

# CHLOROSIS



## WHAT IS THE THREAT:

Chlorosis is the yellowing of plant foliage due to a lack of certain soil micronutrients, most commonly iron and manganese. Alkaline soils (with a pH of 8.0 or higher) are unable to make metallic micronutrients available for root absorption. Chlorosis, if allowed to progress, will cause slow growth, leaf loss, susceptibility to additional stress, and eventually tree or plant death.

## WHERE IS THE THREAT:

In alkaline soils, iron and manganese become insoluble and unavailable to the tree; however, soils containing adequate levels of micronutrients may still exhibit chlorosis because they are not available for root absorption. Trees growing in poorly drained soils are also susceptible to iron chlorosis. Chlorosis can be found all over the US, but is common in the Upper Midwest, Texas, Colorado, and in some areas of the northeast, and is particularly prevalent in oak.

## SYMPTOMS:

The primary symptom of micronutrient chlorosis is the fading of the leaf color from green to increasingly paler shades of green and, when extreme, to a yellow hue.

## WHAT TO DO ABOUT IT:

Arborjet recommends a two-pronged approach to treating micronutrient chlorosis: A trunk injection of Mn-jet Fe™, followed by a soil drench of NutriRoot®. By injecting Mn-jet Fe directly into the xylem tissue, its minerals will be available to the tree immediately; thus, being the fastest way to alleviate chlorosis symptoms and improve tree health. Following up with a soil drench of NutriRoot will make watering more efficient, reduce plant stress, and increase water storage.



*Pin Oak showing signs of Iron Chlorosis.*



*Healthy Pin Oak after micro-infusion with MIN-jet Iron using the TREE I.V.*



*Iron chlorosis on foliage of trident maple*

Header Image taken by: Robert L. Anderson, USDA Forest Service, Bugwood.org, Oak Chlorosis: Joseph O'Brien, USDA Forest Service, Bugwood.org, Pin Oak taken by: Arborjet, Inc., Iron Chlorosis on foliage: William M. Ciesla, Forest Health Management International, Bugwood.org