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Special Issue Reprint

## Sensory Detection and Analysis in Food Industry

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This Reprint brings together recent advances in flavoromics, fermentation ecology, food functionality, and food safety, highlighting the transition from descriptive food quality evaluation toward mechanism-oriented food science. The collected contributions span fermented foods and beverages, fruits and vegetables, botanical seasonings, and other complex food systems, demonstrating how instrumental analysis, sensory science, multi-omics, chemometrics, artificial intelligence, and process engineering can be integrated to explain flavor formation, microbial succession, quality evolution, and safety assurance. The studies cover molecular flavor characterization, sensory-active compounds, microbial community dynamics, fermentation starters, metabolomics, rapid analytical technologies, and quality prediction, providing new insights into the relationships among food composition, processing, perception, and functionality. Together, these contributions illustrate the growing importance of combining molecular evidence with sensory validation and data-driven approaches to support intelligent quality evaluation, precision process regulation, and product innovation. This Reprint provides an up-to-date overview of emerging concepts and technologies that are shaping the future of food quality research and offers valuable references for researchers, food scientists, industry professionals, and regulatory communities interested in flavor science, fermentation technology, quality control, and food safety.



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