

# ECOLOGY LAB 11

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# Soil Sampling Method

- Background information

- **Sampling** involves the selection from the total population of a **subset** of individuals upon which measurements will be made; the measurements made on this **subset** (or **sample**) will then be used to estimate the **properties** (or **parameters**) of the total **population**. Sampling is **inherent** to any field research program in soil science because the measurement of the total population is impossible for any realistic study.

# Soil Sampling Method

- **Soil test** may refer to one or more of a wide variety of soil analysis conducted for one of several possible reasons. Possibly the most widely conducted soil tests are those done to estimate the plant-available concentrations of **plant nutrients**, in order to determine fertilizer recommendations in agriculture. recommend that a soil test contains 10-20 sample points for every (160,000 m<sup>2</sup>) of field.

# Soil Sampling Method



# Laboratory tests often check for plant nutrients in three categories:

- Major nutrients: **nitrogen (N), phosphorus (P), and potassium (K)**
- Secondary nutrients: **sulfur, calcium, magnesium**
- Minor nutrients: **iron, manganese, copper, zinc, and chlorine.**

# General Sampling Procedures

- A critical step in obtaining accurate soil tests is collecting representative samples in the field. Typically, uniform fields should be sampled in a simple random pattern. Fields with significant landscape or other differences should be divided into separate sample areas. Differences may include soil types, slope, degree of erosion, drainage, crop and/or manure history, or other factors that may influence soil nutrient levels.

# Soil sampling Equipment's

- **Standard Augers** – Used for sampling most soil types, standard augers have an open bit design, and are available in (76mm) and (102mm).
- **Clay Augers** – Like the standard augers, clay augers have an open bit design and work well in cohesive soils. Available in (76mm) and (102mm).
- **Sand Augers** – Designed for looser, granular soils, sand augers have closed bits to retain cuttings and are available in (76mm) and (102mm).
- **Mud Augers** – Best-suited for muck-like, boggy and root-bound soils, the mud auger offers an open design and is available only in (76mm).
- **One-Piece Soil Samplers** – Available in (279mm) or (360mm) lengths, these units have a T-handle and steel construction that allows penetration into tougher soils.

# Soil sampling Equipment's

Standard Augers



Clay Augers



Sand Augers





# Soil sampling Equipment's

**Mud (Dutch) Augers**



**One-Piece Soil Samplers**

