Hindawi

Special Issue on
Risk Analysis and Strategies for Reduction and Mitigation of Emerging Contaminants in Food

CALL FOR PAPERS

Micropollutants in food are a significant concern due to the pervasive presence of trace-level contaminants in our food supply. Questions have been raised about these substances, originating from a diverse range of sources including agriculture, industry, and pharmaceuticals, and their impact on food safety and human health. Micropollutants, also known as emerging contaminants, are trace-level substances found in the environment, including air, water, soil, and food. When present in even minute concentrations, micropollutants can have profound and far-reaching impacts on both human and environmental health.

The presence of micropollutants in food raises complex challenges for human and environmental health. A myriad of emerging contaminants are significant human health concerns, particularly with regard to their effects on food matrices and food chemistry. These contaminants include microplastics, nanoplastics, nanomaterials, polychlorinated dibenzo-p-dioxins (PCDDs), dibenzofurans (PCDFs), toxic heavy metals or trace elements, organochlorines, organophosphates, carbamates, polyfluoroalkyl compounds, cosmeceuticals, and pharmaceuticals and their metabolites. Micropollutants can accumulate in food materials through the soil and water used in agriculture or aquaculture, leading to the ingestion of contaminated food items or contaminated water, exposing consumers to potential health risks, including endocrine disruption and the development of antibiotic resistance. Most of these micropollutants can bioaccumulate in organisms, meaning that they accumulate in tissues over time, leading to higher concentrations of micropollutants in organisms higher up the food chain, which can have a potentially significant impact on human health. International bodies and national regulatory agencies have recognized the significance of micropollutants and are working to establish guidelines and regulations to monitor and mitigate their impact. Ongoing research, regulatory measures, and public awareness are crucial components in addressing and mitigating the impact of micropollutants on the well-being of human populations.

This Special Issue aims to provide academics, professionals, and policymakers from around the world with a platform to share and discuss recent developments in food science and technology on monitoring and analysis, fate and transport, ecotoxicity and risk assessment, control and treatment, and prioritization and regulation of emerging micropollutants in food. We welcome both original research and review articles.

Potential topics include but are not limited to the following:

▶ Occurrence and fate of micropollutants (MPs) in food (all types of processed/semi-processed/raw food) and associated antimicrobial resistance (AMR)
▶ Characterization of MPs in food matrices and the environment
▶ Detection/monitoring of MPs in food and environment, including chemical, instrumental, and biological techniques, as well as high-sensitivity field level kits and biosensors
▶ Novel methods of development, validation, and verification of MPs in food and environment in lieu of legislation
▶ Monitoring and baseline studies of MPs in food and ecotoxicity assessments
▶ Health risk assessment of MPs in food and mitigation strategies
▶ Mechanisms of removal or degradation of emerging pollutants in food using optimization studies
▶ Eco-friendly strategies to remove the MPs from the environment to reduce food contamination
▶ Absorption and reabsorption behavior of MPs in food
▶ MPs in seafood and their impact on human health and reduction/mitigation strategies
▶ AMR genes, mechanisms, and their expression under MP stress
▶ Development of food products (value-added products) and their safety and quality analysis
▶ Carbon emissions and their impact on micropollutants in food

Authors can submit their manuscripts through the Manuscript Tracking System at https://review.wiley.com/submit?specialIssue=636569.

Papers are published upon acceptance, regardless of the Special Issue publication date.

Lead Editor
Arisekar Ulaganathan, Tamil Nadu Dr. J Jayalalitha Fisheries University, Nagapattinam, India
arisekar@tnfu.ac.in

Guest Editors
Annisa Utami Rauf, Universitas Gadjah Mada, Yogyakarta, Indonesia
annisaur@ugm.ac.id