Refreshing The Public Appetite For 'Good Bacteria': Menus Made By Microbes

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Abstract

A series of events was developed to engage audiences in discussion around the importance of microorganisms in the production of fermented foods, particularly through tasting. The events were designed to attract different audiences: families attending a science museum; families in their community space; and adults in different informal eating environments. Information was provided, alongside interactive activities where possible. Feedback was positive in that the audiences enjoyed the format, the food and the events themselves, although science itself was not always specifically mentioned. The dining experience format provided a versatile and informal opportunity for engagement between experts and non-experts, and is suggested as a valuable template for similar activities, assuming appropriate budgeting and advertising issues are addressed, alongside appropriate objective setting and effective evaluation.

Introduction

The public's perception of microorganisms is generally that they are 'bad', due to association with disease and spoilage. However, the vast majority of the planet's microorganisms are not pathogenic, and in many cases we rely on their ability to break down substrates in order to maintain cycling of elements, disposal of sewage, remediation of toxic materials, composting and so on. The importance of the human microbiome to our health and wellbeing is being increasingly revealed in the scientific literature, and to interested audiences through accessible and popular science publications such as Gut (Enders, 2014), I Superorganism (Turney, 2015), and I contain Multitudes (Jong, 2016). The value of probiotics and fermented foods as adjuncts or benefit to the diet is also of current interest (Weesner, 2016): an internet search reveals a large number of accessible books on the topic. On a less positive but more

urgent note, there is significant drive to raise awareness of the emergence of antibiotic resistant microorganisms, and of steps that might be taken to address this in the future.
The role of the scientist and science communicator is significant in terms of raising awareness of such issues to the public. However, there might be different drivers behind the development, delivery and evaluation of these events: disseminating research outputs as required by funding bodies; using the public as citizen scientists to contribute data or analyse data, or as funders of the work through crowd sourcing; reinforcing a key message (such as the value of vaccines), or enhancing science literacy (Wellcome, 2015).
This series of events falls into the last category. The aim was to remind audiences of the importance of microorganisms in the provision and preservation of food, rather than of food spoilage and foodborne illness, and to engage them in discussion. Through the millennia and across the globe, we have been reliant on the activities of microorganisms for the production – and processing - of many of our staple foods, particularly through fermentations (Caplice and Fitzgerald, 1999; Ross et al., 2002; Steinkraus, 1997).
So that audiences felt more like partners than subjects, it was decided to use food and dining as a vehicle for activities. By tasting and talking about the foods we eat, the intention was to raise awareness of the significant role of 'good bacteria' in our lives.

Methods

There were five events in the series, held during the year in which Manchester was the European City of Science (2015-2016). The series was entitled 'Menus made by Microbes'. By having an overarching theme, the intention was to build on a brand, developing a website as a resource (http://ww2.mmu.ac.uk/engage/resources/menus-made-by-microbes/), thereby reinforcing the overall positive message. Each event, with a different culinary focus, was tailored to a different audience.
Two target audiences were identified: families and adults. Two family audiences were selected: those who visited a science museum, and those where the event was brought to their community. Three adult audiences were: street food enthusiasts; craft ale consumers, and high-end diners. Insurance, risk assessments and health and safety protocols were addressed in discussion with the venues/food providers.
In all cases, evaluation was deliberately light touch. Any ethical issues were considered by the delivery team, and subsequently by the University Ethics Committee. For the dining experiences, audience members were asked to provide feedback on a blank card without any

specific questions provided by the researchers. Feedback was transcribed into and analysed with NVIVO 11® (QSR International, Cheshire, UK). Common themes from responses were collated, and each audience member's feedback was coded into the appropriate theme. Themes were merged where more than one similar theme existed. Coding was carried out by two researchers, initially blind to each other's analysis, and a consensus reached after individual analysis was complete. For family events, additional quantitative data were obtained from interactive activities.

Events

Fuel For Your Body! Family Event at the Museum of Science and Industry, Manchester

Every month, the Museum of Science and Industry in Manchester (www.msimanchester.org.uk) hosts a 'Pi '(Platform for Investigation) event, where visiting scientists take over the entrance area with a range of activities designed to engage visitors with some aspect of their science.

