



News/What to Watch For:

Examine leaves for powdery mildew lesions on cherry and examine peach fruits for powdery mildew lesions
Aphids, such as green peach aphid, black cherry aphid, and rosy apple aphid will be leaving fruit trees in the next few weeks
Continue to watch apricot, plum, and peach/nectarine leaves for shot hole infections (purplish lesions and holes in leaves)

New spray timing dates for codling moth and peach twig borer, pages 5-6.

JUST THE BASICS: Current Treatments

APPLE & PEAR

- *Codling moth* treatment should continue at intervals, paying attention to period of greatest egg hatch (see table on page 5).
- Look for *fire blight* strikes at fruit clusters and prune them out as soon as possible.
- *Woolly apple aphids* are starting to become active (see below).

PEACH/NECTARINE, APRICOT

- *Peach twig borer* eggs will be hatching soon. See table at end of Advisory (some locations) for when to treat.

CHERRY

- *Western cherry fruit fly* treatment should begin when fruits turn a salmon blush color.

Insect and Disease Information

: information for residential settings

: information for commercial orchards

APPLE & PEAR

Codling Moth

Hosts: apple, pear

The first protective spray for codling moth should have started in most areas. Codling moth is a pest that is around all summer long, and requires repeated sprays for worm-free fruit. There are 3 generations of this pest (1 generation is egg to adult), and each generation can cause damage. The length of time between sprays depends on the chemical used, the “pest pressure” in your area, and the level of injury you are willing to accept.

Some growers can get away with one spray per generation, and in those cases, the pest population is low. But in most urban areas where there are many unmanaged fruit and crab-apple trees, the pest pressure is high, and trees would need protection all season long. In those areas, where trees are not protected, on average, 75% of fruit can be infested. See the

updated codling moth table on page 5 for dates on greatest egg hatch, at which time, it is important fruit is protected.

Fire Blight

Hosts: apple, pear

Very few fire blight strikes have been seen yet in Utah orchards. All new infections should be pruned out as soon as possible (in dry weather). This will not only prevent the infections from becoming larger, but also reduce the inoculum (source of bacteria) in the orchard.



Insect and Disease Information, continued from previous page

Woolly Apple Aphid

Hosts: apple



Woolly apple aphids are different from typical aphid species in that they feed on twigs, bark and roots, and have a cottony covering on their bodies. We usually do not see these aphids in the trees until mid to late spring.

They are just starting to appear in cracks and crevices of apple tree canopies in warmer areas of the Wasatch Front. It is important for growers to scout your own trees to determine when and if a treatment is needed. Start by looking aphids around the callus wounds of old pruning scars, branch crotches, other cracks and crevices, and on root suckers.

PEACH/NECTARINE, APRICOT, CHERRY

Green Peach Aphid

Hosts: peach/nectarine



One of the most common questions I have heard this spring is in regard to green peach aphids and curling peach leaves.



green peach aphids are now starting to form winged individuals that will leave the peaches for alternate hosts



beneficials like syrphid fly larvae (shown at right), lady beetles, and lacewings, are feeding on green peach aphids

This aphid is very common, and is present every year. They might be more noticeable this year due to our mild winter and no heavy frosts this spring.

Starting in mid June, these aphids will start to migrate out of the orchard to their alternate feeding hosts for the summer (weeds and vegetable plants). A tree that has just a few clusters of curled leaves may be OK to leave, but where green peach aphids have affected almost the entire tree, a treatment may be required.

Moderate populations are managed by our native natural enemies, including lacewing larvae, lady beetles, syrphid fly larvae, and parasitic wasps.

Backyard growers can use Ortho Fruit and Veg., horticultural oil (1%), insecticidal soap (all readily available in garden supply stores).

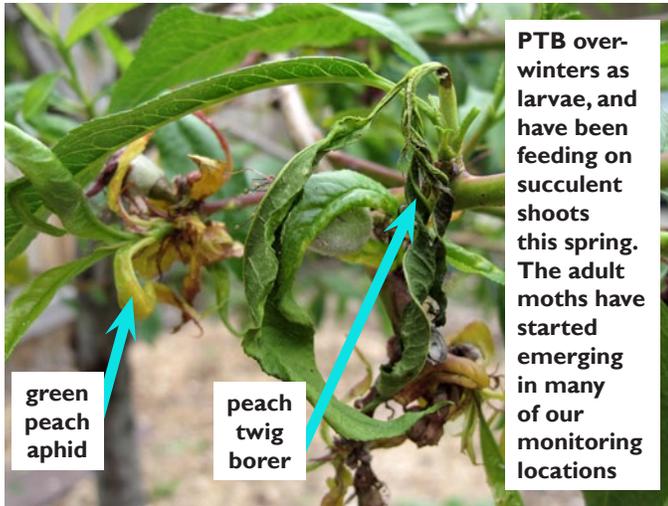
Peach Twig Borer

Hosts: peach/nectarine, apricot

Peach twig borer affects peaches, nectarines, and apricots. Unlike codling moth on apples, this pest appears to be more sporadic in Utah, and some locations have a low enough population that do not need to be treated.

