# IMPORTANCE OF SOIL CHARACTERISTICS

**Consistence**
- ✓ Can affect growth of plants…soil may be too hard for some roots to grow in.

**Texture**
- ✓ Affects soil's ability to hold water…ability to hold water affects plants
- ✓ Clay – holds water –water does not pass through
- ✓ Sand – does not hold water – water passes through easily

**Particle Size** – measured in mm
- ✓ Affects permeability
- ✓ Larger particle size (sand) = higher permeability
- ✓ Smaller particle size (clay) = lower permeability

**Permeability / Porosity**
- ✓ How quickly water passes through the soil – affects plants.
- ✓ High permeability (sand) = water passes quickly
- ✓ Low permeability (clay) = water passes slowly

**Absorbency / Moisture Content**
- ✓ How much water the soil HOLDS.
- ✓ Can hold water for plant's roots.

**Clarity**
- ✓ Can show how well the soil performs as a filter.
- ✓ Cloudy color = water was dirtier after passing through soil = poor filter
- ✓ Clear color = water was cleaner after passing through soil = good filter

**pH**
- ✓ Most plants cannot grow in soils too acidic or basic (pH of 5.5-7.5 range is good)
- ✓ pH too high or low prevents plants from using nutrients like N, P, or K.

**Nitrogen (N)**
- ✓ Main element that affects plant productivity.
- ✓ Directly responsible for vegetative growth and green color in plants.

**Phosphorus (P)**
- ✓ Essential for strong roots, flower and fruit development.
- ✓ Boosts plant's resistance to disease.

**Potassium (K)**
- ✓ Essential to the plant's ability to produce sugars.
- ✓ Increase plant's ability to survive cold temperatures, and survive droughts.

Changing N–P–K
- ♦ Fertilizer = replaces lost nutrients
- ♦ Packages contain 3 numbers = % of N-P-K
  Ex. 5-10-10 = 5% N, 10% P, 10% K
- ♦ The key is to match the correct fertilizer to the specific deficiencies of the soil
  Ex. Soil with N-P-K results of L-L-H would require 15-15-5 fertilizer
  Ex. Soil with N-P-K results of H-M-L would require 5-10-15 fertilizer