

House of Commons EFRA Committee Inquiry: Plastic food and drink packaging Submission by the Society for Applied Microbiology

Introduction

1. The Society for Applied Microbiology (SfAM) welcomes the opportunity to respond to the Committee's inquiry into plastic food and drink packaging.
2. Members of the public are becoming increasingly concerned by the potential environmental impacts of the current pattern of food production and consumption in the UK and globally. For instance, a 2017 survey revealed that two-thirds of adults who believe that human behaviour is changing the earth's climate also agree that the food system is a key contributor.¹ In early 2018, an Ipsos MORI poll found that 85% of adults aged 16-75 were at least "fairly concerned" about the impact of plastic packaging waste on the environment.²
3. It is apparent that the ubiquity of plastic packaging in the food supply chain must be addressed in some manner. Nevertheless, food safety scientists acknowledge that plastic packaging has played a vital role in enabling the globalisation of the food supply chain. **In particular, the use of plastics has reduced the potential for food to be contaminated by microorganisms that cause foodborne disease (pathogens) and that contribute to food waste through spoilage.** Alternative approaches will need to deliver similar (and higher) levels of protection for the consumer whilst remaining environmentally sustainable.
4. This written submission draws upon insights from a briefing published by SfAM in July 2019, which focuses on the *future of microbiological food safety in food manufacturing and processing*.³ The briefing document was developed in collaboration with food scientists and experts across academia, industry and research funding organisations.

What progress have packaging manufacturers, food producers and retailers made in developing and using alternatives to, and reducing consumers' use of plastic food and drink packaging?

5. The discovery of alternative food and drink packaging materials is an active area of research within the UK. For example, researchers within academic institutions and the food industry are investigating new materials including biodegradable packaging⁴ and edible cling film.⁵
6. Nevertheless, it is crucial that new, sustainable packaging materials (and the atmosphere within food packaging) continue to provide a high level of protection against contamination from harmful microorganisms and their toxins. Researchers are investigating methods to minimise contamination and spoilage within packaged

¹ Global Food Security (2017). [Public attitudes to climatic shocks and their interaction with the food system.](#)

² <https://www.ipsos.com/ipsos-mori/en-uk/public-concern-about-plastic-and-packaging-waste-not-backed-willingness-act>

³ Report may be found at <https://sfam.org.uk/about-us/our-work/priority-areas/food-safety-security.html>

⁴ <https://gtr.ukri.org/projects?ref=104494>

⁵ <https://www.nottingham.ac.uk/news/pressreleases/2018/november/green-and-edible-cling-film-and-food-packaging-made-from-plants.aspx>

food products, for example through generating ozone inside a package (which degrades over time to oxygen)⁶ and developing novel packaging materials that are impregnated with essential oils that kill microorganisms.⁷

7. **As new food packaging materials are developed, it is important that these materials are compatible with methods and substances that limit the growth of pathogens and spoilage microorganisms.**

What are the barriers to and opportunities for further innovation?

8. In our recent report, **experts highlighted the importance of keeping consumers informed about the science behind the food products they are buying in an accessible and transparent manner. In particular, it is important that any arising concerns about packaging interacting with food are addressed.**
9. For instance, in 2019 the EU-funded NanoPack project held 10 focus groups and 10 in-depth interviews aimed at understanding public views on 'active food packaging technologies' (defined as packaging in which the material constituents, the product and the environment interact to extend the shelf life of foods whilst maintaining quality).⁸ Consumers were especially concerned that the 'active' nature of the packaging would in some way contaminate or alter the foods they were purchasing.⁹

Is there adequate research and development funding and support for alternatives to plastic food and drink packaging?

10. Our report briefly analyses UK Government data on research projects that have been funded by Innovate UK (now part of UK Research and Innovation) and the Industrial Strategy Challenge Fund (ISCF) programme.¹⁰
11. This analysis does not reflect the whole funding landscape for food-relevant R&D projects. However, we have gathered some insights that are relevant to innovation in food manufacturing and processing within the context of microbiological food safety.¹¹

Innovate UK

12. Our analysis of R&D projects funded by Innovate UK (excluding ISCF projects) that relate to *microbiological food safety in food manufacturing* revealed that (**Figure 1**):
 - 10 out of 29 projects (one-third) focus on food packaging
 - These projects account for 25% (£1.02m) of the total confirmed funding allocation (£4.04m).

