

News/What to Watch For:

Greater peachtree borer moths have been detected in Cache County; time to treat Kaysville Field Day, August 17, new information: pesticide laws and safety CEU credits offered!! "Predicting Peach Harvest", page 2

Spray timing (codling moth and peach twig borer), pages 4-5
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Insect and Disease Activity/Info

APPLES/PEARS

Codling Moth

We are now in between first and second generations of codling moth egg hatch. Most sites should have applied your last spray for the first generation. Please check the table to see when the egg hatch for the second generation starts. We had a short spell of cooler weather, so there may be as long as a week between generations.

White Apple Leafhopper



Leafhoppers have been observed in apples and cherries recently. There are two generations, and the first generation in spring is rarely noticed while the second generation is larger and causes more damage. We are currently seeing a mix of nymphs (white, non-flying insects) and adults (jump quickly away when disturbed) representing the second generation.

Leafhoppers are a minor pest of apples and other fruit trees, and rarely cause economic damage. Their feeding causes stippling of leaves but this does not harm the tree. Apple trees can tolerate a large population (more than 6 nymphs/leaf) before any damage occurs to fruit. Treatment is usually warranted when the pest is a nuisance at apple-picking time.

Look for leafhoppers by examining leaves for typical damage (a yellow stippling pattern that starts along the leaf midrib), and turning them over to see nymphs and white shed skins left behind after molting.

STONE FRUITS

Leafrollers



There are several different leafroller species that occur in Utah orchards, including the fruittree, European, and oblique-banded (shown above). Leafrollers are a minor pest in Utah, and only rarely is damage found on fruit.

Insect and Disease Information, continued from previous page

damage to peach caused by leafroller feeding



The European and fruittree leafrollers overwinter as eggs, and have just one generation in the summer. The obliquebanded leafroller overwinters as a larva, and has two generations—one currently active, and a second one occurring in late August. Leafrollers curl leaves inward with webbing and feed on the leaf surface. At night, they will leave the curled leaf to feed on fruit. Early fruit feeding results in deep scarring as the fruit grows. If you find any curled leaves containing a larva at this time of year, it is most likely the obliquebanded leafroller.

Although we can catch large numbers of obliquebanded leafroller moths, larvae are effectively controlled when codling moth sprays are applied. However, if you have found finding late-season feeding of peaches (or apples) close to harvest in the past, it was probably leafroller, and you may want to monitor for larvae, and consider an application of Altacor or Delegate.

Greater Peachtree Borer

Growers in the Cache County area should begin treatment now as we have trapped peachtree borer there. Again, sprays only need to be applied to the lower 12-18" of trunk and any exposed roots. The residual material of the insecticide on the bark will kill the eggs and newly hatching larvae.

Western Flower Thrips

Western flower thrips were found this week in peach orchards. Thrips causes the most damage in early spring, before fruits have barely begun to form. On nectarines and plums, they cause scarring of the fruit skin. But thrips can also cause late season damage to nectarines and sometimes, peaches.

Thrips feeding on nectarine fruit near harvest results in "silvering" of the skin. On peaches, the fuzz is removed, and damage is most obvious on highly colored fruit.

Managing weedy areas in and adjacent to orchards can help to lower the thrips population, reducing migration into orchards.

"silvering" of peach skin caused by late-season thrips feeding.



"pansy spot" of apple caused by thrips oviposition scar



For commercial growers, not mowing adjacent fields or weedy row middles near harvest can also prevent migration into the trees (similar to mite management). Some insecticides, such as Sevin, may actually increase the population size because it does not kill thrips, but does kill natural enemies. Carzol, Success, and Delegate are all effective against thrips.

Predicting Peach Harvest Date

Is your mouth watering thinking about ripe peaches? Well, you may have to wait a bit longer this year than in past years to enjoy fresh northern Utah peaches. The harvest this year will be later than normal, starting at approximately early August and continuing into late September. Growers are able to predict the harvest date based on accumulated warmth calculated over the first 30 days after full bloom.

Although we also may see a smaller harvest this year (many growers lost a portion or a majority of their crop to killing frosts during bloom), the fruit size is expected to be substantial. Temperatures during those first 30 days after bloom are more critical in determining fruit size and harvest than later temperatures. Cooler temperatures mean larger fruit.