Insect and Disease Information, continued from previous page

Peach twig borer, continued



Peach twig borer larvae prefer to feed on succulent tissue inside twigs. Later in the season, when twigs become hardened off and unpalatable, larvae enter fruit as the “second best option.” In short, the first generation bores into succulent twigs (hence, its name) while later generations move on to the ripening fruit.

A table has been added to page 6 that shows the starting range of dates for the first generation of peach twig borer. You may need to apply insecticide regularly so that your tree is protected throughout each generation, or, if you have low pest pressure, you can get away with a single (or no) application for each generation (up to 2 well-timed sprays).

Sprays for the first generation will protect shoots from being attacked while later sprays will protect fruit from being attacked. Treatment options are the same as for codling moth, and shown on page 7.

Peach Powdery Mildew



Hosts: peach/nectarine

In the **April 26 Advisory**, we discussed peach powdery mildew. Lesions are just barely visible on fruits now. If this disease has been present in your orchard in the past, begin scouting now.



Coryneum Blight



Hosts: peach/nectarine, apricot, cherry



Many coryneum infections have been seen on apricot fruits, primarily due to a few prolonged rainstorms we had this spring. Although the temperatures were cool, the duration of the storms (more than 36 hours) was the contributing factor in all the infections.

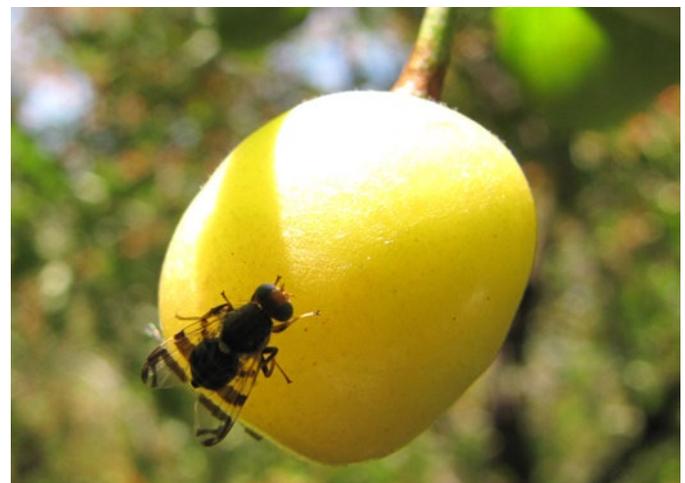
There is nothing to be done about existing infections. Future infections can be prevented with a fungicide spray. When temperatures are warm (above 75), all that is needed is 4-6 hours of rain to cause new infections.

Commercial growers can find options by [clicking here](#).

Homeowners can use captan before a forecasted rain.

Western Cherry Fruit Fly

Hosts: cherry



Treatment for western cherry fruit fly—the worms in the fruit—should begin as soon as cherries develop a salmon blush color. Cherries in most locations are still green, but it is

Cherry fruit fly is continued on next page

Insect and Disease Information, continued from previous page

Cherry fruit fly, continued

important to monitor your own trees to determine when to start.

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, they should be treated for cherry fruit fly or else removed.

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, especially if you can get as many nearby neighbors to use it as well. 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 as large droplets, so complete coverage is not necessary. It is expensive (\$160 for 2 gallons), and only available for purchase at larger ag supply chains.

Production Information

Thinning Fruit Trees

It is time to thin apples and peaches. Both of these crops usually set more fruit than the tree can carry to harvest, and it is important to thin the fruit so that:

- fruits size up properly
- trees are not stressed with a heavy crop load
- trees produce a good crop of fruit next year

Excess fruit that remains too long on the tree will impact fruit size, formation of flower buds, crop potential for the following year, and overall tree health. An overload of fruit greatly reduces the tree’s carbohydrate reserves and can also affect the tree’s ability to withstand disease and winter injury.

