

BIOSMART



Bio-based smart packaging for enhanced preservation of food quality

<http://biosmart-project.eu/>

Summary

The BIOSMART project proposal will develop active and smart bio-based and compostable packages to meet the needs of both fresh and pre-treated food applications. In addition, the novel packaging system will form the basis for tailoring performance and functionality to specific flexible and rigid food packages in diverse market segments.

Type of Action:

Research & Innovation Action

Value Chain: Across VCs

Start date: 01 May 2017

End date: 30 April 2021

BBI JU contribution: €
3,610,866.25

In order to address future demands, packaging will need to enable lightweighting, reduced food residues, easier shelf life monitoring and longer shelf life, easier consumer waste handling, all without a price premium. The BIOSMART project proposal therefore encompasses an approach for selectively integrating superhydrophobic surfaces, microencapsulated phase change materials, barrier coatings, sensor devices and new bio-active antimicrobial and antioxidants, into fully bio-based multilayer flexible plastic packages.

Objectives

The BIOSMART project aims to meet the following objectives. It will:

Develop an operational framework for tailoring active and smart functional bio-based packages that address the demands of selected market segment.

Scale up existing laboratory level active and smart functionally technologies from TRL3(Technology Readiness Level) to prototype pilot scale level at TRL5.

Improve mechanical properties of the Polylactide (PLA) film by developing nanoclay composites and copolymers.

Implement a single or multiple active and smart technologies into three food package demonstrators at acceptable costs.

Reduce the overall environmental impact of the value chain through novel material selection, package designs, recycling methodologies, extended shelf life and controlled product quality.

Expected impacts

The BIOSMART Project aims to have the following impacts. It will:

- Improve the mechanical and/or functional properties of the packaging products developed against the current state-of-the-art in the field.
- Ensure that fresh food packages that should be biodegradable or compostable and processed food packages that should be recyclable, in line with the EU's objective of reducing the recyclable content in landfilled waste.
- Reduce costs of packing compared to current materials measured on a life cycle basis.
- Increase the shelf of food products through improved preservation.
- Open new markets for new applications for biodegradable materials.

Achievements & milestones



Bio-based smart food packaging to reduce waste

9th February 2019

active or smart flexible and rigid packaging

solution for the performance and commercial needs of the selected food.

incorporates an oxygen sensor to monitor shelf-life. [Read more](#)

Project coordination

- IK4-Tekniker (Spain)
- University of Reading (United Kingdom)
- Lipofabrik (France)
- Université des Sciences et Technologies de Lille - Lille 1 (France)
- Haute école spécialisée de Suisse occidentale (Switzerland)
- Instituto Tecnológico del Embalaje, Transporte y Logística (Spain)
- Innventia AB (Sweden)
- Ppropagroup Spa (Italy)
- TecSense GmbH (Austria)
- Wipak Walsrode GmbH et Co. KG (Germany)
- GEA Westfalia Separator Group GmbH (Germany)

Organisation name: IK4-Tekniker (Spain)