



## What's In Bloom

(Salt Lake City area)

Butterfly bush: bloom  
Clematis: end bloom  
Clethra: bloom  
Goldenrain Tree: end bloom  
Japanese Stewartia: end bloom

Mimosa: end bloom  
Oakleaf hydrangea: end bloom  
Rose of Sharon: full bloom  
Sourwood: full bloom  
Smokebush: bloom  
Trumpet Vine: bloom

## In the News

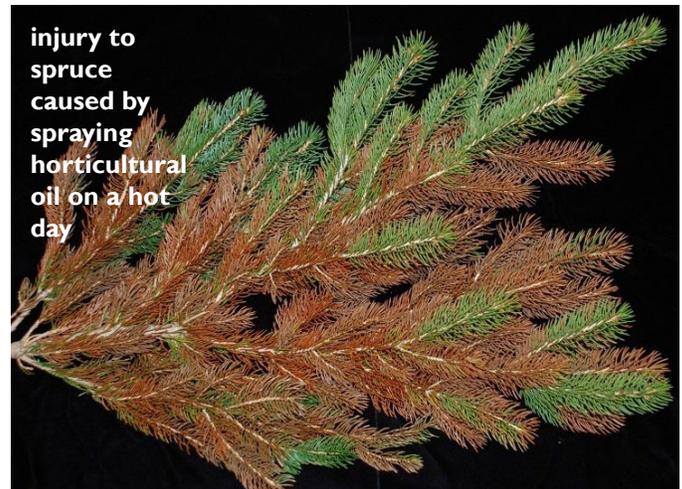
### Reduce Phytotoxicity From Pesticide Applications

*"Phytotoxicity" = chemical injury to plants*

Sometimes a pesticide or fertilizer application can cause harm to a plant, and depending on circumstances, the injury may be worse than what was caused by the target pest. Label directions always state the dangers in using the product, and air temperature, plant stress, improper mixing, and incompatible mixes are some of the most common contributors to injury.

Symptoms included leaf spots, blotches, scorch or tip burn. Symptoms are sometimes confused with disease, insect or mite damage or problems caused by environmental conditions.

Sulfur products, oils, and insecticidal soaps are commonly applied products that will all cause injury to foliage if used when temperatures reach 90 degrees within 4 hours of spraying, or if the plants are under drought stress.



**injury to spruce caused by spraying horticultural oil on a hot day**

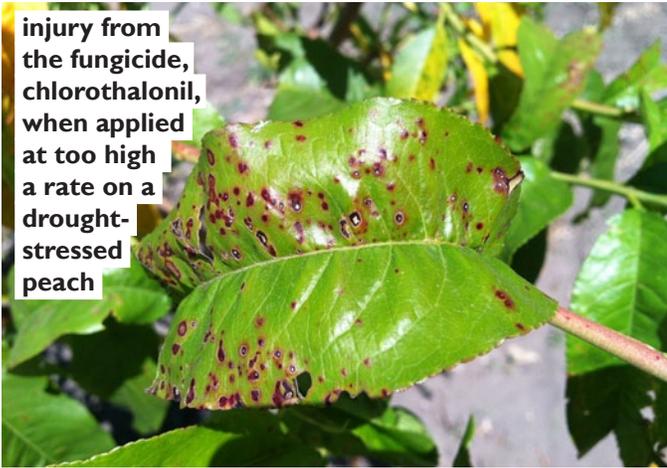


**injury from spraying malathion at too high a rate on a drought-stressed apple**



**injury to crabapple caused by spraying horticultural oil on a hot day**

**Pesticide Phytotoxicity, continued from previous page**



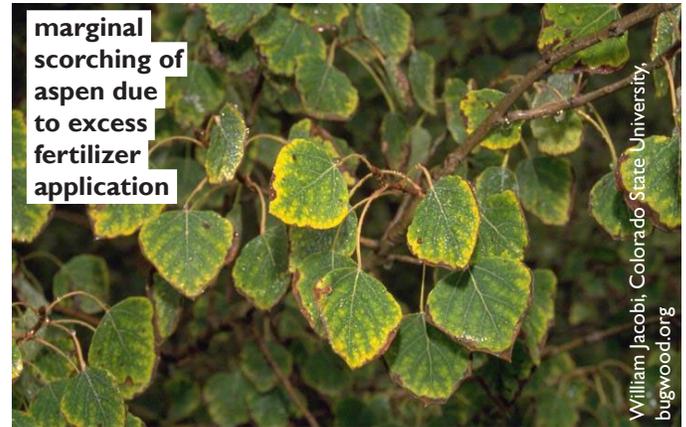
**injury from the fungicide, chlorothalonil, when applied at too high a rate on a drought-stressed peach**