The Microbes on the Menu experience (March 2016) was customised to enable interaction with the anticipated five or six hundred visitors. The overall theme was 'good bacteria', and a series of activities was developed to encourage discussion around key topics that had been identified by the delivery team, which comprised ten individuals including three members of academic staff and seven undergraduates. One undergraduate student took a lead role as part of her final year project, issuing a briefing sheet to the team, who were on hand throughout the day to ask and answer questions. Health and safety aspects were particularly important in terms of food storage and tasting.

A welcome panel asked visitors to estimate 'the percentage of good bacteria on the planet...' posting stickers on one of four columns (0-25%, 26-50%, 51 -75%, 76 – 100%). From there, after some discussion, they were guided to a large screen projecting rolling videos about 'microbes in the human body' (Natural History Museum, 2012), and 'introducing the human gut microbiome' (Canadian Digestive Health Foundation, 2014), whose cartoon format was aimed at young children. Some reference sources were provided as a catalyst for discussion (Bacteriology of Humans [Wilson 2008], alongside an article written by the student [Adebola, 2015]).

Keeping the focus on 'good bacteria', the main exhibit was a large table displaying over thirty different fermented foods. These had been purchased, or donated by a number of

companies (often small and/or Fairtrade, sourced through our partner, MetMunch, a University-led social enterprise encouraging healthy eating [www.metmunch.com]), and several were available for taking away (such as pre-packed yoghurt, coffee sachets), or tasting (for example cheese, sauerkraut, chocolate). A large world map was available for visitors to note foods from their own countries. The undergraduate student had compiled a list of fermented foods from around the world (see website).

An investigation as to what had been understood from the event was carried out through a 'myths and medicine board', which was continually hosted by a member of the team to enable discussion and/or clarification. Eight statements were provided: 'fermented foods are safe in unlimited amounts'; food fermentation helps prevent spoilage and disease'; we can change our gut bacteria to improve our health'; faecal transplant therapy can help treat disease'; good bacteria in food are sometimes called probiotics'; good bacteria in food help you live longer'; some of these foods can be used in place of medicine'; fermented foods contain smaller nutrient molecules'. Again, visitors put stickers with a red cross (medicine) or a blue cloud (myth) onto the appropriate section as they saw fit. Visitors were also invited to post comments on a Padlet screen (https://padlet.com). Children collected stickers from each different activity: for a full set of stickers, a booklet produced for the event was provided.

Over 800 people attended the event through its six hour duration. The 'good bacteria' question received 156 responses (families were observed working together to record one response), with the majority recognising that not all bacteria were 'bad' (6 responses for 0-25%, 39 for 26-50%, 58 for 51 -75%, and 53 for 76 – 100%). The videos (and written resources) did not capture anyone's attention, although they provided an attractive backdrop to proceedings. The most successful activity was the food display, where there was much discussion around foods especially Kombucha, which proved fascinating to audiences, and black garlic, which is a focus for research at the University (Elosta et al, 2017). Some larger companies that had supplied significant quantities of food at no charge (for example yoghurt and cheese manufacturers) provided generic information (no specific health claims) which were taken by the visitors, indicating engagement (although the number taken was not quantified). Comments provided via Padlet were complimentary but vague. Several different foods were listed on the map (Table 1), perhaps indirectly demonstrating the observed varying ethnicities amongst visitors.

It was difficult to manage the movement of people sequentially through the different activities to ensure participation in all events, because the food display was a major distraction. The 'myths and medicine' board accumulated 388 stickers, with significant

discussion taking place over which answers were correct. There was perhaps excessive optimism about the value of probiotics, but in general the audience was realistic (Table 2). However, bias of choice affected by the number of pre-existing stickers could not be discounted. The majority of respondents correctly assigned six of the eight statements to either a myth or medical fact ('medicine'). Respondents incorrectly assigned the statement 'Some of these foods can be used in place of medicine' and 'Good bacteria in food can help you live longer' as medical fact. The language of some of the statements could have been clearer – but itself became a topic for discussion. For example, it was not clear whether pre-conceived notions of 'live longer', and 'in place of medicine' were brought to the event, but on-site discussion highlighted such topics as issues for consideration in future related events. It was intended that we count the number of leaflets issued as an estimate of 'completions', but the sheer number of visitors made this activity impossible.

