



Wine Packaging Seminars:
Environmental Impact & O₂ Measurements

Bordeaux, France 29 November 2010



Title/Titre : **A Comparison of Two Life Cycle Assessments for Wine Packaging : The Pira Ciba and Franklin Associates Studies**

Speakers/

Intervenants : **Philip Bailey, Manton Technical Services**



In May 2009, Chris Edwards & Gary Parker of Pira Ciba produced (at the request of Performance BIB) “A Comparison of Bag-in-Box Life Cycle Assessments” set out to compare two major studies on the environmental impact of packaging used for wine (and other beverages):

- A study was conducted by Pira Ciba in 2009 at the request of Rapak which included glass bottles, plastic bottles, beverage carton, stand-up pouches and BIB in the UK market.

- A study conducted in 2006 by Franklin Associates for Tetra Pak and updated for BIB packaging in 2008 at the request of Scholle, which included glass bottles, plastic bottles, beverage carton and BIB packaging in the USA.

This comparison was presented on Friday 15 May 2009 to the Performance BIB Environmental Work Group meeting held in the London St Pancras Novotel, chaired by Philip Bailey, with David Bellmore (Scholle) and Tony Hoare (Rapak) as scientific co-chairpersons. The report is available to members on our web site should you care to study it further.



- Because of the complexity of the subject, and the numerous factors which can be taken into account , the reports gave apparently different numerical values in some areas.
- Edwards & Parker compared the Rapak & Scholle reports and identified differences in approach and tried to align the results.
- For example, packaging was transported over different distances in the two market places. In the USA filler to customer distance was calculated using 1500 miles (2414 Km), whereas in the UK 255 miles (410 Km) was taken. It was found that Global Warning Potential grows by approximately $\frac{1}{4}$ g CO₂ eq. for every 10km rise in transport distance.
- There were different packaging weights used in the studies as a result of the different manufacturers involved.
(e.g. carton weight, % recycled cardboard & bag weight etc.)

They also identified slight differences in contributing factors, which led to slightly different final figures. (Biogenic substances for example)

Once these factors were taken into account there was more convergence between the studies.



Pira Ciba concluded (after attempting to harmonize some of the assumptions) that :

“The results for the glass bottle were similar for both studies

- The PET bottle provided approx. half the impact of the glass bottle.
- Lightweight alternatives were generally between 10-25% of the impact of the glass bottle.
- Transportation, secondary packaging and end-of-life assumptions can play a key role in differentiating lightweight packaging formats.”



Pira Ciba also concluded (after attempting to harmonise some of the assumptions) that there was little significant difference between the two carbon footprint study conclusions . This is shown below as the lowest (best) and the highest (worst) results of the two studies along with the average values reported.

