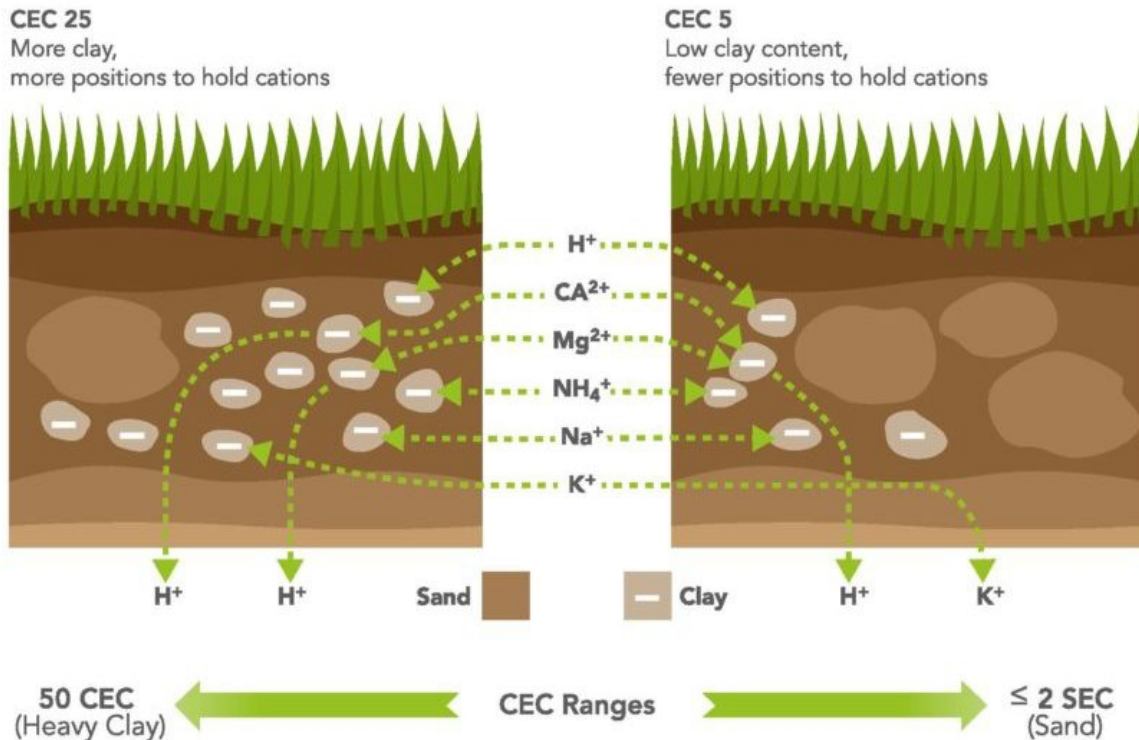


Soil Explained

The volume components of a typical soil are 25% water, 25% air, 40-50% minerals, and 0.5-5% organic matter. Organic matter serves as a source of nutrients and aids in nutrient holding capacity, along with increasing the infiltration rate and water holding capacity of the soil.

Cation Exchange Capacity in Soils



PRACTICAL APPLICATIONS

Soils with CEC 11-50 Range	Soils with CEC 1-10
<ul style="list-style-type: none"> • High clay content • More lime required to correct a given pH • Greater capacity to hold nutrients in a given soil depth • High water-holding capacity • Suitable for a portion of nutrient application in fall season 	<ul style="list-style-type: none"> • High sand content • Nitrogen, magnesium and potassium leaching more likely • Less lime required to correct a given pH • Low water-holding capacity • Fertilizers added typically just prior to and during growing season

The mineral matter in soils is classified by amount of sand, silt, and clay to determine the “soil texture.” Sand is the largest particle size and characterized by being the lowest in nutrient content of the three. Silt is the next smallest followed by clay, which is the smallest particle size.

How Intrepid Trio® Works in Soils

Clay particles are the most chemically active and complex of any soil particles. Some clays can fix nutrients such as potassium and ammonium nitrogen, making them less available to plants. Clays are also negatively charged and central to Cation Exchange Capacity (CEC) which is the absorption or attachment of positively charged ions (K^+ , Ca^{++} , Mg^{++} , Na^+ , H^+ , NH_4^+) by negatively charged soil colloids or clays. As a general rule, the higher the CEC, the greater the nutrient holding capacity will be for that soil. Soils with high amounts of sand and silt that contain low organic matter will have low CEC values that require more frequent fertilization and lime. **Intrepid Trio** contains the cations K and Mg that are essential nutrients and must be applied frequently on sandy, acidic soils with low CEC's.

How Intrepid Trio® Maintains Soil pH

Soil pH is a measure of your soil's acidity or alkalinity. Soil pH levels range from 0 to 14. The optimum pH for most plants ranges between 5.5 and 7.0 but can vary depending on crop and site. When soil pH falls outside the optimum range, it can inhibit the plants' nutrient uptake – even if there is an adequate supply in the soil. Intrepid Trio is favored for its neutral pH and for the fact that its Sulfur source is already in the sulfate form. Unlike other sulfur fertilizers, Intrepid Trio eliminates the sulfur oxidation process that increases soil acidity.