

Special Issue

Strategies for Sustainable Sugarcane Health and Productivity

Message from the Guest Editors

Sugarcane agroecosystems face multifaceted challenges that include disease outbreaks, suboptimal nutrient management, and climate-driven yield instability; meanwhile, diseases like rusts, smuts, and mosaic remain persistent threats. Emerging research has highlighted how integrated crop management—encompassing disease surveillance, precision fertilization, soil health optimization, and climate-resilient farming practices—can synergistically enhance productivity and sustainability. This special issue invites multidisciplinary contributions. Submissions may explore pathogen diagnostics, rhizosphere–microbe interactions, host resistance breeding, precision nutrient delivery systems, regenerative soil practices, and data-driven decision tools for disease and fertility management. We particularly encourage studies on climate-smart interventions, such as biofertilizer-based disease suppression synergies, rootzone microbiome engineering, and AI-driven models integrating disease risk with fertilizer efficacy. By bridging disease control, agronomic innovation, and ecosystem resilience, this Special Issue aims to advance scalable solutions for global sugarcane systems.

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Deadline for manuscript submissions

20 February 2026



Agronomy

an Open Access Journal
by MDPI

Impact Factor 3.4
CiteScore 6.7



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