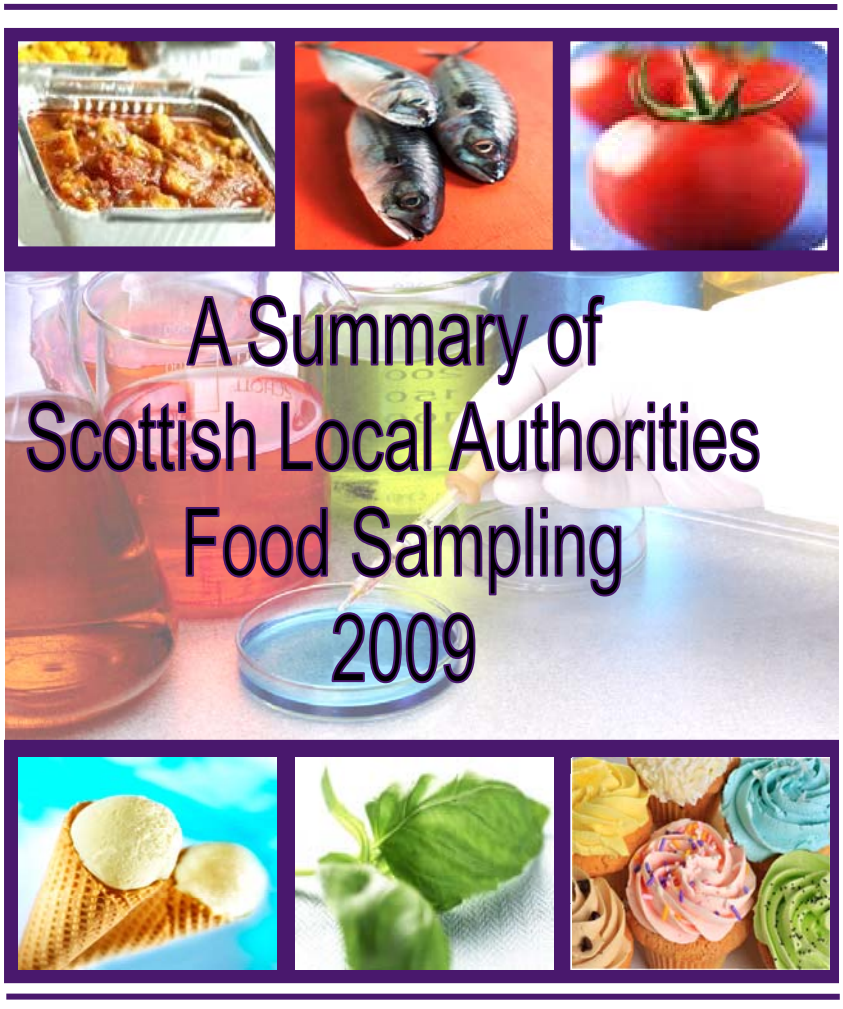
Food Surveillance System

A Report by the Scottish Food Enforcement Liaison Committee's

Research Working Group



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SUMMARY

The Scottish Food Enforcement Liaison Committee's (SFELC's) Research Working Group (RWG) was set up in 2005 to interrogate and report on the food sampling data inputted onto the UK Food Surveillance System (UKFSS) database. Since 2005, 29 out of the 32 Local Authorities (LAs) and all partner laboratories in Scotland have been using UKFSS routinely for storing sampling and results data, with over 13,000 samples submitted annually to the central database.

The RWG comprises representation from Scottish Food Liaison Groups, Public Analysts (PAs), Food Standards Agency in Scotland (FSAS) and Health Protection Scotland (HPS). It meets on a quarterly basis throughout the year and, since 2007, has published an annual report of its work which has summarised the key trends observed in this national data set and made recommendations to SFELC on food sampling and surveillance priorities for the following year.

This report provides a summary of the LA food sampling activity undertaken between 1st January and 31st December 2009. It is important to note that the sampling undertaken by LAs is targeted for the purposes of enforcement or surveillance work, and the results are therefore not fully representative of the food chain. However the information provided in this report can be used by LAs and the FSA to target future sampling programmes and to inform the development of initiatives to improve food safety and standards. A list of food surveys undertaken in Scotland during 2009 is provided in Annex A.

During 2009, results relating to 13,442 samples were submitted to the UKFSS database; 219 more than the total number taken during 2008. Similar to previous years' data, the predominant food categories sampled were 'Meat and Meat Products' (25% of all samples taken) and 'Prepared Dishes, (21% of all samples taken), and sampling activity was focussed on 'Retailers' (44% of all samples taken), 'Restaurants and Other Caterers' (28%), and 'Manufacturers / Processors' (17%).

Of the 13,442 samples submitted to UKFSS during 2009, 7533 were subjected to microbiological examination (compared to 6792 in 2008), of which 77% gave a satisfactory result. The majority of microbiological failures were due to the presence of elevated levels of hygiene indicators and Aerobic Colony Counts (ACCs), which would not usually be considered a risk to health, but are indicative of poor food preparation and handling practice. Only 21 (0.3%) of the samples tested for the presence of pathogenic organisms (Salmonella, Campylobacter, *Escherichia coli* O157, *Listeria monocytogenes*, *Clostridium perfringens*, *Staphylococcus aureus* and *Bacillus cereus)* were found to contain levels exceeding

legislative standards or guideline values with the potential to cause illness. These included 4 ready-to-eat foods (cooked meat, crab and ice-cream) which were found to contain *Listeria monocytogenes*, and 2 samples of fresh basil which were contaminated with Salmonella. It should be emphasised that in all cases where pathogenic organisms were detected in foods, the relevant Environmental Health Departments took appropriate action to ensure public health was protected.

All other microbiological failures were attributed to the detection of microorganisms in ready-to-eat foods at levels indicating poor practice during food production and preparation in terms of hygiene and temperature control. These results highlighted particular issues in relation to the production of cooked meats and sandwiches, indicating a need for enforcement authorities to pay particular attention to hygiene practices in premises producing these products.

A total of 5909 samples submitted to UKFSS during 2009 were subjected to chemical analyses; which is 522 fewer than the number of chemical samples recorded in 2008. In 2009 the failure rate for chemical samples was the same as that for microbiological samples, with 77% of samples giving a satisfactory result. The majority of chemical failures were due to labelling issues, which were mainly attributed to issues relating to 'Ingredients Listing', 'QUID Declaration' and 'Durability Indication' in 'Meat and Meat Products' and 'Prepared Dishes'. Similar to the data recorded in 2008, misuse of colourings (including those known as the Southampton 6) was identified in confectionery and Indian foods. Inappropriate use of preservatives in bakery and meat products was also highlighted. Similar to previous years' data, the use of elevated levels of the preservative sulphur dioxide in burgers and sausages was identified as a particular issue, indicating that enforcement authorities should continue to work towards improving compliance in this area.

Based on the trends identified in the 2009 dataset, the RWG has made a number of recommendations that should be taken into account by SFELC when developing forthcoming national sampling and surveillance programmes.

OVERALL DATA TRENDS

In 2009, a total of 13,442 samples were submitted for microbiological or chemical testing over the 12 month period.

