



# PRESERVE

HIGH PERFORMANCE SUSTAINABLE BIO-BASED PACKAGING WITH TAILORED END OF LIFE AND UPCYCLED SECONDARY USE

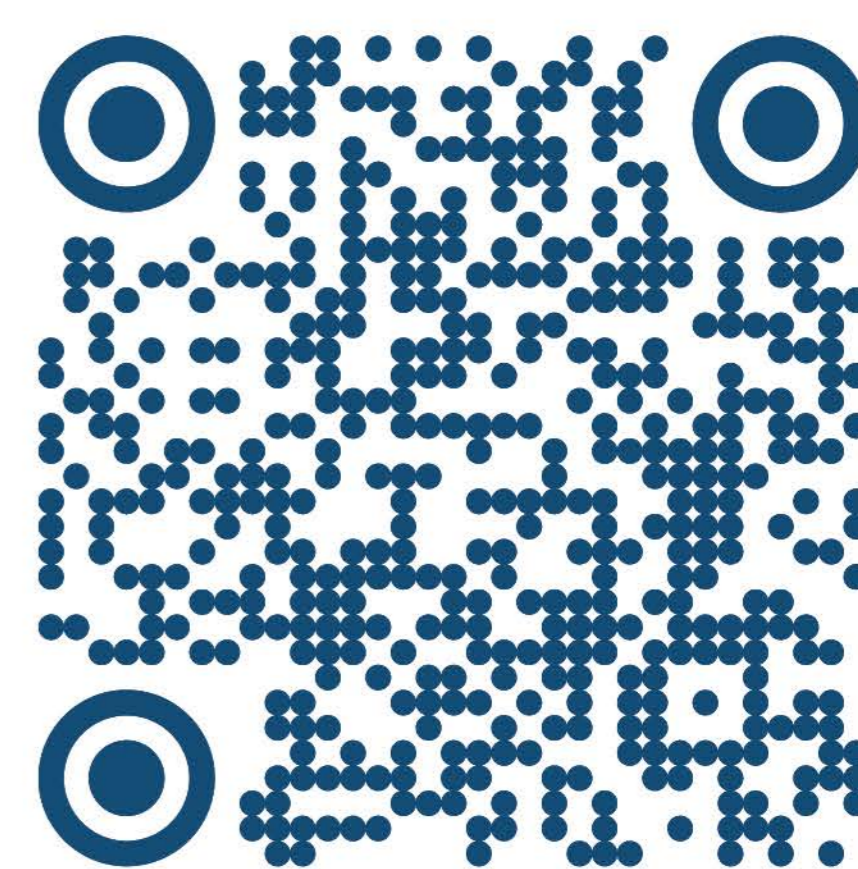
PRESERVE is contributing to the future of packaging through innovative solutions, focusing on creating bio-based food packaging that can be upcycled for diverse applications.

The end result of PRESERVE is packaging applications prototypes for food and drink packaging and for second high performance applications such as flow packs, trays, pouches, beverage bricks, injected jars, bottle, carrier boxes and bags.

## MONITORING POLICY DEVELOPMENTS FOR BIO-BASED PACKAGING

During the PRESERVE project, policy evolution in food and drink packaging was continuously monitored to ensure alignment with emerging legislation. European Bioplastics provided regular updates on the impacts and boundaries of new policies, guiding the consortium on how these developments influenced R&D activities and objectives. In collaboration with other EU-funded projects working on the improvement of food packaging, the policy paper "Upcycling Food and Drinks Packaging: How EU-funded research projects transform food and drink packaging to reduce waste" was published. This white paper presents the main results achieved by the projects and offers strategic recommendations for EU policymakers and stakeholders.

Download it now!



WE IMPROVE PACKAGING RECYCLING...



...BECAUSE EVERYTHING DESERVES A BETTER CHANCE

Of the 58 million tonnes of plastics produced each year in Europe, **only 42% is recycled**. Given that packaging consumes more than 40% of all plastic produced each year, improving its circularity from origin to subsequent life cycles is more than urgent. PRESERVE has developed innovative solutions to **enhance the recyclability of food packaging** while **enabling the reuse of recycled materials** in high-value upcycled applications.

## BIO-BASED FOOD AND DRINK PACKAGING

These solutions are tailored to preserve the quality of food while ensuring sustainable end-of-life options and the recovery of the materials:

- To-go pocket tray:** Self-reinforced PLA and PVOH coating with a metallized lid.
- Snack flowpack:** Multilayer metallized film with PET, protein coating, bioadhesive and bio-PE.
- Dairy Pouch:** PHA and PLA blend and PHA monomaterial films.
- Beverage Brick:** Paper board coated inside and outside with PHA.
- Molded pulp cup:** Molded fibre coated or lined with PHA.

## UPCYCLED MATERIALS FOR NON-FOOD APPLICATIONS

We have enhanced material recovery systems, enabling materials originally used in food packaging, such as PLA, to be repurposed for innovative non-food applications:

- Flowpack for wet wipes:** Extruded films with r-PE, bio LDPE and HDPE.
- Injected cosmetic jars:** Compound of r-HDPE, R-LDPE and r-PET.
- Blow molded cosmetics bottles:** Compound of r-HDPE, LDPE and r-PET.
- Non-woven shopping bags:** Recycled PLA coated with PLA-based finish coating to avoid microplastics release.
- Carrier and display boxes:** Molded structure made with rPLA, rDenim and optionally coated with PLA to avoid microplastics release.

## ENSURING SAFETY, CIRCULARITY, AND ENVIRONMENTAL RESPONSIBILITY

All materials developed in the PRESERVE project have been designed to ensure compliance with health and safety standards, circularity, and environmental impact. Through comprehensive life cycle and circularity assessments, we have evaluated the materials' performance at every stage, ensuring they meet the highest standards for sustainability and safety while minimizing their environmental footprint.

PRESERVE facilitated know-how transfer across its comprehensive value chain of actors, including 7 technology institutes and academic partners, 4 producers of polymers and bio-based raw materials, 4 plastic packaging converters, 3 end-user packers, and 5 up-recyclers providing technological solutions. The project also incorporated expertise in health, safety, and environmental assessments, alongside innovation and dissemination specialists, ensuring broad-reaching collaboration.

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