

# Performance BIB Science Group Meeting

10 AM to noon on 24 October 2012, Bristol, UK



**SCIENCE GROUP OBJECTIVES**



**PAST AND PRESENT THEMES**

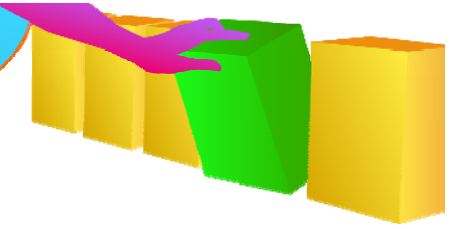


**2013 SHELF LIFE STUDY BY INTER RHONE**



**POSSIBLE FUTURE THEMES**





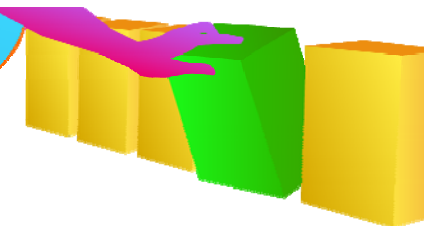
## SCIENCE GROUP OBJECTIVES

**The broader objective of the Performance BIB Science Group is to further the scientific understanding** of the technical performance of BIB packaging systems in order to further improve the product offered to the final consumer.

Specifically the main activities within the 2012-13 programme are:

- Select topics & speakers for the 24 October 2012 Shelf-life seminar in Bristol
- Further disseminate knowledge & tools (including the BIB Cone Meter) throughout the BIB industry
- Identify areas where more knowledge & tools are required
- Conduct a modest shelf-life project to obtain additional information



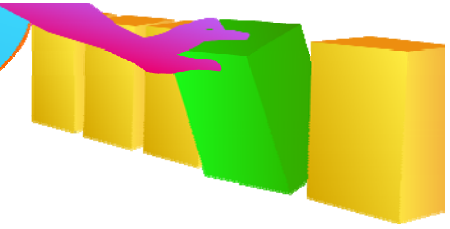


## PAST AND PRESENT THEMES

The conference in Bristol is the 7<sup>th</sup> **international conference** organized by Performance BIB. Below (and on the next page) are some of the themes of scientific & technical interest explored during these conferences. In addition there are other themes (related to consumer preferences, BIB benefits, BIB communications and legislative constraints) not listed below since these themes fall under the auspices of the Performance BIB Education Group.




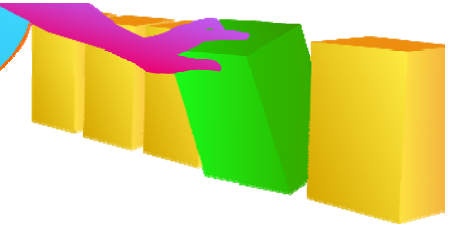
Performance BIB Meeting Themes 2004-2010 1 = low priority, 2 = middle priority, 3 = high priority		May 2004 Gruissan	Nov. 2004 Barossa Valley	Nov. 2006 La Rochelle	Nov. 2007 Nimes	Oct. 2008 Grande Motte	Nov. 2010 Bord- eaux	Oct. 2012 Bristol
<b>Theme 1</b>	Technical preoccupations of filling centres (leaks, oxidation etc.)	3						
<b>Theme 2</b>	Total Wine BIB Shelf-life study results	1	2			1		2
<b>Theme 3</b>	Wine BIB Shelf-life study results after opening package		1					3
<b>Theme 4</b>	Recommended procedures for Wine BIB Shelf-life trials		1					3
<b>Theme 5</b>	Establishing a "best by" date for wine BIBs (shelf-life)		1					2
<b>Theme 6</b>	Guide of Good Practices for the Filling of Wine BIBs	1	2	3		1		
<b>Theme 7</b>	Measurement of CO <sub>2</sub> loss during the storage of wine BIBs		1					
<b>Theme 8</b>	BIB package interactions (yeast lees as O <sub>2</sub> absorbers, permeation/sorption)			1	2	3		
<b>Theme 9</b>	Measurement and control of dissolved oxygen (DO) in wine BIBs		1	2		2	3	
<b>Theme 10</b>	Measurement of total oxygen in Wine BIBs after filling (headspace + DO)		1	1	1	1	3	3



