



Microplastics in foods: an emerging food safety challenge

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Food safety is entering a new period in which emerging contaminants are challenging traditional approaches to hazard identification, risk assessment, and public health protection. Among these contaminants, microplastics have rapidly become one of the defining scientific issues of the past decade because of their widespread occurrence in foods and their potential implications for human health. Recognizing the growing importance of this field.

Microplastics have been detected in a wide range of food products, including seafood, drinking water, dairy products, fruits, vegetables, honey, and processed foods. Although current evidence does not yet permit definitive conclusions regarding long-term health risks, experimental studies suggest that chronic exposure may contribute to oxidative stress, inflammatory responses, intestinal barrier dysfunction, and alterations of the gut microbiota. These findings emphasize that microplastics should no longer be viewed solely as environmental pollutants but also as

emerging contaminants that deserve greater attention within food safety research and regulatory science.

It is now time to move beyond documenting the occurrence of microplastics and to focus on the scientific questions that will shape future risk assessment. The research community should prioritize the development of standardized analytical methods, coordinated reporting protocols, realistic dietary exposure assessments, and mechanistic studies that clarify the biological consequences of chronic exposure (1).

The Food Safety section of the Journal of Food Safety and Hygiene seeks to promote research that not only advances analytical capabilities but also provides mechanistic insights, innovative risk assessment approaches, and practical solutions for emerging food safety challenges. We particularly encourage interdisciplinary studies that bridge laboratory discoveries with regulatory applications and contribute to protecting both consumers and the environment.



The future of food safety will depend not only on scientific and technological innovation but also on the collective commitment of researchers, regulators, industry, and policymakers to translate scientific evidence into practical solutions. By fostering rigorous, collaborative, and forward-looking research, we can build more resilient food systems and better protect public health for future generations.

References

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