Survey of Salmonella, E.coli and antimicrobial resistance (AMR) in frozen, part-cooked breaded or battered poultry products at retail sale in the UK

Research programme Research projects -
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Project status Ongoing
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Two outbreak strains of Salmonella Enteritidis associated were investigated in 2020. These were associated with large outbreaks, with a total of 435 outbreaks in 2020 alone, but were also genetically linked to cases from previous years. Cases continue to be reported in the UK and the investigation is ongoing. Epidemiological investigation identified raw or defrosted breaded chicken products as a common instance of Salmonella cases and outbreaks.

Recently there have been recalls and withdrawals of frozen partially cooked (ready-to-cook) breaded chicken products due to contamination with Salmonella. These recalls have highlighted a data gap within our current surveillance, with previous surveys having focussed on fresh meats such as chicken, beef, and pork and have not considered meat preparations or composite foods consisting of multiple ingredients (such as coated chicken products).

Objectives and approach

This survey will analyse the levels of Salmonella and E.coli detected in frozen, part-cooked breaded and battered poultry products on retail sale within the UK. In addition, this study will establish the prevalence of Salmonella in the positive samples by undertaking a cooking protocol and following manufacturer's instructions on the packet of the sample.

The design of this study will provide a geographic spread of samples across the UK and the sampling will capture as broad representation of producers as possible, from large supermarket chains to small business owners. Sampling will be based on market share and will enable us to calculate the national prevalence of contamination.

This project will provide data on the extent to which these types of products are contaminated with these microorganisms and the potential risk to consumers if these are not handled hygienically and/or thoroughly cooked. A parallel survey to this project was conducted on Consumer practices with respect to coated frozen chicken products to consider together and complement this study.

Those products which are found to be Salmonella positive will then be subject to additional sampling in order to provide more information about serotypes in frozen, part-cooked breaded and battered chicken products on retail sale within the UK. Isolates of E.coli will additionally undergo testing for AMR phenotypes, in line with those tested for in the EU harmonised surveys.

After the first analysis, Salmonella positive samples will be cook. This process will be undertaken in a fan-assisted oven, and where manufacturer’s cooking instructions have details, may also include grilling or microwaving. Oven temperature will be validated to ensure the correct cooking temperatures are reached. Temperatures will be monitored at the beginning and end of the cooking process. The sample will then be examined for detection of Salmonella in line with the methods used in the main survey (ISO methods) to identify the prevalence of Salmonella post cooking.

These data will be used as part of a package of evidence from a number of sources to help the FSA to most effectively target our risk management advice for both industry and consumers. This survey will also provide an opportunity to gather information on antimicrobial resistance in Salmonella and E. coli in these products. The results will be used to inform policy and communication with the food industry and the general public alike.