

Food Sampling by Northern Ireland District Councils – 2009 Summary Report

Northern Ireland Strategic Committee on Food Surveillance



Introduction

Food surveillance is an important public health measure. The information contained in this report should reassure the public that the necessary surveillance mechanisms are in place to identify and respond to unsatisfactory microbiological and chemical parameters identified in food samples collected for analysis. During 2009 very few foods sampled contained disease causing bacteria. However the report does highlight areas for further investigation and improvement. It will be important in the current economic climate to ensure that the public health and consumer protection benefits arising from food sampling programme are not compromised. Food sampling activities of District Councils need to be maintained at an appropriate level, based on a careful assessment of risk. The Food Surveillance database is already becoming an important tool to identify areas for further investigation and will, in the future, enable more informed identification of trends to inform targeted sampling by District Councils.

Dr Brian Smyth

Chair, Northern Ireland Strategic Committee on Food Surveillance

The Northern Ireland Strategic Committee on Food Surveillance was established in 2007 to independently evaluate statistical data relating to microbiological and chemical examination and analysis of food sampled by officers of the District Councils across Northern Ireland, and recorded on the United Kingdom Food Surveillance database.

This is the third report to use regional data obtained from the United Kingdom Food Surveillance System and this report has been written to provide a broad overview of the outcome of microbiological and chemical analysis of food.

The database was made available to District Councils in 2006 and through support funding from **safe food** they were able to commence using it on 1 January 2007. In 2007 it was reported that there were 8700 Northern Ireland food samples on the database. At the end of 2008 there were an additional 9314 food samples on the database. At the end of 2009 there were a further 8966 samples on the database which now holds details of almost 27,000 food samples for Northern Ireland.





Based on the results of sampling the Committee did not observe any major issues regarding the contamination of food with food poisoning organisms, with exception of an incident relating to *salmonella* in ready to eat foods. Six food samples were found to contain unsatisfactory levels of *Listeria monocytogenes* (a food poisoning organism) that can grow at low temperatures (below 5°C), but it is killed by cooking food thoroughly. There were no incidences of detection of food poisoning bacteria such as *Campylobacter* or *E.Coli* 0157. Throughout the year a number of food types were found to contain *Clostridium perfringens*, *Staphylococcus aureus* and *Bacillus cereus* which are food poisoning organisms. The presence of these bacteria in high numbers per gram of food usually indicates questionable hygiene practices, such as inadequate cooking, cooling of food, refrigeration and cross contamination. Where these organisms were found, follow up action was taken by environmental health officers, including repeat sampling and the issuing of advice and guidance.

The information leaflet represents only a brief summary of the key points of the main report.

The full report can be accessed at:

<http://www.food.gov.uk/news/newsarchive/2010/dec/niscfssr>

Key Findings

During 2009, officers of District Councils involved with food sampling visited a range of food premises in Northern Ireland to collect a range of food samples in support of both enforcement and surveillance activities. A total of 8966 food samples were collected and submitted to the Northern Ireland Public Health Laboratory and Public Analyst for microbiological examination (72%), and chemical analysis (28%), respectively.

Microbiological Examination for Food Poisoning Organisms

Examination of food for the presence of *Salmonella*, *Campylobacter*, *E.Coli* 0157, *Listeria*, *Clostridium perfringens*, *Staphylococcus aureus* and *Bacillus cereus* revealed that the number of pathogens detected was, as in the previous two years, extremely small compared, with the total number of samples collected and submitted to the food examiner.

During 2009, 5645 foods were examined for *Salmonella*, and there was only one detection of this pathogen in a sample of ready to eat snack food containing contaminated sesame seed.

Ten samples of food contained *unsatisfactory levels of Listeria monocytogenes*: eight were samples of meat/meat products, one was a fruit and vegetable product and the other related to an egg/egg product.

All detections of *Listeria* species should be investigated, looking particularly at cleaning procedures to reduce risk of contamination, and other factors that would allow growth, particularly if served to vulnerable groups. *Listeria* would appear the most common pathogen detected. Taking into account other microbiological results, such as raised total bacterial counts which illustrates the opportunity for growth within the food chain, future surveillance should be focussed on the handling and storage problems of foods associated with *Listeria* species.

The Chilled Food Association has recently published guidance for Food Business Operators in relation to the shelf life of ready to eat foods in relation to *Listeria monocytogenes*. The Agency in Northern Ireland, in conjunction with the Northern Ireland Food Liaison Group (NIFLG), are holding a microbiological training workshop in early 2011 for both industry and enforcement officers.

The most frequently sampled foods for microbiological examination in 2009 were meat, meat products and prepared dishes. As outlined in the 2008 report, these food types were found most often to fail microbiological tests though not to levels that would be harmful to health.

