EXTENSION
UtahStateUniversity

Tree Fruit IPM Advisory

UTAH PESTS

Orchard Pest Update, Utah State University Extension, **July 2, 2016**

News/What to Watch For:

Aphids, such as green peach aphid, black cherry aphid, and rosy apple aphid, will be leaving fruit trees in the next few weeks for alternate weed hosts.

Temperatures are hot and dry now; watch soil moisture and irrigate trees as needed; the period of fruit expansion is the most critical time.

Hot, dusty conditions encourage spider mites; they are easier to control when treated at low populations. Monitor for them starting with the lowest foliage closest to the trunk.

JUST THE BASICS

APPLE & PEAR

- *Codling moth* second generation starts early next week in most areas (pg 5).

PEACH/NECTARINE, APRICOT, CHERRY

- *Peach twig borer* second treatment coming up in mid July.
- Continue *cherry fruit fly* protection to harvest.
- Protect lower trunks of plum, peach/nectarine against *greater peachtree borer.*

Backyard Grower Information

APPLE, PEAR

Codling Moth

Hosts: apple, pear

- ***apply application at start of second generation see pg 5***

Codling moth in most sites will begin second generation egg hatch. Your next application can occur at the start date, or if you can tolerate higher injury or have a low population, apply your next spray at the start of "second generation peak egg hatch".

Continue to protect fruit until harvest or September 15, whichever is earliest.

PEACH/NECTARINE, APRICOT, PLUM, CHERRY

Peach Twig Borer

Hosts: peach/nectarine, apricot

- ***consider spraying fruit for second generation, pg 6***

peach twig borer larva inside peach fruit

Backyard Grower Information, continued

Second generation of peach twig borer egg hatch will begin in mid-July for most areas. Fruit becomes more susceptible to attack by twig borer larvae when it is softer, and one application at the beginning of second generation should suffice for most areas.

Greater Peachtree Borer

Hosts: peach/nectarine, plum

- ***continue protecting lower trunks***

An indication of peachtree borer is gummosis at the base of trees. The larvae can girdle and kill young trees.

Continue to protect the lower 12-18 inches of the trunks of your susceptible trees through September. Make sure the spray covers the entire surface area, particularly close to ground level, and any exposed roots.

Materials for home growers can be found on the last page of this newsletter. Other ways to prevent attack are:

- Remove all weeds, grass, and excess soil from around the base of the tree. Heat and dryness reduce the survival of eggs and larvae.
- Avoid mechanical and rodent-caused injuries to trunks.
- Keep trees healthy with optimal nutrition and irrigation.

There is also an option to use beneficial nematodes, such as *Steinernema carpocapsae* (all strains). It must be ordered online (such as from Arbico Organics), and is applied in water. The environment in which the nematodes are applied must be kept moist.

The nematodes will work their way into the tree at the soil line to attack and feed on developing larvae inside the tree. The application rate is 500 nematodes per square inch of bark surface. Research has shown that applying the nematodes in early spring is the best option (when temperatures are cooler and soil is moister), but an application in **late summer** (mid September) could also reduce larvae by 60%.

Western Cherry Fruit Fly

Hosts: cherry

Often, it is difficult to tell if a cherry has a maggot in it until the fruit is sliced.

Many have harvested sweet cherries and discovered what happens when trees are not sprayed. This pest occurs in large numbers just about anywhere backyard cherries are grown.

For tart cherries or sweets that are still not ready, continue protecting cherries until harvest. Be mindful of the product you are using. The label will provide the length of time needed to wait between the last spray and safe consumption. See the recommendations table on page 7 for the days to wait to harvest.

Walnut Husk Fly

Hosts: walnut, apricot, peach

In 2015, some growers reported walnut husk flies in peaches. This is typically a pest of walnuts, but can attack soft apricots or peaches growing near walnuts.

