

Total Diet Study of metals and other elements in food

Report for the UK Food Standards Agency (FS102081)

The Food and Environment Research Agency
Sand Hutton
York
YO41 1LZ
UK

Tel: +44(0)1904 46 2000

Web: www.fera.defra.gov.uk

Email: foodanalysis@fera.gsi.gov.uk / info@fera.gsi.gov.uk

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Authors: M. Baxter and N. Brereton

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Client: Food Standards Agency,
Aviation House,
125 Kingsway,
London, WC2B 6NH

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Principal workers: N. Brereton, M. Baxter, M. Walls, T. Neal, C. Richards, A. Grieve, N. Cox, J. Dexter, A. Duffy, E. Simpson, C. Chadwick, S. Marsden, and M. Wilderspin,

Distribution: 1. G. Shears, FSA
2. N. Brereton, Fera
3. E. Bradley, Fera



Summary

3312 retail food samples belonging to 138 food categories were collected by HallMark Meat Hygiene Ltd from 24 locations around the UK. Once received at Fera, samples were prepared as for consumption and combined into 138 food categories and then 28 food groups, according to a protocol provided by the FSA.

All categories and groups, totalling 162 samples (as 4 were 'single category groups'), were analysed for aluminium, antimony, total arsenic, inorganic arsenic, barium, bismuth, cadmium, chromium, copper, germanium, indium, iodine, lead, manganese, mercury, molybdenum, nickel, palladium, platinum, rhodium, ruthenium, selenium, strontium, thallium, tin and zinc using inductively coupled plasma-mass spectrometry (ICP-MS).

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Abbreviations

EFSA	European Food Safety Authority
ICP-MS	inductively coupled plasma-mass spectrometry
LoD	limit of detection
LoQ	limit of quantitation
QA	quality assurance
QC	quality control
UKAS	United Kingdom Accreditation Service

1. Introduction

The UK total diet study (TDS) is performed on a regular basis to enable the FSA to (a) calculate up to date background exposure to metals and other elements from the whole diet and (b) determine trends in exposure. The last TDS on metals was carried out in 2006, so a new study is now due to update the FSA with more current data.

The key principle of a TDS is that it is representative of the whole diet. It is different from many surveys in that foods are prepared as if for consumption (rather than being analysed as sold), before being pooled into groups prior to analysis. This TDS involved the purchase of 24 retail samples (one from each of the identified local authorities) for each of the 138 categories of foods established by the FSA (3312 individual samples in total).

The relative proportion of categories within a group (i.e. the amount of each category making up the pooled group sample) reflects its importance in the average UK household diet. This is based on three previous years of food purchase data from the Family Food Survey (previously the National Food Survey).

Foods are grouped so that commodities known to be susceptible to contamination (e.g. offal, fish) are kept separate, as are foods that are consumed in large quantities (e.g. bread, potatoes, milk).

Compared to the 2006 study, the 2014 TDS contains 17 additional categories and 5 additional groups. Also in this study, the categories have been analysed separately as well as the groups. This approach will (a) provide much more specific data on metal concentrations at the food category level and food group level, (b) allow the FSA to refine exposure assessments for each food category, (c) allow the FSA to carry out more bespoke exposure assessments for high consumers of certain foods groups and (d) help identify any 'hotspots' in particular food categories.

2. Methodology

2.1 Sample preparation

Food and drink samples were collected by Hall Mark Meat Hygiene Ltd, Gloucestershire from various retailers based in 24 different locations in the UK (as detailed in the sampling contractors report) and sent to Fera for analysis. Upon receipt, samples were checked against HallMark's sample list. Frozen or shelf-stable samples were placed into appropriate storage whilst highly perishable samples were refrigerated and prepared within 3 days of receipt.

The samples were prepared, as if for consumption, following instructions supplied by the FSA. Where appropriate, this involved cooking and/or discarding inedible portions. The instructions were designed to reflect consumer practices and keep in line with EFSA's guidance on TDS design (EFSA Journal 2011; 9(11):2450). Commonly available kitchen utensils and equipment were used in the cooking and preparation process, including stainless steel pans and knives, Pyrex dishes and steel baking trays. Where water was required to cook or prepare samples (e.g. boiling vegetables, stewing meat or preparing drinks), potable tap water was used rather than deionised water. Table salt was added to the water when boiling certain vegetables and plain flour and vegetable oil was used to coat and fry certain food types. The FSA preparation instruction sheets are shown in Annex 1 of this report.

Prepared samples were homogenised using a Buchi B-400 mixer or a Robot Coupe food processor and equal quantity sub-samples were combined to make 138 food categories. 28 food groups were then created by combining specific quantities of each category according to their proportion in the diet. The compositing procedure was supplied by FSA and can be found in Annex 2 of this report. Each group sample was homogenised separately and stored along with the categories at -20°C until analysis. All category and group composites were assigned a unique LIMS code. Additional sub-samples were prepared to be passed on for other tests (acrylamide at Premier Analytical Services and mycotoxins at Fera).

2.2 Multi-element analysis

All analytical methods used in the survey were UKAS-accredited (ISO17025). To minimize background contribution, deionized (18.2 MΩ cm) water, analytical grade reagents and acid cleaned plasticware were used throughout.

An aliquot (0.5 g dry material or up to 3 g fresh material) of each sample was weighed into a test tube and concentrated nitric/hydrochloric acid mixture added to each tube (5 mL, 4:1 ratio). The sample was then solubilised under high temperature and pressure using a single reaction chamber microwave digester system (UltraWAVE, Milestone). The digest solutions were cooled, transferred into polystyrene test tubes and made up to 10 mL with deionised water.

Each digest solution was diluted a further 5-fold with dilute acid (nitric/hydrochloric acid 1.0/0.5 %v/v) containing yttrium and holmium as internal standards. The solutions were measured on an Agilent 7700x ICP-MS. Calibration standards were prepared using the same acid composition from commercially available element standard solutions to give an appropriate concentration range. ICP-MS operating conditions are shown in Table 1.

2.3 Iodine analysis

An aliquot (0.5 g dry material or up to 3 g fresh material) of each sample was weighed into a test tube. Deionised water was added to dry samples and fresh samples had proportional amounts of water added to adjust all volumes to approximately 3 mL. An aliquot (2 mL) of enzyme solution containing pancreatin (1.5 %w/v) and alpha-amylase (0.05 %w/v) was added to each test tube and heated at 37 °C overnight.

An aliquot of tetramethylammonium hydroxide (TMAH) solution (50 %v/v, 2 mL) was added and the contents vortex mixed. The tubes were heated at 80 °C, in a heater block, for 4 hours to leach iodine from the sample matrix. When cool, the digests were made up to 10 mL with deionised water.

Each digest solution was diluted a further 5 fold with dilute sodium hydroxide solution (0.1 %) containing antimony and tellurium as internal standards and centrifuged (3,000 rpm for 30 min) prior to analysis. The solutions were analysed using an Agilent 7700x ICP-MS. Calibration standards were prepared using sodium hydroxide solution and potassium iodate to give an appropriate concentration range. ICP-MS operating conditions are shown in Table 1.

2.4 Inorganic arsenic analysis

The method used was based on that developed by Munoz et al.^[2] An aliquot (0.25 g or 1 mL liquid) of each sample was weighed into centrifuge tubes. Concentrated hydrochloric acid (10 mL) was added to each sample, mixed and left to stand overnight. Hydrobromic acid (1 mL) and hydrazinium sulphate (0.5 mL) were then added to each tube and mixed prior to shaking/extraction with chloroform (5 mL). The solutions were centrifuged (6,000 rpm for 15 min) and the lower chloroform phase transferred to a new tube. This extraction procedure was repeated twice, collecting and combining the chloroform extracts each time. The chloroform extracts were centrifuged (6,000 rpm for 5 min) for a final time to allow any residual acid to be removed and then the extracts filtered (0.45 µm PTFE).

The arsenic was back-extracted by adding dilute hydrochloric acid (4.8 mL, 1 M) to each tube, shaking, then centrifuging (6,000 rpm for 15 min) and transferring the acid layer to a 10 mL volumetric flask. This process was repeated, the second extract added to the first, and the volume made up to mark with dilute hydrochloric acid (1 M).

Seven calibration standards were prepared in dilute hydrochloric acid (1 M) from a commercially available, NIST traceable, arsenic stock solution (1000 mg/L). The calibration covered a range from 100 ng/L to 100 µg/L. Gallium and rhodium were added to all solutions as internal standard prior to measurement using an Agilent 7700x ICP-MS. ICP-MS operating conditions are shown in Table 1.

3. Quality Procedures

A 10 % audit (in duplicate) was performed within the study. Each analytical batch contained a minimum of 3 procedural blanks, a spiked sample (for recovery estimate purposes) and reference materials (certified and/or in-house). UKAS-accredited QA/QC criteria are summarised below.

3.1 LoD and LoQ

The LoD was defined as three times the standard deviation of the signal from reagent blanks (taken through the entire analytical procedure) when subsequently corrected for sample weight and dilution. The LoQ was defined as ten times the standard

deviation of the signal from reagent blanks (taken through the entire analytical procedure) when subsequently corrected for sample weight and dilution.

3.2 Instrument stability

Analyses included re-measurement of a calibration standard at regular intervals during the analytical run. To pass this check, the results for the re-measured standard had to be within ± 20 % of the initial value.

3.3 Spike recovery

Data were accepted if the recovery of spike for each analyte was within 80 to 120 %.

Spike quantities for each element were as follows:

Al, Mn, Zn, Sn at 11 μg

Cr, Ni, Cu, Ge, As, Se, Sr, Mo, Ru, Rh, Pd, Cd, In, Sn, Sb, Ba, Pt, Tl, Pb, Bi at 1 μg

iAs, Hg at 0.1 μg

3.4 Reference material data

Accepted results had to be within the certified range, or ± 25 % of the quoted value, whichever was greater. Where indicative values were shown on certificates, measured concentrations had to be within a factor of 2 of the quoted value. Data were accepted if results for the majority of reference materials passed the criteria above.

3.5 Replicate agreement

Replicate values for a given sample had to have a relative standard deviation ≤ 20 % or a standard deviation of $\leq \text{LoQ}$, whichever was greater.

4. Results

Table 2 shows the QA/QC data obtained during this study and Table 3 presents the LoDs/LoQs and estimated measurement uncertainty. LoDs/LoQs vary depending on the weight of sample taken for analysis. Table 4 presents z-scores from Fera's participation in FAPAS proficiency testing during the study.

The results of the survey are reported in Tables 5 to 29. All reported data satisfied the QA/QC criteria described in section 3 of this report. Element concentrations that

are above the LoD but below the LoQ are pre-fixed with '~' to indicate that they are semi-quantitative results.

5. References

2. Munoz O., Velez D., and Montoro R., 1999 Optimization of the solubilization, extraction and determination of inorganic arsenic [As(iii) + As(v)] in seafood products by acid digestion, solvent extraction and hydride generation atomic absorption spectrometry. Analyst, 124, 601-607

Table 1. ICP-MS operating conditions

Parameter	Agilent 7700x			
ICP Power (W)	1550			
Nebuliser gas flow rate (L/min)	1.05			
Plasma mode	General Purpose (GP)			
Tuning	Autotune*			
Nebuliser type	Glass Concentric			
Interface cones	Nickel			
Spray chamber temp (°C)	2			
Peri-pump speed (rpm)	0.1			
MS Acquisition setting	Single point, peak hopping			
<u>Cell mode</u>	<u>Multi-element</u>	<u>Inorganic As</u>	<u>Iodine</u>	
No-gas	²⁷ Al, ⁸⁸ Sr, ⁹⁵ Mo, ¹⁰¹ Ru, ¹⁰³ Rh, ¹⁰⁵ Pd, ¹¹¹ Cd, ¹¹⁵ In, ¹¹⁸ Sn, ¹²¹ Sb, ¹³⁷ Ba, ¹⁹⁵ Pt, ²⁰¹ Hg, ²⁰⁵ Tl, ²⁰⁸ Pb, ²⁰⁹ Bi		¹²⁷ I	
Helium	²⁷ Al, ⁵² Cr, ⁵⁵ Mn, ⁵⁶ Fe, ⁶⁰ Ni, ⁶³ Cu, ⁶⁶ Zn, ⁷² Ge, ⁷⁵ As			
'High Energy' Helium	⁷⁸ Se	⁷⁵ As		
Internal standards	⁸⁹ Y, ¹⁶⁵ Ho	⁶⁹ Ga, ¹⁰³ Rh	¹²¹ Sb, ¹²⁸ Te	

* Instrument driven optimisation to attain "Robust conditions". These relate to the levels of oxide (~ 1 %) and double charged species (< 1.5 %) present in the plasma.

Table 2. QA/QC data obtained during the survey (µg/kg)

Reference		Al	Cr	Mn	Ni	Cu	Zn	As	iAs	Se	Sr	Mo	Cd	Sn	Sb	I	Ba	Hg	Tl	Pb
	Rec. [%]	101	98	100	98	99	98	99	76	98	100	99	99	103	98	102	98	96	90	94
DORM-4	Cert. value	-	1870	-	1360	15900	45700	6800		3560	-	-	306	56	-		-	410	-	416
Fish protein	Uncertainty		±160		±220	±900	±3200	±640		±340			±15	±10				±55		±53
	Our value	1350000	1820	2710	1160	13000	46800	5780		3180	8370	263	267	~72	9		4490	406	~12	366
NIST 1547	Cert. value	249000	~1000	98000	690	3700	17900	60		120	53000	60	26	<200	~20		124000	31	-	870
Peach leaves	Uncertainty	±8000		±3000	±90	±400	±400	±18		±9	±4000	±8	±3				±4000	±7		±30
	Our value	221000	1010	84600	553	2950	16100	244		695	48200	~42	24	~103	20		104000	32	~16	715
NIST 1548a	Cert. value	72400	-	5750	369	2320	24600	200		245	2930	260	35	17200	~9		1100	~5	-	44
Total diet	Uncertainty	±1520		±170	±23	±160	±1790	±10		±28		±17	±2	±2570			±100			±9
	Our value	66100	~80	5120	315	1960	22000	176		~211	2690	222	31	14250	8		955	~3	<8	48
NIST 1549	Cert. value	~2000	3	260	-	700	46100	~1.9		110	-	~340	1	<20	~0.27	3380	-	0.3	-	19
Non-fat milk powder	Uncertainty		±0.7	±60		±100	±2200			±10			±0.2			±20		±0.2		±3
	Our value	<200	<80	210	<80	500	42500	<12		~104	3180	302	1	<40	<2	3430	752	<2	<8	~21
INCT-OBT-5	Cert. value	1980000	~6300	180000	8500	10100	52400	668		-	105000	414	2640	-	76		67400	21	~51	2010
Tobacco leaves	Uncertainty	±280000		±6000	±490	±400	±1800	±86			±5000	±62	±140		±13		±3800	±1		±310
	Our value	1760000	6290	169000	7030	8210	47500	726		~168	93000	320	2520	~133	48		60100	21	45	1700
ZC73013	Cert. value															360				
Spinach	Uncertainty															±120				
	Our value															377				
ERM BB422	Cert. value															1400				
Fish muscle	Uncertainty															±400				
	Our value															1290				
BCR627	Assign. value								~81											
Tuna fish muscle	Uncertainty																			
	Our value								96											
IMEP-107	Assign. value								107											
Powdered rice	Uncertainty								±14											
	Our value								97											
NMIJ7503a	Cert. value								84											
Rice flour	Uncertainty								±3											
	Our value								75											

Our value is the mean result of all the individual analyses conducted in the survey. 'iAs' = inorganic As

The following elements are not characterised within any of our reference materials: Ge, Ru, Rh, Pd, In, Pt, Bi.