Samples were collected for both microbiological and chemical testing across a wide range of food categories (Figure 1). Similar to the datasets obtained in previous years, the most frequently sampled food categories during 2009 were 'Meat and Meat Products' and 'Prepared Dishes'.

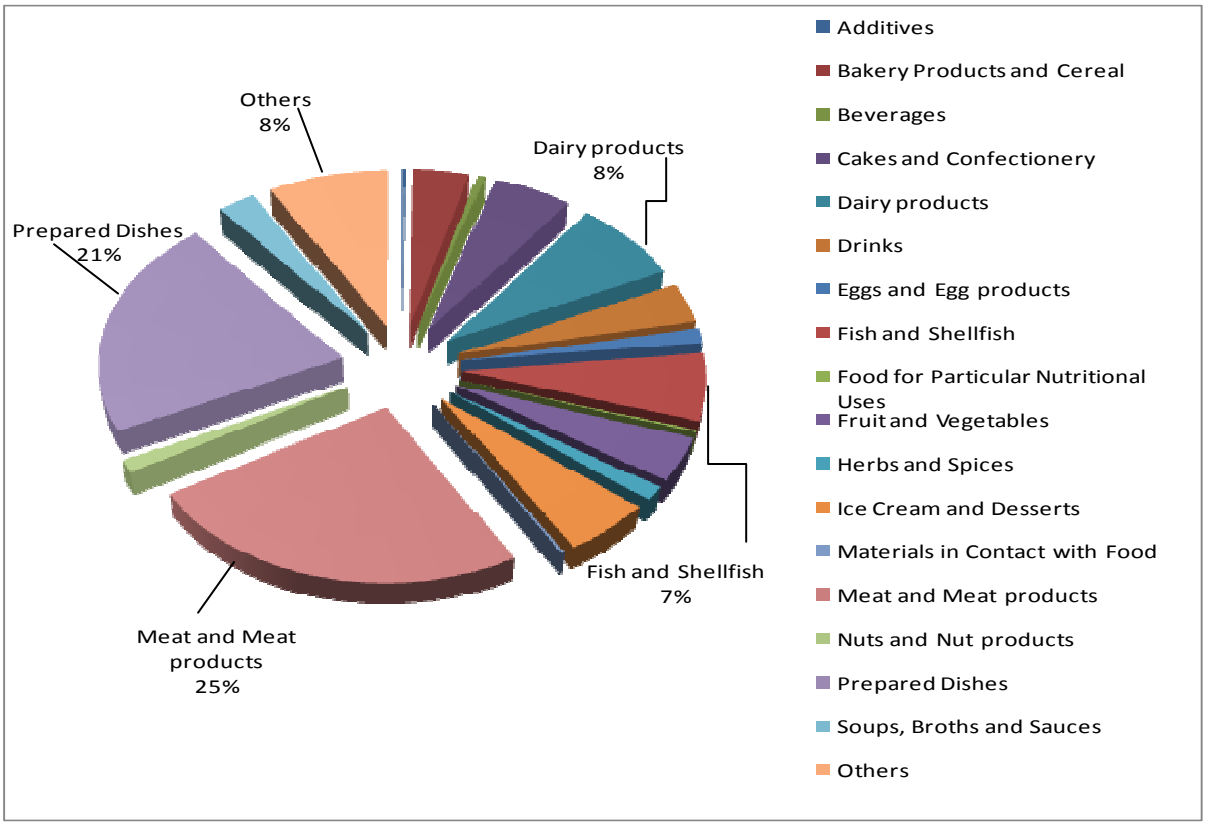

Figure 1. Percentage distribution of microbiological and chemical samples according to food category in 2009.

The UKFSS also allows sampling trends to be examined according to premises type. During 2009, the majority of food samples taken in Scotland were from 'Retailers' (44%), with 'Restaurants and Caterers' accounting for 28% and 'Manufacturers / Processors for 17% of all samples recorded on UKFSS (Figure 2a).

Figure 2b compares sample numbers and satisfactory and unsatisfactory results recorded on UKFSS in 2007, 2008, and 2009 for these three premises types. The data suggests that between 2008 and 2009 there was a decrease in sampling activity at retailers, whilst the numbers of samples taken at restaurants, manufacturers and processors increased.

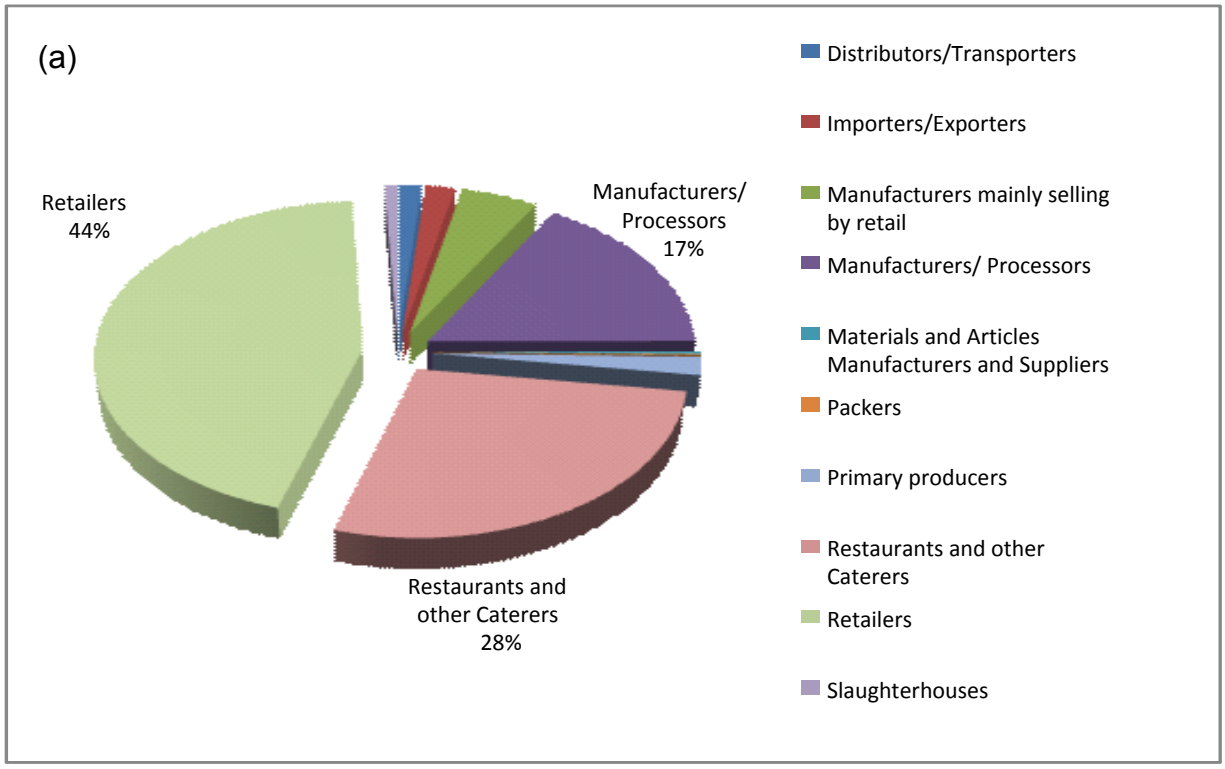

Figure 2. a) Percentage distribution of microbiological and chemical samples according to premises type in 2009.

