Special Issue

Model-Based Evaluation of Crop Agronomic Traits

Message from the Guest Editors

In the past, crop improvement mainly relied on field trials and phenotypic observations, which were both time-consuming and resource-consuming; this greatly limited the efficiency and effectiveness of crop improvement. However, with the advent of crop modeling, coupled with the challenges of climate change, the model-based assessment of crop agronomic traits has become an important tool for modern agriculture, integrating advances in computational modeling, remote sensing, and data analysis. It has revolutionized the way researchers assess traits such as yield potential, drought tolerance, and nutrient use efficiency. The purpose of this Special Issue is to compile cutting-edge research on the development, validation, and application of models in crop science. We hope that the papers solicited will deepen our understanding of genotype–environment interactions, optimize agricultural management strategies, and improve prediction accuracy under different climatic conditions. The scope of research includes but is not limited to mechanistic and empirical models, machine learning models, and high-throughput phenotyping models.

Guest Editors

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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

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