

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.

Guest Editors

Dr. André Bueno Gama

Dr. Saulo Castro

Dr. Ziqin Pang

Prof. Dr. San-Ji Gao

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Agronomy
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
agronomy@mdpi.com

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Editor-in-Chief

Prof. Dr. Leslie A. Weston

Gulbali Centre for Agriculture, Water and Environment Research,
Charles Sturt University, Wagga Wagga, NSW 2678, Australia

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