Special Issue

Optimized LED Lighting for Enhanced Crop Performance in Controlled Environment Agriculture (CEA)

Message from the Guest Editors

The special issue will feature original research articles, review papers and mini reviews exploring efficient artificial lighting in the greenhouses and vertical farms. LEDs present a compelling alternative to traditional lighting due to their energy efficiency, longevity, adjustable spectra, and low heat output, granting unprecedented control over the light environment. This issue will investigate how various light spectra and their combinations affect plant physiology. Likewise, articles will examine dynamic light management strategies, adapting intensity and spectra based on plant stage and environmental factors. The integration of LED systems with other CEA technologies, to create synergistic effects for enhanced growth and resource efficiency will be addressed. Furthermore, the economic viability and sustainability of LED solutions in CEA, considering costs, energy savings, and lifecycle, will be considered. Additionally, this special issue aims to provide a comprehensive view of the latest advancements in LED lighting for controlled environments, potentially but not limited in conjunction with biostimulants to further enhance plant performance under optimized light conditions.

Guest Editors

Dr. Awais Ali

Dr. Giulia Franzoni

Dr. Milon Chowdhury

Deadline for manuscript submissions

31 January 2026

Horticulturae

an Open Access Journal by MDPI

Impact Factor 3.0
CiteScore 5.1

mdpi.com/si/244142

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

mdpi.com/journal/horticulturae

Horticulturae

an Open Access Journal by MDPI

Impact Factor 3.0
CiteScore 5.1

mdpi.com/journal/horticulturae

About the Journal

Message from the Editor-in-Chief

Horticultural plants and their products provide sustenance, health, and beauty. A confluence of factors is putting increasing pressure on horticultural production to evolve, and innovative research is addressing these challenges. *Horticulturae* provides a venue to communicate research results in a rapid manner with open access, allowing everyone the opportunity to stay abreast of leading research addressing horticulture. I invite you to consider publishing the results of your research in this high quality, peer-reviewed journal.

Editor-in-Chief

Prof. Dr. Luigi De Bellis
Department of Biological and Environmental Sciences and Technologies (DiSTeBA), Salento University, Lecce, Italy

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), PubAg, AGRIS, FSTA, and other databases.

Journal Rank:

JCR - Q1 (Horticulture) / CiteScore - Q1 (Horticulture)

MDPI