## PAST AND PRESENT THEMES

The scientific side of Performance BIB has always tried to develop new themes for each conference or present new materials on existing themes. All conference presentations since 2006 are available on [www.b-i-b.com](http://www.b-i-b.com)

	<b>Performance BIB Meeting Themes 2004-2010</b> 1 = low priority, 2 = middle priority, 3 = high priority	May 2004 Gruissan	Nov. 2004 Barossa Valley	Nov. 2006 La Rochelle	Nov. 2007 Nimes	Oct. 2008 Grande Motte	Nov. 2010 Bord- eaux	Oct. 2012 Bristol
 <b>Theme 11</b>	<b>Methods for measuring filled package oxygen permeability</b>			2	1	1		1
<b>Theme 12</b>	<b>Technical specifications of Wine BIB packaging: principles and key parameters</b>			1	3			
<b>Theme 13</b>	<b>International Standardisation of Wine BIB tests</b>			1	2	3		
<b>Theme 14</b>	<b>New Materials</b> (barrier materials, intelligent materials etc.)					1		
<b>Theme 15</b>	<b>Guide of Good Practices for the transport of wine in Flexitanks</b>			1	2	3		
<b>Theme 16</b>	<b>Recommendations for the transport of BIB wine in maritime containers</b>					1		2
<b>Theme 17</b>	<b>BIB Traceability</b>					1		
<b>Theme 18</b>	<b>Determination of the environmental impact of wine packaging</b>				2	3	3	



# 2013 SHELF LIFE STUDY BY INTER RHONE

## Step objective 1

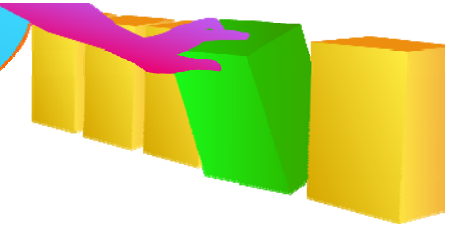
Define well the different concepts related to shelf life including perceptions & expectations within the industry & by the consumer as well as offering more standardized definitions.

## Step objective 2

Identify characteristics of real life BIB supply chains. The primary focus will be on wines filled and consumed in France but we may also include an exported wine. We will try to explore cases where the duration & complexity within the supply chain is different but also if possible with different end level consumer groups.

How long the wines remain & the storage & transport conditions in each step of the supply chain (from filler to end consumer) must be identified .

For this we would like to receive input (to remain confidential if necessary) from Performance BIB meeting participants.

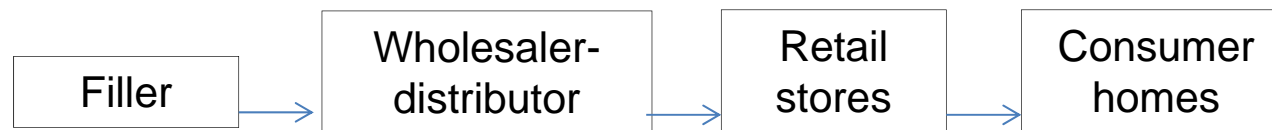


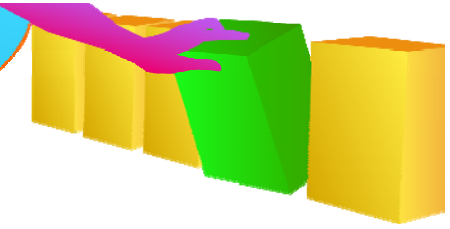
# 2013 SHELF LIFE STUDY BY INTER RHONE

## Step objective 3

Once the real conditions are identified we will recreate 4 typical but very different supply chains and measure BIB shelf life performance for each supply chain. The BIBs will be filled, stored, transported, purchased and consumed as close to real conditions of delay, temperature, etc identified in the previous section.

