REPORT ON FOOD SAMPLING BY DISTRICT COUNCILS IN NORTHERN IRELAND IN 2017	6th November 2018
TO: ENVIRONMENTAL SERVICES REPORT	
FOR INFORMATION	

Linkage to Council Strategy (2015-19)	
Strategic Theme	Resilient, Engaged and Health Communities
Outcome	To provide Information on Food Sampling by District Councils in Northern Ireland in 2017
Lead Officer	Food, Health & Safety and Consumer Protection Manager
Cost: (If applicable)	N/A

Background

Those who make and sell food must ensure that it is safe, of good quality, and honestly labelled. Sampling of food by Council's Food Team for microbiological examination at the NI Public Health Laboratory and chemical analysis by the Public Analyst is essential in protecting consumers from harm and being misled.

Between 1st January 2017 and 31st December 2017 there were 8160 sample details entered onto the United Kingdom Food Surveillance System (UKFSS) database from Northern Ireland and includes samples taken by Causeway Coast and Glens Borough Council.

A report on Food Sampling by District Councils in Northern Ireland 2017 has recently been published and is attached as appendix 1.

The sampling work outlined in the report is targeted towards key priority areas to protect the public and make best use of resources. It is therefore not typical of food generally and it is encouraging to see that 60% of all samples taken were satisfactory. Unsatisfactory samples results are followed up by Council that collected the sample and action can range from advice to prosecution as appropriate.

Recommendation

For Information

Food Sampling by District Councils in Northern Ireland - 2017

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Introduction

We are pleased to present the tenth report on Food Surveillance in Northern Ireland. The 2017 report shows that district councils Environmental Health Officers continue to take food samples and submit them to the Northern Ireland Public Health Laboratory (Microbiological analysis) and the Public Analyst Scientific Services Limited (Chemical analysis). This is a positive and we thank officers for continuing to sample foods and foodstuffs, enabling production of this report and helping to ensure food safety and public health is maintained.

1. Overall Microbiological and Chemical Data Trends

Between 1st January 2017 and 31st December 2017 there were 8160 samples entered onto the United Kingdom Food Surveillance System (UKFSS) database from Northern Ireland.

A breakdown of the numbers of samples taken for microbiological and chemical examination and analysis and those giving an overall satisfactory result are presented in Table 1.

Table 1. Breakdown of UKFSS sampling statistics for 2017

	Number of samples	Number of samples giving an overall satisfactory result	% Satisfactory Samples
Microbiological	6028	3883	64%
Chemical	2132	1019	48%
Total	**8160**	**4902**	**60%**

Table 1 shows overall in 2017, 60% of all samples taken were satisfactory. Figures 1 and 2 show the percentage of satisfactory and unsatisfactory results for microbiological examination and chemical analysis between 2007 and 2017.

The results indicate that the percentages of unsatisfactory results recorded in 2017 for chemical analysis and microbiological examination were (52% and 36% respectively).

Figure 1 shows that there is no significant increase or decrease in the detection of unsatisfactory microbiological contamination.

Figure 2 would indicate that there has been an increase in the number of satisfactory chemical results, comparing to 2016 figures.

It should be noted as in previous reports that the inclusion of “Borderline” microbiological results as “Unsatisfactory” has the effect of raising the overall percentage of unsatisfactory results. In addition, many of the unsatisfactory chemical analytical results arise as a result of labelling errors and not as a result of incorrect food composition.

