

Second French Total Diet Study (TDS 2)

Report 1

Inorganic contaminants,
minerals, persistent organic
pollutants, mycotoxins
and phytoestrogens

ANSES Opinion

June 2011

Scientific publication

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List of abbreviations

15-Ac-DON	15-acetyldeoxynivalenol
3-Ac-DON	3-Acetyldeoxynivalenol
ADI	Acceptable Daily Intake
AF	Aflatoxin
AFSSA	<i>Agence française de sécurité sanitaire des aliments</i> [French Food Safety Agency]
TMDI	Theoretical Maximum Daily Intake
ANSES	<i>Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail</i> [French Agency for Food, Environmental and Occupational Health & Safety]
ATSDR	Agency for Toxic Substances and Disease Registry
BMDL	Benchmark dose limit
IQC	Internal quality control
CRM	Certified Reference Materials
DAS	Diacetoxyscirpenol
PMTDI	Provisional Maximum Tolerable Daily Intake
TDI	Tolerable Daily Intake
PTMI	Provisional Tolerable Monthly Intake
DOM-1	Deepoxy-deoxynivalenol
DON	Deoxynivalenol
EAR	Estimated average requirement
LOAEL	Lowest Observed Adverse Effect Level
NOAEL	No Observed Adverse Effect Level
TDS	Total Diet Studies
EFSA	European Food Safety Authority
FB1	Fumonisin B1
FB2	Fumonisin B2
FusX	Fusarenon X
HBGV	Health-Based Guidance Value
PAH	Polycyclic Aromatic Hydrocarbon
PTWI	Provisional Tolerable Weekly Intake
HBCD	Hexabromocyclododecane
ICP-MS	Inductively coupled plasma mass spectroscopy
INCA	<i>Enquête individuelle et nationale sur les consommations alimentaires</i> [Individual national survey on dietary consumption]
INRA	<i>Institut National de Recherche Agronomique</i> [French National Institute for Agricultural Research]
INSEE	<i>Institut national de la statistique et des études économiques</i> [National Institute of Statistics and Economic Studies]
JECFA	Joint FAO / WHO Expert Committee on Food Additives
LABERCA	<i>Laboratoire d'Étude des Résidus et Contaminants dans les Aliments</i> [Laboratory for research on residues and contaminants in food]
LB	Lowerbound
LC-MS/MS	Liquid chromatography coupled with [tandem] mass spectrometry
LOD	Limit of detection
LOQ	Limit of quantification
LSA	<i>Laboratoire de sécurité alimentaire</i> [Food safety laboratory]

MAS Monoacetoxyscirpenol
MB Middlebound
MOE Margin of Exposure
NIV Nivalenol
WHO World Health Organization
OEHHA Office of Environmental Health Hazard Assessment
ORP *Observatoire des résidus de pesticides* [French Observatory for Pesticide Residues]
OTA Ochratoxin A
OTB Ochratoxin B
PAT Patulin
PBB Polybrominated biphenyl
FW Fresh Weight
PBDE Polybrominated diphenyl ether
DL-PCB Dioxin-like polychlorinated biphenyl
NDL-PCB Non-dioxin-like polychlorinated biphenyl
PCDD Polychlorodibenzo-p-dioxin
PCDF Polychlorinated dibenzofuran
PFOA Perfluorooctanoic acid
PFOS Perfluorooctane sulfonate
PFTrDA Perfluorotridecanoic acid
POP Persistent Organic Pollutant
BFR Brominated Flame Retardant
RfD Reference Dose
SCF Scientific Committee for Food
SU.VI.MAX *SUplémentation en Vitamines et Minéraux Anti-oXydants*
 [Supplement study on vitamins and anti-oxidant minerals]
TCT Trichothecene
TEF Toxic Equivalency Factor
TEQ Toxic Equivalent
TWI Tolerable Weekly Intake
UB Upperbound
UL Tolerable Upper Intake Level
US EPA United States Environmental Protection Agency
ZEA Zearalenone

1. General introduction

The total diet studies (TDS) are national surveys of dietary exposure carried out to assess the risks of particular chemical substances to public health. They are elaborated on the basis of representative 'shopping baskets' of food consumption in mainland France that are analysed for a significant number of chemical substances likely to be found in foods 'as consumed'.

These studies use a standard method recommended by the World Health Organization (WHO) in order to screen for various chemical substances which may be found because:

- they are naturally present (this is true for inorganic contaminants, minerals, phytoestrogens) or are due to contamination of environmental origin, either natural (the case of mycotoxins) and/or due to industrial, agricultural, domestic human activities, etc (case of persistent organic pollutants, see Report 1);
- because they are used for technological or agricultural reasons, or because they are formed during the production, transformation or preservation of the basic ingredient or food ready to be eaten (case of authorised substances such as food additives and pesticide residues, heat-induced contaminants, see Report 2);

The surveillance of food composition and/or contamination, nutrient intake coverage, and the evaluation of health risks to populations provide essential scientific information to enable authorities to control and regulate chemical products and the safety of food products, on the national, European and international levels.

Consequently, for risk assessors (public health agencies and research institutes or organisations responsible for ensuring the safety of food and the environment and for monitoring the state of health of the population), these scientific studies provide essential input for research and risk assessment. Furthermore, combined with consumption surveys, they enable a description of the background levels of the composition and contamination of food 'as consumed' and of the chronic exposure levels affecting consumers. They are also used to characterise the risk of inadequate dietary intake and/or an excess of contaminants for the same consumers and to identify the food elements which contribute the most to dietary intake and/or to total exposure.

For risk managers, public authorities and stakeholders in the food chain that are responsible for ensuring the safety of food, the environment and public health, these studies are just as essential. If any undesirable substances are found in food, the studies provide the scientific information needed to revise or introduce regulations in order to reduce consumer exposure. As for beneficial substances, the studies help guide consumption recommendations in order to optimise dietary intake.

The results of the studies are used to establish surveillance priorities (for food, the environment and the general state of health of the population) aimed at substances for which the dietary intake level or level of exposure for the consumer is close to or greater than the toxicological safety limit defined by the risk assessors.

Finally, the regular repetition of such national programmes ensures the availability of long-term indicators for evaluating the effectiveness of public health measures for food and the environment. For instance, exposure levels may be reduced by controlling the quality of food (withdrawing highly contaminated foodstuffs from the market for example), by changing production practices, but also by reducing environmental pollution at the source.

The first French TDS was undertaken between 2000 and 2004 by the French National Institute for Agricultural Research (INRA), in collaboration with the French Food Safety Agency (AFSSA). This led to a comprehensive appraisal of the population's exposure, including adults and children, to mycotoxins, as well as to inorganic contaminants and minerals. In 2006, AFSSA undertook a second TDS, which included a larger number of target substances. The survey included all of the substances which had already been analysed in the first study, in order to determine trends in the monitoring of the levels to which the population was exposed. Other substances were added to the list, either to update knowledge of them or more simply to fill a gap in French and international data. In addition to covering a wider range of substances (more than 400 as against 34 in the first survey), this new study covered all of the administrative regions in mainland France (as opposed to 3 major cities for TDS 1). Furthermore it was based on the most recent national individual consumer data, namely the INCA 2 survey (second Individual and National Food Consumption survey) undertaken from 2006 to 2007.

2. Selected substances

2.1 Substances naturally found in foods or due to environmental contamination

In the first French TDS, 18 inorganic contaminants and minerals, as well as mycotoxins, had been analysed. In this second TDS, the same items were analysed and others were added.

Eighteen inorganic and mineral contaminants, which had already been screened for in the first study (Leblanc, Guerin *et al.* 2005), were analysed: Arsenic (As), Lead (Pb), Cadmium (Cd), Aluminium (Al), Mercury (Hg), Antimony (Sb), Chromium (Cr), Calcium (Ca), Manganese (Mn), Magnesium (Mg), Nickel (Ni), Copper (Cu), Zinc (Zn), Lithium (Li), Sodium (Na), Molybdenum (Mo), Cobalt (Co), Selenium (Se). Ten more elements were added: Silver (Ag), Barium (Ba), Tin (Sn), Gallium (Ga), Germanium (Ge), Strontium (Sr), Tellurium (Te), Vanadium (V), Potassium (K), Iron (Fe).

Some of these elements required increased surveillance, for example Sodium (Na) for which TDS 1 had revealed higher levels than the reference value. Other elements for which no problems of exceeding health-based guidance values or safety limits had been recorded, are covered by general surveillance of the exposure of the population, which should become a permanent measure, particularly for some risk groups such as young children or women of childbearing age. Other substances required special surveillance, such as Arsenic, especially in its inorganic form, which was re-evaluated by AFSSA (AFSSA 2009a), the European Food Safety Authority (EFSA) (EFSA 2009d) and the Joint FAO / WHO Expert Committee on Food Additives (JECFA) (JECFA 20011a), as well as Aluminium (AFSSA 2008a) and Cadmium whose health-based guidance values had been lowered (EFSA 2009a; JECFA 2011b).

The mycotoxins (aflatoxins B, G and M, ochratoxin A, patulin and fusarium, A and B trichothecenes, zearalenone and nivalenol), had been analysed in the first study, which concluded that special attention should be paid to children for whom the risk of being exposed to a level greater than the health-based guidance value was not negligible, particularly for ochratoxin A and deoxynivalenol (Leblanc, Tard *et al.* 2005). TDS 2 therefore screened for mycotoxins, with analytical levels that were lower for the T₂ and HT₂ toxins.

Phytoestrogen levels were also determined, given their oestrogenic activity, which had led the AFSSA expert committee on human nutrition to conclude that more data should be acquired.

More specifically the isoflavones (genistein, daidzein, equol, formononetin, glycitein, biochanin A), lignans (matairesinol, secoisolariciresinol, enterolactone) coumestans (coumestrol), and natural stilbenes (resveratrol) were analysed.

Given their toxicity and the lack of national contamination and exposure data, persistent organic pollutants (POPs) were analysed:

- 17 congeners of polychlorodibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/F): TCDD-2378, PCDD-12378, HCDD-123478, HCDD-123678, HCDD-123789, HCDD-1234678, OCDD, TCDF-2378, PCDF-12378, PCDF-23478, HCDF-123478, HCDF-123678, HCDF-234678, HCDF-123789, HCDF-1234678, HCDF-1234789, OCDF;
- 12 congeners of dioxin-like polychlorinated biphenyls (DL-PCBs): PCB-77, 81, 126, 169, 105, 114, 118, 123, 156, 157, 167, 189, and 6 congeners of non-dioxin-like polychlorinated biphenyls (NDL-PCBs) (PCB-28, 52, 101, 138, 153, 180);
- 16 perfluorinated compounds: the carboxylates (PFOA, PFBA, PFPA, PFHxA, PFHpA, PFNA, PFDA, PFUnA, PFDoA, PFTTrDA, PFTTeDA) and the sulfonates (PFOS, PFBS, PFHxS, PFHpS, PFDS);
- Brominated Flame Retardants (BFRs): 8 polybrominated diphenyl ether congeners (BDE-28, 47, 99, 100, 153, 154, 183, 209), 3 polybrominated biphenyl congeners (BB-52, 101, 153), and 3 hexabromocyclododecane congeners (HBCD-alpha, beta, gamma).

2.2 Substances used for technological or agricultural reasons or formed in food

Two hundred and eighty-three active substances of plant protection products were evaluated during the study. Among these some were considered as priorities for surveillance of exposure: their selection followed the work done by AFSSA using a conservative ranking method recommended by the WHO (Ménard, Héraud *et al.* 2008; WHO 1997). Priority was given to substances having a Theoretical Maximum Daily Intake (TMDI) of more than 80% of the Acceptable Daily Intake (ADI) in adults and/or children and which were on the complete list of the GEMS-Food (WHO 2002) environmental surveillance programme for chemical contamination of food or listed by the Stockholm Convention on POPs (UNEP 2001). In this way a list of 72 priority active substances (Tables 1, 2 and 3) was drawn up: this included 54 with a TMDI of more than 80% of the ADI, 23 that were on the WHO list, 10 POPs and eight that are considered as priorities by the French Observatory for Pesticide Residues (ORP) (AFSSA, AFSSE *et al.* 2004).

Of these 72 priority active substances, 21 are included in Annex 1 of Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market (Directive 91/414) (hence authorised in Europe) (Table 1), 41 have not been included in Annex 1 (of which it was decided that 20 would be removed from Annex 1 after 2004) (Table 2) and 10 are prohibited as POPs (Table 3).

Table 1: Criteria for selecting priority substances authorised in Europe

Active substance	Reference	Type	TMDI > 80% ADI ⁽¹⁾	POP ⁽²⁾	WHO ⁽³⁾	ORP ⁽⁴⁾
Carbendazim	2009/152/EC	F				X
Chlorothalonil	2005/53/EC	F				X
Chlorpyrifos-ethyl	2005/72/EC	I, A			X	
Chlorpyrifos-methyl	2005/72/EC	I, A	X		X	
Deltamethrin	2003/5/EC	I	X			
Dimethoate	2007/25/EC	I, A	X			
Diquat	2001/21/EC	H	X			
Fenpropimorph	2008/107/EC	F	X			
Folpet	2007/5/EC	F				X
Imazalil	2011/19/EC	F	X			
Iprodione	2003/31/EC	F				X
Malathion	2010/17/EC	I, A	X		X	
Mancozeb	2005/72/EC	F			X	
Maneb	2005/72/EC	F			X	
Methomyl	2009/115/EC	I	X			
Metiram	2005/72/EC	F	X		X	
Phosmet	2007/25/EC	I	X			
Propineb	2003/39/EC	F	X		X	
Pirimiphos-methyl	2007/52/EC	I	X		X	
Thiram	2003/81/EC	F	X		X	
Triallate	2009/77/EC	H	X			

TMDI: Theoretical Maximum Daily Intake, POP: Persistent Organic Pollutant, WHO: World Health Organization, ORP: French Observatory for Pesticide Residues, A: acaricide, F: fungicide, H: herbicide, I: insecticide.

(1) Ménard, Héraud *et al.* 2008, (2) UNEP 2001, (3) WHO 2002, (4) AFSSA, AFSSE *et al.* 2004)

Table 2: Criteria for selecting priority substances which are not authorised in Europe

Active substance	Reference	Type	TMDI > 80% ADI ⁽¹⁾	POP ⁽²⁾	WHO ⁽³⁾	ORP ⁽⁴⁾
Aldicarb	2003/199/EC	N, I, A	X			X
Azinphos-methyl	Reg 1335/2005	I, A	X			
Biphenyl	2004/129/EC	F	X			
Carbaryl	2007/355/EC	I, GR	X			
Carbetamide	2008/934/EC	H	X			
Carbofuran	2007/416/EC	I, N, A	X			
Chlorfenvinphos	2002/2076/EC	I	X			
Hydrogen cyanide	2004/129/EC	I, R	X			
Cyhexatin	2008/296/EC	A	X			
Diazinon	2007/393/EC	I, A	X		X	
Dichlorvos	2007/387/EC	I, A	X			X
Dicofol	2008/764/EC	A	X			
Disulfoton	2002/2076/EC	I	X			
Endosulfan	2005/864/EC	I, A			X	X
Ethion (diethion)	2002/2076/EC	I, A	X			
Ethoxyquin	2008/941/EC	GR	X			
Fenbutatin-oxide	2008/934/EC	A	X			
Fenitrothion	2007/379/EC	I, A			X	
Fenthion	2004/140/EC	I	X			
Fentin acetate	2002/478/EC	F, H	X			
Fentin hydroxide	2002/479/EC	F, H	X			
Metaldehyde	2008/934/EC	M	X			
Methidathion	2004/129/EC	I, A	X			
Mevinphos	2002/2076/EC	I, A	X			
Monocrotophos	2002/2076/EC	A, I	X			
Naled	2005/788/EC	I, A	X			
Ofurace	2002/2076/EC	F	X			
Omethoate	2002/2076/EC	I, A	X			
Oxydemeton-methyl	2007/392/EC	I, A	X			
Parathion	2001/520/EC	I, A			X	
Phorate	2002/2076/EC	I	X			
Phosalone	2006/1010/EC	I, A	X			
Phosphamidon	2002/2076/EC	I, A	X			
Hydrogen phosphide (phosphine)	-	I	X			
Prochloraz	2008/934/EC	F	X			
Quinalphos	2002/2076/EC	I	X			
Rotenone	2008/317/EC	I	X			
Sulfotep	2002/2076/EC	I, A	X			
Thiometon	2002/2076/EC	I, A	X			
Vinclozolin	Reg 1335/2005	F	X			X
Zineb	2001/245/EC	F			X	

TMDI: Theoretical Maximum Daily Intake, POP: Persistent Organic Pollutant, WHO: World Health Organization, ORP: French Observatory for Pesticide Residues, A: acaricide, F: fungicide, GR: growth regulator, H: herbicide, I: insecticide, M: molluscicide, N: nematocide, R: rodenticide.

(1) Ménard, Héraud *et al.* 2008, (2) UNEP 2001, (3) WHO 2002, (4) AFSSA, AFSSE *et al.* 2004

Table 3: Criteria for selecting persistent organic pollutants listed in the Stockholm Convention

Active substance	Reference	Type	TMDI > 80% ADI ⁽¹⁾	POP ⁽²⁾	WHO ⁽³⁾	ORP ⁽⁴⁾
Aldrin	Reg 850/2004	I	X	X	X	
Chlordane	Reg 850/2004	I		X		
DDT	Reg 850/2004	I		X	X	
Dieldrin	Reg 850/2004	I	X	X	X	
Endrin	Reg 850/2004	I	X	X	X	
Technical HCH	Reg 850/2004	I		X	X	
Heptachlor	Reg 850/2004	I	X	X	X	
Hexachlorobenzene	Reg 850/2004	I		X	X	
Lindane (gamma HCH)	2000/801/EC	I, R		X		
Toxaphene (camphechlor)	83/131/EC	I		X	X	

TMDI: Theoretical Maximum Daily Intake, POP: Persistent Organic Pollutant, WHO: World Health Organization, ORP: French Observatory for Pesticide Residues, I: insecticide. R: rodenticide.

(1)(Ménard, Héraud *et al.* 2008, (2) UNEP 2001, (3) WHO 2002, (4) AFSSA, AFSSE *et al.* 2004.

