

## INTERPRETATION OF SOIL TEST RESULTS

### Test Level

**LOW:** A low test result indicates a need for substantial addition of fertilizer, compost, or manure to raise soil test levels. Added nutrients are required for proper plant growth and health. Low pH indicates a need for lime, unless you are growing acid-loving plants such as blueberries or azaleas.

**MEDIUM:** A medium test result suggests that a moderate amount of added fertilizer, compost, or manure is needed for best results. Nutrient levels are lower than optimum for most types of plants.

**OPTIMUM:** Your soil test result is good. Small additions of fertilizer, compost, or manure may be necessary to maintain these levels or for demanding crops. Small amounts of phosphorus in the plant row may be helpful in early spring plantings.

**EXCESSIVE:** Soil test levels are higher than needed for optimum growth. Excess nutrients are a potential source for environmental problems such as accelerated algal growth in ponds and lakes. Occasionally there will be plant growth problems due to nutrient imbalance.

### Result category descriptions

**pH** is a measure of soil acidity, with lower numbers being more acid. Most plants grow well between pH 6.0 and 7.5, although acid-loving plants such as azalea or blueberry prefer a lower pH. Soil pH is naturally lowered slowly over time but can be corrected with application of ground limestone or wood ash. If magnesium (Mg) is low, high magnesium (or “dolomitic”) limestone should be used.

**Available phosphorus (P)** reflects the amount of P that can easily be utilized for plant growth. Phosphorus is readily tied up in soils, especially acid soils and those with pH's above 7.0. Because plants are not efficient at taking up P when soils are cold, placing P near the roots where it's needed can be beneficial to early season plant growth.

**Potassium (K or potash), Magnesium (Mg), and Calcium (Ca)** are all plant nutrients that exist in the soil as positively charged ions or “cations.” Potassium is frequently deficient in non-clay soils and, therefore, is a common ingredient in mixed fertilizers. Most soils that are limed to the proper pH provide adequate calcium. Magnesium can be low in sandy soils but often quite high in “heavier,” clay soils.

**Nitrogen (N)** recommendations are based on general N needs of various plants, rather than on a soil test. Nitrogen soil tests are not reliable for most plants.

### Commercial grower results

**Effective CEC** (cation exchange capacity) is based on the soil test quantities of Ca, Mg, and K. CEC reflects the ability of soil to “hold” these cations. A normal range is from below 5 in sandy soils low in organic matter to over 20 in clayey soils or those high in organic matter. **Base Saturation Ratio** describes the relative proportions of Ca, Mg, and K that are held by soil particles. A wide range is acceptable, but an ideal ratio is 20:4:1 in soils above pH 6.0. **Aluminum** is not a plant nutrient but is used as an indicator of both lime and phosphorus needs.