⁶ <https://gtr.ukri.org/projects?ref=133097>

⁷ <https://www.nanopack.eu/2019/05/03/innovative-nanopack-film-extends-cherries-and-bread-shelf-life-by-over-40-latest-tests-show/>

⁸ <https://www.nanopack.eu/2018/02/09/future-packaging-already/>

⁹ <https://www.nanopack.eu/2019/02/14/consumers-show-willingness-to-adopt-nanotechnology-in-active-food-packaging/>

¹⁰ <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

¹¹ Innovate UK and ISCF projects were identified by searching descriptions for the words 'food', 'agri' or 'crop').

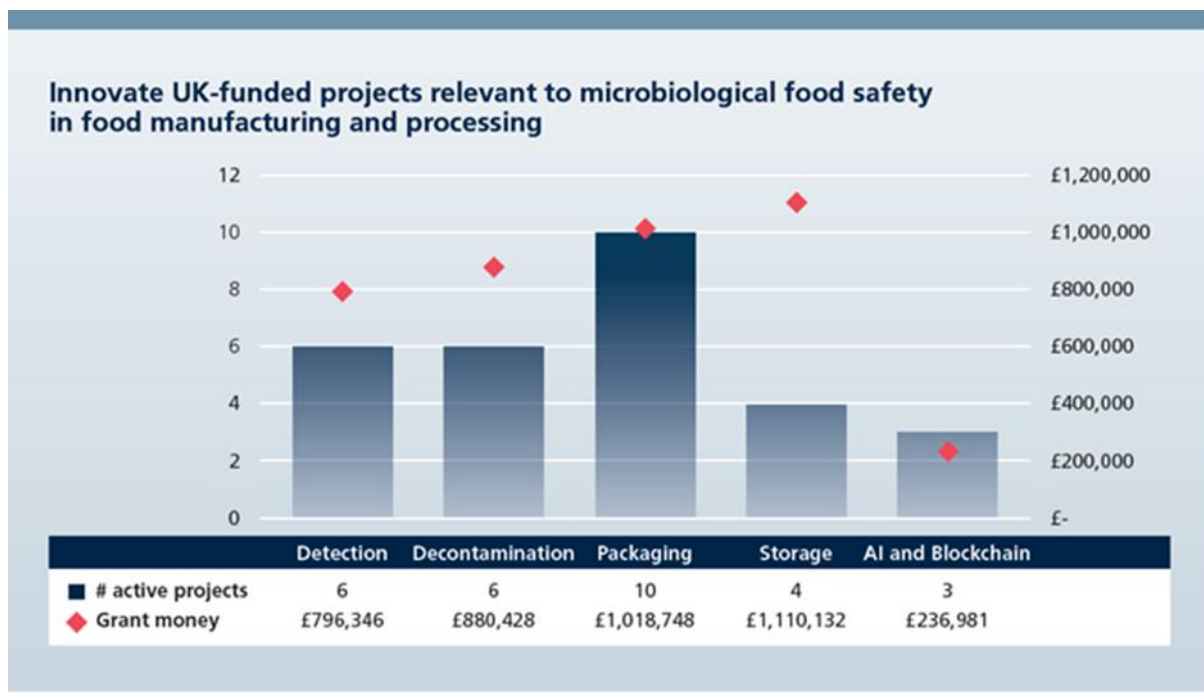


Figure 1: Innovate UK-funded projects relevant to microbiological food safety in food manufacturing and processing (active as of 20 May 2019). Source: gov.uk (Note: some grant award amounts were not listed).

Industrial Strategy Challenge Fund

13. **We found 567 active ISCF projects (as of 20 May 2019) of which 28 relate to food, totalling £5.9 million of investment. However none of these were found to focus specifically on food safety in manufacturing.** Nevertheless, it should be noted that some ISCF-funded projects may have a future impact on food safety in the UK (such as sustainable plastic packaging).
14. The UK government has indicated its commitment to support the food industry and 'secure the UK's position as a global leader in sustainable, affordable, safe and high-quality food and drink'.¹² **To ensure that innovation in food safety science is considered alongside other advancements (including those in food packaging materials), the UK government must explore ways to place the UK as a global leader in food safety research, including through ISCF initiatives.**
15. **To achieve this we recommend that the Food and Drink Sector Council liaise with the wider science community, bringing together researchers and practitioners from the food industry, learned societies, professional organisations, the academic sector, public health organisations and research funders.**

¹² HM Government (2017). [Industrial Strategy: Building a Britain fit for the future](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/612347/industrial-strategy-building-a-britain-fit-for-the-future.pdf).



About the Society for Applied Microbiology

The Society for Applied Microbiology (SfAM) is the oldest microbiology society in the UK, representing a global scientific community that is passionate about the application of microbiology for the benefit of the public. Our members work to address issues involving the environment, human and animal health, agriculture and industry.

www.sfam.org.uk

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