Table 3. LoDs/LoQs (µg/kg) for the various sample weights taken and measurement uncertainty (MU)

LoD	Al Zn	Ba Cr Cu Ni Se	Sr Sn	I Mn Mo	As iAs Cd Pb Tl	Bi Ge Ru Pd Pt	Hg In Rh Sb
0.25 g	0.2	0.08	0.04	0.02	0.012	0.004	0.002
0.5 g	0.1	0.04	0.02	0.01	0.006	0.002	0.001
1 g	0.05	0.02	0.01	0.005	0.003	0.001	0.0005
2.5 g	0.02	0.01	0.005	0.002	0.001	0.0005	0.0002

LoQ	Al Zn	Ba Cr Cu Ni Se	Sr Sn	I Mn Mo	As iAs Cd Pb Tl	Bi Ge Ru Pd Pt	Hg In Rh Sb
0.25 g	0.67	0.27	0.13	0.067	0.040	0.013	0.0067
0.5 g	0.33	0.13	0.07	0.033	0.020	0.007	0.0033
1 g	0.17	0.07	0.03	0.017	0.010	0.003	0.0017
2.5 g	0.07	0.03	0.01	0.007	0.004	0.001	0.0007

MU*	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	Se	Sr	Mo	Ru	Rh	Pd	Cd	In	Sn	Sb	Ba	Pt	Hg	Tl	Pb	Bi	I	iAs
[%]	15	25	13	(25)	15	15	(25)	17	17	(25)	9	(25)	(25)	(25)	18	(25)	8	7	(25)	(25)	16	(25)	14	(25)	11	21

* Measurement uncertainty estimated from our PT performance, calculated using a coverage factor of 2 (a confidence interval approximately 95 %).

() Indicates no available PT data to calculate MU for these elements, they are likely to be equal to or lower than the worst case value (25%).

Table 4. FAPAS proficiency testing results obtained by Fera during the last 12 months (z-scores).

Date	Matrix	FAPAS Round	Al	Cr	Mn	Cu	Zn	As	iAs	Se	Mo	Cd	Sn	Sb	Hg	Pb	I
Feb-Mar 14	Vegetable puree	07207										0.7	0.0			0.4	
Mar-May 14	Grapefruit	07210										0.1	0.1			-0.3	
Apr-May 14	Milk Powder	07211						-0.7				0.1			-0.4	0.0	
Apr-Jun 14	Soft drink	07212		-0.2		-0.2	0.1	-0.2				0.2		-0.1			
Jun-Jul 14	Tomato paste	07214										-0.1	-0.5			-0.1	
July-Sep 14	Infant Formula	07216	0.7	-0.5						0.0	-0.4						0.0
Aug-Sep 14	Powdered rice	07219						-0.1	-1.1			0.1			-0.5	-0.3	
Aug-Sep 14	Breakfast cereal	1876					-0.3										
Sep-Oct 14	Edible oil	07220				0.0		0.4								0.0	
Nov-Dec 14	Wine	07224				-0.2						0.1				0.1	
Jan-Feb 15	Fruit juice	07227										0.6	-0.2			0.3	

'iAs' inorganic arsenic

Interpretation of z-scores:

With a normal distribution, statistically approximately 95% of z-scores will be in the 'satisfactory' range of $-2 \leq z \leq 2$. Whilst z-scores outside this range are to be expected, (1 in 20), these are deemed 'questionable' and further investigation is required as part of our quality procedures.

Table 5. Element concentrations in the Groups. (mg/kg as received or prepared)

Fera LIMS	Group	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042828	Group 1	Bread	4.01	<0.04	7.79	~0.07	1.38	10.3	<0.002	<0.006	<0.012	~0.05	3.26	0.208	<0.002
S14-042829	Group 2	Miscellaneous Cereals	3.67	0.12	6.79	0.17	1.52	8.27	<0.001	~0.009	~0.013	~0.03	1.74	0.218	<0.001
S14-042830	Group 3	Carcass Meat	0.49	<0.04	0.087	~0.05	0.72	39.2	<0.002	<0.006	<0.012	~0.10	0.12	<0.01	<0.002
S14-042831	Group 4	Offal	~0.29	<0.04	1.99	<0.04	23.2	36.7	<0.002	<0.006	<0.012	0.59	0.24	0.72	<0.002
S14-042832	Group 5	Meat Products	1.97	~0.05	1.31	0.17	0.77	19.7	<0.001	<0.003	<0.012	0.08	0.57	0.055	<0.001
S14-042833	Group 6	Poultry	0.95	~0.02	0.413	0.29	0.50	11.2	<0.001	~0.008	<0.012	0.14	0.16	0.046	<0.001
S14-042834	Group 7	Fish	1.43	~0.06	1.01	0.10	0.67	6.97	<0.001	2.0	<0.012	0.29	1.82	0.033	<0.001
S14-042835	Group 8	Oils and Fats	<0.05	<0.02	~0.009	<0.02	<0.02	0.22	<0.001	<0.003	<0.012	<0.02	0.04	~0.008	<0.001
S14-042836	Group 9	Eggs	~0.11	<0.02	0.334	<0.02	0.51	11.1	<0.001	<0.003	<0.012	0.21	0.48	0.059	<0.001
S14-042837	Group 10	Sugars and Preserves	3.55	0.07	1.6	0.24	0.93	3.44	<0.001	<0.003	<0.012	<0.02	1.07	0.043	<0.001
S14-042838	Group 11	Green Vegetables	1.28	<0.02	1.8	~0.06	0.39	2.43	<0.001	<0.003	<0.012	<0.02	2.02	0.127	<0.001
S14-042839	Group 12	Potatoes	0.99	<0.04	1.57	~0.10	0.92	3.26	<0.002	<0.006	~0.015	<0.04	0.51	0.085	<0.002
S14-042840	Group 13	Other Vegetables	1.75	<0.04	1.75	~0.05	0.69	2.83	<0.002	<0.006	<0.012	<0.04	1.46	0.076	<0.002
S14-042841	Group 14	Canned or Jarred Vegetables	1.5	~0.06	1.65	0.14	1.05	3.19	<0.001	<0.003	<0.012	<0.02	0.74	0.232	<0.001
S14-042842	Group 15	Fresh Fruit	0.37	<0.04	1.57	<0.04	0.67	1.01	<0.002	<0.006	<0.012	<0.04	1.0	~0.021	<0.002
S14-042843	Group 16	Fruit Products	0.78	~0.04	2.28	~0.06	0.45	0.54	<0.001	<0.003	<0.012	<0.02	0.78	~0.009	<0.001
S14-042844	Group 17	Non-alcoholic Beverages	1.3	<0.02	2.1	~0.03	~0.04	~0.14	<0.001	<0.003	<0.003	<0.02	0.26	<0.005	<0.001
S14-042845	Group 18	Milk	<0.05	<0.02	~0.009	<0.02	<0.02	2.14	<0.001	<0.003	<0.003	<0.02	0.16	0.025	<0.001
S14-042846	Group 19	Dairy Products	8.59	~0.03	0.309	~0.03	0.24	8.38	<0.001	<0.003	<0.012	~0.03	0.71	0.057	<0.001
S14-042847	Group 20	Nuts	2.31	~0.06	17.9	2.14	10.1	33.4	~0.002	~0.005	<0.012	0.13	5.41	0.915	<0.001
S14-042848	Group 21	Alcoholic Drinks	0.24	<0.02	0.371	<0.02	~0.04	0.17	<0.001	<0.003	<0.003	<0.02	0.31	~0.006	<0.001
S14-042849	Group 22	Meat Substitutes	2.7	~0.04	18.3	0.14	2.51	34.1	~0.002	~0.004	<0.012	~0.04	3.37	0.195	<0.001
S14-042850	Group 23	Snacks	3.97	0.09	4.02	0.13	1.81	8.83	<0.001	0.011	<0.012	<0.02	1.36	0.154	<0.001
S14-042851	Group 24	Desserts	2.5	0.09	1.4	0.21	0.85	3.78	<0.0004	~0.003	<0.012	~0.01	0.65	0.052	<0.0004
S14-042852	Group 25	Sandwiches	2.92	0.06	3.79	0.05	0.90	10.6	<0.0004	0.038	<0.012	0.08	2.83	0.125	<0.0004
S14-042853	Group 26	Condiments	4.06	0.05	1.29	0.07	0.51	1.94	<0.0004	0.011	<0.012	~0.01	1.29	0.037	<0.0004
S14-042854	Group 27	Tap Water	<0.02	<0.008	<0.002	<0.008	~0.02	<0.02	<0.0004	<0.0012	<0.003	<0.008	0.26	<0.002	<0.0004
S14-042855	Group 28	Bottled Waters	<0.02	<0.008	<0.002	<0.008	<0.008	<0.02	<0.0004	<0.0012	<0.003	<0.008	0.34	<0.002	<0.0004

Table 5. Element concentrations in the Groups. (mg/kg as received or prepared)

Fera LIMS	Group	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042828	Group 1	Bread	<0.001	<0.002	0.021	<0.001	<0.02	<0.001	~0.027	0.75	<0.002	<0.001	<0.004	~0.006	<0.002
S14-042829	Group 2	Miscellaneous Cereals	<0.0005	<0.001	0.016	<0.0005	1.26	~0.0014	0.065	0.88	<0.001	<0.0005	<0.002	~0.004	~0.002
S14-042830	Group 3	Carcass Meat	<0.001	<0.002	<0.006	<0.001	<0.02	~0.0013	0.023	~0.05	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042831	Group 4	Offal	<0.001	<0.002	0.067	<0.001	<0.02	<0.001	0.075	0.15	<0.002	0.0035	<0.004	0.042	<0.002
S14-042832	Group 5	Meat Products	<0.0005	<0.001	~0.007	<0.0005	0.23	0.0026	0.067	0.22	<0.001	<0.0005	<0.002	~0.004	<0.001
S14-042833	Group 6	Poultry	<0.0005	<0.001	<0.003	<0.0005	~0.02	~0.0012	~0.015	~0.05	<0.001	<0.0005	~0.004	~0.002	<0.001
S14-042834	Group 7	Fish	<0.0005	<0.001	0.014	<0.0005	~0.02	0.0025	0.811	0.18	<0.001	0.0497	<0.002	~0.004	<0.001
S14-042835	Group 8	Oils and Fats	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	~0.023	<0.02	<0.001	<0.0005	<0.002	<0.002	~0.001
S14-042836	Group 9	Eggs	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	0.378	0.41	<0.001	<0.0005	<0.002	<0.002	~0.002
S14-042837	Group 10	Sugars and Preserves	<0.0005	<0.001	~0.006	<0.0005	~0.01	0.0049	0.155	0.73	<0.001	~0.0010	0.017	~0.006	~0.002
S14-042838	Group 11	Green Vegetables	<0.0005	<0.001	~0.006	<0.0005	<0.01	~0.0006	<0.005	0.33	<0.001	<0.0005	<0.002	0.017	<0.001
S14-042839	Group 12	Potatoes	<0.001	<0.002	~0.020	<0.001	<0.02	<0.001	~0.006	0.23	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042840	Group 13	Other Vegetables	<0.001	<0.002	~0.008	<0.001	<0.02	<0.001	~0.007	0.54	<0.002	<0.001	<0.004	~0.005	<0.002
S14-042841	Group 14	Canned or Jarred Vegetables	<0.0005	<0.001	~0.006	~0.0007	30.1	<0.0005	~0.008	0.27	<0.001	<0.0005	<0.002	~0.005	<0.001
S14-042842	Group 15	Fresh Fruit	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	<0.005	0.32	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042843	Group 16	Fruit Products	<0.0005	<0.001	<0.003	<0.0005	6.16	<0.0005	0.091	0.18	<0.001	<0.0005	<0.002	~0.005	<0.001
S14-042844	Group 17	Non-alcoholic Beverages	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	0.008	0.08	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042845	Group 18	Milk	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	0.263	~0.03	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042846	Group 19	Dairy Products	<0.0005	<0.001	<0.003	<0.0005	~0.03	<0.0005	0.242	0.22	<0.001	<0.0005	<0.002	~0.003	0.014
S14-042847	Group 20	Nuts	<0.0005	<0.001	0.02	<0.0005	<0.01	<0.0005	<0.01	2.53	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042848	Group 21	Alcoholic Drinks	<0.0005	<0.001	<0.003	<0.0005	<0.01	~0.0008	0.006	~0.04	<0.001	<0.0005	<0.002	~0.003	<0.001
S14-042849	Group 22	Meat Substitutes	<0.0005	<0.001	~0.007	<0.0005	<0.01	0.0017	0.052	0.70	<0.001	<0.0005	<0.002	~0.005	<0.001
S14-042850	Group 23	Snacks	<0.0005	<0.001	0.059	<0.0005	<0.01	~0.0007	0.063	0.68	<0.001	~0.0005	~0.003	~0.005	~0.001
S14-042851	Group 24	Desserts	<0.0002	<0.0004	0.004	<0.0002	~0.01	0.0009	0.158	0.32	<0.0004	<0.0002	<0.0008	0.003	0.004
S14-042852	Group 25	Sandwiches	<0.0002	0.002	0.013	<0.0002	<0.004	0.0008	0.064	0.51	<0.0004	0.0054	<0.0008	0.004	0.002
S14-042853	Group 26	Condiments	<0.0002	<0.0004	0.008	<0.0002	0.02	0.0092	0.031	0.26	<0.0004	<0.0002	~0.001	0.009	~0.000
S14-042854	Group 27	Tap Water	<0.0002	~0.001	<0.0012	<0.0002	<0.004	~0.0002	0.008	0.05	<0.0004	<0.0002	<0.0008	<0.0008	<0.0004
S14-042855	Group 28	Bottled Waters	<0.0002	<0.0004	<0.0012	<0.0002	<0.004	~0.0006	~0.002	0.11	<0.0004	<0.0002	<0.0008	<0.0008	<0.0004

Table 6. Element concentrations in Bread category (mg/kg as received or prepared)

Fera LIMS	Group	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042856	1_1	White sliced bread	5.12	0.05	5.88	0.06	1.25	8.82	~0.001	~0.003	<0.012	0.05	2.64	0.207	<0.0004
S14-042857	1_2	White unsliced bread	4.84	~0.05	5.2	~0.05	1.18	7.87	<0.001	~0.004	<0.012	~0.03	5.55	0.187	<0.001
S14-042858	1_3	Brown bread	4.27	~0.05	10.8	~0.10	1.75	13.6	~0.004	<0.006	<0.012	~0.06	3.33	0.242	<0.002
S14-042859	1_4	Wholemeal and granary bread	2.72	~0.04	15.1	~0.09	2.23	16.5	~0.004	<0.006	<0.012	~0.06	2.83	0.271	<0.002
S14-042860	1_5	Other bread	4.02	0.06	6.17	0.06	1.2	8.43	<0.0004	0.007	<0.012	0.04	3.19	0.208	<0.0004

Table 6. Element concentrations in Bread category (mg/kg as received or prepared)

Fera LIMS	Group	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042856	1_1	White sliced bread	<0.0002	0.002	0.021	<0.0002	0.02	~0.0005	~0.020	0.59	<0.0004	~0.0003	<0.0008	0.008	<0.0004
S14-042857	1_2	White unsliced bread	<0.0005	0.004	0.019	<0.0005	<0.01	~0.0007	0.024	0.64	<0.001	<0.0005	<0.002	~0.005	<0.001
S14-042858	1_3	Brown bread	<0.001	~0.003	0.026	<0.001	<0.02	<0.001	~0.029	1.02	<0.002	<0.001	<0.004	~0.006	<0.002
S14-042859	1_4	Wholemeal and granary bread	<0.001	~0.002	0.025	<0.001	<0.02	<0.001	<0.01	1.3	<0.002	<0.001	<0.004	~0.004	<0.002
S14-042860	1_5	Other bread	<0.0002	0.002	0.016	<0.0002	<0.004	~0.0004	0.047	0.63	<0.0004	<0.0002	<0.0008	0.005	<0.0004

