Evaluating Soil Management Effects On C Sequestration In Soil Macroorganic Matter. (S06-mirsky122745-Poster)

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Abstract:

Soil management can influence C sequestration by its impact on soil macroorganic matter (MOM). Because C sequestration is a recent criterion for soil management, results from experimental soil management and a regional survey across a range of soil management conditions could serve to introduce MOM as a management tool for farmers. However, MOM fractionation is laborious and requires a level of skill and experience that limits its suitability for routine use by soil testing laboratories. The objectives of this study were: to evaluate the impact of soil management on C sequestration in MOM of a long-term crop rotation and fertility experiment, and on farms in eastern and central Pennsylvania; to test the relationship between C recovery as MOM or by chemical labile SOM (CLOM) fractionation (KMnO(@4)); and to compare the effect of sample handling (ground soil cores vs. sieved soil cores) on C recovery in MOM fractionation. The C sequestered in MOM tended to be greater with dairy manure as a nutrient source compared to soil management with mineral fertilizers in the controlled study. Treatment effects on C sequestration were similar when measured with the two sample handling procedures. We will also be comparing C sequestration measured as MOM with that measured as CLOM.

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