Some herbicides, too, should not be used in hot temperatures. 2,4-D and dicamba are commonly applied lawn herbicides that will volatilize in heat, and the ensuing fumes will injure the foliage of nearby plants. In some cases, the injury can occur dozens of yards away, even on a neighboring property.



**injury to catalpa caused by spraying herbicide on a hot day**

Improper use of fertilizer can also cause injury. Soil that contains excess fertilizer can result in leaf burn under hot, dry conditions. Salts from the fertilizer become concentrated in the soil under droughty conditions, leading to direct root injury, which will show up as leaf scorch. Leaves may also burn when soluble salts move through the plant and concentrated in the leaves. When moisture is lost rapidly on hot, dry days through transpiration or evaporation, leaves become scorched. Slow release fertilizers or yearly applications of compost instead of fertilizer will prevent this problem.



**marginal scorching of aspen due to excess fertilizer application**

William Jacobi, Colorado State University, bugwood.org

Most pesticides should be applied at temps below 85° F, on calm days without high humidity, and in the early morning or evening when pollinators are not active. It is important to read the entire label of each product to prevent injury to humans, the environment, and to plants.

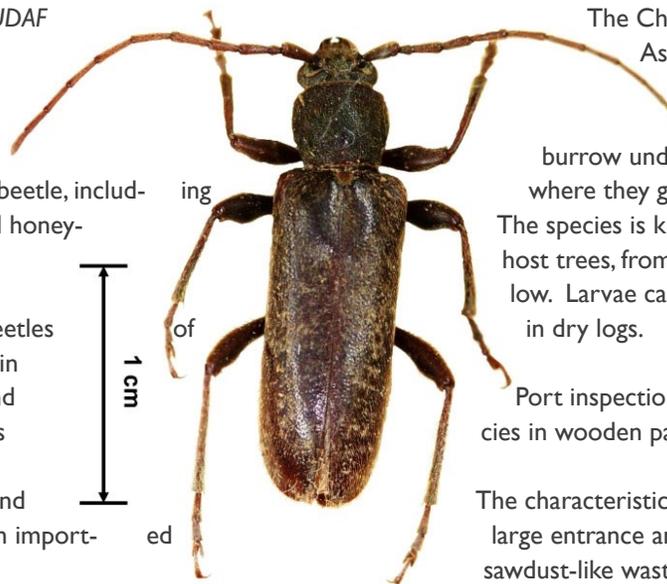
**Exotic Forest Pest Alert: Chinese Longhorned Beetle**

by Clint Burfitt, State Entomologist, UDAF

The Utah Department of Agriculture and Food is asking if anyone is seeing unusual dieback in host trees of the Chinese longhorned beetle, including apple, crabapple, birch, willow, and honeylocust.

In 2009 and 2010, several adult beetles *Trichoferus campestris* were found in outdoor survey traps in Illinois and Utah. The source of these beetles has not yet been confirmed. Historically, this species has been found inside warehouses associated with imported wooden pallets and crates.

Utah has not initiated any regulatory response, but is trapping and making regular inspections at sites near the initial detection.



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The Chinese longhorned beetle is native to Asia and Russia. Female beetles lay eggs on the trunk and branches from June to August. The hatched larvae burrow under the bark and into the sapwood, where they grow and eventually emerge as adults. The species is known to attack a variety of deciduous host trees, from apple, maple, walnut, locust, and willow. Larvae can also bore and develop successfully in dry logs.

Port inspections have intercepted larvae of this species in wooden packing materials imported from Asia.