Figure 1. Microbiological sampling results 2007-2017

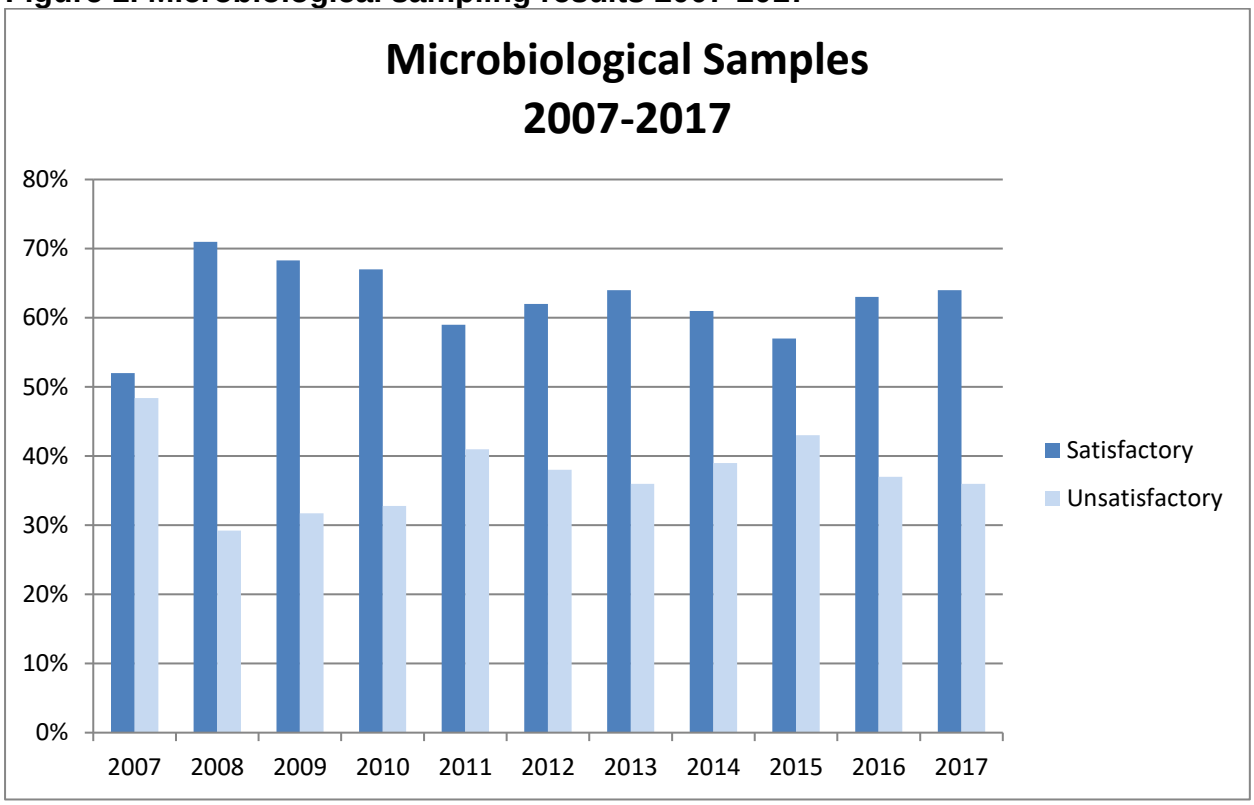

Figure 2. Chemical sampling results 2007-2017

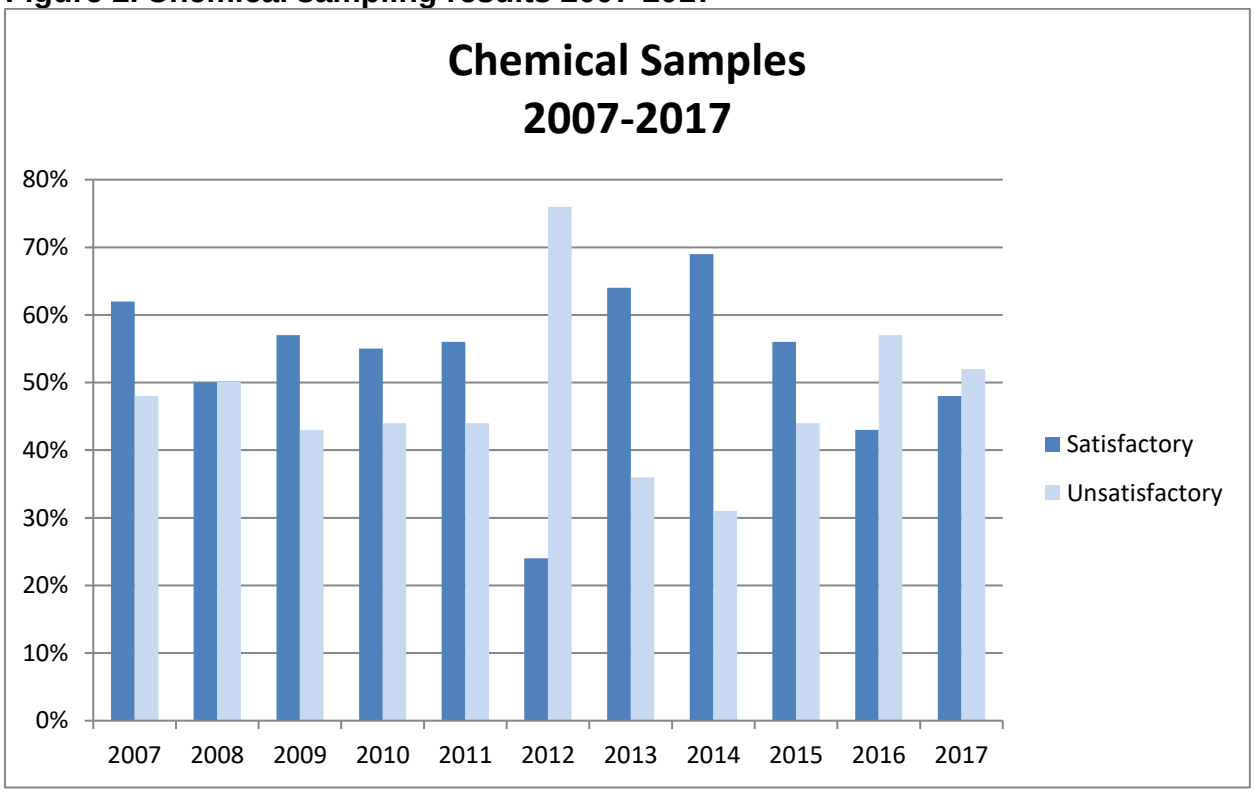

Table 2. Most sampled food categories – overall (both Microbiological and Chemical samples)