There is little need for advertising for these events, since the Museum is always busy, especially on a Saturday. Nevertheless, a press release was produced, an interview on Radio Manchester broadcast and a variety of social media engaged to promote the event, although the value of these could not be assessed. However, the inclusion of global foods enabled participation by a wide range of ethnic minorities, which are often inadvertently excluded from public engagement activities (Lawson 2012).

World Family Picnic, Hulme, Manchester

A World Family Picnic was scheduled for the Queen's birthday, also as part of the National Big Lunch 2016 (Figure 1). The event was planned in partnership with the University's Community Engagement team, who host 'Community Days' twice a year to encourage networking between the University and the local community. The aim of this event was to raise awareness of the importance and diversity of fermented foods around the world, by bringing families together to eat and celebrate their communities. There was no charge for attending the event, nor for any of the foods available as part of it. The University team working with fermented food comprised two academics and seven undergraduates (in addition to the Community Engagement team).

A display of fermented foods was sourced from local shops, positioned next to a world map (available on website) where visitors could indicate the origin of different fermented food (Figure 1). MetMUnch hosted a table promoting the importance of preservation to keep foods safe, and the positive roles microorganisms play in preservation. An information leaflet was

provided (available on website), along with a range of pickles and chutneys for sampling. One community group brought a range of Indian foods that included fermented components (yoghurt in curry, dosa bread).

Other activities included storytelling, with books and knitted foods, music from the Northern Chamber Orchestra quartet, face painting, handpainting (henna), a colouring competition, a quiz about fermented foods (available on website), and prizes for the most amazing fermented picnic, and the most unusual fermented food. Prizes were donated by the local supermarket.

The event was scheduled to take place from midday to 2.30pm. Rain forced a rapid move to the University building atrium, which provided a well-lit open space. The weather probably affected attendance and reduced passing foot traffic, but those who did come – school groups, families with picnics – stayed for the whole time, taking part in the competitions and activities, and visiting the displays. The informal, drop-in nature of the event made it difficult to assess the numbers attending, but an estimate of around one hundred was made. The cultural diversity of the participants was significant, and a range of foods was contributed. The map worked well as an interactive focus, accumulating 14 post-it notes encompassing foods from Africa, the Mediterranean, Middle East, India, Cuba, Poland and the UK. There were 14 entries for the quiz, with participants' ages ranging from 4 (with parental support) to 14. Participants were required to talk to stallholders and 'experts' to help complete the quiz. Marks ranged from 5/19 to 18/19, with no direct relationship between participant age and performance.

No formal feedback was sought; this event was intended to be just a picnic. One local school which had hosted an assembly about the topic and event was a very active participant: more schools would likely have also become involved if they had been better, or more actively, informed. More prior engagement with local communities would also have been valuable, in effect making the event community-led. However, health and safety issues around food preparation would need to be addressed to enable more sharing and tasting. Nevertheless, the event provided a useful vehicle for engaging the community with University life, and the staff, students and science within, in an informal and accessible manner.

High-end Dining Experience

This audience was one where curiosity, comfort and an element of cost and adventure played a part in their 'gastronautical' engagement with science, held as part of the Manchester

Science Festival (2015). A five-course meal was served at a high-end restaurant in Manchester developed in conjunction with a professional chef (RichardFoxcooks.co.uk). The aim was to demonstrate the range of microbiological input into the menu. Every course owed some element of its production to microorganisms. Information was provided in an elegant menu card, describing the microbiology behind the courses, and providing 'bite-sized' 'food for thought' facts about microbiology (Figure 2). Other microbiological input derived from a brief (ten minute) cooking demonstration and discussion between the chef and microbiologist, before the meal. A microbiologist facilitator sat at each table, so that any questions regarding the food could be addressed. Thus six members of academic staff were involved, with one undergraduate providing administrative support.

In total, there were 48 guests (maximum capacity of 60), each table sitting 10 – 12 guests. Bookings were made through the Manchester Science Festival website. The evening began at 7.00pm with a drinks reception and vertical canapés before guests sat at their tables, and the last guests left at around 10.30pm. Wine was donated by a supplier, on condition of acknowledgement and feedback, and a themed cocktail was developed for the event by the bartender.

Free text feedback was sought through feedback cards or email (Figure 3). Eighteen responses were received from the thirteen dining parties.

