FOOD PACKAGING: NEEDS AND REQUIREMENTS OF THE COMPANIES

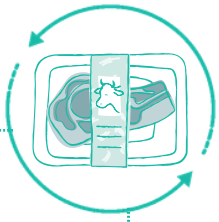
In the **Activity 1.1** of D4PACK project the objective was to analyse agrifood companies' technical needs and level of readiness with respect to new technology transfer solutions, in order to:

- Identify the real needs of agri-food companies regarding next-generation packaging solutions.
- Analyze the most commonly used packaging solutions, along with the decision-making processes and criteria behind their selection.
- Assess the level of awareness among companies about next-generation packaging options.
- Define the Technology Transfer Services that the project will offer to companies.

Methodology

Partners contucted deep interviwes on 29 companies located in four areas (Czech Republic, Hungary, Italy and Slovenia) belonging to the sub-sectors fruits and vegetables, dairy products, meat.

Meat sector



Requirements

- Food product protection, with a focus on:
  - extension of shelf life;
  - food safety, maintaining quality, taste and freshness of meat.

Equipment

- Modified Atmosphere (MAP) and vacuum packaging to ensure product quality and safety.
- In-house packaging lines, which are necessary due to the short shelf life of meat products.

Challenges

- Preserving premium quality, safety, durability, and resistance to temperature changes.
- Complying with product labeling regulations.
- Introduce standardized films for packaging.
- Sustainability: lack of applicable solutions, so proceed with experimental testing.
- Cost of packaging: proposed to be managed through annual tenders among suppliers.
- Difficulty in finding reliable suppliers for high-quality materials: possible solution through annual tenders.
- Specific problems such as color migration, mechanical damage to perforated trays, bag color: resolved through complaints and compensation.

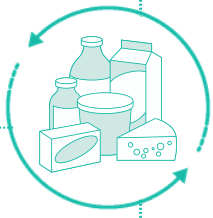
Dairy products

Requirements

- Food safety and security to protect products from external influences and during transportation to ensure preservation.
- Tamper-proof packaging and extension of shelf life.
- Packaging that is easy to purchase and has wide availability.
- The date must be affixed to each item, so it must be technically feasible.
- Packaging should also serve aesthetic and marketing purposes.

Equipment

- MAP and vacuum packaging.
- Shrink wrapping is typical for GRANA cheese.
- In-house packaging lines to be kept under own control.



Challenges

- Finding a supplier having enough capacities and assortment choice (best practise).
- Reducing the weight of plastic packaging materials.
- Optimization of the currently used packaging solutions.
- Finding a supplier having enough capacities and assortment choice.

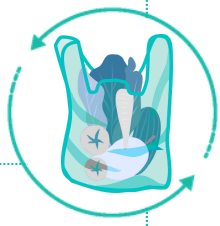
Fruit and vegetables products

Requirements

- Food safety: materials must be suitable for food contact and avoid migration phenomena.
- Extension of shelf life: essential to maintain product quality.
- Breathability of packaging: there must be ventilation holes to avoid premature spoilage.
- Integrity and strength: packaging must ensure physical durability based on the time between collection and point of sale.

Equipment

- It is essential that the packaging be breathable (with holes) to prevent products from rotting.
- In-house packaging lines to be kept under own control.



Challenges

- Regulatory compliance: it is essential to comply with laws and regulations regarding packaging.
- Adapt to the demands of large retailers.
- Contain packaging costs, as these are low unit value products.
- Adaptability to irregular shapes (e.g., round fruits): packaging must be functional and optimized.
- Material optimization: reduce quantity and thickness, with a focus on reducing plastic.
- Physical integrity of packaging: critical for 3-4 week shipments.
- Technological obsolescence: some current solutions no longer keep pace with modern needs.

The needs of agrifood companies

The interviews revealed the following assistance needs indicated by companies:

1. **Technological support**

   Companies require technical support on several fronts, including:
   - Collaborations with research organizations to identify and test real alternatives to current packaging materials.
   - Trials of new technologies and design of packaging with more sustainable characteristics.
   - Assistance in selecting raw materials and evaluating their composition.
   - Information on the impact of packaging changes on product quality and shelf-life.
   - Assessment of sustainability and effects on the entire production chain.

2. **Supply chain integration and sectoral cooperation**

   Enterprises emphasize the need to:
   - Ensure a coherent and integrated supply chain between packaging manufacturers, food industries (meat, dairy, fruit and vegetables), customers and retail.
   - Find solutions to improve recyclability of contaminated packaging (e.g., with meat juices).
   - Share experiences and experiments among companies in the same industry.
   - Coordinate joint initiatives to develop common solutions.

3. **Consulting on regulations and market trends**

   Companies highlight a strong need for:
   - Up-to-date information on market trends and innovations in the packaging industry.
   - Reliable sources of data.
   - An efficient system for timely updates in legislative matters, now often acquired in an autonomous and fragmented manner.

4. **Financial support and incentives**

   Among the main requirements:
   - Funding for research, innovation and the purchase of new packaging lines.
   - Tax breaks and incentives for the use of sustainable materials, which are often more expensive.
   - Extension of economic support beyond the duration of European projects to offset increased operating costs.
   - Reductions on environmental taxes.

This publication has been developed within the D4PACK, supported by the Interreg CENTRAL EUROPE Programme with co-financing from the European Union. Its content is the sole responsibility of the authors and the project partnership and does not necessarily reflect the views or positions of the Interreg CENTRAL EUROPE Programme, its programme bodies or the European Union. Neither the programme authorities nor the European Union can be held responsible for any use that may be made of the information contained herein.