

BIOFOODPACK - Biocomposite Packaging for Active Preservation of Food: the project and the progresses

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BIOFOODPACK (FIG. 1) is a M-era.NET project aiming to develop a sustainable biocomposite food packaging material to actively interact with foodstuffs, leading to improved food safety with minimal processing, reducing food loss and waste. Antimicrobial and antioxidant properties of natural resources are combined with different fillers to achieve water resistant materials with enhanced mechanical and gas barrier properties and electrically conductive for in-pack low temperature sterilization by pulsed electric fields.

University of Aveiro (Portugal) is the Coordinator of BIOFOODPACK and is the responsible for development of novel sustainable polysaccharide-based antimicrobial and antioxidant composites with optimized physicochemical properties. Wrocław University of Science and Technology (Poland)-WRUT is in charge of studying the introduction of conductive species into both biopolymers and blends of biopolymers and synthetic polymers. The University of Minho (Portugal) tests applicability of the electrically conductive biocomposites in the sterilization of packaged food using PEF. The interaction of the packaging material with the foodstuffs using the typical pasteurization and the novel PEF processing will be studied under different environmental conditions. Migrations of fillers and its possible toxicity will be performed by Cyprus University of Technology (Cyprus). Three companies are involved: 1) MKF-E, a leading supplier of films, will enable the large-scale production of the packaging films; 2) SONAE, a market leader retailer will be involved on the testing of the biocomposite as packaging material at industrial environment, producing food samples packaged with the developed materials; and 3) Energy Pulse Systems, developing, producing and commercializing pulsed power modulators, will determine the technical requirements of the PEF equipment to process already packaged food.

One of the most important outcomes of this project is the establishment of strong synergies between partners that in a short-term period (3 years), leading to a biocomposite packaging active in food preservation, effective for in-packaged mild temperature sterilization and playing a role in the extension of food shelf-life. Technology Readiness Level will go from 1-2, up to 6 at the end of the project. In the long term (5 years) it is expected to turn the biocomposite into commercially available solution product(s).



Fig.1. BIOFOODPACK logo.

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