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A REVIEW

Concept of soil organic carbon stock

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Abstract : Soil organic carbon (SOC) controls ecosystem and agro-ecosystem function, influencing soil fertility, water holding capacity and many other functions. The total amount of C stored in the surface soil is higher than sub surface soil area. It is estimated that the amount of C in the atmospheric pool is about 766 Pg C and about 566 Pg C in living vegetation. It is also of global importance because of its role in the global carbon cycle and therefore, the part it plays in the mitigation of atmospheric levels of greenhouse gases (GHGs). Different factors such as topography, climate, and soil physico-chemical properties also effect SOC stock in soil. Past long-term experimental studies have shown that soil organic C is highly sensitive to changes in land use, with changes from native ecosystems such as forest or grassland to agricultural systems almost always resulting in a loss of SOC. Land use change in different part of the world has also been observed to influence SOC stocks in different depth of the soil. Proper management of land use and land management practices and application of fertilizers, organic compost and manures could leads to greater C-storage in the soil, improves soil fertility and crop yield.

Key Words : Organic carbon, Ecosystem, Carbon cycle, Greenhouse gases, C-storage

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