

## Summer Leaf Scorch on Deciduous Plants

When the temperatures go up the Schutter Diagnostic Lab starts to receive samples of scorch on deciduous trees and shrubs. Scorch is characterized by marginal browning on leaves along with yellowing and necrosis between the main leaf veins. Entire leaves may turn brown and become brittle (especially cottonwood). It also appears as

several years, soil compaction, soil cultivation, restrictions to rooting or root damage, glare and reflected heat (especially asphalt and recent seal coat), etc.

Once scorch appears there is not much you can do. Always be sure you water deeply to encourage deep rooting. This enables trees to withstand environmental stress such as drought and winter desiccation.



Leaf scorch on one side of maple tree. Photo by Carol O'Meara, Colorado State University Extension, Boulder County.

entire root zone, 1 1/2 – 3 times farther than the branches--95% of the roots of most trees, including tall evergreens and large deciduous trees, is found in the top 18 inches of soil in this extended area.

Linnea Skoglund

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rapid wilt and drying of leaves, which retain a grey-green color. Leaves may or may not stay on the tree. It is common with both types of scorch that twigs will remain green. In many cases plants recover. Scorch is more prevalent on upper, southern, or windward parts of the tree.

Scorched leaves indicate a water problem – too much, too little, wrong time, wrong place. It also may mean the plant is unable to absorb and use water. Many factors contribute to scorch including: transplanted in the past 1-3 years, improper planting, improper irrigation over



Leaf scorch on aspen.

Frequent, light irrigation is detrimental to root development. Check soil moisture at 12 - 18 inches down--if it is rather dry, water trees slowly and deeply, allowing water to penetrate at least two feet. Deep-water the



Close-up of scorched leaves. Photo by Carol

# Conifer Aphids Stressing Junipers

If your junipers are suffering from browning and dieback of twigs and branches, the problem may be conifer aphids. Conifer aphids (*Cinara* species) are larger than most aphids, up to 1/8th inch long, but like all aphids they feed on plant sap with straw-like mouthparts. Feeding on foliage causes brown stippling and eventually desiccation, while feeding on bark can cause entire branches to die back. Conifer aphids also produce copious amounts of sticky, shiny honeydew dripping from infested foliage, often the first noticeable sign of infestation. Their cryptic coloration, brown



Whitney Cranshaw, Colorado State University, Bugwood.org

and black with a bark-like texture, can make conifer aphids difficult to see unless you are looking carefully. Once the problem is identified it is easy to resolve: Prune dead foliage back, and drench the plant with insecticidal soap. This will clean honeydew and associated molds off, and will destroy the natural waxes in the insects' cuticle, drying them out and killing them. If the juniper tolerates the insecticidal soap treatment well, it can be reapplied as needed to control the conifer aphids.

Ruth O'Neill

## Recommended List of Trees

Colorado State University Extension along with three other organizations has compiled a list of recommended trees for the Front Range of Colorado. It is an excellent list with valuable information that applies to

Montana as well. Anyone using the list might also check the hardiness zone of a tree before making a recommendation. <http://www.plantmaps.com/interactive-montana-usda-plant-zone-hardiness-map.php>

You can find the list at <http://www.ext.colostate.edu/pubs/garden/treereclist.pdf>

Linnea Skoglund

### Schutter Diagnostic Lab Samples July 15—August 1

DISEASES	INSECTS
Ash, bur oak, clematis, crabapple, hawthorn, honeysuckle, horsechestnut, poplar, snap bean, spruce—scorch and stress	Arborvitae spider mite ( <i>Platytetranychus</i> sp.)
Apple—fire blight	Rosy apple aphid ( <i>Disaphis plantaginea</i> )
Choke cherry—shot hole disease	Snakefly ( <i>Agulla</i> sp.), a beneficial predator on aphids etc.
Cottonwood—bacterial wet wood, Septoria leaf spot	Argus tortoise beetle ( <i>Chelymorpha cassidea</i> ), infesting field bindweed
Cottonwood, elm, nasturtium, spruce, various vegetables - suspected herbicide damage	
Crabapple—apple scab, fire blight	
Mountain Ash—fire blight	
Tomato—CMV. TMV	

# Diseases of Apple Trees - Black Rot

*Reprinted from NDSU Crop & Pest Report*

Many people have been concerned in the last few weeks regarding problems with apple trees – both edible apples and ornamental crabapples – especially from the western part of the state.

The most-common disease pests of apples are fire blight, apple scab and black rot canker. Black rot canker has been the most common issue, and the rest of this article will cover this disease and the associated problem known as frog-eye leaf spot. For more information about fire blight and apple scab, see the NDSU Extension publication “Insect and Disease Management Guide for Woody Plants in North Dakota” (<http://www.ag.ndsu.edu/pubs/plantsci/trees/fl192w.htm>).

