

7. Addendum

POST TRIAL EXPERIENCE

The results of this trial provided sufficient confidence to commence commercial bottlings of wine into 187mL PET with 2% Amfresh™ as the oxygen scavenger. The first commercial bottling occurred in August 2006. Amfresh™ is one of a variety of oxygen scavengers which derive from a parent group of compounds known as Amosorb™.

TEMPERATURE EFFECTS ON EMPTY AND FULL BOTTLES

PET bottles while empty are very susceptible to deformation by heat and great care must be taken with the dispatch, transport and receipt of stock of empty bottles. Direct sunlight for 15 minutes in summer on the side of a pallet of empty bottles is sufficient to heat bottles enough to render them unusable. Indirect sunlight or sustained heat, such as a truck parked in the sun for several hours can have similar results.

The temperature effect on packaged stock is largely by way of an increase or decrease in shelf-life decay rate with temperatures above and below 23°C respectively. Storage of finished product in an insulated warehouse is required as a minimum for wine packed in PET, which incidentally is good management practice for wine packaged in glass as well. Any cost of refrigeration to extend shelf-life of packaged stock can often be avoided by judicious planning of the production schedule.

BOTTLE HANDLING ON THE BOTTLING LINE

Once a bottling line designed for glass bottles is configured to handle PET efficiently, it is a constant 'work in progress' to keep to a minimum scuffing of the soft surface of the PET bottle.

SHELF-LIFE OF COMMERCIAL PRODUCTION

Experience with commercial bottling runs have shown shelf-life of wine to be 9 months from bottling date for bottles manufactured with 2% Amosorb™ and filled within 2 weeks of manufacture. This is consistent with that predicted by the trial, which showed that a shelf-life was justified between 8 and 12 months from bottling.

In order to extend the shelf-life of wine packed into PET, 4% Amosorb™ has been added to the PET bottle at manufacture which has enhanced shelf-life by 6 months. This level of Amosorb™ is less than the limit of 5% prescribed for alcoholic beverages in PET by FDA and EU authorities.

EXTRA MARKER FOR SHELF-LIFE

Browning has begun to be assessed by measurement of the wine at absorbance 420nm and red colour at 520nm, rather than simply by organoleptic assessment. Measurement of browning and colour density and hue by this method gives veracity to the assessment of shelf-life.

NEW SCAVENGERS

Amosorb™ was the only commercially available oxygen scavenger with FDA and EU approval when this trial was commenced in 2004. Since that time a lot of research effort has been directed at finding alternative scavengers which extend shelf-life of wine in PET. There is confidence within the PET industry that an improved oxygen scavenger, with less shelf-life limitations, will soon be found and be commercially available.