

# Polymer nanocomposites & active antimicrobials in dairy packaging



## Description

Pilot line production of functional polymer nanocomposites from natural halloysite nanotubes (HNTs) that release active antimicrobials in dairy packaging applications to extend food life.

## Objectives

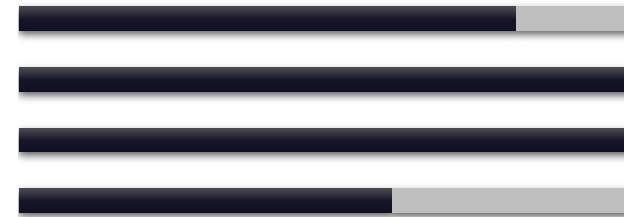
- To analyse and demonstrate the positive environmental impacts by extending dairy life-shelf using antimicrobial surfaces,
- To perform a risk assessment focused on toxicity and safety issues,
- To reduce costs by applying smart technologies in the supply chain and processes optimisation,
- To evaluate the social impacts, to stimulate the use of novel technologies and to increase retailers and consumers acceptance.

## Activities

- Sustainability assessment:
  - Life-Cycle Assessment LCA,
  - Life-Cycle Costing LCC,
  - Social Life-Cycle Assessment SLCA,
- Market uptake:
  - Market analysis,
  - Consumers and retailers behaviour,
  - Health and safety assessment.

## Challenges

- Input data complex to collect
- Technical knowledge required
- Legal & legislation barriers
- Technology readiness level



## Expected outcomes

- Enhance food safety for consumers,
- + 25% shelf-life of food products,
- Reduction of operational costs for food manufacturers,
- Reduction of food waste.