Food Category	Satisfactory	Unsatisfactory	Grand Total	% Satisfactory	% Unsatisfactory
Meat and Meat Products, Game and Poultry	1426	1313	2739	52%	48%
Fruit and Vegetables	1088	398	1486	73%	27%
Prepared Dishes	708	511	1219	58%	42%
Bakery and Cereal Products	275	172	447	62%	38%
Soups, Broths and Sauces	275	102	377	73%	27%
Dairy Products	221	131	352	63%	37%
Ice Cream and Desserts	187	129	316	59%	41%
Cakes and Confectionery	115	171	286	40%	60%
Fish and Shellfish	181	95	276	66%	34%
Egg and Egg Products	165	93	258	64%	36%
Drinks	118	63	181	65%	35%
Others	58	38	96	60%	40%
Nuts and Nut Products, Snacks	30	14	44	68%	32%
Beverages	23	3	26	88%	12%
Herbs and Spices	20	5	25	80%	20%
Foods for Particular Nutritional Uses	7	12	19	37%	63%
Additives	2	8	10	20%	80%
Materials and Articles in Contact with Food	3	0	3	100%	0%
Grand Total	**4902**	**3258**	**8160**	**60%**	**40%**

Table 2 shows that the most sampled food category was Meat and Meat Products (2739 samples), with the ‘Materials and Articles in Contact with Food’ category having the highest failure rate (100% - 3 samples out of a total of 3).

The ‘Others’ category included products like syrups, oils and fats used an ingredient and water used as an ingredient.

Table 3. Most sampled Microbiological categories

Food Category	Satisfactory	Unsatisfactory	Grand Total	% Satisfactory	% Unsatisfactory
Meat and Meat Products, Game and Poultry	1059	814	1873	57%	43%
Fruit and Vegetables	1016	358	1374	74%	26%
Prepared Dishes	590	375	965	61%	39%
Soups, Broths and Sauces	239	71	310	77%	23%
Ice Cream and Desserts	178	113	291	61%	39%
Dairy Products	175	111	286	61%	39%
Egg and Egg Products	154	91	245	63%	37%
Bakery and Cereal Products	184	54	238	77%	23%
Fish and Shellfish	97	77	174	56%	44%
Cakes and Confectionery	77	73	150	51%	49%
Drinks	52	2	54	96%	4%
Others	31	1	32	97%	3%
Nuts and Nut Products, Snacks	18	0	18	100%	0%
Herbs and Spices	8	4	12	67%	33%
Beverages	3	0	3	100%	0%
Foods for Particular Nutritional Uses	1	1	2	50%	50%
Additives	1	0	1	100%	0%
Grand Total	**3883**	**2145**	**6028**	**64%**	**36%**

Table 3 shows the food category most sampled for microbiological analysis was ‘Meat and Meat Products, Game and Poultry’ (1873 samples). The three categories with the highest failure rates were ‘Foods for Particular Nutritional Uses (50% of 2 samples) ‘Cakes and Confectionary (49% of 150 samples) and ‘Fish and Shellfish’ (44% of 174 samples).

The ‘Others’ category included products like syrups, oils and fats used an ingredient and water used as an ingredient.

Table 4. Most sampled Chemical categories

Food Category	Satisfactory	Unsatisfactory	Grand Total	% Satisfactory	% Unsatisfactory
Meat and Meat Products, Game and Poultry	367	499	866	42%	58%
Prepared Dishes	118	136	254	46%	54%
Bakery and Cereal Products	91	118	209	44%	56%
Cakes and Confectionery	38	98	136	28%	72%
Drinks	66	61	127	52%	48%
Fruit and Vegetables	72	40	112	64%	36%
Fish and Shellfish	84	18	102	82%	18%
Soups, Broths and Sauces	36	31	67	54%	46%
Dairy Products	46	20	66	70%	30%
Others	27	37	64	42%	58%
Nuts and Nut Products, Snacks	12	14	26	46%	54%
Ice Cream and Desserts	9	16	25	36%	64%
Beverages	20	3	23	87%	13%
Foods for Particular Nutritional Uses	6	11	17	35%	65%
Egg and Egg Products	11	2	13	85%	15%
Herbs and Spices	12	1	13	92%	8%
Additives	1	8	9	11%	89%
Materials and Articles in Contact with Food	3	0	3	100%	0%
Grand Total	**1019**	**1113**	**2132**	**48%**	**52%**

Table 4 shows the food category most sampled for Chemical analysis was ‘Meat and Meat Products, Game and Poultry’ (367 samples). The ‘Additives’ category had the highest failure rate (89% of 9 samples), followed by ‘Cakes and Confectionary (72% of 136 samples) and ‘Foods for Particular Nutritional Uses’ (65% of 17 samples).

The ‘Others’ category included products like syrups, oils and fats used an ingredient and water used as an ingredient.