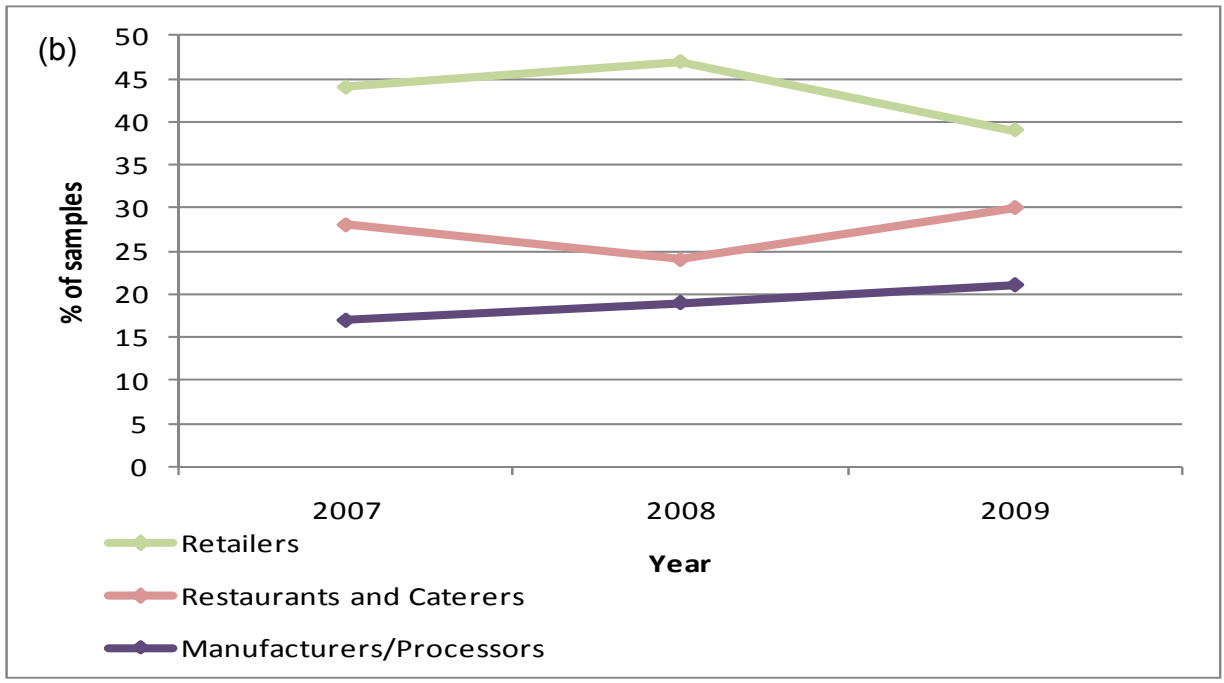

Figure 2. b) Sampling activity in the three most frequently sampled premises types in 2007, 2008 and 2009.

Samples submitted to Official Control Laboratories (OCLs) are subjected to a wide range of tests which may include assessing microbiological quality and safety, determining the presence and amounts of additives and contaminants, and checking for compositional and

labelling compliance. In the majority of cases, more than one test is conducted on each sample submitted to the laboratory. A breakdown of the number of samples taken in 2009 for microbiological and chemical purposes, and those giving an overall satisfactory result (i.e. have passed all of the tests carried out) is presented in Table 1.

Table 1. Breakdown of UKFSS sampling statistics for 2009

	Samples taken in 2009	Number of samples giving an overall satisfactory result in 2009	% of Satisfactory Samples
Microbiological	7533	5817	**77.2**
Chemical	5909	4555	**77.1**
Total	13,442	10,372	**77.2**

There was a 1.5% increase in the total numbers of samples tested during 2009 (13,442) compared with 2008 (13,223 samples). This increase was due to a higher number of samples being subjected to microbiological examination in 2009 (7533 samples compared with 6792 samples in 2008 – 10%). In contrast, there was an 8% decrease in the number of samples subjected to chemical analyses between 2008 (6431 samples) and 2009 (5909 samples).

Overall, 22.8% of all food samples taken during 2009 were unsatisfactory, which is similar to the percentages recorded during 2008 (22.1%) and 2007 (21.4%).

The results also indicate that the percentages of unsatisfactory results recorded in 2009 were similar for microbiological examination and chemical analyses. This is also a similar trend to that observed during 2007 and 2008 (Figure 3).

