STOPP PRACTICE ABSTRACT

DESIGNING RECYCLABLE FOOD PACKAGING WITH RECYCLED PLASTICS

PROBLEM ENCOUNTERED AND OBJECTIVE

Food packaging designers are under growing pressure to make packs recyclable and include recycled plastics, while still protecting food safety, shelf life and consumer acceptance. In practice, recyclability is often reduced by complex material combinations, labels, adhesives, dark colours or components that cannot be sorted or processed. The objective is to provide practical design guidance that helps companies select recyclable materials, avoid problematic features and safely integrate recycled plastics into new food packaging applications across existing European recycling systems.

MAIN RESULTS / OUTCOMES

The STOPP eco-design guidance translates recycling and recycled-content requirements into design choices for food packaging. It highlights that recyclable packaging must be collected, sorted, processed at industrial scale and used again as raw material. It also identifies PET, HDPE, PP, PS and PE streams as relevant recycling routes in Europe. For recycled plastics, the guidance stresses traceability, supplier qualification, food-contact compliance and stable material performance as key conditions for circular packaging at industrial scale.

PRACTICAL RECOMMENDATIONS

Prioritise mono-material packaging, compatible closures and labels, and colours that do not disturb sorting or reduce recyclate quality. Avoid full-body sleeves, multilayers, metallisation, non-NIR detectable colours and difficult-to-separate components unless compatibility has been tested. When using recycled plastics, work early with recyclers and compounders, secure traceable feedstock, validate safety and performance, and consider whether the material can return to high-value applications rather than being downcycled after use in practice and production systems wherever possible today.

Fig 1: Rigid plastic yoghurt cups, a common food packaging format addressed by the STOPP eco-design guidance.

Further information

This information has been extracted from D3.4 and can be found here: STOPP REPORTS

About this abstract

Authors: VTT, UVA, ReC, PRE and SIE
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STOPP is a Horizon Europe project aiming to transform food plastic packaging through the "5 Rs": Refuse, Reduce, Redesign, Reuse, and Recycle. Aligned with the EU's Packaging Directive, it develops training materials and strategies to promote circular economy solutions. Engaging stakeholders, STOPP advances recycling, reusable packaging, and consumer awareness for sustainable food packaging.

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