Flies are now starting to lay eggs. Applications for peach twig borer will also target WHF on peach. The peak fly emergence will occur in early to mid-August, so another application will be needed at that time. Populations of walnut husk fly can be reduced by removing all nuts that fall to the ground. To make husk removal of infested nuts easier, store them in a damp burlap bag for 2 to 3 days.

Commercial Grower Information

APPLE & PEAR

White Apple Leafhopper

Hosts: apple, cherry

Second generation nymphs will start in mid to late July. Watch for them on the undersides of leaves. Treatment is warranted at that stage when the pest has been a nuisance at apple-picking time in the past.

Options for leafhopper can be found by clicking here.

Codling Moth

Hosts: apple, pear

Second generation egg hatch starts soon, and signals the time for repeated applications until early September. Be sure to use a different insecticide class from the product you used for first generation.

Codling moth options can be found by clicking here.

STONE FRUITS

Peach Twig Borer

Hosts: peach/nectarine, apricot

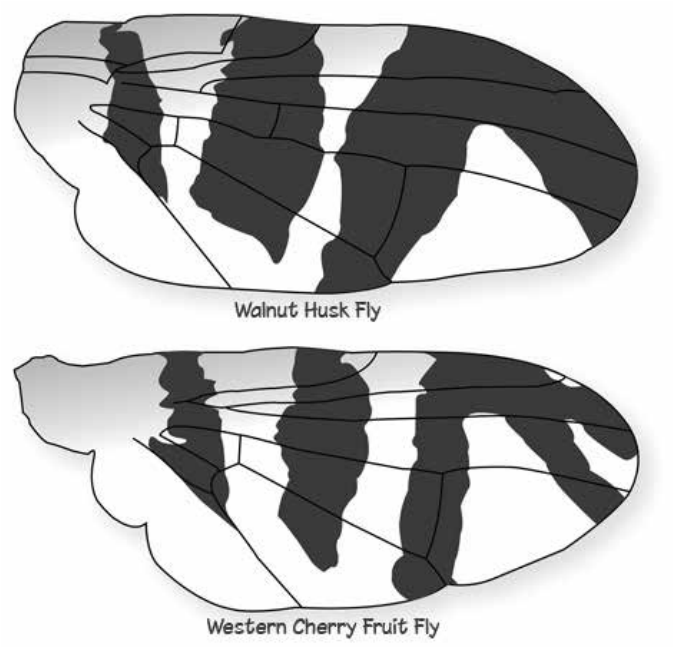
See updated spray dates on page 6. Second generation egg hatch will start in mid-July.

Options for peach twig borer can be found by clicking here.

Walnut Husk Fly

Hosts: peach/nectarine, apricot

If you had injury from walnut husk fly last year, keep in mind that adults are active now. They prefer walnut, but will lay eggs in softening peach or apricot fruit if they are nearby. The greatest risk for infestation is 2 to 3 weeks before harvest of early varieties.



If you are using yellow sticky traps for walnut husk fly, be sure to look at the wing pattern to identify the fly, as walnut husk flies are the same size as cherry fruit flies.

Options for walnut husk fly can be found by clicking here.

Greater Peachtree Borer

Hosts: peach/nectarine, plum

Good weed control and maintaining tree health can help protect trees from attack by peachtree borer. In addition, paint the trunks with 1:1 white latex paint/water mix to try and smooth out the bark area and prevent winter sunscald.

Using Lorsban for GPTB is a tedious task, not to mention dealing with PPE and the labor. For orchards that are one acre or more in size, using mating disruption should be considered. It costs about $40/acre, and is so effective at reducing the population, it can be used every other year.

Other options for greater peachtree borer can be found by clicking here.

Cat-facing Injury

Hosts: most fruit trees, especially peach

As the weather gets hotter and drier, stink bugs will increase movement from ground cover and weedy areas into fruit trees, particularly peaches. Adults may lay eggs in or near the

Commercial Grower Information, continued

orchard, and nymphs and adults will feed on fruit by piercing the skin and sucking out the juices dissolved by their salivary enzyme.

