



*plants*



an Open Access Journal by MDPI

## Applications of Plant Biotechnology and Tissue Culture Techniques for Plant Production and Food Security

Guest Editors:

**Prof. Dr. Yaser Hassan Dewir**

1. Department of Plant Production, College of Food and Agriculture Sciences, King Saud University, Riyadh 11451, Saudi Arabia

2. Department of Horticulture, Faculty of Agriculture, Kafrelsheikh University, Kafr El-Sheikh 33516, Egypt

**Dr. Katalin Magyar-Tábori**

Research Institute of Nyíregyháza, Institutes for Agricultural Research and Educational Farm (IAREF), University of Debrecen, P.O. Box 12, 4400 Nyíregyháza, Hungary

Deadline for manuscript submissions:

**closed (30 April 2024)**

### Message from the Guest Editors

Dear Colleagues,

The increasing world population and demand of food, the scarcity of irrigation water and various environmental stresses are the major challenges in achieving food security. New plant biotechnology approaches, coupled with tissue culture techniques, are being employed to increase and improve the production of agronomical and horticultural crops and several herbs and medicinal plant species. The application of the plant tissue culture method facilitates genetic improvements, plant breeding and the production of diseases-free plants; reduces the costs of commercial production and rescues endemic, endangered plant species. The use of doubled haploid technologies (isolated microspore/anther and unpollinated ovule culture in vitro) greatly accelerates the breeding process and increases the genetic diversity. This Special Issue invites researchers to contribute their work on plant production and crop improvement using plant tissue culture and biotechnology methods.



[mdpi.com/si/175255](https://mdpi.com/si/175255)

# Special Issue



# plants



an Open Access Journal by MDPI

## 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

*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.

## 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 (*Plant Science*)

## Contact Us

---

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

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/plants](http://mdpi.com/journal/plants)  
[plants@mdpi.com](mailto:plants@mdpi.com)  
[X@Plants\\_MDPI](https://twitter.com/Plants_MDPI)