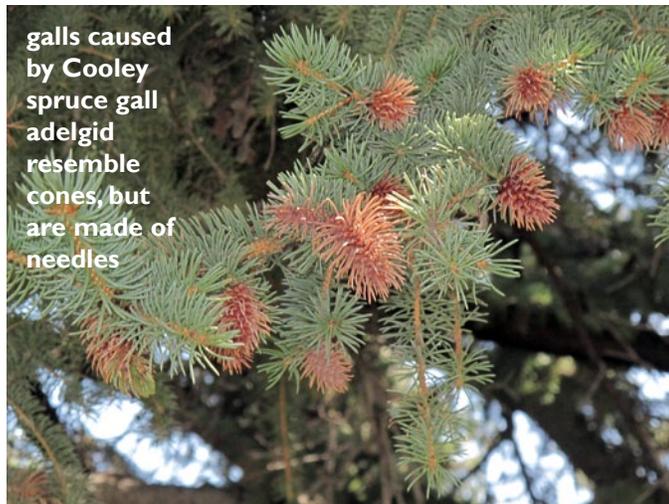
The characteristic symptoms of infestation include large entrance and emergence holes in tree trunks; sawdust-like waste from borings at the base of infested trees; peeling bark; and tunnels made by large larvae. The crown of the tree will often show yellowing and wilting of foliage and dieback. Please call 1-801-538-7184 if you see these symptoms.

## Insect/Disease Information

### CONIFERS

#### Cooley Spruce Gall Adelgid

**Hosts:** Colorado blue spruce



Spruce gall adelgid is the insect that causes the cone-like galls on branch tips of spruce. This insect has a two-year life cycle that consists of five stages and requires two hosts to complete. Three occur on spruce, and two on the alternate host, Douglas-fir.

The adelgids overwinter as immature females at the base of spruce needles and in spring, develop a white, cottony coating under which they lay their eggs.

Eggs hatch when spruce needles start elongating, and the nymphs begin feeding at the base of the needles. As they feed, a toxin in their saliva causes the needles to swell and coalesce. Eventually, a gall filled with dozens of chambers envelops the developing insects where they feed for the next several months.

At this time of year, the galls dry and crack open, and winged females emerge, seeking out Douglas-fir trees. They lay eggs on the needles, which hatch to form the woolly adelgid stage. This stage causes twisted and yellowed needles. Nymphs of the second generation overwinter on Douglas-fir needles. This population remains on Douglas-fir until the following late summer, when females fly to spruce to overwinter and begin a new life cycle. It is known that some individuals are able to remain on spruce, and some remain on Douglas-fir.

A few galls on your Colorado blue spruce is not harmful. They can be easily pruned out while they are still green, or before they split open.

Heavily infested trees can become less vigorous and look unsightly, and may need control. One method is to spray a dormant oil spray in late fall. A spring-time spray is also effective, but must be timed before the new growth emerges. Keep in mind that horticultural oil sprays on blue spruce can cause them to turn green.

An application of imidacloprid in spring can also minimize damage.

#### **Treatment:**

*residential:* horticultural oil (1%), insecticidal soap, Sevin (carbaryl), Bayer Advanced insect spray (lambda-cyfluthrin)

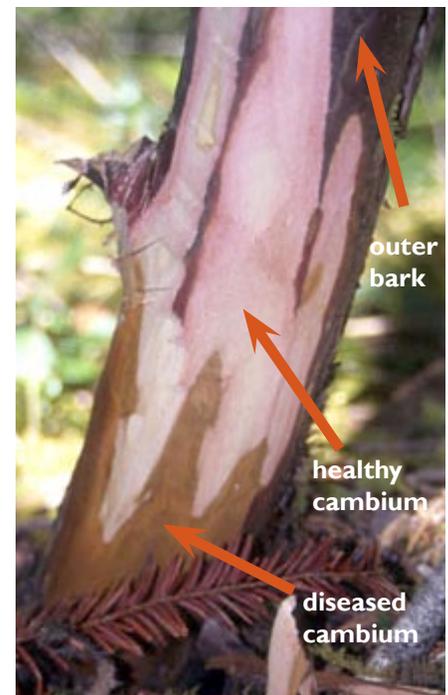
*commercial:* carbaryl, cyfluthrin (Tempo), dinotefuran (Safari) as a soil injection

#### Phytophthora Crown and Collar Rot

**Hosts:** juniper and many deciduous species

Do you have a juniper or other tree that seemingly died overnight? The problem could be a disease caused by Phytophthora (fye-TOP-thora).