Table 5. Most sampled Premises – overall - (both Microbiological and Chemical samples)

Premises Type	Satisfactory	Unsatisfactory	Grand Total	Satisfactory	Unsatisfactory
Restaurants and other Caterers	2660	1411	4071	65%	35%
Retailers	1072	994	2066	52%	48%
Manufacturers/processors	813	584	1397	58%	42%
Manufacturers mainly selling by retail	213	199	412	52%	48%
Distributors/Transporters	49	45	94	52%	48%
Importers/Exporters	58	8	66	88%	12%
Primary Producers	21	7	28	75%	25%
Packers	16	10	26	62%	38%
Grand Total	**4902**	**3258**	**8160**	**60%**	**40%**

Table 5 shows that the most sampled premises type was ‘Restaurants and Other Caterers’ (4071 samples). The highest failure rate was shared between ‘Manufacturers mainly selling by retail’ (48% of 412 samples), ‘Retailers’ (48% of 2066 samples) and ‘Distributors/Transporters’ (48% of 94 samples).

Table 6. Most sampled premises for Microbiological

Premises Type	Satisfactory	Unsatisfactory	Grand Total	% Satisfactory	% Unsatisfactory
Restaurants and other Caterers	2431	1265	3696	66%	34%
Retailers	822	605	1427	58%	42%
Manufacturers/processors	436	190	626	70%	30%
Manufacturers mainly selling by retail	134	75	209	64%	36%
Importers/Exporters	33	1	34	97%	3%
Distributors/Transporters	11	6	17	65%	35%
Primary Producers	15	2	17	88%	12%
Packers	1	1	2	50%	50%
Grand Total	**3883**	**2145**	**6028**	**64%**	**36%**

Table 6 shows 'Restaurants and other Caterers' accounted for 61% of microbiological samples. The category with the highest failure rate was 'Packers' (50% - one sample from a total of two) followed by 'Retailers' (42% of 1427 samples).

Table 7. Most sampled premises for Chemical

Premises Type	Satisfactory	Unsatisfactory	Grand Total	% Satisfactory	% Unsatisfactory
Manufacturers/processors	377	394	771	49%	51%
Retailers	250	389	639	39%	61%
Restaurants and other Caterers	229	146	375	61%	39%
Manufacturers mainly selling by retail	79	124	203	39%	61%
Distributors/Transporters	38	39	77	49%	51%
Importers/Exporters	25	7	32	78%	22%
Packers	15	9	24	63%	38%
Primary Producers	6	5	11	55%	45%
Grand Total	**1019**	**1113**	**2132**	**48%**	**52%**

Table 7 shows the premises most food samples were taken from for Chemical analysis was ‘Manufacturers/Processes’ (771 samples). The premises from which food samples had the highest failure rate was shared between ‘Manufacturers mainly selling by retail’ (61% of 203 samples) and ‘Retailers’ (61% of 639 samples).

2. Microbiological Sampling Data

Table 8. Pathogen table

Table 8 represents tests carried out on food samples for the presence of pathogenic micro-organisms in food.

Pathogen	Unsatisfactory/borderline foodstuffs	No. unsatisfactory samples	No. borderline samples	No. samples tested	% Satisfactory	Total Satisfactory
Salmonella	**0**	**0**	**0**	**5896**	**100%**	**5896**
Campylobacter	**0**	**0**	**0**	**300**	**100%**	**300**
E.coli 0157	**0**	**0**	**0**	**86**	**100%**	**86**
Listeria monocytogenes (enumeration)	Cooked Ham	0	2	**5404**	**99.91%**	**5399**
	Cooked Chicken Pieces	0	1			
	Coleslaw	1	0			
	Meat Filled Pastry	1	0			
	Total	**2**	**3**			
Listeria monocytogenes (detection in 25g)	None	**0**	**0**	**1311**	**100%**	**1311**
Clostridium perfringens	Egg and Egg Products	**0**	1	**4396**	**99.64%**	**4380**
	Fruit and Vegetables		5			
	Herbs and Spices		1			
	Meat and Meat Products, Game and Poultry		4			
	Prepared Dishes		2			
	Soups, Broths and Sauces		3			
	Total		**16**			

Table 8 continued

Pathogen	Unsatisfactory/borderline foodstuffs	No. unsatisfactory samples	No. borderline samples	No. samples tested	% Satisfactory	Total Satisfactory
Bacillus cereus	Bakery and Cereal Products	0	2	**4985**	**98.76%**	**4923**
	Cakes and Confectionery	0	1			
	Dairy Products	0	2			
	Egg and Egg Products	0	2			
	Fish and Shellfish	0	3			
	Fruit and Vegetables	0	16			
	Ice Cream and Desserts	0	1			
	Meat and Meat Products, Game and Poultry	2	14			
	Prepared Dishes	1	13			
	Soups, Broths and Sauces	1	4			
	Total	**4**	**58**			
Staphylococcus aureus	Bakery and Cereal Products	1	8	**5788**	**95.91%**	**5551**
	Cakes and Confectionery	0	3			
	Dairy Products	11	18			
	Egg and Egg Products	1	4			
	Fish and Shellfish	0	9			
	Fruit and Vegetables	1	65			
	Ice Cream and Desserts	0	2			
	Meat and Meat Products, Game and Poultry	1	84			
	Nuts and Nut Products, Snacks	0	0			
	Prepared Dishes	0	29			
	Total	**15**	**222**			

Salmonella

Salmonella was not detected in any food samples submitted in 2017.

