Combined impact of biochar and straw amendments on soil fertility and crop yield in wheat-maize system

Jinze Bai, Yongzhong Feng, Sudhir Yadav

QAAFI, The University of Queensland, Australia
College of Agronomy, Northwest A&F University, China

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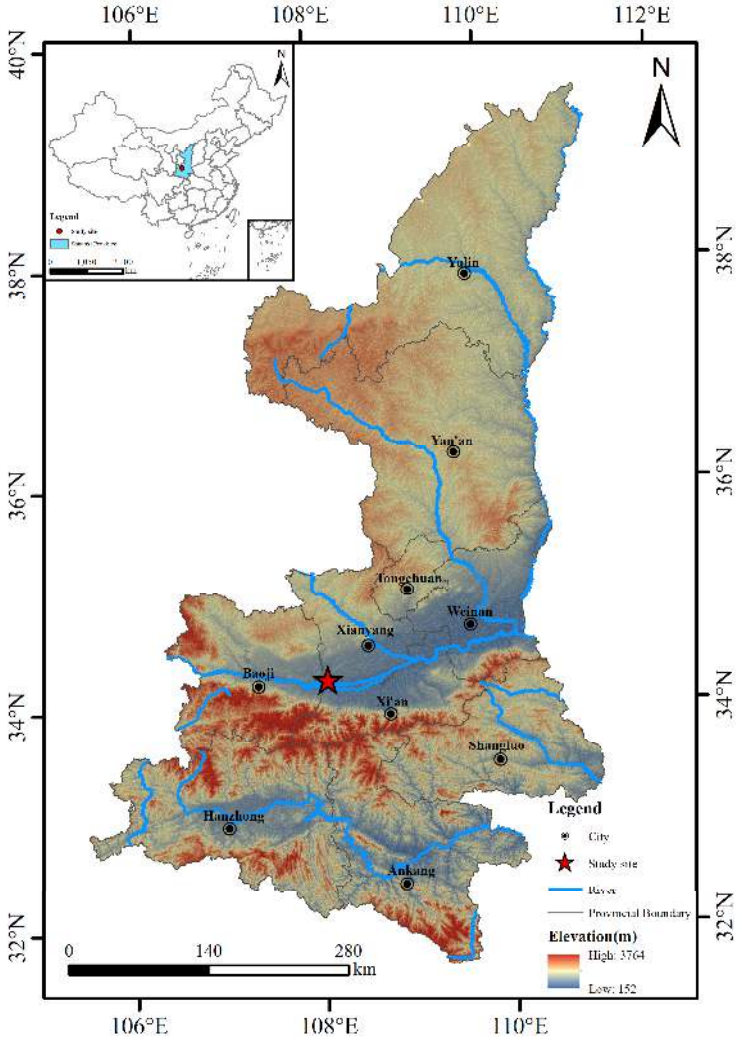
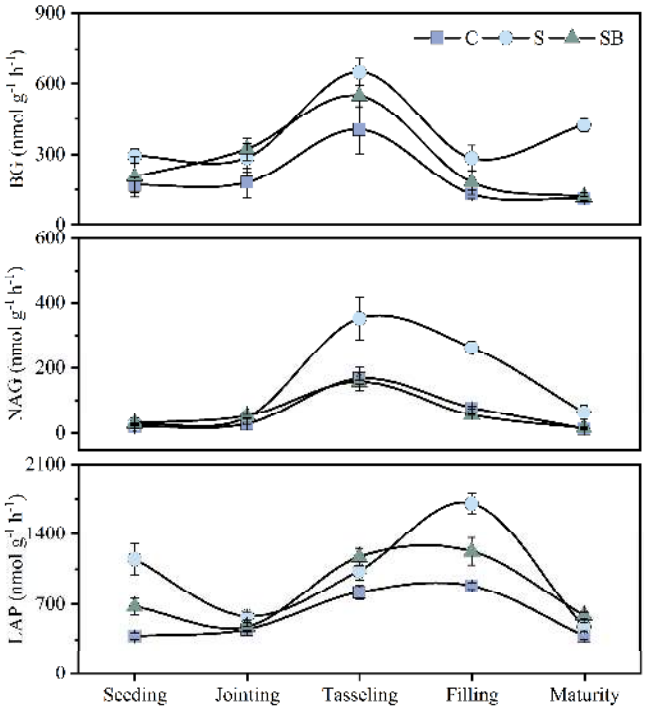
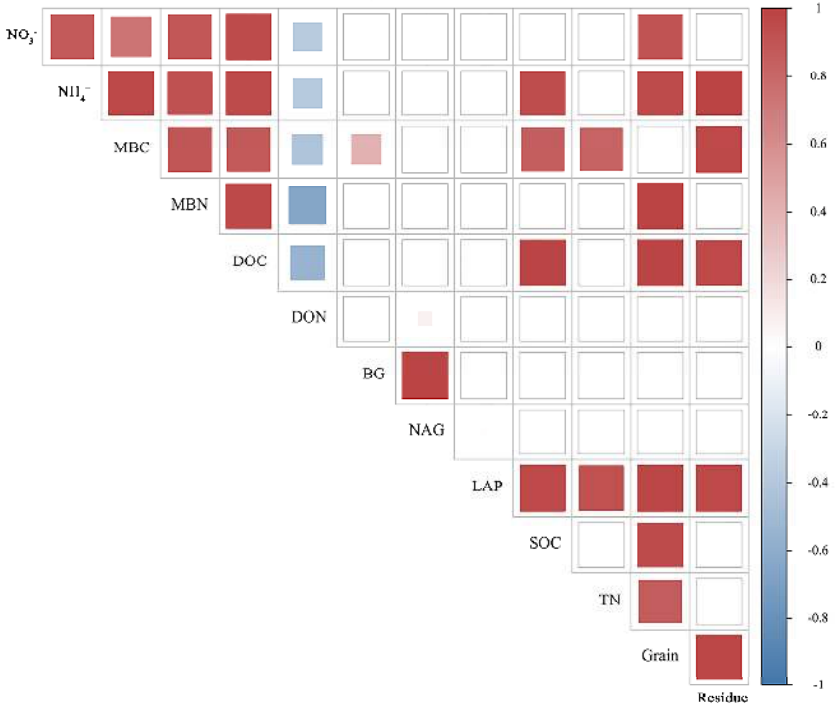


