Special Issue

Resilient Legume-Based Cropping Systems: Integrating Agronomic, Soil and Nutrient Perspectives

Message from the Guest Editors

Legume-based cropping systems enhance agricultural sustainability through nitrogen fixation, improved soil health, and diversified rotations. In this Special Issue, we aim to explore the integration of agronomic practices, soil functioning and nutrient-cycling dynamics in legume-based systems to advance resilience in cropping systems. Research topics of interest include the following: the role of legume species diversity and mixture designs in enhancing system stability; the interactions of legumes with soil microbial communities and soil organic matter accrual; nutrient flows (nitrogen, phosphorus, potassium, micronutrients) under legume-based rotations; resilience to abiotic and biotic stresses; and the integration of legumes in novel cropping systems. We are soliciting original research articles that address the following: agronomic strategies to integrate legumes effectively; soil–nutrient–microbe interactions underpinning legume system resilience; assessment of nutrient use efficiency, soil health indicators and yield stability in legume-based systems; and system-level evaluations of legume integrations in diverse environments.

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Deadline for manuscript submissions

10 May 2026

Agriculture

an Open Access Journal by MDPI

Impact Factor 3.6
CiteScore 6.3

mdpi.com/si/260913

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Agriculture (ISSN 2077-0472) is an international, scholarly and scientific open access journal publishing peer-reviewed research papers, review articles, communications and short notes that reflect the breadth and interdisciplinarity of agriculture.

Editor-in-Chief

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