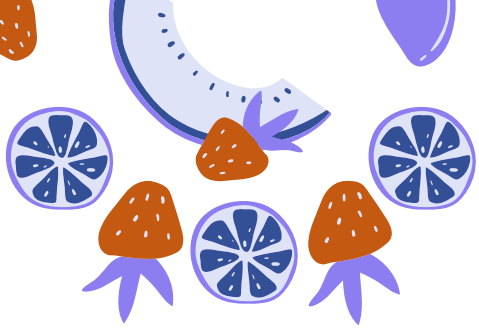

Rapid and non-destructive quality analysis to mitigate food loss and waste

SISTERS Project
Practice Abstracts

No. 43

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Country/Region:
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Keywords:
#QualityAnalysis
#PostHarvest
#ShelfLife
#FoodSupplyChain

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The problem

Fresh fruits and vegetables are highly perishable commodities.

Changes in key attributes like color, aroma, texture, and sensory appeal during shelf-life lead to consumers rejection and thus to significant amounts of food loss and waste (FLW).

The solution

A quality analysis framework can help to monitor and improve the postharvest handling of fresh produce.

Assessing critical parameters—including physical, chemical, and sensory characteristics— through rapid and non-destructive quality analysis can extend products shelf life and reduce FLW.

Benefits

- Enhanced product quality and consumer satisfaction through improved freshness retention.
- Reduction of FLW across the supply chain, leading to cost savings and improved sustainability.
- Empowered stakeholders with data-driven insights that support decision-making.
- Increased adoption of innovative food technologies.

Co-funded by the European Union

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 101037796

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PRACTICAL RECOMMENDATIONS

- **Use predictive models for sensory and perceived quality:** Implement models that forecast sensory attributes and consumer-perceived quality using measurable parameters, enabling better decision-making for storage, transport, and sale timing.
- **Adopt rapid and non-destructive analysis tools:** Near-infrared (NIR) spectroscopy, hyperspectral imaging, or texture and aroma analysis can be used to monitor quality parameters in real time without damaging produce.
- **Implement systematic quality monitoring:** Regularly assess key attributes like color, texture, and aroma throughout the supply chain to maintain high standards and reduce losses.

About SISTERS and this Practice Abstract

This practice abstract was elaborated in the framework of the SISTERS project, based on the EIP AGRI practice abstract format. © 2024
Project dates: from November 2021 to April 2026.
Goal: to systemically reduce food loss and waste in the main stages of the food value chain in Europe through innovations targeted to each stage of the chain.

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