A rosé chain and red wine will be chosen and the same wine will be used for each supply chain study. Each BIB will be opened as it would be by the consumer and the amount poured each time (until the end) will be as typical as possible. The wine will be submitted to a full run of analytical and sensorial evaluations.





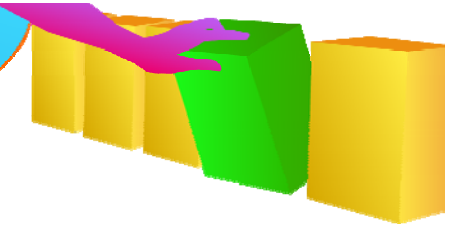
## POSSIBLE FUTURE THEMES

Performance BIB has made a great deal of progress in understanding the factors that determine wine BIB shelf-life, to improve measurement systems for some of the key parameters (especially oxygen) and to make recommendations to its members so as to further extend shelf-life. Much however still remains to be done.

Since our research budget is very limited, most information must be gained by encouraging members and experts to share the results of existing studies.

The potential list of themes is almost endless but we have listed a few areas where we do not have enough information (even after the meetings in Bristol) but perhaps you do.

This is merely a discussion guide. Please add themes that you believe to be important and indicate when you already have the answer.



# POSSIBLE FUTURE THEMES

## Real supply chain conditions

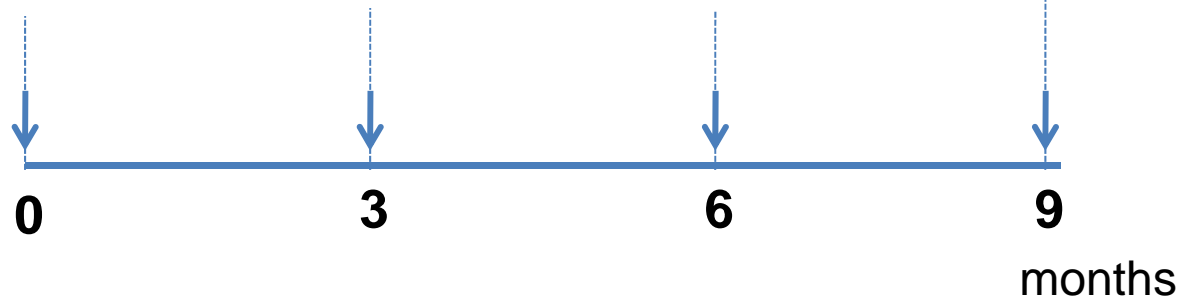
**LEVEL OF THE  
SUPPLY CHAIN**



**REFERENCE  
DATE**

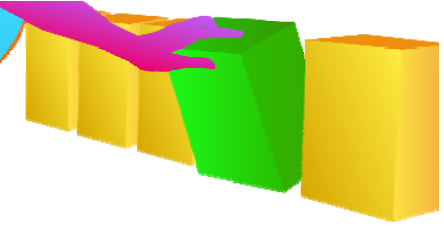
**Date of filling wine**      **Limit Date to be delivered to the retailer**      **Limit Date to be sold to the consumer**      **Consumed**

