

Most plastic bottles are not recycled

The food industry could recycle far more plastic, according to research by WUR.

The Dutch are very good at separating out plastic waste. Most plastic packaging, such as bottles for milk, soft drinks and shampoo, is made of polyethylene (PE). To date, this plastic is not used much in new plastic bottles; it mostly ends up in products such as sewer pipes. 'It means the packaging industry is a long way off having a circular economy,' says Wageningen researcher Ulphard Thoden van Velzen.

His research group at Wageningen Food and Biobased Research took a bale of plastic bottles that had been collected as waste and determined the quality and strength of the plastic. They did that in five stages. First organic remains were removed from the plastic, then other kinds of plastic such as polystyrene were taken out. In the third stage, the bottles were separated from other types of PE packaging and in the fourth stage they removed 'contamination', such as the lids and labels. That left them with pure PE bottles.

After each stage, the researchers determined the quality. 'The purer the PE, the better the quality and mechanical strength,' says the research group in an article in *Packaging Technology and Science*. 'The better we are able to separate plastic PE, the more chance of reusing it.'

Cables

The problem is, continues Thoden van Velzen, that the recycling companies are barely able to sell their recycled plastic. 'Their warehouses are full of huge bales



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of plastic recyclate. That is because food companies are only allowed to use new PE plastic and many non-food

'I'd be pleased if the plastic was recycled even once'

companies, such as those manufacturing cleaning agents and shampoo, prefer to use new PE too. That is cheaper and of better quality. The odour and colour of the packaging can be different if recycled PE is used, and it may contain a wide range of chemicals. The sorting and recycling companies can't remove the chemicals in a cost-effective manner.' But if PE is separated properly, you can easily reuse it, says Thoden van Velzen. How often could this PE waste be recycled? 'Several times, but I'd be pleased

companies, such as those manufacturing cleaning agents and shampoo, prefer to use

if it was recycled just once in the packaging industry.' Instead the PE plastic is used in cables, plastic barrels and sewer pipes, but that market is not so big. The waste collection firms, sorting companies, supermarkets and food companies all point the finger at one another, says the researcher. 'I think all the stakeholders need to make a move. The supermarkets need to set objectives saying they want to reuse more plastic. The sorting companies need incentives that encourage them to sort properly rather than maximizing the number of kilos processed. And the government needs to draw up rules that stimulate plastic recycling.' AS