Table 7. Element concentrations in Miscellaneous Cereals category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042861	2_6	Flour	5.19	0.03	8.36	0.04	1.5	8.91	0.001	0.008	<0.012	0.04	2.37	0.254	<0.0004
S14-042862	2_7	Buns, cakes and pastries	5.04	0.09	3.77	0.16	1.31	6.16	~0.001	~0.005	<0.012	~0.02	1.91	0.117	<0.001
S14-042863	2_8	Savoury biscuits	3.02	0.10	11.7	~0.06	1.83	11.8	<0.001	~0.004	<0.012	~0.03	1.56	0.328	<0.001
S14-042864	2_9	Sweet biscuits	2.83	~0.03	7.32	0.09	1.23	6.73	0.004	~0.003	<0.012	<0.02	1.18	0.197	<0.001
S14-042865	2_10	Chocolate biscuits	6.9	0.21	5.99	0.35	2.04	7.83	<0.002	<0.006	<0.012	<0.04	1.86	0.159	<0.002
S14-042866	2_11	Breakfast cereals	2.42	~0.10	17.7	0.35	2.82	15.7	<0.002	~0.010	<0.012	<0.04	1.65	0.432	<0.002
S14-042867	2_12	Rice	0.59	~0.05	2.95	~0.11	0.9	4.29	<0.002	0.036	~0.028	~0.04	0.33	0.212	<0.002
S14-042868	2_13	Other cereal products	2.32	~0.03	3.52	~0.03	0.91	4.92	<0.001	~0.005	<0.012	~0.03	1.0	0.151	<0.001
S14-042869	2_14	Pasta	1.04	<0.02	2.12	~0.03	0.92	4.04	<0.001	<0.003	<0.012	~0.05	0.63	0.148	<0.001
S14-042870	2_15	Pizza	3.72	~0.05	3.75	~0.06	1.05	13.3	<0.001	~0.005	<0.012	~0.05	3.0	0.136	<0.001

Table 7. Element concentrations in Miscellaneous Cereals category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042861	2_6	Flour	<0.0002	0.002	0.03	<0.0002	<0.004	0.0016	<0.01	0.68	<0.0004	<0.0002	<0.0008	0.006	<0.0004
S14-042862	2_7	Buns, cakes and pastries	<0.0005	~0.001	0.012	<0.0005	~0.02	0.003	0.079	0.44	<0.001	<0.0005	<0.002	~0.006	~0.001
S14-042863	2_8	Savoury biscuits	<0.0005	~0.001	0.024	<0.0005	<0.01	~0.0007	~0.030	0.79	<0.001	<0.0005	<0.002	~0.005	<0.001
S14-042864	2_9	Sweet biscuits	<0.0005	<0.001	0.015	<0.0005	<0.01	0.0025	0.035	0.70	<0.001	<0.0005	<0.002	~0.005	<0.001
S14-042865	2_10	Chocolate biscuits	<0.001	<0.002	~0.017	<0.001	<0.02	~0.0024	0.161	0.79	<0.002	<0.001	<0.004	~0.010	~0.005
S14-042866	2_11	Breakfast cereals	<0.001	<0.002	0.026	<0.001	<0.02	<0.001	0.039	3.35	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042867	2_12	Rice	<0.001	<0.002	~0.006	<0.001	<0.02	<0.001	~0.024	~0.12	<0.002	~0.0012	<0.004	<0.004	<0.002
S14-042868	2_13	Other cereal products	<0.0005	<0.001	0.014	<0.0005	<0.01	~0.0009	0.082	0.44	<0.001	<0.0005	<0.002	~0.005	<0.001
S14-042869	2_14	Pasta	<0.0005	<0.001	~0.009	<0.0005	13.3	<0.0005	~0.010	0.40	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042870	2_15	Pizza	<0.0005	~0.002	0.015	<0.0005	<0.01	~0.0008	0.109	0.59	<0.001	<0.0005	<0.002	~0.005	0.011

Table 8. Element concentrations in Carcass Meat category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042871	3_16	Beef	0.26	0.03	0.066	0.05	0.71	43.4	<0.0004	~0.002	<0.012	0.08	0.10	0.008	<0.0004
S14-042872	3_17	Lamb	0.32	0.07	0.109	0.08	1.04	40.9	~0.000	~0.001	<0.012	0.07	0.17	0.010	<0.0004
S14-042873	3_18	Pork	1.1	<0.04	0.093	<0.04	0.75	25.6	<0.002	<0.006	<0.012	0.15	~0.05	~0.011	<0.002

Table 8. Element concentrations in Carcass Meat category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042871	3_16	Beef	<0.0002	<0.0004	<0.0012	<0.0002	<0.004	~0.0006	0.032	0.06	<0.0004	<0.0002	<0.0008	~0.002	<0.0004
S14-042872	3_17	Lamb	<0.0002	<0.0004	~0.001	<0.0002	<0.004	~0.0004	0.032	0.09	<0.0004	~0.0003	0.012	0.014	<0.0004
S14-042873	3_18	Pork	<0.001	<0.002	<0.006	<0.001	<0.02	~0.0011	~0.013	<0.04	<0.002	<0.001	<0.004	<0.004	<0.002

Table 9. Element concentrations in Offal category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042874	4_19	Lambs liver	0.47	<0.04	3.21	<0.04	97.1	43	~0.002	<0.006	<0.012	0.38	0.14	1.28	<0.002
S14-042875	4_20	Pigs liver	0.33	~0.05	3.49	<0.04	8.09	74.9	<0.002	<0.006	<0.012	0.60	0.13	1.35	<0.002
S14-042876	4_21	Other liver	0.39	~0.05	3.01	<0.04	23	33.2	~0.003	<0.006	<0.012	0.47	0.24	0.827	<0.002
S14-042877	4_22	Kidney	~0.14	<0.04	1.31	<0.04	4.76	33	<0.002	<0.006	<0.012	1.55	0.28	0.752	<0.002
S14-042878	4_23	Other offals (excluding kidney and liver)	~0.15	<0.04	0.251	<0.04	2.32	30.7	<0.002	<0.006	<0.012	0.13	0.31	~0.028	<0.002

Table 9. Element concentrations in Offal category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042874	4_19	Lambs liver	<0.001	<0.002	0.074	<0.001	<0.02	~0.0016	0.079	~0.08	<0.002	0.0088	<0.004	0.092	<0.002
S14-042875	4_20	Pigs liver	<0.001	<0.002	0.054	<0.001	<0.02	<0.001	0.052	~0.06	<0.002	~0.0019	<0.004	~0.011	<0.002
S14-042876	4_21	Other liver	<0.001	<0.002	0.032	<0.001	<0.02	~0.0012	0.042	~0.10	<0.002	<0.001	<0.004	~0.010	<0.002
S14-042877	4_22	Kidney	<0.001	<0.002	0.165	<0.001	~0.03	<0.001	0.089	0.26	<0.002	0.0068	~0.004	0.095	<0.002
S14-042878	4_23	Other offals (excluding kidney and liver)	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	0.048	0.14	<0.002	<0.001	<0.004	<0.004	<0.002

Table 10. Element concentrations in Meat Products category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042879	5_24	Uncooked bacon	~0.15	~0.05	0.096	0.67	0.69	26.9	<0.002	<0.006	<0.012	0.18	0.14	~0.011	<0.002
S14-042880	5_25	Cooked ham and bacon	<0.1	~0.06	0.107	<0.04	0.60	20.9	<0.002	<0.006	<0.012	~0.13	~0.05	~0.015	<0.002
S14-042881	5_26	Corned meat	1.04	~0.09	0.126	<0.04	0.71	47.4	<0.002	<0.006	<0.012	~0.08	0.74	~0.014	<0.002
S14-042882	5_27	Other canned or cooked meats	1.1	~0.05	1.2	~0.05	0.90	27.7	<0.002	<0.006	<0.012	~0.11	0.44	0.053	<0.002
S14-042883	5_28	Pork sausages	3.69	~0.10	1.45	0.22	0.80	17.3	<0.002	<0.006	<0.012	~0.09	0.47	0.067	<0.002
S14-042884	5_29	Beef sausages	2.6	~0.07	1.59	0.2	0.66	35.7	<0.002	<0.006	<0.012	~0.07	0.42	0.043	<0.002
S14-042885	5_30	Other sausages	1.48	~0.10	1.49	~0.06	0.65	10.1	<0.002	<0.006	<0.012	~0.06	0.47	0.079	<0.002
S14-042886	5_31	Ready to eat meat products	1.37	~0.07	2.27	~0.05	0.66	15.7	<0.002	<0.006	<0.012	<0.04	0.69	0.079	<0.002
S14-042887	5_32	Meat based ready meals	1.49	~0.06	1.21	~0.05	0.61	12.8	<0.002	<0.006	<0.012	<0.04	0.63	0.049	<0.002
S14-042888	5_33	Meat based takeaways	7.97	~0.12	2.51	~0.10	1.03	17.8	<0.002	<0.006	<0.012	~0.05	1.09	0.066	<0.002
S14-042889	5_34	Other meat products	1.76	~0.07	1.28	~0.09	0.74	10.8	<0.002	<0.006	<0.012	~0.05	0.62	0.122	<0.002
S14-042890	5_35	Burgers	1.19	~0.06	0.983	0.19	0.86	40.5	<0.002	<0.006	<0.012	~0.11	0.34	0.042	<0.002

Table 10. Element concentrations in Meat Products category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042879	5_24	Uncooked bacon	<0.001	<0.002	<0.006	<0.001	<0.02	~0.0016	~0.010	<0.04	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042880	5_25	Cooked ham and bacon	<0.001	<0.002	<0.006	<0.001	<0.02	~0.0019	~0.009	<0.04	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042881	5_26	Corned meat	<0.001	<0.002	<0.006	<0.001	0.29	<0.001	0.14	0.21	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042882	5_27	Other canned or cooked meats	<0.001	<0.002	~0.011	<0.001	~0.05	<0.001	0.02	0.16	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042883	5_28	Pork sausages	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	0.028	0.29	<0.002	<0.001	<0.004	~0.004	<0.002
S14-042884	5_29	Beef sausages	<0.001	<0.002	<0.006	<0.001	<0.02	~0.0014	0.03	0.33	<0.002	<0.001	<0.004	~0.006	<0.002
S14-042885	5_30	Other sausages	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	0.09	0.26	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042886	5_31	Ready to eat meat products	<0.001	<0.002	~0.012	<0.001	<0.02	<0.001	0.03	0.22	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042887	5_32	Meat based ready meals	<0.001	<0.002	~0.009	<0.001	<0.02	0.0066	0.028	0.24	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042888	5_33	Meat based takeaways	<0.001	<0.002	~0.007	<0.001	2.22	~0.0015	0.075	0.30	<0.002	<0.001	<0.004	~0.012	<0.002
S14-042889	5_34	Other meat products	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	0.033	0.26	<0.002	<0.001	<0.004	~0.007	<0.002
S14-042890	5_35	Burgers	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	0.054	0.24	<0.002	<0.001	<0.004	<0.004	<0.002

Table 11. Element concentrations in Poultry category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042891	6_36	Chicken (RAW)	<0.05	<0.02	0.135	0.36	0.41	11.1	<0.001	~0.007	<0.012	0.15	0.07	0.046	<0.001
S14-042892	6_37	Other poultry (RAW)	~0.12	<0.02	0.109	<0.02	0.66	18.7	<0.001	<0.003	<0.012	0.12	0.20	0.019	<0.001
S14-042893	6_38	Cooked poultry	1.01	<0.04	0.235	<0.04	0.39	10.4	<0.002	<0.006	<0.012	~0.13	0.12	0.037	<0.002
S14-042894	6_39	Poultry products	4.25	0.08	1.69	0.08	0.84	9.93	~0.001	~0.009	<0.012	0.12	0.51	0.077	<0.001

Table 11. Element concentrations in Poultry category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042891	6_36	Chicken (RAW)	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	0.019	<0.02	<0.001	~0.0006	~0.003	<0.002	<0.001
S14-042892	6_37	Other poultry (RAW)	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	~0.012	~0.05	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042893	6_38	Cooked poultry	<0.001	<0.002	<0.006	<0.001	<0.02	~0.0015	~0.028	<0.04	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042894	6_39	Poultry products	<0.0005	<0.001	~0.005	<0.0005	0.08	0.0054	0.06	0.17	<0.001	<0.0005	<0.002	~0.006	<0.001

Table 12. Element concentrations in Fish category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042895	7_40	White fish	~0.11	~0.04	0.302	0.23	0.28	6.45	<0.001	4.78	~0.016	0.33	5.28	<0.005	<0.001
S14-042896	7_41	Fatty fish	~0.10	<0.02	0.158	0.12	0.48	6.03	<0.001	1.08	~0.014	0.27	0.62	<0.005	<0.001
S14-042897	7_42	Shellfish	6.62	~0.04	0.57	0.14	2.37	18.5	<0.001	1.77	~0.035	0.38	7.65	0.031	<0.001
S14-042898	7_43	Canned salmon	2.88	<0.02	0.26	<0.02	0.56	8.12	0.006	0.237	<0.012	0.28	6.69	<0.005	<0.001
S14-042899	7_44	Other canned/ bottled fish	0.39	<0.02	0.165	<0.02	0.61	7.17	~0.001	0.831	<0.012	0.58	1.29	~0.006	<0.001
S14-042900	7_45	Fish based ready meals and fish products	1.03	0.07	1.68	0.09	0.54	5.53	<0.001	1.35	<0.012	0.15	0.88	0.058	<0.001
S14-042901	7_46	Takeaway fish based meals	1.74	~0.06	1.48	0.08	0.60	5.15	<0.001	2.51	<0.012	0.17	1.5	0.057	<0.001

Table 12. Element concentrations in Fish category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042895	7_40	White fish	<0.0005	<0.001	<0.003	<0.0005	<0.01	0.0022	1.86	0.11	<0.001	0.0719	<0.002	~0.004	~0.001
S14-042896	7_41	Fatty fish	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	0.221	~0.02	<0.001	0.0698	<0.002	~0.003	<0.001
S14-042897	7_42	Shellfish	<0.0005	0.007	0.085	<0.0005	<0.01	0.0022	0.499	0.29	<0.001	0.0567	<0.002	0.017	<0.001
S14-042898	7_43	Canned salmon	<0.0005	0.005	<0.003	<0.0005	0.04	0.0185	0.385	0.11	<0.001	0.0302	<0.002	<0.002	<0.001
S14-042899	7_44	Other canned/ bottled fish	<0.0005	~0.001	0.019	<0.0005	0.05	~0.0016	0.22	~0.04	<0.001	0.207	<0.002	<0.002	<0.001
S14-042900	7_45	Fish based ready meals and fish products	<0.0005	<0.001	~0.007	<0.0005	<0.01	0.0029	0.822	0.24	<0.001	0.0212	<0.002	~0.002	~0.001
S14-042901	7_46	Takeaway fish based meals	<0.0005	~0.001	~0.006	<0.0005	~0.01	0.0023	1.05	0.24	<0.001	0.0537	<0.002	~0.005	~0.001