Phytophthora is a fungus-like organism that is present in most soils, and only causes disease when soils are consistently saturated. It is sometimes referred to as a "water mold." This disease is not typically seen in Utah's natural landscapes; however, in some cultivated sites, over watering and/or poorly drained soils can provide excellent conditions for the disease to occur.



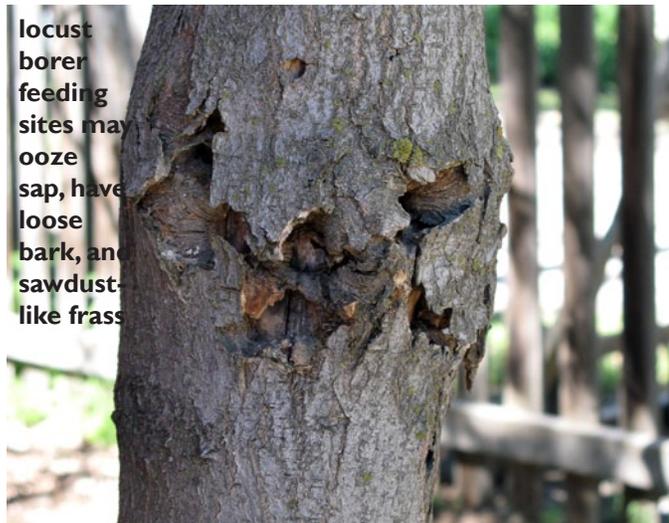
Juniper is one of many susceptible hosts whose roots are attacked. The pathogen grows in the cambium (the inner bark), turning it a distinctive cinnamon-brown color as the tissue dies.

There is no practical chemical treatment for landscape settings. The best option is to remove and destroy killed plants and replace them with resistant species. Avoid over watering.

## DECIDUOUS TREES

### Locust Borer

**Hosts:** black locust (not honeylocust)



locust borer feeding sites may ooze sap, have loose bark, and sawdust-like frass

Locust borer adults will start emerging in northern Utah starting approximately August 8, and continue for 4 to 6 weeks. Their emergence coincides with goldenrod bloom, a favorite nectar source for the adults.

The locust borer is a beetle that attacks black locust (*Robinia pseudoacacia*) and its cultivars. 'Purple Robe' locust is the most common black locust planted in Utah. (Honeylocust (*Gleditsia triacanthos*) is not attacked.)

An individual female can lay up to 200 eggs singly in bark crevices and around wounds on the trunk and larger branches. Hatched larvae immediately bore into the cambium and "rest" for the winter. In spring, larvae start feeding and boring into the sapwood and heartwood, producing a tunnel 3-4 inches long.

Trees infested by locust borer will ooze sap at feeding sites. Limbs may be killed, or the weakened wood can split during storms. Trees produce excessive sprouts, and with repeated attacks, may be killed. Drought-stressed trees or trees weakened by root compaction or root loss are most susceptible, as are trees less than 8 inches in diameter.

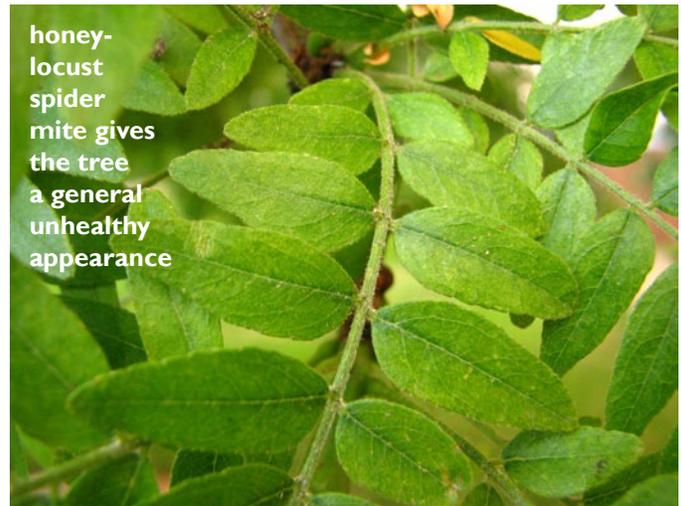
**Treatment:**

Maintain a vigorously growing tree with optimal watering and fertilization. Treat bark and major limbs with an insecticide starting in mid-August through early October (carbaryl or permethrin).

