



What's In Bloom

(Wasatch Front)

- butterfly bush: bloom
- catalpa: bloom
- climbing roses: bloom
- elderberry: begin bloom
- goldenrain tree: bloom
- Japanese tree lilac: end bloom
- mimosa: bloom
- rose-of-sharon: begin bloom
- shrub roses: bloom
- smokebush: bloom
- sourwood: begin bloom
- sumac: begin bloom
- trumpet vine: bloom
- vitex: begin bloom

Insect/Disease Information

APHIDS

Aphids are hot 'n heavy this season, primarily due to the cool, moist spring, which created lots of lush growth. Aphids increase so quickly because each female (and in the summer, they are all females), can give birth to up to 100 live aphids (parthenogenesis). All the aphids listed below overwinter as eggs on the woody host. Some move to alternate hosts for the summer, and return to the tree to mate and lay eggs. Here are some of the aphids we've been seeing this spring and summer:



The **linden aphid** (*Eucallipterus tiliae*) has spots down its back as well as on the wings and antennae. The depth of color and appearance of the spots depends on the vigor and nutrient availability of the host tree. Young nymphs rarely have spots. Linden trees are the primary host. It remains on lindens all summer.



Rose aphid (*Macrosiphum rosae*) can cause reduced flower size or abnormal petal production. They overwinter as eggs on flower canes, hatching in spring with the emergence of new foliage. Several generations pass before they are noticed as a nuisance. The rose aphid can occur in a pink or green form, and remains on roses all summer.

Black cherry aphid (*Myzus cerasi*) feeds only on cherry (ornamental and fruit-bearing). In mid-summer, the aphid leaves cherry trees for an alternate weed host.



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The **woolly ash aphid** is a woolly aphid that produces powdery white coating. Feeding causes terminal ash leaves to become curled and distorted, but does not harm the tree. There are several species of woolly ash aphids and little is known on their biology. Some spend the winter on conifer roots, while others remain on ash.



Woolly beech aphid (*Phyllaphis fagi*) is a non-native aphid that rarely causes long-term harm to beech trees, and control is often not warranted. This aphid exudes a white, waxy filament that gives it its name. It remains on beech through the summer.



Oak aphid (*Tuberculatus* sp.) does little harm to oaks, and does not migrate to an alternate host.



Feeding by the **honeysuckle aphid** (*Hyadaphis tataricae*) causes a proliferation of stunted terminal growth, appearing as a witches' broom. It feeds on tatarian and climbing honeysuckles and does not migrate to an alternate host.



Snowball aphid (*Ceruraphis viburnicola*) feeds primarily on cranberry bush viburnum, causing severe leaf distortion. The new foliage is twisted, cupped, and curled. Severe infestations can also cause twigs to curl inward. They migrate to an unknown secondary host for the summer.

Mealy plum aphid (*Hyalopterus pruni*) exudes a mealy wax that covers the leaves. Notice the lacewing larva in the center of the leaf: it is a beneficial predator that consumes hundreds of aphids in its lifetime.



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Mealy plum aphid can either remain on plums all summer, or migrate to reed grass or cattails. The aphids that remain on plum all summer are not able to produce eggs for overwintering. Only the offspring of winged aphids that fed on the secondary host and returned to the plum are able to lay eggs.

Aphid Treatment: summer-weight horticultural oil (0.5-1%), insecticidal soap, imidacloprid (Merit, generics, Bayer Advanced).

SCALE TREATMENT TIME

Several scale insect pests of woody ornamentals will be active with crawlers soon. Crawlers (newly hatched nymphs) are the susceptible stage for treatment.

European Elm Scale



Crawlers of European elm scale will be active along the Wasatch Front July 10-13, and in cooler areas, July 22. Egg hatch and crawler activity will continue for a month. Like all soft scales, crawlers settle on leaves for the summer, and migrate back to woody tissue where they spend the rest of their lives. They feed on sap, producing honeydew as it feeds. This sticky material drips down onto cars, people, and other plants, which can be a nuisance. Branches and bark covered in black sooty mold (that thrives on the honeydew) is a sure sign of a heavy infestation. In addition, branch dieback, stunting, loss of tree vigor, and defoliation may also occur.

Lecanium Scale

Lecanium scales are the most common soft scales found in Utah, and this group is made up of several different species, including the European fruit lecanium. Hundreds of different woody species are attacked, including maple, linden, ash, cottonwood, and honeylocust. It is highly prolific, sometimes overlapping each other on twigs, stems, and branches of host trees. Crawlers will be active in trees along the Wasatch Front July 20-24, and in cooler areas, July 31, for about 4 weeks.



Cottony Maple Scale



Cottony maple scale is another soft scale. Crawler eggs started hatching earlier this week along the Wasatch Front, and will be hatching July 12-14 in cooler areas, again, for about 4-6 weeks. Hosts include maples, honeylocust, linden, poplar, elm, willow, and birch. In the overwintering stage, it looks like lecanium scale: brown, oval, and flat. But in spring, a large, cottony white egg sac is produced that extends from beneath the body. Each egg mass contains 1,000 to 1,500 eggs. Like lecanium scale, severe infestations can kill twigs or major limbs. Trees under drought stress are most affected.

