BIOACTIVELAYER

a multi-layer, biodegradable packaging solution

Aiming to create a multi-layer, biodegradable packaging solution having successfully secured €1.2 million of funding from the **EU's Seventh Framework Programme**

The research leading to these results has received funding from the European Union Seventh Framework Programme ([FP7/2007-2013] [FP7/2007-2011]) under grant agreement n° [606548]

The commercial drive for such a product is provided by the growing global demand for dried foods. Dried food has many advantages such as cheaper transportation costs, longer storage life and ease of use.

BioActiveLayer will provide a unique alternative to the existing solution of Modified Atmosphere Packaging (MAP). **BioActiveLayer** will provide a cost-effective and fully recyclable solution to the dried food industry. The tailor-made material will also maintain product quality and assure food safety, providing a shelf-life of up to 24 months.

The demand for 'advanced' packaging technologies is higher than ever. Consumers and manufacturers alike are seeking extended shelf life and improved reliability. The EU food packaging industry alone uses approximately 247,000 tonnes per annum of thin aluminium foil, which when applied in laminated structures, means that there is currently no adequate or proven technology capable of fully recycling these materials in an efficient and cost-effective manner.This results in more than 80% of current MAP packaging being sent to land fill.

The **BioActiveLayer** project is made up from a pan European consortium of eight organisations, representing five EU member states.

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The market need

Modified Atmosphere Packaging (MAP) is a preserving technique usually applied for packaging of dried food. However, there is no cost-effective and proven technology capable of fully recycling these materials which are usually based on multilayer plastic materials. If **BioActiveLayer** was to even make a 5% substitution of these materials which currently lead to MAP applications, we would reduce over 300,000 tons of non-renewable plastic packaging waste.

Our vision

Our vision is to successfully introduce a source of renewable, biodegradable packaging as a replacement for existing MAP applications, whilst being able to maintain freshness and increase the shelf life of the associated food produce.

The BioActiveLayer technology

The **BioActiveLayer** project plans to enhance the novel paper-based, bio-degradable, multi-layer structure by increasing the paper moisture barrier (by applying blends of waxes and resins).

The main moisture barrier improvement will rely on a composite based in PHA. Currently PHA lacks the barrier required for MAP applications; therefore, composites with mineral fillers and oxygen barrier materials will be developed to obtain a moisture barrier layer.

The paper properties will be enhanced following a three step approach.

- To increase the paper moisture barrier through the application of blends of waxes and resins.
- The moisture barrier improvement will be derived from a newly formed composite based on Polyhydroxyalkanoates (PHAs). Existing standards of PHA lack the standard of barrier required for MAP applications. Therefore, **BioActiveLayer** will identify suitable mineral fillers which can maintain the required moisture barrier layer.
- Oxygen barrier materials will be improved through the use of oxygen scavenging compounds.

For more information, about **BIOACTIVELAYER**, please contact:

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