

Active packaging solution to reduce food waste at retail & household level

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The problem

The growing global population has led to an increasing demand for minimally processed foods. While these foods appeal to consumers as a healthier option compared to processed alternatives, they pose significant challenges. Natural degradation processes, such as oxidation and microbial growth, are primary contributors to shortened shelf life and food spoilage. This results in considerable food waste both at retail and household level.

The solution

Active packaging, incorporating bioactive compounds that interact with packaged food offers a promising solution to enhance the shelf life of food products. As part of the SISTERS project, bioactive compounds extracted from food loss, are valorised into biodegradable packaging by blending or applying them as coating layers on the packaging's surface.

Benefits



Improving food safety and quality with antioxidant, antibacterial, and UV barrier features.



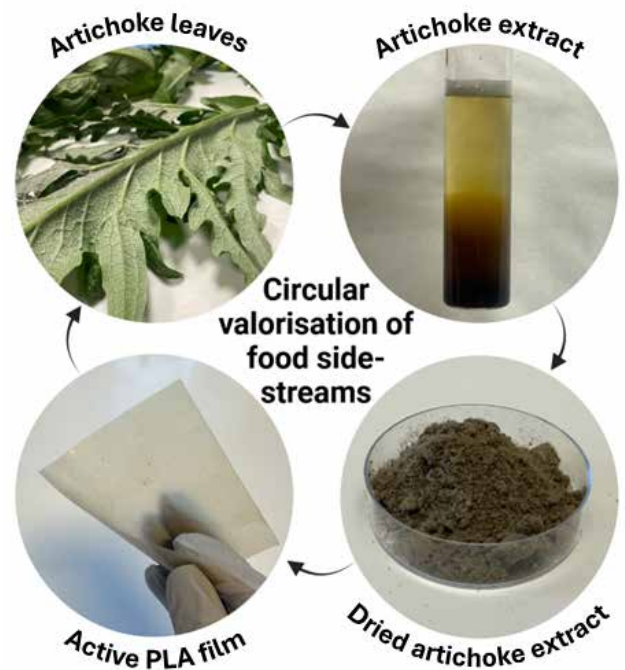
Reducing waste generation both at initial production and final disposal.



Economic benefits by valorising food loss and waste streams.

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PRACTICAL RECOMMENDATIONS



- Bioactive compounds derived from food loss, such as vegetable side-streams, can reduce dependency on chemical additives.
- Using green extraction methods can result in non-hazardous residues, allowing further utilization and minimizing waste during processing.
- Active packaging should be tailored to account for specific factors causing food deterioration for optimal protection.
- Suitable carriers can help to stabilise bioactive compounds during processing, ensuring target performance.
- Designing active packaging for smaller food portions can help to reduce leftover waste.



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.