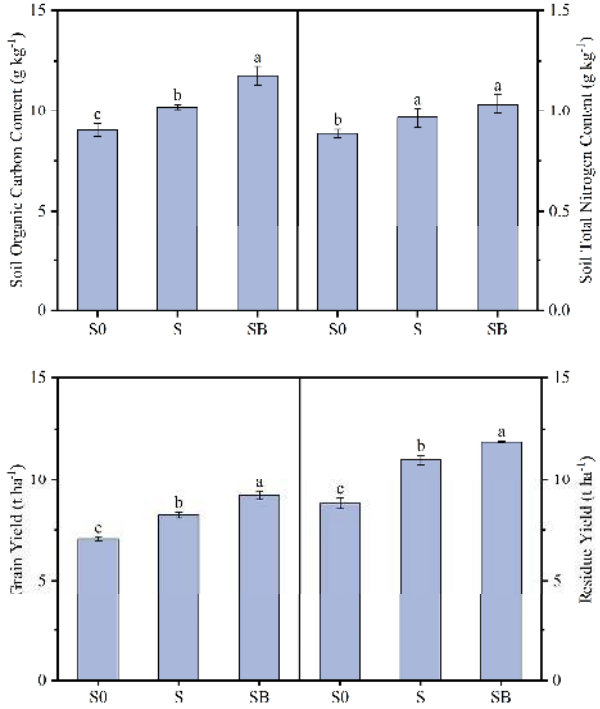
Biochar is a promising carbon sequestration strategy that can improve the physicochemical conditions of soil for crop growth.

However, the effects of biochar on **soil enzyme activities** are unclear, limiting our understanding of its impact on soil biological health.

A six-year field experiment was conducted in a temperate wheat-maize agroecosystem in north-western China, with three treatments: no straw incorporation (C), straw incorporation (S), and straw incorporation combined with biochar amendment (SB).







- Compared with S, SB decreased **soil labile fractions** and significantly suppressed enzyme activities, leading to a 14.3% reduction in microbial biomass carbon.
- Increases in soil organic carbon and total nitrogen were observed in SB compared to S, contributing to increases in **grain and residue yields**.

Thank You

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