

News/What to Watch For:

- **Peach twig borer** mating disruption should be up in all areas along the Wasatch Front; starting spray dates will be reported early next week, but will occur in the range of May 30-June 5 for warmer Wasatch Front areas
- Continue to watch apple for fire blight and powdery mildew
- Black cherry aphid populations are increasing, although we are seeing a lot of predation, which may mean that treatment is not necessary
- San Jose scale crawlers will be active in June in northern Utah; we will report on spray dates as they get closer, southern Utah should treat for scale some time between May 17 and 22 (Washington County) or the last week of May (Grand County)
- Codling moth spray timing, page 4
- Spray materials, page 5

Insect and Disease Activity/Info

APPLES/PEARS

Codling Moth

Most locations along the Wasatch Front should have applied their first spray of the season. The table on page 4 has been updated with dates for other locations.

A few growers have commented that they are using the “oil option”, and we would love to hear your feedback on this method. Again, the idea is to use horticultural oil, mixed at a rate of 1% in water, to smother the eggs on the fruit, before they hatch. Then, the first insecticide spray will be applied later, thus reducing the total insecticide sprays per generation. The oil can also be used at the start of the second generation hatch (dates to be reported).

Woolly Apple Aphid



Woolly apple aphids (WAA) have been seen in some areas in Utah County. WAA overwinters mostly on roots, but a few overwinter in the tree canopy, and it is those aphids that are

also starting to reproduce and become more visible. Numbers right now are still very low. They will start to become more noticeable toward the middle and end of June. When their populations have increased to large colonies, they are more difficult to treat.

Look for WAA around the callus wounds of old pruning scars, in branch crotches, or other cracks and crevices on the tree. They can also be found on the foliage of root suckers or at the graft union. Eventually they will move to more succulent twig tissue. They will appear as small bits of cottony fluff.

Large colonies are more difficult to control because their fluffy wax protects them from chemicals and most predators. The primary damage WAA inflicts is galling to the roots and twigs. (If you have aphids in the tree canopy, there is also a population feeding on the roots.) And like all aphids, they also exude honeydew and can create a sticky mess.

Powdery Mildew



Insect and Disease Information, continued from previous page

Apple powdery mildew (*Podosphaera leucotricha*) lesions 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 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.

Fire Blight



this spring's temperatures during bloom could have lead to widespread infections



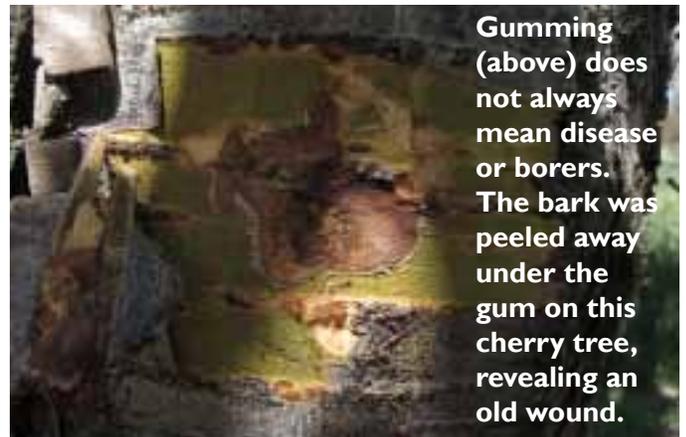
one sign of a new infection is bacterial ooze on leaf or fruit stems

Continue to watch apples and pears for new fire blight infections. There have been a few sporadic reports from Utah and Davis counties of new infections showing up. Again, if you carefully monitor the fruit clusters for any dieback and prune them out right away, you can stay on top of this disease.

