

# Plant Nitrogen Nutrition: From Cell to Field

## SPECIAL ISSUE

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Edited by Guohua Xu

# Plant Nitrogen Nutrition: From Cell to Field

This JXB special issue covers the topics of Nitrogen (N) transport, N metabolism, N sensing and signaling networks, N interaction with water, N in plant-microbiota association, and N use efficiency from cell to field.

## Invited reviews

*Barbara Reinhold-Hurek* Microbial nitrogen cycling in association with plants

*Alia Dellagi and Bertrand Hirel* Can interactions between arbuscular mycorrhizal fungi and soil bacteria improve plant N acquisition?

*Richard Broglie* Patterns of nitrogenase expression in the rhizosphere in wild type and remodeled diazotrophs

*Nico von Wieren* Nitrogen-dependent changes in root system architecture: from *Arabidopsis* to cereals

*Alain Gojon* Nitrate signaling mechanisms in *Arabidopsis*

*Yinbo Gan and Brian G. Forde*  
Progress of nitrate regulate lateral root and root hair development in plants

*Herbert Kronzucker* The intersection of nitrogen nutrition and water use in plants: Understanding new paths toward improved crop productivity under changing climate conditions

*Joseph Swift and Gloria Coruzzi* A balancing act: How nitrogen and drought signaling combine to regulate plant responses

*Mechthild Tegeder and Michael Udvardi* From nodule to sink: Nitrogen partitioning processes in legumes

*Xiaorong Fan, Anthony J. Miller and Guohua Xu* Plant nitrogen uptake and assimilation – regulation of cellular pH homeostasis

*Chengcui Chu* Rethinking of NRT1.1: Mechanisms and applications in plants

*Kunhsiang Liu* Protein phosphorylation in nitrate signaling

*Anne Krapp* Novel perspectives on the molecular crosstalk mechanisms in plant responses to mineral nutrient availability

*Le Luo, Yali Zhang and Guohua Xu* How does nitrogen shape plant architecture?

*Fusuo Zhang and Lixing Yuan* Breeding for high yield and nitrogen use efficiency in maize: Past and future

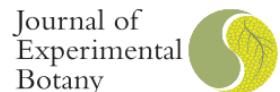
On the reverse: Aerial view of the growth of a core collection of rice germplasms in a paddy field with three different levels of N fertilization (courtesy of Prof. Guohua Xu).

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