

Menthol in Everyday Life: “Pop-Ups” Collect Data, Engage Publics



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SYNBIOCHEM Responsible Research and Innovation (RRI) group members ran three more “pop-up” stalls in Spring 2017. These stalls invited passers-by to interact with the taste, smell, sight and touch of menthol products. Participants shared comments about their experiences with menthol products, and offered thoughts about different ways of producing menthol. Each stall was held in partnership with another public event.

Background

SYNBIOCHEM at the University of Manchester is one of 6 UK synthetic biology research centres. The centre focuses on new biological ways to make fine and speciality chemicals including compounds called terpenoids that can be used as flavours and fragrances. Menthol is one of these terpenoids.

SYNBIOCHEM researchers, creating microbes that can produce particular flavours and fragrances, use menthol as a proof of concept.

One way that the RRI group at SYNBIOCHEM is addressing the agenda of responsible research and innovation is by conducting an “end-to-end assessment” of the societal and economic implications of producing menthol using bacteria and other organisms. This involves research in academic, industrial, commercial and public domains.

About Pop Ups

A pop-up stall in a public location is an open and creative means to reach out to people of different backgrounds and ages and engage

with them. At the three events, our pop-up stalls explored how people made sense of menthol as part of everyday practices and social relationship and how they made sense of a change in the methods of production of menthol. The stall contained a range of menthol products which visitors could taste, smell and rub on their skin. Visitors could record their thoughts on postcards.

The Pop-Up Locations

British Science Week. About 2000 high school students (Years 7 to 9) visited the University of Manchester’s Sackville Street Building for British Science Week (13-17 March 2017). The RRI group represented the Manchester Institute of Biotechnology (MIB) on Friday, 17th March, at a pop up stall.

The Body Experience at the Manchester Museum, 18th March 2017 – part of a special event “body experience” where multiple university departments set up interactive stalls (mostly) for children to learn about different parts of bodies. At this event, the menthol pop up stall mainly attracted young families.

#scienceX. The third pop-up was on the 23rd April 2017 at the Trafford Centre as part of the University of Manchester “Science Extravaganza”. Participants were diverse, although the stall was quieter here probably because people at the Centre were mainly there for shopping and leisure. Still, one father commented on how important he thought it was to bring science into public spaces.



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As part of our research process we are collaborating with artist and illustrator Lynne Chapman. At the Body Experience, Lynne sketched (see above and front page) the experience of people smelling menthol products, sitting between cases of fossils and beneath a huge model T-Rex skeleton.

Initial Insights

Overall, about 150 people stopped by our three menthol pop-up stands. At each stall we collected about 90 postcards (about 270 in total), as participants were encouraged to fill in two postcards cards to share their responses. We still have lots of work to do to rigorously analyse the data and feedback from the three pop-ups, as well as from other interviews and events. Yet, we did glean a series of initial and tentative insights from the pop-ups:

Menthol evokes feelings and memories.

Participants frequently responded strongly to menthol products at the stand. Picking up a pot of vapour rub, many people said, "I love that". Menthol is associated menthol with a variety of memories, including grandparents' homes, and practices of care such as looking after ill children.

Awareness varied about current menthol production. Participants understanding of how menthol was produced was mixed. Many assumed it had botanical origins, and some (incorrectly) mentioned eucalyptus as a possible source. This was sometimes associated to their feeling that menthol was a "natural" remedy. While 70% of menthol is indeed derived from mint plants, participants tended to be unaware of the synthetic chemistry which produces the other 30% and which is already an alternative route to agricultural production.

Views on menthol made through synthetic biology. Some people's reactions to synthetic biology focused on the use of *E.coli*. There were concerns that using bacteria could be problematic. Others were not personally worried about genetic engineering, but thought there were "other people" who would not like consumer products that were genetically engineered. A common question was "why bother?" Since mint plants grow easily, and we already have synthetic chemistry, participants asked (after they were told about synthetic biology), why would scientists menthol this way? At the same time, when compared with chemical production, a few participants said they would prefer biological production if that was more sustainable.

Connections with other issues. Menthol quickly evokes emotions (such as caring for family members, grandparents, and soothing sick children). Wider connections are also made. One visitor spoke extensively about how his family had lost their employment (in a menthol sweet factory) when production was moved overseas.

Pop-ups as Engagement

The pop up stalls succeeded partly because people react to the smell and taste of menthol and partly because people are already in places where they are browsing. They also perform a dual role: they allow members of the public to join in and contribute to research and, simultaneously, to learn about both biotechnology and sociology at the university.



RRI menthol study team: Andrew Balmer, Robert Meckin, Barbara Ribeiro, Philip Shapira, Abdullah Gok. Thanks to Lynne Chapman for permission to reproduce illustrations.

Link: <http://synbiochem.co.uk/responsible-research-and-innovation/>