Evaluation of additives on the European level is based on a stepwise approach similar to that used in the report of the scientific cooperation (SCOOP) Task 4.2 led by the European Commission's Scientific Committee on Food between 1996 and 1998 (European Commission 1998). This three-tier approach gradually progresses from conservative estimate (Tier 1: budget method) to the most realistic estimate (Tier 2: calculation of theoretical intake from maximum permitted levels and food consumption data or household spending data, then Tier 3: calculation of intake from usage data and food consumption data). Out of the 58 additives evaluated during the Tier 1, 21 additives or groups of additives were identified as not requiring Tier 2 estimates. Tier 3 concerned 13 additives for which it was necessary to ensure that the ADI was not exceeded (Bemrah, Leblanc *et al.* 2008). This last stage made it possible to demonstrate that there was no risk of a certain number of additives exceeding the ADI. The results of this study based on usage data (Tier 3 usage) showed that only annatto (E160b), the nitrites (E249-250) and the sulfites (E220, E221, E222, E223, E224, E226, E227 and E228) involved a risk for the French population of exceeding the ADI.

For the last stage of refining the exposure assessment, it was decided to keep these three additives for TDS 2, as well as tartaric acid (E334) which had not been investigated in the earlier study due to the lack of available usage data.

Among the POPs, this TDS study also analysed 20 polycyclic aromatic hydrocarbons (PAHs): 15 which had been defined as a priority by the Scientific Committee on Food (SCF) in 2002 due to their carcinogenic nature, at least *in vitro* (benzo[a]anthracene, benzo[b]fluoranthene, benzo[j]fluoranthene, benzo[k]fluoranthene, benzo[ghi]perylene, benzo[a]pyrene, chrysene, cyclopenta[cd]pyrene, dibenz[a,h]anthracene, dibenzo[a,e]pyrene, dibenzo[a,h]pyrene, dibenzo[a,i]pyrene, dibenzo[a,l]pyrene, indeno[1,2,3-cd]pyrene and 5-methylchrysene) and five others which had been investigated for their contribution to exposure or their toxic potential (anthracene, pyrene, fluoranthene, benzo[c]fluorine and phenanthrene).

JECFA showed that the exposure margins for acrylamide were low (JECFA 2005; JECFA 2011a). Consequently this heat-induced substance was analysed.

Out of all the target substances (445), only the 28 inorganic contaminants and minerals were screened for in all of the food matrices sampled. The other substances were screened for in fewer foods. The analyses focused mainly on known exposure contributors and sometimes involved screening of food matrices for which too few data were available.

3.1 The INCA 2 food consumption study

The French Individual and National Studies on Food Consumption (INCA 1 & 2) are large-scale national surveys designed to provide a snapshot of the eating habits of adults and children in France.

INCA 2 was carried out by AFSSA between 2006 and 2007 and included 4079 individual subjects (2624 adults aged from 18 to 79 years and 1455 children aged from 3 to 17 years), representative of the French mainland population (AFSSA 2009b; Dubuisson, Lioret *et al.* 2010; Lioret, Dubuisson *et al.* 2010). The values for each individual were weighted to ensure that samples for adults and children were representative (AFSSA 2009b). For the purpose of this survey, mainland France was divided into eight major regions (Table 4) covering all the administrative regions as follows: (i) West (Bretagne, Pays de Loire, Poitou-Charentes), (ii) North-West (Basse Normandie, Haute Normandie, Nord-Pas de Calais, Picardie), (iii) Paris Region (Ile de France), (iv) East (Champagne Ardennes, Lorraine, Alsace), (v) Centre-East (Franche-Comté, Rhône Alpes), (vi) South-East (Provence Alpes Côte d'Azur, Languedoc Roussillon), (vii) South-West (Midi-Pyrénées, Aquitaine) and (viii) Centre (Centre, Bourgogne, Limousin, Auvergne).

Subjects were selected at random from the 1999 census of individuals in households by the French National Institute of Statistics and Economic Studies (INSEE) and from those in a database of new housing, also supplied by INSEE. A first random selection was made of primary geographical units (n=180) from each urban category and from each major region (stratified by the age of the head of the household and for income). A second random selection was made to extract individual households from each primary geographical unit. This preparatory stage led to the creation of two databases, one for households with at least one child aged 10 and under in 1999 and the other with all the other households. One individual was selected at random from among either the adults or the children in the databases thus created.

The field-study phase of the food consumption survey was carried out over a period of 11 months in order to include seasonal variations in eating habits. The individuals recruited kept a record of all they consumed over seven consecutive days and also completed a questionnaire covering anthropometric and socio-economic factors. The sizes of the portions consumed were assessed either using the photographic reference book from the SU.VI.MAX study (Etude de Supplémentation en Vitamines et Minéraux Antioxydants) (Hercberg, Deheeger *et al.* 1994; LeMoullec, Deheeger *et al.* 1996) that had already been used for INCA 1 (1999), or directly from the quantity if this was known (in g or mL), or from the number of spoonfuls or portions, if appropriate.

Table 4: Breakdown of participants in the INCA 2 study by region

Region	Adults	Children
North-West	280	246
East	210	148
Paris Region	255	243
West	295	209
Centre	205	141
Centre-east	229	164
South-west	109	141
South-east	253	152

3.2 Food sampling

Samples were taken of all foods at the start of the survey, according to a sampling plan that was itself designed to include all the substances analysed in TDS 2, and not only the substances covered in this report. The method described below was not used only for the food matrices analysed for the substances included in this report (Siro, Volatier *et al.* 2009).

3.2.1. Food groups

As for the first TDS, food sample definitions were extracted from the nomenclature of the CIQUAL food composition table (AFSSA 2005a). In 2006, this extracted list contained 1242 food items or individual foods, divided into 44 food groups. To ensure that these correctly represented the eating habits of the French population, some of the food items were grouped together if they were composed of similar nutrients (vitamins and minerals, in particular) and for which contamination varied very little, i.e. foods that were found to be similar in the context of the analyses carried out for this study. Some products were also grouped together even if they had different fat content, for example minced beef with 5%, 10%, 15% or 20% fat.

The industrial process was also taken into account when grouping the foods, whenever this could affect contamination, especially during the cooking phases which increase the rates of polycyclic aromatic hydrocarbon (PAHs) and acrylamide. Some foods were grouped together on account of their names. For example, in France emmental cheese is frequently referred to as *gruyère*. These two types of food were therefore grouped together, considering that the production process is basically the same and that both can be expected to have very similar levels of minerals and contaminants.

Grouping in this way reduced the list from 1,242 food items to 787.

3.2.2. Selecting the food items to be sampled

Nine lists of foods were drawn up: a national list and eight regional lists. The 'national' list included 116 'national' foods, which could be expected to have the same composition and level of contamination wherever they were bought. This list mostly contains processed foods, in accordance with the method adopted in the first French TDS and by certain foreign TDSs, such as the New Zealand study (NZFSA 2009). Processed foods include ready-to-eat cereals, beverages, ready meals, biscuits, imported exotic fruit, etc, which are considered to vary little or not at all from region to region. The 'regional' lists included foods that were likely to have heterogeneous levels of contamination, depending on the region where they were bought. These differences might, for example, be due to methods of production and/or of animal feeding practices, or environmental pressure. Regional lists were made up of foods produced in mainland France, such as eggs, meat, delicatessen meats, certain fish, fruit and vegetables.

Two main criteria were applied when compiling the lists of food items:

- **Criterion I:** First, the most heavily-consumed foods by quantity (in g/week) were selected based on consumption data from INCA 2, for adults and/or children, if consumed by at least 5% of adults and/or children. For the national list, the 90 most heavily consumed foods were selected, as consumed by the entire population surveyed. For each regional list, the 30 most heavily-consumed foods were selected. For these regional lists, only the consumption by subjects surveyed for INCA 2 residing permanently in the region were taken into account. Consumption by adults and children were studied separately as many foods tend to be consumed by either adults or children so that, for example, a food making up a large part of the children's diet might not be selected for a study of the adults' diet, and vice versa;
- **Criterion II:** Next, the principal known contributors to exposure to contaminants of interest were added to the lists if they had not been selected in the first phase. For mycotoxins and inorganic contaminants, the principal contributors were identified from the results of the first TDS (Leblanc, Guerin *et al.* 2005; Leblanc, Tard *et al.* 2005). For pesticides, foods were chosen if they contributed more than 5% to total theoretical exposure of the French population. These 5% correspond to a criterion set by the WHO/FAO's Codex Alimentarius Commission in its 'Procedural Manual for maximum limits in foods or food groups contributing significantly to the tolerable daily or weekly intake' (CAC 2005). There are 51 types of such foods, including meat, cereals, fruit and vegetables, and dairy products, which were added to the lists for sampling if they had not been selected during the first phase.

In all, 212 different types of foods were selected and sampled in at least one region, or at the national level (Annex 1). Two groups from the INCA 2 nomenclature are not represented in the sampling, the groups 'other cereals' (oats, maize meal, etc.) and 'other fats' (peanut butter, duck fat, goose fat, etc.) which are rarely consumed by the population (0.1 to 0.5 g/day, on average) (AFSSA 2009b). The foods sampled thus account for 88% of the consumption of adults and 89% of that of children. The percentage of coverage of consumption for the different food groups is shown in Table 5.

Table 5: Percentage of the consumption of the population covered by sampling

Food groups	Coverage (%)
Bread and dried bread products	97.0
Breakfast cereals	84.1
Pasta	99.9
Rice and wheat products	100.0
Croissant-like pastries	74.3
Sweet and savoury biscuits and bars	91.1
Pastries and cakes	80.5
Milk	94.9
Ultra-fresh dairy products	97.6
Cheese	82.8
Eggs and egg products	93.8
Butter	100.0
Oils	94.1
Margarine	100.0
Meat	93.8
Poultry and game	86.6
Offal	49.8
Delicatessen meats	82.4
Fish	52.3
Crustaceans and molluscs	79.2
Vegetables (excluding potatoes)	79.5
Potatoes and potato products	98.8
Pulses	62.5
Fruit	94.3
Dried fruits, nuts and seeds	97.3
Ice creams, sorbets and frozen desserts	94.9
Chocolate	90.7
Sugars and sugar derivatives	90.7
Water	89.2
Non-alcoholic beverages	82.9
Alcoholic beverages	91.7
Coffee	86.7
Other hot beverages	99.3
Pizzas, quiches and savoury pastries	78.0
Sandwiches and snacks	78.6
Soups and broths	83.1
Mixed dishes	59.6
Dairy-based desserts	85.7
Compotes and cooked fruit	99.7
Seasonings and sauces	65.5
Specific foods	1.7

For example, 84.1% of all breakfast cereals consumed in France are represented in the sample.

3.2.3. Specification for each composite sample

Where the data available in the INCA 2 survey were insufficient or incomplete, data from the TNS-SECODIP purchasing panel of 2004 were used. This database contains the purchases of 17,150 French households (data not published).

Each sample from each list consists of 15 sub-samples of equal weight of the same food item (Table 6), so this sampling strategy is based on the food item and not on the food group. Using 15 sub-samples gives a confidence interval (CI) of about 15 to 25% around the mean value for composition or contamination, according to the following formula: $CI = 1.96 \times SD/\sqrt{n}$, where SD is the standard deviation of the distribution (generally about 30 to 50% of the mean), and n is the number of sub-samples.

The sub-samples were selected on the basis of five breakdown criteria, making it possible to describe each food item in detail (Table 6). The first level of breakdown for the food item is the mean quantity consumed by the population, particularly for the items grouped together. The second level is the product's texture, or the industrial production process. The third level is the content of fat, salt or any other nutrient, as appropriate, for example for cheese (fat content), meat (fat content), butter (salt content), chocolate (cocoa content), etc. The fourth breakdown level, where appropriate, is the flavour and/or origin of the product. The fifth and final level is the characteristic on the strength of which the product is advertised, such as 'low-fat' or 'low-sugar', 'organic', 'with added vitamins and minerals', 'with added calcium', etc.

Sub-samples were then purchased, based on the outlet most widely used by the French population for each sub-sample (supermarkets, other retail outlets, markets, etc.); preservation technique (fresh, frozen, canned, etc.); and the most widely-consumed brand. More exactly, for industrial products, each composite sample was made up of sub-samples representing the market shares of the different brands found in the data for the SECODIP panel of 2004. The same decision rules were applied for non-industrial products, e.g. for fruit, with each variety forming a sub-sample.

Table 6: Examples of how 3 food samples were broken down into 15 sub-samples

Composite sample	S-S	Level 1: by quantity consumed	Level 2: texture or industrial process	Level 3: Content in fat, salt, or other	Level 4: Flavour and/or origin	Level 5: Characteristics
Aperitif biscuits	1	Crackers	-	NS	Salted	-
	2	Crackers	-	NS	Salted	-
	3	Crackers	-	NS	Cheese	-
	4	Crackers	-	NS	Cheese	-
	5	Biscuit	Extruded	NS	Peanut	-
	6	Biscuit	Extruded	NS	Peanut	-
	7	Biscuit	Extruded	NS	Bacon	-
	8	Biscuit	Air-filled	NS	Peanut	-
	9	Biscuit	With fillings	NS	Cheese+other	-
	10	Snack	-	NS	Cheese	-
	11	Snack	-	NS	Salted	-
	12	Snack	-	NS	Salted	-
	13	Crisps	Flat	NS	Paprika	-
	14	Crisps	Flat	NS	Salted	-
	15	Crisps	Tortilla	NS	'Chilli' flavour	-

Composite sample	S-S	Level 1: by quantity consumed	Level 2: texture or industrial process	Level 3: Content in fat, salt, or other	Level 4: Flavour and/or origin	Level 5: Characteristics
Ice creams and sorbets	1	Ice cream	Tub	NS	Vanilla	-
	2	Ice cream	Tub	NS	Vanilla	-
	3	Ice cream	Tub	NS	Chocolate	-
	4	Ice cream	Tub	NS	Coffee	-
	5	Ice cream	Cornet	NS	Vanilla	-
	6	Ice cream	Cornet	NS	Vanilla	-
	7	Ice cream	Cornet	NS	Chocolate	-
	8	Ice cream	Cornet	NS	Chocolate	-
	9	Ice cream	Stick	NS	Vanilla	-
	10	Ice cream	Stick	NS	Vanilla	-
	11	Ice cream	Stick	NS	Vanilla	-
	12	Ice cream	Bar	NS	-	-
	13	Ice cream	Pot	NS	Mixed	-
	14	Sorbet	Tub	NS	Lemon	-
	15	Sorbet	Tub	NS	Lemon	-
Camembert-type cheese	1	Camembert		40% Fat	Normandy	-
	2	Camembert		45% Fat	Normandy	'AOC'
	3	Camembert		45% Fat	Normandy	-
	4	Camembert		45% Fat	Normandy	-
	5	Camembert		45% Fat	Normandy	-
	6	Camembert		45% Fat	Normandy	-
	7	Camembert		50% Fat	Normandy	-
	8	Camembert		50% Fat	Normandy	-
	9	Camembert		50% Fat	Normandy	-
	10	Camembert		50% Fat	Normandy	-
	11	Camembert		20-30% Fat	Normandy	'Low-fat'
	12	Caprice des dieux®		-	-	-
	13	Coulommiers		-	Lorraine	-
	14	Brie		60% Fat	-	-
	15	Pavé d'affinois®		-	-	-

S-S: sub-sample, NS: not specified, AOC (Appellation d'origine contrôlée): "controlled designation of origin" is the French certification granted to certain French geographical indications for wines, cheeses, butters, and other agricultural products.

Example: the ice creams and sorbets sample. Out of 15 ice creams and sorbets consumed in France, 13 on average are ice creams while 2 are sorbets. So of the 15 sub-samples making up the 'ice creams and sorbets' sample, 13 are ice creams and 2 are sorbets. Out of 13 ice creams consumed, 7 are vanilla-flavoured, so 7 of the 13 sub-samples of ice cream are vanilla. Etc.

3.2.4. Method for collecting samples

The samples were purchased between June 2007 and January 2009 (Table 7) by professional samplers. Regional samples were purchased in the eight regions described above. National samples of products available all year round were purchased in Paris and its inner suburbs.

Table 7: Selecting cities for sampling

Major regions	Administrative regions	Successive sampling campaigns	Cities selected
West	Bretagne Pays de la Loire Poitou-Charentes	1st: December 2007- February 2008	Rennes, Poitiers
		2nd: August-September 2008	Nantes, Brest
North-west	Basse-Normandie Haute-Normandie Nord - Pas-de-Calais Picardie	1st: January-February 2008	Caen, Lille
		2nd: August-September 2008	Rouen, Amiens
Paris Region	Île-de-France	1st: August-October 2007	Paris, Pontoise
		2nd: March-April 2008	Paris, Melun
East	Champagne-Ardenne Lorraine Alsace	1st: July-August 2008	Reims, Metz
		2nd: December 2008-January 2009	Strasbourg, Nancy
Centre east	Franche-Comté Rhône-Alpes	1st: May-June 2008	Besançon, Lyon
		2nd: October-December 2008	Saint-Etienne, Grenoble
South east	Provence - Alpes - Côte d'Azur Languedoc-Roussillon	1st: June-August 2007	Marseille, Perpignan
		2nd: February-April 2008	Nice, Montpellier
South west	Midi-Pyrénées Aquitaine	1st: April-May 2008	Toulouse, Bordeaux
		2nd: September-October 2008	Pau, Montauban
Centre	Centre Bourgogne Limousin Auvergne	1st: April-May 2008	Orléans, Dijon
		2nd: October-November 2008	Limoges, Clermont-Ferrand
National	-	1st: October 2007-January 2008	Paris and suburbs
		2nd: June-July 2008	Paris and suburbs

In each of the eight major regions, four cities were selected for purchasing the samples. The cities were selected according to two criteria, first, the number of inhabitants according to INSEE (www.insee.fr) and second the distance between the cities selected for a given region. For each major region, two pairs of cities were formed when possible to ensure that samples were acquired from different supply chains, particularly for fresh produce such as fruit and vegetables (Table 7). In each region, two samples of each item were purchased in the course of the study, first in a city from the first pair and later in a city from the second pair. Each sampling campaign lasted three months at most, with at least six months between the start of each of the two periods for a given region in order to cover potential seasonal variability in composition or contamination and the seasonal availability of certain produce such as fruit and vegetables. As a result, the sampling campaigns for each region took place in summer and winter, or in spring and autumn. The order of the two pairs of cities was selected at random.