**NUMBER OF  
MONTHS AFTER  
FILLING (Example)**



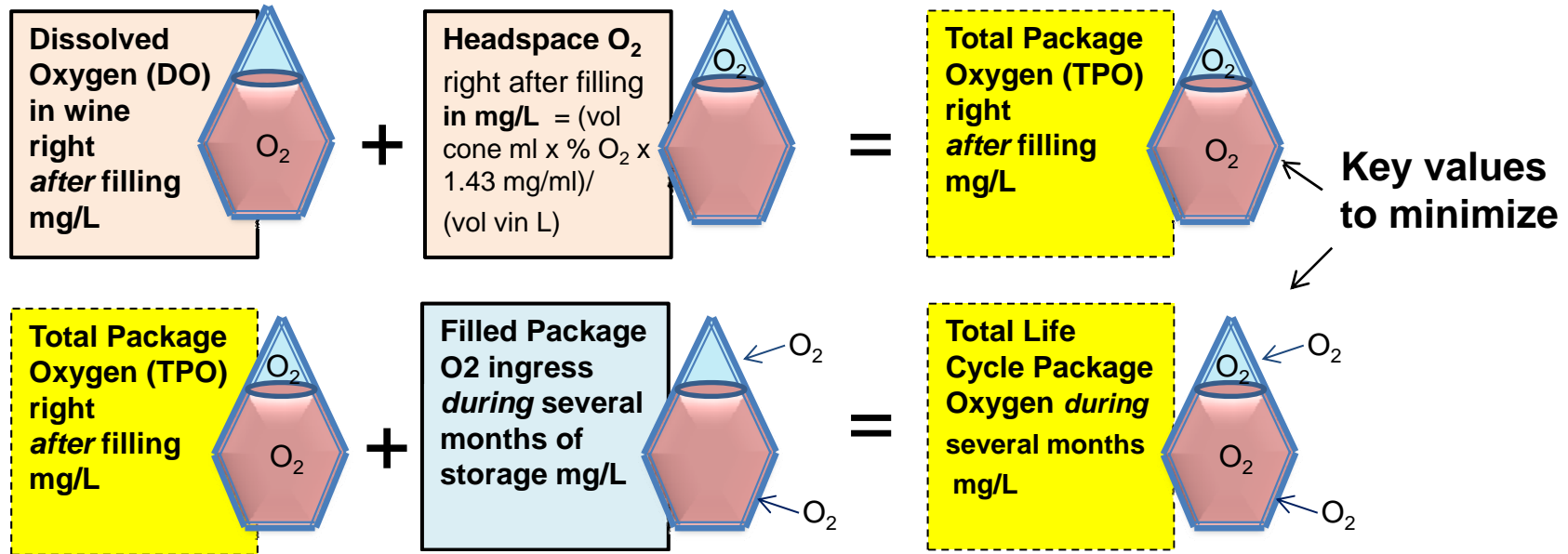
What are the real delays, conditions (including temperatures) and shelf-life indicator levels (including free SO<sub>2</sub>) observed in various levels of specific supply chains (averages & variance)?  
How to best simulate this for controlled shelf life studies?



