

## Special Issue

# Biochar-Based Fertilizers for Sustainable Agriculture: Feedstocks, Production, and Effects on the Soil-Plant System

### Message from the Guest Editors

Biochar is a solid material, rich in carbon, obtained by thermochemical processes from various organic residues. Biochar as a soil amendment has been widely studied and the results indicate that it can partially or fully replace chemical fertilizers in agricultural production. However, in some cases, low concentrations or imbalanced nutrients may limit the use of biochar as a fertilizer. In view of this, several strategies have been assessed to make use of biochar as a fertilizer viable. Enriching biochar with one or multiple nutrients is a promising strategy to increase nutrient-use efficiency, reduce final product costs and reduce the environmental damage caused by chemical fertilizers, such as nutrient leaching and greenhouse gas emissions. There are several techniques to enrich biochar with nutrients to produce biochar-based fertilizers, including pre- and post-pyrolysis procedures. The feedstocks used to enrich biochar can be grouped into chemical fertilizers, organic wastes, rock dust, minerals, and pure inorganic compounds. This Special Issue welcomes submissions on biochar-based fertilizers including feedstocks, production, and effects on the soil-plant system.

### Guest Editors

Prof. Dr. Cícero Célio de Figueiredo

Dr. José Ferreira Lustosa Filho

Dr. Keiji Jindo

### Deadline for manuscript submissions

closed (25 July 2025)



## Agriculture

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