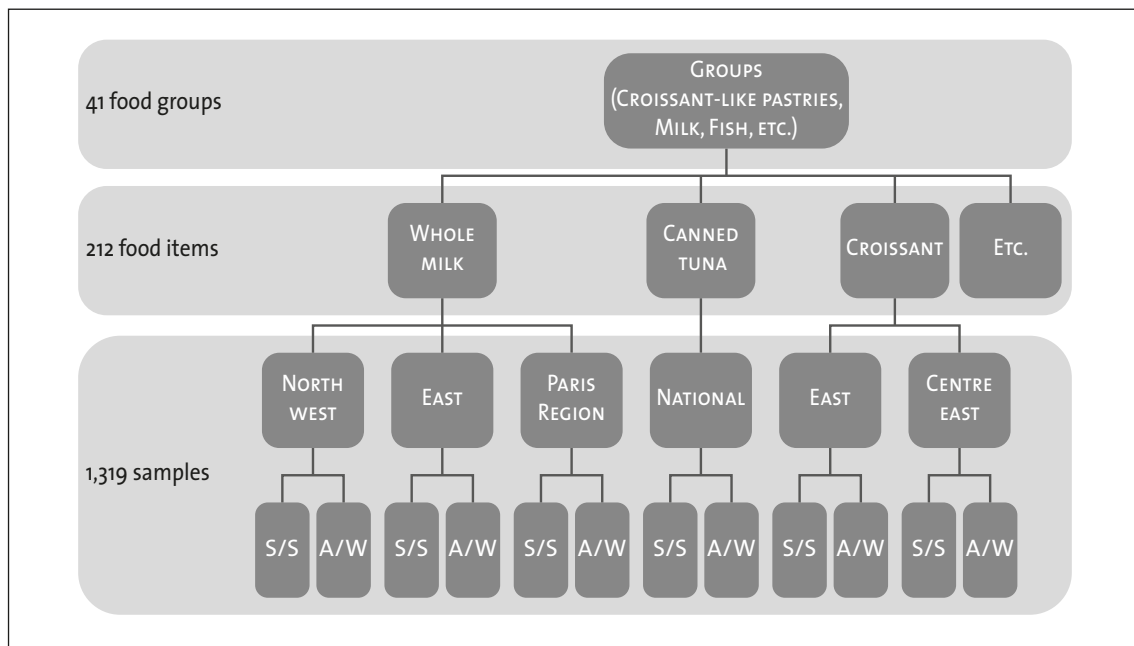
The points of sale were selected partly depending on whether, as large supermarkets or hard discount retailers, their own brands figured in the sampling plan, and partly on whether they had outlets in the cities selected for other products.

A substitution procedure was set up to mitigate the absence of certain products on the market during sampling. For example, when a product that had been available in 2004 (i.e. taken from the data of the SECODIP panel) was not available during purchasing, a brand from the same producer was selected; if no corresponding brand was available, the following brand from a list in diminishing order of market share was selected; when a brand was unavailable in the city or region considered, the brand most heavily represented on the shelves in the shops was selected to replace it. Given that the main aim of the study was to reflect the dietary practices and habits of the French population, priority was given to the most widely available product in shops.

As a result of seasonality, some products are consumed mostly during certain months of the year, the period during which they are available in shops. Certain products, such as turnips, oysters, leeks or meat-and-vegetable stew (pot au feu) were only sampled during the autumn and winter, and were replaced in the spring and summer sampling plans by cherries, strawberries, melons or peaches.

In all, 19,830 products were purchased and prepared ‘as consumed’, making up the 1,319 composite samples analysed in the study for the substances of interest previously defined (Figure 1).

Figure 1: Principle behind sampling



*S/S: spring/summer, A/W: autumn/winter

It should be noted that the sampling did not cover foods consumed in canteens and restaurants, with the exception of fast-food outlets. For consumption in the former, which accounts for about 12% of adult lunches and 25% of those for children, and fewer than 5% of evening meals (AFSSA 2009b), it is therefore considered that the origins of the products were the same as for the other meals.

3.2.5. Preparing samples ‘as consumed’

For each product, only the edible parts were used for preparing the sample. The inedible parts were discarded, meaning bones and skin from meat or fish, and peel from fruits and vegetables when this was not consumed, pips, fruit stones, etc.

The food was then prepared ‘as consumed’. For example, fruit and vegetables were washed. Vegetables (except for vegetables consumed raw), meat and seafood were cooked: braised, pan-fried, grilled, baked, deep-fried, etc., depending on the practices declared by the participants in INCA 2. The list of equipment used to prepare the samples is provided in Annex 2, as well as the cleaning procedure for the equipment used. Cooking methods for the sub-samples were divided up in proportion to the methods declared by the individuals surveyed for the INCA 2 study. More precisely, for each sub-sample, the sampling plan details the preparation prior to cooking, the actual cooking (if any), including the cooking time if necessary, and the post-cooking preparation, such as removal of skin for meat, of bones in some cases, the addition of salt or oil, vinegar, etc. When other ingredients are added during

preparation, the products most widely-consumed by the population were selected to be used systematically, such as olive or sunflower oil, semi-salted butter, semi-skimmed milk and salt, as well as the most purchased brands.

For mixed dishes such as couscous, meat-and-vegetable stew, home-made cakes, etc., preparation was based on the most frequently-consulted recipes on French cookery websites, i.e. those appearing first in search engine results.

For each composite sample, the 15 sub-samples, after preparation, were frozen and then regrouped into a single sample. Solid samples were homogenised by a single cryomilling phase with liquid nitrogen. The resulting homogenate in the form of a fine homogenous powder was separated into batches and frozen at -20°C until analysis. Liquid samples were homogenised without cryomilling, distributed in suitable jars and also frozen at -20°C until analysed. All samples were also stored fresh, frozen and dry-frozen in order to build a sample repository that can be used for risk assessment on emerging topics until the next TDS programme.

3.3. Sample analyses

3.3.1. Minerals and inorganic contaminants

Minerals and inorganic contaminants were screened for in all the food samples according to an ICP-MS method accredited by COFRAC and a validated SAAF method (for K, Na, Ca and mg). The analyses were performed by the Environmental inorganic contaminants and minerals unit of the ANSES Laboratory for Food Safety, the National Reference Laboratory for heavy metals in foodstuffs of animal origin.

The samples were analysed after closed-vessel microwave digestion using three detection techniques: inductively coupled plasma mass spectrometry (ICP-MS) for 23 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Sn, Ga, Ge, Li, Mn, Hg, Mo, Ni, Pb, Se, Sr, Te, V, Zn), ICP-MS using a collision/reaction chamber (collision cell technology or CCT) for Fe, and flame atomic absorption spectrometry (FAAS) for four major mineral elements (Na, mg, Ca, K).

From 0.2 to 0.6 g of homogenised samples were weighed in quartz digestion flasks containing 3 mL of nitric acid (67% v/v) and 3 mL of ultra-pure water (AFNOR 2002b). After a 15 minute pre-digestion stage, the samples were mineralised according to a previously optimised programme (Noël, Leblanc *et al.* 2003). After cooling to room temperature, the solutions were transferred quantitatively into 50 mL polyethylene tubes containing 100 µL of internal standards. Ultra-pure water was then added to the solution to achieve the final volume before analysis. Certain iron-rich matrices were further diluted before analysis. Each sample was analysed in duplicate.

The methods of analysis by standard-mode ICP-MS and FAAS were evaluated in terms of their performance criteria in order to validate them (Chekri, Noël *et al.* 2010; Millour, Noël *et al.* 2011). The criteria for linearity, specificity, accuracy, repeatability and reproducibility were evaluated according to the NF V03-110 standard (AFNOR 1998). The limits of detection (LOD) and quantification (LOQ) were calculated according to the NF EN 13804 standard (AFNOR 2002a) and were respectively defined as being equal to 3 and 6 times the standard deviation of the mean of 21 independent blank tests after correction by the sample weight (0.6 g) and the dilution (1/50). The LOQs were determined on average every quarter and verified experimentally according to the XPT 90-210 standard (AFNOR 2003) which involves spiking deionised water by adding concentrations corresponding to the LOQs of each element. The defined LOQ values are shown in Table 8.

In order to manage and validate the results, an analytical quality assurance system was evaluated beforehand so as to establish relevant internal quality controls (IQC) (Millour, Noël *et al.* 2010) (Table 9). The standard analytical sequence consisted of:

- a calibration range including a blank test and 5 standards whose concentrations ranged from 0 to 100 µg/L for Al and Zn, from 0 to 50 µg/L for Mn, Cu, As, Fe and from 0 to 20 µg/L for the other elements in ICP-MS; from 0 to 2 mg L⁻¹ for Na and K, from 0 to 5 mg/L for Ca and from 0 to 1 mg/L for mg in FAAS. The coefficient of determination (r^2) has to be above 0.995 and the range has to have a minimum of 4 points to be acceptable. In ICP-MS, in order to cover a wide range of masses and to monitor variations in sensitivity according to the region of the mass as well as instrument drift and matrix effects, five internal standards with a concentration of 2 µg/L (Scandium, Yttrium, Indium, Bismuth, Rhenium) were added in standard mode and two (Yttrium and Indium) in CCT mode to all the solutions;
- 3 blank tests with different mineralisations. The mean of the blanks was subtracted from the value of the sample analysed;
- a mid-range standard re-analysed every five samples and at the end of the sequence in order to track the variation in instrument response;

- certified reference materials (CRM) to check the accuracy of the method. The CRMs retained were selected according to their availability, the matrix and the number of certified values available: BCR 278R (mussel tissue), IAEA 407 (fish), INCT-MPH2 (mixed Polish herbs), BCR 063R (milk powder), IAEA 359 (cabbage) and IAEA 140 TM (seaweed);
- 2 spikes of standard solutions at different concentrations into two unknown samples to check the specificity of the method (lack of interference) in ICP-MS. Their concentrations varied between 2 and 100 µg/L;
- 18 duplicated samples to verify sample homogeneity and check the repeatability of the method.

The results were validated if they fulfilled the IQCs implemented. In the event they did not, the samples were re-analysed. When the concentrations were above the LOQ, the mean of the duplicates analysed was selected, combined with a measurement uncertainty.

Table 8: Limits of quantification of the minerals and inorganic contaminants screened for

Elements	LOQs defined according to the NF EN 13804 standard (mg/kg fresh weight)
Iron (Fe)	0.086
Lithium (Li)	0.001
Aluminium (Al)	0.472
Vanadium (V)	0.020
Chromium (Cr)	0.020
Manganese (Mn)	0.015
Cobalt (Co)	0.002
Nickel (Ni)	0.053
Copper (Cu)	0.023
Zinc (Zn)	0.100
Gallium (Ga)	0.002
Germanium (Ge)	0.003
Arsenic (As)	0.010
Selenium (Se)	0.100
Strontium (Sr)	0.013
Molybdenum (Mo)	0.011
Silver (Ag)	0.084
Cadmium (Cd)	0.001
Tin (Sn)	0.003
Antimony (Sb)	0.001
Tellurium (Te)	0.002
Barium (Ba)	0.090
Mercury (Hg)	0.010
Lead (Pb)	0.005
Sodium (Na)	11.1
Potassium (K)	8.10
Calcium (Ca)	25.7
Magnesium (Mg)	5.83

Table 9: Internal quality controls implemented to analyse minerals and inorganic contaminants

Control name	Aim	Frequency	Acceptability criteria
Linearity	Establish the relation between counts/s in ICP and absorbance in FAAS and the concentrations, using standards with known concentrations.	Prior to sample analysis	≥ 4 points and $r^2 \geq 0.995$
Instrument drift	Evaluation of the instrument response and run quality	After calibration, every 5 samples and at the end of the analytical sequence	Between 80 and 120% of the initial value of the mid-range standard
Blank	Verification of the lack of contamination in the reagents and sample preparation process	3 per sequence	Blank values < LOQ
Internal standard	Monitoring of instrument drift and matrix effects in ICP-MS	Added to standards and samples	Sc, Y, In, Bi, Re in standard-mode ICP-MS Values included between 70 and 130% of the target value
CRM	Accuracy control	3 per sequence	$-2 < Z\text{-score} < 2$
Spike recovery	Monitoring of specificity of the method in ICP-MS	2 different standard spiked of different concentrations per sequence	Between 80 and 120% of the theoretical spiked standard value
Duplicates	Elimination of specific batch error and verification of repeatability	All samples in duplicate	Acceptable if $RSD \leq 20\%$ when average $\geq 5 \times LOQ$ or $RSD \leq 40\%$ when average $\geq LOQ$

3.3.2. Persistent organic pollutants

The analyses of persistent organic pollutants (POPs) were performed on all known or supposed contributors for each family of contaminants, dioxins and PCBs, brominated flame retardants and perfluorinated chemicals. The analyses were carried out by the *Laboratoire d'Etude des Résidus et Contaminants dans les Aliments* (LABERCA) of the National Veterinary School at Nantes, which is the National Reference Laboratory for certain contaminants including dioxins, furans and DL-PCBs.

Dioxins and PCBs

The extraction of fat was adapted to the physical characteristics of the samples (Antignac, Marchand *et al.* 2006; Laurent, Marchand *et al.* 2005). The solid samples were freeze-dried and then ground. The liquid samples underwent protein precipitation through the addition of potassium oxalate. The markers were added before extraction (17 $^{13}C_{12}$ -labelled PCDD/F congeners and 18 $^{13}C_{12}$ -labelled PCB congeners).

After grinding, the lipid fraction was extracted by Accelerated Solvent Extraction (ASE) using a mixture of toluene/acetone (70/30; v/v) at a high pressure and temperature (P=100 bar, T=120°C). The solvents were then evaporated to determine the quantity of fat extracted. The extract was finally redissolved in 25 mL of hexane before being purified. The liquids underwent two successive fat extractions using a solvent mixture of ethanol, ether and hexane (45/22.5/32.5; v/v).

The purification was done in three stages:

- the first column was a silica column prepared with 5 g of sulfate, 5 g of silica, 20g of silica acidified with 22% of sulfuric acid, 25 g of silica acidified with 44% of sulfuric acid and 5 g of sulfate, then conditioned with 150 mL of hexane. The elution was done with 150 mL of hexane;
- the second purification enabled the separation of the PCBs from the PCDD/Fs using a column of Florisil prepared with 6 g of Florisil. The elution was done with 110 mL of hexane to recover the PCBs, then with 120 mL of toluene to recover the PCDD/Fs.

Finally, a column of charcoal-Celite (0.25 g) was used for the final purification of the fraction containing the PCDD/Fs. This column was conditioned with 10 mL of toluene, 5 mL of a mixture of toluene/dichloromethane/methanol (5/20/75; v/v/v), 5 mL of a mixture of dichloromethane/cyclohexane (50/50; v/v) and 15 mL of hexane. The elution was done with 30 mL of toluene. The fraction containing the PCBs was split into two sub-groups according to the planarity of the congeners using a column of charcoal-Celite (0.5 g) and Florisil (1g). This column was conditioned with 5 mL of toluene, 2 mL of dichloromethane, 5 mL of hexane and the elution was done with 10 mL of hexane for non-coplanar PCBs (mono and di-ortho) and then with 20 mL of toluene for coplanar PCBs (non-ortho).

After these different stages, a quantification standard was added for each family of compounds ($^{13}\text{C}_{12}$ -1,2,3,4-TCDD for dioxins and $^{13}\text{C}_{12}$ -PCB.111 for PCBs). The rates of recurrence had to be within a range between 30% and 140% as recommended in Regulation (EC) No. 1883/2006 of 19 December 2006 laying down methods of sampling and analysis for the official control of levels of dioxin and dioxin-like PCBs in certain foodstuffs.

The congeners were determined by high-resolution gas chromatography-mass spectrometry, using an HP6890 Chromatograph, a DB-5MS column (30m in length, 0.25 mm in diameter, 0.25 μm phase thickness) coupled with a high-resolution mass spectrometer (Jeol JMS-700D and Jeol JMS-800D).

The detection thresholds depend on the matrices and congeners. The detection limits were between 0.01 and 0.001 pg/g fresh weight, enabling the detection of a significant number of congeners in most cases. Moreover, quality controls were regularly analysed in order to validate the analytical results. Two matrices were used for quality control: one was a fish oil with a predominance of furans and PCBs; the second was a sample of butter with a more pronounced pattern of contamination by dioxins.

For all the molecules screened for, the substance concentrations were determined in relation to fresh weight. To calculate the toxic equivalent quantities (relative to 2,3,7,8-TCDD), the 1998 toxic equivalency factors (TEFs; WHO, 1998) (Van den Berg, Birnbaum *et al.* 1998) were used for dioxins (7 PCDDs and 10 PCDFs with chlorine atoms in positions 2, 3, 7 and/or 8) as well as for DL-PCBs (12 congeners). All data were acquired under the ISO 17025 quality system using an accredited method.

Perfluorinated compounds

The method for assaying 16 perfluorinated compounds (5 perfluoroalkyl sulfonates including PFOS, and 11 perfluorocarboxylic acids including PFOA, Table 10) (Veyrand, Kadar *et al.* 2010) in solid foods was based on solid/liquid extraction using an organic solvent: the freeze-dried solid extracts were stirred with methanol for 30 minutes, before being centrifuged (2,000 g at 0°C). The extraction solvent was then recovered and evaporated under a stream of nitrogen until a volume of approximately 1 mL was obtained. The extract was then purified on two columns: the compounds were first deposited on a polymeric reversed phase column, and then purified on a charcoal column. A final centrifugation at 12000 g was performed to remove any residual lipids. The final extracts were then injected into liquid chromatography coupled with tandem mass spectrometry (LC-MS/MS) and quantified after electrospray ionisation in negative mode. Two diagnostic transitions were performed for each compound, to identify and quantify the compounds

Concerning water samples, 100 mL were deposited on a reversed-phase SPE column, before being eluted and concentrated before injection. For samples of milk and dairy products, the samples were extracted using acetone, thus enabling combined extraction of the analytes and protein precipitation. Finally, the purification protocol for fish samples involved purifying the samples by dispersive SPE (mixture of the purification phase with the extract) using charcoal. The extracts were then centrifuged before being concentrated under a stream of nitrogen.

Each sample was first supplemented with two ^{13}C -labelled internal standards ($^{13}\text{C}_4$ -PFOA and $^{13}\text{C}_4$ -PFOS), to quantify the compounds very accurately by isotopic dilution. An external standard (fluorometholone) was added at the end of the analysis to determine the extraction yields. Depending on the matrices, these yields ranged from 30 to 80%. Quality controls as well as analytical blank tests were performed for each series.

The limits of detection and quantification, depending on the matrix and compound screened for, ranged from 0.2 pg/g fresh weight (FW) to 3.73 ng/g FW.

Table 10: List of perfluorinated compounds screened for

Perfluoroalkyl sulfonates	
PFOS	Perfluorooctane sulfonate
PFBS	Perfluorobutane sulfonate
PFHxS	Perfluorohexane sulfonate
PFHpS	Perfluorohptane sulfonate
PFDS	Perfluorodecane sulfonate
Perfluorocarboxylic acids	
PFOA	Perfluorooctanoic acid
PFBA	Perfluorobutanoic acid
PFPA	Perfluoropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluoroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTTrDA	Perfluorotridecanoic acid
PFTeDA	Perfluorotetradecanoic acid

Brominated compounds

The limits of detection and quantification, depending on the matrix and compound screened for, are presented in Table 11.

