

SOIL ORGANIC CARBON DYNAMICS IN RELATION TO DIFFERENT LAND USES

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Abstract: Maintenance of organic carbon in soil (SOC) is critically important for sustained agricultural productivity and environmental quality. This review paper presents SOC dynamics resulting from different land uses. Global warming is a threat issue for whole of world. CO₂ emission from land use is a major factor responsible for climatic change. Enhancing soil carbon sequestration in agricultural land is a strategy of vital importance to decelerate the observed climate changes. However, soil physical disturbances have aggravated the soil degradation process by accelerating erosion. Thus, reducing the magnitude and intensity of soil physical disturbance through appropriate farming/agricultural systems is essential to manage soil carbon sink capacity of agricultural lands. Land use changes in the tropics are responsible for more greenhouse gas emissions. The dominant type of land use change is the conversion of forest to agricultural systems that promote CO₂ concentration in atmosphere. Soil organic carbon has been recorded abundantly in agroforestry systems than other land use systems.

Keywords: Soil carbon sequestration, Soil degradation, Carbon sink, Agroforestry

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