Campylobacter

Campylobacter was not detected in any of the samples that tested for it.

Listeria monocytogenes

There were two unsatisfactory results for Listeria Monocytogenes. This was in coleslaw and a meat filled pastry.

E.coli O157

It is reassuring to see that E.coli O157 was not found in any of the 86 samples tested.

Table 9. Hygiene Indicators

Bacteria	Unsatisfactory/borderline foodstuffs	No. unsatisfactory samples	No. borderline samples	No. samples tested	% Satisfactory
Enterobacteriaceae	Total	**234**	**607**	**4618**	**81.79%**
	Bakery and Cereal Products	15	22		
	Cakes and Confectionery	9	22		
	Dairy Products	5	30		
	Egg and Egg Products	6	36		
	Fish and Shellfish	10	28		
	Fruit and Vegetables	4	14		
	Ice Cream and Desserts	8	41		
	Meat and Meat Products, Game and Poultry	134	277		
	Others	0	1		
	Prepared Dishes	43	128		
	Soups, Broths and Sauces	0	8		
E. coli (non-pathogenic)	**Total**	**75**	**82**	**5761**	**97.27%**
	Bakery and Cereal Products	4	4		
	Cakes and Confectionery	8	4		
	Dairy Products	10	5		
	Egg and Egg Products	1	3		
	Fish and Shellfish	12	1		
	Fruit and Vegetables	10	29		
	Ice Cream and Desserts	2	2		
	Meat and Meat Products, Game and Poultry	17	19		
	Prepared Dishes	10	13		
	Soups, Broths and Sauces	1	2		
***Listeria* species (enumeration)**	**Total**	**16**	**15**	**5404**	**99.43%**
	Dairy	3	0		
	Egg and Egg Products	1	0		
	Fish and Shellfish	0	1		
	Meat and Meat Products, Game and Poultry	3	9		
	Prepared Dishes	9	5		
***Listeria* species (detection in 25g)**	**Total**	**0**	**3**	**1311**	**99.77%**
	Meat and Meat Products, Game and Poultry	0	3		

Hygiene indicator organisms such as *Enterobacteriaceae*, non-pathogenic E.coli and Listeria species (not *Listeria monocytogenes*) are used to assess issues relating to process control such as the control of raw materials, undercooking and cross contamination. These indicators allow EHOs/sampling officers to focus on potential areas for concern in the production and handling of food.

3. Microbiological Recommendations

It is reassuring to see there were no detections for Salmonella, Campylobacter and E.coli O157 in 2017 samples. Continued sampling for pathogens will help ensure the requirement that food businesses are providing consumers with safe food. It is important to sample products and test for pathogens. Sampling should continue and where issues arise, these will receive the necessary follow up from the Environmental Health Department and where appropriate, Food Standards Agency.

District Councils should consider the data in the above tables when setting new sampling plans and targeting food groups.

4. Chemical Sampling

Data categorised as chemical sampling covers a wide range of analysis types including the presence of contaminants, nutritional constituents, additives, substitution and undesirable substances. The majority of samples submitted for chemical analysis are also assessed for compliance with The Food Information Regulations (Northern Ireland) 2014 as well as other relevant legislation which includes labelling requirements. As each sample is tested for a range of labelling and chemical testing issues, each category of analyses is associated with a number of different results. It should be noted that unsatisfactory results are defined as those which fail to comply with guideline values as well as those which are found to be in breach of legislative standards, therefore appropriate follow-up will not involve enforcement in all cases.

Meat/Fish Substitution and Speciation

Table 10. Summary of failures for meat substitution tests

	Present Not Permitted	Grand Total
Bovine species (semi quant)	**10**	**10**
Lamb Mince	2	2
Pork Sausages	6	6
Thick Pork Sausages	2	2
Chicken species (semi quant)	**2**	**2**
Pork Sausages	2	2
Ovine species (semi quant)	**20**	**20**
Pork And Leek Sausages	2	2
Pork Sausages	14	14
Thick Pork Sausages	4	4
Porcine species (semi quant)	**4**	**4**
Steak Mince	4	4
Grand Total	**36**	**36**

Meat substitution

Samples are checked using a semi-quantitative PCR based DNA test, for either 5 or 7 target species. Traces levels (<1.0%) of DNA from “Foreign” meat species (relative to

total DNA) may be tolerable as being due to unavoidable cross contamination, however higher levels in (for example) minced beef would be indicative of possible substitution (For example mincing a mixture of meats, and selling it as “beef”).

Regarding meat products, UK Regulations require Pork sausages and Pork burgers to contain only pork. Whilst the use of other species of meat in most other meat products (e.g. “Beef sausages”) is not prohibited, the proportion of each meat used must be stated, and if the proportion of a second meat was sufficiently high to partially characterise the product then that has implications for the name/description of the food.

The failures found highlight the fact that some manufacturers are not respecting existing Regulations.

