

SOIL TEST RESULTS

Your soil analysis report will give the pH value, soil nutrient values, and a bar graph representing the level of some of the soil nutrients found in your soil. The report will tell you how much lime is needed to raise the pH to the appropriate value, and it will give you specific information regarding how much fertilizer you need and how to apply it. The recommendations are specific for the type of plant/crop you listed on the submission form when you submitted the sample(s).

UNDERSTANDING YOUR SOIL TEST REPORT

Soil pH: The soil pH is a measure of how acidic or alkaline your soil is. Soil pH directly affects nutrient availability. The pH scale ranges from 1 to 14 with 7 as neutral. Values less than 7 indicate acidity, while values greater than 7 indicate an alkaline soil. Most plants/crops do best in slightly acidic soils (pH 5.8 to 6.5).

Nutrients: Nutrients for healthy plant growth are divided into three categories: primary, secondary and micronutrients. Nitrogen (N), phosphorus (P) and potassium (K) are primary nutrients which are needed in fairly large quantities compared to the other nutrients. Calcium (Ca), magnesium (Mg), and sulfur (S) are secondary nutrients which are required by the plant in lesser quantities but are still essential for good plant growth. Zinc (Zn), boron (B), and manganese (Mn) are micronutrients which are required by some plants in very small amounts. We have no established levels for Copper (Cu) and Sodium (Na). Most secondary and micronutrient deficiencies are easily corrected by keeping the soil at the optimum pH value.

The soil test rating levels for these nutrients (except for nitrogen) are defined as follows:

Low: The soil nutrient level is deficient and an application of this element will result in a significant yield/growth increase. A high application rate is needed to 1) meet the crop/plant requirement, 2) compensate for soil interaction, and 3) build the soil reserves.

Medium: The soil nutrient level is adequate for moderate yields/growth, but a yield/growth response can be expected about 50% of the time from an application of this nutrient.

Sufficient: The soil nutrient level is in that range adequate to meet the crop/plant requirement as well as that needed for consistently high yields/growth. A maintenance application rate is recommended to compensate for crop/plant removal.

High: The soil nutrient can adversely affect yield/growth and product quality, and a further increase could lead to plant nutrient element imbalances. Therefore, no addition of this element is recommended unless needed to compensate for high crop removal.

Excessive: The soil nutrient level will adversely affect plant yield, create nutrient element deficiencies due to imbalances, and can lead to potential ecological damage to the surrounding environment.

Nitrogen: Available nitrogen is taken up by plant roots in the form of nitrate (NO₃⁻) and ammonium (NH₄⁻). Nitrogen testing is not routinely recommended because the levels of available nitrogen are variable due to its mobility in the soil. The available forms of nitrogen are very water soluble and move rapidly through the soil profile with rainfall and irrigation. This causes the amount in the root zone to fluctuate over time. Nitrogen recommendations are based on the requirements of the particular crops/plants you are growing.

For additional assistance for home garden soil report interpretation, contact the Clemson Extension Home & Garden Information Center (HGIC) at 1-888-656-9988 from 8:00 a.m. to 4:30 p.m. Monday through Friday.

Clemson University does not endorse fertilizer brands or retail outlets. All recommendations are for South Carolina conditions and may not apply to other areas. In all applications, ensure that the application equipment is properly functioning and that the fertilizer is applied in accordance with label directions. The Agricultural Service Laboratory is a public service of Clemson University, an affirmative action and equal opportunity educational institution.