Special Issue

Practical Use of Crop, Pest and Diseases Models in Sustainable Agriculture

Message from the Guest Editors

As global temperatures rise and precipitation patterns shift, models play a pivotal role in assessing risks such as heat-induced stress, drought-driven yield losses, and the spread of crop pests, enabling the design of adaptive strategies like climate-resilient variety selection and precision farming techniques. To optimize crop health and productivity simultaneously, advanced modeling techniques are employed to simulate the dynamics of pests, diseases, and weeds, enabling data-driven decisions for chemical treatments and integrated pest management (IPM) strategies. Advancements in artificial intelligence and machine learning further enhance their capabilities by assimilating real-time data from remote sensors and satellite imagery, refining predictions of growth stages, resource needs, and carbon dynamics. This Special Issue focuses on innovative crop model applications and the modeling of pests, diseases, and weeds in sustainable agriculture. We welcome research, reviews, and case studies on climate-smart practices, resource efficiency, and resilience, fostering solutions for resilient, sustainable farming systems.

Guest Editors

Prof. Dr. Chuang Zhao

College of Resources and Environmental Sciences, China Agricultural University, Beijing 100091, China

Dr. Liujun Xiao

National Engineering and Technology Center for Information Agriculture, Key Laboratory for Crop System Analysis and Decision Making, Jiangsu Collaborative Innovation Center for Modern Crop Production, Nanjing Agricultural University, 1 Weigang Road, Nanjing, Jiangsu 210095, China

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

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Message from the Editor-in-Chief

Agriculture (ISSN 2077-0472) is an international, cross-disciplinary and scholarly journal on the science and technology of crop and animal production, and management of the natural resource base for agricultural production. We invite submissions from authors according to the aims and scope of the journal described in more detail on this page. *Agriculture* is published in an open access format – articles are published on the journal's website immediately after acceptance, giving the scientific community and the public unlimited and free access to the content.

Editor-in-Chief

Prof. Dr. Les Copeland
Sydney Institute of Agriculture, School of Life and Environmental Sciences, The University of Sydney, Sydney, NSW 2006, Australia

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