STONE FRUITS

Gummosis of Peach, Cherry, Apricot, Plum

This spring, there were lots of phone calls wondering what is causing the ooze on peach, nectarine, apricot, or plum trees. The oozing is generically referred to as gummosis (although "gummosis" can also refer to a specific fungal disease that

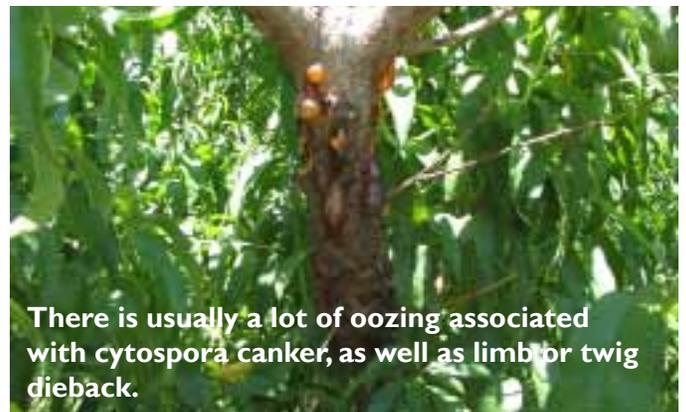


Gumming (above) does not always mean disease or borers. The bark was peeled away under the gum on this cherry tree, revealing an old wound.

does not occur in Utah). The sticky, oozing gum can be clear or amber in color, and by the end of the summer, it will have become almost rock-hard.

Diagnosing the cause of gummosis can be difficult, as many different factors can lead to oozing:

1. **Cytospora canker**, caused by *Leucostoma cincta*, invades and kills bark and cambial tissue through wounds such as pruning cuts, sunscald, winter injury, hail, etc. Gumming from cytospora is dark amber in color, and if you scrape the outer bark, the dead phloem will appear cinnamon brown in color. Cytospora canker is an opportunistic pathogen, meaning that it invades trees through wounds. It can be found almost everywhere, so prevention is the key to management.



There is usually a lot of oozing associated with cytospora canker, as well as limb or twig dieback.

Insect and Disease Information, continued from previous page

Managing cytospora includes the following:

- a. in normal pruning operations, make proper cuts (i.e., do not leave stubs or do not make “flat cuts” that remove the branch collar where healing would normally occur) and do not prune in wet weather;
- b. use white tree wrap or 50/50 latex paint/water to prevent winter sunscald injury;
- c. prune affected limbs back to healthy wood and sterilize tools with 10% bleach between cuts;
- d. remove severely affected trees;
- e. keep trees healthy with optimal watering, mulching, nutrition, etc.

2. Borers

- a. If you see gumming at the base of the tree (no higher than 8-12”), the gumming may be caused by **greater peachtree borer**. Peachtree borers attack the crown of the tree, and healthy trees can withstand attack. Trees can be protected with a properly timed insecticide (we will include dates in a future advisory).
 - b. **Flatheaded or shothole borers** will only attack weakened trees or wounds such as where sunscald has occurred. Usually there is very little ooze associated with these insects because the trees are already weakened. If the borers attack healthy trees, however, the tree will exude copious sap/ooze to flush out the insects. This ooze is often clear in color, and limited to beetle entry holes. Management of these pests is difficult, and may include bark sprays of permethrin May through August.
4. **Wounds** from frost crack, bark injury, cat scratching, hail, etc. may exude gum in spring. Gummosis not caused by a pathogen will run somewhat clear in color (but will dry to amber).
 5. **Other factors** such as planting too deep, excessive irrigation, severe pruning from April - August, or over-bearing have all been cited as possible causes of gummosis and require no treatment.

If you are not sure that a pathogen is causing the gummosis, scrape the outer bark away. If the inner bark is still cream-colored (healthy), the oozing is caused by a non-living factor, and there is nothing you should do. If the wood is tan to brown, it is dead, and was most likely killed by a pathogen.

Peach Leaf Curl



Peach leaf curl is a sporadic disease of peach and nectarine trees, that we typically only see in backyard trees or smaller orchards. It was somewhat pronounced last spring due to the cool wet weather, and may or may not be evident this spring. Infections only occur when temperatures are below 79°F, in the presence of moisture. Once the temperatures rise, further infections of leaves ends.

