

Protocol for measuring electrical conductivity of dried soils

Purpose:

Measure electrical conductivity of dried soils, which can be used a proxy for nitrate and sodium levels depending on context.

Procedure:

1. Place a 50 mL centrifuge tube on a balance (at least 2 decimals) and tare.
2. Weigh 6.00 ± 0.05 g of dry soil into the 50 mL centrifuge tube. Record weight of soil.
3. Add 30.00 mL of 18 Mohm DI water using a 50 mL graduated cylinder or bottle-top dispenser. Make sure the cap is tight, and invert three times.
4. Replicate every 5 samples and be sure to include blanks.
5. Let samples sit for 23 hours.
6. Shake for 1 hr on the reciprocating shaker.
 - a. Ensure all caps are screwed on tightly and tubes are secured on the shaker with tape.
7. Centrifuge tubes for 2 minutes at 6000 rpm.
8. Filter the supernatant through a 1 μ m glass fiber filters (using a syringe) into a 20 mL scintillation vial.
9. Measure EC after filtering with EC probe at PSLA. Set the channel to 1 (μ S/cm). Clean off the probe with DI water and a kimwipe. Place probe into the sample and allow for stabilization.
 - a. Make sure to clean off the probe with DI water and a kimwipe between each sample.
10. Keep supernatant in a scintillation vial tray and store in the fridge in case you need to re-analyze. The solution (mostly water) can be poured down the drain.