# Special Issue

# Plant–Rhizosphere Interactions

## Message from the Guest Editors

Research on plant–rhizosphere interactions is gaining much traction. While it has long been known that beneficial microbes such as mycorrhizal fungi and rhizobacteria establish symbiotic relationships with plant roots, thereby enhancing nutrient availability and uptake and improving soil structure, they can also suppress harmful pathogens and mitigate environmental stresses. Plants provide carbon for soil microorganisms, primarily through the release of root exudates that influence the structure of rhizosphere microbial communities. Recent advances have shown that rhizosphere interactions support plant growth and adaptation to abiotic stressors, by modulating hormone levels and activating defense mechanisms. They are thus increasingly sought after as green agents in promoting crop health and stress resilience and reducing dependence on chemical fertilizers and pesticides. As climate change and land degradation threaten global food security and ecosystem stability, understanding and optimizing rhizosphere interactions is crucial for developing resilient plant systems that can withstand environmental fluctuations.

## Guest Editors

Prof. Dr. Jill M. Farrant

Department of Molecular and Cell Biology, University of Cape Town, Private Bag X3, Rondebosch, Cape Town 7701, South Africa

Dr. Shandry M. Tebele

Department of Molecular and Cell Biology, University of Cape Town, Private Bag X3, Rondebosch, Cape Town 7701, South Africa

## Deadline for manuscript submissions

31 March 2026

**Plants**

**an Open Access Journal by MDPI**

**Impact Factor 4.1**
**CiteScore 7.6**
**Indexed in PubMed**

mdpi.com/si/243252

*Plants*
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
plants@mdpi.com

mdpi.com/journal/plants

# Plants

an Open Access Journal by MDPI

Impact Factor 4.1
CiteScore 7.6
Indexed in PubMed

mdpi.com/journal/plants

# About the Journal

## Message from the Editor-in-Chief

*Plants* is an open access journal which provides an advanced forum for research findings in areas related to plant function, its physiology, biology, taxonomy, stresses, and its interactions with other organisms. It publishes original research articles, reviews, reports, conference proceedings (peer reviewed full articles) and communications. In original research papers, it is important that full experimental details are provided. We also encourage timely reviews and commentaries on topics of interest to the plant research community.

## Editor-in-Chief

Prof. Dr. Dilantha Fernando
Department of Plant Science, University of Manitoba, Winnipeg, MB R3T 2N2, Canada

## Author Benefits

**Open Access:**

free for readers, with article processing charges (APC) paid by authors or their institutions.

**High Visibility:**

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, PubAg, AGRIS, CAPlus / SciFinder, and other databases.

**Journal Rank:**

JCR - Q1 (Plant Sciences) / CiteScore - Q1 (Ecology, Evolution, Behavior and Systematics)

MDPI