

News/What to Watch For:

Examine cherry leaves for powdery mildew; watch apple fruit clusters for signs of fire blight infections; monitor aphid populations and treat when necessary; watch for spider mites; look at cherry fruits for salmon-blush color to start fruit fly control
New spray timing dates for codling moth and peach twig borer, page 4
Spray information, pages 5-6

Insect and Disease Activity/Info

Specific spray information found on last two pages.

APPLE AND PEAR

Codling Moth

Estimated spray timing is shown on page 4 under "spray timings." Note that with the cooler weather, the first spray dates have shifted forward a bit. The danger in spraying too soon is that the residues of the material you apply will be almost depleted during the time of maximum egg hatch (between 340-640 degree days). It is during this time period at which fruit protection is essential to prevent successful entries of hatching codling moth larvae.

What material to use? That decision is left up to the grower. We can provide a list of options that we feel work fairly effectively. Keep in mind that early in the season, beneficial predators such as predatory mites are also building in population. Broad-spectrum materials such as pyrethroids (permethrin, bifenthrin, cyfluthrin, etc.) will kill beneficials and possibly cause insect problems such as spider mite flare ups later in the season.

Apple aphid

Aphid populations are starting to build, and can be a problem where no delayed dormant application was applied. Green apple aphid (*Aphis pomi*) has many generations and remains on the apples throughout the summer. Rosy apple aphid (*Dysaphis plantaginea*) also passes through several generations but leaves the apple trees for alternate feeding in July. It is mostly a problem on residential trees where populations can build. It's feeding causes dimpled and malformed fruit.

Watch the terminals of apple trees for aphid build-up. Green peach aphid colonies have begun to build in peaches as well.

Spider Mites



Spider mite populations have started to build in Box Elder county apples and peaches. The McDaniel and two-spotted spider mites overwinter as adult females in protected areas in groundcover. If available, they will feed on weeds and other ground plants early in the season before moving up into the fruit tree canopy. If there is very little ground cover, they will immediately move up the tree to succulent new leaves.

Spider mites can be considered an indirect pest because they are typically controlled by predatory mites. However, as mentioned earlier, when a broad-spectrum pesticide is used early in the season, the undesired effect of a spider mite outbreak can be the result. The reason is that the predatory mites (which emerge earlier than spider mites) are killed.

Check the lowest, most interior leaves of the tree for the typical stippling damage caused by spider mites. The number of mites found this week is below treatment threshold

Insect and Disease Activity, continued

(fewer than 5 mites/leaf), so we do not recommend treatment at this time. But keep in mind to monitor your trees, and treat when there is an average of more than 10 mites per leaf and fewer than one predatory mite per leaf.

Fire Blight

Some fire blight infections have been seen in Utah County on pears and apples. Watch the old flower clusters on your trees carefully and when you see leaf browning and wilting of the fruit cluster, prune these out immediately.

Apple Powdery Mildew

Powdery mildew (*Podosphaera leucotricha*) secondary infections are spreading within trees so keep an eye out for infected shoots. These will have a silvery color, and leaves will be misshapen and curled. Powdery mildew spreads with high relative humidity, usually in the dawn or dusk hours, and does not need standing water to germinate. The newest leaves are the most susceptible, so a fungicide spray should be used to prevent infections up to the time terminal shoots have hardened off and when days get drier.

Some varieties are more susceptible than others (such as Braeburn, Gala, Gingergold, Jonagold, Jonathon, Rome). The 'Delicious' varieties are the least susceptible.

Powdery mildew has also been reported on cherry (*Podosphaera clandestina*) in Utah County.

PEACH, NECTARINE, APRICOT

Peach Twig Borer

Peach twig borer flight was reported in Castle Valley for May 12, and spray timing is listed on page 4. Moths are expected to fly in areas of the Wasatch Front by early next week. First sprays are recommended at 300-400 degree days after first flight. We recommend the earlier timing if you know you have a large population, or had moderate to significant damage last year, and the later timing if you had very little damage last year.

