



# How to Read Your Soil Test Results

Nutrient or Property	Description
<b>pH in water</b>	Soil pH is the measure of the acidity or alkalinity of the soil after mixing with an equal amount of distilled water. The lower the pH, the greater the acidity. The pH in soils ranges mostly between 3 and 8. The ideal pH for most agricultural production systems is around 6.6, however there are crops that require lower pH values such as blueberries, and crops that prefer even more neutral pH values such as alfalfa.
<b>LR</b>	LR is the Lime Requirement. The buffer pH indicates how many tons of standard ground limestone are needed to raise the pH of a sample to 6.6. At a pH of 6.6 most nutrients are available to the plants and fertilizer applications will be efficient for most gardens, lawn, and field crops.
<b>CEC</b>	CEC is the Cation Exchange Capacity. It represents the ability of the soil to retain and later release positive charged ions or cations. Most essential plant nutrients (K, Ca, Mg) have positive charges. In your test this results CEC is presented in me/100 grams of soil. Sand would have a CEC of nearing zero, clay and humus (organic matter) may have CEC values above 10. Most West Virginia topsoil has a CEC of 10-30, with 15 and higher being ideal for most crop productions.
<b>BS</b>	BS is the Percent Base Saturation of a soil. BS represent the part of the CEC not occupied by acid producing cations ions such as Hydrogen and Aluminum. It is called percent of base saturation. This number ranges from 0-100% and increases as the soil becomes less acidic and more neutral, and decreases in acid soils. The goal for farmers and gardeners is to reach a base saturation of 80% or higher, which can be accomplished in most cases by applying lime, fertilizers, and manures.
<b>P</b>	Phosphorus (P) is an anion (negatively charged particle). The total amount of Phosphorus in soils is usually much greater than the available amount, and its availability is controlled by other soil characteristics such as soil pH. The closer the pH is to 7, the more Phosphorus is available to crops, but in very acid and alkaline soils Phosphorus is not available. Soils with high organic matter have in general higher and more available P content.
<b>K</b>	Potassium (K) is one of the most important plant nutrient, it is a macronutrient. It is a cation and available K is crucial to soil productivity. Soil available K content is in general smaller than available calcium (Ca) or magnesium (Mg). Corrections are made to its content by the addition of fertilizer.
<b>Ca</b>	Calcium (Ca) is one of the most important plant nutrient, it is a macronutrient. It is a cation and available Ca is crucial to soil productivity. Soil available Ca content is higher than available magnesium (Mg) or potassium (K). Corrections are made to its content by the addition of lime and specialized fertilizer.
<b>Mg</b>	Magnesium (Mg) is one of the most important plant nutrient, it is a macronutrient. It is a cation and available Mg in the soil is crucial to soil productivity. Soil available Mg content is higher than available potassium (K) and lower than calcium (Ca). Corrections are made to its content by the addition of lime and specialized fertilizer.
<b>me/100 gr</b>	The quantities of soil mineral nutrients that are available to plants in the CEC are expressed in milli-equivalents of the element per 100 grams of soil. This number can be used to calculate the total pounds of elements present per acre of soil.
<b>Lb/A</b>	This is the abbreviation for Pounds per Acre.