In total, responses from 45 individuals/parties were received for the three dining events (*vide infra* for description of other events). Coding of pooled responses from the three events generated 159 comments that were collated into 15 common themes using the NVIVO 11 system. For this event, the most frequent themes to arise from the feedback related to the quality of the food (7.6%), and the use of the experts, presenting an informal and entertaining 'double act' of microbiologist and chef (7.6%). Interestingly, a similar number (7%) of respondents made no reference to 'science' as part of their experience: the focus appeared to be on enjoyment. Comments which were specifically focused on science included: 'good range of foods to show variety of microbes in food production. Good use of reinforcements too – done in an amusing manner'; 'I never realised so many foods were fermented'; 'having a microbiologist on our table was a great help in understanding the complex world of microbes'). Although all of these values appear low, the themes are clearly important and dominant when compared to responses for other themes across the three events (Figure 3). Two negative comments related to audibility and visibility of the demonstrations at the front of the (long) room; another diner 'wanted to talk more with my friends'. An indirect

indication of engagement was that most of the menus were taken by the guests. Facilitators reported that the nature and content of discussion at table varied, but always included some microbiology.
The ticket cost was £40/head, subsidised by £5/head. Advertising was primarily through the Manchester Science festival website, which was successful in terms of attracting a sufficient number of guests.

Ploughman's Evening at a Brewery

As a reminder of the importance of fermented foods in rural communities of the past, a ploughman's evening was hosted at the Visitors' Centre of a local brewery, during National Science Week (March 2016). The target audience was primarily beer enthusiasts, and the menu encompassed bread, cheese, beer, pickles and game (Figure 4). On arrival, guests were provided with canapés (Welsh rarebit with a twist of Marmite), and Robinson's steam lager as a 'sparkling' accompaniment. They were invited to set up their own brewing experiments using brewers' or bakers' yeast, sugar and warm water in 25mL plastic bottles with balloons instead of lids. The production of carbon dioxide by the yeast inflates the balloon – the owner of the balloon with the largest circumference (19cm) won a prize at the end of the evening. Demonstrations of yeast growing on agar, and viewed under the microscope, complemented a brewery tour before guests sat on benches to enjoy the food, again in the company of microbiologist facilitators. The Menus made by Microbes chef worked with the brewery so that different beers and cheeses could be paired as a tasting event – 'beer notes' cards were provided - which contributed to an introduction to the microbiology underpinning the production of the food, and the importance of fermentation in food safety and food preservation – again through conversation between chef and microbiologist. Four academics and three undergraduates were involved in the delivery of the event.
The cost of £25/head was again subsidised by £5/head. For the significant effort made to promote the event (local radio, local CAMRA, British Science Week), an audience of twenty for a maximum of forty settings was disappointing. For the diners, feedback cards revealed an entirely positive experience (Figure 3). Similar to the themes found with respect to the fine dining event, the most common themes were the use of experts at the event (3.8%) ('the talks were engaging, a great partnership, informative and exciting') and the enjoyment of the food (3.2%), whilst a similar number made no reference to science in the their responses (3.8%).

Comments noted ‘The combination of the excellent tour and the science behind production’, and ‘the role of yeast in fermentation’

Street Food Supper Club

The final dining experience was hosted at a small craft brewery in Manchester’s trendy Northern Quarter, during the 2016 Manchester Science Festival. The event was developed in collaboration with a local umbrella organisation that organises street food events. The aim of this event was to attract a young audience familiar with street food culture, with different street food vendors each serving one course.

This was the most informal of the three dining events. Two academics helped to deliver the event. The brewery provided a space for communal eating in close proximity to the fermentation vessels, with microbiologists among the diners. The vendors set up their stalls in the brewery yard. A range of craft ales was available as well as wine and non-alcoholic drinks (first drink included in the ticket price), and the event began with a general introduction and a conversation with the brewer. Each vendor – initially shy but increasingly enthusiastic about their food – brought their plates to the guests at the tables, and then talked about their particular creations. This enabled exploration of the components of the food that had a microbiological slant: smoked daal with aubergine pickle and yoghurt; pork shoulder and kimchi bao with sesame dressed edamame and seaweed and preserved lemon, with a vegetarian option of tofu gyoza, pickled shiitake and soy with the dressed edamame. A eulogy to kimchi was given (leaflet on website), before a dessert of sourdough bread and cultured butter pudding was served. Thus algae (seaweed), fungi (mushrooms), yeast (bread and beer), mould (soy) and bacteria (various lactic fermentations) all played their part. The range of foods that utilised lactic fermentation was particularly notable. Again, feedback cards revealed an enjoyable experience (Figure 3). Similar trends in themes were reported, with both the food and use of experts being noted as positive aspects of the event (both 6.4%) (‘the explanations and the chance to talk to experts was particularly good’; ‘a lovely idea to present science via a themed menu – all from sustainable and ethical caterers as well’). Similar to the other events, science was often not specifically referenced (5.2%), although more was requested. Two diners offered suggestions for the inclusion of more information about the benefits of microbes in foods. The vendors were each guaranteed a minimum payment related to an anticipated audience of forty. Around thirty guests attended, filling the venue comfortably, but again requiring that the event demanded some subsidy. More interest

