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Bioplastics not superior

Biodegradable plastic packaging no better than common plastics

Biodegradable plastics used in packaging, which are made from renewable biomass sources, do not prove to offer an overall ecological advantage. The farming and processing of the plants used in packaging cause more severe acidification of soil and eutrophication of water bodies than the production of common plastic packaging. Moreover, they cause higher levels of particulate emissions. The bioplastic bags now common on the market offer no ecological advantage either. These are the conclusions reached in a study done on behalf of the Federal Environment Agency. The study was commissioned to determine whether the special provisions for biodegradable plastic packaging introduced by the German Packaging Ordinance are still defensible from an ecological viewpoint. These provisions are due to expire at the end of this year. "The bottom line is that packaging made of so-called bioplastics are not better for the environment. The climate impact of bioplastics may score better, but they are negative in a number of other environmental areas," said Jochen Flasbarth, President of the Federal Environment Agency (UBA). "The study results make a case for ending the special regulations for this type of packaging, which include exemption of retailers from the take-back obligation."

If you take a look at the entire life cycle of biodegradable plastic packaging made of renewable resources, that is from production to disposal, it does not rate any better than common plastic packaging. Whereas their CO₂ emissions and consumption of petroleum are lower, they place greater strains in other environmental areas, particularly through the use of fertilisers. Using fertilisers on the plants which the plastics are made of causes eutrophication of water and acidification of soil - to a much greater extent than in the production of common plastics. The logical conclusion is that the much touted bioplastic bags have no ecological advantages over common plastic bags. Reusable bags made of fabrics and other durable materials are in fact the real ecological alternative.

Packaging made of biodegradable plastics was also unsuccessful in retail. During the 2009 period covered in the study, the market share of bioplastics packaging was a maximum of 0.5 per cent. Germany consumed a total of 2,645 million tonnes of plastic packaging in 2009.

UBA's President Flasbarth remarks, "The Federal Environment Agency recommends that bioplastics only be supported in future if their ecological superiority over common plastics can be proven." New plastics such as biopolyethylene, which is made in part from sugar cane, do not yet satisfactorily meet these criteria either. Their production must be further optimised. One

significant means of achieving this is to use residual plant matter so that, in future, these plastics may prove to have advantages over common plastics. They are currently in use in small volumes for the production of bottles and bags. Bioplastics must be easily recyclable at low energy cost after use.

Article 16 Para 2 of the German Packaging Ordinance makes special provisions for biodegradable plastic packaging to promote its introduction to the market. Manufacturers and distributors of such packaging are exempted from the existing take-back system for packaging. When used as beverage packaging they are also exempted if the packaging is made of at least 75 per cent renewable resources. Manufacturers and distributors are at liberty to determine how they can most effectively secure the highest possible recycling rate required by the ordinance. The special provisions are due to expire on 31 December 2012. The objective of the study carried out on behalf of UBA by the Institute for Energy and Environmental Research (ifeu) was to determine whether these special provisions are still defensible from an environmental viewpoint. Jochen Flasbarth said, "The study has proven that the special provisions for bioplastics stipulated in Art. 16 Para 2 of the Packaging Ordinance have not been successful. The results of the research project strongly suggest that the special provisions on packaging made of these plastics should not be continued."

Further information and links:

The study entitled *Untersuchung der Umweltwirkungen von Verpackungen aus biologisch abbaubaren Kunststoffen* [Analysis of the environmental impact of biodegradable plastic packaging] evaluated a total of 85 life cycle assessments, studies and professional articles with a view to all of the environmental pros and cons of every type of packaging. The study also analyses the use of packaging in retail trade based on the status quo as well as on forecasts of future use.

Study: <http://www.umweltbundesamt.de/uba-info-medien-e/3986.html>

FAQs: <http://www.umweltbundesamt.de/abfallwirtschaft/faq-biokunststoff.htm>

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