

Special Issue

Soil Nutrient Dynamics in Agriculture: Cycling, Chemistry and Climate Resilience

Message from the Guest Editor

This Special Issue is dedicated to advancing the understanding of soil nutrient dynamics in the context of environmental stress and sustainable agricultural development. Soil nutrient dynamics constitute a key component of agroecosystem functioning, determining both agricultural productivity and environmental quality. Under increasing climate change pressures, there is a growing need for a deeper and more quantitative understanding of the links between nutrient cycling and the resilience of soil–plant systems to environmental stress. This Special Issue focuses on two main complementary research pillars:(i) Coupling nutrient cycling with measurable climate resilience indicators, such as yield stability, nutrient use efficiency, and reductions in nutrient losses;(ii) The application of innovative materials and technologies in nutrient management, including waste-derived materials, engineered sorbents (e.g., biochar, zeolites), and advanced modeling approaches (process-based and machine learning).

Guest Editor

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