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Independent LCA of grocery carrier bags materials: plastics proves to be the material with the overall lowest impact to environment

On March 14th, 2018 the Danish Environmental Protection Agency (Miljøstyrelsen) has published a study that analyses the life cycle environmental impacts of production, use and disposal of grocery carrier bags currently available in Danish supermarkets. The aim of the study being to identify the bag with the best environmental performance, the recommended number of reuse and best disposal option of a grocery bag.

7 materials (LDPE, PP, rPET, Polyester, biopolymer, paper, cotton and composite) and their variations were analyzed in compliance with the international standards ISO 14040 and 14044 for a range of recommended environmental impacts, taking into consideration different end-of-life options: incineration, recycling and reuse as waste bin bag before incineration. For all carrier bag alternatives, the assessment took into account impacts arising from production of the carrier and its packaging (assumed to occur in Europe), transportation to Denmark, use, and disposal which could occur in Denmark or within Europe.

Main finding of the analysis is that, with regards to production and disposal, **LDPE lightweight carrier bags** provide the **overall lowest environmental impacts** for most environmental indicators when not considering reuse. In particular, between the types of available bags, LDPE carrier bags with rigid handle are the most preferable. Effects of littering for this type of bag were considered negligible for Denmark.

Moreover, another relevant finding was in respect to the best disposal option, the Study states *“reusing the carrier bag as a waste bin bag is better than simply throwing away the bag in the residual waste and it is better than recycling. Recycling can potentially offer benefits in the case of heavy plastic bags, such as PP, PET and polyester. Reuse as a waste bin bag is most beneficial for light carrier bags, such as LDPE, paper and biopolymer”*

EuPF welcomes this analysis, which is based also on the European Commission’s Assessment of impacts of options to reduce the use of single-use plastics carrier bags of 2011 as well as on valid methods, applied by the European scientific community, to assess the true effect on the environment of a plastic packaging product, provided the most convenient EoL option is available.

The LCA Study is fully available in English at the following address:
<http://mst.dk/service/publikationer/publikationsarkiv/2018/mar/plastposer-lca/>