Use of additives in food

Table 11. Food samples containing colours either above the regulatory limit or not permitted

Colour Tested and Food	Above Limit/Declaration/Guideline	Present Not Permitted	Grand Total
Allura Red	**4**	**0**	**4**
Red Velvet Cupcakes	2	0	2
Red Velvet Loaf	2	0	2
Ponceau 4R	**0**	**2**	**2**
Chicken Tikka Masala	0	2	2
Quinoline Yellow	**2**	**0**	**2**
Yellow Sugar Strands	2		2
Sunset Yellow FCF	**0**	**2**	**2**
Chicken Tikka Masala	0	2	2
Grand Total	**6**	**4**	**10**

Colours

The use of certain water soluble artificial food colours has been restricted, following a report from the European Food Safety Authority (EFSA), which raised concerns over the safety of metabolites of those colours and recommended reducing the exposure of consumers to them. As a result, the food additives Regulation (EC) No 1333/2008 was

amended, so for example Colours E124 and E110 may no longer be used in sauces, though they can still be legitimately used in some other categories of foods.

The failures found highlight the fact that not all food businesses have taken account of these legislative changes.

Table 12. Food samples containing preservatives either not permitted or above the regulatory limit

Sulphur Dioxide	Above Limit/Declaration/Guideline	Present Not Permitted	Grand Total
Beef - Fresh	0	2	2
Burgers	18	10	28
Fruit Pie Fillings	2	0	2
Mince - "Standard" Beef	0	6	6
Mince - Lean Beef	0	4	4
Sausagemeat - Beef	4	0	4
Sausages - Beef	6	0	6
Sausages - Pork	4	0	4
Grand Total	**34**	**22**	**56**

Preservatives

Sulphur dioxide is a permitted preservative; it is also one of the allergens included in Annex II of Regulation (EU) 1169/2011.

Regarding meat products, there is a maximum limit set of 450 mg/kg for both burger meat and sausages by Regulation (EC) No 1333/2008. Adding a higher level than is permitted is likely to result in an extended shelf life, by masking deteriorating quality, leading to businesses gaining an unfair advantage to the detriment of consumers. There is also an increased risk of the additive not “cooking out” prior to the food being consumed, thus exposing consumers to an increased risk of an allergenic reaction.

It should also be noted that in the case of burgers, the presence of this preservative is only permitted if the burger meat has a minimum vegetable or cereal content of 4%. Burgers made using only beef and seasoning may not contain it.

Sulphur dioxide is also used legitimately to present “browning” of peeled vegetables and fruits. This use is also subject to maximum permitted limits, and products must be appropriately labelled, taking into account also the labelling rules for allergenic ingredients.

Other issues

Plastics food packaging (migration formaldehyde or PAA’s)

No samples were received to the Laboratory in 2017 to be tested for the above.

Honey (adulteration/substitution)

There were 96 samples of honey received. Only one sample was unsatisfactory due to the product not displaying any durability information.

Mycotoxins (aflatoxins/ochratoxin A)

There were 166 samples submitted and tested for Aflatoxins and Ochratoxin A. None of these samples were report as unsatisfactory.

3-MCPD

There were no samples received that required testing for 3-MCPD.

5. Recommendations for Chemical Standards

It is recommended that current levels of sampling for both surveillance and enforcement should be at least maintained. A large proportion of the sample submitted currently “fail” for various reasons. Continued economic pressures on both food businesses and consumers could result in a spiralling down of compliance rates unless sufficient resource is devoted both surveillance / enforcement sampling and advice to businesses.

6. Veterinary residues in food of animal origin

Residue Surveillance

European law requires all Member States to monitor residues of veterinary drugs and prohibited substances in food products of animal origin. This is implemented in the UK by the National Residues Control Plan (NRCP). The number and type of samples taken is determined on a UK wide basis according to output, with NI taking a proportionate share of the samples. The Meat Inspection Scheme also operates in Northern Ireland on a statutory basis. This scheme focuses on testing suspect animals in abattoirs, mainly cattle, for a range of antibiotics and hormones. DEARA inspectors select animals for sampling on the basis of treatment history, information received, and ante and post mortem inspection.

In addition to statutory testing, a risk based programme (RISK) which covers sheep, cattle, pigs, poultry, eggs and milk is undertaken. EU law provides Member States with the flexibility to undertake additional discretionary testing in situations where further investigation is necessary or a survey is considered appropriate.

A non-compliant result from any of the testing schemes will trigger follow-up action which may include on-farm investigations and sampling, and possible targeted sampling of animals from the farm in question when presented for slaughter. For the purposes of this report non-compliant follow up samples are reported under the Meat Inspection section. Compliance with EU residues surveillance legislation is an essential requirement for the export of Northern Ireland produce. Both domestic and export markets increasingly demand high quality products, with safety as a key element. An efficient and effective residues surveillance programme is vital in meeting this requirement. The additional testing makes an important contribution to product safety and provides added assurance to existing and potential customers.

Commentary on non-compliant results for 2017

1. National Surveillance Scheme
2. Meat Inspection Scheme
3. RISK Scheme

1. NATIONAL SURVEILLANCE SCHEME

Samples collected under the UK National Surveillance Scheme may be taken at abattoirs or on-farm, and provide retrospective surveillance data. As a consequence, carcases are not detained pending the laboratory result.

a) Prohibited and unauthorised substances

1. A number of samples tested non-compliant for a range of illegal growth-promoting hormones and for thiouracil, a thyrostat that promotes growth by increasing water retention. However, all these compounds can occur naturally because of dietary, pregnancy and injury related factors, etc. In all cases no evidence of misuse was uncovered.

