

Breaking News on Food Processing & Packaging - Europe

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Study finds glass bottling produces similar carbon emissions to PET

By Linda Rano

17/03/2008- **A study published by WRAP suggests that the bottling of Australian wine in the UK using light glass bottles with a high recycled content produces roughly the same CO2 emissions during production and transportation as PET bottling.**

According to the study, manufacturing glass is less carbon intensive than manufacturing PET on a per unit weight basis. However a PET wine bottle can be manufactured of lower weight than the glass equivalent and lightweighting has been shown to reduce CO2 emissions with regard to transportation of loads.

This means that when the total emissions are compared the lower weight of the PET is offset by the carbon intensity of the material to give similar overall results to the light weight glass equivalent.

For both glass and PET the study shows that incorporating recycled content reduces greenhouse gas emissions.

When PET bottles are made from recycled PET flakes instead of virgin PET, less energy is required, as the first phase (crude oil synthesis) is avoided. When glass is recycled there is no need for extraction of raw materials and the overall temperature needed to melt glass cullet (broken or waste glass) is less than that needed to melt virgin raw materials.

Core comparisons were made between an Amcor-produced PET bottle 54g with 0 per cent recycled content - found to produce an average of 446g CO2/bottle, a lightweight 365g glass bottle available in the UK with 81 per cent recycled content - found to produce an average of 453g CO2/bottle, and a 496g glass bottle available in the UK also with 81 per cent recycled content - found to produce an average of 523g CO2/ bottle.

Also, using a PET bottle with 50 per cent recycled content produced an average of 387g CO2/ bottle and using 100 per cent recycled content produced an average of 327g CO2/ bottle. Using the 365g glass bottle with 92 per cent recycled content produced an average 356g CO2/bottle.

It was assumed that the wine, produced in southern Australia, was shipped to Corby bottlers, UK, in flexitanks, via Adelaide and Felixstow. For the 365g glass bottle and the PET bottle the largest contributor to CO2 emissions came from the shipping of the wine from Australia. For the 496g glass bottle CO2 emissions arising from the manufacture of the bottle were slightly higher than the shipping.

The study analyses only CO2 emissions - although the list of CO2 emissions considered is not comprehensive - and not other greenhouse gases. The inclusion of other greenhouse gases would increase the emissions from manufacturing PET by almost 14 per cent and for glass there would be an increase estimated at about 10 per cent.

Richard Swannel, WRAP Director of Retail and Organics Programmes said in a statement that this report: "*demonstrates the positive environmental impact of lightweighting and the incorporation of recycled content. It will help inform the wine packaging and retail industries on the environmental impact of their packaging choices.*"

He recognised that "*Ultimately the final decisions by producers will also depend upon numerous variables including what the supply chain requires, product storage and shelf life requirements,*

recyclability and consumer preferences."

The report was commissioned by WRAP and carried out by Artenius PET Packaging (formerly Amcor PET packaging) and Best Foot Forward.

WRAP encourages and enables businesses to be more efficient in their use of materials and recycle more often, so minimising landfill and reducing carbon, emissions. It is backed by government funding.

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