The extraction of fat was adapted to the physical characteristics of the samples (Cariou, Debrauwer *et al.* 2006; Debrauwer, Riu *et al.* 2005). The solid samples were freeze-dried and then ground. The liquid samples underwent protein precipitation through the addition of potassium oxalate. Markers were added before extraction (eight ¹³C₁₂-labelled PBDE congeners, one ¹³C₁₂-labelled PBB congener, three ¹³C₁₂-labelled HBCD congeners).

After grinding, the lipid fraction was extracted by ASE using a mixture of toluene/acetone (70/30; v/v) at a high pressure and temperature (P=100 bar, T=120°C). The solvents were then evaporated to determine the quantity of fat extracted. The extract was finally made up with 25 mL of hexane before being purified.

The liquids underwent two successive fat extractions using a solvent mixture of ethanol, ether and hexane (45/22.5/32.5; v/v).

Purification involved three stages: The first column was a silica column prepared with 5 g of sulfate, 5 g of silica, 20g of silica acidified with 22% of sulfuric acid, 25 g of silica acidified with 44% of sulfuric acid and 5 g of sulfate, then conditioned with 150 mL of hexane. The first elution using hexane enabled the collection of PBDEs and PBBs. The HBCDs were then eluted using dichloromethane. Only the PBDEs and PBBs were subjected to two additional columns. The first additional purification was a column of Florisil prepared with 6g of Florisil. The elution was done with 110 mL of hexane and enabled the collection of PBDEs and PBBs. This fraction was then purified on a column of charcoal-Celite (0.5 g) and Florisil (1 g). This column was conditioned with 5 mL of toluene, 2 mL of dichloromethane, 5 mL of hexane and the elution was done with 30 mL of hexane. The HBCDs were purified by liquid/liquid extraction using sodium hydroxide and hexane. A quantification standard was added to each vial for each family of compounds (¹³C₁₂-PBDE 138 for PBDEs and PBBs and fluorometholone for HBCDs) just before injection. The recurrence rates had to be within a range of 30% to 140%.

The PBDEs and PBBs were determined by high-resolution gas chromatography-mass spectrometry: using an HP6890 Chromatograph, a DB-5MS column (30m in length, 0.25 mm in diameter, 0.25 µm phase thickness) coupled with a high-resolution mass spectrometer (Jeol JMS-700D and Jeol JMS-800D). The detection thresholds depended on the matrices and congeners. The limits of detection were substantially lower than 0.001 ng/g

fresh weight in most of the samples, allowing a significant number of congeners to be detected in most cases. Moreover, quality controls were regularly analysed in order to validate the analytical results. The quantification of α -, β - and γ -HBCD stereoisomers was carried out by LC-MS/MS with an Agilent 6410 'triple quadrupole' system fitted with a 'Hypersil Gold reversed phase column' (100 mm x 2.1 mm).

Table 11: Limits of detection and quantification (LOD/LOQ) for brominated compound

Congeners	Median (ng/g FW)	Maximum (ng/g FW)
PBDE 28	0.0001	0.0030
PBDE 47	0.0001	0.0021
PBDE 99	0.0002	0.0044
PBDE 100	0.0002	0.0033
PBDE 153	0.0006	0.0081
PBDE 154	0.0006	0.0079
PBDE 183	0.0016	0.0157
PBDE 209	0.0066	0.6786
PBB 52	0.0002	0.0054
PBB 101	0.0006	0.0087
PBB 153	0.0009	0.0164
alpha HBCD	0.0032	0.0242
beta HBCD	0.0017	0.0310
gamma HBCD	0.0050	0.0489

3.3.3. Mycotoxins

The mycotoxin analyses were performed by the Côtes d'Armor Laboratory for development and analyses, accredited by COFRAC to screen specifically for aflatoxin M₁ in milk and dairy products and aflatoxins B and G in cereals, nuts, and derived products, and generally to screen for mycotoxins in human foodstuffs.

The mycotoxin analyses were carried out on foodstuffs likely to be contaminated by these substances. The analytical limits for the detection of mycotoxins are given in Table 12.

Screening for Aflatoxins (AFs) B₁, B₂, G₁ and G₂ was performed using a single method. The NF EN 12 955 standardised method entitled 'Determination of aflatoxin B₁ and the sum of aflatoxins B₁, B₂, G₁ and G₂ in cereals, shell-fruits and derived products' was used for the following food groups: breads and dried bread products, breakfast cereals, pasta, rice and semolina, other cereals, croissant-like pastries, biscuits, pastries and cakes, eggs and egg products, poultry and game, dried fruits, nuts and seeds, chocolate. To summarise, this analytical technique involves an extraction stage using a mixture of water and methanol (or for fat-rich products using only methanol), a purification stage using an immunoaffinity column, separation by liquid chromatography (LC) and detection-quantification by fluorescence (LC-F). The LOD and LOQ for the food groups mentioned are 0.05 and 0.2 $\mu\text{g}/\text{kg}$ respectively for each of the AFs.

Screening for AFM₁ was done using two methods:

- the NF EN ISO 14 501 standardised method entitled 'Determination of aflatoxin M₁ content in milk and milk powder was used for milk'. To summarise, this analytical technique involves an extraction-purification stage using an immunoaffinity column, separation by liquid chromatography (LC) and detection-quantification by fluorescence (LC-F). The LOD and LOQ are 0.001 and 0.005 $\mu\text{g}/\text{kg}$ respectively;
- the AFSSA CNEVA/TOMI/SD 1794 internal reference method entitled 'Determination of aflatoxin M₁ content in butter, cream, cheese and yoghurt' was used for the following food groups: ultra-fresh dairy products, cheese, butter, poultry and game, delicatessen meats. To summarise, this analytical technique involves an extraction stage using dichloromethane, a purification stage using an immunoaffinity column, separation by Liquid Chromatography (LC) and detection-quantification by fluorescence (LC-F). The LOD and LOQ for the food groups mentioned are 0.01 and 0.05 $\mu\text{g}/\text{kg}$ respectively.

Screening for fumonisins B (FB1 and FB2), ochratoxin A (OTA), patulin (PAT), trichothecenes A and B, zearalenone (ZEA) and certain derivative metabolites was carried out using the internal reference method P-316-059 concerning 'Multi-mycotoxin analyses in cereals, animal foods, fodder, milk and dairy products, and urine.' To summarise, this analytical technique involves an extraction stage using a mixture of acetonitrile-water for solid samples or pure acetonitrile for liquid samples, followed by centrifugation, evaporation to dryness and take-up of the residue using a mixture of acetic acid-methanol, and after filtering, detection and quantification by liquid chromatography coupled with a mass spectrometer using at least two transitions to identify the molecules (LC-MS/MS). The technique was used for the following mycotoxin/matrix combinations:

Screening for FB1s and FB2s in breakfast cereals, with LOD and LOQ of 2.0 and 10.0 µg/kg respectively for each FB1 and FB2.

Screening for OTA in bread-rusks, breakfast cereals, pasta, rice and semolina, other cereals, croissant-like pastries, biscuits, pastries and cakes, poultry and game, delicatessen meats, fruits, dried fruits, nuts and seeds, chocolate, alcoholic beverages, coffee, other hot beverages, pizzas, quiches, sandwiches, mixed dishes, dairy-based deserts, with LOD and LOQ of 0.2 and 0.5 µg/kg respectively for solid samples and 0.01 and 0.05 µg/kg respectively for liquid samples.

Screening for PAT in pastries, fruits, compotes and cooked fruit, and non-alcoholic beverages, with LOD and LOQ of 6.0 and 20.0 µg/kg respectively for solid samples and 3.0 and 10.0 µg/kg respectively for liquid samples.

Screening for A and B trichothecenes in bread and dried bread products, breakfast cereals, pasta, rice and semolina, other cereals, croissant-like pastries, biscuits, pastries and cakes, delicatessen meats, fruit, dried fruits, nuts and seeds, pizzas, quiches, sandwiches, mixed dishes, dairy-based deserts, with LOD and LOQ of 3.0 and 10.0 µg/kg respectively.

Screening for ZEA and its derivatives in bread and dried bread products, breakfast cereals, pasta, rice and semolina, other cereals, croissant-like pastries, biscuits, pastries and cakes, eggs and egg products, poultry and game, delicatessen meats, fruits, non-alcoholic beverages, pizzas, quiches, sandwiches, mixed dishes, with LOD and LOQ of 1.5 and 5.0 µg/kg respectively for solid samples and 0.15 and 0.5 µg/kg respectively for liquid samples.

Table 12: Limits of quantification (LOQ) and detection (LOD) for the mycotoxins screened for

Mycotoxins	Matrix	LOD max (µg/kg)	LOQ max (µg/kg)
Aflatoxins B+G	All matrices	0.05	0.2
Aflatoxin M1	Liquid matrix Solid matrix	0.001 0.01	0.005 0.05
Fumonisin B1, B2	All matrices	2	10
OTA	Liquid matrix Solid matrix	0.01 0.2	0.05 0.5
Patulin	Liquid matrix Solid matrix	3 6	10 20
HT2	Liquid matrix Solid matrix	0.3 3	1 10
T2	Liquid matrix Solid matrix	0.3 3	1 10
DON	Liquid matrix Solid matrix	0.3 3	1 10
NIV	Liquid matrix Solid matrix	0.3 3	1 10
Zearalenone and derivatives	Liquid matrix Solid matrix	0.15 1.5	0.5 5

Approximately 3% of the analytical results for screening for OTA and TCT were not taken into account for the calculations of exposure since the method was not considered effective, notably with certain recovery rates being lower than 60% for certain matrix/toxin combinations.

3.3.4. Phytoestrogens

The phytoestrogen analyses were conducted by the Laboratoire d'Etude des Résidus et Contaminants dans les Aliments (LABERCA) of the Nantes-Atlantic National College of Veterinary Medicine, Food Science and Engineering, within the group of identified or assumed contributors to exposure.

The multi-residue method described below is used to detect and identify phytoestrogens in food matrices (Antignac, Cariou *et al.* 2003; Antignac, Cariou *et al.* 2004; Antignac, Gaudin-Hirret *et al.* 2009). This method is used in particular for isoflavones (daidzein, genistein, formononetin, biochanin A, glycitein, equol), lignans (enterolactone, enterodiol, matairesinol, secoisolariciresinol), coumestans (coumestrol), and natural stilbenes (resveratrol).

The method involves several steps, the main ones being:

- Freeze-drying (if applicable);
- First hydrolysis (enzymatic) of precursors (*Helix pomatia* digestive juice);
- Liquid-liquid extraction (plant matrices only);
- Second hydrolysis (chemical, in acid medium) of precursors (plant matrices only);
- Liquid-liquid extraction (plant matrices only);
- Extraction-purification using C₁₈ solid-phase extraction (SPE) columns;
- Purification using silica gel (SiOH) solid-phase extraction columns;
- Detection and identification using LC-MS/MS (negative electrospray ionisation mode [-ESI]);
- Interpretation of results.

For non-soy based food matrices, a test sample of 5 g or mL was used for analysis. In the specific case of soy-based products, the sample test was reduced to 50 µL given the extremely high concentration of phytoestrogens expected in this type of product. After freeze-drying and grinding (in the case of solid matrices), an acetate buffer was added, then 150 ng of daidzein-D₃ was added to each sample (internal standard used for quantification by the isotope dilution method). After the samples had been homogenised, enzymatic hydrolysis (*Helix pomatia* digestive juice) was performed. Following centrifugation, the supernatant was recovered while the pellet was retained in the original centrifuge tube.

For plant matrices, an initial liquid-liquid extraction using ether was then performed on the supernatant, followed by a phase when the ether was evaporated to dryness. Aqueous phases on the other hand, combined with the previous pellet, underwent a second chemical hydrolysis in acid medium (HCl 35%) in order to supplement the hydrolysis of precursors closely linked to the matrix. A new liquid-liquid ether extraction procedure was then applied, this ether phase then being combined with the previous one, evaporated to dryness and lastly, redissolved in a mixture of ethanol and ultra-pure water.

For all samples concerned, these extracts were purified by two successive solid-phase extraction (SPE) steps, one reversed phase (C₁₈ stationary phase), and one normal phase (stationary SiOH phase). Finally, after evaporation to dryness, the extracts obtained were redissolved using a solution of fluorometholone in a water/methanol mixture (external standard) before being injected into the measurement system apparatus.

The measurement system used was LC-MS coupled with MS. Chromatographic separation was performed on a type C₁₈ column, with a methanol/water mobile phase. Negative electrospray ionisation (-ESI) then took place. Two diagnostic signals were monitored for each target analyte, to ensure their unambiguous identification based on current criteria at the European level (Commission Decision 2002/657/EC). The most sensitive signal was used for quantification by means of the isotope dilution method. For each series of analyses, a range of high amplitude benchmarking was devised to cover the wide variability of phytoestrogen levels expected in the various matrices analysed.

In general, for isoflavones and enterolignans, the limit of detection (LOD) for plant matrices is approximately 0.5 µg/kg and the limit of quantification (LOQ) is approximately 1 µg/kg; for animal matrices, the LOD is approximately 0.1 µg/kg and the LOQ is approximately 0.2 µg/kg. These limits are approximately three times higher for coumestans.

3.4. Calculation of population intakes and exposure

3.4.1. Processing consumption data

Specified Goldberg cut-off values were used to identify underreporters of energy intake among the 4079 subjects in the French Individual and National Food Consumption Survey (INCA 2) (Black 2000; Goldberg, Black *et al.* 1991). Basal metabolism was calculated for each subject with Schofield equations, using individual data on age, gender, height, and weight (Schofield 1985). The intra-individual coefficient of variability in these equations was considered to be equal to zero since the method used to collect the consumption data was a food frequency questionnaire.

Based on these analyses, 717 subjects were excluded from the study. Calculations on intakes and exposure were thus performed on 3362 subjects (1,918 adults and 1,444 children).

It should be noted that the consumption of dietary supplements was not considered in this study.

3.4.2. Processing composition and contamination data

Values below the limits of detection or quantification are referred to as censored data. Censored data were processed according to the World Health Organization (WHO) recommendations (GEMS-Food Euro 1995).

For items with a censoring rate of less than 60%, the censored data were replaced by an estimate corresponding to a median or middlebound (MB) assumption: concentrations below the LOD (non-detected substances) were replaced by 0.5 LOD, and concentrations below the LOQ but above the LOD (called traces) were replaced by 0.5 LOQ.

For items with a censoring rate of at least 60%, two assumptions were made about concentrations: the low or lowerbound (LB) assumption, and the high or upperbound assumption (UB). The lowerbound assumption corresponds to a scenario in which non-detected values are estimated to be 0 and the values detected, but not quantified, are estimated to be equal to the LOD. The upperbound assumption corresponds to a scenario in which non-detected values are estimated to be equal to the LOD and the values detected but not quantified are estimated to be equal to the LOQ. The LB scenario represents the minimum possible value, and the UB scenario represents the maximum possible value.

There are a few exceptions to this and these specific factors are described on a case-by-case basis. For example, in view of the limited data in the literature for phytoestrogens screened in the matrices that are sampled to enable an interpretation of censored data and to avoid overestimating exposure, on occasion only the lowerbound assumption (LB) was chosen and the censored data were replaced by 0. The upperbound assumption (UB) was rejected because there are often substantial analytical limitations for certain matrices.

To estimate population intakes and exposure, the mean levels of the two seasons sampled were considered for each food, both regionally and nationally, as applicable.

In order to increase the percentage of the diet taken into account when calculating intakes and exposures, mean levels of the same foods, when they had been sampled in other regions, were assigned to foods that had not been sampled in a particular region (therefore, consumed less in this region).

3.4.3. Methods of calculating dietary intakes and exposure

The dietary intakes of the population were calculated individually, for all individuals, using the following formula:

$$I_{i,j} = \sum_{k=1}^n C_{i,k} \times L_{k,j}$$

Where $I_{i,j}$ is the dietary intake j of individual i , n is the number of foods in the diet, $C_{i,k}$ is the consumption of food k by individual i , $L_{k,j}$ is the concentration level of nutrient j of food k .

Dietary exposure to each contaminant of interest in the population was calculated individually, for all INCA 2 study subjects, using the following formula:

$$E_{i,j} = \frac{\sum_{k=1}^n C_{i,k} \times L_{k,j}}{BW_i}$$

Where $E_{i,j}$ is dietary exposure to contaminant j of individual i , n is the number of foods in this diet, $C_{i,k}$ is the consumption of food k by individual i , $L_{k,j}$ is the level of contaminant j of food k , BW_i is the body weight of individual i .

It should be noted that this calculation method does not consider the intra-individual variability of intakes or exposure recorded during the INCA 2 survey week. Indeed, a method that would take this factor into account would be too cumbersome to apply to all of the substances investigated by this study.

Certain substances required specific processing of the data and a more complex calculation of exposure:

- only total mercury was analysed. However, exposure to organic mercury (methylmercury) and inorganic mercury should be calculated separately, because there is a health-based guidance value for each one (Joint FAO / WHO Expert Committee on Food Additives [JECFA] 2010). Given that nearly all exposure to methylmercury through diet comes from fishery products, methylmercury exposure has been estimated using exposure to fish, molluscs and crustaceans, as recommended by the JECFA. The hypothesis according to which 100% of mercury comes in the form of methylmercury in seafood products has been confirmed by the results of the Calipso study (Sirot, Guérin *et al.* 2008). Similarly, exposure to inorganic mercury was estimated using the mercury exposure of all the other food groups, apart from fishery products;
- only total arsenic was analysed. However, the health-based guidance value defined for total arsenic is no longer used in successive risk assessments undertaken at the international level (EFSA 2009d; JECFA 2011a). The risk of exposure to inorganic arsenic should be analysed. Exposure to inorganic arsenic was calculated from exposure to total arsenic, by applying assumptions for inorganic arsenic speciation. For fish, molluscs and crustaceans, the proportion of inorganic arsenic comes from the CALIPSO study data (Sirot, Guerin *et al.* 2009). For the other food groups, the proportion of inorganic arsenic was estimated from low and high values (LB and UB) recorded by Yost *et al.* (Yost, Tao *et al.* 2004);
- since the sample does not cover the entire diet, exposure is underestimated, *de facto*. While consumption of most of the known contributors to exposure (dairy products, meat products, eggs and egg products, and molluscs and crustaceans) was adequately covered by sampling (about 80% to 100%) (Table 5) only 52.3% of fish consumption was sampled. In order to ensure that the calculated exposure to dioxins and polychlorinated biphenyls (PCBs), especially those linked to fish consumption, was not significantly underestimated, an additional exposure simulation was implemented to take into account total fish consumption. The contamination values of the sampled fish were applied to the fish that were consumed but not sampled. The assignment of a sampled species to a non-sampled species was done on the basis of analysis of data from the CALIPSO study (Marchand, Antignac *et al.* 2006). The species have since only been matched in the CALIPSO study, as the dioxin and PCB concentrations were of the same order of magnitude. This made it possible to consider not only the fat content, but also the potential for different metabolisms among species with the same fat content but exhibiting contamination that can often be very different. Exposure was then calculated using the method described above.

