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Soil texture analysis by feel method

The soil texture analysis by the feel method is a simple, quick, and inexpensive way to determine the relative proportions of sand, silt, and clay in a soil sample. By manipulating a small amount of moist soil with your hands, you can estimate its texture class, which provides useful insights for agricultural and environmental management.

Here's a step-by-step guide to performing the feel method:

1. Collect the Soil Sample

- Collect a small soil sample (about 25-50 grams) from the area you're interested in. Remove any debris, rocks, or organic matter like roots and leaves.

2. Moisten the Soil

- Add water to the soil sample gradually while kneading it until it becomes moist but not overly wet. The soil should have the consistency of putty or dough. If it's too wet, allow some water to evaporate before proceeding.

3. Perform the Ribbon Test

- Take a small amount of the moistened soil (about the size of a golf ball).
- Roll it into a ball with your hands, and then press it between your thumb and forefinger, squeezing it into a ribbon.
- **If a ribbon forms**:
    - **Length of ribbon**: Measure how long the ribbon stays intact before breaking.
        - **Less than 2.5 cm (1 inch)**: Likely a sandy loam or loamy soil.
        - **2.5 to 5 cm (1–2 inches)**: Likely a loam, clay loam, or silt loam.
        - **Longer than 5 cm (2 inches)**: Likely a clayey soil.
- **Texture**: Feel the texture of the ribbon:
    - **Gritty feel**: Indicates a sandy soil.
    - **Smooth and floury feel**: Indicates a silt-dominated soil.
    - **Sticky and smooth, forms a strong ribbon**: Indicates a high clay content.

4. Grit Test

- Rub a small amount of moist soil between your fingers:
    - **Gritty feeling**: Indicates a higher proportion of sand.
    - **Smooth and slippery**: Indicates a higher proportion of silt.
    - **Sticky, hard to work with**: Indicates a higher proportion of clay.

5. Determine the Soil Class

Based on the length of the ribbon and the feel of the soil, classify the soil into one of the texture classes:

- **Sand**: Feels gritty, does not form a ribbon, and falls apart easily.
- **Sandy Loam**: Slightly gritty, forms a short ribbon (less than 2.5 cm), but breaks easily.
- **Loam**: A balanced feel (slightly gritty, smooth, and sticky), forms a short ribbon.
- **Silt Loam**: Feels smooth and silky, forms a short ribbon, and does not feel gritty.
- **Clay Loam**: Feels sticky, forms a longer ribbon (2.5–5 cm), and may feel slightly gritty.
- **Clay**: Feels very sticky and smooth, forms a long ribbon (longer than 5 cm).

6. Optional: Confirm Using a Soil Triangle

- If you need a more precise classification, compare your results using a soil texture triangle, which is based on the exact percentages of sand, silt, and clay.

The feel method is qualitative, but it is an effective way to quickly assess soil texture in the field.