

A comprehensive review of current practices in the management of *L. monocytogenes* during the production of cooked, sliced meat

Area of research interest: [Foodborne pathogens](#)

Study duration: 2013-01-01

Planned completion: 1 July 2014

Project code: FS241045

Conducted by: Hutchison Scientific Ltd

There is currently no effective method for routinely assessing the infectivity of hepatitis E virus (HEV), an emerging foodborne agent.

Background

Our Foodborne Disease Strategy for 2010 to 2015 identifies *L. monocytogenes* as a priority for action, as it is the leading cause of death from foodborne disease. Therefore, finding ways to reduce exposure of vulnerable consumers to *Listeria* in ready-to-eat food remains important.

In terms of the number of microbiological incidents reported to us each year, those involving *Listeria* are the second most frequent after incidents involving salmonella. Approximately 30% of incidents involving *Listeria* reported to our organisation between 2005 and 2011 involved ready-to-eat sliced meats. The frequency of incidents indicates that more work is required to understand the sampling and testing regimes used by manufacturers, particularly small to medium-sized enterprises (SMEs) of ready-to-eat food and their approaches to controlling *Listeria* in the food supply chain.

Research Approach

The research project reviewed current practices used in the management of *Listeria monocytogenes* during the production and retailing of cooked sliced meat in the UK. The project identified key risk areas and some potential gaps in their management. The project covered companies that slice pre-cooked meats (eg deli counters), as well as those manufacturing pre-packed cooked sliced meats.

This was done with a view to develop information for food business operators (in particular SMEs) and local food authorities on the key risk areas for *L. monocytogenes* contamination and the monitoring and management of these. In particular, it is envisaged that the outputs of this project will be used to underpin the development of a decision support tool that will be taken forward as a separate piece of work.

The following objectives were achieved to fulfil this research requirement:

- A systematic review of the available literature to identify key monitoring and intervention steps applicable in the UK for manufacturers of cooked sliced meats with regard to *Listeria* was conducted.
- Information was collected and analysed on the cooked sliced meat industry's practices and attitudes towards cleaning and monitoring with regard to *Listeria*, slicing and packing

methods, risk management practices and evidence supporting product shelf-life.

- Information relating to the inspection of cooked sliced meat premises by local food authorities was collected and analysed.
- The approach that end users would find most useful if the outputs of this project are used to develop guidance on the management of listeria during cooked sliced meat production was established and recommendations for future work were made.

Results

Listeria monocytogenes is widely found in the environment and premises involved in cooked sliced meat production are therefore under continuous risk from the introduction of this bacterium. The project identified key practices that could influence *L. monocytogenes* prevalence and levels in cooked sliced meat throughout the processing and retailing chain were identified.

L. monocytogenes can be introduced into cooked sliced meat processing environments by several potential routes. One of the main contamination routes is that *L. monocytogenes* strains on raw materials can establish niches in the processing environment and final product contamination then occurs from these niches. Effective cooking is a critical control point for *L. monocytogenes* in cooked meat production and the key issue of concern is post-cook contamination.

A series of visits were undertaken to commercial cooked sliced meat manufacturers, large retailer delicatessen counters and small to medium enterprises (SME) retailers that sliced cooked meats in stores. A wide range of processing practices was observed across a range of business sizes that manufactured cooked sliced meat. Many of the smaller manufacturers were not aware of the regulatory requirements regarding shelf life analysis or environmental testing in relation to *L. monocytogenes*.

Opinions were obtained from environmental health officers who undertook enforcement in cooked sliced meat processing plants and SME stores that sliced cooked meats in terms of areas where further assistance (eg information, guidance or training) was needed. Shelf-life determination, plant cleaning and sanitisation, monitoring of process parameters, control of key hazard organisms, post-process handling and changing product formulation were identified as high priorities by environmental health officers, for themselves and FBOs relating to *L. monocytogenes* and cooked sliced meats. A number of recommendations were made highlighting areas where additional information, guidance or training would be of benefit to industry and enforcement officials.

Research report

England, Northern Ireland and Wales

PDF

[View Research Report: A comprehensive review of current practices in the management of *Listeria monocytogenes* during cooked sliced meat as PDF\(Open in a new window\)](#) (4.17 MB)