



SISTERS



Best practices for tracking food quality with smart labels

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The problem

Food spoilage is hard to track, and there is no reliable solution yet to check food quality during transportation. The SISTERS Project aims to extend produce shelf-life by monitoring the packaging integrity and conditions in food production and transportation.

The solution

SISTERS is **testing off-the-shelf smart labels** during produce pilot runs between Spain and Italy. These labels, including temperature indicators like critical temperature indicators and time-temperature indicators (TTI), provide insights into transport conditions. Other labels sensing ammonia, ethylene, and volatile organic compounds show promise. TTI labels serve as backup sensors for data from sensor kits.

Benefits

-  **Reduced waste**
-  **CO₂ reduction**
-  **Shelf-life extension of produce**
-  **Reduced transport costs**
-  **Real-time analysis and predictability of food spoilage.**

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PRACTICAL RECOMMENDATIONS



Recommendations for tracking food quality with smart labelling at the logistics stage:

- Monitoring of **temperature exposure** of produce during transportation.
- Integration of **smart labels with biobased packaging solutions**.
- Aid in the demonstration of improved shelf life of fresh produce.
- Demonstrate the viability of **newly developed biobased food packaging** through measurement of VOCs permeating through the packaging.
- Immediate indication of **food quality during the storage and display** of produce.



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. © 2023

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.