

# Beginner's Guide to Soil Testing

## Why test soil?

Optimum Nutrient Levels



Known Soil Acidity



Environmental Protection



Health Benefits



## Commonly Tested Nutrients

Phosphorous

- Deficiencies can lead to impaired vegetation growth and low yield
- Desired Range: 4-14 ppm

Potassium

- Deficiencies will not allow plants to utilize nitrogen and water, making them more susceptible to disease
- Optimum Range: 100-160 ppm

Calcium

- Essential for proper function of cell wall and membrane
- Optimum Range: 1000-1500 ppm

Magnesium

- Works with phosphorous to drive plant metabolism
- Vital for photosynthesis
- Optimum Range: 50-120 ppm

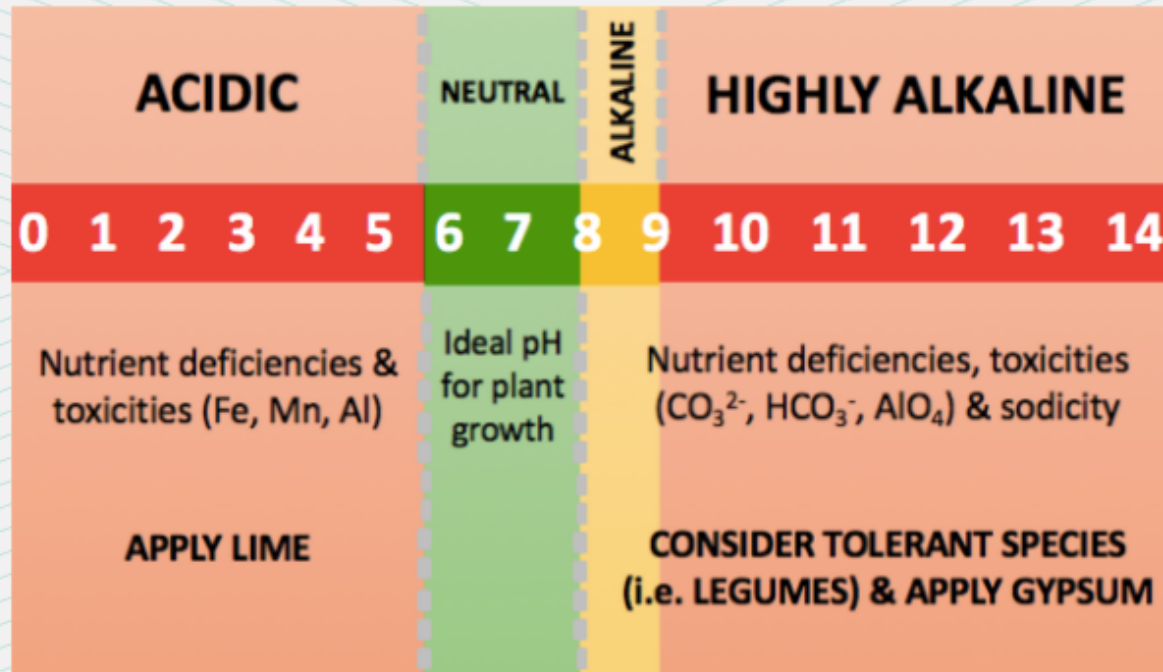
## Soil Test Key

CATEGORIES	INTERPRETATION
Very Low	Soil test level is well below optimum. Very high probability of plant response to additional nutrients. Substantial amounts of additional nutrients required to achieve optimum growth. Fertilizer rates based on plant response and are designed to gradually increase soil nutrient levels to the optimum range over a period of several years.
Low	Soil test level is below optimum. High probability of plant response to addition of nutrients. Moderate amounts of additional nutrients needed to achieve optimum growth. Recommendations based on plant response and are intended to gradually increase soil nutrient levels to the optimum range.
Optimum	For most plants, low probability of response to addition of nutrient. Most desirable soil test range on economic and environmental basis. To maintain this range for successive years, nutrients must be retained in the system, or those nutrients removed by plants or lost to the environment must be replaced.
Above optimum	The nutrient is considered more than adequate and will not limit plant performance or quality. At the top end of this range, there is the possibility of a negative impact on the turf if nutrients are added. Additional nutrient applications are not recommended.
Excessive	This soil test level is independent of plant response and, due to environmental concerns, is only defined for soil test phosphorus (P). This P concentration is associated with elevated risk of P loss in leachate and runoff at concentrations high enough to impair surface water quality. No P should be applied and steps should be taken to minimize losses from leaching and runoff.

Standard soil testing key used by the University of Massachusetts Amherst's Center for Agriculture, Food and the Environment.



# Soil pH Scale



## Crops that Grow in Acidic Soil

pH of 4.5 - 5.5



Blueberries



Potatoes



Peanuts

## Crops that Grow in Alkaline Soil

pH of 8.0+



Kale



Onions



Broccoli

## Crops that Grow in Neutral Soil

pH of 5.5 - 8.0



Peppers



Garlic



Tomatoes