

ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD

A UK WIDE MICROBIOLOGICAL SURVEY OF PRE-PACKED READY-TO-EAT SLICED MEATS AT RETAIL SALE IN SMALL TO MEDIUM SIZED ENTERPRISES (SMEs), WITH PARTICULAR REFERENCE TO THE PRESENCE OF *LISTERIA MONOCYTOGENES*

On 15 December 2014 the Food Standards Agency published its microbiological survey of pre-packed ready-to-eat sliced meats at retail in UK small to medium sized enterprises (SME'S), with particular reference to the presence of *Listeria monocytogenes*. A summary of the key findings of the survey is given below and the full report is attached for members of the Committee.

It is also available on the FSA website at:

<http://www.food.gov.uk/science/research/foodborneillness/b14programme/b14projlist/fs241042>

**Secretariat
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A microbiological survey of pre-packed ready-to-eat sliced meats at retail in UK small to medium sized enterprises (SME'S), with particular reference to the presence of *Listeria monocytogenes*. (FSA project FS241042)

1. Between April 2012 & January 2013, 1,049 samples of ready to eat sliced meat at retail in small to medium sized enterprises were examined to detect and/or enumerate *Listeria monocytogenes* and other *Listeria* spp. Samples were also examined to determine numbers of the hygiene indicator organisms *Escherichia coli* and *Enterobacteriaceae*, as well as for a range of physical characteristics: salt content, water activity and pH. The temperature of the surface of packs of meat in the SMEs at the time of sampling was measured and recorded, as were a range of other details including 'use-by' date and storage instructions.

Key Findings

2. The key findings were:
 - *Listeria monocytogenes* was detected in 3.8% of samples and *Listeria* spp. were detected in 7.0% of samples.
 - Enterobacteriaceae were enumerated from 36.2% of samples and the mean count (\log_{10} cfu/g) was 2.96 ± 1.47 .
 - *E. coli* were enumerated from five samples (0.48%).
 - The mean temperature of the samples was 6.8°C, with 71.3% of samples above the industry guideline of 5°C and 32.7% being stored above 8°C.
3. The survey found that most of the meat products were stored at temperatures higher than the recommended industry guidelines, and this, combined with the relatively high prevalence of *Listeria monocytogenes*, in comparison with the previous FSA surveys, could put consumers at risk.
4. As a result of these findings the FSA issue a letter to all Environmental Health Officers highlighting the issues raised and asking them where appropriate to remind food business operators of the importance of correct temperature control and staff training in the appropriate control and maintenance of chilled display units.

Aims of the survey & approach

5. The primary objective of this UK wide survey was to determine the prevalence and levels of contamination in pre-packed RTE sliced meats at sale in SME retail outlets. Pre-packed cooked, cold sliced meats e.g. ham, beef, turkey and chicken; sliced cured meats e.g.: Parma ham; and sliced fermented meats e.g.: salami and chorizo sausage sold at retail premises classed as SME will be sampled.

6. Larger retailers were excluded from this survey as they have been heavily sampled in previous FSA surveys and the EU harmonised survey of *Listeria* in RTE foods, which were based on market share.
7. Samples were tested for *Listeria* spp., *Listeria monocytogenes* and the indicator organisms *Enterobacteriaceae* and *Escherichia coli*. Samples were also tested for physical characteristics such as salt content, water activity and pH. The surface temperature of the samples at time of sampling was also measured. The methods used were ISO validated methods.
8. It should be noted that this survey focused on prevalence and levels of contamination in pre-packed RTE sliced meats and was not intended to provide information on seasonality. Information on a wide range of factors such as a retailer type, country of origin and production types was also recorded.

Background

9. The Food Standards Agency (FSA) Strategy for 2010-2015 includes the outcome that 'Food produced or sold in the UK is safe to eat'. A main priority for this is to 'reduce foodborne disease using a targeted approach'.
10. The FSA's Foodborne Disease Strategy (FDS) for 2010-2015 proposes a pathogen-specific approach to reducing foodborne disease rates in the UK, with *Campylobacter* (which causes the most cases) and *L. monocytogenes* (which causes the most deaths) as priorities for action. Although the number of laboratory confirmed cases of *L. monocytogenes* infection is low compared to other foodborne pathogens such *Salmonella* and *Campylobacter*, the mortality rate associated with listeriosis is much higher (44% between 1990 and 2003) underlining the importance of this bacterium as a foodborne pathogen.
11. Since listeriosis has a high mortality rate, it is important that sources of exposure to this organism are pinpointed and factors contributing to infections identified. The types of food in which *Listeria* can be found are diverse and there are several key foods which have been implicated in the transmission of listeriosis, including cooked sliced meats.
12. In 2002, a LACORS/PHLS (now known as LACORS/HPA) Co-ordinated Food Liaison Group Study on the microbiological examination of ready-to-eat cold cooked sliced meats and pâté from catering and retail premises found the prevalence of *L. monocytogenes* in 763 cold meat samples to be 2.1%. Between 1995-2003, a study in Wales found *L. monocytogenes* to be present in 0.7% of sliced beef and poultry samples and the organism was not found in sampled sliced ham.
13. In 2007 the FSA undertook a microbiological survey of ready-to-eat (RTE) cooked sliced meats and pâtés at retail with particular reference to the presence of *L. monocytogenes* (FSA project B18026). A total of 1,691 samples of RTE cooked sliced meat were randomly collected from 1,000 retail premises across the UK, of which 1,686 samples were acceptable for testing. This study

excluded dried, cured and fermented meats. The samples were tested for the presence of *Listeria* spp. and *L. monocytogenes*.

14. Overall *Listeria* spp. was detected in 45 cooked sliced meat samples giving a weighted prevalence of 2.82%. Of these, *L. monocytogenes* was detected in 21 meat samples with a weighted prevalence of 1.53%, of which all were below 100 cfu/g and therefore satisfactory according to the Microbiological Criteria Regulations No.2073/2005. *L. monocytogenes* was found in 1.67% (n=2/134) of beef, 1.84% (n=16/1,096) of pork, 0.75% (n=2/402) of poultry and 0.87% (n=1/54) of mixed meats tested.
15. Due to their design, being based on market share, previous FSA surveys and the EU Harmonised survey of *Listeria* in RTE foods focused on the major retailers. This survey focused on Small to Medium sized enterprises (SME's) as data on contamination levels in these settings was more limited.
16. Information for this survey and investigations of RTE foods for *Listeria* contamination will be used to build up a representative picture of the prevalence of *L. monocytogenes* contamination in foods across the UK.