3.4.4. Interpretation of results

It is necessary to clarify some points concerning the way data on intakes and exposure through food are interpreted.

The use of mean concentrations (in composite samples) in the calculations enables a realistic and appropriate estimate of intakes and exposure over the long term to the extent that these estimates are compared to reference intakes and health-based guidance values: estimated average requirement (EAR), population reference intake, tolerable upper intake level (UL), tolerable daily intake (TDI), provisional tolerable weekly intake (PTWI), provisional tolerable monthly intake (PTMI), no effect level or benchmark dose limit (BMDL), etc., established by French, European or international scientific authorities.

Health-based guidance values are indices that enable establishment of a qualitative or quantitative relationship between exposure to a chemical substance and its effect on human health. They are specific to an effect, exposure route and duration of exposure. Their establishment and definition differ depending on whether a toxicity threshold or lack of a toxicity threshold is considered.

For substances with a threshold effect, that is, that cause, above a certain dose, damage with severity that is proportional to the dose absorbed, it is possible to define a tolerable daily intake (TDI), provisional tolerable weekly intake (PTWI), or even provisional tolerable monthly intake (PTMI). The acceptable daily intake (ADI)/TDI, PTWI, and PTMI correspond to an amount found in food and drinking water, which can be ingested daily, weekly or monthly, respectively, over a lifetime without incurring an appreciable risk to consumer health.

For substances with no threshold effect, i.e., for which there is a probability, however slight, that a single molecule entering the body would have adverse effects on that body, the amount is defined as a benchmark dose limit (BMDL). The BMDL corresponds to a dose causing, in exposed subjects, an increase of 1, 5 or 10% in the incidence of an adverse effect on health as compared with subjects who are not exposed.

The characterisation of risk consists in comparing dietary exposure, i.e., the amount of a substance that an individual is likely to ingest daily, determined on the basis of their eating habits and amounts of that substance found in foods, to the health-based guidance value. If the health-based guidance value is exceeded, or if the margin between the exposure and the BMDL is small, then a health risk cannot be excluded.

If exceeding of the health-based guidance value is not observed or if the margin between exposure and the BMDL is high with the upperbound assumption (UB), then all risk can be ruled out since it involves a protective scenario that increases concentrations and therefore exposure. Conversely, if exceeding of the health-based guidance value or a small margin between exposure and the BMDL with the lowerbound assumption (LB) is observed, then a health risk cannot be ruled out since it involves a scenario that reduces concentrations and therefore exposure. If the risk can be rejected with the lowerbound but not with the upperbound assumption then it would be best to acquire additional data to make the characterisation more accurate.

French values were used for dietary intakes (Martin, Azaïs-Braesco *et al.* 2001). The EAR was calculated using the following formula: $EAR = 0.77 \times \text{population reference intake}$, for all nutrients except magnesium, for which the $EAR = 0.83 \times \text{population reference intake}$ (Touvier, Lioret *et al.* 2006) and iron, for which an estimate of the distribution of requirements was used (see the fact sheet on iron). When only a range for the population reference intake or EAR was found in the literature, the mean value of this range was used for comparison with intake. Concerning the intake levels, the values defined in Europe and, if not available, then in France, were given preference (Martin, Azaïs-Braesco *et al.* 2001; SCF 2006). If neither ANSES nor EFSA had chosen an intake level for a nutrient, intake levels defined by agencies abroad were considered. For contaminants, values chosen at the French, European or international levels were given preference. When several agencies had proposed values for risk assessment, the most relevant value (or values, as applicable) was (were) chosen, after consulting ANSES's Expert Committees. Also, some reference values for the assessment have been updated to reflect newly published assessments, compared with those in previous ANSES opinions or reports. In certain cases, no available value was considered to be suitable for the assessment of chronic risk that was part of this study. No new health-based guidance value was calculated during this work.

Percentages of the population whose intakes were below the requirements (or who had a prevalence of inadequate intakes) or exceeded the health-based guidance values or tolerable upper intake levels were calculated. It should be noted that the dietary intake and exposure data from which these percentages were calculated are not exhaustive, but cover a representative sample of the French population (INCA 2), and not the population as a whole. Accordingly, these estimates are meaningful only if accompanied by the confidence intervals (at 95%) on which their risk assessment was based.

Concerning the prevalence of inadequate intakes, it should be remembered that these can vary considerably within a group, according to age and gender.

Nutritionists agree that, for minerals and trace elements, a dietary intake below a requirement at a time *t* and for short periods over a lifetime does not necessarily cause a significant health risk (Martin, Azaïs-Braesco *et al.* 2001).

It is important to note that it is not possible to assess intakes and acute exposure within the framework of this study, at a time *t*, but 'background levels' and chronic intakes and dietary exposure can be assessed. It also does not allow for assessing intakes or exposure by other routes (respiratory, dermal, etc.), or due to special situations such as contamination of foods by the local environment, consumption of dietary supplements, specific cooking/preparation methods or practices (barbecue for example) or special diets (enriched or organic diets, for example). Moreover, the potential cumulative effects of various substances were only taken into account in the risk assessment when the toxicological data were available (as was the case with dioxins and PCBs for example).

For certain chemicals, discrepancies can be observed when compared with previous results, therefore, it would be advisable to conduct further studies or methodological work, for example, to improve understanding.

Risk characterisation for all substances studied, after consulting the expert committees, has been divided into four categories:

- risk that can be excluded for the general population;
- theoretical risk that cannot be excluded with certainty, especially for substances assessed as exceeding health-based guidance values according to the upperbound assumption (UB) only, i.e. the scenario which increases concentrations and therefore exposure;
- risk that cannot be excluded for the general population or specific population groups;
- risk that does not lead to a conclusion about the risk itself or about the coverage of requirements, particularly for substances that do not have robust health-based guidance values or nutrients for which no EARs were estimated (in this case, refer to the fact sheets for more information).

The classification of these substances in one of these categories took several factors into account, namely the results of exposure in adults and children, the margin between dietary exposure and the reference value, the substance's toxicity, its critical populations and effects, knowledge of its levels in foods or exposure derived from other studies or the literature.

3.4.5. Presentation of results

The results are presented in sections, one for each family of substances studied. In each section, the results are described in the form of fact sheets that summarise the risk assessment along with the hazard assessment and characterisation, then exposure assessment and risk characterisation, accompanied by recommendations as applicable.

The first part includes some background knowledge on the item. For nutrients, the EARs and/or population reference intakes are given for each population category when they are available, as well as the tolerable upper intake level if any. For the other components, the TDI, TWI or TMI is given, if any.

In the second part, the results of intakes and exposure are presented for the entire French population, for adults (18 years and older) and children (3 to 17 years). All the estimates were calculated using weighted data. The main contributors to exposure are identified for the two population sub-groups, usually at the level of food groups, but also in terms of the individual food, when that proves to be relevant. The intakes and exposure values (means, 5th percentile for intakes, and 95th percentile) are compared to the reference values for all of the items studied, which are presented in the first part. The theoretical percentages for populations of adults and children not reaching the EARs (or prevalences of inadequate intakes) or exceeding the health-based guidance values or tolerable upper intake levels are also given, along with their confidence interval at 95%. Lastly, the predominant foods or groups contributing (on average) to total intake or exposure, are listed. For substances for which the non-detection rate was considered to be significant, only contributors to exposure for the lowerbound (LB) assumption are presented in the text. Indeed, according to the upperbound (UB) assumption, the contributions are theoretical and largely dependent on analytical limitations. A food group for which the LOD is high may appear to be a major contributor even though the substance was not actually detected, and might be detected in other food groups. Thus the interpretation of contributions using the upperbound assumption is itself more tenuous. Nevertheless, all the contributions are presented in the tables (see below).

The summary tables show all of these results. For each food group analysed, or sub-group as applicable, the mean composition and contamination are provided in the standard unit of measure for each item (specified in each instance), along with the total number of samples. For items for which the censoring rate was at least 60%, both concentration assumptions are given: the lowerbound (LB), and the upperbound (UB). Nationally, the concentration averages were calculated as follows: first, for a given sample, the mean concentration of both rounds of sampling was calculated; then, for each food item, the mean concentration of the different regions – provided the food is regional – was calculated; and finally, the mean concentration of the food group (or sub-group, if appropriate) was calculated. These last means are given in the tables. The type of food is also specified, with 'N' indicating national foods, and 'R' indicating regional foods. It should be noted that these average concentrations are given primarily for information purposes and that care should be taken when comparing these data with that from other sources. Indeed, while each of the study samples is representative of the consumption of the food (consumed in one region, if this is the case), the whole sample is not itself representative of the dietary consumption, i.e., the means provided have not been weighted by the consumption of each sample or each food, and foods that were infrequently consumed but known as being major contributors to exposure to the substances in question were included in the sampling (see 3.2.2).

The mean results for intakes and exposure are also shown in the tables, for adults and children, as well as the 5th percentile for population intakes and the 95th percentile for consumers of groups of products listed in the tables. The proportion of the mean contribution (as a %) of each food or food group to total intake or exposure is indicated. Both the upperbound and lowerbound assumptions may be provided, as appropriate.

Appended to each report, the intake and exposure results (mean, percentiles and dietary contributions) are shown for the following population sub-groups, at the national level: children aged 3 to 6 years, 7 to 10 years, 11 to 14 years, 15 to 17 years, adults 18 years and older, women of childbearing age (18 to 44 years), and the elderly (65 years and over).

The regional results are not shown, and will be analysed later.

4. Inorganic contaminants, minerals

The values given in brackets after the intake and exposure levels correspond to the minimum and maximum mean, 5th and 95th percentile values observed in the various regions. Regarding the elements for which the censoring rate was high (>60%), two assumptions were considered: lowerbound (LB) and upperbound (UB). In this case, the values given in brackets correspond to the minimum and maximum mean and 95th percentile values observed in the regions.

4.1. Arsenic

Arsenic (As) is a metalloid that is widely distributed in the Earth's crust (2 mg/kg on average) and is abundant in certain delta zones. It also comes from anthropogenic sources (industrial activities, combustion of fossil fuels, old agricultural practices, etc.). There are various organic and inorganic chemical forms of arsenic and it has four valence states of -3, 0, +3 or +5. Arsenic's speciation – the form in which it is found – determines its behaviour in the environment, bioavailability and toxicity.

Hazard characterisation

When ingested by humans, inorganic arsenic causes cutaneous lesions, cancers, developmental toxicity, neurotoxicity, cardiovascular disease, glucose metabolism disorder and diabetes. On the basis of data related to lung cancer in humans, EFSA concluded that a range of 0.3 to 8 µg/kg bw/day should be used as a single reference point for characterising inorganic arsenic risk (EFSA 2009d). In 2010, JECFA withdrew the PTWI of 15 µg/kg bw/week that had been defined in 1989 (JECFA 2011a). According to these new modelling approaches, the reference point would be 3 µg/kg bw/day (2-7 µg/kg bw/day). Regarding organic arsenic, the data are insufficient to establish a health-based guidance value.

Risk assessment and characterisation

Among the analysed samples, 35% had a total arsenic level lower than the LOD or LOQ. The highest mean levels were found in crustaceans and molluscs (2.52 mg/kg) and in fish (1.42 mg/kg) (Table A1). The other food groups had levels lower than 0.07 mg/kg, which is the same order of magnitude as the results of TDS 1 (Leblanc, Guerin *et al.* 2005). Some groups, such as rice, fruits and dried fruits, had levels that were 4 to 8 times lower than those of TDS 1.

The French population's mean exposure to total arsenic was estimated at 0.78 µg/kg bw/day in adults (0.7-0.92) (Table A2) and 1.21 µg/kg bw/day in children (1.08-1.38) (Table A3). At the 95th percentile, exposure was estimated at 1.79 µg/kg bw/day in adults (1.57-2.04) and 2.91 µg/kg bw/day in children (2.56-4.05). These exposure levels are respectively 25% and 15% lower than those recorded in TDS 1.

The French population's mean exposure to inorganic arsenic was estimated, for the low and high speciation assumptions, at 0.24 and 0.28 µg/kg bw/day in adults (0.18-0.34). In children, exposure was estimated at 0.30 and 0.39 µg/kg bw/day (0.25-0.48). At the 95th percentile, exposure was estimated at 0.46 and 0.51 µg/kg bw/day in adults (0.36-0.61) and at 0.61 and 0.77 µg/kg bw/day in children (0.47-1.16).

In adults and children, the main contributors to total arsenic exposure were fish (30% and 42% respectively), and molluscs and crustaceans (17% and 7% respectively). Water was also a non-negligible contributor (8% in adults and 6% in children); the same was true for milk in children (6%). Water was the main contributor to inorganic arsenic exposure in adults and in children (≥19% in adults and children irrespective of the assumption), followed by non-alcoholic beverages (around 10-15%) and milk in children (around 15%).

On the basis of EFSA's BMDL₀₁ of 0.3 µg/kg bw/day (EFSA 2009d), irrespective of the speciation assumption, margins of exposure (MOEs) ranged from 0.4 to 1.3 for mean exposure and at the 95th percentile, in adults and children (Table 13). On the basis of the BMDL₀₁ of 8 µg/kg bw/day, MOEs (low speciation hypothesis) for mean exposure were around 20 to 30, and less than 20 for exposure at the 95th percentile. As noted by EFSA, the possibility of a risk to some consumers related to inorganic arsenic exposure therefore cannot be excluded. It would therefore be advisable to continue efforts to reduce dietary exposure to inorganic arsenic. Moreover, it appears necessary to implement routine analytical methods to quantify arsenic's various forms of speciation in order to refine exposure levels.

Table 13: Margins of exposure (MOEs) to inorganic arsenic for the general French population

BMDL ₀₁ , µg/kg bw/day	Speciation assumption	Adults		Children	
		Mean exposure	95 th exposure percentile	Mean exposure	95 th exposure percentile
0.3	Low proportion	1.3	0.7	1	0.5
	High proportion	1.1	0.6	0.8	0.4
8	Low proportion	33	17	27	13
	High proportion	29	16	21	10

4.2. Lead

Lead (Pb) is an omnipresent metal naturally found in the Earth's crust (10 mg/kg on average). Its intensive use by humans (for mining and industrial activities: foundries, accumulators, pigments, alloys, ammunition, etc.) has caused it to be widely dispersed in the environment. It mainly occurs in Pb⁰, Pb²⁺ forms and in some cases Pb⁴⁺. Humans are primarily exposed to it through the foods and water they consume, but also through the air, soil and dust. Since it was banned for use in petrol for cars, house paint and water pipes in the late 1990s, exposure levels have significantly decreased over the past ten years.

Hazard characterisation

In humans, the main target organ is the central nervous system, particularly during the development of fetuses and young children. An inversely proportional relationship has been demonstrated between blood lead concentrations and intelligence quotient (IQ) scores. In adults, lead affects the kidneys (increased prevalence of chronic kidney disease) and the cardiovascular system (high systolic blood pressure). The previously recognised health-based guidance value had been a PTWI of 25 µg/kg bw/week, established by JECFA in 1986. In 2010, EFSA (EFSA 2010b) and JECFA (JECFA 2011b) both acknowledged that this PTWI was not sufficiently protective but were unable to establish a new health-based guidance value, since a no-effect level could not be identified on the basis of current data. However, EFSA identified three reference intakes, two for adults and one for children, pregnant women and women of childbearing age. They were respectively 0.63 µg/kg bw/day for nephrotoxic effects, 1.5 µg/kg bw/day for cardiovascular effects, and 0.5 µg/kg bw/day for neuro-developmental effects (EFSA 2010b).

Risk assessment and characterisation

Among the analysed samples, 54% had a lead level lower than the LOD or LOQ. The highest mean levels were found in crustaceans and molluscs (0.113 mg/kg) and chocolate (0.023 mg/kg); the other food groups all had concentrations that were less than or equal to 0.02 mg/kg (Table A1). In general, the lead levels found in foods were equivalent to or less than the levels found in TDS 1 (Leblanc, Guerin *et al.* 2005).

The French population's mean exposure to lead was estimated at 0.20 µg/kg bw/day in adults (0.17-0.29) (Table A2) and 0.27 µg/kg bw/day in children (0.21-0.43) (Table A3). At the 95th percentile, exposure was estimated at 0.35 µg/kg bw/day in adults (0.28-0.48) and 0.57 µg/kg bw/day in children (0.38-0.99). These exposure levels were 35% lower than those observed in TDS 1.

In adults, the main contributors to lead exposure are alcoholic beverages (14%), bread and dried bread products (13%) and water (11%). In children, milk appeared to be the main contributor (11%), together with water (11%) and non-alcoholic beverages (10%).

In adults, on the basis of the BMDL₀₁ of 1.5 µg/kg bw/day defined for cardiovascular effects, MOEs ranged from 4 to 8 for mean exposure and at the 95th percentile (Table 14). On the basis of the BMDL₁₀ of 0.63 µg/kg bw/day defined for nephrotoxic effects, MOEs were respectively 3 and 2. In children, on the basis of the BMDL₀₁ of 0.5 µg/kg bw/day defined for neurotoxic effects, MOEs were 0.9 to 2 for mean exposure and at the 95th percentile. Considering this same BMDL in women of childbearing age, MOEs were respectively 3 and 1. As noted by EFSA, the possibility of risk related to lead exposure therefore cannot be excluded for certain consumer groups. It would therefore be advisable to continue efforts to reduce dietary exposure to lead.

Table 14: Margins of exposure (MOEs) to lead for the general French population

BMDL, µg/kg bw/day	Effects	Adults		Children	
		Mean exposure	95 th exposure percentile	Mean exposure	95 th exposure percentile
1.5	Cardiovascular	8	4	-	-
0.63	Nephrotoxic	3	2	-	-
0.5	Neurotoxic	-	-	2	0.9

4.3. Cadmium

Cadmium (Cd) is an omnipresent heavy metal found in the environment's various compartments (soil, water, air) due to its natural occurrence in the Earth's crust (0.1 mg/kg on average) and anthropogenic activities (industrial and agricultural). It is mainly found in the form of Cd²⁺. The primary source of cadmium exposure varies by population type: food for the general population, cigarette smoke and ambient air for industrially exposed workers.

