

# Leaf Scorch of Trees and Shrubs



Leaf scorch is commonly seen on a variety of trees in Indiana during summer months. Maple, dogwood, ash, elm, oak, and various other trees and shrubs are affected. Scorch usually occurs after periods of unfavorable weather conditions such as drought, high temperature, and hot, dry winds. Newly planted trees and shrubs are especially prone to leaf scorch during the first two to three years following planting. Leaf scorch symptoms may also appear following damage or disease in the roots or injury to the trunk.

## Symptoms

Leaf scorch symptoms are browning of the leaf margins (silver maples show more of a blackening) that progresses inward between the major leaf veins. Older trees in poor sites, ie. “street trees,” will often show chronic leaf scorch as will any tree suffering from drought and/or a poor root system.

Young, recently planted trees and shrubs that have not yet established a good root system are also likely candidates to show extreme scorch.

Scorch symptoms are often more severe on outer, more exposed leaves, especially on the sunward and windward sides of the tree. Where hot drying winds occur for several days during the period of active tree growth, more severe scorch symptoms may appear. The outer parts of leaves or whole leaves simply dry up. Under these conditions new leaves will often form if the moisture supply to the roots is adequate. Often, leaves on one side of a plant may be affected while the remainder of the plant will be normal. This may occur on the side of the tree in which the root system is limited for one reason or other. Perhaps a street or a

sidewalk is impeding the proper development of roots on one side of the tree or shrub.

## Cause

Leaf scorch is caused by failure of the tree to supply enough water to the leaves at a critical time, usually in July and August. A great amount of water evaporates from the leaf surface because of sun and wind during hot, dry weather. If the water supply is deficient, the exposed leaves dry out and scorch. Trees with defective root systems are particularly subject to leaf scorch. The same holds true for trees whose roots have been partly removed or covered with impervious material like asphalt or concrete paving. Leaf scorch is also a common symptom of transplant shock, a term that refers to a number of stresses occurring in recently transplanted trees and shrubs, refer to BP-31 (Transplant Shock of Trees and Shrubs).



*Fig. 1 - Leaf scorch on maple – note brown, dead tissue along the leaf margin and between veins.*

*“Newly planted trees and shrubs require frequent watering; however, they do NOT need to be watered daily! Too frequent waterings can result in root rot.”*

*Fig. 2 - Leaf scorch on white oak.*



Salt damage, especially from deicing salt used on roads, sidewalks, or driveways near the tree, will also cause leaf scorch. Girdling roots, drought, poor growing locations, and other factors aggravate the problem. If these problems cannot be corrected, you can expect leaf scorch to recur each year during summer drought periods; try to anticipate such problems and follow the appropriate remedies as outlined below.

## Remedies for Leaf Scorch

Most homeowners do not know how to correctly water trees and end up drowning the plants by watering every day, or they turn on the sprinkler for a half hour and only water the grass. Deep watering is the best way to prevent leaf scorch. Short, frequent periods of watering only wet the soil to a depth of a few inches and do not

contribute to a deep, strong root system or to good tree health. A slow, deep (12 - 18 inches) soaking of the soil in the root zone area is required. Deep watering needs to be done only occasionally during summer drought periods (once or twice a month). Use a slow trickle from the garden hose over several hours. Do not let the water puddle; it needs to soak. Apply water at the same rate at which it enters the soil.

Proper watering of young trees is especially critical in the first few years after planting, however, use care not to overwater. Overwatering can be just as injurious as underwatering, especially in areas where the soil is heavy and poorly drained. Refer to publication HO-100 (Planting Landscape Trees and Shrubs) for additional information on

handling newly planted trees and shrubs.

In exposed areas, if possible, plant trees in groups rather than singly. Plant very scorch sensitive trees, such as Japanese maple and dogwood, in sheltered locations. Fertilize trees of low vigor. Do not plant shallow-rooted trees on droughty sites. Be especially aware of any future changes planned within the vicinity of the tree. Even slight changes in the growing site can result in injury to the feeder roots and subsequent leaf scorch. For further information refer to Tree Decline, pages 14 & 15.

*Fig. 3 - Early leaf scorch on Bradford pear; scorch symptoms are first apparent at the leaf tip and along leaf margins.*



The first and most important step before managing a tree disease is to accurately diagnose the problem. With an inaccurate diagnosis, more harm than good could be done, not to mention the wasting of both time and money.

This publication is just one of several available online from Purdue Extension that addresses diseases found on landscape trees in Indiana. If your tree does not have symptoms similar to those described in this publication, please check the others.

Also, for more detailed photographs of disease symptoms, consider purchasing Common Tree Diseases of Indiana (BP-63). It presents information about the six most common tree diseases seen in Indiana. It is available from the Purdue Extension Media Distribution Center. The publication is \$5 and can be ordered by calling 1-888-EXT-INFO.

If you are still in doubt as to the cause of the problem, consult a professional such as the Extension Educators at your local Purdue University Cooperative Extension Service office or Purdue University's Plant Pest and Diagnostic Laboratory (P&PDL).

To submit a plant sample to the P&PDL for diagnosis, obtain a sample submission form from your local Purdue Extension office, from the P&PDL office (1-888-EXT-INFO), or from the P&PDL Web page [www.ppd.purdue.edu/](http://www.ppd.purdue.edu/). Detailed instructions for submitting most types of samples are included on the back of the forms.

Submit a sample that is representative of the problem and shows the varying degrees of symptoms. Send several branches (even large ones) showing the symptoms and a detailed description of the problem and other useful information about the site, the age of the tree or shrub, and the date of planting. Photographs are very helpful.

Send the sample and submission form by first-class or overnight mail early in the week to:

Plant & Pest Diagnostic Laboratory  
Purdue University  
1155 LSPS  
West Lafayette, IN 47907-1155

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