



# Actifilm

by tecnalia

NATURAL AND EDIBLE COATINGS  
FOR **ACTIVE FOOD PRESERVATION**  
**AND PACKAGING**

## NATURAL AND EDIBLE COATINGS FOR ACTIVE FOOD PRESERVATION AND PACKAGING

**Edible coatings** that **extend the shelf life** of food, addressing the growing demand for food that is **natural, safe** and adapted to today's consumers.



### Did you know that...?

- **A third of the world's food** produced for human consumption **is lost** or wasted, which is equivalent to 1.3 billion tonnes a year.
- **5% of the fruit and vegetables** that are sold each year in Europe **is ruined in distribution**, due to fungi, bacteria and the action of ethylene, a plant hormone responsible for product ripening.
- The treatments typically applied at horticultural plants are **chemical fungicides**, which lead to **toxicity problems and development of resistance**.
- **Packaging represents 2% of the GDP** in most developed countries. **Half of the production is used for food packaging.**
- Food loss and waste also exert **unnecessary pressure on the environment**, which leads to the **depletion of natural resources** and the **release of greenhouse gases**.

## DEMAND FOR NEW SOLUTIONS

**Consumers** are looking for fresher and more natural products with less additives and which **preserve their nutritional and organoleptic properties** after processing and packaging.

**Industries** need to get their products to increasingly distant markets, in order to improve their profitability.

They are looking for **innovative technologies and approaches** that help to maintain **safety** and **quality**, **increasing the shelf life of fresh products** and preserving their nutritional value.

**Changes in shopping habits:** increase in online sales.

## OUR SOLUTION

Applicable to the food surface or to the surface of the packaging material, **it fulfils different functions:**

- **Barrier** against moisture and oxygen.
- **Possibility of incorporating active compounds in their formulation** (antioxidants, antimicrobials, aromas, vitamins, etc.) to extend the shelf life or improve organoleptic or nutritional qualities.
- Reduced **migration of moisture, fat, aromas**, etc. between the different food components and hence maintained sensory characteristics of the food.



## USES

### → Coating of peeled fruit:

Technology validated for apples:

- Shelf-life extended by one month.
- 30% reduction in weight.
- Almost 35% firmer.
- No alteration to the fruit's colour, smell or flavour.
- Easy to produce and apply by spraying.
- Complementary to existing preservation systems, if applicable.
- Competitive cost and high performance (1 litre of solution coats approx. 100 kg of apples).
- Technology covered by trade secret.



### → Coating on fresh meat:

- Technology validated for fresh poultry.
- Application by surface spraying or by immersion.
- No significant changes in the organoleptic properties (colour, flavour).
- Additional to existing preservation systems, if applicable.
- Competitive cost and high performance (1 litre of solution coats approx. 1 m<sup>2</sup> of meat).



### → Biodegradable coating over the surface of packaging materials:

- Control of moisture migration and microbiological growth.
- May incorporate natural antimicrobial and antioxidant additives for the development of active packaging.
- Potential application on plastic packaging materials, paper and cardboard.





## ADVANTAGES

- **Extended shelf life** of products.
- **Opening of new markets**, as products can be transported over greater distances without deteriorating or losing properties.
- **Increased food safety**, as the consumer is guaranteed to receive the food at home in optimum conditions.
- Reduced environmental pollution by using **edible materials from renewable sources**.



## BUSINESS OPPORTUNITIES

TECNALIA offer its customers the chance to:

- **Licence** the technology.
- Carry out **specific contract developments** for customers.
- Agree on a way of operating, as a joint venture, to develop new products by **setting up a new company**, or others.



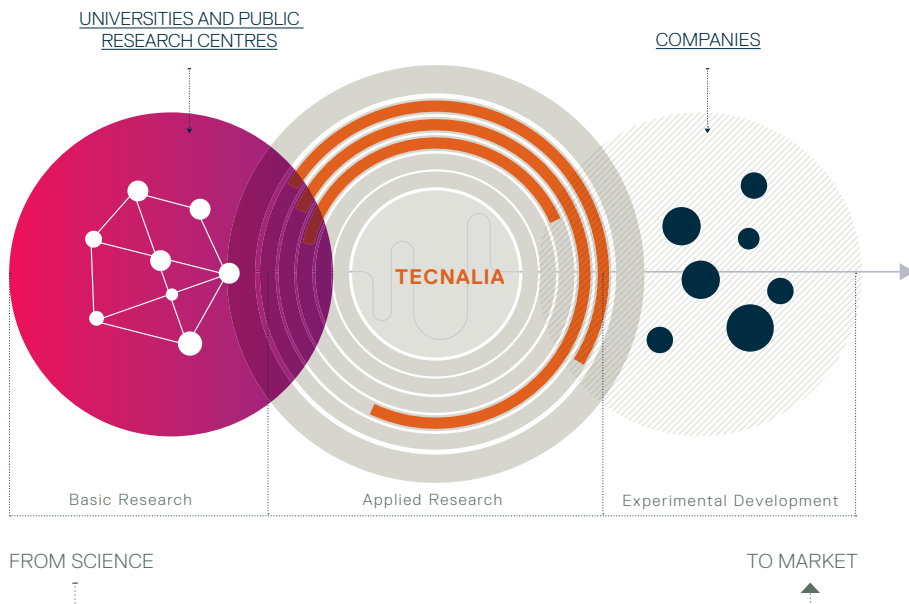
## TARGET AUDIENCE

- **Packaging** companies that handle fruit and **suppliers** of post-harvest fruit treatments.
- Meat **processing and packaging** companies.
- Fresh food packaging **suppliers**.



# TECNALIA

IS A BENCHMARK RESEARCH AND TECHNOLOGICAL  
DEVELOPMENT CENTRE IN EUROPE



## WE CAN DO SO MUCH TOGETHER

Our work is not understood without yours; we want to work together so your company can compete better. Because together, we can develop technologies that transform the present.

**The future is technological, let's share it!**



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