Their feeding leaves a variety of symptoms depending on when it occurred. Early feeding will result in deep pits in the fruit while later feeding (close to pit hardening) will leave brown scars under the skin, and cause clear oozing.

For the most part, stink bugs do not warrant an insecticide application. The most effective materials are the broad spectrum insecticides (carbaryl and pyrethroids) that are also harsh on beneficial insects and pollinators. Often the cost of an application (labor, materials, and loss of beneficials) outweighs the minor fruit losses from stinkbug injury.

ALL FRUITS

Spider Mites

Hosts: all fruits

Spider mite activity is slowly increasing on apples, peaches, and cherries. Check for mites by examining the leaves on the lowest branches first. (Mites overwinter in groundcover and migrate up the tree in hot, dry weather.) Look for leaves that are stippled, and turn them over. Using a hand lens, look for the slow-moving mites.

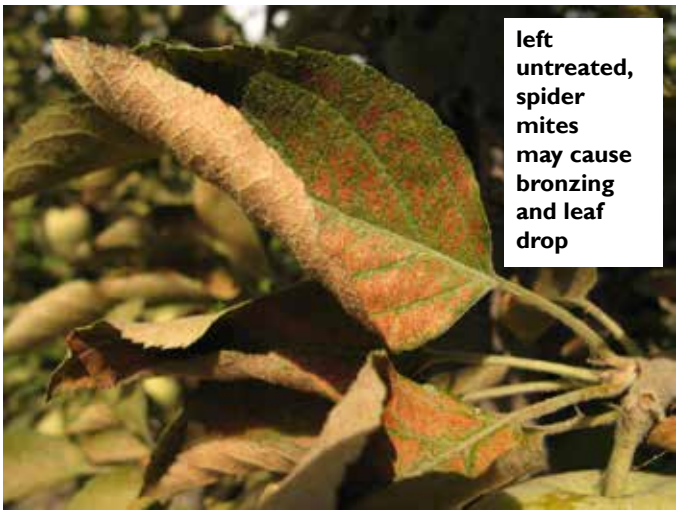
Before making a decision on whether to treat, also look for predatory mites within the pest mite population. These are fast moving mites, about the same size, that can prevent spider mite densities from exceeding economic thresholds. If predators are present, then a treatment may not be necessary.

A 0.5-1% application of horticultural oil is very effective on mites, especially when populations are low, and when the spray coverage is good enough to cover the undersides of the leaves.

Other options for spider mites can be found by clicking on the appropriate fruit: apple, peach, cherry.

monitor for spider mites on the lowest, interior leaves first

moderate spider mite damage to apple may require a spray



left untreated, spider mites may cause bronzing and leaf drop

Spray Timing Information - Codling Moth

Please check this table at each advisory as the information may change as the dates get closer. Many more locations can be viewed on the Utah Climate Center TRAPs website (select location; select codling moth).

Codling Moth, First and Second Generations

Once the 2nd generation starts, fruit should be protected throughout the season until harvest or September 15, whichever is earliest. Continue to be mindful of the "Period of Greatest Egg Hatch" and make sure you don't skip a spray during that time.