(Note that other conditions such as soil, nutrition, and water status can also have some effect on harvest date.)

Degree Day Accumulations and Insect Development

Upcoming Monitoring/Insect Activity

Pest	Host(s)	DD/Monitoring Action
Codling moth-2nd Gen	apple, pear	Egg-hatch begins mid to late July
San Jose scale	apple mostly	Still time to treat in cooler areas of northern Utah
Cherry powdery mildew	cherry	Mildew is active now
Western cherry fruit fly	cherry	Continue protection through harvest
Pear psylla	pear	Second generation egg hatch begins last week of June
Peach twig borer-2nd Gen.	peach, nectarine	Egg hatch begins approximately early to mid-August
Spider mites	all	Look for activity on lower interior leaves now

Degree Day Accumulations and Insect Phenology

March 1 - Wednesday, June 7

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	766	100	92	615	100	91
	Tremonton	519	91	58	442	97	42
Cache	North Logan	509	90	54	233	57	1
	Providence	606	96	73	249	57	1
	Smithfield	473	88	49	244	57	1
Carbon	Price	864	1 (2nd gen)	97	653	0 (2nd gen)	95
Davis	Kaysville	744	100	91	608	100	88
Grand	Castle Valley	1403	60 (2nd gen)	21	1250	61 (2nd gen)	11
Juab	Tintic	588	95	70	407	94	28
Salt Lake	Holladay	826	0 (2nd gen)	96	708	0 (2nd gen)	97
	West Valley City	900	1 (2nd gen)	98	769	0 (2nd gen)	99
Sevier	Richfield	826	0 (2nd gen)	96	755	0 (2nd gen)	99
Tooele	Erda	626	97	77	626	100	91
	Tooele	751	100	92	621	100	91
Uintah	Vernal	782	100	94	628	100	91
Utah	Alpine	661	98	82	447	97	42
	American Fork	798	100	95	626	100	91
	Genola	823	0 (2nd gen)	96	645	0 (2nd gen)	93
	Lincoln Point	746	100	91	583	100	84
	Orem	863	1 (2nd gen)	97	661	0 (2nd gen)	95
	Payson	763	100	92	621	100	91
	Provo	855	1 (2nd gen)	97	672	0 (2nd gen)	96
	Santaquin	730	100	91	554	100	80
Weber	West Mountain	732	100	91	571	100	84
	Pleasant View	781	100	94	546	100	75
Wasatch	Heber City	445	83	40	206	38	0
Wayne	Capitol Reef	1149	18 (2nd gen)	2	974	6 (2nd gen)	0

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 and Second Generations

For codling moth generation one, the period of greatest egg hatch occurs from 340 DD - 640 DD, and egg hatch ends at 920 DD. Egg hatch of the second generation starts at 1100 degree days.

County	Location	FIRST GENERATION		SECOND GENERATION
		Period of Greatest Egg Hatch	Egg Hatch Ends	Begin protecting fruit (egg hatch begins again)
Box Elder	Perry	past	July 14	July 22
	Tremonton	June 28 - July 12	July 24	July 31
Cache	N. Logan	June 27 - July 13	July 26	August 3
	Providence	June 23 - July 9	July 22	July 30
	Smithfield	June 29 - July 14	July 26	August 2
Carbon	Price	past	July 10	July 19
Davis	Kaysville	past	July 14	July 21
Grand	Castle Valley	past	past	past
Juab	Tintic	June 23 - July 9	July 22	July 30
Salt Lake	Holladay	past	July 10	July 17
	West Valley City	past	July 8	July 15
Sevier	Richfield	past	July 12	July 20
Tooele	Erda	June 25 - July 8	July 18	July 25
	Tooele	past	July 13	July 20
Uintah	Vernal	past	July 14	July 22
	Alpine	past	July 18	July 26
	American Fork	past	July 12	July 19
	Genola	past	July 11	July 18
	Lincoln Point	past	July 14	July 21
	Orem	past	July 9	July 16
	Payson	past	July 13	July 20
	Provo	past	July 10	July 17
	Santaquin	past	July 15	July 22
	West Mountain	past	July 15	July 21
Weber	Pleasant View	past	July 12	July 19
Wasatch	Heber City	June 30 - July 18	August 2	August 12
Wayne	Capitol Reef	past	past	past

