



## **Cumulative effects of biochar, mineral and organic fertilizers on soil organic matter**

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We investigated the effect of three consecutive annual applications of biochar at rates of 0 and 20 t ha<sup>-1</sup>, in a factorial combination with a mineral fertilizer (NPK and nitrosulfate) and two types of organic amendment (municipal solid waste compost and sewage sludge), on soil organic matter in a field experiment under Mediterranean conditions. Biochar increased significantly soil organic C content and C/N ratio. In biochar-amended soils, soil organic C increased significantly with the addition of municipal solid waste compost and sewage sludge. To capture organic matter protection mechanisms related to aggregation and mineral interaction, the soil samples will be fractionated into free (unprotected), intra-macroaggregate, intra-microaggregate, and mineral-associated organic matter pools, and the isolated fractions will be subjected to further chemical and spectroscopic analysis.