

Full Dataset Description

A hydraulic soil sampler was used to collect soil cores that measured approximately 5.3 cm (~2-5/64") in diameter and up to 1 meter (~40") deep. After collection, soil cores were stored in a freezer until they could be further processed. Soil cores were segmented into four depth intervals, sieved to 2 mm (~5/64"), and dried at 60°C (140°F). Routine fertility measurements including SOM, cation exchange capacity, and soil nutrients were performed at a lab certified by Wisconsin and Minnesota. Other analyses were performed at the University of Wisconsin - Madison.

| measurement | common unit | technical unit | description |
|----------------------------------|-------------------------|-----------------------|---|
| particulate organic carbon (POC) | percent (%) | g POC / 100 g soil | particulate carbon measured by wet sieving to > 53 µm (~1/500") |
| soil organic matter (SOM) | percent (%) | g SOM / 100 g soil | soil organic matter measured by loss on ignition |
| soil test P | parts per million (ppm) | mg P / kg soil | available phosphorus measured in Bray 1 extract |
| soil test K | parts per million (ppm) | mg K / kg soil | available potassium measured in Bray 1 extract |
| exchangeable Ca | parts per million (ppm) | mg Ca / kg soil | exchangeable calcium measured in Mehlich III extract |
| exchangeable Mg | parts per million (ppm) | mg Mg / kg soil | exchangeable magnesium measured in Mehlich III extract |
| cation exchange capacity (CEC) | none | mEq / 100 g soil | ability for soil to hold positive ions estimated from K, Ca, and Mg |
| sand | percent (%) | g sand / 100 g soil | sand mass percent measured by hydrometer |
| silt | percent (%) | g silt / 100 g soil | silt mass percent measured by hydrometer |
| clay | percent (%) | g clay / 100 g soil | clay mass percent measured by hydrometer |
| soil organic carbon (SOC) | percent (%) | g SOC / 100 g soil | organic carbon mass percent measured by dry combustion |
| pH | none | -log[H ⁺] | soil acidity measured in 1:1 mixture of soil and water by weight |

Datasets are available as a spreadsheet (CSV file) upon request. Please email Gregg Sanford (gsanford@wisc.edu) if you would like to request a spreadsheet.