Table 13. Element concentrations in Oils and Fats category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042902	8_47	Fat spreads or blended spreads	0.48	<0.02	~0.012	<0.02	<0.02	0.26	~0.001	<0.003	<0.012	<0.02	0.05	~0.011	<0.001
S14-042903	8_48	Reduced fat spreads or blended spreads	0.23	<0.02	~0.008	<0.02	<0.02	0.27	<0.001	<0.003	<0.012	<0.02	0.10	~0.012	<0.001
S14-042904	8_49	Low/light fat spreads or blended spreads	~0.06	0.07	0.019	<0.02	<0.02	0.18	<0.001	<0.003	<0.012	<0.02	0.09	~0.013	<0.001
S14-042905	8_50	Vegetable oils	<0.05	<0.02	~0.007	<0.02	<0.02	~0.12	<0.001	<0.003	<0.012	<0.02	<0.01	<0.005	<0.001
S14-042906	8_51	Lard	0.46	<0.02	~0.006	<0.02	<0.02	0.22	<0.001	<0.003	<0.012	<0.02	<0.01	<0.005	<0.001
S14-042907	8_52	Other fats	~0.09	<0.02	0.087	<0.02	0.10	2.09	<0.001	<0.003	<0.012	<0.02	0.21	0.095	<0.001

Table 13. Element concentrations in Oils and Fats category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042902	8_47	Fat spreads or blended spreads	<0.0005	<0.001	<0.003	<0.0005	<0.01	~0.0016	~0.029	<0.02	<0.001	~0.0006	<0.002	<0.002	~0.003
S14-042903	8_48	Reduced fat spreads or blended spreads	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	~0.022	<0.02	<0.001	<0.0005	<0.002	<0.002	~0.002
S14-042904	8_49	Low/light fat spreads or blended spreads	<0.0005	<0.001	<0.003	<0.0005	~0.02	<0.0005	0.051	<0.02	<0.001	<0.0005	~0.003	<0.002	<0.001
S14-042905	8_50	Vegetable oils	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	~0.014	<0.02	<0.001	~0.0009	<0.002	<0.002	<0.001
S14-042906	8_51	Lard	<0.0005	<0.001	<0.003	<0.0005	0.04	<0.0005	<0.01	<0.02	<0.001	<0.0005	~0.002	<0.002	<0.001
S14-042907	8_52	Other fats	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	0.274	~0.04	<0.001	<0.0005	~0.002	~0.002	0.01

Table 14. Element concentrations in Eggs category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042908	9_53	Eggs	<0.05	<0.02	0.293	<0.02	0.55	11.3	<0.001	<0.003	<0.012	0.22	0.40	0.056	<0.001
S14-042909	9_54	Egg products	0.98	~0.03	1.29	~0.03	0.48	10.8	<0.001	<0.003	<0.012	~0.06	1.0	0.092	<0.001

Table 14. Element concentrations in Eggs category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042908	9_53	Eggs	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	0.39	0.45	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042909	9_54	Egg products	<0.0005	<0.001	~0.004	<0.0005	<0.01	<0.0005	0.281	0.32	<0.001	<0.0005	<0.002	~0.003	0.026

Table 15. Element concentrations in Sugars and Preserves category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042910	10_55	Sugar	0.42	<0.02	0.418	~0.03	~0.04	~0.12	<0.001	<0.003	<0.012	<0.02	0.58	<0.005	<0.001
S14-042911	10_56	Jam and fruit curds	2.44	0.07	2.59	0.12	0.15	0.71	<0.001	~0.003	<0.012	<0.02	0.51	~0.016	<0.001
S14-042912	10_57	Marmalade	0.44	<0.02	0.088	<0.02	0.14	~0.10	<0.001	~0.004	<0.012	<0.02	0.80	<0.005	<0.001
S14-042913	10_58	Syrup, Honey, Treacle, Maple Syrup	2.09	~0.03	3.6	0.08	0.18	1.5	<0.001	0.025	~0.027	<0.02	1.08	~0.009	<0.001
S14-042914	10_59	Jelly	3.2	~0.05	0.246	<0.02	0.07	~0.13	<0.001	~0.007	<0.012	<0.02	0.16	<0.005	<0.001
S14-042915	10_60	Chocolate confectionery	6.04	0.18	3.36	0.61	2.4	8.97	<0.001	~0.005	<0.012	~0.03	1.44	0.116	<0.001
S14-042916	10_61	Sugar confectionery	3.27	~0.03	0.125	<0.02	0.17	0.17	<0.001	<0.003	<0.012	<0.02	1.01	<0.005	<0.001

Table 15. Element concentrations in Sugars and Preserves category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042910	10_55	Sugar	<0.0005	<0.001	<0.003	<0.0005	<0.01	0.0043	~0.015	~0.04	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042911	10_56	Jam and fruit curds	<0.0005	<0.001	<0.003	<0.0005	0.05	~0.0012	<0.01	0.45	<0.001	<0.0005	<0.002	~0.004	<0.001
S14-042912	10_57	Marmalade	<0.0005	<0.001	<0.003	<0.0005	0.06	0.0017	~0.031	0.25	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042913	10_58	Syrup, Honey, Treacle, Maple Syrup	<0.0005	<0.001	<0.003	<0.0005	0.04	0.0174	<0.01	0.56	<0.001	<0.0005	~0.003	0.012	<0.001
S14-042914	10_59	Jelly	<0.0005	<0.001	<0.003	<0.0005	<0.01	~0.0010	<0.01	0.10	<0.001	~0.0010	<0.002	~0.002	<0.001
S14-042915	10_60	Chocolate confectionery	<0.0005	<0.001	0.016	<0.0005	<0.01	0.0024	0.412	0.84	<0.001	<0.0005	<0.002	0.007	0.005
S14-042916	10_61	Sugar confectionery	<0.0005	<0.001	<0.003	<0.0005	<0.01	~0.0012	<0.01	2.45	<0.001	<0.0005	~0.003	<0.002	<0.001

Table 16. Element concentrations in Green Vegetables category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042917	11_62	Cabbage	0.38	<0.02	1.77	~0.03	0.21	1.35	~0.001	<0.003	<0.012	<0.02	4.64	0.061	<0.001
S14-042918	11_63	Sprouts	0.53	<0.02	1.85	~0.03	0.41	2.6	<0.001	<0.003	<0.012	~0.02	0.97	0.074	~0.001
S14-042919	11_64	Cauliflower	~0.12	<0.02	1.28	<0.02	0.20	1.87	<0.001	<0.003	<0.012	<0.02	0.87	0.07	<0.001
S14-042920	11_65	Lettuce and leafy salads	1.64	~0.03	2.37	~0.03	0.60	2.66	<0.001	~0.004	<0.012	<0.02	2.9	0.029	<0.001
S14-042921	11_66	Peas	6.72	<0.02	3.19	0.22	1.24	7.11	<0.001	<0.003	<0.012	<0.02	1.53	0.391	<0.001
S14-042922	11_67	Green beans	2.07	<0.02	1.79	0.12	0.76	2.2	<0.001	<0.003	<0.012	<0.02	3.17	0.445	<0.001
S14-042923	11_68	Other fresh green vegetables	0.76	<0.02	2.06	0.12	0.61	2.86	<0.001	<0.003	<0.012	<0.02	3.54	0.08	~0.003

Table 16. Element concentrations in Green Vegetables category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042917	11_62	Cabbage	<0.0005	0.004	~0.006	<0.0005	<0.01	~0.0005	~0.014	0.31	<0.001	<0.0005	~0.005	0.037	<0.001
S14-042918	11_63	Sprouts	<0.0005	<0.001	~0.004	<0.0005	0.04	<0.0005	<0.005	0.20	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042919	11_64	Cauliflower	<0.0005	<0.001	~0.003	<0.0005	<0.01	<0.0005	<0.005	0.20	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042920	11_65	Lettuce and leafy salads	<0.0005	~0.002	0.025	<0.0005	<0.01	~0.0013	~0.012	0.33	<0.001	<0.0005	<0.002	~0.004	<0.001
S14-042921	11_66	Peas	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	~0.006	0.76	<0.001	<0.0005	~0.005	~0.006	<0.001
S14-042922	11_67	Green beans	<0.0005	~0.002	<0.003	<0.0005	<0.01	~0.0006	~0.005	0.84	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042923	11_68	Other fresh green vegetables	<0.0005	~0.002	<0.003	<0.0005	<0.01	~0.0005	~0.006	0.34	<0.001	<0.0005	<0.002	<0.002	<0.001

Table 17. Element concentrations in Potatoes category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042924	12_69	Fresh potatoes	1.24	<0.02	1.55	0.11	0.82	2.57	<0.001	<0.003	<0.012	<0.02	0.41	0.076	<0.001
S14-042925	12_70	Potato products	0.58	~0.04	1.66	0.09	0.97	3.69	<0.001	~0.005	<0.012	<0.02	0.54	0.082	<0.001

Table 17. Element concentrations in Potatoes category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042924	12_69	Fresh potatoes	<0.0005	<0.001	0.016	<0.0005	<0.01	<0.0005	~0.005	0.21	<0.001	<0.0005	<0.002	~0.003	<0.001
S14-042925	12_70	Potato products	<0.0005	<0.001	0.031	<0.0005	<0.01	~0.0014	~0.009	0.21	<0.001	<0.0005	<0.002	~0.002	<0.001

Table 18. Element concentrations in Other Vegetables category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042926	13_71	Onions,leeks	1.22	<0.02	1.58	~0.04	0.77	3.31	<0.001	<0.003	<0.012	<0.02	1.82	0.032	<0.001
S14-042927	13_72	Carrots	~0.13	<0.02	1.12	<0.02	0.18	1.12	~0.001	<0.003	<0.012	<0.02	1.51	~0.006	<0.001
S14-042928	13_73	Turnips, swedes	~0.10	<0.02	2.94	~0.04	0.15	0.84	<0.001	<0.003	<0.012	<0.02	1.81	~0.010	<0.001
S14-042929	13_74	Other fresh vegetables	0.80	<0.02	1.04	~0.04	0.48	2.2	<0.001	<0.003	<0.012	<0.02	1.45	0.066	<0.001
S14-042930	13_75	Mushrooms	<0.05	<0.02	0.40	<0.02	2.18	4.29	<0.001	0.011	<0.012	0.10	0.06	~0.013	<0.001
S14-042931	13_76	Tomatoes	0.39	<0.02	1.01	<0.02	0.38	1.01	<0.001	<0.003	<0.012	<0.02	0.36	0.058	<0.001
S14-042932	13_77	Cucumbers	<0.05	<0.02	1.6	<0.02	0.25	1.42	<0.001	<0.003	<0.012	<0.02	1.67	0.087	<0.001
S14-042933	13_78	Dried pulses	3.86	~0.05	5.4	0.55	2.4	9.8	<0.001	<0.003	<0.012	0.11	1.64	1.13	<0.001
S14-042934	13_79	Herbs, spices	147	0.46	45.9	0.58	4.58	13.3	0.011	0.055	0.053	0.10	20.1	0.299	<0.001
S14-042935	13_80	Vegetable based ready meals	4.27	~0.06	2.72	0.15	1.0	6.13	<0.001	~0.006	<0.012	~0.02	1.83	0.161	<0.001
S14-042936	13_81	Dried soups	0.99	<0.02	0.253	<0.02	0.15	0.76	~0.001	<0.003	<0.012	<0.02	0.40	~0.011	<0.001

Table 18. Element concentrations in Other Vegetables category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042926	13_71	Onions,leeks	<0.0005	<0.001	~0.007	<0.0005	<0.01	<0.0005	<0.005	0.40	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042927	13_72	Carrots	<0.0005	<0.001	0.014	<0.0005	<0.01	<0.0005	<0.005	1.25	<0.001	<0.0005	<0.002	~0.005	<0.001
S14-042928	13_73	Turnips, swedes	<0.0005	<0.001	~0.007	<0.0005	<0.01	<0.0005	<0.005	0.52	<0.001	<0.0005	~0.006	<0.002	<0.001
S14-042929	13_74	Other fresh vegetables	<0.0005	<0.001	~0.004	<0.0005	<0.01	<0.0005	<0.005	0.52	<0.001	<0.0005	<0.002	~0.005	<0.001
S14-042930	13_75	Mushrooms	<0.0005	<0.001	~0.006	<0.0005	<0.01	<0.0005	<0.005	~0.04	<0.001	0.003	<0.002	<0.002	<0.001
S14-042931	13_76	Tomatoes	<0.0005	~0.002	<0.003	<0.0005	<0.01	<0.0005	<0.005	~0.05	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042932	13_77	Cucumbers	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	~0.009	~0.05	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042933	13_78	Dried pulses	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	~0.009	1.07	<0.001	<0.0005	<0.002	~0.003	<0.001
S14-042934	13_79	Herbs, spices	<0.0005	0.011	0.041	<0.0005	~0.02	0.0061	0.109	5.26	<0.001	0.0024	0.008	0.134	~0.001
S14-042935	13_80	Vegetable based ready meals	<0.0005	~0.001	~0.008	<0.0005	<0.01	0.0034	0.05	0.49	<0.001	~0.0008	<0.002	~0.006	~0.002
S14-042936	13_81	Dried soups	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	~0.009	0.16	<0.001	<0.0005	<0.002	<0.002	<0.001

Table 19. Element concentrations in Canned Vegetables category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042937	14_85	Canned, carton or jarred soups	1.38	~0.03	0.69	~0.05	0.37	1.4	<0.001	<0.003	<0.012	<0.02	0.55	0.049	<0.001
S14-042938	14_86	Canned or jarred tomatoes	3.0	0.08	1.22	~0.06	1.0	1.27	<0.001	<0.003	<0.012	<0.02	0.62	0.038	<0.001
S14-042939	14_87	Canned or jarred peas	0.65	<0.02	2.48	0.13	1.85	8.93	<0.001	<0.003	<0.012	<0.02	1.16	0.714	<0.001
S14-042940	14_88	Canned or jarred beans	1.05	~0.08	3.12	0.30	1.82	5.41	<0.002	<0.006	<0.012	<0.04	0.91	0.451	<0.002
S14-042941	14_89	Other canned or jarred vegetables	~0.13	<0.04	0.947	<0.04	0.29	3.14	<0.002	<0.006	<0.012	<0.04	0.45	~0.017	<0.002

Table 19. Element concentrations in Canned Vegetables category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042937	14_85	Canned, carton or jarred soups	<0.0005	<0.001	~0.006	<0.0005	32.5	~0.0007	0.022	0.26	<0.001	<0.0005	<0.002	~0.004	<0.001
S14-042938	14_86	Canned or jarred tomatoes	<0.0005	<0.001	0.013	<0.0005	13.1	<0.0005	~0.007	0.27	<0.001	<0.0005	<0.002	0.007	<0.001
S14-042939	14_87	Canned or jarred peas	<0.0005	~0.001	~0.003	<0.0005	~0.02	<0.0005	~0.005	0.39	<0.001	<0.0005	<0.002	~0.003	<0.001
S14-042940	14_88	Canned or jarred beans	<0.001	<0.002	<0.006	<0.001	45.9	<0.001	<0.005	0.24	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042941	14_89	Other canned or jarred vegetables	<0.001	<0.002	~0.008	<0.001	0.08	<0.001	~0.005	0.25	<0.002	<0.001	<0.004	~0.006	<0.002

Table 20. Element concentrations in Fresh Fruit category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042942	15_90	Oranges	<0.1	<0.04	0.235	<0.04	0.31	0.46	<0.002	<0.006	<0.012	<0.04	2.43	<0.01	<0.002
S14-042943	15_91	Other citrus fruits	~0.23	<0.04	0.302	<0.04	1.07	0.82	<0.002	<0.006	<0.012	<0.04	6.66	<0.01	<0.002
S14-042944	15_92	Apples	0.56	<0.04	0.458	<0.04	0.45	~0.23	<0.002	<0.006	<0.012	<0.04	0.19	~0.010	<0.002
S14-042945	15_93	Pears	0.83	<0.04	0.586	<0.04	0.59	0.76	<0.002	<0.006	<0.012	<0.04	0.29	~0.015	<0.002
S14-042946	15_94	Stone fruit	0.92	<0.04	0.822	~0.11	1.1	1.64	<0.002	<0.006	<0.012	<0.04	0.71	~0.013	<0.002
S14-042947	15_95	Bananas	<0.1	<0.04	3.28	<0.04	0.82	1.55	<0.002	<0.006	<0.012	<0.04	0.61	0.038	<0.002
S14-042948	15_96	Grapes	0.90	<0.04	0.656	<0.04	1.18	~0.32	<0.002	<0.006	<0.012	<0.04	0.75	<0.01	<0.002
S14-042949	15_97	Other fresh fruit	0.99	<0.04	2.52	~0.06	0.89	1.28	<0.002	<0.006	<0.012	<0.04	1.02	~0.029	<0.002