CHERRY

Western Cherry Fruit Fly

Western cherry fruit fly is a serious pest of tart and sweet cherries. Although residential growers can "tolerate" several wormy cherries, please keep in mind that a commercial growers' crop can be rejected by the processing plant if worms are detected. If residential trees are adjacent to commercial orchards, it would be helpful if they were treated for cherry fruit fly.

There is an excellent product called GF-120 that is used by many growers across the country with great success (in Washington, they use this product almost exclusively). If you

have a heavy infestation, it will take 1-2 seasons of use to bring 100% control with this product. It contains a bait that attracts the fly to eat it, and the active ingredient is called spinosad. Spinosad is a metabolite from the naturally occurring soil bacterium, *Saccharopolyspora spinosa*. GF-120 must be applied every 7 days, but complete coverage is not necessary. Although it is expensive, it is available for purchase by residential growers. Consider "joining in" with other neighbors to save money.

Cherry fruit fly has been detected in Tooele and Utah Counties. The timing of your spray depends on the development of the fruit. We usually recommend starting applications at 1060 degree days after March 1 (base 41). However, the flies cannot penetrate the skin of the cherry to lay eggs until the cherry has developed a salmon-blush color. So use that guideline for when to start spraying. Check the fruits at the top of the tree and in the sunniest locations as these will color up first.



Fruit fly cannot penetrate skin to lay eggs until cherries develop a salmon blush color, so there is no need to spray before this time.

Cherry growers in Castle Valley and Tooele County should check their fruit maturity and begin spray applications when appropriate.

Degree Day Accumulations and Insect Development

Upcoming Monitoring/Insect Activity

By Insect (in order of appearance)	
Cherry powdery mildew (CPM)	Look for small white lesions on new foliage near the base and interior of the tree
Apple powdery mildew (PM)	Look for small white lesions on new foliage
Green peach aphid (GPA)	Look for colonies on peach and nectarine
Black cherry aphid (BCA)	Watch terminals for leaf-curling and feeding
White apple leafhopper (WALH)	Look for nymph activity
Codling moth (CM)	Egg-hatch begins at 220 DD (after biofix)
Peach twig borer (PTB)	Egg-hatch begins at 300 DD after biofix; look for "shoot strikes"
Western cherry fruit fly	Watch fruit maturity

By Host (see abbrev. at left)	
Apple	RAA, WALH, PM
Cherry	BCA, BCM
Peach	GPA, PTB
Pear	

Degree Day Accumulations [\(click here for more information on degree days\)](#)

March 1 - Monday, May 27

County	Location	Base 50	Codling Moth (post biofix)	Western Cherry Fruit Fly (base 41)
Box Elder	Perry	316	188	716
Cache	North Logan	257	79	600
	Providence	241	74	535
	Smithfield	259	103	582
Carbon	Price	292	78	675
Davis	Kaysville	312	110	717
Grand	Castle Valley	650	258	1211
Salt Lake	SLC	364	199	815
	West Valley City	391	301	971
Tooele	Erda	544	239	1033
	Grantsville	549	---	1032
	Tooele	491	244	967
Utah	Alpine	304	86	679
	Genola	377	199	788
	Lincoln Point	316	143	685
	Orem	328	216	715
	Payson	338	164	721
	Provo	385	196	795
	Santaquin	324	177	701
	West Mountain	387	217	784
Weber	Pleasant View	336	194	755

"Base 41" and "base 50" refer to the lower temperature threshold at which certain insects develop. For example, no codling moth development occurs below 50 degrees.

Spray Timing

Please check this chart each week for updated dates. These dates are forecasted using the average temperature for each site.

