2009 Deep Soil Core Protocol V.2

Test McTester[1]
[1]USDA-ARS

Version 2
Mar 12, 2021

1 Works for me This protocol is published without a DOI.

PDI Test

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ABSTRACT

Describes the method of analyzing Deep Soil Cores

PROTOCOL CITATION

Test McTester 2021. 2009 Deep Soil Core Protocol. **protocols.io**
https://protocols.io/view/2009-deep-soil-core-protocol-bs9bnh2n
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1 Mark cores at top of soil with marker around outside of cylinder, keeping the cores upright not to allow the soil to slide up the tube. Measure the overall length of the sample (cm) and enter on data sheet.

2 Place piece of tape on side of template and mark segment sizes on it, Lay tube in PVC template and cut tube in half length wise, , then cut sample into segmented lengths with a spatula 0-5, 5-30, 30-60, 60-70, 70-80, 80-100 putting individual segments in paper bags and labeling each bag, then place in green house to let dry. NOTE: At this time, it may be easier to break up the clumps rather than after they have dried.

3 Weigh each sample and enter on data sheet, weigh 7 bags and average the weights to get average to use for bag weight to tare scale at before weighing samples

4 Grind samples separating stones and soil through a 2 mm sieve putting the stones and soil in separate containers, stones back in the paper bags, and soil in quart zip locks transcribing the tag information from the paper bags onto the zip locks.

5 After grinding samples, all stones collected (didn't pass through a 2mm screen) must be saved from each individual tube and segment. We just dumped the stones back into the original bag and saved until all the samples were ground.

6 After all samples are ground, the rocks must be washed free of soil and OM. Using a 2mm screen, each rock sample was pre-soaked with water, scrubbed free of dirt, and placed in petri dish or aluminum pan for drying. Also, the rock samples were submerged in a wash basin to float off any OM. When washing the stones, a lot of the 'stones' were actually clay clumps so much of the sample is washed away. A wash basin under the screen helps collect sediment rather than letting it go down the drain. Samples were placed in a dryer at 50C.

7 Send the complete volume of soil labeled in a zip lock out for carbon analysis and ask the lab for the excess sample to be returned for archiving.

8 Calculate bulk density by taking roughly 75g of stones, the stone sample is dumped into a graduated cylinder with a known volume of water. We used. 300ml of water. Record the stone weight prior to adding to cylinder, the starting water volume, and the displaced water volume. This process was repeated 3 times for each depth.