Unit C: Traits of Soil

Lesson 2: Calculating Density of Soil

TERMS

- Permeability
- Soil Density

I. Soil Density

A. Is found by finding the amount of pore space lost within a set area.

1. Soil density is commonly 1.75 grams per centimeter.
2. Soil density can be above 1.75 grams per centimeter, but the soil will lose productivity and have drainage problems due to how dense the soil is.

B. Different textures are more susceptible to soil density.

1. Sandy, Loamy Sand, and Sandy Loam do not have a problem with soil density.
2. Silt, Silt Loam, Loam, Sandy Clay Loam, Clay Loam, and Silty Clay Loam are more common to have soil density problems.
3. Clay, Sandy Clay, and Silty Clay can have the worst problems with soil density.

II. Soil Density Analysis

A. Soil density is found by doing a mechanical analysis:

1. Take a soil sample and weigh it in grams.
2. Take the sample and bake it in an oven to dry the sample.
3. Bake the sample at 350 degrees for 3 hours.
4. Take the sample out and let it cool off.
5. Measure they weight of the soil sample in grams.
6. Measure the sample size in centimeters.
7. Divide the dry weight (cook weight) by the centimeters and that will be your density.

REVIEW/SUMMARY

1. What are some factors that add to soil density?

2. What types of things could be affected by a lower or higher than normal soil density?