# Organic Matter Determination of Calcareous Soils Using Dry Combustion Analysis. (S08-schwab184919-Poster)

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## Abstract:

Research laboratories commonly use either the Walkely-Black method or the loss on ignition method (LOI) for soil organic matter determination. Both methods are undesirable because chromium waste is generated in the Walkely-Black method, and water loss from some clay minerals can inflate the OM content when the LOI method is used. Dry combustion carbon analysis could a viable alternative OM test if organic carbon could be separated from inorganic carbon. A study was initiated using a LECO CNS-2000 to determine optimum temperature and oxygen flow parameters for organic carbon analysis of calcareous soil. After the optimum temperature and oxygen flow profile was determined, calcareous and non-calcareous soil samples from the North American Proficiency Testing (NAPT) program and the NCR-13 soil bank were analyzed. Dry combustion results were compared to the mean WB and LOI obtained by the NAPT program. Dry combustion correlated well with WB (r2=0.97) for all soils. In addition to providing accurate OM results the dry combustion method also provides accurate total soil nitrogen content which is important in most research applications.

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