had been anticipated from the different advertising routes utilised (Manchester Science Festival, North Manchester FM radio, Manchester Wire, Creative Tourist and University social media).

Conclusions

Since only general, rather than specific learning objectives were defined at the start of this study, the authors recognise that it was difficult to measure whether audiences were intrigued, interested and informed. However, it was apparent from feedback that information was provided in a novel manner (on menus, and – less novel - via factsheets), and food provided a useful focus for the delivery of and engagement with, the information. Pauses in proceedings between courses enabled demonstrations and introductions, and discussion with experts at table continued whilst eating. The microbiologist hosts (other than the author) gave positive feedback, noting that the more communal aspects of the ploughman's and street food activities made interaction inevitable, whilst informal and enjoyable. Feedback from participants via comment cards was similar for each event. The quality of food and the presence/knowledge of experts was consistently highlighted by respondents. During all events, an acknowledgement of science was absent from feedback more often than it was present. This suggests an interesting insight that although each event was based upon the microbiology of the food, participants may be 'forgetting' or not focusing on the science, due to the distraction of eating and socialising. Negative comments were minimal. For future events, specific scientific content-based aims could be identified, to enable a more precise evaluation. For example with a particular fermentation process being the focus of a given event, or an exploration of the roles of pre-and pro-biotics in food – or even the gut microbiome. However, the intrusiveness of a more formal survey to assess learning might affect the value of the event in terms of the informal learning and enjoyment of engaging with science that appears to have taken place.

Gatherings of different audiences enabled informal interactions with science and scientists, and the format provides a useful template for events with similar aims, and clear themes - for example, at science festivals, or as a regular 'science supper club' following existing initiatives such as 'pint of science', 'scibars', bookclubs and science cafes. Asian or African fermented food nights are obvious topics for future events (Franz et al., 2014; Rhee et al., 2011).

A significant benefit of the series of events was the construction of a website for use as a resource, enabling collation of all of the information provided for the different events.
Two aspects that need to be improved to ensure sustainability are appropriate advertising, and realistic budgeting. These events were subsidised by an award from two microbiology societies. Costs included fees for the chef, design and print of menus and other materials, complimentary tickets for sponsors, facilitators and competition winners where appropriate, a subsidy of £5 per head for two of the dining events, and a guaranteed payment for each street food vendor. These measures were taken primarily to guarantee that the event took place, and to ensure attendance. For the family events, food and beverages were donated by several commercial suppliers, which was invaluable. A hidden cost was the significant aspect of staff time for planning and delivery of the events, and that of the student volunteers.
The dining events were never oversubscribed, and all attained above the minimum number required, mainly due to significant efforts to advertise. Social media, local radio interviews, and press releases to targeted groups and websites for specific events such as the Manchester Science Festival helped to promote the events, but it is essential that partner organisations – the venues and the vendors – also encourage their audiences to participate. Rarely did the same individuals attend all of the events, reflecting the aim of attracting different audiences, but emphasising the difficulty of building a core of interested diners.
The microbiology underpinning Microbes on the Menu derived indirectly from our research on hygienic surfaces in the food industry, but was clearly appropriate for education, and the events illustrated the accessibility of our staff, and the enthusiasm of our students. Articles were written for microbiology society magazines (Verran, 2016), and an invitation from the Conversation press agency (https://theconversation.com/) to comment on emerging interest in artisanal cuisine(Johnson, 2016) demonstrated a more widespread awareness of our activities (Verran and Dempsey, 2016).

