

One of the most common questions that I have been getting the past few weeks has been, “Why is my tree yellow?” Yellowing of tree leaves could be caused by a variety of things, anything from root problems, to insects, to disease, to environmental conditions. But the most common cause that I’ve seen lately is interveinal chlorosis caused by iron deficiency. That term makes it sound a lot more complicated than it actually is. Chlorosis is the term used any time leaves are turning yellow, and interveinal means the yellow color is between the veins of the leaf, while the veins themselves remain green.

It can be caused by a lack of iron in the soil, or if there is iron in the soil, it may not be available to the plant. What do you mean that the iron is in the soil but isn’t available to the plant? If it’s there, can’t the plant just grab it and use it? Usually, that’s the way it works, but certain nutrients are only available to be used at certain soil pH levels. Iron chlorosis is more likely at higher pH levels. If the pH of the soil is too high, the iron sticks more to the soil than it does to the water, preventing the water from moving the iron from the soil to the tree. Water is used to move nutrients from the soil, to the roots, and into the tree. If the tree isn’t being watered enough or is drought stressed, it may not be receiving the nutrients that it needs because there is no water to move them.

Iron deficiency turns plants yellow because iron is a key component of photosynthesis. In order to perform photosynthesis, plants create chlorophyll, which is the cause of the green color in trees. If the plant is iron deficient, it can’t perform photosynthesis as much as a plant that isn’t iron deficient. Because the plant cannot use all of the chlorophyll that it made for photosynthesis, it will begin to break down the chlorophyll and use the resources in other areas. As the chlorophyll breaks down, it shows the yellow color that it would normally cover until autumn.

There are a few different ways to treat iron chlorosis, but the easiest thing to do would be to prevent it in the first place. Specific trees are more susceptible to iron chlorosis, and some are more tolerant of it. Some of the susceptible species are red and silver maples, river birch, and pin oaks. Trees that would be more tolerant of iron chlorosis are catalpas, hackberries, honeylocust, lindens, and Norway maples. If the tree is already established, a soil test could be administered to check the pH and the iron content of the soil. If the pH is high, sulfur treatments could be used to lower the pH and make available the iron that is already in the soil. If it isn’t a pH issue, there are a few options to consider. Most treatments are either soil applications, foliar applications, or trunk injections. Soil treatments are generally the least expensive, but most labor intensive. Iron can also be applied to the leaves as a foliar spray, but doesn’t always last for multiple years and can be difficult to apply to large trees. The last option is trunk injections, which should be the last resort. This treatment can last the longest of the three options, but it also causes and injury to the trunk while performing the injection, which can leave the tree vulnerable to disease and insect problems. Trees that have been treated for chlorosis should continue to be watched for chlorosis symptoms.

Interveinal chlorosis caused by iron deficiency in plants is a problem for plants and disrupts photosynthesis. There are a few different treatment options to consider, but is generally simple to treat and resolve. Trees with chlorosis may continue to have issues with chlorosis throughout their lives. For more information about iron chlorosis, contact Miranda Earnest at the Buffalo County Extension Office, at 308-236-1235, or [mearnest2@unl.edu](mailto:mearnest2@unl.edu).