predators.

Start looking for them now, especially if you have root suckers at the base of the tree. You may find them in curled leaves with the green apple aphid, or on stems. They may also be congregated at the graft junction. In the canopy of the tree, look first around the callus of old pruning scars or on other

wounds, which are places where they prefer to overwinter. Eventually they will move to more succulent twig tissue.

Insecticides available for WAA control are contact sprays and should be applied when the colonies first become visible in the tree. They should be applied with a high volume to penetrate the waxy coverings, and thorough coverage to dripping.

White Apple Leafhopper



Leafhoppers are now showing up some apple trees. There are two generations of leafhopper per year. Although the first generation is fairly small, and foliar damage is rarely noticed, the second generation density in late summer can be quite large. Apple trees can tolerate a large population (more than 6 nymphs/leaf) before any damage occurs to fruit, but hopping and flying insects can be a nuisance during harvest.

Look for leafhoppers by examining leaves for typical damage (a yellow stippling pattern along the leaf veins) and turning them over to see nymphs. (Nymphs will remain on leaves while adults will fly away when disturbed.) You may also notice cast skins, which are left behind after molting (shown above).

Degree Day Accumulations and Insect Development

Upcoming Monitoring/Insect Activity

Pest	Host(s)	DD/Monitoring Action
Codling moth- 1st. Gen	apple, pear	Egg-hatch continues through late June/early July
San Jose scale	apple mostly	Crawlers hatch early June; treat in late June
White apple leafhopper	apple	Look for nymph and adult activity on undersides of leaves
Cherry powdery mildew	cherry	Look for small white lesions on new foliage near the interior of the tree
Western cherry fruit fly	cherry	Treat when fruit develops salmon blush color
Pear psylla	pear	Second generation egg hatch begins last week of June
Peach twig borer- 1st Gen.	peach, nectarine	Egg hatch begins approximately late June
Spider mites	all	Look for activity on lower interior leaves when weather gets hot

Degree Day Accumulations and Insect Phenology

March 1 - Wednesday, June 16

County	Location	Codling Moth, 1st Gen.			Peach Twig Borer, 1st Gen.		
		DD (post biofix)	% Moth Flight	% Egg Hatch	DD (post biofix)	% Moth Flight	% Egg Hatch
Box Elder	Perry	320	63	9	169	26	0
	Tremonton	146	24	0	-	-	-
Cache	North Logan	173	35	0	-	-	-
	Providence	250	51	3	-	-	-
	Smithfield	128	20	0	-	-	-
Carbon	Price	446	83	40	-	-	-
Davis	Kaysville	327	63	9	191	38	0
Grand	Castle Valley	783	100	94	630	100	92
Juab	Tintic	245	50	2	65	5	0
Salt Lake	Holladay	383	73	25	265	64	2
	West Valley City	413	80	35	282	70	3
Sevier	Richfield	392	77	30	321	81	8
Tooele	Erda	197	40	0	197	38	0
	Tooele	300	59	6	169	30	0
Uintah	Vernal	385	73	25	231	53	1
Utah	Alpine	294	59	6	80	7	0
	American Fork	387	73	25	215	42	1
	Genola	398	77	30	221	49	1
	Lincoln Point	350	65	11	186	34	0
	Orem	409	77	30	207	38	0
	Payson	351	65	11	209	41	0
	Provo	412	80	35	230	53	1
	Santaquin	349	68	14	174	30	0
	West Mountain	358	70	20	197	38	0
Weber	Pleasant View	345	67	12	109	12	0
Wasatch	Heber City	147	24	0	-	-	-
Wayne	Capitol Reef	618	97	77	443	97	42

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, First Generation

Most residential growers should start sprays at the “standard start date,” unless you choose to use horticultural oil at 200 DD. The period of greatest egg hatch occurs from 340 DD - 640 DD. Egg hatch for the first generation ends at 920 DD.