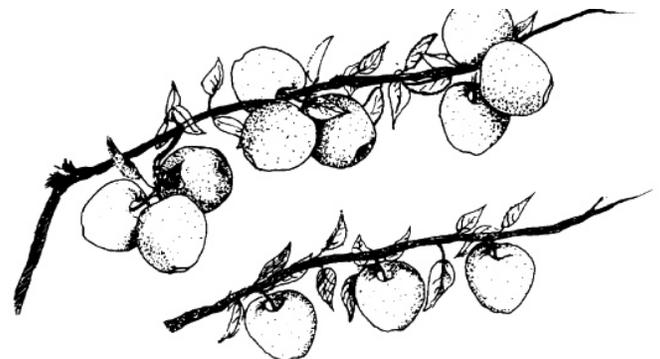
Although fruit will naturally drop from the tree (“June drop”), the amount is insufficient to ensure optimal fruit size. Natural drops typically stem from unfertilized seed, cold injury, competition between fruit, or excessive shading.

Start thinning peaches when they are the size of a robin’s egg, and before apples are 3/8 inch in diameter. Remove the fruit either by hand or, on taller trees, hitting unwanted fruit with children’s plastic bats, rubber hoses, or other soft object. (Hand thinning is the optimal option.)

1. Pick off the smallest fruits and any that are misshaped or damaged.
2. For apples, reduce clusters to one apple each
3. Adequately space the remaining fruits to about 4 to 6 inches apart along the shoot or twigs. A moderate-sized peach tree, for example, should only produce 100 to 150 fruits on the entire tree.



peach thinning before (above, 8 fruits) and after (below, 2 fruits, spaced about 6 inches apart)



on apples, thin each cluster to 1 fruit, and space fruits about 4-6 inches apart.

Spray Timing Information - Codling Moth

Please check this table at each advisory as the information may change as the dates get closer. The forecasts use the average temperature for each site. Fruit should remain protected through each generation according to interval provided on your pesticide label. Many more locations can be viewed on the [Utah Climate Center TRAPs website](#) (select location; select codling moth).

Codling Moth, First Generation

In the table, choose either Option A or B when starting your codling moth sprays.

Option A is what most people will do. Apply insecticide at the recommended date, and repeat.

Option B is an alternative that may help to reduce sprays. Liberally apply horticultural oil (1%) on the first date, and then apply your regular insecticide on the later date. The oil kills eggs that have been laid on fruit up to that point.

Apply treatments (the number of times depends on prior infestation), spaced 7-21 days apart (depending on material) to protect fruit up to the end of the first generation egg hatch.

County	Location	Option A	Option B		Period of Greatest Egg Hatch	First Gen. Ends
		Apply first spray	Apply oil	Apply first insecticide		
Box Elder	Perry	passed	passed	June 3	June 3 - 18	
	Tremonton	Maya 28	May 27	June 6	June 6 - 24	
Cache	River Heights	May 27	passed	June 6	June 7 - 25	
	Richmond	June 5	June 3	June 15	not yet known	
Carbon	Price	May 27	passed	June 4	June 4 - 22	
Davis	Kaysville	passed	passed	May 29	May 28 - June 15	
Grand	Castle Valley, Moab	passed	passed	passed	now through June 5	June 17
Iron	Cedar City Airport	May 31	May 29	June 9	June 9 - 26	
Juab	Tintic	May 27	passed	June 5	June 5 - 27	
Salt Lake	Benches/Cooler sites	passed	passed	June 3	June 3 - 18	
	Most areas	passed	passed	May 29	May 29 - June 14	June 25
Sevier	Monroe	passed	passed	June 2	June 1 - 21	
Tooele	Erda	passed	passed	May 30	May 28 - June 17	
	Grantsville	passed	passed	May 28	May 27 - June 16	June 29
Uintah	Vernal Airport	May 27	passed	June 5	June 4 - 23	
Utah	Alpine	May 28	May 27	June 6	June 6 - 24	
	American Fork	passed	passed	May 30	May 30 - June 17	
	Genola	passed	passed	May 28	May 28 - June 17	
	Lincoln Point	passed	passed	June 2	June 2 - 21	
	Orem (Lindon)	passed	passed	May 28	May 28 - June 13	June 26
	Payson	passed	passed	May 30	May 29 - June 16	June 30
	Provo Airport	passed	passed	May 28	May 29 - June 14	June 27
	Provo Canyon	May 28	passed	June 5	June 4 - 20	
	Santaquin	passed	passed	May 30	May 29 - June 17	
West Mountain	passed	passed	May 29	May 29 - June 15	June 30	
Weber	Ogden Airport	passed	passed	May 28	May 28 - June 15	June 28
Wasatch	Heber City	June 5	June 3	June 14	June 14 - July 2	
Washington	New Harmony	passed	passed	May 27	May 26 - June 14	June 28
Wayne	Torrey	passed	passed	passed	now through June 12	June 25

