

Special Issue

Green Biomonitoring: Using Plants to Trace Environmental Pollutants and Understand Their Physiological Responses

Message from the Guest Editor

Environmental pollution is a major global challenge affecting ecosystem stability, biodiversity, and human health. Emissions of heavy metals, persistent organic pollutants, particulate matter, pesticides, pharmaceuticals, and emerging contaminants continue to impact terrestrial and aquatic environments, highlighting the need for sustainable monitoring. Plants are effective bioindicators because they accumulate pollutants and exhibit measurable physiological, biochemical, and molecular responses. These responses support pollution assessment and improve understanding of plant stress adaptation and ecosystem resilience. This Special Issue focuses on advances in plant-based biomonitoring and environmental assessment. We welcome research and reviews about:

- Plant monitoring of heavy metals and trace elements
- Detection of organic and emerging contaminants
- Air pollution biomonitoring using mosses, lichens, and urban plants
- Plant stress physiology and biochemical markers
- Omics approaches and remote sensing techniques
- Climate change–pollution interactions and phytoremediation
- Advances in biomonitoring methods

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Toxics (ISSN 2305-6304) is an international, peer-reviewed, open access journal which provides an advanced forum for studies related to all aspects of toxic chemicals and materials. We aim to publish high quality work that furthers our understanding of the exposure, effects, and risks of chemicals and materials in humans and the natural environment as well as approaches to assess and/or manage the toxicological and ecotoxicological risks of chemicals and materials. Please consider publishing in *Toxics* when preparing your next paper.

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Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 17 days after submission; acceptance to publication is undertaken in 2.6 days (median values for papers published in this journal in the first half of 2026).