Table 20. Element concentrations in Fresh Fruit category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042942	15_90	Oranges	<0.001	~0.002	<0.006	<0.001	<0.02	<0.001	<0.005	0.26	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042943	15_91	Other citrus fruits	<0.001	~0.005	<0.006	<0.001	~0.03	<0.001	<0.005	0.50	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042944	15_92	Apples	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	<0.005	0.15	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042945	15_93	Pears	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	~0.005	0.22	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042946	15_94	Stone fruit	<0.001	<0.002	<0.006	<0.001	~0.02	<0.001	<0.005	~0.11	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042947	15_95	Bananas	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	<0.005	0.34	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042948	15_96	Grapes	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	<0.005	~0.07	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042949	15_97	Other fresh fruit	<0.001	<0.002	<0.006	<0.001	~0.04	<0.001	<0.005	0.82	<0.002	<0.001	<0.004	<0.004	<0.002

Table 21. Element concentrations in Fruit Products category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042952	16_100	Dried fruit	8.52	~0.05	3.92	0.28	2.67	2.79	<0.001	0.013	~0.016	<0.02	4.42	0.046	<0.001
S14-042953	16_101	Fruit juices and vegetable juices	0.36	<0.04	2.0	<0.04	0.28	0.38	<0.002	<0.006	<0.003	<0.04	0.59	<0.01	<0.002
S14-042950	16_98	Canned peaches, pears, pineapples	~0.18	~0.06	3.41	~0.11	0.58	0.65	<0.002	<0.006	<0.012	<0.04	0.39	<0.01	<0.002
S14-042951	16_99	Other canned or frozen fruit	0.89	0.08	3.13	0.12	0.53	0.68	<0.001	<0.003	<0.012	<0.02	0.59	~0.010	<0.001

Table 21. Element concentrations in Fruit Products category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042952	16_100	Dried fruit	<0.0005	0.004	~0.006	<0.0005	<0.01	~0.0008	~0.020	0.65	<0.001	~0.0010	<0.002	0.015	<0.001
S14-042953	16_101	Fruit juices and vegetable juices	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	0.087	0.17	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042950	16_98	Canned peaches, pears, pineapples	<0.001	<0.002	<0.006	<0.001	58.9	<0.001	~0.011	~0.11	<0.002	<0.001	<0.004	0.017	<0.002
S14-042951	16_99	Other canned or frozen fruit	<0.0005	<0.001	<0.003	<0.0005	81.7	~0.0010	0.723	0.31	<0.001	<0.0005	<0.002	0.018	<0.001

Table 22. Element concentrations in Non-alcoholic Beverages category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042954	17_102	Tea	2.9	<0.04	4.38	~0.05	~0.06	~0.10	<0.002	<0.006	<0.003	<0.04	0.18	<0.01	<0.002
S14-042955	17_103	Takeaway Tea	1.48	<0.04	2.23	<0.04	~0.06	~0.15	<0.002	<0.006	<0.003	<0.04	0.10	<0.01	<0.002
S14-042956	17_104	Instant coffee	<0.1	<0.04	0.439	<0.04	<0.04	<0.1	<0.002	<0.006	<0.003	<0.04	0.37	<0.01	<0.002
S14-042957	17_105	Ground coffee	<0.1	<0.04	0.223	<0.04	<0.04	<0.1	<0.002	<0.006	<0.003	<0.04	0.26	<0.01	<0.002
S14-042958	17_106	Takeaway coffee	<0.1	<0.04	0.262	<0.04	~0.10	1.09	<0.002	<0.006	<0.003	<0.04	0.18	~0.011	<0.002
S14-042959	17_107	Branded food drinks	3.49	<0.04	1.1	~0.07	0.37	6.82	<0.002	<0.006	<0.003	<0.04	1.36	~0.031	<0.002
S14-042960	17_108	Cocoa, drinking chocolate	2.07	~0.06	0.818	0.22	0.80	2.56	<0.002	<0.006	<0.003	<0.04	0.52	~0.019	<0.002
S14-042961	17_109	Concentrated soft drinks	<0.1	<0.04	0.069	<0.04	<0.04	<0.1	<0.002	<0.006	<0.003	<0.04	0.19	<0.01	<0.002
S14-042962	17_110	Ready to drink soft drinks	<0.1	<0.04	<0.01	<0.04	<0.04	<0.1	<0.002	<0.006	<0.003	<0.04	0.36	<0.01	<0.002
S14-042963	17_113	Alternatives to milk	0.45	<0.04	0.931	~0.09	0.6	1.59	<0.002	<0.006	<0.003	<0.04	0.41	0.119	<0.002

Table 22. Element concentrations in Non-alcoholic Beverages category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042954	17_102	Tea	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	~0.003	~0.06	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042955	17_103	Takeaway Tea	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	0.008	<0.04	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042956	17_104	Instant coffee	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	0.006	0.15	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042957	17_105	Ground coffee	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	~0.004	~0.09	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042958	17_106	Takeaway coffee	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	0.08	~0.05	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042959	17_107	Branded food drinks	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	0.07	0.20	<0.002	<0.001	<0.004	~0.004	<0.002
S14-042960	17_108	Cocoa, drinking chocolate	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	0.117	0.30	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042961	17_109	Concentrated soft drinks	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	~0.002	~0.05	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042962	17_110	Ready to drink soft drinks	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	~0.004	<0.04	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042963	17_113	Alternatives to milk	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	0.022	~0.07	<0.002	<0.001	<0.004	<0.004	<0.002

Table 23. Element concentrations in Milk category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042964	18_114	Whole (full fat) milk (cows)	<0.1	<0.04	~0.022	<0.04	<0.04	2.79	<0.002	<0.006	<0.003	<0.04	0.29	0.037	<0.002
S14-042965	18_115	Skimmed/Semi skimmed milks (cows)	<0.1	<0.04	~0.018	<0.04	<0.04	2.22	<0.002	<0.006	<0.003	<0.04	0.24	~0.029	<0.002

Table 23. Element concentrations in Milk category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042964	18_114	Whole (full fat) milk (cows)	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	0.282	~0.08	<0.002	<0.001	<0.004	<0.004	<0.002
S14-042965	18_115	Skimmed/Semi skimmed milks (cows)	<0.001	<0.002	<0.006	<0.001	<0.02	<0.001	0.369	~0.06	<0.002	<0.001	<0.004	<0.004	<0.002

Table 24. Element concentrations in Dairy Products category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042966	19_116	Condensed milk or Evaporated Milk	~0.07	<0.02	0.065	<0.02	0.13	8.93	<0.001	<0.003	<0.012	~0.03	0.84	0.109	<0.001
S14-042967	19_117	Instant milk	<0.05	<0.02	0.03	<0.02	0.09	5.92	<0.001	<0.003	<0.003	~0.03	0.76	0.037	<0.001
S14-042968	19_118	Natural cheese	0.27	0.11	0.194	~0.06	0.28	29	<0.001	<0.003	<0.012	0.10	1.93	0.085	<0.001
S14-042969	19_119	Processed cheese	1.03	0.08	0.179	~0.05	0.21	21.1	<0.001	~0.004	<0.012	0.07	1.85	0.10	<0.001
S14-042970	19_120	Butter	0.95	<0.02	<0.005	<0.02	<0.02	0.56	<0.001	<0.003	<0.012	<0.02	0.04	0.032	<0.001
S14-042971	19_121	Ice-cream	30.5	~0.05	0.635	0.08	0.41	3.69	<0.001	<0.003	<0.012	<0.02	0.57	0.068	<0.001
S14-042972	19_122	Yoghurt	0.23	<0.02	0.254	<0.02	0.10	4.84	<0.001	<0.003	<0.012	<0.02	0.47	0.042	<0.001
S14-042973	19_123	Other milk products	0.35	<0.02	0.171	~0.03	0.11	2.84	<0.001	<0.003	<0.012	<0.02	0.37	0.028	<0.001
S14-042974	19_124	Cream	<0.05	<0.02	~0.009	<0.02	~0.05	2.15	<0.001	<0.003	<0.012	<0.02	0.16	0.099	~0.002
S14-042975	19_125	Canned milk puddings	0.36	<0.02	0.723	<0.02	0.11	3.67	<0.001	0.01	~0.008	<0.02	0.32	0.069	<0.001

Table 24. Element concentrations in Dairy Products category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042966	19_116	Condensed milk or Evaporated Milk	<0.0005	<0.001	<0.003	<0.0005	0.64	<0.0005	0.422	0.12	<0.001	<0.0005	<0.002	<0.002	0.007
S14-042967	19_117	Instant milk	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	0.446	0.19	<0.001	<0.0005	<0.002	<0.002	0.005
S14-042968	19_118	Natural cheese	<0.0005	~0.001	<0.003	<0.0005	<0.01	<0.0005	0.346	0.54	<0.001	<0.0005	<0.002	~0.004	0.045
S14-042969	19_119	Processed cheese	<0.0005	~0.001	<0.003	<0.0005	<0.01	0.0029	0.363	0.45	<0.001	<0.0005	<0.002	~0.004	0.021
S14-042970	19_120	Butter	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	0.062	<0.02	<0.001	<0.0005	<0.002	<0.002	0.011
S14-042971	19_121	Ice-cream	<0.0005	<0.001	<0.003	<0.0005	~0.02	~0.0006	0.251	0.29	<0.001	<0.0005	<0.002	~0.005	~0.003
S14-042972	19_122	Yoghurt	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	0.27	0.11	<0.001	<0.0005	<0.002	<0.002	~0.003
S14-042973	19_123	Other milk products	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	0.278	0.07	<0.001	<0.0005	<0.002	<0.002	~0.002
S14-042974	19_124	Cream	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	0.226	~0.04	<0.001	<0.0005	<0.002	<0.002	0.009
S14-042975	19_125	Canned milk puddings	<0.0005	~0.003	<0.003	<0.0005	0.10	<0.0005	0.281	~0.03	<0.001	<0.0005	<0.002	<0.002	~0.002

Table 25. Element concentrations in Nuts category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042976	20_126	Ground nuts including peanut butter	3.17	~0.04	17.2	1.42	5.65	26	<0.001	~0.003	<0.012	0.11	3.31	1.25	<0.001
S14-042977	20_127	Tree nuts	1.75	~0.06	18.7	2.63	13.4	38.7	<0.001	~0.006	<0.012	0.10	5.84	0.251	<0.001

Table 25. Element concentrations in Nuts category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042976	20_126	Ground nuts including peanut butter	<0.0005	~0.003	0.04	<0.0005	<0.01	<0.0005	<0.01	3.52	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042977	20_127	Tree nuts	<0.0005	0.004	~0.005	<0.0005	<0.01	<0.0005	<0.01	1.5	<0.001	~0.0006	<0.002	<0.002	<0.001

Table 26. Element concentrations in Alcoholic Drinks category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042978	21_128	Beer	~0.06	<0.02	0.111	<0.02	~0.04	<0.05	<0.001	<0.003	<0.003	<0.02	0.15	~0.005	<0.001
S14-042979	21_129	Cider	0.18	<0.02	0.167	<0.02	<0.02	~0.06	<0.001	<0.003	<0.003	<0.02	0.11	<0.005	<0.001
S14-042980	21_130	Wine	0.64	<0.02	1.1	<0.02	0.08	0.62	<0.001	~0.006	~0.006	<0.02	0.81	~0.012	<0.001
S14-042981	21_131	Alcopops and cocktails	~0.11	<0.02	0.041	<0.02	<0.02	<0.05	<0.001	<0.003	<0.003	<0.02	0.09	<0.005	<0.001
S14-042982	21_132	Spirits	<0.05	<0.02	<0.005	<0.02	~0.03	~0.06	<0.001	<0.003	<0.003	<0.02	<0.01	<0.005	<0.001

Table 26. Element concentrations in Alcoholic Drinks category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042978	21_128	Beer	<0.0005	<0.001	<0.003	<0.0005	<0.01	~0.0007	0.006	<0.02	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042979	21_129	Cider	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	~0.004	0.08	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042980	21_130	Wine	<0.0005	<0.001	<0.003	<0.0005	<0.01	~0.0013	0.011	0.09	<0.001	<0.0005	<0.002	0.009	<0.001
S14-042981	21_131	Alcopops and cocktails	<0.0005	<0.001	<0.003	<0.0005	~0.02	~0.0007	~0.003	~0.04	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042982	21_132	Spirits	<0.0005	<0.001	<0.003	<0.0005	<0.01	<0.0005	0.006	<0.02	<0.001	<0.0005	<0.002	<0.002	<0.001

Table 27. Element concentrations in Snacks category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042984	23_134	Potato crisps and potato based snacks	5.43	~0.10	3.34	0.15	2.05	8.65	<0.002	~0.008	<0.012	<0.04	1.04	0.139	<0.002
S14-042985	23_135	Other snacks (not potato based)	4.71	~0.09	5.86	~0.11	1.17	11.4	<0.002	0.021	~0.013	<0.04	2.19	0.208	<0.002

Table 27. Element concentrations in Snacks category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042984	23_134	Potato crisps and potato based snacks	<0.001	<0.002	0.078	<0.001	<0.02	<0.001	~0.024	0.77	<0.002	<0.001	<0.004	~0.005	<0.002
S14-042985	23_135	Other snacks (not potato based)	<0.001	<0.002	~0.013	<0.001	<0.02	~0.0013	0.174	0.75	<0.002	<0.001	<0.004	~0.007	~0.005

Table 28. Element concentrations in Desserts category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042986	24_136	Desserts (unfrozen)	3.01	~0.09	1.44	0.22	1.05	4.7	<0.002	<0.006	<0.012	<0.04	0.72	0.056	<0.002
S14-042987	24_137	Desserts(frozen but not ice cream)	0.66	~0.03	1.34	~0.04	0.18	1.72	<0.001	<0.003	<0.012	<0.02	0.36	0.035	<0.001

Table 28. Element concentrations in Desserts category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042986	24_136	Desserts (unfrozen)	<0.001	<0.002	<0.006	<0.001	<0.02	~0.0011	0.20	0.35	<0.002	<0.001	~0.004	<0.004	~0.004
S14-042987	24_137	Desserts(frozen but not ice cream)	<0.0005	<0.001	~0.005	<0.0005	<0.01	~0.0006	0.116	0.20	<0.001	<0.0005	<0.002	~0.002	<0.001

Table 29. Element concentrations in Condiments category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Al	Cr	Mn	Ni	Cu	Zn	Ge	As	iAs	Se	Sr	Mo	Ru
S14-042989	26_82	Meat or yeast extracts	3.96	~0.07	2.35	0.14	0.36	11.8	<0.002	~0.020	~0.023	<0.04	3.7	0.058	<0.002
S14-042990	26_83	Spreads, dressings	0.70	~0.03	0.327	<0.02	0.10	1.77	<0.001	<0.003	<0.012	~0.03	0.37	~0.015	<0.001
S14-042991	26_84	Pickles, sauces	5.35	0.07	1.51	0.09	0.60	1.48	~0.001	0.013	~0.013	<0.02	1.47	0.043	<0.001