### Honeylocust Spider Mite

**Hosts:** honeylocust

Honeylocust spider mite can sometimes be a problem, especially on drought-stressed trees, or trees that have been treated with permethrin, carbaryl, or imidacloprid (Merit).



honeylocust spider mite gives the tree a general unhealthy appearance

The mites feed on the undersides of leaves and cause leaves to turn a dirty yellow and then bronze color, and to eventually drop. Their populations build rapidly in hot weather, and are starting to be noticeable now. This pest will not kill trees, but repeated infestations can cause growth to slow.

The honeylocust mite overwinters as orange colored adult females in cracks and crevices on the bark or in the tree canopy. (Two-spotted spider mites overwinter in groundcover.) Therefore, dormant oil treatments next spring will help to significantly reduce the population.

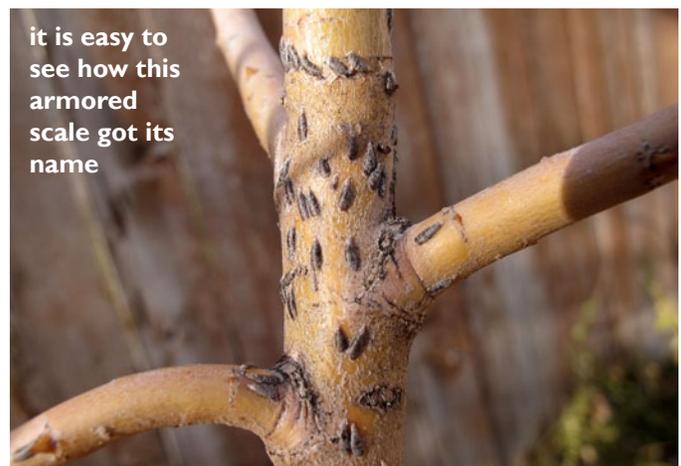
Check for mites throughout the growing season at the base of honeylocust leaflets, where they will congregate early in the season. A hand lens will be necessary for this.

**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 mites.

### Oystershell Scale

**Hosts:** dozens of deciduous plants



it is easy to see how this armored scale got its name

In Utah, oystershell scale may be found on maple, ash, lilac, hybrid poplars, aspen, cottonwood, or willow. Oystershell scale is an armored scale, which means that it is protected by an outer shell that is just about impervious to contact insecticides.

This scale overwinters as eggs under the dead mother's shell, hatching in spring as crawlers. They settle in a new location within hours, and form a hard covering within 5-7 days. Except for the crawler stage, they are immobile all their lives, feeding on plant cell contents through a straw-like stylet.

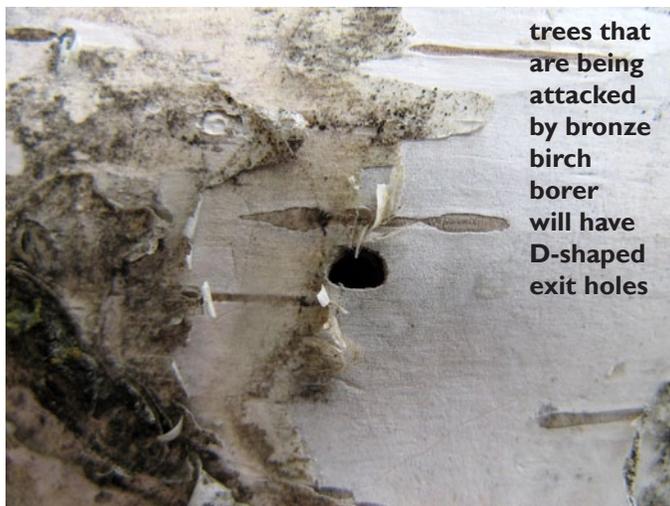
A second generation of crawlers are hatching now in the Salt Lake City area, and will start hatching in the next several weeks in cooler areas of northern Utah.

#### **Treatment:**

- scrub scales off limbs in winter
- prune the most infested limbs
- apply dormant oil before budbreak (provides limited control)
- apply insecticides to crawlers, including 0.5-1% horticultural oil, insecticidal soap, acetamiprid (Assail, Ortho), lambda-cyhalothrin, Safari (can also be used as drench in spring)

### **Bronze Birch Borer**

**Hosts:** paper birch, European white birch, gray birch



Adult bronze birch borers already exited their hosts earlier this season, and the females have laid eggs on new hosts. There is not much to do about this pest at this time of year, except to look for the D-shaped exit holes on the trunk of birch, especially toward the tops of the trees. If exit holes are located, consider a treatment of imidacloprid next spring, as well as a bark treatment of permethrin during adult flight.

