

# BIOFRESHCLOUD

A NEW PACKAGING SYSTEM THAT OPTIMIZES THE SHELF LIVES OF MEDITERRANEAN FOODS



**PROJECT CODE: PRIMA-S2-2019-PCI2020-112015**  
**CALL: PRIMA-S2-2019/PCI2020**  
**PERIOD: 36 MONTHS**  
**BUDGET: 742,935.00€**  
**PRINCIPAL INVESTIGATOR: FERNANDO PÉREZ RODRÍGUEZ**



The BioFreshCloud project, funded by the PRIMA-MED program of the European Union and the Ministry of Science and Innovation, arose to bolster the shelf lives of two fresh Mediterranean products, tomatoes and strawberries, although it aims to obtain results applicable to other red products. Today, in a more globalized market, distribution chains are long-distance and this European project aims to improve the quality of the products consumed by the end user through sustainable and innovative technologies.

Fernando Pérez Rodríguez, coordinator of the project at the University of Córdoba, explained that the idea is to combine Information and Communication Technologies (blockchain, Industry 4.0 and expert systems) with sustainable packaging through mathematical models so that, in the end, the shelf lives of these products, in their different formats, is longer and they are of better quality.

**A research group at the University of Córdoba designs sustainable packaging using waste generated during the tomato and strawberry harvest**

The objective is to reinforce the food industry of the Mediterranean basin through innovative technologies, improving logistics and, thus, reducing waste. "More quality, longer shelf lives, and less waste," he adds.

The proposal takes an integrated, innovative and ecological approach to evaluate the shelf lives of these two foods, thus minimizing possible losses through combinations of food biopreservation technologies.

The research team at the UCO started with the production of the packaging, optimizing the biorefinery techniques to obtain latest-gen materials (cellulose nanofibers) from agricultural residues generated during the cultivation of the tomatoes and strawberries themselves. They are also working with the residues extracted from the raspberry harvest as an alternative to strawberries. The final objective is to be able to produce a functional packaging material, combined with bioprotective agents, that can be

used for various products, both plant and non-plant.

The results sought include creating a patent on the procedure for obtaining the packaging, and another on the computer system for distribution chains. The latter proposes devising mathematical models gauging sensory deterioration, including organoleptic factors, and the food safety of the product, so that they can be applied in real time during logistics. These prototypes predict the possible spoilage and alteration of food based on the information obtained from the food chain.

For the group participating in the European BioFreshCloud project has been an opportunity to strengthen ties with scientists worldwide and to share knowledge and new ways of working.

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