County	Location	1st Gen. End of Egg Hatch	2nd Gen. Start Sprays	2nd Gen. Period of Greatest Egg Hatch	2nd. Gen. Keep Fruit Protected to:
Box Elder	Perry	passed	July 6	July 17 - Aug 1	not yet known
	Tremonton	passed	July 10	July 19 - Aug 1	not yet known
Cache	Logan Airport	July 11	July 20	July 29 - unknown	not yet known
	River Heights	July 6	July 15	July 25 - unknown	not yet known
Carbon	Price Airport	passed	July 10	July 20 - Aug 3	not yet known
Davis	Kaysville	passed	July 6	July 15 - July 28	not yet known
	Farmington	passed	passed	July 7 - July 20	August 3
Grand	Moab	passed	passed	June 27 - July 9	July 22
Iron	Cedar City Airport	passed	July 10	July 20 - Aug 3	not yet known
Juab	Nephi	July 4	July 13	July 22 - Aug 4	not yet known
Millard	Delta	passed	July 3	July 12 - July 27	not yet known
Salt Lake	Benches/Cooler sites	passed	July 4	July 13 - July 24	not yet known
	Most areas	passed	passed	July 5 - July 17	July 30
Sanpete	Ephraim	July 10	July 22	Aug 3 - unknown	not yet known
Sevier	Monroe	passed	passed	July 12 - July 28	not yet known
Tooele	Erda Airport	July 2	July 11	July 19 - Aug 1	not yet known
	Grantsville	passed	July 5	July 13 - July 26	not yet known
Uintah	Vernal Airport	July 2	July 12	July 23 - unknown	not yet known
Utah	Alpine/Highland	July 6	July 15	July 25 - unknown	not yet known
	American Fork	passed	July 8	July 18 - July 31	not yet known
	Genola	passed	July 7	July 16 - July 29	not yet known
	Lincoln Point	passed	July 9	July 18 - July 31	not yet known
	Orem/Lindon	passed	July 6	July 15 - July 28	not yet known
	Payson	passed	July 6	July 16 - July 28	not yet known
	Provo Airport	passed	July 8	July 17 - July 29	not yet known
	Provo Canyon	passed	July 10	July 19 - Aug 1	not yet known
	Santaquin	passed	July 10	July 19 - July 31	not yet known
	Tickville (Oak Springs)	July 9	July 18	July 27 - unknown	not yet known
	West Mountain	passed	July 7	July 16 - July 29	not yet known
Weber	Ogden Airport	passed	July 5	July 14 - July 26	not yet known
	Pleasant View	passed	July 2	July 12 - July 24	not yet known
Wasatch	Heber City	July 15	July 25	not yet known	not yet known
Washington	New Harmony	passed	July 8	July 18 - Aug 1	not yet known
Wayne	Capitol Reef	passed	passed	July 4 - July 16	July 30
	Torrey	passed	passed	July 11 - July 24	not yet known

Spray Timing - Peach Twig Borer

Peach Twig Borer, First and Second Generations

For the start of 2nd generation, use the earlier date to apply the spray if you had damage last year, and use the later date if you had very little PTB damage last year. In general most areas need just one application at the beginning of each generation. Fruit is more susceptible to attack as it softens, so in high risk areas, an application 2 weeks before harvest may be necessary.

County	Location	1st Gen. Keep Fruit Protected Up To:	2nd Gen. Start Dates	2nd Gen. Keep Fruit Protected Up To:	3rd Gen. Start Dates
Box Elder	Perry	passed	July 18 - July 22	not yet known	not yet known
	Tremonton	July 8	July 23 - July 27	not yet known	not yet known
Cache	Logan Airport	July 17	Aug 2 - unknown	not yet known	not yet known
	River Heights	July 14	July 30 - Aug 3	not yet known	not yet known
Carbon	Price Airport	July 10	July 26 - July 31	not yet known	not yet known
Davis	Kaysville	passed	July 15 - July 19	not yet known	not yet known
	Farmington	passed	July 8 - July 11	August 3	not yet known
Grand	Moab	passed	June 30 - July 4	July 24	Aug 1 - Aug 4
Iron	Cedar City Airport	July 5	July 23 - July 27	not yet known	not yet known
Salt Lake	Benches/Cooler sites	passed	July 14 - July 17	not yet known	not yet known
	Most areas	passed	July 6 - July 10	July 30	not yet known
Sanpete	Ephraim	July 16	not yet known	not yet known	not yet known
Sevier	Monroe	passed	July 14 - July 19	not yet known	not yet known
Tooele	Erda Airport	July 6	July 20 - July 24	not yet known	not yet known
	Grantsville	passed	July 15 - July 19	not yet known	not yet known
Uintah	Vernal Airport	July 12	July 29 - Aug 3	not yet known	not yet known
Utah	Alpine/Highland	July 8	July 25 - July 29	not yet known	not yet known
	American Fork	July 2	July 18 - July 22	not yet known	not yet known
	Genola (CHF)	passed	July 16 - July 20	not yet known	not yet known
	Lincoln Point	July 2	July 18 - July 22	not yet known	not yet known
	Orem (Lindon)	passed	July 15 - July 19	not yet known	not yet known
	Payson	passed	July 17 - July 21	not yet known	not yet known
	Provo Airport	July 2	July 17 - July 21	not yet known	not yet known
	Provo Canyon	July 2	July 18 - July 22	not yet known	not yet known
	Santaquin	July 5	July 20 - July 24	not yet known	not yet known
	Tickville (Oak Springs)	July 13	July 29 - Aug 2	not yet known	not yet known
	West Mountain	passed	July 17 - July 21	not yet known	not yet known
Washington	New Harmony	passed	July 15 - July 19	not yet known	not yet known
Weber	Ogden Airport	passed	July 15 - July 19	not yet known	not yet known
	Pleasant View	passed	July 12 - July 16	not yet known	not yet known
Wasatch	Heber City	July 20	not yet known	not yet known	not yet known
Wayne	Capitol Reef	passed	July 4 - July 8	July 29	not yet known
	Torrey	passed	July 12 - July 16	not yet known	not yet known