Euonymus Scale

Euonymus scale is an armored scale, feeding on mesophyll cells. Because they are not feeding on tree sap, they do not produce honeydew. Their hard covering makes them almost impervious to insecticides and natural enemies. Crawlers of the second generation will be starting to hatch July 12-15 along the Wasatch Front, and in cooler areas, including Cache County, around July 24. They will continue to be active through early to mid-August.

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Black Pineleaf Scale



Crawlers of black pineleaf scale, an armored scale, will be hatching at the same timing as the euonymus scale (July 12-24, depending on location in northern Utah). Austrian and Scotch pines are the most commonly infested pines in Utah. Scale feeding turns foliage chlorotic, with localized necrosis (death).



Under heavy and prolonged infestations, needles that are normally retained for 5 years will drop in 1 to 2 years. New needles are sparse, stunted, and chlorotic. Many trees in the greater Salt Lake area have been killed due to this pest.

Oystershell Scale



Oystershell scale is an armored scale with two generations of crawlers. The first generation was active earlier this spring, and the second generation crawlers will be hatching Aug. 1-7 in Wasatch Front areas and Aug. 15 in cooler areas, over a 4-week period. Dozens of deciduous plants can be attacked by oystershell scale. In Utah, common hosts are maple, ash, lilac, hybrid poplars, aspen, cottonwood, and willow.

Treatment for Soft Scales: Scale insects are difficult to treat, but there are a few windows of opportunity for control. Dormant oil sprays in spring will smother many overwintering soft scales, but for severe infestations, it is not a stand-alone treatment. A soil drench or injection of a systemic insecticide such as imidacloprid (Merit) should be applied in early May. (It may take three months for the material to reach the top of the tree.) Targeting crawlers is a primary time to treat because these young nymphs are at their most vulnerable. Horticultural oil or insecticidal soap are very effective against soft scale crawlers, and are soft on beneficials. Other products that are effective are azadirachtin, synthetic pyrethroids, and malathion. Trees should be sprayed at least twice, once near the beginning of crawler emergence, and again 2 weeks later.

Treatment for Armored Scales: Apply Safari (dinotefuran) as a soil injection in May (imidacloprid is not effective on armored scales). Or treat crawlers with Safari, Distance (pyrifoxifen), Talus (buprofezin), or pyrethroid. Oil could be used on crawlers but may not be effective in heavy infestations. Distance and Talus are growth regulators and work best when used early. They also have sublethal effects in that surviving females lay fewer eggs the following year. At least two applications will be necessary due to the long egg-hatch period of many armored scales.

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Two-Spotted Spider Mite



Spider mite numbers will be building for the next several weeks. They have been observed on raspberry, crabapple, and maple. They thrive in hot, dry weather, and the dustier, the better. Heavy feeding causes stippled leaves and reduced plant vigor.

They overwinter as adult females in groundcover where they start their feeding in spring. As the groundcover plants start to die in the heat, they migrate to woody plants. If predatory mites are in good supply, they will keep harmful mite populations in check. But predatory mites are very sensitive to insecticides, and when they are killed early in the season, spider mites will take over.

Treatment: neem oil, horticultural oil (0.5-1%) or insecticidal soap (do not use oils or soap on drought-stressed plants or when temperatures are over 85 F)

Honeylocust Spider Mite



Unlike the two-spotted spider mite, honeylocust spider mite females overwinter within the tree canopy. They start lay-

ing eggs in early June, and will increase in population in hot weather. They only become a real problem in drought years, or if the tree is stressed for any other reasons. So they may not be a problem in northern Utah this year. Their feeding damage does not look like two-spotted (which causes a stippled effect), but rather appears as a light silvery shading on yellowed/bronzed leaves. This pest will not kill trees, but repeated infestations can cause growth to slow.

Check for mites throughout the growing season at the base of honeylocust leaflets, where they will congregate early in the season. A hand lens will be necessary for this.

Treatment: Drought-stressed trees are more susceptible, so water trees deeply during dry spells. Mites are easily controlled with miticide sprays for commercial use, or horticultural oil or soap for residential use. Dormant oil in early spring can also kill the overwintering females.

Sycamore Plant Bug



Overwintering honeylocust plant bugs will start hatching and building in populations soon, now that honeylocusts are finally starting to leaf out. Nymphs feed with their piercing-sucking plant parts on succulent young foliage for approximately 6 weeks. Leaves damaged by early feeding will be distorted, discolored, and dwarfed. Heavy feeding can cause necrosis and leaf drop, although new flush of foliage will emerge. The nymphs cause the primary damage; once you see adults, it is too late for treatment. There is just one generation per year.

Look for plant bug nymphs by shaking several branches over paper or a cloth tray.

Treatment: Target nymphs 7-10 days after budbreak. Examples include insecticidal soap (Safer, Concern, Garden Safe, etc.), oil (Concern, Lilly Miller), imidacloprid (Admire, Bayer Advanced, Bonide systemic, Gallant, Provado, etc.), bifenthrin (Tundra, Talstar, etc.), permethrin (Aloft, Brigade, Pounce, etc.), carbaryl (Sevin), malathion.

