

Layman's Report

Fabio Mataluni & C. srl started the project

Re_Pack
Edails 

AIMING TO INTRODUCE
UP TO 100% RECYCLED PLASTIC BOTTLES
FOR EDIBLE OILS ON THE MARKET

The project is aimed at obtaining a **high quality product**, guaranteed as regards of food safety and functionality, into an **eco-friendly bottle**.

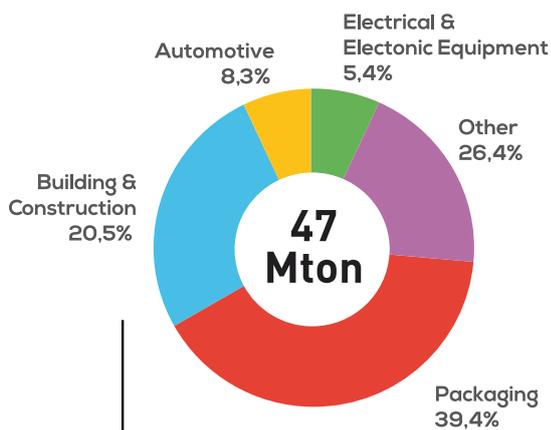
THE PROBLEM

Hundreds of million tons of materials. These are the figures necessary to quantify the food packaging wastes produced in Europe, which represent over 60% of the total packaging wastes.

HOW TO TURN WASTE IN AN EXPLOITABLE RESOURCE

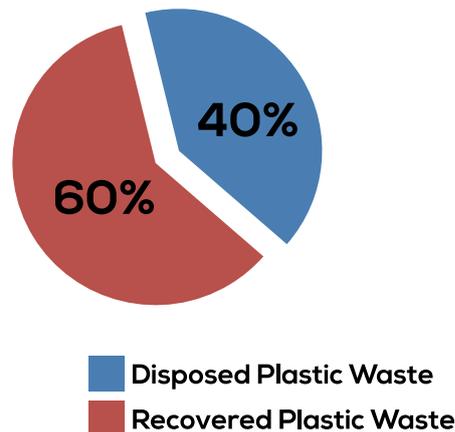


25 Mton of plastic waste coming from post consuming are only partially recovered for recycling



About 40% of plastic items used in Europe in the 2011 were packagings

Source: Corepla



LEGAL CONTEXT

EC Regulation 282/2008 on recycled plastic materials and articles intended to come into contact with foods identifies the features that PET recycling plants should have to achieve the certification for food use, opening a field of great interest for manufacturers of food packaging.

Decree 113/2010 (in force since 5 August 2010), removed the prohibition on the use of recycled PET for the production of packaging for mineral water. Today it is permissible up to 50% recycled, or at least 50% of virgin PET for the production of packaging for food waters.

Decree 139/2012 of the Ministry of Health introduced the possibility of using recycled PET up to a maximum of 50% for the production of packaging for beverages and soft drinks.

Decree 134/2013 of the Ministry of Health introduced the possibility of using recycled PET up to a maximum of 50% for the production of packaging for all foods.

The food packaging industry should properly design packages in order to reduce the environmental impact related to their end life. Recycling is one of the most advantageous solutions from the environmental point of view, allowing to greatly reduce the quantity of wastes to dispose of and reduce the dependence on non-renewable sources.

THE AIM

Aim of the RE-PACK EDOILS project is the use of post-consumer recycled PET (PCR) for the production of preforms and bottles in different colours to be used in the packaging of edible oils.

To this aim, recycled PET (R-PET) will be used resulting from the differentiated disposal of bottles already used for the food packaging, carefully selected and processed by means of a certified regeneration process, allowing to restore the initial conditions of functionality and safety

of the material.

The use of recycled PET instead of virgin PET, obtained from fossil sources, involves a reduction of the emissions and of the use of non-renewable resources, such as petrol and natural gas.

The main targets of the project are:

- ✓ To promote the recovery and the recycling of PET bottles intended for food contact.
- ✓ To extend the potential application of recycled PET.
- ✓ To assure the safety and the security of the packaging made up of recycled PET.

FIRST INTRODUCTION
ON THE MARKET OF
AN ECO-BOTTLE
FOR EDIBLE OILS



RESULTS

The preform



The preform was properly designed for RE-PACK EDOILS project in order to optimize its design and to reduce about 10% in weight of conventional PET 1 L bottles for high quality seeds edible oils. Preforms of up to 100% of R-PET

were produced by Fabio Mataluni & C. factory through standard injection molding machines. The R-PET polymer was regenerated by an Erema Prime technology plant for PCR.

The first recycled bottled for edible oils

1 L bottles made in up to 100% R-PET were blown and filled with high quality seed edible oil .

The good processability of the polymer led to production of high quality bottles without reducing the process speed compared to virgin PET bottles.

The safety in the use of the 100% Recycled PET bottles has been assessed by global and specific migration performed by both internal and external laboratories.