It has been said in the science communication literature that the deliverers of public engagement activities tend to follow their own agendas when deciding on the topic of their next event, rather than asking the public what they might wish to know more about (Redfern et al, 2016). In these times of antipathy towards ‘experts’(Scharrer et al, 2016) we need to avoid notions of superiority, but also be clear as to the message we are intending to convey, the audience we wish to engage with, and the medium through which we operate.
Informality, and exchange of conversations such as those encountered at the dining table in the Menus made by Microbes series, helps to break down barriers (Fischoff and Scheufele,

2014), engenders confidence, helps to build relationships, and encourages science literacy through discussion.

In contrast to adult audiences, which tend to be more selective about the events they attend, families are frequent consumers of science communication activities, reliant on the scientists to decide what science they should be exposed to, and how they should be entertained. School audiences tend to be more constrained, with teachers preferring activities that complement the curriculum (Redfern et al, 2013a), and/or encourage students to choose a career in science.

Evaluation of such events tends to rely on immediate responses to the question 'are you enjoying yourself?' or 'write one/two/three things you have learnt/wow factor on a post-it note'(e.g. Redfern et al 2013b). These activities risk evaluation fatigue on the part of the visitors, who then become/feel like experimental subjects rather than the beneficiaries of valuable hands-on science activities. Therefore, evaluation protocols should be designed that enable the event hosts to assess interaction and engagement with minimal disruption. Qualitative methods such as collecting free-text feedback, informal conversations and recording observations as an event progresses allow researchers to capture essential evaluation. Although these methods may be unfamiliar to the quantitatively trained scientist, it is important that scientists engage with qualitative research when undertaking public engagement with science. Evaluation of longer-term behaviour change is usually beyond the scope of the presenters, unless some subsequent contact is built into the development strategy.

With these challenges, what route should the science communicator take? What is your message? Who is your audience? How will you know if your event has been successful? What defines success? One approach is to enjoy the science together with your audience, through some type of shared experience.

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Legends for tables

Table 1. Collated information from a world map at the 'Fuel for your Bodies' event. Visitors were invited to write the names of different fermented foods that they knew about, on a particular country.

Table 2. Collated responses from visitors at the 'fuel for your body' event. Visitors were invited to identify whether they considered the statements provided to be 'myth' or 'medicine'.

Legends for figures

Figure 1: Visitors to the 'World Family Picnic' were invited to apply Post-It notes onto a world map, denoting fermented foods from different countries.

Figure 2: Section of the menu card provided to guests at the ‘high-end dining event’. Fermented foods on the menu were highlighted in different colours, and explanations were provided on the facing page (available on website).

Figure 3: Free text responses from guests at the three dining events were coded independently into themes by two investigators. Of a total of 159 comments from 45 respondents (22 from the high-end dining experience, 9 from the ploughman’s evening, 14 from the street food supper club), 15 themes were identified. The figure presents the percentage of total comments for each theme, for each event.

Figure 4: Food platter from the ploughman’s evening.

Table 1

Fermented food	Location
Tabasco	USA
Chocolate	Mexico, UK, Chile, China, Ivory Coast
Vinegar	USA
Sour cream	USA
Bread/sourdough bread	Iraq, Italy, USA
Pochinoli-alcohol	Dublin
Alderney milk	France
Cheese	UK, Spain
Stotty bread	UK
Beer	Australia, UK
Perry	UK
Sauerkraut	Germany, Poland, Russia
Wine	Spain, Turkey
Sensay butter	Europe
Black garlic	Spain
Palm wine	Africa
Tapioca	Africa
Gari	Nigeria
Coffee	Kenya, Congo
Kefir	South Africa, Poland
Olives	Spain, Greece
Senraez	*
Yogurt	Iraq
Apple cider vinegar	Pakistan
Lassi	India
Paneer	India
Mi Kiri (curd)	Sri Lanka
Fish sauce	Thailand
Kombucha	China
Soy sauce	China
Dumplings	China
Chilli sauce	China
Kimchi	Korea
White rice vinegar	Hong Kong
Rice wine	Vietnam
Beer	Australia
Mead	*
Vegemite	Australia
Meat	USA
Rum	USA

* represents food item written outside of any particular country.