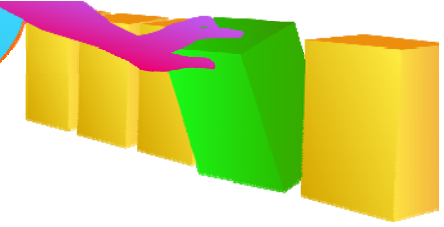


# POSSIBLE FUTURE THEMES

## Impact of (TPO + Package O<sub>2</sub> Ingress) on shelf life



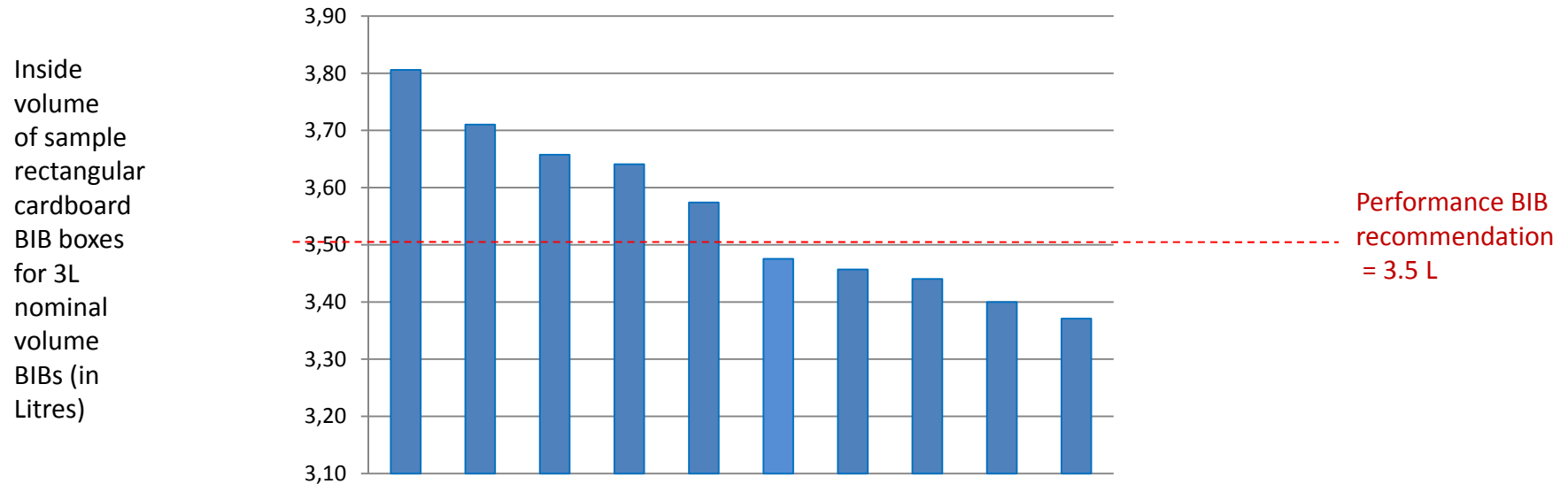
What is the impact of various levels of TPO and Filled Package O<sub>2</sub> Ingress on Shelf-life?  
How to best estimate Filled Package O<sub>2</sub> Ingress ?



# POSSIBLE FUTURE THEMES

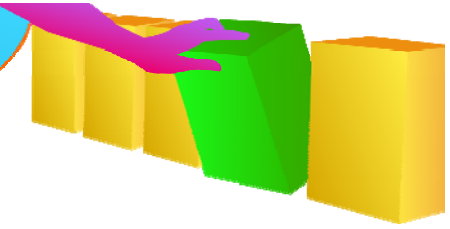
## Boxes and box/bag fit

Real distribution of inner box volumes observed with 10 BIB 3L references taken at random



Measured (using metal caliper) by taking outside dimensions of fully erected box and subtracting widths of cardboard.

What is the impact of too much or too little residual space in the box? What is the statistical distribution of inner box volume & residual space is left in the box? What is the impact of various BIB shapes relative to box shapes?