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Spittlebug



Spittlebugs (*Aphrophora* sp.) are another plentiful sap-sucking insect this season. You can't miss the frothy white bubbles they surround themselves with, encircling foliage and twigs. The spittle, consisting of plant juices, is made by the immature bug to keep it moist and protect it from its enemies. Spittlebugs inflict very little damage on mature plants. There are a number of species of spittlebugs that feed on both deciduous and evergreen plants in our region.

Treatment with insecticides is not necessary, but you can dislodge the bugs with a hard spray of water.

Maple Anthracnose



Like sycamore anthracnose, maple anthracnose has hit maples hard this year. Norway maples are most susceptible, but our native Rocky Mountain and bigtooth maples can also be affected.

Maple anthracnose overwinters in fallen leaves so the disease is worst in natural or wooded settings where the fallen

leaves collect from year to year. In spring, rain and wind carry spores to newly emerging leaves. Infections begin with purple blotches that usually extend along and between the veins and out to the leaf margins. Smaller spots can coalesce to larger areas. Leaves curl and wither, and the diseased area may extend down the leaf stem. Small brown fruiting bodies will form on the undersides of the leaves, distinguishing this disease from leaf scorch.

This disease is treated by preventive fungicides applied at budbreak in spring. Trees should recover as no more new infections will occur.

Powdery Mildew



Powdery mildew is appearing on the leaves of a variety of plants, including crabapple, horsechestnut, honeysuckle, maple, rose, and others. The list of susceptible plants is very long, but often the species of fungus causing powdery mildew is host specific, and may not be the same species on an adjacent plant with powdery mildew.

Powdery mildew prevents leaves from photosynthesizing to their fullest ability, resulting in stunted or twisted leaf growth, leaf chlorosis or necrosis, and leaf drop. Some plants show very little effect to powdery mildew. In late summer, the fungus produces black fruiting bodies called chasmothecia, which allows the fungus to survive the winter on the fallen leaves. Free water (rain) does not spread powdery mildew. Instead, it is high humidity, which may occur after rainfalls or overhead irrigation. Crowded or shaded plantings are also susceptible.

Treatment: Prune out or pick off localized infections, avoid overhead irrigation, improve air circulation between and within plants and rake fallen leaves in the fall. Horticultural oil (0.5%) has been used for control of powdery mildew. Fungicides, such as sulfur, should be applied to prevent future infections.

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Oak Leaf Blister



Leaf blister on oak (*Taphrina caerulescens*) is a disease that shows up in cool, moist weather, as we experienced this spring. The damage can clearly be seen now on red oak species, but no new infections will be happening now that the weather is hot and dry.

The fungus overwinters on buds, and new infections in spring require cool temperatures and moisture. Infected leaves will form raised, yellow blisters that may coalesce and cause the leaves to pucker and curl. Heavily infested leaves will turn brown and drop. New infections do not occur during the summer, so treatments are not recommended at that time.

Treatment: Since this disease causes only unsightly damage to leaves, and is usually not serious in Utah, fungicides are typically not necessary. But on specimen trees, or situations of high infestations, a fungicide application may be warranted. This disease is treated with a single, dormant-season fungicide application prior to bud break, of chlorothalonil (Daconil, Bravo, Echo, Ferti-Lome, etc.). With this in mind, be prepared to treat these trees next spring.

Fire Blight



Wilted shoots caused by fire blight have been showing up in crabapples, hawthorn, quince, and ornamental pear. Fire blight is usually not as severe a problem in ornamental trees as it is in production apples and pears, however it can cause many small cankers throughout an infected tree. If not pruned out, each small canker harbors the bacteria for future infections. Sometimes entire limbs can be killed.

The best option now is to prune out infections, ideally cutting 8" beyond the wilted shoot and only in dry weather. Disinfect pruners between cuts with Lysol, 10% bleach, or rubbing alcohol. Next spring, consider sprays of the antibiotic streptomycin during bloom (do not use at any other time). Apply once at start of bloom, and again 5 days later.

Upcoming Monitoring/Insect Activity

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Pest	Host Plants	Activity	Indicator Plant
Lecanium scale	many hardwoods	crawlers start emerging	catalpa full bloom
Cottony maple scale	many hardwoods	crawlers start emerging	catalpa full bloom
Cottonwood leaf beetle	Populus sp.	3rd generation larvae begin	kousa dogwood full bloom
Fletcher scale	arborvitae, yew	crawlers start emerging	elderberry full bloom
Black pineleaf scale	Austrian, Scotch	crawlers start emerging	elderberry full bloom
European elm scale	elm	crawler emergence peaks	goldenrain tree bloom
Euonymus scale	most euonymus species	2nd generation crawlers start emerging	goldenrain tree full bloom
Elm leaf beetle	elms	2nd generation larvae begin hatching	trumpet vine bloom
Pine needle scale	2- and 3-needled pines	2nd generation crawlers start emerging	trumpet vine bloom

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