Peach leaf curl is a fungal-caused disease that affects leaves just as they open, leading to puckering, distortion, and discoloration of the foliage. The affected area is pink at first, and then turns yellow-green, and then brown. Leaves will eventually drop.

If you see these symptoms, note that there are no fungicides that can be applied at this time. The best treatment is a single application of a fixed copper at leaf fall.

Small Fruit Update

Raspberry Horntail

USU Entomologist, Diane Alston, reported on May 8 that she found adult raspberry horntail that had just finished pupating within raspberry canes in Utah County. They will likely begin emerging from the canes at the beginning of this week.

If raspberry horntail is a problem in your area, an insecticide application to prevent egg-laying should go on this week (May 14-18) for areas along the Wasatch Front. Synthetic

pyrethroids and Sevin are effective. Spinosad is another option, but unproven. A second application should be applied 10-14 days later depending on product residual and when bloom time is projected to begin. Avoid treating during bloom.

Alston and her crew will be inspecting canes in Cache and Rich Counties the week of May 14, but adult emergence is likely still at least two weeks away in these cooler areas.

Upcoming Monitoring/Insect Activity

Pest	Host(s)	Monitoring Action
San Jose scale	apple mostly	Crawler emergence 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 base and interior of the tree

Spray Timing

Codling Moth, First Generation

Most residential growers should start sprays at the “traditional start date,” unless you choose to use horticultural oil at 200 Degree Days (DD), in which case, you won’t need to apply your main insecticide for several weeks, shown under “Option A, 350 DD”

County	Location	Option A		Option B
		Apply Oil (200 DD)	Apply First Cover (350 DD)	Traditional Start Date (220 DD, 1% egg hatch)
Box Elder	Perry	passed	May 22	May 14
Cache	River Heights	May 20	Date is after June 3 (actual date reported later)	May 22/23
	Smithfield	May 27	Date is after June 3 (actual date reported later)	May 29
Davis	Kaysville	passed	May 25	May 16
Grand	Castle Valley	passed	passed	passed
Iron	Cedar City	May 17	May 30	May 19
Salt Lake	All Regions	passed	May 22	passed
Tooele	Tooele	passed	May 27	May 16
Uintah	Vernal	May 14	May 26	May 16
Utah	Alpine	passed	May 26	May 15
Utah	American Fork	passed	May 24	May 14
	Genola	passed	May 22	May 15
	Orem	passed	May 21	May 13
	Payson	May 16	May 28	May 18
	Santaquin	passed	May 24	May 16
Weber	Pleasant View	May 13-14	May 25	May 15/16
Wasatch	Heber City	May 26	Date is after June 3 (actual date reported later)	May 28

Spray Materials - Commercial Applicators

Please look up spray material options in the **2012 Utah-Colorado Tree Fruit Production Guide**. If you do not have a copy and would like one, contact marion.murray@usu.edu. You may also access spray options at the guide's companion website at intermountainfruit.org.

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. Products are listed by Conventional (usually broad-spectrum pesticides that are effective, but harmful to beneficial insects), or Soft/Organic (not as effective, but safer for environment and humans). Products are listed in order of efficacy.

Target Pest	Host	Chemical	Example Brands	Comments
Codling moth	apple, pear	<i>Conventional</i> carbaryl acetamiprid malathion gamma-cyhalothrin <i>Soft/organic</i> hort. oil (1%) spinosad codling moth virus	Sevin, Bonide Fruit Tree Spray, etc. Ortho Max Flower, Fruit, and Veg., Malathion Spectracide Triazicide Many products 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 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 F; follow up with a different product spinosad: every 7 days codling moth virus can only be purchased online
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 Kalgreen	do not apply lime sulfur when temperature is over 75 degrees F, and do not mix with oil or apply after or before oil
Coryneum blight	peach, apricot	captan	Captan	use as a preventive before a rain
Aphids	all	1% horticultural oil insecticidal soap	variety variety	these work as contact sprays only, so thorough coverage is important

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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