

Soil Moisture and Soil Organic Matter

Equipment and Supplies:

- Al weigh boats
- Balances (x5, at least) with 3 decimal places at least
- Ball point pen (x5, at least)
- Data sheet (columns: plot number, tin weight, wet weight, oven dry weight, ashed weight)
- Drying oven at 40 degrees C
- Muffle furnace at 400 degrees C

Steps:

1. Use ball point pen to imprint bottom of Al weigh boat with plot number
2. Weigh out ~10g of soil. Record actual weight to three decimal places on data sheet.
3. Put in drying oven (40 degrees Celsius). Note time.
4. Remove from oven 24 hours or more later. Record amount of time in the oven
5. Soil moisture: Weigh again. Record oven-dried weight.
6. Put oven-dried samples in muffle furnace (400 degrees Celsius) for 4 hours. Make sure fume hood is on above the furnace so we don't set off the fire alarm.
7. Let cool approximately 1 hour. Either keep samples in turned off muffle furnace or in oven so samples don't regain moisture from air.
8. Soil Organic Matter: Weigh again. Record ash weight to three decimal places on data sheet.

For more information on SOM see

Storer, D. A. 1984. A simple high sample volume ashing procedure for determination of soil organic matter. Commun. In Soil Sci. Plant Anal. 15(7): 759-772.