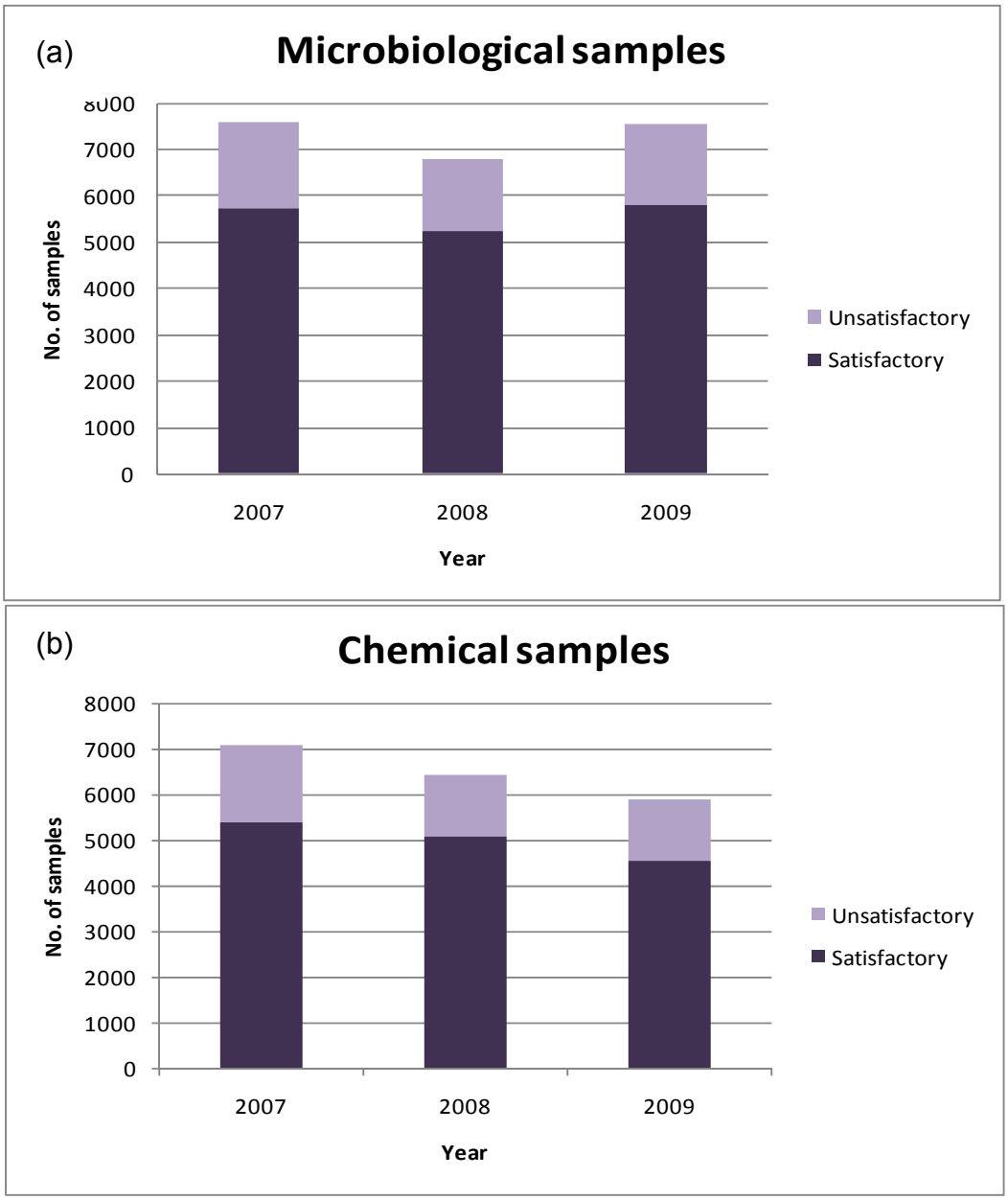

Figure 3. Comparison of sampling activity and numbers of satisfactory and unsatisfactory microbiological samples (a) and chemical samples (b) in 2007, 2008 and 2009

The two food categories most frequently sampled during 2009 were 'Meat and Meat Products' and 'Prepared Dishes' (Figure 1). In the 'Meat and Meat Products' category , 27.7% of samples gave an overall unsatisfactory result, which represents a slight increase compared with the percentage of unsatisfactory results recorded in 2008 (26%). In the 'Prepared Dishes' category, 19.5% of samples gave an overall unsatisfactory result, which represents a 5.5% decrease in the rate of failures in this category. This decrease was observed in both the chemical and microbiological results obtained for 'Prepared Dishes'.

MICROBIOLOGICAL SAMPLING DATA

Microbiological samples are examined in a suite of tests, including the detection and enumeration of pathogens and/or levels of hygiene indicators and aerobic colony counts (ACCs). The results of these tests are interpreted against food hygiene legislation (as defined under Regulation EC No 2073/2005) and/or the Health Protection Agency (HPA) Guidelines for Assessing the Microbiological Safety of Ready-to-Eat Foods Placed on the Market, and are classified as satisfactory, borderline or unsatisfactory. Samples are given an overall satisfactory result only when the results of all tests within the suite are satisfactory.

Overall, 77.2% (5817 out of 7533) of all microbiological samples taken by participating LAs during 2009 were found to be satisfactory. It is worth noting that the 22.8% (1716) of the microbiological samples that did not meet regulatory or guideline standards were only rarely found to be contaminated with bacteria at levels that would present a risk to consumer health.

Detection of pathogens in food samples

In 2009, 6280 food samples were tested for the presence of at least one of the six key foodborne pathogens: Salmonella, Campylobacter, *Escherichia coli* O157, *Listeria monocytogenes*, *Clostridium perfringens*, *Staphylococcus aureus* and *Bacillus cereus.*

Only 21 of these 6280 (0.35%) food samples failed due to the presence of one of these pathogens at levels which could be considered a risk to human health.

Table 2 shows the results for pathogens and a breakdown of the food samples that gave borderline or unsatisfactory results according to the requirements of EC Regulation No. 2073/2005 and/or HPA guidelines for ready to eat foods. It is important to highlight that all samples which did not give a satisfactory result would have been followed up by Environmental Health Departments to ensure public safety was protected at all times.

None of the samples tested failed due to the presence of Campylobacter or *E. coli* O157. Similar to the previous year's data, considerably fewer samples were tested for the presence of Campylobacter or *E. coli* O157, compared with other microorganisms. It is worth noting that whilst these are recognised as significant foodborne pathogens, they are more commonly associated with raw poultry (Campylobacter) and red meat (*E. coli* O157). Therefore, these pathogens tend only to be monitored in ready-to-eat foods where under-cooking or poor handling practices leading to cross-contamination are suspected or where testing for indicator organisms has highlighted areas of concern that may require to be followed up. Out of 1349 samples tested for Salmonella only two samples failed due to

presence of this pathogen (0.15%) – both were samples of imported fresh herbs (basil) that were taken as part of a national imported foods survey (Annex A, Table A).

Only 4 out of 4266 (0.09%) samples tested for *L. monocytogenes* failed due to unsatisfactory levels of this pathogen. Five samples of ready-to-eat foods were also found to contain borderline levels of *L. monocytogenes* ($10 \leq 10^2$ cfu/g).

Similar to the 2008 data, none of the samples tested for *C. perfringens* in 2009 were found to contain levels considered by HPA guidelines to be unsatisfactory and potentially injurious to health and/or unfit for human consumption ($>10^4$ cfu/g). Borderline levels of *C. perfringens* ($10\text{-}10^4$), were detected in 14 out of 3886 (0.36%) of the samples tested in 2009. This is an increase compared with the 2008 data, in which borderline levels of *C. perfringens* were detected in 5 out of 3803 (0.13%) of the samples tested.

Of the 411 samples tested for *B. cereus*, 8 samples failed due to unsatisfactory or borderline levels of this pathogen (1.94%). All of these samples were ready-to-eat foods, with the highest levels detected in prepared rice, soup and pasta dishes sampled from take-away restaurants. According to HPA guidelines, these results are indicative of poor processing, particularly in relation to temperature and time controls.

The highest number of pathogen failures, 87 out of 5637 samples tested (1.54%), was attributed to unsatisfactory or borderline levels of *S. aureus* in a range of ready-to-eat foods, with the highest levels detected in raw milk cheeses. These results are indicative of poor hygiene practice or contamination of raw materials and would lead to further investigation by enforcement officers to review the premises' HACCP (Hazard Analysis and Critical Control Points) and potential issues relating to personal hygiene.

Table 2. Test results for pathogens in 2009

Pathogen	Number of samples tested	Samples failed for unsatisfactory levels of pathogen	Samples failed for borderline levels of pathogen
Salmonella	**1349**	**2** Basil (2)	NA
Campylobacter	**229**	0	NA
***E. coli* O157**	**170**	0	NA
Listeria monocytogenes	**4266**	**4** Ham (2) Crab Sandwich filling Ice Cream	**5** Cream Ham Smoked trout Pate Cured smoked bacon Salad
Clostridium perfringens	**3886**	0	**14** Chicken Tikka Curry sauce Lemon thyme Lasagne Ground coriander Stew for steak pie Coronation chicken sandwich filling Smoked salmon Smoked mackerel Rosemary Smoked fillet venison Fresh raw mussel Egg mayonnaise sandwich filling Venison liver pate
Bacillus cereus	**411**	**3** Lasagne Boiled rice Crab soup	**5** Fried rice Tuna salad roll Battered chicken Egg fried rice Pilau rice
Staphylococcus aureus	**5637**	**12** Chilli chicken rolls Sliced smoked salmon Mozzarella Steak pie Meatloaf Unpasteurised cheese (6) Ice cream	**75** A wide range of ready-to-eat foods

It is worth noting that, compared with the previous year; a higher number of samples were tested for each of the pathogenic bacteria listed in Table 2. Whilst very few of these samples were found to contain levels of pathogenic bacteria that could present an immediate risk to human health, the occurrence of unsatisfactory and borderline results for *S. aureus*, *B. cereus* and *C. perfringens* in foods are indicative of poor processing, handling and temperature control in a range of prepared foods which may merit future investigation by Environmental Health Departments.