Hazard characterisation

In humans, prolonged oral exposure to cadmium causes renal tubular dysfunction highlighted by microproteinuria. Bone fragility and reproductive disorders have also been reported, as has increased cancer risk, which is why cadmium has been classified as 'carcinogenic to humans' (group 1) by the IARC (IARC 1993a) and ranked in category 2 by the European Union (JOCE 2004). Due to its long biological half-life, which is estimated at from 10 to 30 years in humans, cadmium's health-based guidance value was established on a weekly and not a daily basis. This tolerable weekly intake (TWI) was provisionally set at 7 µg/kg bw/week in 1989 by JEFCA and has been confirmed on several occasions, most recently in 2003. In 2009, EFSA proposed a tolerable weekly intake of 2.5 µg/kg bw/week, according to a 'Benchmark dose' approach modelling the dose-effect relationship between urinary Cd and urinary beta-2-microglobulin using data from 30,000 individuals in 35 studies (EFSA 2008). In 2010, JECFA revised its health-based guidance value and set a provisional tolerable monthly intake (PTMI) of 25 µg/kg bw/month (JECFA 2011b).

Risk assessment and characterisation

The censoring rate for cadmium (non-detected or non-quantified element) was estimated at 21%, whereas it was higher (69%) in the first French TDS, with the same analytical limits (Leblanc, Guerin *et al.* 2005). The highest levels (Table A1) were found in crustaceans and molluscs (0.167 mg/kg), offal (0.053 mg/kg), sweet, savoury biscuits and cereal bars, and chocolate (respectively 0.030 and 0.029 mg/kg). For almost all food groups, mean cadmium concentrations were higher than those reported in TDS 1, by a factor of 20 (mixed dishes, biscuits, etc.), 30 (croissant-like pastries, sandwiches and snacks) and even 80 (chocolate). However the concentrations found in TDS 2 were of the same order of magnitude as the surveillance plans of the institute for research into cereal agro-food technology (IRTAC – 2000-2010) and the EC surveillance plans (data not published) for cereal products and chocolate.

The French population's mean exposure to cadmium was estimated at 0.16 µg/kg bw/day in adults (0.15-0.17) (Table A2) and 0.24 µg/kg bw/day in children (0.22-0.27) (Table A3). At the 95th percentile, exposure was estimated at 0.27 µg/kg bw/day in adults (0.24-0.30) and 0.45 µg/kg bw/day in children (0.41-0.55). These exposure levels were 4 times higher than those observed in TDS 1, due to higher contamination levels.

In adults and children, the main contributors to cadmium exposure were bread and dried bread products (22% and 13% respectively) and potatoes and potato products (12% and 14% respectively).

EFSA's health-based guidance value was exceeded by 0.6% in adults [0.3; 1.0] and by 14.9% in children [13.0; 16.7]. It should be noted that for children, the risk of adverse effects is considered to be low, in that the effects used to establish the health-based guidance value relate to an early biological response, are 'non specific' and are observed after around 50 years of exposure. However, it would be advisable to continue efforts to reduce dietary exposure to cadmium. Moreover, these results underline the need to identify the reasons for the differences in concentration observed between TDS 1 and TDS 2, particularly in cereal products, to the extent that these differences do not agree with other sources of data.

4.4. Aluminium

Aluminium (Al) is the most abundant metallic element in the Earth's crust (8%). Because of its physico-chemical properties (low density, malleability, resistance to corrosion, etc.), it is used in numerous industrial sectors (food processing, pharmaceuticals, construction, etc.) and to treat drinking water. It is found in foods and water in various chemical forms that determine its bioavailability and toxicity. However, analysing these various chemical forms in foods is complex, which is why measurements deal with total aluminium.

Hazard characterisation

The toxic effects of aluminium essentially involve the central nervous system (encephalopathy, psychomotor disorders) and bone tissue. In humans, these effects are observed in subjects exposed through routes other than food, leading to an accumulation of high amounts of aluminium: patients with renal failure under dialysis, parenteral nutrition, occupationally exposed people. JECFA established a PTWI of 1 mg/kg bw/week (JECFA 2006a). This PTWI applies to all aluminium compounds found in foods. EFSA confirmed this value in 2008 (EFSA 2008b).

Risk assessment and characterisation

Among the analysed samples, 35% had an aluminium level lower than the LOD or LOQ. The highest mean levels were found in crustaceans and molluscs (21.1 mg/kg) and in chocolate (15.6 mg/kg) (Table A1). All the other food groups had concentrations lower than 6 mg/kg. Some groups had concentrations with the same order of magnitude as those observed in TDS 1 (Leblanc, Guerin *et al.* 2005): bread, vegetables, beverages, etc. Others, however, had concentrations that were greater than the TDS 1 concentrations by a factor of 2 to 4 (dairy products, chocolate, etc.) and even 10 (oils) or 25 (butter). These differences may be partly due to the use of aluminium materials for food preparation and cooking as reported in TDS 2 (Annex 2).

The French population's mean exposure to aluminium was estimated at 40.3 µg/kg bw/day in adults (37.8-45.9) (Table A2) and 62.2 µg/kg bw/day in children (59.2-66.3) (Table A3). At the 95th percentile, exposure was estimated at 69.7 µg/kg bw/day in adults (57.4-102.4) and 118.8 µg/kg bw/day in children (96.5-129.6). These exposure levels were respectively +50% and +40% higher than those recorded in TDS 1 but nonetheless remained very low.

In adults, the main contributors to aluminium exposure were hot beverages other than coffee (13%) and vegetables excluding potatoes (11%). In children, the main contributors were vegetables excluding potatoes (8%), pasta (7%), pastries and cakes (6%) and dairy-based desserts (6%).

The health-based guidance value was exceeded by only 0.2% in adults [0.02; 0.47] and 1.6% in children [0.9; 2.2]. Risk related to dietary exposure to aluminium therefore cannot be excluded for certain consumer groups, and so efforts should be continued in order to reduce contamination and exposure.

4.5. Mercury

Mercury (Hg) is a metallic element naturally found in the Earth's crust (0.02 mg/kg). It is the only metal that is liquid under standard temperature and pressure conditions. It is found in various organic and inorganic chemical forms. Mercury is used in a wide range of industrial sectors (batteries, cables and electrical switches, measurement devices, dental amalgams, lamps), which result in it being released into the environment. It also enters the environment through waste incineration.

Hazard characterisation

With oral exposure, the central nervous system is organic mercury's main target organ, particularly during foetal development. The toxic effects are alteration of sensory functions (sight, hearing), motor coordination, memory, attention and learning. JECFA set a PTWI for methylmercury of 1.6 µg/kg bw/week, based on epidemiological studies on the relationship between exposure in mothers and neurological development in children (JECFA, 2004). It applies to methylmercury exposure through the consumption of fish and other seafood products.

The toxicity of inorganic mercury causes renal lesions, neurotoxicity and cardiovascular disorders. In 2010, JECFA defined a new PTWI for inorganic mercury of 0.004 mg/kg bw/week (4 µg/kg bw/week), on the basis of renal effects in rats, which applies to total mercury exposure through foods other than fish and seafood products (JECFA 2011a).

Risk assessment and characterisation

Among the analysed samples, 95% had a total mercury level lower than the LOD or LOQ. Only concentrations in 69 samples (5%) could be quantified. The highest mean levels (Table A1) were found in fish (LB=0.133 mg/kg, UB=0.134 mg/kg), chocolate (LB=0.014 mg/kg, UB=0.017 mg/kg) and molluscs and crustaceans (LB=0.014 mg/kg, UB=0.016 mg/kg). Mean concentrations were lower than those observed in the first study, with the exception of fish, for which the concentration was higher (Leblanc, Guerin *et al.* 2005) due to a greater percentage of tuna (predatory species, rich in mercury) in the TDS 2 sampling.

The French population's mean exposure to organic mercury (MeHg), through the sole consumption of fish and other seafood products, was estimated at 0.017 µg/kg bw/day in adults, irrespective of the assumption (LB or UB) (Tables A2 and A3) (0.01-0.27). In children, mean exposure was estimated at 0.022 µg/kg bw/day irrespective of the assumption (0.02-0.03). At the 95th percentile, exposure was estimated at 0.061 µg/kg bw/day in adults (0.03-0.08) and 0.097 µg/kg bw/day in children (0.06-0.14), irrespective of the assumption. These exposure levels had the same order of magnitude as those estimated in TDS 1. In women of childbearing age (Table A6 in the Annex), who constitute the critical population group considering the effects of MeHg on foetal development, mean exposure totalled 0.019 µg/kg bw/day irrespective of the assumption. At the 95th percentile, exposure was estimated at 0.067 µg/kg bw/day.

The French population's mean exposure to inorganic mercury through the consumption of foods other than seafood products was estimated at 0.006 µg/kg bw/day in adults for the lowerbound (LB) and 0.18 µg/kg bw/day for the upperbound (UB) (0.004-0.19). In children, mean exposure was estimated at 0.014 (LB) and 0.26 (UB) µg/kg bw/day (0.007-0.28). At the 95th percentile, exposure was estimated at 0.026 (LB) and 0.29 (UB) µg/kg bw/day in adults (0.01-0.32) and at 0.05 (LB) and 0.47 (UB) µg/kg bw/day in children (0.02-0.53). These exposure levels had the same order of magnitude as those estimated in TDS 1.

With the lowerbound (LB), in adults and children alike, fish was the main contributor to total mercury exposure (69% and 60% respectively, in methylmercury form only).

The health-based guidance value set for MeHg was exceeded by 0.84% of adults [0.4; 1.3] and 1.11% of children [0.6; 1.7]. In women of childbearing age more specifically, the health-based guidance value was exceeded in 0.72% of subjects [0.4; 1.1]. The vast majority of the subjects who exceeded the health-based guidance value were high consumers of fresh tuna (consumption rates of 100 to 500 g/week), which was the most contaminated species in the TDS 2 samples. Risk related to MeHg exposure is not a major public health problem in mainland France; nevertheless, efforts should be continued in order to reduce contamination and exposure.

Regarding inorganic mercury, with the upperbound assumption only, the health-based guidance value was exceeded in 1.4% of children [0.8; 2.0] but not in any adults. Risk related to inorganic mercury exposure is not a major public health problem in mainland France; nevertheless, efforts should be continued in order to reduce exposure levels. Moreover, it appears necessary to lower the analytical detection limits for mercury in order to refine exposure levels.

4.6. Antimony

Antimony (Sb) is a metalloid that makes up a very small percentage of the Earth's crust. It is used in metal alloys to harden them, in the production of semi-conductors, and in plastics and fireworks. Antimony trioxide is used as a flame retardant for textiles and plastic materials, as an opacifier for glass, ceramic and enamel, as a pigment for paint and as a chemical catalyst.

Hazard characterisation

Antimony trioxide is considered to be 'possibly carcinogenic to humans' (group 2B) (IARC 1989). After ingestion, soluble antimony salts cause irritating gastrointestinal effects with vomiting, abdominal cramps and diarrhoea. Cardiac and ocular toxicity are also reported at high doses. Due to a lack of in-depth studies into the toxicity of antimony and its compounds with long-term oral exposure, it is difficult to set a robust health-based guidance value. It has been suggested that the health-based guidance value of 6 µg/kg bw/day be used: this was established by WHO as the guideline value in drinking water (WHO 2003) and used by AFSSA in 2007 (AFSSA 2007c). This was based on a subchronic (90 day) study in rats with antimony potassium tartrate administered in drinking water (no-effect dose of 50 mg/L, i.e. 6 mg/kg bw/day). The treated animals showed few clinical signs. Only reversible weight loss was observed in the group treated at the highest dose (500 mg/L).

Risk assessment and characterisation

Among the analysed samples, 66% had an antimony level lower than the LOD or LOQ. The highest mean levels (Table A1) were found in sugars and sugar derivatives (LB=8.8 µg/kg, UB=8.9 µg/kg), chocolate (4.2 µg/kg) and pastries and cakes (LB=3.8 µg/kg, UB=3.8 µg/kg). Out of the food groups for which antimony had been detected in TDS 1, molluscs and crustaceans, compotes and cooked fruit, and seasonings and sauces had higher concentrations in TDS 2 (Leblanc, Guerin *et al.* 2005). In general, antimony was detected in more samples than in TDS 1 (for identical analytical limits), which explains the higher levels, although they were still very low.

The French population's mean exposure to antimony was 0.03 µg/kg bw/day in adults with the lowerbound (LB) (0.02-0.03) and 0.04 µg/kg bw/day with the upperbound (UB) (0.04-0.05) (Table A2). In children, mean exposure was estimated at 0.04 µg/kg bw/day with the lowerbound (0.03-0.04) and 0.06 µg/kg bw/day with the upperbound (0.05-0.06) (Table A3). At the 95th percentile, exposure was respectively 0.05 and 0.07 µg/kg bw/day in adults (0.04-0.09) and 0.07 and 0.10 µg/kg bw/day in children (0.06-0.12). Mean exposure levels were around twice as high as those observed in TDS 1 but they remained very low.

Considering the lowerbound (LB), in adults, hot beverages other than coffee were the main contributors to antimony exposure (13%), as were sugars and sugar derivatives (11%). In children, the main contributors were pastries and cakes (11%).

The health-based guidance value of 6 µg/kg bw/day was not exceeded by any adult or child subjects, irrespective of the assumption. Risk related to antimony exposure is not a public health problem.

4.7. Silver

Silver is a white metal naturally found in the Earth's crust. It is used in the production of various alloys (metallurgy, silverware, jewellery), electronic devices and photographic film. Silver is also used in medical environments for its antiseptic and disinfectant properties. In the food industry, it is used as an additive (E174-colouring), mainly to decorate confectionery items (chocolates, sugar candies, etc.).

Hazard characterisation

While fatal cases of acute silver poisoning have been reported, chronic toxicity data for this compound in humans, collected further to its use as a therapeutic agent, indicate no harmful health effects. In humans, prolonged administration of silver-based compounds, after a long latency period, causes bluish pigmentation characteristic of argyria. This silver deposit in the skin and mucous membranes is not associated with other pathological signs. No studies have demonstrated the mutagenic, carcinogenic and teratogenic potential of silver.

The United States Environmental Protection Agency (US EPA) derived a health-based guidance value for silver ingestion corresponding to 5 µg/kg bw/day (US EPA 1997). This value was based on the appearance of argyria, an apparently benign clinical symptom. This guidance value was calculated based on a no-observed adverse effect level (NOAEL) in humans of 1 g (single intravenous dose) converted into a daily oral dose (0.014 mg/kg bw/day) and associated with an uncertainty factor of 3. However, ANSES considers that this health-based guidance value is not appropriate for assessing the health risk related to silver ingestion through food.

Risk assessment and characterisation

Among the analysed samples, 82% had a silver level lower than the LOD or LOQ. The highest mean levels (Table A1) were found in molluscs and crustaceans (6.48 mg/kg), and then offal (LB=0.44 mg/kg, UB=0.45 mg/kg) and ice creams, sorbets and frozen desserts (LB=0.17 mg/kg, UB=0.19 mg/kg).

The French population's mean exposure to silver was 1.29 µg/kg bw/day in adults with the lowerbound (LB) (0.8-2.34) and 2.65 µg/kg bw/day with the upperbound (UB) (2.19-3.56) (Table A2). In children, mean exposure was estimated at 1.60 µg/kg bw/day with the lowerbound (0.95-2.78) and 3.47 µg/kg bw/day with the upperbound (2.81-4.5) (Table A2). At the 95th percentile, exposure was respectively 2.82 and 4.78 µg/kg bw/day in adults (1.47-9.93) and 3.60 and 6.59 µg/kg bw/day in children (2.01-8.87).

With the lowerbound (LB), in adults, the main contributors to silver exposure were molluscs and crustaceans (24%). In children, milk was the main contributor (9%), followed by water (8%).

In the absence of data to establish a health-based guidance value, it is presently not possible to draw a quantitative conclusion on the risk related to silver. It would be advisable to undertake long-term toxicological studies for silver in order to establish a health-based guidance value. Nevertheless, oral toxicity data tend to show that it is a relatively well-tolerated substance.

4.8. Barium

Barium (Ba) is a metal found in numerous minerals. It is used for many purposes (pesticides, textiles, pigments, water treatment, medicine, etc.).

Hazard characterisation

Soluble barium salts are well absorbed and essentially deposited in the bone tissue. No carcinogenic or mutagenic effects have been demonstrated. Workers regularly exposed to barium through inhalation can show benign pulmonary signs with no associated functional disorders. However, experimental data indicate that chronic oral exposure to barium causes nephropathy in rodents. On the basis of these observations, the US EPA proposed a reference dose for chronic oral exposure (RfD) of 0.2 mg/kg bw/day (US EPA 2005). This value was used by AFSSA in 2007 in an opinion on risk assessment related to barium in drinking water (AFSSA 2007b).

Risk assessment and characterisation

Among the analysed samples, 34% had a barium level lower than the LOD or LOQ. The highest mean levels (Table A1) were found in breakfast cereals (2.85 mg/kg), followed by chocolate (2.00 mg/kg), dried fruits, nuts and seeds (1.73 mg/kg) and pulses (1.20 mg/kg). All the other food groups had concentrations lower than 1 mg/kg.

The French population's mean exposure to barium was estimated at 6.4 µg/kg bw/day in adults (5.86-6.99) (Table A2) and 10.2 µg/kg bw/day in children (9.18-11.3) (Table A3). At the 95th percentile, exposure was estimated at 10.5 µg/kg bw/day in adults (9.32-12.0) and 18.9 µg/kg bw/day in children (16.8-21.5).

In adults and children alike, the main contributors to barium exposure were breads and dried bread products (20% and 12% respectively). These were followed by vegetables excluding potatoes in adults (8%) and pasta in children (7%).

The health-based guidance value was not exceeded in any subjects. Risk related to barium exposure is therefore not a public health problem.

4.9. Tin

Tin (Sn) is a metal that is scarce in the Earth's crust (2 mg/kg on average) and is found mainly in the Sn(II), Sn(IV) and metallic forms. It is malleable, moderately ductile and resists corrosion from seawater and freshwater. It is used in tinfoil which is used to make metallic packaging (food tins), and in metallic alloys (including bronze), coins, decorative tableware and anti-algae products (in the form of tributyltin). Stannous chloride (SnCl₂) is a food additive with antioxidant and colour retention properties authorised in canned white asparagus (E512). Tin can be found in inorganic or organic form in foodstuffs at variable proportions. However, since analysing these various forms in foods is complex, the analyses dealt with total tin.

Hazard characterisation

Inorganic tin is considered to be mostly non-toxic, due to very low absorption. It mainly results in local irritation. Levels greater than 150 mg/kg in canned beverages and 250 mg/kg in canned foods are associated with acute signs of gastric irritation in some individuals. Data related to long-term toxicity are limited. In 2005, ATSDR set an intermediary minimum risk level (less than one year of exposure) of 0.3 mg Sn/kg bw/day on the basis of haematological effects in rats after administration of the SnCl₂ form in food for 13 weeks (ATSDR 2005).

