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Multi-omic Integration for Applied Prediction Breeding

Guest Editors:

Prof. Dr. Moysés Nascimento
Department of Statistics, Federal University of Viçosa, Viçosa 36570-260, MG, Brazil

Dr. Diego Jarquin
Agronomy Department, University of Florida, Gainesville, FL 32611, USA

Dr. Camila Ferreira Azevedo
Department of Statistics, Federal University of Viçosa, Viçosa, Minas Gerais, Brazil

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Message from the Guest Editors

One of the primary goals of humanity is food security. However, environmental variations, limitations of arable land, reduced water availability, and a growing population require research to support plant breeding implementations. The integration of large multi-omics datasets could be seen as a good strategy to circumvent these challenges. New approaches based on Artificial Intelligence methods and traditional parametric models can help introduce quantitative genetics data and biostatistics concepts, among other layers of information, to explain trait performance. More specifically, these new developments aim to find new ways to drive genetic improvement and gain biological insights by designing and optimizing selection methods for plant breeding. These methods leverage information from multiple facets of plant biology (genomics, transcriptomics, proteomics, metabolomics, ionomics, and high-throughput phenotyping), providing novel solutions to unravel the biological basis of complex traits for plant breeding programs. In this Special Issue, we aim to exchange knowledge on any aspect related to Multi-Omic Integration for Applied Prediction Breeding in any crops.

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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

Message from the Editor-in-Chief

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Agronomy Editorial Office
MDPI, St. Alban-Anlage 66
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