10th Pangborn Sensory Science Symposium
11th - 15th August 2013, Rio De Janeiro, Brazil



FINAL REPORT to
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Table of Contents

1	Abstract	3
2	Executive Summary	3
3	Background	4
4	Project Aims and Performance Targets	4
5	Method	4
6	Results/Discussion	6
7	Outcome/Conclusion	6
8	Recommendations	7
9	Appendix 1: Communication	8
10	Appendix 2: Intellectual Property	8
11	Appendix 3: References	8
12	Appendix 4: Staff	8
13	Appendix 5: Abstract of Conference Presentation	9
14	Appendix 6: Budget Reconciliation	10

1 Abstract:

The 10th Pangborn Sensory Science Symposium was held in Rio De Janeiro, Brazil from 11th – 15th August, 2013 and attracted more than 750 delegates from over 30 different countries. The conference discussed Sensory and Consumer Science, with an emphasis on the following themes:

- Advances in sensory and consumer methodology
- Sensory and instrumental relationships
- Cross-cultural and income-related research
- Food choice and consumer behavior
- Fundamentals of sensory research
- Sensory properties for health and wellness
- Sensometrics
- Sensory and consumer research of non-food products
- Sensory evaluation in quality control and product development
- Cross-modal interactions
- Age-related sensory perception and behaviour

This travel grant enabled participation in the conference via a poster presentation titled: “Do oak volatiles influence consumers’ emotions and acceptance of wine?”

2 Executive Summary:

The travel funding allowed University of Adelaide PhD student, Anna Crump, to attend and participate (via presentation of a poster) in the 10th Pangborn Sensory Science Symposium held in Rio De Janeiro, Brazil in August 2013. The Pangborn Symposium is an international meeting of sensory scientists to honour the work and contribution of Rose Marie Pangborn to the field of sensory science. The conference is convened every two years, and is recognised as the most important scientific symposium for the disciplines of sensory and consumer science. Over the five days the program comprised 2 keynote presentations, 10 plenary lectures, 12 oral sessions, 6 workshops and 540 posters. Around 750 people from over 30 different countries attended the conference. The symposium focussed on topics such as: advances in sensory methodology, food choice and consumer behaviour, sensometrics, sensory properties for health and wellness, and fundamentals of sensory research.

The lunch breaks, poster sessions and symposium dinner provided opportunities to meet with other conference delegates to discuss research interests, directions and the potential for collaboration.

3 Background:

Linking consumer emotions with food and beverage products is of significant interest to both the scientific community and the global wine industry. The Pangborn Symposium was attended by prominent sensory scientists, and is the most prestigious conference within the field of sensory science. As such, it represented a unique opportunity to disseminate my recent PhD research findings, to learn about new sensory techniques and to establish international collaborations. This project sought funding to assist with travel costs associated with attending the 10th Pangborn Sensory Science Symposium in Rio De Janeiro, Brazil.

4 Project Aims and Performance Targets:

The aim of this project was to attend and participate in the 10th Pangborn Sensory Science Symposium (http://www.pangborn2013.com/) held in Rio De Janeiro, Brazil from August 11th to August 15th 2013. The specific objectives accomplished included:

- Dissemination of my research findings via a poster presentation;
- Learning about novel methods and approaches to sensory and consumer research;
- Increased knowledge of research methods to investigate consumer emotions;
- Interaction with renowned researchers, with a view to establishing collaborations; and
- Gaining an insight into other food and beverage research programs, and how these methods could be applied to current viticulture/oenology research programs.

5 Method:

Dissemination of my PhD research was achieved via a poster presentation during the conference and through discussions with other conference attendees. The posters were grouped under themes of:

- Cross-cultural and income-related research
- Sensory and consumer research of non-food products
- Advances in sensory and consumer methodologies
- Age-related sensory perception and behaviour
- Food choice and consumer behaviour
- Cross-modal interactions
- Sensory evaluation in quality control and product development
- Fundamentals of sensory research
- Sensory properties for health and wellness
- Sensometrics
- Sensory and instrumental relationships

Poster sessions were held over two days of the conference, and with 540 posters included in more than 10 different categories, the topics were diverse and of a very high standard. All delegates were keen to discuss their work, and there was the opportunity to leave a business card for more information about the research or to obtain a copy of the poster.

6 Results/Discussion:

The concept of mind genomics featured heavily during the conference and appears to be a rapidly growing area of sensory research. A representative from the H.J. Heinz Company, Margaret Emrick, presented a talk titled "*Three in one tool – Advancing consumer research through the application of mind genomics to answer product development needs in a challenging economic environment*". I found this talk particularly interesting as Margaret described the method in detail while working through an actual case study. Results were analysed using conjoint analysis. The method has applications for new products or line extensions, quality improvement and brand maintenance, and I believe it is relevant in the field of wine consumer research, particularly when investigating the consumer acceptance of wines displaying particular aromas or other sensory traits.

A sensory method which featured in many of the conference presentations and also had a workshop dedicated to teaching conference delegates how to apply the methodology and the subsequent data analysis was Temporal Dominance of Sensations or TDS. At the conference registration we were given four chocolate samples and a link to an internet site, in which we could participate in an online TDS experiment. The results from the multi-bite chocolate experiment were then presented at the workshop and participants learnt how the data was analysed. The TDS method uses a limited number of attributes (around 8 maximum) to rate the sequence of the most dominant observations, with the results presented using external preference mapping. I found the 'hands on' approach of this activity useful, as it is often much easier to understand and put into practice a method once you have the practical experience rather than learning from a book.

