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Short Communication

Soil Organisms for Better Agroforestry Performance

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Soil is the medium through which plant grow and it stores variety of microorganisms, invertebrates, protozoan's, bacteria, and fungi etc. that play a viable role in soil ecosystem services. Their presence, types and numbers affects an overall soil physicochemical property that indicates soil health and quality [1,2]. Agroforestry stores variety of organisms into the soil that plays an important role in its performance and productivity. From a time immemorial, agroforestry system has been gaining wide popularity due to its diversified nature and better ecosystem services for improving lives and livelihood of poor people. Integrating tree, crop and livestock's in agroforestry systems have been practiced from an ancient time. In this system, an addition of litter and other plant residues can be decompose by various soils inhabiting microorganism that release essential nutrients and maintains soil organic carbon (SOC) in agroforestry system [3,4]. Moreover, these biological organisms maintain soil biological properties along with soil fertility enhancement and regulate biogeochemical cycle. Carbon addition, movement and flux can also be regulated by soil inhabiting organisms. Moreover, litter inputs and its decompositions affect SOC status that governs fertility and productivity in agroforestry system. Soil organic matter and organic carbon is a good indicator of soil fertility that determines soil health and quality. Soil health is a key indicator that reflects the fertility and productivity of the soil, thus, it is known as integrative capacity of respective soil environment which governs and responds to cultural or production practices by maintaining both productivity and ecosystem sustainability. However, SOC pools affect overall agroforestry productivity and its performance. Although, an extensive root system of woody perennial trees hold soil and moisture along soil profile depth for long time by adding litter and other organic residues that reduce evaporation losses and provides erosion control. Moreover, integrating some leguminous trees in agroforestry systems improve soil health and quality. Leguminous nitrogen fixing trees works as innovative tools for maintaining soil fertility and productivity by addition and decomposition of litter and other organic input [5]. An effective management of agroforestry system can promise a better soil health and productivity along with food and climate security. Thus, a sustainable soil management practices can improve soil health and quality that ensure better agroforestry performance for a long time.

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