Codling Moth, First Generation (begin spray at 220 DD, end at 1020 DD)

County	Location	Begin Spray (1st Generation)	Dates of Max. Egg Hatch (340-640 DD)	End Spray (1st Generation)
Box Elder	Perry	May 29	June 7-June 23	July 9
Cache	North Logan	June 8	June 17-July 3	July 21
	Providence	June 7	June 16-July 4	July 22
	Smithfield	June 8	June 17-July 4	July 22
Carbon	Price	June 6	June 14-June 29	July 15
Davis	Kaysville	June 4	June 11-June 26	July 11
Grand	Castle Valley	May 22	May 31-June 16	June 30
Salt Lake	SLC	May 28	June 5-June 20	July 5
	West Valley City	May 27	June 4-June 19	July 6
Tooele	Erda	May 25	June 5-June 19	July 4
	Tooele	May 25	June 5-June 22	July 9
Utah	Alpine	June 7	June 14-June 30	July 16
	Genola	May 27	June 4-June 20	July 7
	Lincoln Point	May 31	June 8-June 20	July 10
	Orem	May 27	June 4-June 20	July 6
	Payson	May 31	June 9-June 26	July 12
	Provo	May 29	June 7-June 26	July 14
	Santaquin	May 30	June 9-June 25	June 12
	West Mountain	May 27	June 5-June 21	July 7
Weber	Pleasant View	May 27	June 6-June 22	July 9

Peach Twig Borer (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. Ending spray date corresponds to 800 DD)

County	Location	Start sprays (small population)	Start sprays (large population)	End Sprays (1st summer generation)
Grand	Castle Valley	June 3	June 5	June 25

Spray Materials - Commercial Applicators

Target Pest	Host	Chemical	Example Brands	Amount per acre	REI	Comments
Codling moth	apple, pear	acetamiprid deltamethrin methoxyfenozide phosmet spinetoram thiacloprid codling moth virus	Assail Battalion Intrepid Imidan Delegate Calypso Virossoft, etc	3.4 oz 7-14 oz 16 oz 5.33 lbs 6-7 oz 4-8 oz ---	12 h 12 h 4 h 5 d 4 h 12 h ---	<ul style="list-style-type: none"> • see table on page 4 for timing • ensure good coverage for effective control • virus must be applied every 7 days
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	
Apple aphids	apple, pear (rare)	imidacloprid acetamiprid	Provado Assail	4-8 oz 1.7 oz	12 h 12 h	
Western cherry fruit fly	cherry	carbaryl malathion imidacloprid spinosad spinosad	Sevin Malathion Provado Success, Entrust GF-120	1 pint 12 oz 2 oz see label see label	12 h 12 h 12 h 4 h 4 h	
Green peach aphid	peach	imidacloprid	Provado	2 oz	12 h	
Coryneum blight	peach, nectarine	azoxystrobin captan ziram pyraclostrobin, boscalid	Abound Captan Ziram Pristine	2.75-3.75 oz 1.5 lbs 2.6-3.6 oz		rotate among classes to prevent resistance

Spray Materials - Residential Applicators

Note that these treatments are only recommended if you know you have the particular pest in your trees.

Target Pest	Host	Chemical	Example Brands	Comments
Codling moth	apple, pear	azadirachtin carbaryl esfenvalerate malathion permethrin pyrethrin spinosad	Azatin Sevin, Bonide Fruit Tree Spray Ortho Bug-B-Gone Malathion Bayer Advanced Dust Concern Multi-Purpose Green Light	<ul style="list-style-type: none"> • Rotate among chemical classes to prevent resistance. • Most are applied every 7 days, but read the label. • See spray timing on page 4
Aphids	apple, pear (rare). peach	azadiractin hort. oil imidacloprid insecticidal soap malathion	Azatin many Bayer Advanced Safer, M-Pede Malathion	
Western cherry fruit fly	cherry	carbaryl esfenvalerate malathion pyrethrin spinosad	Sevin Ortho Bug-B-Gone Malathion Concern Multi-Purpose Ferti-Lome, Green Light, Natural Guard, GF-120	
Powdery mildew	apple	bayleton lime sulfur propiconazole neem oil potassium bicarbonate	Bonide Lilly Miller Ferti-Lome Garden Safe Kaligreen	do not apply lime sulfur when temperature is over 75 degrees F

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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