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Biochar and Its Use as a Promising Soil Conditioner for Agricultural and Environmental Sustainability

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Message from the Guest Editors

Biochar application in soils is a reliable approach to mitigate climate change and improves overall soil quality. Recent studies show that biochar plays a crucial role in regulating soil physico-chemical properties and crop improvement. Moreover, biochar affects nutrient cycling by altering chemical forms, changing phosphorous sorption and desorption capacities, and influencing the structural and functional microbial community, enzymatic activities and mycorrhizal associations. The porous structure, high specific surface area, and metal oxide and surface functional groups make biochar an effective material for removing nutrients and pollutants from eutrophic and polluted water via ligand exchange, cation bridge and precipitation. However, its potentiality as a soil conditioner and how its effects on agricultural and environmental sustainability is still in the nascent stage. Hence, it is a need to understand these aspects through biochar process and production and its applicability in wider area including waste management. Chapters related to environmental impact and life cycle assessment by using biochar may also be invited in this Special Issue.

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Message from the Editor-in-Chief

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