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Environmental and Genetic Factors in Field Crop Production and Improvement: Mechanisms and Regulation

Guest Editors:

Dr. ShuiJin Hua

Institute of Crop and Nuclear
Technology Utilization, Zhejiang
Academy of Agricultural
Sciences, Hangzhou 310021,
China

Dr. Yang Zhu

Department of Agronomy and
Plant Breeding, College of
Agriculture and Biotechnology
(CAB), Zhejiang University,
Hangzhou 310058, China

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Message from the Guest Editors

Crop production with improved quality and yield is generally affected by both genetic and environmental factors. Need-to germplasms have been largely produced via multiple approaches. Recently, gain-of-function and loss-of-function genetic materials have shown potential applications in modern crop breeding programs. In addition, genome editing for targeted traits and other methods with genetic information changes are available via toolkits to enhance crop production, improve yield, and achieve nutrient enrichment. Therefore, it is essential to understand the mechanisms of how genetic information is precisely transduced at different field conditions and in various consequential development transitions. With dramatic changes in the globe's climate, how to increase plant tolerance in response to environmental stress is a key research area for the crop industry and for food security. However, the mechanism underlying these changes are still largely unknown. This Special Issue of *Plants* plans to decipher how both genetic and environmental factors contribute to crop improvement, showcasing perspectives on agronomy, ecophysiology, biochemistry, bioengineering, and crop biology.



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Special Issue



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Editor-in-Chief

Prof. Dr. Dilantha Fernando

Department of Plant Science,
University of Manitoba, Winnipeg,
MB R3T 2N2, Canada

Message from the Editor-in-Chief

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Plants Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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