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Chlorosis

Chlorosis is defined as a yellowing or loss of color of normally green parts of a plant. It is the result of loss of chlorophyll from the affected tissues, allowing other pigments to become visible. Chlorosis can result from many different conditions. As with most landscape problems, it is important to try and identify the most likely cause(s) before deciding on a program of treatment.

Causes for Chlorosis

Any condition that limits chlorophyll production can result in chlorosis. It is important to make sure the plant is not supposed to be chlorotic. Some plants are specifically grown because of their naturally yellow (chlorotic) foliage. In these cases, the yellow foliage is determined by genetics and cannot be made to “green-up.” Also, some trees, such as river birch and crabapple, will naturally shed interior leaves with the onset of hot summer weather. The shed leaves usually turn yellow before dropping, but this is normal unless unusually heavy shedding occurs.

Physical damage to plants can result in chlorosis. Wounds to the roots, trunk, or branches, either from man-made or natural causes, can lead to chlorosis. Trees too deep in the soil are also at risk. If nutrient and water transport is disrupted, chlorosis can quickly follow.

Soil conditions often play a large role in the development of chlorosis. Soils that are too wet or too dry can lead to yellowing. Soils that are too alkaline or acidic, or that have a shortage or over-abundance of certain nutrients or salts can also be problematic. Soil tests that identify key soil characteristics may be needed to help identify what soil condition may need to be addressed.

Poor soil biology can also lead to chlorosis. Plants interact with soil microorganisms around their roots to create the proper mix of soil physical, chemical and biological properties that favor proper nutrient uptake. Soils that have low numbers or a non-preferred mix of microorganisms are more likely to be chlorotic.

Chlorosis Treatments

Once the likely causes for the observed chlorosis are identified, treatment options can be prepared. Often, a combination of treatments may be necessary. In some cases, it may be better to consider replacing a plant rather than treating it.

Proper water management is critical. Over-watering commonly results in root death which can lead to chlorotic foliage. Extremely dry soils can stress plants and lead to chlorosis as well. Properly watering landscape materials is step one.

Changing the soil pH (acidity or alkalinity) of the soil is possible, but can be difficult and often requires repeated applications over time to correct. Mulching with wood chips, adding compost, and inoculating the soil with microorganisms can all help reestablish a better soil biology. Providing a “tree friendly” soil biology can help offset some of the common problems faced by trees growing in urban conditions.

Finally, nutrients that are lacking or unavailable to the tree can be applied directly. These nutrients can be applied to the soil, injected into the trunk of the tree, or applied directly to the foliage. Usually, these options treat the symptoms or chlorosis, rather than the actual causes. As such, they may provide a quick fix without addressing the actual cause of the problem.

Your Certified Arborist at The Care of Trees can help assess your landscape and provide a set of treatment options.



(left to right)
A river birch shows yellowing due to chlorosis; a comparison of two trees, one with chlorosis and one that is healthy; interior leaf shedding during hot weather.

