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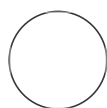
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🌐 Soil pH 1:1 Soil Water Ratio

📁 In 2 collections

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ABSTRACT

Soil pH can be measured at either a 1:1 or 1:2 soil to water ratio. Because of the use of the log scale, the two ratios typically provide similar results. A soil with high clay or organic matter may require a 1:2 or even 1:5 ratio to allow for enough fluid to make a measurement. A sample that will also have the lime requirement (i.e. Sikora) measured will be measured with a 1:1 ratio when possible. With either soil to water ratio, the soil and water are placed in a tube and shaken for 15 minutes on a reciprocating shaker to achieve soil solution equilibrium. A calibrated probe accounting for temperature is used for the measurement. One CAL standard sample is included in each batch.

MATERIALS

- pH and temperature probe in 1521 (located near balances)
- 🧴 50 mL polypropylene centrifuge tube with cap– 1 tube per sample
- Reciprocating shaker Reagents
- pH calibration standards (4.01, 7.01, 10.01)
- DI water (or other solution as requested)
- Beaker for waste

- 1 Measure 🧴 20 g dry weight soil into the Falcon tube (this should be done in the core processing step)

- 2 Add  20 mL DI water
- 3 Place on reciprocating shaker for  00:15:00 at 1000 RPM 15m
- 4 Rinse the pH probe well with DI water and gently pat dry with a kimwipe
- 5 Check the calibration of the pH meter using the pH 4.01 and 7 standard. If either of the pH values differ from the known calibrate the pH probe.
 - 5.1 Calibrate the pH meter with a minimum of two standards that bracket the potential sample results according to the instructions on the screen.
 - 5.2 The probe should be calibrated using standards in the same type of vessel as the samples will be measured in (centrifuge tubes).
- 6 Insert rinsed pH/temperature probe combo into the sample.
 - 6.1 Be careful to keep the probes still and not against the wall or bottom of the vessels
 - 6.2 Make sure the diaphragm is submerged in suspension.

6.3 Record results when the numbers stabilize onto the pH log sheet.
[Soil_pH_log.xlsx](#)

7 Between each measurement, rinse the probe well with DI water over the beaker and gently pat dry the probe with a kimwipe.

8 When not measuring, make sure that the pH probe is rinsed and fully submerged in **1M 3 Molarity (M) KCl**.

9 After measuring the pH, discard the soil water slurry into the autoclave waste (smaller containers on the counter or large container under bench near the hood).

10 Print the required labels needed for Bray/Olsen extraction for each site, depth, and replicate.

10.1 1000S_SITE_P_BRAY_DEPTH_REPLICATE or 1000S_SITE_P_OLSEN_DEPTH_REPLICATE

10.2 1000S_SITE_Pext_BRAY_DEPTH_REPLICATE