Table 29. Element concentrations in Condiments category (mg/kg as received or prepared)

Fera LIMS	Category	Description	Rh	Pd	Cd	In	Sn	Sb	I	Ba	Pt	Hg	Tl	Pb	Bi
S14-042989	26_82	Meat or yeast extracts	<0.001	0.015	~0.010	<0.001	<0.02	0.0034	0.034	0.43	<0.002	<0.001	~0.005	0.092	<0.002
S14-042990	26_83	Spreads, dressings	<0.0005	<0.001	<0.003	<0.0005	~0.02	~0.0006	0.04	0.11	<0.001	<0.0005	<0.002	<0.002	<0.001
S14-042991	26_84	Pickles, sauces	<0.0005	<0.001	0.01	<0.0005	~0.02	0.0112	~0.016	0.29	<0.001	<0.0005	<0.002	0.009	<0.001

Annex 1 - Cooking and preparation instructions supplied by FSA

(Note: Condiments, Tap waters and Bottled waters were separated into 3 individual groups – Grp 26, 27 and 28 respectively - not shown in these original instructions)

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
1 Bread	White, standard, sliced	No preparation required	n/a	Toast	10	
	White, standard, unsliced	No preparation required	n/a	Analyse as is	n/a	
	White bread, premium, sliced and unsliced	No preparation required	n/a	Analyse as is	n/a	
	White, soft grain, sliced and unsliced	No preparation required	n/a	Analyse as is	n/a	
	White bread, with or without butter or margarine (toasted or untoasted)	No preparation required	n/a	Analyse as is	n/a	
	White rolls, baguettes etc. without butter or margarine (or butter or margarine not specified)	No preparation required	n/a	Analyse as is	n/a	
	Brown, sliced and unsliced	No preparation required	n/a	Analyse as is	1	Toast one sliced loaf
	Wholemeal and granary bread, sliced and unsliced	No preparation required	n/a	Analyse as is	1	Toast one sliced loaf
	Rolls - white, brown or wholemeal	No preparation required	n/a	Analyse as is	n/a	
	Malt bread and fruit loaves	No preparation required	n/a	Analyse as is	n/a	
	Vienna and French bread	No preparation required	n/a	Analyse as is	n/a	
	Starch reduced bread and rolls	No preparation required	n/a	Analyse as is	n/a	
	Other breads	No preparation required	n/a	Analyse as is	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook
2 Miscellaneous cereals	Flour	No preparation required	24	Analyse as is	n/a
	Cakes and pastries, not frozen	No preparation required	14	Analyse as is	n/a
	Buns, scones and teacakes	No preparation required	6	Analyse as is	n/a
	Cakes and pastries - frozen	Defrost (according to instructions on label)	1	Analyse as is	n/a
	Doughnut	No preparation required	1	Analyse as is	n/a
	Fruit and other pies or pastries	No preparation required	1	Analyse as is	n/a
	Other sponge cakes or desserts (not cream cakes)	No preparation required	1	Analyse as is	n/a
	Cream crackers and other unsweetened biscuits	No preparation required	15	Analyse as is	n/a
	Crispbread	No preparation required	9	Analyse as is	n/a
	Sweet biscuits (not chocolate) and cereal bars	No preparation required	24	Analyse as is	n/a
	Chocolate biscuits	No preparation required	23	Analyse as is	n/a
	Sweet biscuits including half-coated chocolate biscuits	No preparation required	1	Analyse as is	n/a
	Oatmeal and oat products	Prepare according to instructions on label	3	Cook according to instructions on label	3
	Muesli	No preparation required	3	Analyse as is	n/a
	High fibre breakfast cereals	No preparation required	8	Analyse as is	n/a
	Sweetened breakfast cereals	No preparation required	5	Analyse as is	n/a
	Other breakfast cereals	No preparation required	5	Analyse as is	n/a
	Dried rice	Prepare according to instructions on label	15	Boil in tap water until cooked, about 15 minutes. Drain.	15
	Cooked rice	No preparation required	3	Analyse as is	n/a
	Takeaway rice	No preparation required	4	Analyse as is	n/a
	All cooked rice excluding fried rice (e.g. boiled, pilau, savoury)	No preparation required	2	Analyse as is	n/a
	Cake, pudding and dessert mixes	No preparation required	3	Analyse as is	n/a

	Other cereal foods, frozen and not frozen	No preparation required	18	Analyse as is	n/a
	Other cereals	No preparation required	3	Analyse as is	n/a
	Canned pasta	No preparation required	5	Analyse as is	n/a
Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook
2 (cont.)	Dried and fresh pasta	No preparation required	17	Boil in tap water until cooked, about 10 minutes. Drain.	17
	Takeaway pasta and noodles	No preparation required	1	Analyse as is	n/a
	Pasta - not filled and plain noodles (including pot noodle) - without sauce	Prepare according to instructions on label	1	Cook according to instructions on label	1
	Pizzas, frozen and not frozen	Prepare according to instructions on label	15	Cook according to instructions on label	15
	Takeaway pizza	No preparation required	6	Analyse as is	n/a
	Pizza - cheese and tomato, vegetable or unspecified 'pizza'	No preparation required	2	Analyse as is	n/a
	Pizza - meat, fish or poultry	No preparation required	1	Analyse as is	n/a

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
3 Carcase meat	Beef joints - boned	No preparation required	n/a	Roast in oven until cooked, about 30 minutes	4	
	Beef steak - less expensive	No preparation required	n/a	Braise meat until cooked, about 20 minutes	1	
				Stew for 20 minutes until cooked	3	
	Beef steak - more expensive	No preparation required	n/a	Dry fry on both sides until cooked, about 5 minutes	1	
				Grill on both sides until cooked, about 5 minutes	3	
	Minced beef	No preparation required	n/a	Stew for 20 minutes until cooked	9	
				Dry fry until cooked, about 10 minutes	2	
	Steak - without sauce (e.g. braised, sirloin)	No preparation required	n/a	Dry fry on both sides until cooked, about 5 minutes	1	
	Mutton	No preparation required	n/a	Stew for 20 minutes until cooked	1	
	Lamb joints	No preparation required	n/a	Roast in oven until cooked, about 20 minutes	12	
	Lamb chops	No preparation required	n/a	Grill on both sides until cooked, about 5 minutes	7	
	All other lamb	No preparation required	n/a	Stew for 20 minutes until cooked	4	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
3 (cont.)	Pork joints	No preparation required	n/a	Roast in oven until cooked, about 20 minutes	8	
	Pork chops	No preparation required	n/a	Grill on both sides until cooked, about 5 minutes	5	
	Pork fillets and steaks	No preparation required	n/a	Dry fry until cooked, about 10 minutes	2	
				Grilled	4	
	All other pork	No preparation required	4	Stew for 20 minutes until cooked	4	4 with no prepare the 4 to be stewed
		Mince	1	Dry Fry until cooked, about 10 minutes	1	1 that is mince is to be compacted and fried as a burger/meatball

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
4 Offals	Lambs liver	No Preparation Required	5	Stewed	5	All offal to be fried is to be lightly coated with plain flour first. All offal to be stewed requires no preparation.
		Coated with Flour	19	Fried	19	
	Pigs liver	Coated with Flour	24	Fried	24	
	Ox liver	Coated with Flour	4	Fried	4	
	All other liver	Coated with Flour	20	Fried	20	
	Kidney	Coated with Flour	12	Fried	12	
		No Preparation Required	12	Stewed	12	
	All offal other than liver	Coated with Flour	22	Fried	22	
	All offal including tongue	Coated with Flour	2	Fried	2	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
5 Meat products	Bacon	analyse as is	n/a	analyse as is	n/a	
	Bacon and ham joints, uncooked	no preparation required	n/a	Boil until cooked, around 40 minutes	8	
	Bacon and ham rashers, uncooked	no preparation required	n/a	Fry until cooked, around 5 minutes	2	
		no preparation required	n/a	Grill until cooked, around 5 minutes	13	
	Gammon or ham	analyse as is	n/a	analyse as is	n/a	
	Bacon and ham, cooked	analyse as is	n/a	analyse as is	n/a	
	Corned beef, canned or sliced	analyse as is	n/a	analyse as is	n/a	
	Other cooked meat	analyse as is	n/a	analyse as is	n/a	
	Other canned meat and canned meat products	no preparation required	n/a	Cook according to package/label instructions where possible (keep label for record)	16	
	Sausages, uncooked - pork	no preparation required	n/a	Fry until cooked, around 10 minutes	2	
		no preparation required	n/a	Grill until cooked, around 10 minutes	22	
	Sausages, uncooked - beef and other sausages	no preparation required	n/a	Fry until cooked, around 10 minutes	2	
		no preparation required	n/a	Grill on all sides until cooked, around 10 minutes	22	
	Plain ready-to-eat (RTE) sausages (e.g. beef, pork)	analyse as is	n/a	analyse as is	n/a	If samples purchased are not RTE (I think that they all should be), then bake/ grill until cooked.
	Other sausages (RTE)	analyse as is	n/a	analyse as is	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
5 (cont.)	Takeaway sausages and saveloys	analyse as is	n/a	analyse as is	n/a	
	Hot dogs and sausage sandwiches	analyse as is	n/a	analyse as is	n/a	
	Meat pies (pastry topped) and pasties	analyse as is	n/a	analyse as is	n/a	
	Sausage roll (pastry)	analyse as is	n/a	analyse as is	n/a	
	Sausage rolls, ready to eat	analyse as is	n/a	analyse as is	n/a	
	Pate	n/a	n/a	n/a	n/a	
	Pate	analyse as is	n/a	analyse as is	n/a	
	Meat pies, ready to eat	analyse as is	n/a	analyse as is	n/a	
	Meat pies, pasties and puddings, frozen or not frozen	Prepare according to package/label instructions	13	Cook according to package/label instructions where possible (keep label for record)	13	
	Meat pastes and spreads	n/a	n/a	n/a	n/a	
	Takeaway meat pies and pasties	n/a	n/a	n/a	n/a	
	Meat pies (potato topped e.g. shepherd's pie)	n/a	n/a	n/a	n/a	
	Meat and vegetable stews, casseroles or hotpots	n/a	n/a	n/a	n/a	
	Meat lasagne, cannelloni, moussaka and other meat-based oven baked dishes	analyse as is	n/a	analyse as is	n/a	
	Meat salad (e.g. beef, lamb salads)	n/a	n/a	n/a	n/a	
	Complete meat-based ready meals, frozen or not frozen	Prepare according to package/label instructions	13	Cook according to package/label instructions where possible (keep label for record)	13	
	Other convenience meat products, frozen or not frozen	Prepare according to package/label instructions	10	Cook according to package/label instructions where possible (keep label for record)	10	
	Takeaway meat based meals	analyse as is	n/a	analyse as is	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
5 (cont.)	Takeaway miscellaneous meats	n/a	n/a	n/a	n/a	
	Meat or fish -based curry with sauce	analyse as is	n/a	analyse as is	n/a	
	Indian buffet or shared meal or unspecified Indian meal	analyse as is	n/a	analyse as is	n/a	
	Chinese or Thai meat or fish-based dishes excluding curry	analyse as is	n/a	analyse as is	n/a	
	Chop suey and Fu yung dishes	n/a	n/a	n/a	n/a	
	Chinese or Thai curry	n/a	n/a	n/a	n/a	
	Other Chinese or Thai dishes	n/a	n/a	n/a	n/a	
	Chinese or Thai buffet or shared meal or unspecified Chinese or Thai meal	analyse as is	n/a	analyse as is	n/a	
	All other ethnic meals	analyse as is	n/a	analyse as is	n/a	
	Kebabs - all types including chicken	analyse as is	n/a	analyse as is	n/a	
	Takeaway kebabs	analyse as is	n/a	analyse as is	n/a	
	Meat-based sauce (e.g. bolognese, chilli con carne)	analyse as is	n/a	analyse as is	n/a	
	Other meat and meat products	analyse as is	n/a	analyse as is	n/a	
	Other fresh, chilled and frozen meat	Prepare according to package/label instructions	6	Cook according to package/label instructions where possible (keep label for record)	6	
	Meat & fish soups	analyse as is	n/a	analyse as is	n/a	
	Small or single burgers	analyse as is	n/a	analyse as is	n/a	
	Large or double burgers	analyse as is	n/a	analyse as is	n/a	
	Burgers, frozen or not frozen	Prepare according to package/label instructions	13	Cook according to package/label instructions where possible (keep label for record)	13	If no packaging instructions are available, bake the product until cooked, around 20 minutes/hot through the centre
	Takeaway burger and bun	analyse as is	n/a	analyse as is	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
6 Poultry	Chicken, uncooked - whole chicken or chicken pieces	No preparation required	n/a	Grill until cooked, about 30 minutes (or use browning chart to select shade of browning?)	11	
		No preparation required		BBQ until cooked, about 30 minutes	1	
		No preparation required		Stew until cooked, about 20 minutes	1	
		No preparation required		Roast in oven until cooked, about 30 minutes	9	If possible, one should be roast in the bag' spiced/flavoured whole chicken
		No preparation required		Fry until cooked, about 20 minutes	2	
	Turkey, uncooked - whole turkey or turkey pieces	No preparation required		Roast in oven until cooked, about 30 minutes	10	
		No preparation required		Stew until cooked, about 20 minutes	5	
		No preparation required		Stew until cooked, about 20 minutes	4	
	Poultry other than chicken or turkey, uncooked	No preparation required		Stew until cooked, about 20 minutes	5	
	Chicken and turkey, cooked	No preparation required		Analyse as is	n/a	
	Takeaway chicken	No preparation required		Cook according to instructions on label (keep label for records)	6	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
6 (cont.)	Chicken or turkey with sauce or gravy	Prepare according to instructions on label (keep label for records)		Cook according to instructions on label (keep label for records)	9	
	Chicken or turkey in breadcrumbs or batter	No preparation required		Cook according to instructions on label (keep label for records)	4	
	Chicken burger	No preparation required		Cook according to instructions on label (keep label for records)	3	
	Chicken or turkey salad	No preparation required		Analyse as is	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
7 Fish	White fish, fresh or chilled	No preparation required	n/a	Oven bake until cooked, about 15 minutes	3	
		No preparation required	n/a	Fry until cooked, about 5 minutes	4	
		No preparation required	n/a	Grill on both sides for about 5 minutes until cooked	6	
		No preparation required	n/a	Steam or poach until cooked, about 5 minutes	1	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
7 (cont.)	White fish, frozen	Defrost according to instructions on label (keep label for records)	2	Oven bake until cooked, about 15 minutes	2	
		Defrost according to instructions on label (keep label for records)	1	Fry until cooked, about 5 minutes	1	
		Defrost according to instructions on label (keep label for records)	4	Grill on both sides for about 5 minutes until cooked	4	
	White fish, dried, salted or smoked	No preparation required	n/a	Steam or poach until cooked, about 5 minutes	3	
	Herrings and other blue fish, fresh or chilled	No preparation required	n/a	Oven bake until cooked, about 15 minutes	2	
		No preparation required	n/a	Grill on both sides for about 5 minutes until cooked	3	
	Salmon, fresh or chilled	No preparation required	n/a	Grill on both sides for about 5 minutes until cooked	7	
		No preparation required	n/a	Oven bake until cooked, about 15 minutes	4	
	Salmon, frozen	Defrost according to instructions on label (keep label for records)	1	Oven bake until cooked, about 15 minutes	1	
	Blue fish, dried or salted or smoked	No preparation required	7	Steam or poach until cooked, about 5 minutes	7	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
7 (cont.)	Shellfish, fresh or chilled	Remove shell; i.e. if shell-on	10	Steam or poach until cooked, about 5 minutes	10	
		Remove shell; i.e. if shell-on	3	Grill until cooked, about 5 minutes	3	
	Shellfish, frozen	Defrost and remove shell; i.e. if shell-on	8	Steam or poach until cooked, about 5 minutes	8	
		Defrost and remove shell; i.e. if shell-on		Fry until cooked, about 5 minutes		
	Shellfish - without sauce or dressing (e.g. prawns, shrimps, oysters, crab)	Remove shell; i.e. if shell-on	1	Steam or poach until cooked, about 5 minutes	1	
	Salmon, tinned	Drain surrounding medium	24	Analyse as is	24	
	Other tinned or bottled fish	Drain surrounding medium	24	Analyse as is	24	
	Ready meals and other fish products - frozen or not frozen	Prepare according to instructions on label (keep label for records)	23.45937 158	Cook according to instructions on label (keep label for records)	23	If cooking instructions provide options for oven baking/ microwaving/ grilling then please treat as follows: 12 = microwave; 6 = oven bake and 6 = grill
	Other fish products and unspecified 'fish' (e.g. squid, sushi, crabsticks)	Prepare according to instructions on label (keep label for records)	0.540628 417	Cook according to instructions on label (keep label for records)	1	
	Takeaway fish	No preparation required	n/a	Analyse as is	8	
	Takeaway fish based meals	No preparation required	n/a	Analyse as is	2	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
7 (cont.)	White fish - grilled, steamed, baked or boiled - without sauce	No preparation required	n/a	Analyse as is	1	
	White fish - fried (incl in batter/breadcrumbs) - without sauce	No preparation required	n/a	Analyse as is	7	
	Trout, tuna and salmon only - fresh - without sauce or dressing	No preparation required	n/a	Analyse as is	1	
	Fish, processed, in breadcrumbs (fish fingers, fish cakes, scampi) - without sauce or dressing	No preparation required	n/a	Analyse as is	1	
	Fish based pie or other dish (e.g. paella, kedgeree, tuna pasta bake)	No preparation required	n/a	Analyse as is	1	
	Fish salad (e.g. tuna, salmon salads)	No preparation required	n/a	Analyse as is	2	
	Fish -based curry without sauce	No preparation required	n/a	Analyse as is	1	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
8 Oils and fats	Soft margarine	Analyse as is	22	Analyse as is	22	
	Other margarine	Analyse as is	2	Analyse as is	2	
	Reduced fat spreads	Analyse as is	24	Analyse as is	24	
	Low fat spreads	Analyse as is	24	Analyse as is	24	
	Olive oil	Analyse as is	6	Analyse as is	6	
	Other vegetable and salad oils	Analyse as is	18	Analyse as is	18	
	Lard, cooking fat	Analyse as is	24	Analyse as is	24	
	Suet and dripping	Analyse as is	4	Analyse as is	4	
	Imitation cream	Analyse as is	20	Analyse as is	20	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
9 Eggs	Eggs - boiled or poached	Whisk whole eggs together	2	Scramble until cooked (approximately 3-4 minutes)	2	Do not add milk. If possible scramble without any oil or fat.
		No preparation required	13	Boil whole eggs in water until cooked (around 8 minutes)	13	
		Crack whole egg into a shallow frying pan	7	Fry in a shallow frying pan until cooked (around 3 minutes)	7	If possible dry fry in a non-stick frying pan. If oil is required, use only a small amount.
		Crack whole egg into boiling water	2	Poach in boiling water until cooked (around 4 minutes)	2	
	Quiches and flans, frozen and not frozen	No preparation needed	24	Cook according to package instructions where possible (keep label for record)	24	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
10 Sugars and preserves	Sugar	No preparation required	n/a	Analyse as is	n/a	
	Jams and fruit curds	No preparation required	n/a	Analyse as is	n/a	
	Marmalade	No preparation required	n/a	Analyse as is	n/a	
	Syrup, treacle	No preparation required	n/a	Analyse as is	n/a	
	Honey	No preparation required	n/a	Analyse as is	n/a	
	Jelly	No preparation required	n/a	Analyse as is	n/a	
	Chocolate bars - solid	No preparation required	n/a	Analyse as is	n/a	
	Chocolate bars - filled	No preparation required	n/a	Analyse as is	n/a	
	Solid, unfilled chocolate bars and sweets and unspecified 'chocolate'	No preparation required	n/a	Analyse as is	n/a	
	Filled chocolate-coated bars and sweets (e.g. Mars, Snickers, Minstrels)	No preparation required	n/a	Analyse as is	n/a	
	Chewing gum	No preparation required	n/a	Analyse as is	n/a	
	Mints	No preparation required	n/a	Analyse as is	n/a	
	Boiled sweets	No preparation required	n/a	Analyse as is	n/a	
	Boiled sweets, jellies and unspecified 'sweets' (e.g. fruit gums)	No preparation required	n/a	Analyse as is	n/a	
	Fudges, toffees, caramels	No preparation required	n/a	Analyse as is	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
11 Green vegetables	Fresh cabbages	Remove leaves from stem. Wash in water. Chop roughly	3	Analyse as it	n/a	
		Remove leaves from stem. Wash in water. Chop roughly	21	Boil until cooked, about 15 minutes. Drain.	21	
	Fresh Brussel sprouts	Wash in water. Cut into florets	12	Analyse as it	n/a	
		Wash in water. Cut into florets	12	Boil until cooked, about 5 minutes. Drain.		
	Fresh cauliflower	Remove outer leaves. Wash in water. Cut into florets.	4	Analyse as it	n/a	
		Remove outer leaves. Wash in water. Cut into florets.	20	Boil until cooked, about 5 minutes. Drain.		
	Lettuce and leafy salads	No preparation required	n/a	Analyse as it	n/a	
	Prepared lettuce salads	No preparation required	n/a	Analyse as it	n/a	
	Mixed salad, side dish - without dressing - including unspecified 'salad'	No preparation required	n/a	Analyse as it	n/a	
	Vegetable or fruit and nut salad - with dressing	No preparation required	n/a	Analyse as it	n/a	
	Fresh peas	No preparation required	n/a	Boil in water until cooked, about 5 minutes. Drain.	3	
	Peas, frozen	No preparation required	n/a	Boil/ steam/ microwave according to cooking instructions on the pack	21	If packs provide options; divide into equal portions for boiling/ microwaving/ steaming
	Fresh beans	Remove ends	21	Boil in water provided until cooked, about 10 minutes. Drain.	21	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
11 (cont.)	Beans, frozen	No preparation required	n/a	Boil/ steam/ microwave according to cooking instructions on the pack	3	
	Other fresh green vegetables	Remove outer leaves/ ends etc. as appropriate. Wash in water. Cut into pieces as required.	17	Boil in water provided until cooked, about 5 minutes. Drain.	17	If the samples include any green veg that is typically eaten raw, then analyse as is.
	Other green vegetables (e.g. spinach, cabbage, sprouts)	Remove outer leaves/ ends etc. as appropriate. Wash in water. Cut into pieces as required.	7	Boil in water provided until cooked, about 5 minutes. Drain.	7	If the samples include any green veg that is typically eaten raw, then analyse as is.

