Special Issue

Insect–Plant–Microbe Interactions and Sustainable Agriculture

Message from the Guest Editors

The sustainable intensification of agriculture requires innovative strategies that leverage biological interactions to enhance crop productivity while reducing reliance on synthetic inputs. Microorganisms are central to this approach, functioning as key mediators within the insect–plant interface. This Special Issue focuses on the essential role of microorganisms in shaping insect–plant interactions and their contribution to sustainable agricultural systems. We focus on the following topics:

- Microbial influences on plant defence signalling and herbivore behaviour;
- Plant microbiome manipulation for pest and disease management;
- Symbiotic microbes associated with insects and their impact on crop health;
- Microbe-mediated pollination and insect performance;
- Mechanisms of pathogen transmission by insect vectors;
- Biocontrol agents and microbial-based pest management innovations;
- Effects of environmental change on insect–plant–microbe dynamics;
- Omics-driven studies of multitrophic interactions (metagenomics, metabolomics, etc.);
- Microbiome engineering for improved soil and plant resilience;
- Ecological and evolutionary perspectives on microbial symbioses in agroecosystems.

Guest Editors

Dr. Spiridon Mantzoukas

1. Institute of Mediterranean Forest Ecosystems, Terma Alkmanos, 11528 Ilissia, Greece
2. Department of Agriculture, University of Ioannina, Arta Campus, 471 00 Arta, Greece

Prof. Dr. Panagiotis Eliopoulos

Lab of Plant Health Management, Department of Agrotechnology, University of Thessaly, 45100 Larissa, Greece

Deadline for manuscript submissions

Microorganisms

an Open Access Journal by MDPI

Impact Factor 4.2
CiteScore 7.7
Indexed in PubMed

mdpi.com/si/263189

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

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About the Journal

Message from the Editor-in-Chief

"Microorganism" merges the idea of the very small with the idea of the evolving reproducing organism is a unifying principle for the discipline of microbiology. Our journal recognizes the broadly diverse yet connected nature of microorganisms and provides an advanced publishing forum for original articles from scientists involved in high-quality basic and applied research on any prokaryotic or eukaryotic microorganism, and for research on the ecology, genomics and evolution of microbial communities as well as that exploring cultured microorganisms in the laboratory.

Editor-in-Chief

Dr. Nico Jehmlich
Department of Molecular Toxicology, UFZ-Helmholtz Centre for Environmental Research, 04318 Leipzig, Germany

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