Examination of food for microbiological hygiene and quality

Hygiene Indicators

Hygiene indicators such as Enterobacteriaceae, non-pathogenic *E. coli* and *Listeria* species (not *L. monocytogenes)* are used to assess issues relating to process control such as the quality of raw materials, undercooking and cross-contamination. In general, indicator organisms are present in higher numbers and are more easily and rapidly identified than pathogenic organisms, although they are not considered an immediate risk to consumer health in the absence of other pathogenic organisms. These indicators allow food enforcement officers to focus on potential areas for concern in the production and handling of food.

Table 3 shows the failure rates for hygiene indicators in samples tested in Scotland during 2009. For each hygiene indicator organism the HPA Guidelines state the levels at which a sample can be declared satisfactory, borderline or unsatisfactory.

Table 3. Summary of results for samples tested for hygiene indicators in 2009

Hygiene Indicator	No. samples tested	No. unsatisfactory samples	No. borderline samples	% of satisfactory samples
Enterobacteriaceae	2670	229	381	77.1
E. coli (non-pathogenic)	6299	83	83	97.4
Listeria spp.	3545	4	9	99.6

Of the 1716 samples which did not give a satisfactory microbiological result in 2009, 789 (46%) were due to borderline or unsatisfactory levels of the hygiene indicators Enterobacteriaceae, non-pathogenic *E. coli* and *Listeria* species. The majority of unsatisfactory results were attributed to Enterobacteriaceae and *E. coli* being detected in foods at levels $>10^4$ cfu/g for Enterobacteriaceae and/or $>10^2$ for non-pathogenic *E. coli*. Unsatisfactory levels of Enterobacteriaceae and non-pathogenic *E. coli* were picked up in a

range of food categories, and also in swabs and samples of cleaning materials in food businesses (Figure 4). These results are indicative of undercooking or poor hygiene practices during food handling leading to cross contamination, and in general, would lead to further investigation and additional sampling of foods for the presence of pathogens. The detection of non-pathogenic *E. coli* in foods merits particular attention, since this organism is an indicator of potential faecal contamination. The data collected during 2009 suggests that it would be worthwhile for Environmental Health Departments to pay particular attention to hygiene practices in the production of unpasteurised cheeses, cooked meats, and prepared salads, and also in the preparation of sandwiches and meals in restaurants and take-aways.

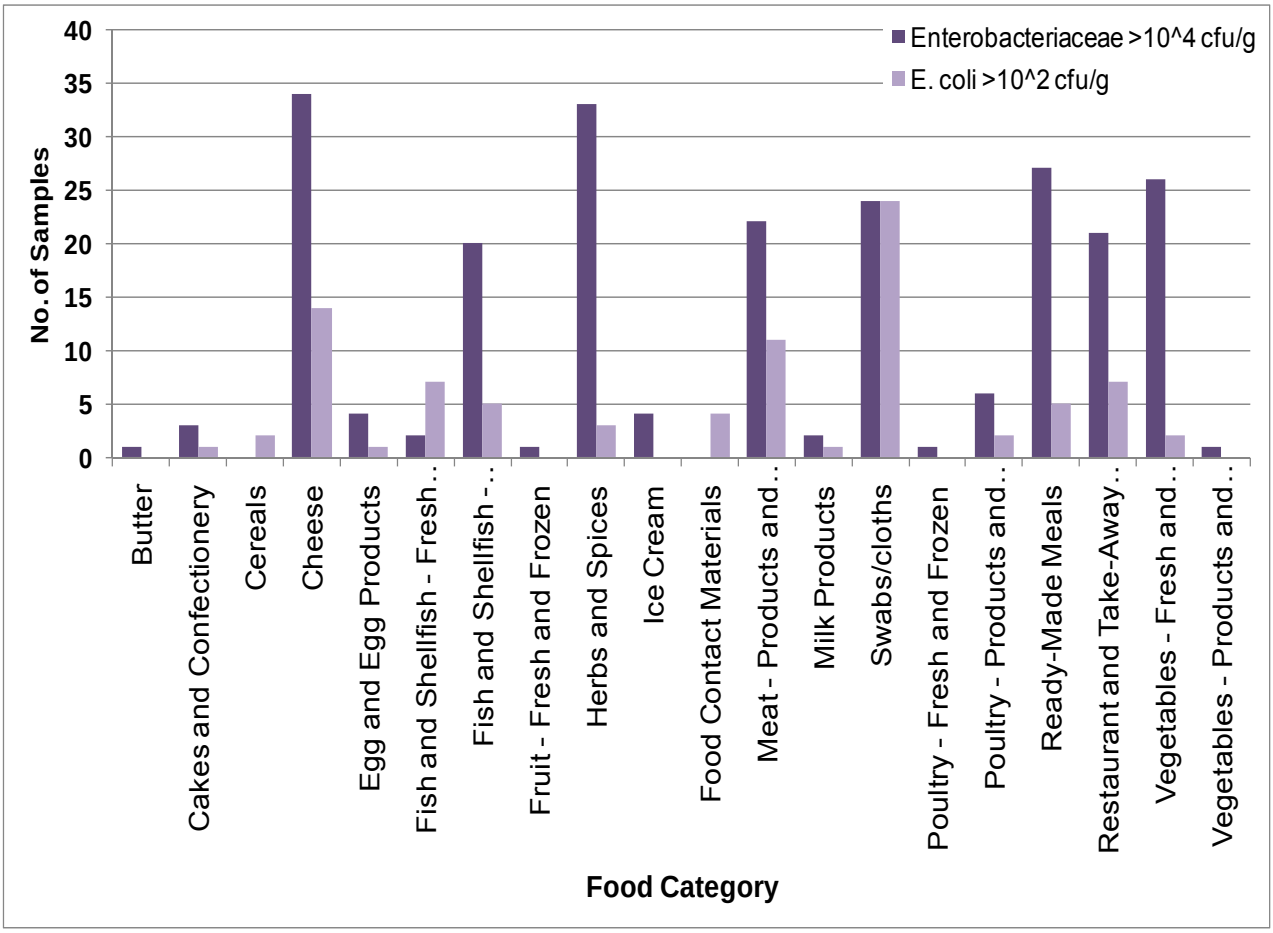

Figure 4. A breakdown of the numbers of samples within food categories which were found to contain unsatisfactory levels of Enterobacteriaceae (>10^4 cfu/g), and non-pathogenic *E. coli* (>10^2 cfu/g).