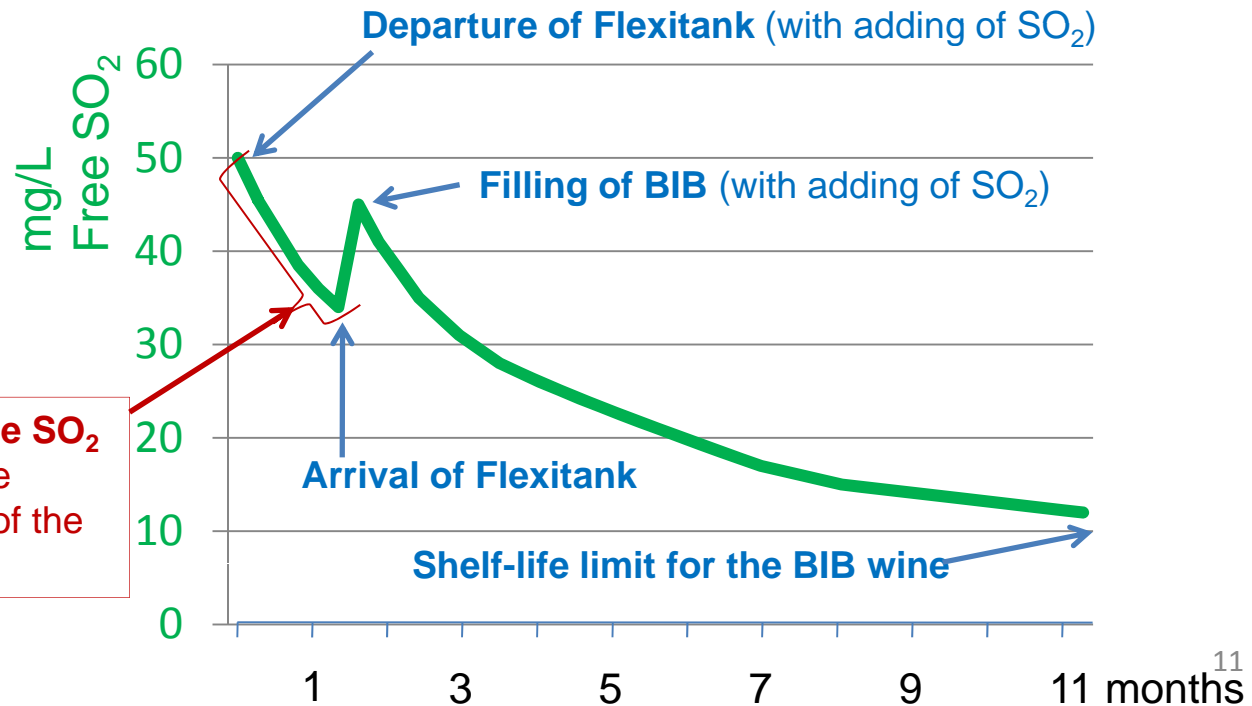


# POSSIBLE FUTURE THEMES

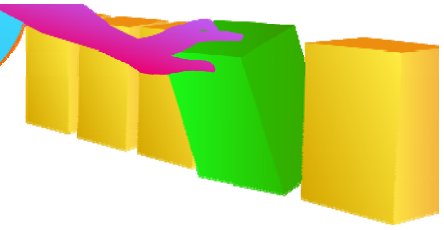
## Flexitank fall in free SO<sub>2</sub>



**Fall of free SO<sub>2</sub>**  
(during the transport of the Flexitank)

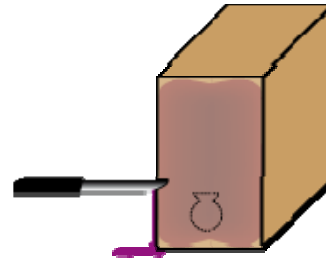


Why is the fall free SO<sub>2</sub> in many Flexitanks often so great during transport? Where is the O<sub>2</sub> coming from?



## POSSIBLE FUTURE THEMES

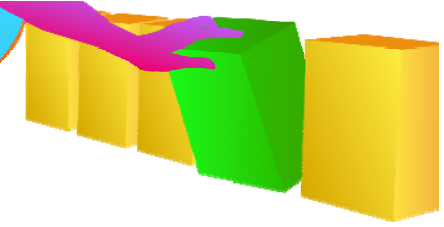
### Leakers



How to best measure film stress & leaker risk during filling? What is the distribution of leakers due to various causes? What tools (other than leaker maps) can be developed to record & analyze leakers?

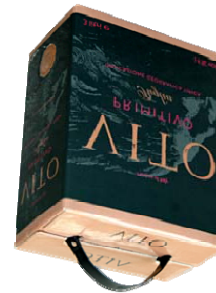
### Age and storage conditions of the package & shelf life:

What is the impact of age and storage conditions on the oxygen barrier of bags and taps?  
Do higher temperatures permanently damage barrier film? For example if film goes from 20° C to 50° C and then back to 20° C will OTR before and after the jump to 50°C the same?



## POSSIBLE FUTURE THEMES

Tap on Bottom or Tap on top & shelf life



Does storage of wine BIBs with tap on top of the box decrease shelf life?