Less greenhouse gas emissions with clip closure solutions

A study by the Fraunhofer Institute for Environmental, Safety and Energy Technology UMSICHT on the calculation of the carbon footprint of various packaging solutions for sausages clearly points to a reduction in greenhouse gas emissions with clip closure solutions.

The latter, when directly compared with injection-moulded cups and thermoformed packaging, result in a substantially greater reduction in emissions.

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In the case of cold cuts, clip closure solutions produce up to 64% less greenhouse gas emissions than injection-moulded cups, and up to 81% less greenhouse gas emissions than thermoformed packaging.

"We expected our packaging solutions to offer environmental benefits. As a result of this study we can now for the first time quantify these benefits for our customers," says Kristian Blomqvist, Vice President Sales and Marketing at Poly-clip System.

Against the backdrop of the new German Packaging Act, the debate around ocean waste and microplastics and the circular economy, environmentally friendly packagings are increasingly in demand.

The results show that CO_2 emissions can be reduced by the choice of packaging. Using eco-balancing, the carbon footprint of a product is determined over its life cycle and a statement on its global warming potential is possible.

In order to establish how environmentally friendly their packaging solutions are, Poly-clip System commissioned the Fraunhofer Institute UMSICHT to investigate a variety of packagings for meat products, comparing clip closure solutions with tray- and thermoformed packaging as well as injection-moulded cups for specific meat products one with another.

Method

For determination of the carbon footprint, the ecological evaluation covered everything from extraction of the raw materials (for example petroleum) up to the finished packaging solution, including disposal of the packaging. The packaging solutions were compared using a comparison unit, which for sausage spread packagings consisted of a 150g pack of sausage spread, and for cold cut packagings a 150g pack of cold cuts.

The bases of calculation included the weight and materials of the packaging solutions and the manufacturing procedure involved.

Analysis of the materials was performed by means of infrared spectroscopy and the packaging plastics manufacturing processes were simulated using commercial eco-balancing databases.

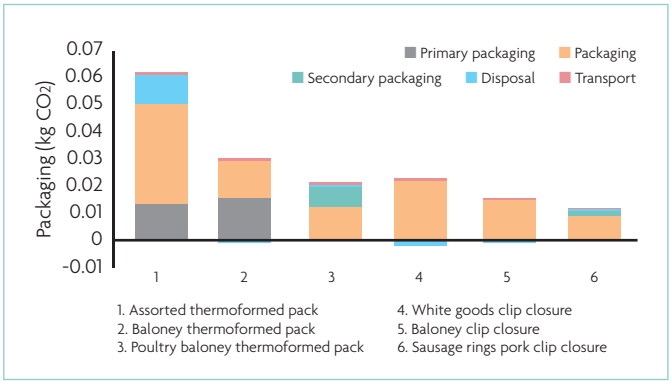

Fig. 2. Comparison of packaging for 150g cold cuts.

Results

"For cold cuts, around 0.05kg CO_2 equivalent can be cut using the clip closure solution, compared with thermoformed packaging.

When extrapolated to the consumption of cold cuts in Germany, this represents a reduction of 22,133 tons of CO_2 equivalent per annum, corresponding to around 173,051,863 driven car kilometres," says Nils Thonemann from the Department of Sustainability and Resource Management at the Fraunhofer Institute UMSICHT.

"In the case of sausage spread packaging, using the clip closure solution saves up to 0.04kg CO_2 equivalent per comparison unit, or 4,427 tons of CO_2 equivalent in terms of the total annual German consumption of sausage spread."

Up to 81% less greenhouse gas emissions using clip closure solutions compared with thermoformed packaging for cold cuts.

The results demonstrate the climate-friendly benefits of clip closure solutions compared with the types of sausage packaging illustrated.

With fewer processing steps, less waste and also lower costs, the designation 'minimalist packaging' is more than appropriate.

Consumer behaviour changes. In this way, less can mean more. More sustainability in sausage packaging using clip closure solutions. ■

Up to 64% less greenhouse gas emissions using the clip closure solution compared with injection-moulded cups.

Fig. 1. Comparison of packaging for 150g sausage spread.