

Does Soil pH Matter?

There are a number of reasons why plants don't perform as we expect. Weather is a huge factor. Our cultural practices are sometimes more harmful than helpful. Soil fertility can be a factor as well. Often overlooked, soil pH can play a huge role in plant response to fertilizer

When we say pH, we are actually referencing 'potential Hydrogen'. This potential Hydrogen is measured on a scale ranging from one to fourteen. Seven is considered neutral. Measurements below seven indicate increasing levels of acidity as you approach one. Measurements above seven indicate increasing levels of alkalinity as you approach fourteen. Most (not all) of our agronomic crops, turfgrass stands, and even garden plants prefer soil pH's that range from around six on up to seven or a little higher.

The numbers are important, but what they indicate is of particular importance, since a soil's pH influences the ability of that soil to take in nutrients. For example, yellow leaves with green veins are typical of iron deficiency. In most cases, iron is not a limiting nutrient in your soil. Pin oak trees, for example, best take up iron from the soil when pH's are in the five to six and a half range. At these levels, iron is soluble and easily taken up by plant roots. Get above a pH of seven, and iron becomes more insoluble. At that point, the tree can't use the iron in the soil and iron deficiency symptoms rear their ugly head. It's a pretty visual example of the often unseen effects caused by very acidic or very alkaline soils.

The best way to determine if soil pH is an issue is with a soil test. Soil tests should be taken from multiple locations in the area in question from the surface down to a depth of four to six inches. After taking at least a dozen subsamples, mix them well in a plastic bucket and submit for testing through a Meadowlark Extension District Office (to send to the K-State Soil Testing Lab) or by sending to a lab of your choice. Once an accurate pH level is determined, you can either rule out pH as a concern, or start to manage accordingly to avoid further issues.

For information on soil testing, contact a District Office or e-mail dhallaue@ksu.edu .