Table 1. Collated information from a World Map at the 'Fuel for your Bodies' event. Visitors were invited to write the names of different fermented foods that they knew about, on a particular country

Table 2

Statement	Correct answer	Number of 'myth' responses	Number of 'medicine' responses	Total number of responses
Fermented food are safe in unlimited amounts	Myth	31	11	42
We can change our gut bacteria to improve our health	Medicine	5	36	41
Fermented foods contain small nutrient molecules	Medicine	17	25	42
Good bacteria in foods are sometimes called probiotics	Medicine	3	37	40
Some of these foods can be used in place of medicine	Myth	10	40	50
Good bacteria in food can help you live longer	Myth	5	36	41
Food fermentation helps prevent spoilage and disease	Medicine	7	35	42
Faecal transplant therapy can help treat disease	Medicine	13	27	40

Table 2. Collated responses from visitors at the 'fuel for your body' event. Visitors were invited to identify whether they considered the statements provided to be 'myth' or 'medicine'.

Figure 1

Figure 1: Visitors to the ‘World Family Picnic’ were invited to apply Post-It notes onto a world map, denoting fermented foods from different countries

Figure 2

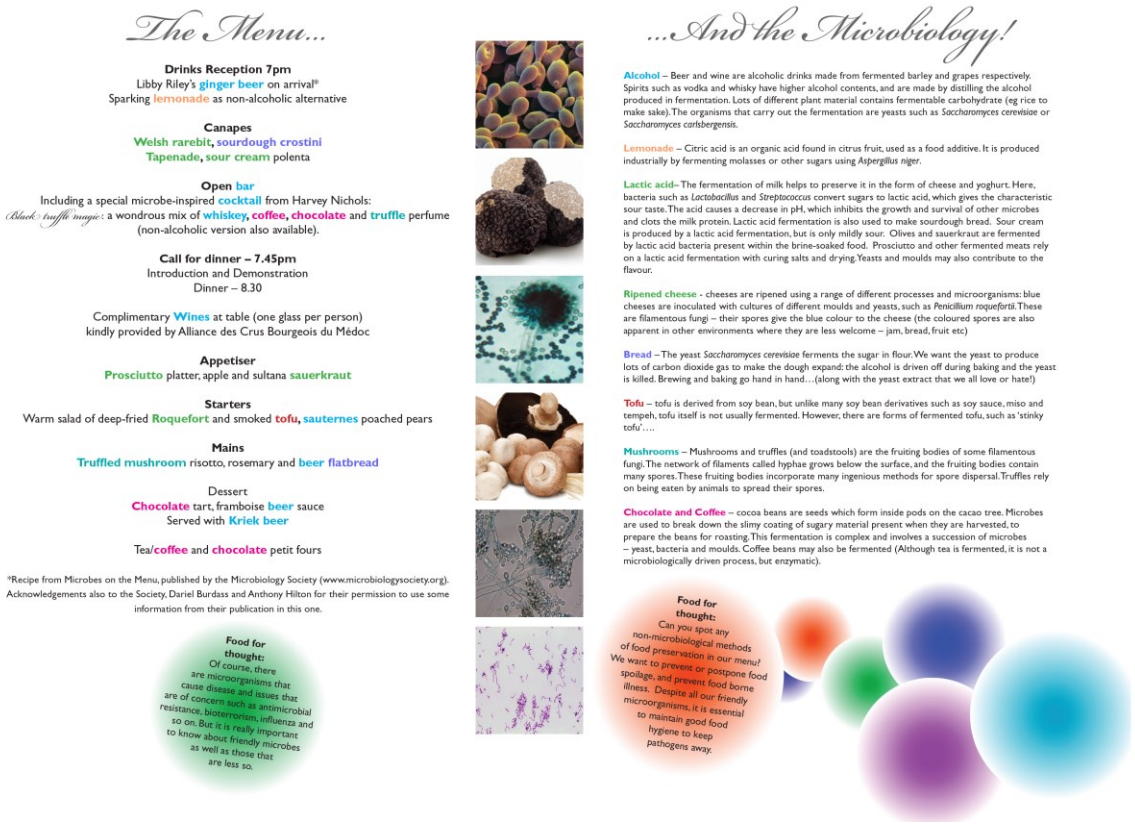

Figure 2: Section of the menu card provided to guests at the 'high-end dining event'. Fermented foods on the menu were highlighted in different colours, and explanations were provided on the facing page (available on website)