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
12 Potatoes	Fresh new potatoes	Wash	4	Boil until cooked, around 15 minutes	4	
	Fresh baking potatoes	Wash	3	Bake in oven until cooked, around 30 minutes	3	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
12 (cont.)	Other fresh potatoes	Wash and peel the potatoes and cut each into 4 even-sized pieces if they are medium size, 2-3 if smaller (5cm pieces)	5	Boil salted water until cooked, approx 15-20 minutes	5	
		Wash and peel the potatoes and cut each into 4 even-sized pieces if they are medium size, 2-3 if smaller (5cm pieces)	7	Par boil in boiling salted water for 5 mins. Drain the potatoes in a colander and shake the colander back and forth a few times to fluff up the outsides. Roast the potatoes for approx. 40 mins until golden brown (see recipe example at http://www.bbcgoodfood.com/recipes/1303/ultimate-roast-potatoes)	7	
		Peel the potatoes and cut lengthways into roughly 1cm/1/2in slices. Cut each slice into fairly thick chips and rinse in a colander under plenty of cold water to remove excess starch.	5	Deep fry in oil (e.g. Sunflower oil) for 10-15 minutes until crisp and golden-brown. Remove from the pan with a slotted spoon and drain on kitchen paper. (see example at http://www.bbc.co.uk/food/recipes/thebestchipsyouhavee_93121)	5	
	Chips - frozen or not frozen	(Frozen Chips) Follow packet instructions where possible (keep label for future reference)	8	Bake in oven until cooked, around 20 minutes	4	
				Deep fried until cooked, around 10 minutes	4	
		(Fresh potatoes prepared as chips)	3	Deep fried until cooked, around 10 minutes	3	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
12 (cont.)	Takeaway chips	No preparation Required	n/a	No cooking Required	n/a	
	Other potato products, frozen or not frozen	Follow packet instructions where possible (keep label for future reference)	4	Follow packet instructions where possible (keep label for future reference)	4	
	Chips and french fries - from fast food outlet (e.g. McDonalds)	No preparation Required	n/a	No cooking Required	n/a	
	Chips - served with meal (e.g. from restaurant or chip shop)	No preparation Required	n/a	No cooking Required	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
13 Other vegetables	Fresh onions, leeks and shallots	Wash in water and peel (i.e. remove outer layer and ends). Cut into pieces.	8	Sauté on medium heat for 5 mins	8	
			8	Sweat for a short while over low heat	8	
			8	Analyse as is (raw)	n/a	
	Fresh carrots	Wash in water, peel and remove ends. Cut into pieces.	18	Boil in water until cooked, about 5 minutes. Drain.	18	
			6	Analyse as is (raw)	6	
	Fresh turnips and swede	Wash in water, peel and remove ends. Cut into pieces.	24	Boil in water until cooked, about 20 minutes. Drain.	19	
	Other fresh root vegetables	Wash in water, peel and remove ends. Cut into pieces.	6	Boil in water until cooked, about 20 minutes. Drain.	6	
	Fresh vegetable stew pack, stir-fry pack etc.	Prepare according to label / No preparation required	4	Cook according to label / analyse as is	4	
	Fresh stem vegetables	Wash in water, peel and remove ends. Cut into pieces.	4	Sauté/ steam for 5 mins	4	
	Fresh marrow, courgettes, aubergine, pumpkin and other vegetables	Wash in water, peel and remove ends. Cut into pieces.	9	Boil in water until cooked, about 10 minutes. Drain.	9	
	Mixed vegetables or unspecified 'vegetable'	No preparation required	1	Analyse as is	1	
	Fresh mushrooms	Wash/ wipe clean (remove soil) cut into pieces	23	Sauté/ steam for 5 mins	23	
	Mushrooms	No preparation required	n/a	microwave for 2 mins	1	Assuming a pack of ready-prepared sliced mushrooms is purchased