Organic forms (organotins) are more toxic than inorganic tin, with effects on reproduction, development and the immune system. In 2004, EFSA established a TDI of 0.1 µg Sn/kg bw/day on the basis of immunotoxic effects observed in rats exposed to tributyltin oxide in food for 2 years (EFSA 2004).

Risk assessment and characterisation

Among the analysed samples, 26% had a tin level lower than the LOD or LOQ. The highest mean levels (Table A1) were found in compotes and cooked fruit (8.55 mg/kg) and cheese (1.94 mg/kg). All the other food groups had concentrations lower than 1 mg/kg. These high levels in fruits and compotes could be partly linked to the use of certain organostannic pesticides on fruit crops, particularly apples, pears and peaches. These pesticides, whose use was still authorised in France during the TDS 2 sampling, are now prohibited.

The French population's mean exposure to tin was estimated at 3.9 µg/kg bw/day in adults (2.5-4.8) (Table A2) and 7.3 µg/kg bw/day in children (3.8-13.1) (Table A3). At the 95th percentile, exposure was estimated at 17.0 µg/kg bw/day in adults (9.4-24.2) and 31.9 µg/kg bw/day in children (15.9-42.2).

In adults and children, the main contributors to tin exposure were compotes and cooked fruit (33% and 54% respectively) and fruit (20% and 17% respectively).

Since the analyses dealt with total tin, it is not possible to draw a conclusion as to the risk related to dietary tin exposure. It appears necessary to distinguish between intake of the inorganic form and that of the organic form, and thus to implement routine analytical methods for the speciation of tin in foods. Furthermore, and as recommended by JECFA in 2005, it would be advisable to undertake long-term toxicological studies for inorganic tin in order to establish a health-based guidance value.

4.10. Gallium

Gallium (Ga) is a metal which is extracted mainly from aluminium and zinc ores. It is used mainly in the form of salts, in small amounts, to manufacture semi-conductors, in the electrical and electronics industries (gallium arsenide and gallium phosphide); it is used as a substitute for mercury in arc lamps and high-temperature thermometers. Several medical applications have been described: radioactive markers, dental alloys, treatment of tumour-induced hypercalcaemia.

Hazard characterisation

In terms of occupational exposure, gallium and gallium compounds are absorbed through the respiratory route, but very little through the digestive route. It has been shown that gallium is retained in animal alveolar cells. Absorption *via* the digestive tract appears to be very low. Gallium binds to transferrin in the circulation (thereby interfering with iron), and is distributed to the liver, spleen, bone and bone marrow.

Gallium toxicity is based primarily on animal studies and varies according to the species and the type of gallium compound. The target organs are the lungs, kidneys, the haematopoietic system, the immune system, and the male reproductive system. Data on humans come from [exposed] workers, particularly those in the semiconductor industry, and patients who have received gallium for therapeutic use. These data are concordant with the toxicological targets determined from animal studies, except for reproductive toxicity, which has not been sufficiently documented.

The IARC has classified gallium arsenide as 'carcinogenic to humans' (group 1). This classification is based mainly on animal experimental data and no mechanism of action has been demonstrated.

Risk assessment and characterisation

Of the samples analysed, 99.5% had a gallium level that was lower than the LOD or the LOQ. It was possible to quantify the levels of 7 samples. The highest mean concentrations (Table A1) were for butter (LB = 14.8 µg/kg, UB = 15.6 µg/kg) and chocolate (LB = 1.0 µg/kg, UB = 1.9 µg/kg). Taking into account the assumptions for interpreting censored data, all of the other food groups had concentrations lower than 1.0 µg/kg with the lowerbound assumption (LB) and 1.5 µg/kg with the upperbound (UB) one.

The mean exposure of the French population to gallium is 0.001 µg/kg bw/day with the lowerbound assumption (LB) (0-0) and 0.037 µg/kg bw/day with the upperbound (UB) (0.04-0.04) in adults (Table A2). The mean exposure in children was estimated at 0.002 µg/kg bw/day with the lowerbound assumption (0-0) and 0.050 µg/kg bw/day with the upperbound (0.05-0.05) (Table A3). At the 95th percentile, exposure was respectively 0.007 (LB) and 0.058 µg/kg bw/day (UB) in adults (0-0.06) and 0.007 (LB) and 0.092 µg/kg bw/day (UB) in children (0-0.1).

With the lowerbound assumption (LB), in adults and children alike, the main contributor to exposure to gallium is butter (73% and 70%, respectively).

Given the lack of data available to establish a health-based guidance value, it is not currently possible to reach a conclusion on the risk associated with gallium. Further research is required on the chronic oral toxicity of gallium.

4.11. Germanium

Germanium (Ge) is a metalloid found naturally in the Earth's crust (7 mg/kg on average). It can occur in organic or inorganic form. Generally recovered from copper, zinc and lead refining, germanium is used primarily in the electronics (diodes, transistors, etc.) and glass (optical elements) sectors because it has properties similar to silicon. In some countries, it is also marketed in its organic form as a dietary supplement.

Hazard characterisation

Germanium is quickly and fully absorbed in the intestines. It is eliminated primarily through urine. The ionic and dioxide forms of germanium are neither mutagenic nor carcinogenic. Several reported cases of patients with repeated exposure to high levels of germanium (entirely dietary) indicate kidney damage in particular. According to studies carried out on rodents, these kidney disorders appear alongside other effects (anaemia, muscle weakness and peripheral neuropathy) as being the most appreciable. A lowest observed adverse effect level (LOAEL) of 37.5 mg/kg bw/day for germanium dioxide was determined in rats. Despite uncertainty, the synthesis of data available for humans points to a greater sensitivity since renal effects generally appear as from 1 mg/kg bw/day (Tao and Bolger 1997). Oral toxicity data are currently still too weak to establish a health-based guidance value.

Risk assessment and characterisation

Of the samples analysed, 83% exhibited a germanium level that is lower than the LOD or the LOQ. The highest mean concentrations (Table A1) are found in butter (LB = 7.9 µg/kg, UB = 8.9 µg/kg), offal (LB = 4.8 µg/kg, UB = 5.2 µg/kg), chocolate (LB = 4.6 µg/kg, UB = 5.6 µg/kg) and delicatessen meats (LB = 4.6 µg/kg, UB = 5.4 µg/kg). All other food groups show concentrations less than or equal to 4.0 µg/kg.

The mean exposure of the French population to germanium is 0.043 µg/kg bw/day with the lowerbound assumption (LB) and 0.088 µg/kg bw/day with the upperbound (UB) (0.03-0.1) in adults (Table A2). The mean exposure in children is estimated at 0.058 µg/kg bw/day with the lowerbound assumption and 0.122 µg/kg bw/day with the upperbound (0.04-0.14) (Table A3). At the 95th percentile, exposure is respectively 0.090 and 0.150 µg/kg bw/day in adults (0.07-0.20) and 0.130 and 0.230 µg/kg bw/day in children (0.07-0.29).

With the lowerbound assumption (LB), in adults and children alike, the main contributor to exposure to germanium is water (33% and 26%, respectively).

The value of 1 mg/kg bw/day was not exceeded with either the upperbound or lowerbound assumptions. However, since there is not enough solid data to establish a health-based guidance value, it is not currently possible to affirm that there is a risk associated with germanium. Long-term toxicology studies on germanium should be carried out to establish a health-based guidance value. As long as there are doubts surrounding its toxicity, it would be best to reduce exposure to this compound as much as possible.

4.12. Strontium

Strontium (Sr) is a trace element found naturally in the Earth's crust (300 mg/kg on average). It occurs primarily in the form of Sr(II). It is generally found in certain carbonate ores (often with calcium carbonates), as well as in sea water. It is used in the manufacture of fireworks (red colourant), ceramics (flux), television tubes (to prevent X-ray emission), and so on.

Hazard characterisation

Strontium is absorbed in varying quantities in the intestines and is stored primarily in the bones. When administered repeatedly, strontium mainly affects bone tissue mineralisation because it competes with calcium. Calcium intake can alter the strength of the toxic effects of strontium and must be taken into account in the event of intoxication. These bone deficiencies were described on animal models and have also been observed in humans. The US Environmental Protection Agency (US EPA) set an RfD of 0.6 mg/kg bw/day based on a LOAEL of 190 mg/kg bw/day observed in a limited number of young rats exposed for 20 days and presenting skeletal development disorders (US EPA 1996). Based on this same study, the Agency for Toxic Substances and Disease Registry (ATSDR) proposed an intermediate minimal risk level for one year of 2 mg/kg bw/day (LOAEL of 140 mg/kg bw/day, uncertainty factor of 90) (ATSDR 2004).

Risk assessment and characterisation

Of the samples analysed, only 2% showed a strontium level that is lower than the LOD or the LOQ. The highest mean concentrations (Table A1) are found in shellfish and molluscs (10.35 mg/kg), followed by dried fruit, nuts and seeds (3.28 mg/kg) and chocolate (3.17 mg/kg). All other food groups show concentrations less than 3.0 mg/kg.

The mean exposure of the French population to strontium is estimated at 23.6 µg/kg bw/day in adults (18.7-27.5) (Table A2) and 29.8 µg/kg bw/day in children (25.6-34.5) (Table A3). At the 95th percentile, exposure is estimated at 56.7 µg/kg bw/day in adults (36.5-84.0) and 59.9 µg/kg bw/day in children (48.9-75.1).

In adults and children alike, the main contributor to exposure to strontium is water (40% and 25%, respectively), followed by vegetables excluding potatoes (9% in both populations).

Although no exceeding of the RfD of 0.6 mg/kg bw/day set by the US-EPA was observed, long-term studies on toxicity should nevertheless be carried out to establish a health-based guidance value.

4.13. Tellurium

Tellurium (Te) is a metalloid recovered from copper refining residues. It is used primarily in metallurgy (alloys), the chemical industry (rubber, plastic) and electronics.

Hazard characterisation

In its inorganic form, tellurium is absorbed by ingestion and partly eliminated through urine. It is neither mutagenic nor carcinogenic. Teratogenic effects have been observed in rats exposed orally to high levels of tellurium (greater than 500 mg/kg in food). In an occupational environment, exposure to tellurium by inhalation can lead to minor symptoms, characterised mainly by breath with a garlic-like odour.

Risk assessment and characterisation

Of the samples analysed, 84% show a tellurium concentration that is lower than the LOD or the LOQ. The highest mean concentrations (Table A1) are found in butter (LB = 23.4 µg/kg, UB = 24.0 µg/kg), and to a lesser degree in cheese (LB = 4.7 µg/kg, UB = 5.2 µg/kg) and chocolate (LB = 2.8 µg/kg, UB = 3.1 µg/kg).

The mean exposure of the French population to tellurium is estimated in adults at 0.024 µg/kg bw/day with the lowerbound assumption (LB) and 0.057 µg/kg bw/day with the upperbound (UB) (0.02-0.06) (Table A2). The mean exposure in children is estimated at 0.039 µg/kg bw/day with the lowerbound assumption and 0.083 µg/kg bw/day with the upperbound (0.03-0.09) (Table A3). At the 95th percentile, exposure is respectively 0.050 (LB) and 0.090 µg/kg bw/day (UB) in adults (0.04-0.10) and 0.090 (LB) and 0.160 µg/kg bw/day (UB) in children (0.07-0.21).

With the lowerbound assumption (LB), in adults and children alike, the main contributor to exposure to tellurium is butter (30% and 31%, respectively).

Since there are not enough data to establish a health-based guidance value, it is not currently possible to reach a conclusion on the risk associated with tellurium. Studies should be pursued on the oral toxicity of tellurium.

4.14. Vanadium

Vanadium (V) is a naturally occurring metal primarily used in metallurgy to reinforce steels, and in other industries for its catalytic, colouring and anti-corrosive properties. The functional role of vanadium has not been clearly characterised in animals or humans. Depending on whether the dose is physiological or pharmacological, vanadium could be involved in oxidation reactions, the modulation of the activity of certain ATPases, lipid and glucidic metabolisms and the thyroid function.

Hazard characterisation

Vanadium is absorbed very little orally (<1%). Experimental studies on animals show that the most significant effects observed following the ingestion of vanadium salts are disorders of the blood (arterial blood pressure and red blood cell levels), the nervous and renal systems and development. The studies are inconsistent, however. Clinical trials have not shown any effect on arterial blood pressure and blood parameters following the ingestion of vanadium. The ATSDR and the Institute of Medicine respectively proposed health-based guidance values of 0.01 mg/kg bw/day (ATSDR 2009) and 0.026 mg/kg bw/day (Institute of Medicine 2001a), based on sub-chronic studies (respectively, in humans and animals) that cannot be used as part of this risk assessment. Experimental studies on vanadium pentoxide have revealed other toxic effects (affecting the spleen, kidneys, lungs and causing cancers), but this form has yet to be found in food. Furthermore, no vanadium deficiency has been identified in humans.

Risk assessment and characterisation

Of the samples analysed, 48% showed a vanadium level that is lower than the LOD or the LOQ. The highest mean concentrations (Table A1) are found in shellfish and molluscs (0.22 mg/kg), seasonings and sauces (0.096 mg/kg), croissant-like pastries (0.085 mg/kg), delicatessen meats and chocolate (0.079 mg/kg), followed by breads and dried bread products (0.073 mg/kg). All other groups show mean concentrations of less than 0.07 mg/kg.

The mean exposure of the French population to vanadium is estimated at 0.86 µg/kg bw/day in adults (0.71-0.97) (Table A2) and 1.06 µg/kg bw/day in children (0.89-1.27) (Table A3). At the 95th percentile, exposure is estimated at 1.47 µg/kg bw/day in adults (1.29-1.67) and 2.10 µg/kg bw/day in children (1.61-2.5).

For children, the main contributor to exposure to vanadium is water (18%). In adults, the main contributor is also water (20%), followed by alcoholic beverages (15%).

Since there are not enough data to establish a health-based guidance value, it is not currently possible to reach a conclusion on the risk associated with vanadium. Studies should be pursued on the oral chronic toxicity of vanadium.

4.15. Nickel

Nickel (Ni) is a metal that occurs naturally in the Earth's crust (0.009%). Due to its properties of malleability, ferromagnetism and conduction of heat and electricity, it is used in a great many industrial applications, mainly as alloys (stainless steels) and catalytic converters for automobile, naval and aircraft manufacturing, and in the electrical industries. Nickel is found in a wide variety of inorganic (metal, oxides, salts) and organic chemical forms. Humans are exposed to nickel through inhalation (occupational exposure), consumption of water and food, and skin contact. In dermal exposure, nickel is allergenic and can cause contact dermatitis.

Hazard characterisation

While nickel also plays a role in the metabolism of methionine in animals, no data to date have established that it is essential for humans (Arnaud 2001a). The nickel measured in food is total nickel, with no information on the chemical species present. However, the toxicity of the chemical species is highly variable, primarily due to their different degrees of bioavailability. The oral data obtained for animals with nickel salts show that the kidney is the primary target organ. The carcinogenic effects of nickel compounds observed following exposure by inhalation led the International Agency for Research on Cancer (IARC) to classify it as 'carcinogenic to humans' (group 1). Nevertheless, no oral study has shown any carcinogenic effects. No nickel compound is currently classified as mutagenic. In 2008, AFSSA adopted the WHO proposal of a TDI of 22 µg/kg bw/day based on a two-generation study in rats (AFSSA 2008b; WHO 2005). A no-effect dose of 2.2 mg/kg bw/day was established based on a reduction of liver weight, in both the adults and the litters, with an uncertainty factor of 100 to take into account inter- and intra-species variations.

Risk assessment and characterisation

Of the samples analysed, 38% showed a nickel level that is lower than the LOD or the LOQ. The highest mean concentrations (Table A1) are found in chocolate (1.35 mg/kg) and dried fruit, nuts and seeds (1.02 mg/kg). All other groups show mean concentrations of less than 0.5 mg/kg. The mean values for all of the food groups are on average higher (factor of 1.9) than those determined within the scope of TDS 1 (Leblanc, Guerin *et al.* 2005). The use of stainless steel cooking equipment (containing nickel) could be the reason for this.

The mean exposure of the French population to nickel is estimated at 2.33 µg/kg bw/day in adults (2.07-2.73) (Table A2) and 3.83 µg/kg bw/day in children (3.47-4.57) (Table A3). At the 95th percentile, exposure is estimated at 3.76 µg/kg bw/day in adults (3.48-4.37) and 7.44 µg/kg bw/day in children (6.35-10.3). Chocolate is the main contributor to nickel intake in children (10%), ahead of water and dairy-based deserts (7%). The main contributors in adults are alcoholic beverages and fruit (9%), followed by water (8%) and vegetables excluding potatoes (7%).

Exposure is higher than in TDS 1 (by +25 to 50%), but nevertheless remains very low since no exceeding of the TDI of 22 µg/kg bw/day was observed in adults or children. The risk associated with dietary exposure to nickel does not constitute a major public health issue.

4.16. Cobalt

Cobalt (Co) is a transition metal that occurs naturally in the Earth's crust (0.002%). Cobalt and its mineral compounds have a number of applications in the chemical and oil industries as catalysts, for the preparation of alloys, as pigment for glass and ceramics, as a drying agent for paint, etc. It is also used as a feed additive for animal species capable of synthesising vitamin B12. Cobalt is an essential element as a central bonding atom for this vitamin (also called cobalamin), necessary for the metabolism of folates and fatty acids. Little data is available to determine the other roles of cobalt in human nutrition. The biological functions and activities of cobalt are that of vitamin B12 which plays a role in erythropoiesis, the regulation of various phosphoprotein phosphatases and as a substitute for zinc in metalloenzymes (Guéant, Namour *et al.* 2001). Cobalt is found in animal products (in the form of cobalamin) and plant products (in organic form).

Hazard characterisation

The gastro-intestinal absorption of cobalt in humans is highly variable (18 to 97%) depending on its chemical form. It is then found mainly in the liver and kidneys. Most of the studies conducted on cobalt toxicity involve cobalt compounds (II). In animals, the reported effects of cobalt salts include polycythaemia (an increase in total red cell mass), changes to the heart (increase in heart weight, pericardial effusion and degenerative changes to the myocardium), functional and morphological alterations of the thyroid, testicular degeneration and atrophy, lower growth and survival of offspring. In humans, cardiomyopathies were reported in the 1960s in heavy drinkers of beer to which cobalt had been added as a foam stabiliser. It was calculated that these individuals had ingested an average of 0.04 to 0.14 mg Co/kg bw/day for several years. Cobalt compounds (II) were classified by the IARC as 'possibly carcinogenic to humans' (group 2B). *In vivo* studies have demonstrated that cobalt salts (dichloride or acetate) are capable of inducing genotoxic alterations such as damaged DNA, genetic mutations, the formation of micronuclei and chromosomal aberrations in animals through oral or parenteral administration. Due to insufficient data on animals and humans, the Scientific Committee on Food (SCF) deemed it was not possible to set a tolerable upper intake level for cobalt (SCF 2006). Given the low number of oral studies available, AFSSA concluded that the TDI for threshold toxic effects could be between 1.6 and 8 µg/kg bw/day. However, genotoxicity data and the lack of carcinogenesis studies make it impossible to factor out the possibility of non-threshold toxic effects (AFSSA 2010). No cobalt deficiency has been shown in humans.