Aerobic colony counts (ACCs)

The majority of samples submitted for microbiological examination were tested for levels of Aerobic Colony Counts (ACCs). ACCs provide an indication of quality and in isolation cannot be used to determine whether there may be a food safety risk. The ACC levels detected will

usually depend on either the stage at which the product has been sampled during its shelf-life, the method used to process the product, or on the way in which it has been handled or stored. High levels of ACCs do not indicate an immediate risk to human health, and are used to prompt further investigation by Environmental Health Departments.

During 2009, a total of 6450 samples were examined for ACCs. The majority of these samples were ready-to-eat foods within the 'Meat and Meat Products' (1455 samples, 22%) and 'Prepared Dishes' (1826 samples, 28%) categories (Figure 5).

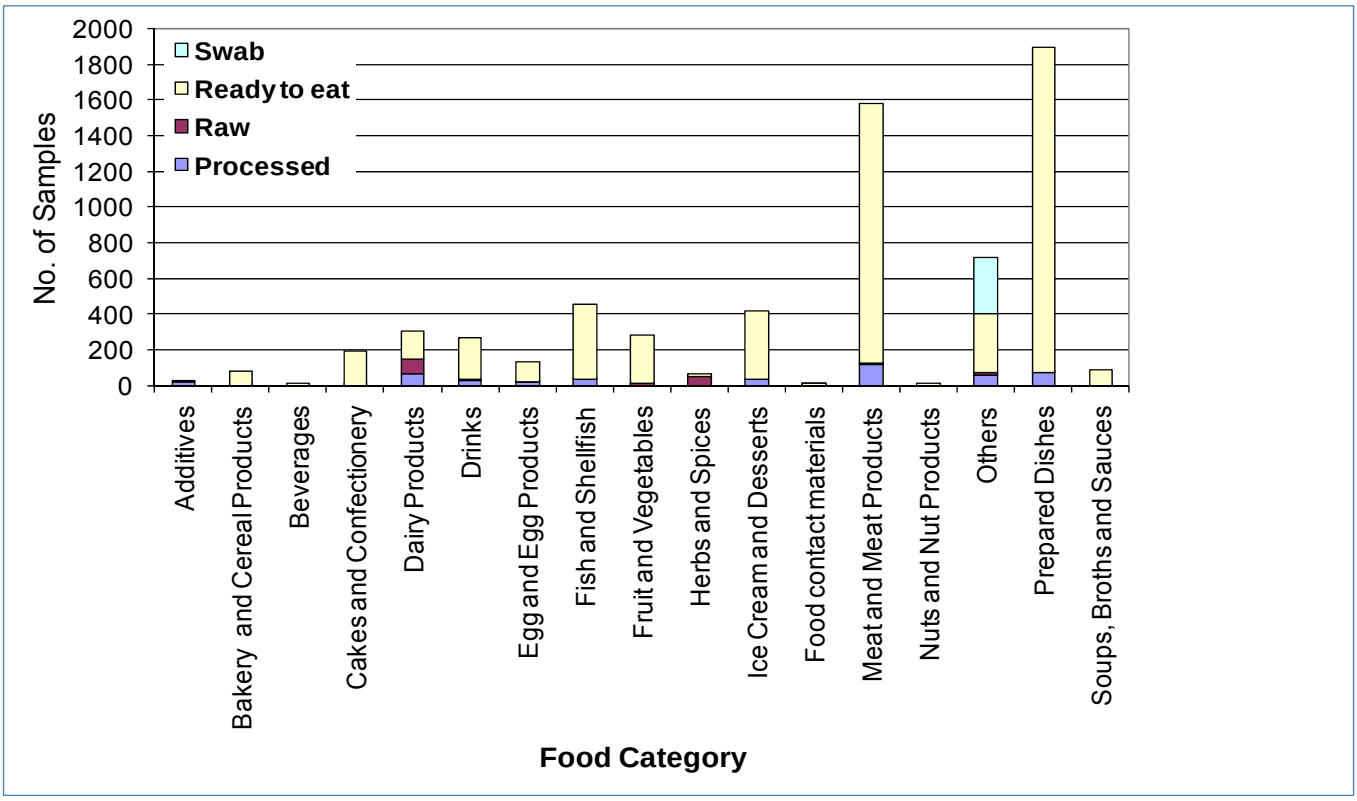

Figure 5. Numbers of samples tested for Aerobic Colony Counts (ACCs) within each food category and product type.

Of the 1455 samples examined for ACCs within the ready-to-eat 'Meat and Meat Products' category, a total of 917 samples (63%) were described as cooked meat. Of the 1826 samples examined for ACCs within the ready-to-eat 'Prepared Dishes' category, a total of 1128 samples (62%) were sandwiches.

For the purposes of interpreting ACC levels, cooked meat samples and sandwiches (without salad) are allocated to HPA category 5 (cooked foods chilled but with some handling prior to consumption). According to HPA guidelines, an ACC level of $\geq 10^7$ is defined as unsatisfactory, and it is recommended that the reasons for the high count are investigated. In general, for these types of products, ACC counts exceeding these levels will be indicative of poor hygiene practices.

Out of the 917 samples tested, a total of 123 samples described as cooked meat (13%) were found to have ACC levels ≥10^7. A further breakdown of these samples revealed that only 20 of these samples were described as being pre-packed for the ultimate consumer, where an indication of minimum durability (shelf-life) was provided on the label. The majority of unsatisfactory ACC samples in cooked meat (103 samples, 84%) were described as non pre-packed (86 samples), or pre-packed for direct sale (17 samples), and as such were not labelled to provide minimum durability information (shelf-life information). High ACC levels in these products indicate poor microbiological quality, which can lead to spoilage of these products during further storage.

It is more difficult to interpret ACC results in sandwiches as HPA guidelines only provide values for ACCs in sandwiches without salad. Of the 1128 sandwiches tested for ACCs, 511 samples were described as sandwiches without salad and 60 of these samples (12%) were found to contain ACC levels of ≥10^7.

These results reinforce the need for further work to promote good hygiene practice and temperature control in premises handling and slicing cooked meats for direct sale to the consumer, as well as those involved in the preparation and sale of sandwiches.

Conclusions

- The results of microbiological food sampling data collated on UKFSS during 2009 indicate that, similar to previous year's data, only a very small percentage of food samples failed due to the presence of pathogenic bacteria that could present a risk to public health.
- The presence of *Listeria monocytogenes* in ready-to-eat foods and Salmonella in fresh herbs supports the need for on-going surveillance and monitoring of these pathogens as part of enforcement regimes in Scotland.
- The detection of elevated levels of *Bacillus cereus* in a range of 'Prepared Dishes' is suggestive of issues relating to poor processing and temperature control in catering premises which may merit further investigation.
- *Staphylococcus aureus* was detected at unsatisfactory or borderline levels in a wide range of 'Prepared Dishes', suggesting that Environmental Health Departments should continue to promote good hygiene practice by food handlers.
- The unsatisfactory levels of hygiene indicators and ACCs detected in cooked meats and sandwiches sampled from across Scotland are indicative of recurring issues in relation to hygiene and process controls in this area of food production. Particular emphasis should be placed on foods which are sold loose or pre-packed for direct sale.