Identification of General Hygiene Indicator Bacteria

The Food Examiner also examines food for certain bacteria whose presence in food can be used as an indicator of general hygiene practices in premises. High numbers of organisms known as Enterobacteriaceae, usually indicate poor hygiene, inadequate cleaning and disinfection. Such results can also indicate possible contamination of ready to eat food after cooking or survival of bacteria after inadequate cooking.



In 2009 foods found to contain unsatisfactory levels of Enterobacteriaceae were:

- Meat and meat products (e.g. cooked chicken and beef, chinese pork, turkey, ham and lamb)
- Prepared dishes (e.g. sandwiches and take away meals)
- Fruit and vegetables (e.g. vegetable salads, stir fry and coleslaw samples)

In comparison with all the foods sampled microbiologically for Enterobacteriaceae only a small proportion (5%) had these high levels.

Total Bacterial Count

In addition to microbiological food safety tests the Food Examiner also ascertains the total number of bacteria in a food sample. Comparisons of total bacterial counts were made for different food types. High bacterial counts in ready to eat food could reflect some or all of the following:

- Poor refrigeration of product on display or storage
- Poor temperature control in the distribution chain
- Poor handling practice
- Inadequate cooking

The following food types were found to have unsatisfactory high bacterial counts:

- Meat and meat products
- Prepared dishes
- Fruit and vegetable based products
- Egg and egg based products
- Cakes and confectionery goods (mainly due to the fact that samples contained cream)





In total, 556 samples (9%) had high bacterial counts compared to 7% in 2008 and a high proportion of these foods were non-prepacked. This information helps direct Environmental Health Departments in determining future sampling surveillance activities.

Overall, 31.7% of the food samples did not meet microbiological standards but much of this was attributed to quality rather than safety.

One per cent of meat and meat product samples had unsatisfactory bacterial levels, consistent with potential temperature abuse. However, further investigation is needed to refine why these foods failed these quality and safety tests. Approximately 5% of non pre-packed foods also had unsatisfactory bacterial levels. In the absence of trend data from other years it is not known whether this was atypical but it does require further investigation.

Premises Type

Comparisons were made between microbiological sample results and types of premises from where the samples were taken. The majority of microbiological food samples were taken from retail and catering premises. The highest rate of unsatisfactory samples occurred in manufacturing premises mainly selling by retail e.g. butchers, bakers and retailers.

Chemical Analysis of Food

Officers also sampled 2527 foods for chemical composition and labelling and 10% of these samples were taken as part of planned regional/national surveys. The remainder of samples were taken for enforcement and surveillance purposes. In 2009, 43% of the samples failed to comply with compositional and labelling requirements compared to 50% in 2008. A number of samples were reported as unsatisfactory because of labelling errors.

Meat and meat products, bakery products and cereals, and prepared dishes formed a significant proportion of foods sampled and also represented a significant proportion of sample failures.

The food products consistently failing as a result of labelling errors were meat and meat products, prepared dishes, drinks, ice-cream and desserts and dairy products. Typically the samples failed as a result of incorrect labelling of ingredients or the quantity of certain ingredients required to be declared on the label.

Benefits of Sampling for Action by District Councils

The report and information obtained through the Food Surveillance database will enable District Councils to allocate resources to specific areas to improve food safety and quality.

It is important for District Councils to recognise that the information gained from food sampling activities will provide significant cost benefit outcomes by early detection of emerging risks or trends in food safety and composition.

Conclusions

Throughout the year considerable resources were spent collecting, submitting and analysing foods sampled for the purposes of informing District Councils that food businesses are producing food to regulatory standards of hygiene, composition, labelling and safety.

The number and scope of foods sampled is considerable and it is reassuring to note that a very high percentage of foods examined have been found to be free from pathogenic bacteria. Evidence from sampling indicates that there are instances of *Listeria* species at low levels in some ready to eat foods and this continues to be monitored.

It is also reassuring to note during 2009 that the microbiological examination of foods sourced from retail and catering establishments, which continue to form the biggest group of premises sampled, were found to be relatively free from pathogenic or disease producing organisms.

The results of food examination would suggest there is still a need in some cases for improvement in the hygienic handling and chill storage of food.

As in previous years it is also apparent that certain groups of food businesses such as manufacturers and manufacturers selling by retail e.g. butchers/bakers, are experiencing difficulties in correctly labelling their products. District Councils continue to work closely with this food sector to support their understanding of the general rules on food composition and labelling.

Recommendations

The report contains a number of recommendations including the need for further investigation to better define why certain food types fail microbiological tests and also suggests that there is scope as the database further develops to look at evidence of seasonal trends.



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Laboratory staff of the Northern Ireland Public Health Laboratory and the Public Analyst.

Further Information

If you have any feedback on the structure and content of this report or would like to see additional information in future reports, your comments and observations would be very welcome.

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