

Biodegradable waste bags 'more damaging' than PE

By Chris Smith

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HEIDELBERG, GERMANY (Sept. 1, 2:40 p.m. ET) -- A detailed life cycle analysis study of plastics waste bags carried out by Heidelberg's Institute for Energy and Environmental Research (IFEU) has shown that traditional PE resins are less damaging in environmental terms than the biodegradable versions currently on the market in Europe.

The study -- which was commissioned by Germany's Association for Plastics Packaging and Films (IK) -- shows that, when all environmental factors are considered, the least environmentally damaging option for plastics waste bags is to use recycled PE, followed by virgin PE. The current biodegradable options -- including both petrochemical and renewably-sourced plastics -- performed the worst in its analysis.

The study looked at 20 and 120-litre plastics waste bags on the market in Germany and a 30-litre size popular in France, comparing both virgin and recycled PE resins with commercially-available biodegradable alternatives including starch and PLA-based formulations.

According to IFEU, the environmental profile of each waste bag is dominated by the raw material production process, with conversion to bags and transport to point-of-sale relatively minor contributors in most cases.

"Consequently, the environmental impact of each bag type considered in the study will be lower the thinner the product is," it says in its conclusion.

Virgin PE and recycled PE score well in environmental terms because the resins enable high levels of down-gauging to be achieved. The study shows the 20 litre PE bags used in Europe have a typical gauge of around 12.5 microns compared to 15-25 microns for biodegradable types.

The IFEU analysis also takes into account future anticipated improvements in the biodegradable plastics sector in terms of resin manufacturing efficiency and material performance. However, the study authors point out that none of its forecast future scenarios result in the materials outperforming PE in general waste bag applications.

IK said it embarked on the study to shed light on whether proposed taxes or restrictions covering use of traditional plastics in waste bag applications could be justified from an ecological perspective. It said the findings "show that sanctioning of conventional plastics in the framework of legal measures are by no means justified."

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