

STREAMLINED LIFE CYCLE ASSESSMENT* HONEY PACKAGING CASE STUDY

HONEY PACKAGE COMPARISON

Honey has been packaged in PET bottles in a variety of shapes for a number of years, including the bear shape that's become ubiquitous in grocery stores. For this Life Cycle Assessment study with a cradle-to-grave boundary, a popular rigid honey packaging format was compared to the premade STANDCAP Pouch, an award-winning inverted flexible pouch.



STANDCAP POUCH



PET BOTTLE



WATER CONSUMPTION

The higher water consumption for the PET bottle is driven by the amount of water needed to cool the molds in the stretch blow molding manufacturing process.

The stand-up pouch format, which is formed by laminating multiple thin layers of film together, uses about two-thirds less water (-68.7%) in its manufacturing and conversion process.



GREENHOUSE GAS EMISSIONS

The premade STANDCAP Pouch results in nearly half the GHG emissions (-46.6%) of the rigid bottle because of the difference in material usage. This disparity can also be traced to differing production methods: The process of laminating and extruding layers of flexible material to produce the pouch uses minimal energy, whereas the bottle requires a greater amount of energy and heat during manufacturing.



FOSSIL FUEL CONSUMPTION

The premade STANDCAP Pouch uses over a third less fossil fuel (-38.2%) than the rigid PET bottle. This is due to the heavy weight of the rigid container and larger amount of plastic used. As a further driver of fossil fuel use, the honey bottle evaluated in this study only contains 12 oz. of honey, while the flexible pouch contains 14 oz.



END OF USE SUMMARY

SOURCE REDUCTION BENEFITS

According to the U.S. EPA Waste Hierarchy, the most preferred method for waste management is source reduction and reuse.

A major benefit of flexible packaging is the high product-to-package ratio that it offers.

High product-to-package ratio:



Low product-to-package ratio:



RECOVERY BENEFITS

STANDCAP POUCH



1x

amount of material ending up as municipal solid waste

Currently, most multilayer pouches are not recyclable, but can still result in less overall material to landfill due to their lightweight nature compared to rigid packages.

PET BOTTLE



1.2x

amount of material ending up as municipal solid waste

The premade STANDCAP Pouch has slight advantages in percent of product weight compared to the rigid PET bottle (**95.3% vs. 92.7%**) and the amount of material discarded (**49,233 g vs. 60,619 g** for 1,000 kg of honey) when considering current U.S. recycling rates.

IMPLICATIONS

The flexible premade STANDCAP Pouch has a number of positive sustainability attributes when compared to a rigid PET bottle for honey. These include lower fossil fuel and water use, GHG emissions and discarded material; and a higher overall product-to-package ratio.

FORMAT	FOSSIL FUEL CONSUMPTION (MJ-EQUIV)	GHG EMISSIONS (KG-CO ² EQUIV)	WATER CONSUMPTION (L)	PRODUCT-TO-PACKAGE RATIO (%)	PKG LANDFILLED ((G)/1000 KG HONEY)
STANDCAP POUCH 	11.16 (-38.2%)	.5236 (-46.6%)	121.24 (-68.7%)	20.3:1 (95.3:4.7%)	49,233 (-18.8%)
HDPE BOTTLE 	18.07	.9813	514.92	12.7:1	60,619



For more information and methodologies of assessments, please visit www.flexpack.org or www.glenroy.com to download Glenroy's "A Life Cycle Assessment Comparison for the Glenroy Premade STANDCAP Pouch in the Sauces and Personal Care Market versus Rigid Packaging Options" report and refer to pages 18-21.