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 (lots of injury last year)	Start Date (little injury last year)	Keep Fruit Protected Up To:	Start 2nd Gen.
Box Elder	Perry	not yet known	not yet known	not yet known	
	Tremonton	not yet known	not yet known	not yet known	
Cache	All Locations	not yet known	not yet known	not yet known	
Carbon	Price	not yet known	not yet known	not yet known	
Davis	All Locations	not yet known	not yet known	not yet known	
Grand	Castle Valley	May 28	May 31	June 18	
Iron	Cedar City	not yet known	not yet known	not yet known	
Juab	All Locations	not yet known	not yet known	not yet known	
Salt Lake	All Locations	June 7	June 10	not yet known	
Sevier	Monroe	not yet known	not yet known	not yet known	
Tooele	All Locations	not yet known	not yet known	not yet known	
Uintah	Vernal	not yet known	not yet known	not yet known	
Utah	All Locations	June 5	June 9	not yet known	
Weber	All Locations	June 7	June 11	not yet known	
Wayne	Torrey	June 3	June 6	June 30	
Washington	Leeds	passed	passed	June 6	June 21 - 24

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	<p><i>Conventional</i> acetamiprid carbaryl gamma-cyhalothrin malathion</p> <p><i>Soft/organic</i> oil (1%) spinosad</p> <p>codling moth virus</p>	<p>Ortho Fruit and Veg. Sevin, Bonide Fruit Tree Spray, etc. Spectracide Triazicide Malathion</p> <p>Many products, EcoSmart Green Light, Gardens Alive Bull's Eye, Monterey Cyd-X</p>	<p>acetamiprid: every 14 days carbaryl: every 14 - 21 days gamma-cyhalothrin: every 14 days malathion: every 7 days hort. oil: lasts 5-7 days for killing eggs; use at beginning of each generation; apply only when temperatures are below 80 F; follow up with a different product spinosad: every 7 days codling moth virus can only be purchased online</p>
Powdery mildew	apple, peach	<p><i>Conventional</i> myclobutanil</p> <p><i>Soft/organic</i> <i>Bacillus subtilis</i> 1% hort. oil, neem oil potassium bicarbonate sulfur (wetttable)</p>	<p>Spectracide Immunox</p> <p>Serenade Garden Disease Control Various; Garden Safe Kaligreen Various</p>	<p>Use all products to protect new foliage; not as curative myclobutanil: every 14 days all others: every 5-7 days as needed</p> <p>do not apply sulfur when temperature is over 75 degrees F; do not mix with oil or apply after or before oil</p>
Aphids	all	<p><i>Soft/organic</i> oil (1%) spinosad</p>	<p>Many products, EcoSmart Safer's, Bayer Natria, Bonide</p>	<p>oil: allow 4 hours-time for application to dry before temps reach 85 or above.</p>
Coryneum blight	peach, apricot	<p><i>Conventional</i> myclobutanil captan</p>	<p>Spectracide Immunox Captan</p>	<p>Use as a preventive before a rain.</p>
Peach twig borer	peach, nectarine	<p><i>Conventional</i> acetamiprid carbaryl malathion permethrin</p> <p><i>Soft/organic</i> spinosad kaolin clay</p>	<p>Ortho Flower, Fruit & Veg Sevin, Bonide Fruit Tree Spray, etc. Malathion Hi-Yield Indoor/Outdoor Broad Use; Lilly Miller Multi-Purpose Insect Spray</p> <p>see 'codling moth' above Surround</p>	<p>see comments under Codling Moth</p> <p>permethrin: every 14 days; this ingredient is becoming less available in stores and may cause spider mite outbreaks</p> <p>Surround: every 3-5 days; works to repel, not kill insects; only moderate control; must purchase online</p>
Western cherry fruit fly	cherry	<p><i>Conventional</i> acetamiprid carbaryl malathion</p> <p><i>Soft/organic</i> pyrethrin spinosad</p>	<p>Ortho Fruit & Veg. Sevin Malathion</p> <p>Concern Multi-Purpose see above</p>	<p>start applications when fruit in sunniest locations develops a salmon blush</p> <p>spinosad: every 7 days</p>

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

is published weekly by Utah State University Extension

Editor: Marion Murray, marion.murray@usu.edu

[click here](#) for archived advisories