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 24	June 27	July 17	
	Tremonton	July 1	July 3	July 21	
Cache	All Locations	July 10	July 13	August 1	
Carbon	Price	past	June 24	July 18	
Davis	Kaysville	past	June 26	July 14	
Grand	Castle Valley	past	past	past	
Juab	Tintic	July 1	July 4	July 24	
Salt Lake	Holladay	past	past	July 9	
	West Valley City	past	past	July 9	
Sevier	Richfield	past	past	July 12	
Tooele	Erda	past	June 25	July 13	
	Tooele	past	June 26	July 14	
Uintah	Vernal	past	June 24	July 16	
	Alpine	June 29	July 2	July 21	
	American Fork	past	June 25	July 14	
	Genola	past	June 24	July 13	
	Lincoln Point	past	June 26	July 15	
	Orem	past	June 24	July 12	
	Payson	past	June 25	July 13	
	Provo	past	past	July 12	
	Santaquin	June 24	June 27	July 16	
Utah	West Mountain	past	June 26	July 14	
	Pleasant View	June 27	June 29	July 16	
	Heber City	July 12	July 15	August 8	
	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 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"> 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
San Jose scale	apple	acetamiprid buprofezin pyriproxifen	Assail Talus Esteem	3.4 oz see label 4-5 oz	12 h 12 h	Talus: one application/season Esteem: 45-day PHI; but provides excellent control
Woolly apple aphid	apple	acetamiprid carbaryl diazinon endosulfan flonicamid imidacloprid	Assail Sevin Diazinon Thionex Beleaf Admire	1.7 oz 1.5-3 qt 4 lb 3-4 lb 2-2.8 oz 7-10.5 oz	12 h 4 d 4 d 12 h 12 h	Beleaf: 21 day PHI Admire: soil application only; 21-day PHI
Earwigs	peach	carbaryl	Sevin	1.5-3 qt	12 h	take care when using Sevin as it can increase spider mite production
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	Lorsban: max once/season; do not allow spray to touch foliage/fruit Thionex: max twice/season
Peach twig borer	peach, nectarine	Bt chlorantraniliprole spinetoram spinosad methoxyfenozide endosulfan phosmet	Dipel, Foray Altacor Delegate Success, Entrust Intrepid Thionex Imidan	see label 3-4.5 oz 4.5-7 oz see label 8-16 oz 4 lb 4 lb	4 h 4 h 4 h 4 h 4 h 4 d 4 d	begin sprays according to spray timing table on previous page; maintain residual through end of egg hatch Delegate, Altacor: apply at 14 day intervals
Powdery mildew	peach	azoxystrobin myclobutanil potassium bicarbonate pyraclostrobin + boscalid sulfur products	Abound (11) Rally (3) Kaligreen Pristine (7+11) variety (M)	11-15 oz 2.5-6 oz 2.5-3 lb 14.5-15.5 oz see label	4 h 24 h 4 h 12 h 24 h	
Western cherry fruit fly	cherry	acetamiprid carbaryl malathion imidacloprid spinetoram spinosad spinosad + bait	Assail Sevin Malathion Provado Delegate Success, Entrust GF-120	2.5-3.4 oz 1 pint 12 oz 6-8 oz 4-4.5 oz see label see label	12 h 12 h 12 h 12 h 4 h 4 h 4 h	protect fruit until harvest; watch PHI numbers: GF-120 - 0 days Sevin - 1 day Provado - 7 days spinosad - 7 days Delegate - 7 days

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; 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
San Jose scale	apple	<i>Conventional</i> bifenthrin carbaryl <i>Soft/organic</i> hort. oil neem oil	Ortho Bug-b-Gone Sevin many options Concern, Garden Safe, others	two applications spaced 7-14 days apart should be enough
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	permethrin: apply every 14-21 days until mid-September in highly infested areas; apply twice (now and one month later) in low infestations carbaryl: must be applied every 7 days; not as effective
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
Western cherry fruit fly	cherry	carbaryl malathion pyrethrin spinosad (<i>Soft/Organic</i>)	Sevin Malathion Concern Multi-Purpose see above	keep fruit protected through harvest; last spray until harvest: spinosad: 7 days; malathion: 1-3 days carbaryl: 1 day; pyrethrin: 0 days

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