County	Location	<i>If using oil for early ovicide</i>		Standard Start Date (1% egg hatch)	Period of Greatest Egg Hatch (340-640 DD)	Egg Hatch Ends
		Apply Oil (200 DD)	Apply delayed 1st cover (350 DD)			
Box Elder	Perry	past	June 18	past	June 17 - July 3	July 16
	Tremonton	June 19	June 27	June 20	June 27 - July 10	July 22
Cache	N. Logan	June 18	June 27	June 19	June 27 - July 12	July 25
	Providence	past	June 23	past	June 22 - July 9	July 22
	Smithfield	June 21	June 29	June 22	June 28 - July 12	July 24
Carbon	Price	past	past	past	June 8 - June 29	July 15
Davis	Kaysville	past	June 17	past	June 17 - July 1	July 12
Grand	Castle Valley	past	past	past	past	June 22
Juab	Tintic	past	June 22	past	June 22 - July 8	July 21
Salt Lake	Holladay	past	past	past	June 13 - June 27	July 8
	West Valley City	past	past	past	June 9 - June 27	July 8
Sevier	Richfield	past	past	past	June 11 - July 1	July 15
Tooele	Erda	past	June 24	June 17	June 23 - July 6	July 17
	Tooele	past	June 19	past	June 18 - July 2	July 13
Uintah	Vernal	past	past	past	June 12 - June 30	July 14
	Alpine	past	June 19	past	June 19 - July 4	July 17
Utah	American Fork	past	past	past	June 12 - June 29	July 11
	Genola	past	past	past	June 10 - June 29	July 11
	Lincoln Point	past	past	past	June 15 - July 1	July 13
	Orem	past	past	past	June 9 - June 26	July 8
	Payson	past	past	past	June 15 - June 30	July 11
	Provo	past	past	past	June 9 - June 27	July 8
	Santaquin	past	past	past	June 15 - July 1	July 13
	West Mountain	past	past	past	June 15 - June 29	July 11
Weber	Pleasant View	past	past	past	June 16 - June 30	July 11
Wasatch	Heber City	June 21	June 30	June 20	June 29 - July 17	August 1
Wayne	Capitol Reef	past	past	past	June 3 - June 17	June 28

Spray Timing - Peach Twig Borer

Peach Twig Borer, First 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 300 and 360 degree days after biofix, or 5% and 16% egg hatch. End of egg hatch, where you should "keep fruit protected up to" is at 800 degree days.

County	Location	Start Date (large population)	Start Date (small population)	Keep Fruit Protected Up To:
Box Elder	Perry	June 23	June 27	July 17
	Tremonton	-	-	-
Cache	N. Logan	-	-	-
	Providence	-	-	-
	Smithfield	-	-	-
Carbon	Price			
Davis	Kaysville	June 22	June 24	July 13
Grand	Castle Valley	past	past	June 23
Juab	Tintic	June 30	July 3	July 23
Salt Lake	Holladay	June 18	June 20	July 8
	West Valley City	June 17	June 20	July 9
Sevier	Richfield	June 15	June 18	July 12
Tooele	Erda	June 21	June 24	July 12
	Tooele	June 22	June 25	July 13
Uintah	Vernal	June 20	June 24	July 16
	Alpine	June 28	July 1	July 21
	American Fork	June 21	June 24	July 13
	Genola	June 20	June 24	July 6
	Lincoln Point	June 22	June 25	July 14
	Orem	June 20	June 23	July 11
	Payson	June 21	June 23	July 12
	Provo	June 19	June 22	July 11
Utah	Santaquin	June 23	June 26	July 15
	West Mountain	June 21	June 24	July 13
	Pleasant View	June 25	June 28	July 15
	Heber City	-	-	-
	Capitol Reef	past	past	July 1

