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Improving Nitrogen Use Efficiency in Model and Crop Plants: From Lab to Field

Guest Editors:

Dr. Maria Rosa Abenavoli
Department of Agraria, University Mediterranea of Reggio Calabria, Località Feo di Vito snc, 89124 Reggio Calabria, Italy

Dr. Francesco Sunseri
Department AGRARIA, University Mediterranea of Reggio Calabria, Località Feo di Vito SNC, I-89124 Reggio Calabria, Italy

Prof. Dr. Agostino Sorgonà
Dipartimento Agraria, Università degli Studi di Reggio Calabria, Reggio Calabria, Italy

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Message from the Guest Editors

Nitrogen (N) availability is one of the major factors limiting plant growth and productivity, being a structural component of amino acids, nucleic acids, and other N-containing biomolecules. To maintain high crop yields for meeting global food demands in intensive agriculture, N fertilizers have been massively applied with a negative impact on the environment and human health. In limited N fertilizer cropping systems, improving the nitrogen use efficiency (NUE) and identifying high-NUE genotypes are important goals for maintaining a high sustainable yield. NUE is a complex multigenic trait, which encompasses the plant's efficiency to absorb (NUpE component), assimilate, transport, and remobilize the available N from the soil (NUtE component). It is governed by interacting genetic and environmental (GxE) factors. NUE improvement might permit solving the trade-off between productivity and environmental impacts. This Special Issue aims to publish the most recent discoveries on phenotyping, mapping quantitative trait loci (QTLs), and selecting candidate genes for NUE improvement in model and crop plants.

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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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Contact Us

Plants Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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