



Studying soil organic carbon in Mediterranean soils. Different techniques and the effects of land management and use, climatic and topographic conditions, organic waste addition

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Soil organic carbon (SOC) is an important component of global carbon cycle, and the changes of its accumulation and decomposition directly affect terrestrial ecosystem carbon storage and global carbon balance. The ability of soil to store SOC depends to a great extent on climate and some soil properties, in addition to the cultivation system in agricultural soils.

Soils in Mediterranean areas are very poor in organic matter and are exposed to progressive degradation processes. Therefore, a lot of actions are conducted to improve soil quality and hence mitigate the negative environmental and agronomic limitations of these soils.

Improved cultivation systems (conversion of cropland to pastoral and forest lands, conventional tillage to conservation tillage, no manure use to regular addition of manure) have been introduced in recent years, increasing the contents in SOC and therefore, enhancing the soil quality, reducing soil erosion and degradation, improving surface water quality and increasing soil productivity.

Moreover, the organic waste addition to the soils is especially useful in Mediterranean regions, where the return of organic matter to soil not only does it help soils store SOC and improve soil structure and soil fertility but also it allows to reuse a wide range of agro-industrial wastes.