2. **Ivermectin**. This is a broad-spectrum antiparasitic agent however it is not authorised for use in animals producing milk for human consumption or in non-lactating dairy cows, including pregnant heifers, within 60 days of calving. On farm investigation revealed that three treated heifers calved very early and that milk entered the bulk tank within 10 days of treatment.

3. **Florfenicol.** This antibiotic is licensed for use in cattle however it is not authorised for use in lactating animals producing milk for human consumption or in pregnant animals intended to produce milk for human consumption. On farm investigation identified that in two of the three cases pregnant animals had been treated however no explanation was identified for the third case.

b) Veterinary medicines

1. **Oxytetracycline.** This is an antibiotic that is licensed for use in a wide range of animal species. Residues of oxytetracycline at almost twice the Maximum Residue Limits were found in an ovine kidney sample. Subsequent investigation showed that the

animal had been purchased 3 days prior to slaughter by the herdkeeper. It was suggested that treatment had occurred prior to purchase.

2. **Clorsulon.** This is a narrow spectrum flukicide used in combination with ivermectin. Residues, in excess of the Maximum Residue Limits, were found in a bovine milk sample. On farm investigation identified treatment of pregnant heifers, which is permissible with the formulation used. Treatment should however be more than 60 days prior to calving and it was suggested that a heifer may have calved early and as a result milk had entered the bulk tank less than 60 day after treatment.

3. **Nitroxynil.** This is an antiparasitic drug licensed for use in cattle & sheep, which is active against immature and adult liver fluke and some gastro-intestinal roundworms. Residues were detected in one bovine and one ovine liver sample in excess of the Maximum Residue Limits. On farm investigation provided no explanation for non-compliance in either case.

4. **Closantel.** This is an antiparasitic drug, active against liver fluke, that is licensed for use in cattle and sheep. Residues were detected in two ovine liver samples and one bovine milk sample in excess of the Maximum Residue Limits. On-farm investigation of the ovine samples provided no explanation - in one instance the flock keeper had purchased the animal only a short time prior to slaughter. Investigation of the violative bovine milk sample showed that the herdkeeper had not complied with the manufacturer's recommended pre-calving withdrawal time.

2. MEAT INSPECTION SCHEME

Under this Scheme, the carcase is detained at sampling, and excluded from the food chain if a non-compliant result is obtained. Also included in this section of the report are samples taken as follow-up to non-compliance in any scheme

a) Prohibited and unauthorised substances

1. **Tildipirosin.** Tildipirosin is a semisynthetic derivative of the naturally occurring macrolide antibiotic tylosin. Tildipirosin is intended for parenteral treatment of respiratory disease in cattle and swine; it is not however authorised for use in sheep. Three sheep, from a single flock were found to contain residues of tildipirosin in kidney

samples (these were follow up samples to the RISK non-compliant sample) in excess of the Maximum Residue Limits. On farm investigation found that tildipirosin had been used under the cascade to treat contagious ovine digital dermatitis.

2. **Florfenicol.** This antibiotic is licensed for use in cattle however it is not authorised for use in lactating animals producing milk for human consumption or in pregnant animals intended to produce milk for human consumption. In total, seven follow up milk samples were found to contain residues of the drug. Investigation showed early calving of pregnant animals and unauthorised treatment of lactating dairy cattle as issues. In two cases no explanation for the residues was identified.

b) Veterinary medicines

1. **Closantel**. This is an antiparasitic drug, active against liver fluke, that is licensed for use in cattle and sheep. Residues were detected in three ovine liver samples in excess of the Maximum Residue Limits. On- farm investigation provided no explanation for the residues.

2. **Marbofloxacin.** This is a fluoroquinolone antibiotic. Residues of marbofloxacin were found in the kidney of four bovine animals in excess of the Maximum Residue Limits. Investigation revealed no explanation in two cases while failure to adhere to manufacturer's guidance gave rise to the residues in the remaining cases

3. **Penicillin G.** This is a narrow spectrum β-Lactam antibiotic that is licensed for use in a wide range of animal species. Residues of penicillin G above the Maximum Residue Limits were found in five cattle kidney samples. On-farm investigation failed to adequately explain the cause of the residues in three cases while failure to follow the manufacturer's instructions with respect to dose and withdrawal were identified as the likely cause in two cases.

4. **Nitroxynil.** This is an antiparasitic drug licensed for use in cattle & sheep, which is active against immature and adult liver fluke and some gastro-intestinal roundworms. Residues were detected in two cattle liver samples and one ovine liver sample in excess of the Maximum Residue Limits. On- farm investigation provided no explanation for the residues.

5. **Amoxicillin.** This is a β-Lactam antibiotic that is licensed for use in a wide range of animal species. Residues above the Maximum Residue Limits were found in two bovine kidney samples. On- farm investigation provided no explanation in one instance while, in the other, the herd keeper failed to withdraw the animal correctly.