Figure 3

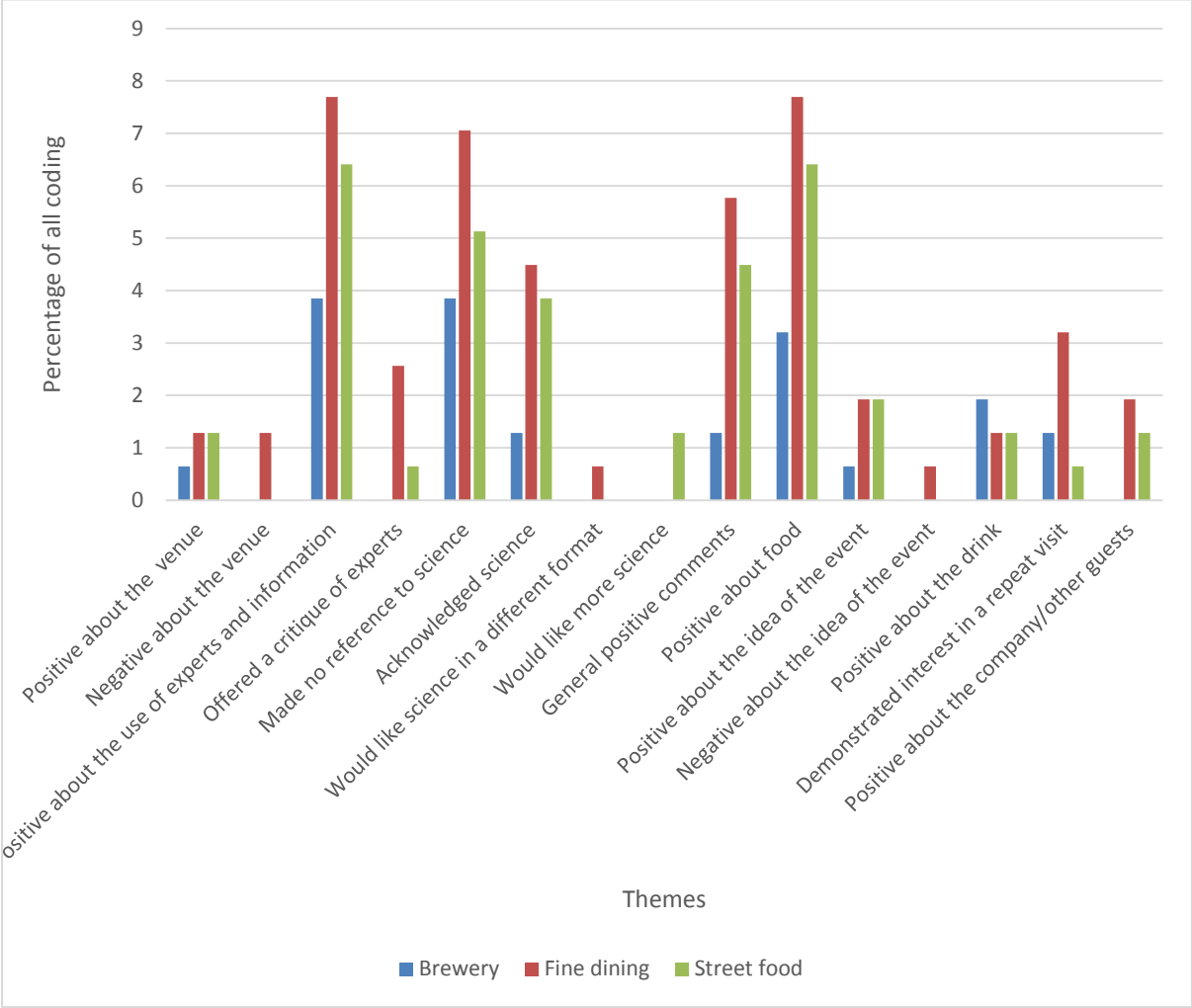

Figure 3: Free text responses from guests at the three dining events were coded independently into themes by two investigators. Of a total of 159 comments from 45 respondents (22 from the high-end dining experience, 9 from the ploughman's evening, 14 from the street food supper club), 15 themes were identified. The figure presents the percentage of total comments for each theme, for each event.

Figure 4

Figure 4 – food platter from the ploughman's evening