Black rot is a canker disease caused by the fungus (*Botryosphaeria obtusa*). When the fungus infects stems or branches, it causes cankers which tend to grow more quickly along the length of the branch, compared to going around the branch. A canker will typically be sunken, have darkened bark, and have

small bumps that are the fruiting bodies of the fungus. As the canker develops and expands around the branches, the leaves on the girdled branches will turn bright yellow and fall to the ground, even in the middle of summer (Figure 1). As the canker continues to develop, entire branches or stems will be girdled and killed. Infections can also occur in the outer bark, which is dead. Outer bark infections are not sunken and cause no damage, but contain fungal fruiting bodies that can serve as a source of spores that cause new infections. Infections in the outer bark can develop into cankers if the tree is wounded or stressed.

The fungus also causes a leaf disease called frog-eye leaf spot (Figure 2). Frog-eye leaf spots are typically chocolate brown with a dark ring around the edge of the spot, and the margin of the spot is sharply defined. The infections on leaves typically occur early in the season and

take place during cool, wet weather. If there are several leaf spots, or if leaf spots occur near the leaf petiole, the leaf will turn yellow and drop.

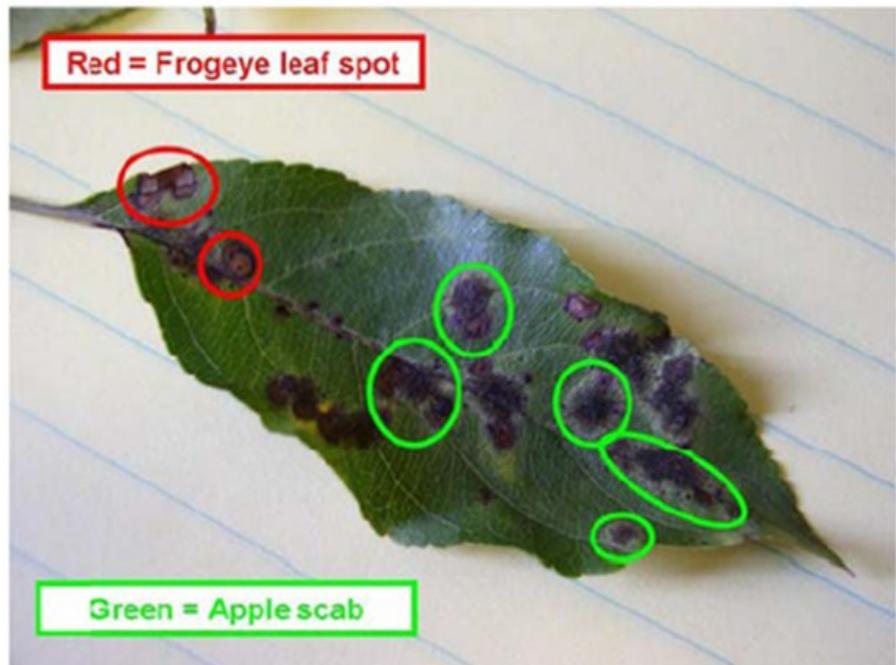


Figure 1. A black rot canker killed the leaves on this branch of an ornamental crabapple tree. Black rot cankers extend more along the length of a branch rather than around it. Eventually, the canker may grow into the main stem and kill the entire tree. Photo by Joe Zeleznik.

New infections on branches and stems occur through wounds – pruning cuts, hail damage, or tissue damaged during the previous winter. While old infections cannot be cured, there are several steps that we can take to prevent new infections or slow development of cankers. Avoiding stress to the tree allows the tree to resist initial canker infection and expansion of existing cankers. Be careful to not wound the tree with mowers

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or weed trimmers and minimize the use of herbicides – both regular herbicides and those used in weed-and-feed formulations with fertilizer – within the drip line of the tree. If the cankers are confined to a manageable level, branches with cankers should be pruned out, several inches below the most basal portion of the canker. Do not leave branch stubs that can serve as an entry point for the fungus. Pruning apple trees is best accomplished during the dormant season to minimize chances of infection by fire blight. If apple trees are pruned during the growing season, applying streptomycin or a copper-based fungicide will help reduce the risk of fire blight infection. If branches are broken during a wind-storm or if bark is damaged by hail, treating the wounds with a copper-based fungicide will help reduce the risk of infection by both black rot and fire blight. Pruning of outer bark infections is not practical because they are usually too



**Figure 2. Frogeye leaf spot (red circles) and apple scab (green circles) on the same leaf. The frogeye leaf spot is identified by the sharp margin on the edge of the light-brown lesion, while apple scab lesions have a diffuse margin. Photo by Joe Zeleznik**

numerous and are not yet causing damage; instead, outer bark infections are best taken as an indication that care should be taken to avoid wounds and stress to the tree. If the fruit load is very heavy, consider thinning out the number of fruits to about one apple per

six inches of branch.

Diseases of Apple Trees – Black Rot  
 North Dakota State University  
 Joe Zeleznik - Extension Forester, NDSU  
 Jim Walla - Forest Pathologist, NDSU  
<http://www.ag.ndsu.edu/cpr/forestry/diseases-of-apple-trees-black-rot>

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- Develop resources for using IPM methods in the urban landscape.
- Train landscape professionals to be First Detectors for invasive pests.
- Educate homeowners/consumers in the basic principles of IPM.

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