Bronze birch borer can be a devastating pest of white-barked birches. Larvae of this beetle feed on the cambium of the tree, eventually girdling it and causing death. (Death may take

several years.) When the top of a birch or large limb near the top dies, it is a sure symptom of bronze birch borer.

IPM practices to keep your birches healthy include applying adequate water and mulch over the root system, and avoiding pruning during adult flight (late May - late June). Weakened trees are the beetle's primary target, so in general, apply practices to keep the tree healthy.

### **Ash Flower Gall**

**Hosts:** all ash species



Ash flower gall is more of an oddity than a pest to worry about or treat. The brown to black galls that hang in clusters beneath the branch shoots are becoming more visible along ash twigs now.

The galls are due to the feeding activity of the ash flower gall mite (*Eriophyes fraxiniflora*) and this mite only feeds on the male flowers of ash. Ash trees are dioecious, meaning they bear either male or female flowers. Most of the cultivated ash trees are male because female trees produce the small winged samaras that have been found to be "messy".

The galls may be objectionable and detract from the appearance, but do not harm the health of the tree. If dormant oil sprays in early spring are being used elsewhere on the same property, add the affected ash to the list, as this should provide some level of prevention.

### **Iron Deficiency**

**Hosts:** most landscape plants

Iron deficiency is a common sight in Utah landscapes. This year, iron deficiency seems to be exacerbated by the lack of rain and dependence on irrigation water, which is more alkaline than rain. Most trees can show symptoms, but it is most often seen on maple, sweet gum, catalpa, cherry, plum, peach, pine, dawn redwood, and dogwood.



**iron deficiency results in chlorotic (yellow) leaves with green veins, and when severe, scorching can occur**

Iron deficiency is not caused by a lack of iron in the soil, but rather our soil pH (which ranges from 7.5 to 8.5). In high pH, iron is insoluble, and therefore not available for root absorption. Because irrigation water is also very alkaline, trying to manage iron deficiency by reducing soil pH is impossible.



Iron is a nutrient necessary for the formation of chlorophyll. Lack of chlorophyll means reduced photosynthesis, and reduced tree vigor. Iron-deficient leaves have interveinal chlorosis (yellowing between veins). In severe symptoms, leaves may show blackened scorching, curling, or premature drop. Dieback or even death of unmanaged trees may occur.

To prevent or treat iron deficiency, chelated iron must be applied to the soil or foliage, but results are temporary. (Chelated products are readily available for absorption, and are not affected by soil pH.) Two brands for Utah soils are Miller's Ferriplus and Sequestrene 138.

Soil applications should be made in the spring, and worked into the root zone. For minor deficiencies, one application will last all season. Foliar sprays (0.1%) with a spreader-sticker may help, and must be reapplied at approximately 10- to 21-day intervals.

**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.

## Bacterial Leaf Scorch

**Hosts:** oaks, elm, red maple, sycamore, and others

Bacterial leaf scorch is a disease that has not been identified in Utah, but one that could potentially spread to our state. It is a disease that affects many different shade tree species including elm, red maple, sweet gum, sycamore and London plane, and oaks. Currently it occurs in the East, west to Texas, and in California.

Leaf symptoms develop in hot, dry weather, and resemble moisture-induced leaf scorch that we often see in Utah. The scorching of the tissue occurs between the veins and at the leaf margins. On most species (except oak), there is a halo of yellow between the necrotic (brown) tissue and green tissue of the leaf. The scorching pattern progresses inward from the margin and results in premature defoliation.

The disease is caused by the bacterium, *Xylella fastidiosa*. The bacteria clog the xylem, inhibiting the flow of water within the tree. *Xylella* must be spread from tree to tree by xylem-feeding leafhoppers or treehoppers.

If you suspect that a tree is showing bacterial leaf scorch symptoms, please alert the Utah Plant Pest Diagnostic Lab at 435-797-2435.



**oaks affected by bacterial leaf scorch do not show the yellow halo between scorched and green tissue**



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Editor: Marion Murray, [marion.murray@usu.edu](mailto:marion.murray@usu.edu)

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