RESULTS

These preforms developed and produced for RE-PACK EDOILS project are suitable for edible seeds oils packaging and are addressed for Countries where it is possible to use up to 100% recycled PET for food contact application.

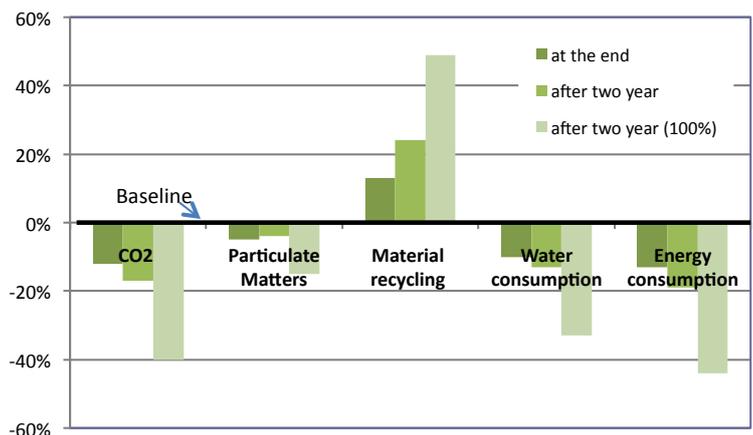
The analysis performed both on preforms and bottles, and the shelf life tests carried out on edible oils packaged in R-PET bottles have pointed out that no significant differences can be observed between virgin PET bottles and R-PET ones.



Recycling reduces the amount of plastic sent to landfills, and using PCR helps support the recycling infrastructure. Using recycled PET means that less petroleum is needed to make new, virgin resin. Recycled PET also requires less energy to produce and has a lower carbon footprint than virgin PET.

Improved environmental performance of the project

The graph shows the results in terms of reduction of CO₂, particulate matters, water and energy consumption and the increase of recycling material at the end of the project, after two years and after two years if the bottles was 100% recycled.

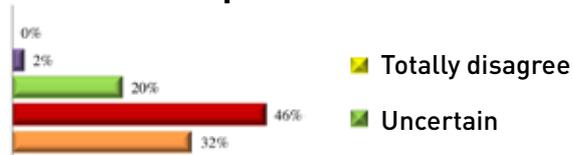


THE MARKET

The market analysis carried out during the RE-PACK EDOILS project has shown that there is an evident consumers predisposition to purchase seed oils bottled in recycled packaging, as reported in the following graphs.

In your opinion a recycled plastic bottle to pack seed oil:

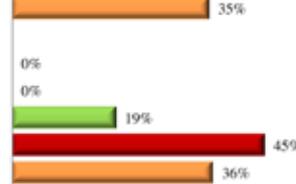
Is as hygienic as a normal plastic bottle



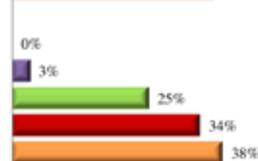
Is as safe as a normal plastic bottle



Is as shockproof as a normal plastic bottle



Preserves oil sensory qualities as a normal plastic bottle



Would you buy a seed oil packaged in a recycled plastic bottle?

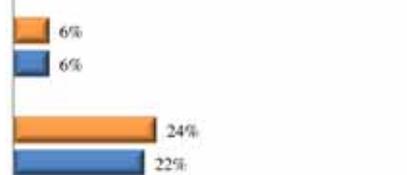
Uncertain



Only if it is cheap



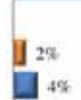
Only if it is well-know brand



Yes



No



Even if the Italian market is very sensitive to the use of recycled material for producing packaging for direct food contact, the actual national legislation allows to use Recycled PET for in contact with edible oils only using up to 50% of virgin material. This is the only constraint related to the market introduction of the innovative packaging produced during the RE-PACK EDOILS project.

EU ADDED VALUE

The production of up to 100% R-PET bottles optimizes the production of plastic packaging for food since it lets to reuse the post-consumed material after usage for the production of high value articles.

The technical information obtained during the development of up to 100% R-PET preforms allowed to verify the possibility to extend the use of recycled polyester for the production of bottles with different shapes and weight, higher and more critical than that designed for REPACK EDOILS project. In fact, it is possible to use the same equipment used for standard V-PET preforms productions by optimizing the process conditions. Moreover, the shelf life tests and migration tests pointed out that these R-PET preforms are also suitable for bottles intended for more sensitive fatty products, such as Olive Oils and Extra Virgin Olive Oils. The dissemination activities are a very useful tool to entry in new markets and to spread among the final consumers the advantages of packaging in recycled materials also for food products.



Organoleptic quality control of edible oils packaged in 100% R-PET bottles.

Awards

The RE-PACK EDOILS project was awarded during events such as the XI edition of Sodalitas Social Award on May 24th 2013 and the first edition of SMAU Roadshow in Naples on December 13th 2013, in the Cluster Award “Best in Show” in the category “Health, biotechnology and agribusiness”.



European Project Re-Pack Edoils



Use of 100 per cent Post-Consumer Recycled Polyethylene Terephthalate
to produce packaging for edible oils

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