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