

## Special Issue

# Crosstalk Between Abiotic Stress and Pathogen Defense in Cereal Crops: Molecular and Redox Regulation

### Message from the Guest Editors

Plant pathogens and abiotic stresses constrain global cereal productivity and food security, with climate change expected to further alter disease patterns. Abiotic factors influence pathogen development, requiring plants to integrate stress signals with immune responses. These interactions converge at key hubs such as redox balance, ROS signaling, phytohormones, kinase cascades, and transcriptional regulation, producing synergistic, antagonistic, or priming effects that shape cereal tolerance or susceptibility. Despite progress, the mechanisms of this crosstalk remain incompletely understood, especially in major cereal crops. This Special Issue focuses on advances in regulatory networks underlying combined stress responses, particularly redox-regulated signaling linking abiotic stress and immunity. Topics include ROS and antioxidants, phytohormones, transcription and kinase signaling, membrane transport, and metabolism. By integrating molecular biology, biochemistry, and physiology, it aims to improve understanding of cereal stress responses and support development of resilient crops.

### Guest Editors

Dr. Rosemary Vuković

Department of Biology, Josip Juraj Strossmayer University of Osijek,  
Cara Hadrijana 8/A, 31000 Osijek, Croatia

Dr. Ivna Štolfa Čamagajevac

Department of Biology, University of Osijek, 31000 Osijek, Croatia

### Deadline for manuscript submissions

15 September 2026



## Plants

an Open Access Journal  
by MDPI

Impact Factor 4.1  
CiteScore 8.5  
Indexed in PubMed



[mdpi.com/si/268925](https://mdpi.com/si/268925)

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

[mdpi.com/journal/  
plants](https://mdpi.com/journal/plants)





# Plants

---

an Open Access Journal  
by MDPI

---

Impact Factor 4.1  
CiteScore 8.5  
Indexed in PubMed



[mdpi.com/journal/  
plants](https://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, and 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)