Based on the oral and poster presentations, online surveys and social media remain popular as a data collection tool in consumer and sensory research, particularly for cross-cultural studies. These methods featured in many of the presentations at the conference, and prove beneficial in collecting consumer emotion data. Presenters were mainly using Twitter, Facebook, and Pinterest for their data collection and some would later generate word clouds with the data (which I thought was an effective way of presenting the data, as it's visually appealing). A presentation given by Hannelize van Zyl of Heineken titled "*Words used by Spanish and English speaking respondents in expressing emotions related to beverages*" highlighted the importance of ensuring that words used to express emotions relate to the same feeling when collecting data in different countries. Ms van Zyl discussed recent examples from a cross-cultural study using English and Spanish speaking consumers, in which there were dissimilarities between Mexican, Spanish and English consumers in regards to the meaning of words used to express particular emotions.

During the Pangborn Symposium I had the opportunity to meet and discuss my results with researchers from leading sensory research organisations and food manufacturers. Consumer emotions are highly topical at present and the delegates were keen to learn about the methodology used for my research.

Overall, the outcomes accomplished with this project include:

- Dissemination of knowledge via a poster presentation: *Do oak volatiles influence consumers' emotions and acceptance of wine?*
- Gaining new knowledge and ideas in sensory science and consumer research.
- Establishing collaborative links with researchers sharing similar research interests.

7 Outcome/Conclusion:

The 10th Pangborn Sensory Science Symposium featured 2 keynote presentations, 10 plenary lectures, 12 oral sessions, 6 workshops and 540 posters. This year's event attracted more than 750 people from around the world. Plenary sessions were given by experts from industry and academia, and focussed on many areas pertaining to sensory and consumer research. Of particular interest was the opportunity to learn about new sensory methods (such as mind genomics) and potential applications to consumer emotion research.

The conference allowed me to present my recent PhD research findings to an international audience of sensory professionals. During the poster session and other networking opportunities, I received useful ideas and feedback on my research.

The conference experience has allowed me to gain ideas for future research projects, learn about new and emerging methods in sensory research, and investigate possible collaborations with internationally recognised researchers in the field of sensory science. This information has since been disseminated locally through a Wine Science research group meeting.

8 Recommendations:

The conference enabled the identification of new sensory and consumer research methods relevant to wine flavour and emotion research, in particular, the utilisation of mind genomics and social media. In addition, the benefits of conducting cross-cultural studies featured quite heavily during the conference and with new sensory methods utilising online technologies it is now possible to conduct consumer studies which will potentially benefit the global wine business.

9 Appendix 1: Communication:

Not applicable - The knowledge and ideas gained from participation at the Pangborn Symposium have been outlined within this report and disseminated via a presentation to colleagues in my research group at the University of Adelaide.

10 Appendix 2: Intellectual Property:

Not applicable - This project has no intellectual property attached to it.

11 Appendix 3: References:

Not applicable

12 Appendix 4: Staff:

Anna Crump, The University of Adelaide

13 Appendix 5: Abstract of conference presentation:

Do oak volatiles influence consumers' emotions and acceptance of wine?

Anna M. Crump, Kerry L. Wilkinson, Trent E. Johnson and Sue E.P. Bastian
The University of Adelaide

The volatile compounds extracted from oak wood can contribute to a wine's overall aroma, flavour and complexity, while the maturation process leads to increased colour, stability and reduced astringency. Oak is an expensive raw material and winemakers are increasingly using oak alternatives (e.g. oak battens, chips, and powder), as more rapid and economical methods of oak treatment. To date, little is known about consumer preferences for oak-related sensory attributes. Therefore, the aims of the present study were to ascertain the acceptability of Cabernet Sauvignon wines aged using alternative oak products and secondly, to investigate the influence of oak-derived aromas on consumers' emotions.

Eleven Cabernet Sauvignon wines were presented to a Descriptive Analysis (DA) panel, who rated specified attributes of each of the wines using scales of perceived intensity. Based on the sensory profiles, five wines were chosen for consumer and expert panel assessment. One hundred and sixteen (n=116) consumers participated in the preference tests and survey, in which the Geneva Emotion and Odor Scale (Chrea *et al*., 2009, Porcherot *et al*., 2010) was used to evaluate the consumers' emotional experience connected to oak-derived aromas. A panel of 10 wine experts rated wine quality on a 20 point scale.

Segmentation of the consumer hedonic data identified three distinct consumer clusters, which had significantly different preferences for each of the wines. DA identified sensory drivers of consumer liking. Results from the consumer research will be presented, along with the expert, sensory and compositional data.

While there is considerable literature describing the use of oak alternatives in the wine industry and their impact on wine composition and sensory properties, consumer liking of wines made using different oak maturation regimes has received little attention. Similarly, this is the first study to investigate consumer emotions linked with oak attributes.

14 Appendix 6: Budget Reconciliation:

The Budget Reconciliation has been provided separately using GWRDC Form B.