6. **Dihydrostreptomycin**. This is an aminoglycoside antibiotic licensed for use in cattle, sheep and pigs. Residues of dihydrostreptomycin above the Maximum Residue Limits were found in the kidney of two bovines. On farm investigation revealed that in one instance the withdrawal period had not been completed prior to slaughter. In the second case the animal had been treated with the product however there was no explanation for the violative residues.

7. **Oxytetracycline.** This is an antibiotic that is licensed for use in a wide range of animal species. Residues of oxytetracycline at over twice the Maximum Residue Limit were found in a bovine muscle sample. On- farm investigation provided no explanation for the residues.

8. **Ivermectin.** This is a broad-spectrum antiparasitic agent. Residues were detected in a cattle liver sample in excess of the Maximum Residue Limits. On- farm investigation provided no explanation for the residues.

9. **Florfenicol.** This is broad spectrum antibiotic which has been shown to be highly effective against respiratory disease in cattle. Four bovine kidney samples which contained residues up to six times in excess of the Maximum Residue Limits were detected (one also contained violative tulathromycin concentrations). On farm investigation found that in two of the violations the herd keepers failed to follow the manufacturer's instructions for use. In the remaining two cases no cause was identified.

10. **Tulathromycin.** This is a macrolide antibiotic used to treat respiratory disease in cattle and swine respiratory disease in pigs. Residues of tulathromycin in excess of the Maximum Residue Limits were found in a bovine kidney (which also contained violative florfenicol residues). On- farm investigation showed use of the products but provided no explanation for the residues.

3. RISK

The RISK scheme samples targets cattle, sheep, pigs, poultry, eggs and milk and is designed to provide risk-based surveillance data. The RISK scheme samples are taken at abattoirs (sheep, cattle, pig and poultry samples) while milk samples are taken from bulk tanks on farm and egg samples from packing stations. Non-compliant samples trigger follow up investigations and further sampling.

a) Prohibited and unauthorised substances

1. **Phenylbutazone.** This non-steroidal anti-inflammatory painkiller is licensed only for use in horses that are not intended to be slaughtered for human consumption. It is not licensed for use in cattle. Residues of phenylbutazone were detected in a bovine plasma sample. On-farm investigation showed that there were nine horses on farm one of which had been treated with “bute” a number of weeks previous to this sample being taken. It is possible therefore, that the residues detected may have resulted from cross contamination.

2. **Florfenicol.** This antibiotic is licensed for use in cattle however it is not authorised for use in lactating animals producing milk for human consumption or in pregnant animals intended to produce milk for human consumption. In total five milk samples were found to contain florfenicol. On farm investigations found that reasons for residues ranged from unexplained to the deliberate treatment of pregnant or lactating cattle

3. **Tildipirosin**. This is a semisynthetic derivative of the naturally occurring macrolide antibiotic tylosin. Tildipirosin is intended for parenteral treatment of respiratory disease in cattle and swine; it is not however authorised for use in sheep. Three sheep, from a single flock were found to contain residues of tildipirosin in kidney samples. On farm investigation found that tildipirosin had been used under the cascade to treat contagious ovine digital dermatitis.

b) Veterinary medicines

1. **Closantel**. This is an antiparasitic drug, active against liver fluke, that is licensed for use in cattle and sheep. Residues were detected in five ovine and one bovine liver

samples in excess of the Maximum Residue Limits. On- farm investigation provided no explanation for the residues. In four of the five sheep cases the animal had been purchased only days before slaughter.

2. **Fenbendazole**. This is a broad spectrum anthelmintic for the treatment of cattle and sheep. Residues were detected in two sheep in excess of the Maximum Residue Limits. On- farm investigation showed use of fendbendazole containing products but provided no explanation for the residues.

3. **Albendazole.** This is a broad spectrum anthelmintic effective against gastrointestinal roundworms, lungworms, tapeworms and adult liver fluke in cattle and sheep. Residues were detected in one ovine liver sample. On farm investigation provided evidence of the use of an albendazole containing product but no explanation for the residues.

3. **Nitroxinyl.** This is an antiparasitic drug licensed for use in cattle and sheep, which is active against immature and adult liver fluke and some gastro-intestinal roundworms. Residues were detected in one bovine liver in excess of the Maximum Residue Limits. On- farm investigation showed use of a nitroxinyl containing product but provided no explanation for the residues.

4. **Ivermectin.** This is a broad-spectrum antiparasitic agent. Residues were detected in a cattle liver sample in excess of the Maximum Residue Limit. On- farm investigation showed use of an ivermectin containing product but provided no explanation for the residues.

4. **Cefalonium**. This is an antibiotic with broad spectrum activity against both Gram-positive and Gram-negative bacteria. Residues greater than twice the Maximum Residue Limits were detected in one bovine milk sample. On- farm investigation provided no explanation for the residues.

5. **Penicillin G**. This is a narrow spectrum β-Lactam antibiotic that is licensed for use in a wide range of animal species. Residues of penicillin G above the Maximum Residue Limits were found in one bovine milk sample. On-farm investigation failed to adequately explain the cause of these residues.

7. Acknowledgements

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