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	*Conventional* carbaryl acetamiprid malathion gamma-cyhalothrin *Soft/organic* spinosad codling moth virus	 Sevin, Bonide Fruit Tree Spray, etc. Ortho Flower, Fruit, and Veg. Malathion Spectracide Triazicide Green Light, Gardens Alive Bull's Eye, Monterey Cyd-X	**acetamiprid**: every 14 days **carbaryl**: every 14 - 21 days **malathion**: every 7 days **gamma-cyhalothrin**: every 14 days **spinosad (organic)**: every 7 days **codling moth virus** can only be purchased online; store in fridge or freezer
Coryneum blight	peach, apricot	*Conventional* captan myclobutanil	 Captan Spectracide Immunox	**captan, Immunox**: use as a preventive before a rain
Greater peachtree borer	peach, plum	*Conventional* carbaryl gamma-cyhalothrin permethrin *Soft/organic* spinosad	 Sevin Spectracide Triazicide Bonide Borer-Miner Killer, Enforcer Outdoor Insect Killer, Hi-Yield Broad Use Including Gardens; Lilly Miller Multi-Purpose Insect Spray Green Light, Gardens Alive Bull's Eye, Monterey	**carbaryl**: every 14 - 21 days **gamma-cyhalothrin**: every 14 days **permethrin**: works best; once/month **spinosad** (organic): every 7-10 days
Peach twig borer	peach, apricot	*Conventional* carbaryl acetamiprid malathion gamma-cyhalothrin *Soft/organic* spinosad	 Sevin, Bonide Fruit Tree Spray, etc. Ortho Flower, Fruit, and Veg. Malathion Spectracide Triazicide Green Light, Gardens Alive Bull's Eye, Monterey	One to 2 applications per generation, depending on prior injury level **acetamiprid**: only the concentrate container includes peach on the label; every 14 days **carbaryl**: every 14 - 21 days **malathion**: every 7 days **gamma-cyhalothrin**: every 14 days **spinosad**: every 7 days
Western cherry fruit fly	sweet and tart cherry	*Conventional* carbaryl acetamiprid malathion gamma-cyhalothrin *Soft/organic* spinosad	 Sevin, Bonide Fruit Tree Spray, etc. Ortho Flower, Fruit, and Veg. Malathion Spectracide Triazicide Green Light, Gardens Alive Bull's Eye, Monterey	**acetamiprid**: only the concentrate container includes cherry on the label; apply every 14 days; 7 days to harvest **carbaryl**: every 14 days; wait 3 days **malathion**: every 7 days; wait 3 days **gamma-cyhalothrin**: every 14 days; wait 14 days to harvest **spinosad**: every 7 days; wait 7 days

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