CHEMICAL SAMPLING DATA

In 2009, 5909 samples were submitted for chemical analysis across the various food categories. Chemical testing is carried out for a variety of reasons to ensure compliance with composition, labelling and contaminants legislation or guidance.

Overall, 4555 out of 5909 (77.1%) of the samples submitted for chemical analysis were reported as satisfactory. 'Meat and Meat Products' and 'Prepared Dishes' were the most frequently sampled categories for chemical testing in 2009, similar to 2007 and 2008. It should again be noted that all samples which did not give a satisfactory result for chemical analyses would have been followed up by Environmental Health Departments to ensure public safety was protected at all times. The types of chemical analyses conducted on food samples during 2009, and the key areas where unsatisfactory results were obtained are presented in Table 4.

Table 4. Chemical analyses conducted on food samples during 2009 and the numbers of satisfactory and unsatisfactory results obtained for each.

Type of analysis*	No. satisfactory results	No. unsatisfactory results	% unsatisfactory results	Main types of failure (number of unsatisfactory results)
Constituent	22325	271	1.2	Fat above or below limit/declaration (70) Meat content above or below limit/declaration (62)
Additives	7992	65	0.8	Levels above limit/declaration (54)
Nutritional Component	2475	32	1.3	Fatty acids above or below limit (7) Sugars above or below limit (10) Vitamins below limit/declaration (6)
Undesirable Substances†	5745	21	0.4	Heavy metals above or below limit/declaration (5) Mycotoxins above limit (9)
Substitution	323	8	2.5	Meat identification (5)

* Note that each sample may be subjected to a range of tests within each type of analysis e.g. a single meat products sample tested for 3 different constituent types - meat content, fat, and gluten.

† Undesirable substances includes suites of tests for more than one parameter e.g. single sample will be tested for a range of different heavy metals or mycotoxins.

Chemical Analyses for 'Constituents' and 'Nutritional Components' are usually carried out to assess compliance with labelling and composition regulations or guidelines. These analyses categories include tests for a range of parameters including acidity, fat, protein, carbohydrate, sugars, fibre, energy, moisture, and meat content. Labelling issues resulting from unsatisfactory results for constituents and nutritional components are addressed later in this report.

The 'Additives' category includes tests for 'Flavour Enhancers', 'Colouring Matter', 'Sweeteners' and 'Preservatives'. For the purposes of this report, the RWG considered the results of sampling for colours and preservatives in foods, which are presented in a subsequent section.

Food samples were tested for the presence of a range of 'Undesirable Substances' that have the potential to pose a risk to consumer health. Only 21 of the 5745 analytical tests conducted to determine levels of 'Undesirable substances' in food samples gave an unsatisfactory result (0.4%). These included the presence of mycotoxins in rice, peanut butter and spices, unsatisfactory levels of heavy metals in mineral/spring water and asparagus, and the presence of antibiotics in milk.

Analyses for 'Substitution' include evaluating the authenticity of the product, as to whether the food is correctly described and labelled. During 2009, 8 samples failed due to identified substitution issues. These samples included meat products and take-away meals found to contain meat species which differed to those specified on the label or description.

Colours in Food

Artificial colours are added to foods commercially to enhance naturally occurring colours and mask any natural variation in colour. They also help to improve the visual appearance of some foods and promote an association between colour and flavour to the consumer.

The types and levels of colour added to food are regulated by The Food Additives (Scotland) Regulations 2009 (previously regulated by The Colours in Foods Regulations 1995). These Regulations lay down permitted colours in foods, maximum levels for permitted colours in certain foods and foods which may not contain added colour such as meat, fish and shellfish.

A total of 489 samples were analysed for levels of different colours during 2009. **Eleven of these samples were found to contain colouring above the maximum permitted level.** The types of foods which gave unsatisfactory results are shown in Table 5. A non-permitted colour (Erythrosine) was also detected in one sample of liquorice sweets.

Table 5. Food samples containing colour above the regulatory limit

Food Description	Colour detected above regulatory limit
Tikka marinade	Tartrazine
Easter marshmallows (yellow)	Tartrazine
Mixed pakora	Sunset Yellow FCF
Candy carrots	Sunset Yellow FCF
Orange jelly crystals	Sunset Yellow FCF
Spicy chicken	Ponceau 4R
Chicken pakora	Ponceau 4R
Raspberry ripple ice cream	Carmoisine
Cinnamon balls	Carmoisine
Chicken tikka masala	Allura Red, Sunset Yellow FCF, Tartazine
South Indian garlic chilli chicken	Allura Red, Ponceau 4R , Sunset Yellow FCF, Tartazine

Preservatives in food

Preservatives are added to food commercially to prolong the shelf-life of food by protecting it against deterioration caused by microorganisms; also in the case of raw meat products they prolong the characteristic bright red meat colour desired by consumers.

The types and levels of preservatives added to food are regulated by The Food Additives (Scotland) Regulations 2009 (previously regulated by The Miscellaneous Food Additives Regulations 1995).

Of the 1384 samples analysed for preservatives in 2009, 27 were found to contain preservative above the maximum permitted level. The types of foods implicated are shown in Table 6. In addition, 8 samples of bakery products were found to contain non-permitted or undeclared preservatives.

Table 6. Food samples containing permitted preservatives above the regulatory limit.

Food Description (no. of unsatisfactory samples)	Preservative detected above regulatory limit
Flavoured soft drink with sugar (4)	Benzoic Acid
Alcoholic drinks with cola (2)	Benzoic Acid
Valentine fairy cakes (1)	Sorbic Acid
Burgers and sausages (15)	Sulphur Dioxide
Bacon and gammon (5)	Nitrate as Sodium Nitrate

FOOD LABELLING

The majority of samples submitted to OCLs for chemical analysis are also assessed for compliance with The Food Labelling Regulations 1996 and other relevant legislation.

One of the FSA's strategic aims is to assist consumers to make informed choices about the food they eat by promoting best practice in the provision of information by food manufacturers. Local Authorities have an important role to play in this regard by ensuring food labelling is accurate and not misleading.

In 2009, the majority (79.7%) of unsatisfactory for chemical samples were due to labelling issues. It should be noted that a single sample can fail for a number of labelling issues.

As a result of these findings, the RWG chose to conduct a more in depth assessment of the labelling data from 2009. A total of 2147 samples, 1934 prepacked and 213 non-prepacked (loose) foods, were assessed for labelling compliance.

Of the 213 samples described as non-prepacked which were assessed for compliance with appropriate labelling regulations, 141 (66%) samples gave an unsatisfactory result. The majority of these failures were identified within the 'Meat and Meat Products' category and were due to an absent/incorrect quantitative ingredients declaration (QUID) and/or issues relating to ingredient information, similar to 2008.