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
13 (cont.)	Fresh tomatoes	Wash in water and cut into pieces.	22	Analyse as is (raw)	n/a	
		Wash in water and cut into pieces.	2	stew	2	
	Fresh cucumbers	Wash in water and cut ends off. Cut into pieces.		Analyse as is (raw)	24	
	Dried pulses other than air-dried	Soak in water overnight (12 hrs).	10	Boil in water until cooked. 20 minutes approx.	10	
	Fresh herbs	No preparation required	n/a	Analyse as is	n/a	
	Ready meals and other vegetable products, frozen or not frozen	Prepare according to label / No preparation required	19	Cook according to label / analyse as is	19	
	All vegetable takeaway products	No preparation required	n/a	Analyse as is	3	
	Vegetable lasagne, vegetable cannelloni, vegetable moussaka and other oven baked vegetable based dishes	No preparation required	n/a	Analyse as is	n/a	
	Vegetable based stews and casseroles and vegetable based pies	No preparation required	n/a	Analyse as is	n/a	
	Soups - dehydrated or powdered	Prepare according to label	24	Analyse as is	n/a	
	Stock cubes and meat and yeast extracts	No preparation required	24	Analyse as is	n/a	
	Salad dressings	No preparation required	n/a	Analyse as is	n/a	
	Other spreads and dressings	No preparation required	n/a	Analyse as is	n/a	
	Takeaway sauces and mayonnaise	No preparation required	n/a	Analyse as is	n/a	
	Pickles	Drain	2	Analyse as is	n/a	
	Sauces	No preparation required	n/a	Analyse as is	n/a	
	Other savoury sauce or unspecified 'sauce'	No preparation required	n/a	Analyse as is	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
14 Canned or jarred vegetables	Soups - canned or cartons	No preparation required	n/a	Cook according to instructions (keep label for record)	22	
	Vegetable based soups	No preparation required	n/a	Cook according to instructions (keep label for record)	1	
	Other soups including unspecified 'soup'	No preparation required	n/a	Cook according to packet instructions (keep label for record)	1	
	Soups - from takeaway	n/a	n/a	n/a	n/a	
	Tomatoes, canned or bottled	No preparation required	n/a	Stew for 10 minutes	24	
	Peas, canned	Strain liquid from can and rinse.	24	Boil in water until cooked, around 5 minutes	24	
	Baked beans and other beans (not green beans) and pulses	Strain liquid from can and rinse.	1	Cook according to instructions (keep label for record)	1	
	Baked beans in sauce	No preparation required	19	Cook according to instructions (keep label for record)	19	
	Other canned beans and pulses	Strain liquid from can and rinse.	4	Cook according to instructions where possible (keep label for record)	4	
	Other canned vegetables	Strain liquid from can and rinse.	24	Cook according to instructions where possible (keep label where necessary for record)	24	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
15 Fresh fruit	Fresh oranges	Peeled	24	analyse as is	n/a	
	Other fresh citrus fruits	Peeled	24	analyse as is	n/a	
	All citrus fruit, fresh (e.g. orange, grapefruit)					
	Fresh apples	Peeled	3	Stewed	1	Prep and Cooking columns not linked - cooking involves both peeled and unpeeled apples
		Eaten as is (not peeled)	21	Baked	2	
				Raw	21	
	Fresh pears	Peeled	2	Baked	1	Prep and Cooking columns not linked - cooked pear from either peeled or unpeeled
	Pears, fresh	Eaten as is	22	Raw	23	
	Stone fruit, fresh (e.g. apricot, plum, peach, cherry, avocado)	De-Stoned, flesh and skin eaten	24	analyse as is	n/a	Avocado to be de-stoned and peeled
	Fresh bananas	Peeled	24	analyse as is	n/a	
	Fresh grapes	Eat as is	24	analyse as is	n/a	
	Other fresh soft fruit	Eat as is	n/a			
	Fresh melons	Eat as is	9	analyse as is	n/a	
	Other fresh fruit	Peeled	6	analyse as is	n/a	
	Soft fruit or berries, fresh (e.g. strawberries, blackberries) - without cream or ice cream)	Peeled and stone as required	8	analyse as is	n/a	
	Free school fruit	Eat as is	1	analyse as is	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
16 Fruit products	Tinned peaches, pears and pineapples	Analyse as is	n/a	Analyse as is	n/a	
	All other tinned or bottled fruit	Analyse as is	n/a	Analyse as is	n/a	
	Frozen strawberries, apple slices, peach halves, oranges and other frozen fruits	Analyse as is	n/a	Analyse as is	n/a	
	Dried fruit	Analyse as is	n/a	Analyse as is	n/a	
	Pure fruit juices (f)	Analyse as is	n/a	Analyse as is	n/a	
	Pure fruit juices	Analyse as is	n/a	Analyse as is	n/a	
	Vegetable juices (e.g. tomato juice, carrot juice)	n/a	n/a	n/a	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
17 Non-alcoholic Beverages (with tap water and bottled water)	Tea	Brew 1 Teabag in 250 ml boiled water for about 3 min	24	n/a	n/a	
	Tea, white (including black or white not specified)	Brew 1 Teabag in 250 ml boiled water for about 3 min	23	n/a	n/a	
	Tea, black including Chinese tea, herbal tea, fruit tea	Brew 1 Teabag in 250 ml boiled water for about 3 min	1	n/a	n/a	2 level Teaspoons in 250 ml boiled water (if no instructions on label)
	Instant coffee	Prepare with boiled water, according to label	24	n/a	n/a	
	Coffee beans and ground coffee	Percolate 6 teaspoons coffee per 1 litre water	24	n/a	n/a	
	Coffee, white including cappuccino, latte	No preparation required. Analyse as is	n/a	n/a	n/a	
	Coffee, black including espresso	No preparation required. Analyse as is	n/a	n/a	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
17 (cont.)	Coffee, black or white not specified	No preparation required. Analyse as is	n/a	n/a	n/a	
	Malt drinks and chocolate versions of malted drinks	Add hot water and stir well, according to instructions on label.	n/a	n/a	n/a	
	Cocoa and chocolate drinks	Add hot water and stir well, according to instructions on label.	n/a	n/a	n/a	
	Hot chocolate or cocoa, with milk or water	If not bought as RTD, then add hot water and stir well, according to instructions on label.	n/a	n/a	n/a	
	Soft drinks, concentrated, not low calorie (g)	Add water to dilute according to instructions on label.	n/a	n/a	n/a	
	Soft drinks, concentrated, low calorie (g)	Add water to dilute according to instructions on label.	n/a	n/a	n/a	
	Soft drinks, not concentrated, not low calorie	No preparation required. Analyse as is	n/a	n/a	n/a	
	Soft drinks, not concentrated, low calorie	No preparation required. Analyse as is	n/a	n/a	n/a	
	Soft drink (incl carbonates and still) - low calorie	No preparation required. Analyse as is	n/a	n/a	n/a	
	Soft drink (incl carbonates & still) - not low calorie (including drinks where calorie content unspecified)	No preparation required. Analyse as is	n/a	n/a	n/a	
				n/a	n/a	
	Mineral water	Analyse as is	n/a	n/a	n/a	
	Other milks and dairy desserts - Non-dairy milk substitutes	Analyse as is	n/a	n/a	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
18 Milk	Liquid whole milk, full price, UHT milk	n/a	n/a	n/a	n/a	
	Liquid whole milk, full price, Sterilised	n/a	n/a	n/a	n/a	
	Liquid whole milk, full price, Pasteurised/ homogenised	analyse as is	n/a	analyse as is	n/a	
	Skimmed milks - Fully skimmed milk	analyse as is	n/a	analyse as is	n/a	
	Skimmed milks - Semi-skimmed milk	analyse as is	n/a	analyse as is	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
19 Dairy products	Condensed or evaporated milk	No preparation required	24	n/a	n/a	
	Instant dried milk	Prepare as per instructions on label using water	17	n/a	n/a	
	Other milks and dairy desserts - Dried milk products	Prepare as per instructions on label using water	7	n/a	n/a	
	Hard cheese - cheddar type	No preparation required	n/a	n/a	n/a	
	Hard cheese - other UK or foreign equivalent	No preparation required	n/a	n/a	n/a	
	Hard cheese - edam or other foreign	No preparation required	n/a	n/a	n/a	
	Cottage cheese	No preparation required	n/a	n/a	n/a	
	Soft natural cheese	No preparation required	n/a	n/a	n/a	
	Processed cheese	No preparation required	n/a	n/a	n/a	
	Soft, continental or processed cheese (e.g. brie)	No preparation required	n/a	n/a	n/a	
	Butter	No preparation required	n/a	n/a	n/a	
	Ice cream in a cone, cornet or wafer and ice cream desserts	No preparation required	n/a	n/a	n/a	
	Ice cream tub or block	No preparation required	n/a	n/a	n/a	
	Ice cream cornets, choc-ices, lollies with ice cream	No preparation required	n/a	n/a	n/a	
	Yoghurt	No preparation required	n/a	n/a	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
19 (cont.)	Canned or fresh carton custard	No preparation required	n/a	n/a	n/a	
	Fromage frais	No preparation required	n/a	n/a	n/a	
	Other milks and dairy desserts - Milk drinks and other milks	No preparation required	n/a	n/a	n/a	
	Cream	No preparation required	n/a	n/a	n/a	
	All canned milk puddings	No preparation required	n/a	n/a	n/a	
	Milk and rice puddings including tapioca, semolina	No preparation required	n/a	n/a	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
20 Nuts	Nuts, nut products and seeds	No preparation required (these should have already been bought pre shelled)	n/a	analyse as is	n/a	
		No preparation required (these should have already been bought pre shelled)	n/a	analyse as is	n/a	
		No preparation required (these should have already been bought pre shelled)	n/a	analyse as is	n/a	
	Tree nuts	No preparation required (these should have already been bought pre shelled)	n/a	analyse as is	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
21 Alcoholic drinks	Beers	No preparation required	n/a	n/a	n/a	
	Lagers and continental beers	No preparation required	n/a	n/a	n/a	
	Bitter - pint or can or size not specified	No preparation required	n/a	n/a	n/a	
	Lager or other beers including unspecified 'beer' - half pint or bottle	No preparation required	n/a	n/a	n/a	
	Lager or other beers including unspecified 'beer' - pint or can or size not specified	No preparation required	n/a	n/a	n/a	
	Ciders and perry	No preparation required	n/a	n/a	n/a	
	Cider or perry - half pint or bottle	No preparation required	n/a	n/a	n/a	
	Cider or perry - pint or can or size not specified	No preparation required	n/a	n/a	n/a	
	Champagne, sparkling wines and wine with mixer	No preparation required	n/a	n/a	n/a	
	Table wine	No preparation required	n/a	n/a	n/a	
	Fortified wines	No preparation required	n/a	n/a	n/a	
	Wine (not sparkling) including unspecified 'wine'	No preparation required	n/a	n/a	n/a	
	Alcopops	No preparation required	n/a	n/a	n/a	
	Cocktails	No preparation required	n/a	n/a	n/a	
	Alcoholic soft drinks (alcopops), and ready-mixed bottled drinks	No preparation required	n/a	n/a	n/a	
	Spirits with mixer	No preparation required	n/a	n/a	n/a	
	Spirits	No preparation required	n/a	n/a	n/a	
	Liqueurs and cocktails	No preparation required	n/a	n/a	n/a	
	Spirits or liqueurs with mixer (e.g. gin & tonic, Bacardi & coke)	No preparation required	n/a	n/a	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
22 Meat substitutes	Veggie burger, bean burger, veggie sausage, nut roast	n/a	n/a	n/a	n/a	
	Soya and novel protein foods	No preparation needed	n/a	Cook according to package instructions where possible (keep label for record)	23	The majority of soya/novel protein foods such as quorn or tofu contain cooking instructions on the packaging. Where possible, use these instructions. Attempt to incorporate an even split between cooking methods - e.g. half dry-fried vs half grilled until cooked.

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
23 Snacks	Crisps and potato snacks	No preparation required	n/a	n/a	n/a	
	Potato crisps or snacks including unspecified 'crisps', prawn crackers	No preparation required	n/a	n/a	n/a	
	Corn snacks, based on maize	No preparation required	n/a	n/a	n/a	
	Wheat-based savoury snack	No preparation required	n/a	n/a	n/a	
	Popcorn	No preparation required	n/a	n/a	n/a	
	Other savoury snacks (including hors d'oeuvres)	No preparation required	n/a	n/a	n/a	
	Cereal snacks	No preparation required	n/a	n/a	n/a	
	Takeaway crisps, savoury snacks, popcorn, popadums, prawn crackers	No preparation required	n/a	n/a	n/a	

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
24 Desserts	Puddings	no preparation required	n/a	no cooking required	n/a	analyse as is
	Custard desserts or sweet soufflé	n/a	n/a	n/a	n/a	
	Meringue desserts including pavlova	n/a	n/a	n/a	n/a	
	Cheesecake	no preparation required	n/a	no cooking required	n/a	analyse as is
	Fool, trifle and mousse desserts	n/a	n/a	n/a	n/a	
	Other cakes and desserts, unspecified 'cake' or 'dessert'	no preparation required	n/a	no cooking required	n/a	analyse as is
	Other milks and dairy desserts - not frozen	no preparation required	n/a	no cooking required	n/a	analyse as is
	Ice lollies, sorbet, frozen mousse, frozen yoghurt	no preparation required	n/a	no cooking required	n/a	analyse as is

Group no.	Food item	Preparation Method	Number of each food item to prepare	Cooking Method	Number of each food item to cook	Comments
25 Sandwiches	Sandwiches	No preparation required	n/a	n/a	n/a	
	Sandwiches from takeaway	No preparation required	n/a	n/a	n/a	
	Meat based sandwich on white bread or roll	No preparation required	n/a	n/a	n/a	
	Meat based sandwich on brown bread or roll	No preparation required	n/a	n/a	n/a	
	Meat based sandwich bread not specified	No preparation required	n/a	n/a	n/a	
	Chicken or turkey based sandwich on white bread or roll	No preparation required	n/a	n/a	n/a	
	Chicken or turkey based sandwich on brown bread or roll	No preparation required	n/a	n/a	n/a	
	Chicken or turkey based sandwich bread not specified	No preparation required	n/a	n/a	n/a	
	Fish based sandwich on white bread or roll	No preparation required	n/a	n/a	n/a	
	Fish based sandwich on brown bread or roll	No preparation required	n/a	n/a	n/a	
	Fish based sandwich bread not specified	No preparation required	n/a	n/a	n/a	
	Cheese based sandwich on white bread or roll	No preparation required	n/a	n/a	n/a	
	Cheese based sandwich bread not specified	No preparation required	n/a	n/a	n/a	
	Unspecified sandwiches or rolls	No preparation required	n/a	n/a	n/a	

Annex 2 - Compositing instructions supplied by FSA

Category no.	Category name	Proportions of each category in the food groups (assuming each group composite weighs 1000g)
1	White sliced bread	394
2	White unsliced bread	50
3	Brown bread	63
4	Wholemeal and granary bread	210
5	Other bread	283
	Group 1 - Bread	1000
6	Flour	76
7	Buns, cakes and pastries	187
8	Savoury biscuits	21
9	Sweet biscuits	104
10	Chocolate biscuits	59
11	Breakfast cereals	171
12	Rice	111
13	Other cereal products	61
14	Pasta	109
15	Pizza	101
	Group 2 -Miscellaneous cereals	1000
16	Beef	543
17	Lamb	190
18	Pork	267
	Group 3 - Carcase meat	1000
19	Lambs liver	203
20	Pigs liver	111
21	Other liver	151
22	Kidney	243
23	Other offals (excluding kidney and liver)	291
	Group 4 - Offals	1000
24	Uncooked bacon	118
25	Cooked ham and bacon	72
26	Corned meat	14
27	Other canned or cooked meats	62
28	Pork sausages	101
29	Beef sausages	7
30	Other sausages	13

Category no.	Category name	Proportions of each category in the food groups (assuming each group composite weighs 1000g)
31	Ready to eat meat products	147
32	Meat based ready meals	274
33	Meat based takeaways	118
34	Other meat products	11
35	Burgers	62
	Group 5 - Meat products	1000
36	Chicken (RAW)	704
37	Other poultry (RAW)	72
38	Cooked poultry	125
39	Poultry products	99
	Group 6 - Poultry	1000
40	White fish	147
41	Fatty fish	92
42	Shellfish	78
43	Canned salmon	18
44	Other canned/ bottled fish	162
45	Fish based ready meals and fish products	349
46	Takeaway fish based meals	154
	Group 7 - Fish	1000
47	Fat spreads or blended spreads	163
48	Reduced fat fat spreads or blended spreads	250
49	Low fat/light fat spreads or blended spreads	86
50	Vegetable oils	428
51	Lard	19
52	Other fats	54
	Group 8 - Oils and fats	1000
53	Eggs	910
54	Egg products	90
	Group 9 - Eggs	1000
55	Sugar	347
56	Jam and fruit curds	56
57	Marmalade	31

Category no.	Category name	Proportions of each category in the food groups (assuming each group composite weighs 1000g)
58	Syrup, Honey, Treacle, Maple Syrup	41
59	Jelly	1
60	Chocolate confectionery	354
61	Sugar confectionery	170
	Group 10 - Sugars and preserves	1000
62	Cabbage	146
63	Sprouts	48
64	Cauliflower	251
65	Lettuce and leafy salads	262
66	Peas	151
67	Green beans	103
68	Other fresh green vegetables	40
	Group 11 - Green vegetables	1000
69	Fresh potatoes	683
70	Potato products	317
	Group 12 - Potatoes	1000
71	Onions, leeks	171
72	Carrots	156
73	Turnips, swedes	24
74	Other fresh vegetables	252
75	Mushrooms	55
76	Tomatoes	135
77	Cucumbers	64
78	Dried pulses	13
79	Herbs, spices	8
80	Vegetable based ready meals	108
81	Dried soups	15
	Group 13 - Other vegetables	1000
85	Canned, carton or jarred soups	300
86	Canned or jarred tomatoes	184
87	Canned or jarred peas	64
88	Canned or jarred beans	387
89	Other canned or jarred vegetables	65

Category no.	Category name	Proportions of each category in the food groups (assuming each group composite weighs 1000g)
	Group 14 - Canned or jarred vegetables	1000
90	Oranges	63
91	Other citrus fruits	98
92	Apples	193
93	Pears	55
94	Stone fruit	74
95	Bananas	280
96	Grapes	70
97	Other fresh fruit	166
	Group 15 - Fresh fruit	1000
98	Canned peaches, pears, pineapples	34
99	Other canned or frozen fruit	53
100	Dried fruit	55
101	Fruit juices and vegetable juices	858
	Group 16 - Fruit products	1000
102	Tea	458
103	Takeaway Tea	5
104	Instant coffee	247
105	Ground coffee	12
106	Takeaway coffee	10
107	Branded food drinks	4
108	Cocoa, drinking chocolate	10
109	Concentrated soft drinks	95
110	Ready to drink soft drinks	156
113	Alternatives to milk	3
	Group 17 - Non-alcoholic Beverages (Excluding tap water and bottled water)	1000
114	Whole (full fat) milk (cows)	219
115	Skimmed/Semi skimmed milks (cows)	781
	Group 18 - Milk	1000
116	Condensed milk or Evaporated Milk	29
117	Instant milk	13
118	Natural cheese	175
119	Processed cheese	18

Category no.	Category name	Proportions of each category in the food groups (assuming each group composite weighs 1000g)
120	Butter	67
121	Ice-cream	243
122	Yoghurt	297
123	Other milk products	101
124	Cream	39
125	Canned milk puddings	17
	Group 19 - Dairy products	1000
126	Ground nuts including peanut butter	470
127	Tree nuts	530
	Group 20 - Nuts	1000
128	Beer	580
129	Cider	101
130	Wine	259
131	Alcopops and cocktails	13
132	Spirits	48
	Group 21 - Alcoholic drinks	1000
133	Soy, mycoprotein or vegetable protein based meat substitutes	1000
	Group 22 - Meat substitutes	1000
134	Potato crisps and potato based snacks	734
135	Other snacks (not potato based)	266
	Group 23 - Snacks	1000
136	Desserts (unfrozen)	739
137	Desserts (frozen but not ice cream)	261
	Group 24 - Desserts	739
138	Sandwiches	1000
	Group 25 - Sandwiches	1000
82	Meat or yeast extracts	30
83	Spreads, dressings	245
84	Pickles, sauces	726
	Group 26 - Condiments	1000
111	Tap water	1000
	Group 27 -Tap water	1000
112	Bottled waters	1000

Category no.	Category name	Proportions of each category in the food groups (assuming each group composite weighs 1000g)
	Group 28 - Bottled waters	1000