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 (Classification)	Amount per acre	REI	Comments
Codling moth	apple, pear	hort. oil	variety	see label		<ul style="list-style-type: none"> for all products, ensure good coverage for effective control hort. oil works on eggs only codling moth virus must be applied every 7 days Altacor and Delegate have shown to have good efficacy, and target eggs and larvae
		acetamiprid	Assail	3.4 oz	12 h	
		deltamethrin	Battalion	7-14 oz	12 h	
		methoxyfenozide	Intrepid	16 oz	4 h	
		phosmet	Imidan	5.33 lbs	5 d	
		spinetoram	Delegate	6-7 oz	4 h	
		thiacloprid	Calypso	4-8 oz	12 h	
		rynaxypyr	Altacor	3.5-4.5		
		codling moth virus	Virosoft, etc	---	---	
Powdery mildew	apple	potassium bicarbonate	Kaligreen	2.5-3 lb	4 h	rotate among chemical classes to prevent resistance
		myclobutanil	Rally (3)	5 oz	24 h	
		trifloxystrobin	Flint (11)	2-2.5 oz	12 h	
		triflumizole	Procure (3)	8-16 oz	12 h	
		fenarimol	Rubigan (3)	12 oz	12 h	
		boscalid/pyraclostrobin	Pristine (7+11)	14.5-18 oz	12 h	
Woolly apple aphid	apple	acetamiprid	Assail	1.7 oz		Beleaf: 21 day PHI Admire: soil application only; 21-day PHI
		carbaryl	Sevin	1.5-3 qt	12 h	
		diazinon	Diazinon	4 lb	4 d	
		endosulfan	Thionex	3-4 lb	4 d	
		flonicamid	Beleaf	2-2.8 oz	12 h	
		imidacloprid	Admire	7-10.5 oz	12 h	
Peach twig borer	peach, nectarine	Bt	Dipel, Foray	see label	4 h	begin sprays according to spray timing table on previous page; maintain residual through end of egg hatch Delegate, Altacor: apply at 14 day intervals
		chlorantraniliprole	Altacor	3-4.5 oz	4 h	
		spinetoram	Delegate	4.5-7 oz	4 h	
		spinosad	Success, Entrust	see label	4 h	
		methoxyfenozide	Intrepid	8-16 oz	4 h	
		endosulfan	Thionex	4 lb	4 d	
		phosmet	Imidan	4 lb	4 d	
Powdery mildew	peach	azoxystrobin	Abound (11)	11-15 oz	4 h	
		myclobutanil	Rally (3)	2.5-6 oz	24 h	
		potassium bicarbonate	Kaligreen	2.5-3 lb	4 h	
		pyraclostrobin + boscalid	Pristine (7+11)	14.5-15.5 oz	12 h	
		sulfur products	variety (M)	see label	24 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> acetamiprid carbaryl malathion gamma-cyhalothrin bifenthrin <i>Soft/organic</i> hort. oil (1%) spinosad codling moth virus	Ortho Max Flower, Fruit, and Veg., Sevin, Bonide Fruit Tree Spray, etc. Malathion Spectracide Triazicide Ortho Max Lawn and Garden Many products Green Light Lawn and Garden Spinosad; Gardens Alive Bull's Eye; Ferti-Lome Borer, Bagworm, Leafminer & Tent Caterpillar; Monterey Garden Insect Spray; Natural Guard Virosoft, Cyd-X	acetamiprid: every 14 days carbaryl: every 14 - 21 days malathion: every 7 days gamma-cyhalothrin: every 14 days bifenthrin: every 14 days hort. oil: 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 spinosad: every 7 days codling moth virus 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
Woolly apple aphid	apple	<i>Conventional</i> carbaryl	Sevin, Bonide Fruit Tree Spray, etc.	apply once; repeat in 14 days if necessary
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
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	see comments under Codling Moth permethrin: every 14 days; this ingredient is becoming less available in stores Surround: every 3-5 days; works to repel, not kill insects; only moderate control; must purchase online

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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