Special Issue

Long-Term Soil Organic Carbon Dynamics in Agroforestry

Message from the Guest Editors

Agroforestry systems, which involve integrating trees with crops, have proven more effective in sequestering soil organic carbon than traditional agricultural practices. This enhanced capability for carbon sequestration plays a role in the global efforts to combat climate change. In addition, SOC is a crucial indicator of soil health and fertility. Therefore, long-term research is needed to explore various aspects of SOC dynamics in agroforestry. Key topics could include the following:

- The impact of species composition and diversity
- Carbon fluxes in soil–plant–atmosphere systems
- Comparative analyses of carbon sequestration potential between agroforestry and monoculture systems
- The role of agroforestry in climate change mitigation
- Dynamics of particulate and mineral-associated organic matter in soils and their significance in carbon stabilization
- The importance of soil enzymes
- The role of nutrient-solubilizing microorganisms
- Carbon modeling, using techniques to predict carbon storage and flux
- Studies on biochar application, exploring improving soil health, and fertility
- Qualitative or mechanistic assessment of soil

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