Of the 1934 prepacked food samples which were assessed for compliance with appropriate labelling regulations, 938 (48%) gave an unsatisfactory result. The highest numbers of failures in pre-packed foods were identified within the 'Meat and Meat Products' and 'Prepared Dishes' categories, similar to 2008. These were also the most frequently sampled categories. The majority of failures identified within these two categories were due to an absent/incorrect 'QUID' and issues relating to ingredient information.

Conclusions

- Similar to 2008, inappropriate use of colours was predominantly detected in Indian take-away meals and ethnic confectionery.
- In 2009, 15 samples failed due to presence of sulphur dioxide preservative above the maximum regulatory level. This appears to be a recurring issue in burgers and sausages and Environmental Health Departments should strive to improve compliance in this area through appropriate education and enforcement action. It is also worth noting the excessive use of nitrate in bacon and other cured meats, which appears to be an emerging issue.

- Non-permitted or undeclared preservatives were detected in a range of bakery products, indicating that this area may merit future investigation**.**
- Similar to previous years, labelling issues were responsible for the majority of unsatisfactory reports for samples that were submitted for chemical analyses.
- 'Meat and Meat Products' and 'Prepared Dishes' were the food categories that most frequently failed labelling requirements predominantly due to issues relating to 'QUID' and ingredient information.

OVERALL CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE WORK

This is the third annual report produced by the Research Working Group using the UKFSS. It provides a broad overview of the results from Scottish Local Authority food sampling collected by 29 LAs and analysed in the Official Control Laboratory network in 2009. A number of specific issues on food safety and standards were subjected to more detailed assessment by the RWG and the findings are included in this report.

Analysis of food sampling data collected during 2009 indicated that over 13,000 samples were taken across a wide range of foodstuffs, the majority of which were found to comply with food safety and standards legislation. Whilst few samples were found to present a serious risk to human health, it is important to recognise the importance of food sampling in protecting consumer interests in relation to food safety and standards.

The RWG has continued to demonstrate the important role of UKFSS in providing data to aid the Scottish Enforcement Community in developing targeted sampling programmes. The data presented in this report has highlighted the following enforcement and surveillance work to be considered by SFELC:

- Initiatives to improve hygiene practices in retail shops selling cooked meats which are intended for direct sale to the consumer. It is proposed that this could be supported by a national survey of ACC and hygiene indicators in these products, and an investigation into how they are produced and handled.
- On-going surveillance of cooked meats and fish based sandwich fillings for levels of *Listeria monocytogenes.*
- A survey of microbiological quality of stored, pre-cooked meals (with an emphasis on cereal based dishes) in restaurants and take-aways for levels of *Bacillus cereus.*
- The detection of *Staphylococcus aureus* in a range of 'Prepared Dishes' suggests that there is a need for Environmental Health Departments to continue to promote hygienic practices by individuals involved in food preparation and handling, particularly take-away foods.
- Initiatives to address the on-going non compliance with food labelling requirements in 'Meat and Meat Products' and 'Prepared Dishes' which have been responsible for the majority of samples that failed in the samples submitted for chemical testing during 2008 and 2009. These products failed predominantly for issues relating to QUID and ingredient information.

- Similar to the findings of previous years' reports the data collected during 2009 has suggested that the use of colours above the permitted level continues to be an issue in ethnic confectionery and Indian 'Prepared Dishes' categories. This suggests that enforcement officers should continue to promote education on the use of colours in these sectors.
- In 2009 fewer samples than in 2008 failed due to presence of sulphur dioxide preservative above the maximum regulatory level (15 and 49 samples respectively). However, the findings suggest that inappropriate use of sulphur dioxide continues to be an issue in sausages and burgers. It is suggested that during Food Standards inspections emphasis should be placed on usage instruction for seasonings which normally contain sulphur dioxide and the application of this in product recipes.
- The excessive use of nitrate as sodium nitrate in bacon could be an emerging issue and should be further explored.
- The possibility of introducing nationally accepted minimum microbiological examination suites for different types of food samples with the scope to add tests to these suites when surveillance of a particular foodstuff, microorganism or contaminant is required.
- The need for microbiological testing to be more effectively targeted to risk.

These issues will be addressed as part of the examination of enforcement resources currently being undertaken by SFELC.

ANNEX A

Table A. Surveys conducted in 2009.

Survey #	Group	Survey Description	Survey Period
SF18	SFELC (SFHWG)	Microbiological and chemical quality of brine and smoked fish	October – December 2009
SF22	SFELC	Colours in cakes and confectionary products	August – October 2009
SF23	SFELC	Salt / Sodium levels in bread from craft bakeries	August – October 2009
SF24	SFELC	Microbiological quality of pre-washed salad leaves from retailers	November 2009 – March 2010
LS9	LACORS	Salt + fat, saturates and sugars study	August 2009 - October 2009
LS24	LACORS	Nutrition of nursery meals (age 3-5) and primary schools	April 2009 - September 2009
LS26	LACORS/ HPA	Large scale events - preparatory work for Olympics 2012	July 2009 – September 2009
LS27	LACORS/ HPA	Pre-packed sandwiches from institutional settings and retail premises	October 2009 – March 2010
LS28	LACORS	Minced beef - chemical	November 2009 – January 2010
IFP0910	FSA	Imported food sampling	As agreed with FSA
LB29	LBFLG	Composition of “homemade” soup from caterers	October to December 2009
LB31	LBFLG	Microbiological quality of ice cream from caterers	July to September 2009
NS19	NSFLG	Metal and plastic drink containers for Materials and Articles	April 2009 – March 2010
NS20	NSFLG	Fat and salt content of home-made soup from catering premises	October 2009 – December 2009
NS21	NSFLG	Microbiological quality of cleaning cloths in catering premises	August 2009 – October 2009
NS22	NSFLG	Fat and salt content of locally produced Aberdeen Rolls (repeat of 2006 survey) and croissants	July 2009 – September 2009
WS25	WSFLG	Listeria in Care Homes	May 2009- August 2009
WS26	WSFLG	Nutritional Value of Primary School Meals	October 2009 – December 2009
SF20	SFELC	Fat and sulphur dioxide levels in lean beef mince and steak mince	November 2008 – January 2009
SF21	SFELC	Microbiological Quality of Water from Water Coolers	November 2008 – March 2009
NS18	NSFLG	Microbiological quality of prepacked & non-prepacked ice cubes at retail and licensed premises	January – March 2009
NS19	NSFLG	Materials & Articles study of containers designed to hold drinking liquids on retail sale	April 2008 – March 2009

REFERENCES

1. HPA Guidelines for Assessing the Microbiological Safety of Ready-to-Eat Foods (2009)
2. Food Surveillance System (FSS) Annual Report (2008) - Scottish Local Authority Food Sampling for 2008
3. Food Surveillance System (FSS) Annual Report (2007) - Scottish Local Authority Food Sampling for 2007
4. EU Microbiological Criteria for Foodstuffs (EC) No 2073/2005
5. The Food Additives (Scotland) Regulations 2009
6. The Colours in Foods Regulations 1995
7. The Miscellaneous Food Additives Regulations 1995
8. Food Labelling Regulations 1996