Risk assessment and characterisation

Of the samples analysed, 14% showed a cobalt level that is lower than the LOD or the LOQ. The highest mean concentrations (Table A1) are found in chocolate (0.139 mg/kg), offal (0.091 mg/kg) and butter (0.046 mg/kg). All other groups show concentrations of less than 0.046 mg/kg. The concentrations are of the same order of magnitude as those in TDS 1 (Leblanc, Guerin *et al.* 2005), except for a few groups (pastries, milk, chocolate, poultry and fish) with concentrations that appear higher in this study.

The mean exposure of the French population to cobalt is estimated at 0.18 µg/kg bw/day in adults (0.17-0.21) (Table A2) and 0.31 µg/kg bw/day in children (0.29-0.36) (Table A3). At the 95th percentile, exposure is estimated at 0.31 µg/kg bw/day in adults (0.26-0.33) and 0.62 µg/kg bw/day in children (0.49-0.69). Although exposure is higher than in TDS 1 (by +30 to 40%), it remains very low.

The main contributor to cobalt intake in adults is coffee (11%). For children, chocolate is the main contributor (12%).

No exceeding of the lower limit of the TDI (1.6 µg/kg bw/day) was observed in adults or children. The risk associated with dietary exposure to cobalt does not seem to constitute a major public health issue. Studies should nevertheless be carried out on the carcinogenicity of cobalt.

4.17. Chromium

Chromium (Cr) is a metal found in abundance in the Earth's crust (100 mg/kg on average), most frequently in trivalent form (CrIII) and, more rarely, hexavalent (CrVI). Chromium is used in metal alloys such as stainless steel and in pigments, for tanning hides, etc. Humans are exposed to it through inhalation and by ingesting water and food. Only trivalent chromium is considered to be a trace element with a role in the metabolism of sugars and fats, by potentiating the action of insulin. The measurements relate to total chromium since the analysis of the different forms of speciation in foods (CrIII and CrVI) remain complex.

Hazard characterisation

In humans, chromium deficiency has been observed in patients receiving long-term total parenteral nutrition. The symptoms are an alteration in the use of glucose and impaired tolerance of it (alteration in the number of insulin receptors and their capacity for binding), an alteration in lipid metabolism, an alteration in nitrogen metabolism, and weight loss. In cases of severe deficiency, neurological effects may be observed. In children, no deficiency in chromium has been described except in cases of severe protein-energy malnutrition. The population reference intake is 50-70 µg CrIII/day for adults (Roussel 2001). It is difficult to suggest a population reference intake for children in view of the uncertainty concerning both their needs and the risks of deficiency.

Chromium toxicity varies considerably depending on its valence. Compounds of CrVI are genotoxic and have been classified as 'carcinogenic to humans' (group 1) by IARC (IARC 1990), as a result of an excess risk of lung cancer in workers exposed *via* inhalation. Concerning the oral route, some data suggest an increased incidence of stomach cancer in humans exposed through drinking water. Although these data seem contradictory, in a preliminary report the Office of Environmental Health Hazard Assessment (OEHHA) proposed a health-based guidance value, with no threshold, of 0.5 (mg/kg bw/day)⁻¹, corresponding to an excess risk of 10% (OEHHA 2010).

Concerning CrIII, EFSA concluded in 2010 that it is neither genotoxic nor carcinogenic (EFSA 2010d). However, its long-term toxicity is less well understood than that of CrVI and no robust health-based guidance value has been established.

Risk Assessment and Characterisation

Only 5% of the samples analysed had a chromium level lower than the LOD or the LOQ. The highest mean concentrations (Table A1) are found in oils (1.0 mg/kg), chocolate (0.87 mg/kg), butter (0.64 mg/kg) and margarine (0.59 mg/kg). The other groups all had mean concentrations of less than 0.5 mg/kg. For all food groups, the mean concentrations were higher than those found in the first TDS (by a factor of 5 on average), which could be related to the use of stainless steel equipment for milling samples.

The mean exposure of the French population to chromium is estimated to be 277 µg/day in adults (260-294) (Table A4) and 223 µg/day in children (211-249) (Table A5). These mean exposures are higher than those estimated during TDS 1 (by a factor of 3 to 4) and for the European population (60-160 µg/d for adults, 63-69 µg/d for children), which can be explained by the high concentrations found in TDS 2 (EFSA 2009b). At the 5th percentile, the intake was estimated to be 166 µg/day in adults (150-187) and 137 µg/day in children (116-156). At the 95th percentile, the intake was estimated to be 413 µg/day in adults (382-433) and 333 µg/day in children (313-377).

In adults, the main contributors to chromium intake are bread and dried bread products (8%) and alcoholic beverages (5% for both groups). In children, the main contributors to chromium intake are milk (9%) and pasta (6%).

Since the analyses for total chromium and data from the literature are insufficient to quantify the proportion of CrIII and CrVI in foods, it is not possible to draw any conclusions as to possible risk related to ingested chromium, nor as to whether requirements in CrIII are met. It would be advisable to develop routine analytical methods for speciation of chromium and to initiate studies on the long-term toxicity of CrIII.

4.18. Calcium

Calcium (Ca) is an alkaline-earth metal. It is the most abundant mineral in the human body (1 kg to 1.2 kg in adults): 99% of calcium contributes to the formation and solidity of bones and teeth. The small proportion of non-bone calcium is nonetheless just as important as the part stored as bone, as it intervenes in several functions such as neuromuscular excitation, muscular contraction, blood coagulation, membrane permeability, the liberation of hormones and the activation of enzymes. The level of calcium in the blood is finely adjusted by 1,25 dihydroxycholecalciferol (vitamin D), parathyroid hormone and calcitonin, by drawing on skeletal reserves. These three hormones intervene in the intestinal absorption and urinary excretion of calcium, bone resorption and the formation of the bone matrix.

Hazard characterisation

Signs of calcium deficiency only become apparent when there are medium- to long-term modifications to the skeletal structure: disorders related to defective mineralisation of osteoid tissue (rickets in children and osteomalacia in adults) or excessive bone loss (osteoporosis in older subjects). As has increasingly been shown, calcium supplements are beneficial in reducing the risk of high blood pressure, cancer of the colon and the prostate, which supports the case for ensuring a sufficient calcium intake. The population reference intake values for calcium are 900 mg/day in adults and 1200 mg/day for women over 55 and men over 65. For children from 3 to 18 years old it ranges from 800 mg to 1200 mg (Guéguen 2001). However, many factors can influence individual needs for calcium (Vitamin D intake, physical activity, etc.). In the long term, excessive calcium intake can lead to hypercalciuria in susceptible subjects, and subsequently to kidney stones and nephrocalcinosis, the risk being heightened in the event of hypervitaminosis D. In 2003, the Scientific Committee for Food (SCF) set a safety level of 2500 mg/day (SCF 2006).

Risk assessment and characterisation

Only 1.7% of the samples analysed had a level of calcium lower than the LOD or the LOQ. The highest mean concentrations (Table A1) were found in cheese (5,164 mg/kg), chocolate (1,200 mg/kg), pizzas, quiches and savoury pastries (1,188 mg/kg), breakfast cereals (1,179 mg/kg), ultra-fresh dairy products (1,081 mg/kg), crustaceans and molluscs (1,066 mg/kg) and milk (1,024 mg/kg). The other groups all show mean concentrations below 1,000 mg/kg. These mean values are similar to the levels recorded in the CIQUAL food composition table (AFSSA 2008d). They are also similar to those collected during the TDS 1, with the exception of dried fruits, nuts and seeds, which were shown to be rich in calcium in TDS 1 (1,593 mg/kg). In particular, this can be explained by the presence of sesame seeds, which are very rich in calcium, among the samples for the TDS 1, but which were absent in the TDS 2.

The mean calcium intake of the French population is calculated to be 786 mg/day in adults (640-1,040) (Table A4) and 659 mg/day in children (596-729) (Table A5). In comparison with the TDS 1, these mean intake values are slightly lower in children and slightly higher in adults, which is consistent with the trends observed between INCA 1 and INCA 2 (Dubuisson, Lioret *et al.* 2010). They are also slightly lower than the estimated intake in INCA 2 as a result of the incomplete coverage of the French diet in the TDS 2. At the 5th percentile, intake is estimated to be 345 mg/day in adults (284-500) and 298 mg/day in children (217-361). At the 95th percentile, it is estimated at 1,419 mg/day in adults (1,099-1,754) and 1118 mg/day in children (931-1245).

For children, milk is the main contributor to calcium intake (26%), followed by ultra-fresh dairy products and cheese (13%). For adults, cheese is the largest contributor (19%), before water (13%), ultra-fresh dairy products (12%) and milk (11%).

Prevalence of inadequate intake is estimated to be 50% in adults [47.6; 52.1] and 68% in children [65.6; 70.4]. However, in children, prevalence of inadequate intake varies considerably and increases with age. Furthermore, prevalence of inadequate intake must be considered in the light of factors likely to influence calcium needs. In this context, more work should be done on the distribution of calcium needs. Upper safety limits (2,500 mg/d) are exceeded by 0.05% in adults [-0.05; 0.14], but no excessive intake was found in children.

4.19. Manganese

Manganese (Mn) is a trace element that can be found in several states of oxidation. The most biologically active forms are Mn^{2+} and Mn^{3+} . Manganese is a component of many enzymes and an activator of several others: it plays a role in the metabolism of sugars (pyruvate decarboxylase, glycosyltransferase, metabolism of insulin) and fat and also the detoxification of oxygen-centred free radicals (Mn-superoxide dismutase).

Hazard characterisation

No cases of manganese deficiency have been reported in humans. Although studies of deficiency in humans have only been conducted under experimental conditions, it seems that it could lead to skeletal disorders, alterations to the growth process, reproductive functions and skin appendages, and to a reduction in cholesterol levels. Nutritional needs in manganese are estimated to be 1-2.5 mg/day in adults (Arnaud 2001a). It seems premature to set a population reference intake but it could reasonably be in the region of 2 to 3 mg/day. The SCF has concluded, since there is insufficient evidence concerning either animals and humans, that it is not possible to set an upper safety limit for manganese (SCF 2006). Although absorption is low, the data suggest that it is neurotoxic at high intake levels. France has therefore set a safety limit of 10 mg/day (Arnaud 2001a).

Risk assessment and characterisation

Only 5% of samples analysed showed a level of manganese lower than the LOD or the LOQ. The highest mean concentrations (Table A1) were found in dried fruit, nuts and seeds (11.9 mg/kg), chocolate (8.87 mg/kg) and bread and dried bread products (7.19 mg/kg). The other general food groups all showed mean concentrations below 5 mg/kg. These mean values are higher than those listed in the CIQUAL food composition table (for example by a factor of 5 for chocolate, or 7 for bread), except for dried fruit, nuts and seeds, for which the values remain similar (AFSSA 2008d). But the values are nonetheless similar to those of the TDS 1, for all food groups (Leblanc, Guerin *et al.* 2005).

Mean manganese intake of the French population has been estimated at 2.16 mg/day in adults (2.02-2.29) (Table A4) and 1.46 mg/day in children (1.41-1.55) (Table A5). These mean intake levels are slightly lower than those calculated during the TDS 1, and than those given by INCA 2, as a result of the incomplete coverage of the French diet. At the 5th percentile, intake is estimated at 1.07 mg/day in adults (0.9-1.1) and 0.71 mg/day in children (0.62-0.83). At the 95th percentile, it is estimated to be 3.55 mg/day in adults (3.15-3.82) and 2.56 mg/day in children (2.40-2.88).

In both adults and children, the main contributors to manganese intake are bread and dried bread products (29% and 20%, respectively).

Since no population reference intake has been set for manganese, the prevalence of inadequate intake has not been calculated. Supplementary data are therefore necessary to provide a meaningful definition of dietary needs of manganese. The upper safety limit of 10 mg/day is exceeded neither by adults nor by children.

4.20. Magnesium

The human body contains about 25 g of magnesium (Mg), 50 to 60 % of it in bones. This mineral plays a role in more than 300 enzyme systems involved in numerous physiological functions. At the cellular level, magnesium participates in breaking down glucose and in the production of DNA and proteins.

Hazard characterisation

It is difficult to diagnose cases of moderate magnesium deficiency. Symptoms range from fatigue, hyper-emotivity and anxiety to numerous physiological and functional disorders involving magnesium, the main examples of which are neuromuscular (involving cramps, tetany and spasmophilia attacks) and metabolic (involving sugars and fats). However, the exact relationship between intake, status biomarkers and cardiovascular, kidney, skeletal and immune functions remains to be confirmed. The population reference intakes for magnesium are expressed in terms of body weight and are set at 6 mg/kg bw/day. They vary from 360 to 420 mg/day in adults, depending on age and physiological condition. In children aged 3 to 18 years old, they range from 80 to 410 mg/day. A NOAEL has been defined for magnesium, based on toxicological studies, that does not take account of food intake, which the SCF did not consider sufficient to warrant setting an upper safety limit (SCF 2006). AFSSA chose effects concerning the acceleration of intestinal transit and the risk of kidney failure, when proposing an upper safety limit of 700 mg/day (Rayssiguier, Boirie *et al.* 2001).

Risk assessment and characterisation

Only 1.7% of samples analysed showed a level of magnesium lower than the LOD or the LOQ. The highest mean concentrations (Table A1) were found in tofu (from the miscellaneous foods group, 1,340 mg/kg), chocolate (1,143 mg/kg), dried fruits, nuts and seeds (1,069 mg/kg), crustaceans and molluscs (811 mg/kg) and biscuits (514 mg/kg). The other groups all show mean concentrations below 500 mg/kg. These mean values are similar to those listed in the CIQUAL food composition table (AFSSA 2008d). They are also similar to those of the TDS 1, except for chocolate which is now 3 times richer in magnesium than in the TDS 1, because of the inclusion in the TDS 1 sample of chocolate biscuit bars (less rich in magnesium than chocolate) (Leblanc, Guerin *et al.* 2005).

Mean magnesium intake of the French population is estimated to be 304 mg/day in adults (282-325) (Table A4) and 227 mg/day in children (2.17-2.33) (Table A5). These mean intake values are similar to those calculated in the INCA 2 study, and higher than those in the TDS 1, which is consistent with the trend observed between INCA 1 and INCA 2. At the 5th percentile, intake is estimated to be 180 mg/day in adults (160-206) and 136 mg/day in children (106-149). At the 95th percentile, it is estimated to be 457 mg/day in adults (424-486) and 342 mg/day in children (321-366).

In adults, the main contributors to magnesium intake are bread and dried bread products (11%), ahead of coffee (9%) and vegetables excluding potatoes (7%). In children, the main contributors are milk (9%) and bread and dried bread products (7%).

The prevalence of inadequate intake is estimated at 65% in adults [62.5; 66.8] and at 53% in children [50.7; 55.8]. The prevalence of inadequate intake should be viewed in the light of new bibliographical data suggesting lower needs for magnesium, of about 180 mg/day, estimated on the basis of balance studies (Hunt and Johnson 2006). The upper safety limit is exceeded by 0.05% in adults, but not significantly [-0.06; 0.2], and is not exceeded by any children.

4.21. Copper

Copper (Cu) is an essential trace element subject to homeostatic control mechanisms. It is a component of several metalloenzymes: cytochrome c oxidase, amine oxidases, superoxide dismutases. Copper contributes to the quality of cartilage, bone mineralisation, the regulation of neurotransmitters, cardiac function (sugar metabolism), immune mechanisms and iron metabolism (ceruloplasmin).

Hazard characterisation

Copper deficiency reduces the activity of the metalloenzymes to which it is related. Population reference intakes, based on a very small quantity of data, are estimated to be between 1.5 and 2 mg/day in adults and between 0.8 and 1.5 mg/day in children (Coudray 2001). In addition, the SCF, considering its hepatotoxicity as a critical effect (SCF 2006), has set an upper safety limit for copper of 5 mg/day.

Risk assessment and characterisation

Only 2% of samples analysed showed a level of copper lower than the LOD or the LOQ. The highest mean concentrations (Table A1) were found in offal (113 mg/kg). The other foods rich in copper, but at slightly lower concentrations, were dried fruits, nuts and seeds (6.64 mg/kg), chocolate (6.43 mg/kg) and crustaceans and molluscs (5.58 mg/kg). The remaining groups all had mean concentrations below 3 mg/kg. The mean value for samples of offal (composed of liver) is similar to the values listed in the CIQUAL food composition table (AFSSA 2008d), but it is 8 times higher than the value in the TDS 1, whose samples included both liver and tongue, with the tongue being less contaminated than the liver (Leblanc, Guerin *et al.* 2005). The mean level observed for chocolate is also higher than in the TDS 1 (by a factor of 2.5) and much higher than the values in the CIQUAL table (by factors of between 6 and 16). For all food groups together, the mean levels are twice as high as in the TDS 1.

Mean copper intake of the French population is estimated to be 1.94 mg/day in adults (1.63-2.23) (Table A4) and 0.93 mg/day for children (0.86-1.02) (Table A5). For adults, these mean intake values are twice as high as those calculated in the TDS 1 (as a result of the significant contribution of coffee) and slightly higher than those in INCA 2 (by a factor of 1.2), but similar to those for children. At the 5th percentile, intake is estimated to be 0.73 mg/day in adults (0.59-0.87) and 0.50 mg/day in children (0.43-0.57). At the 95th percentile, it is estimated to be 4.11 mg/day in adults (2.93-5.26) and 1.73 mg/day in children (1.44-2.57).

In adults, the main contributor to copper intake is coffee (36%) whose high proportion in the diet compared to the TDS 1 explains the difference in intake. In children, the main contributor is pasta (13%).

The prevalence of inadequate intake is estimated to be 33% in adults [31; 35] and 73% in children [71; 76], but it is difficult to interpret these values considering the uncertainty concerning the population reference intake. The upper safety limit is exceeded by 2.6% in adults [1.9; 3.3] and by 0.8% in children [0.4; 1.3].

4.22. Zinc

Zinc (Zn) is an essential mineral found in most cells. It is involved in the activity of nearly 300 enzymes. Its major physiological activity concerns the different stages of protein synthesis, notably the activation of enzymes involved in the synthesis of nucleic acids (DNA and RNA polymerases, RNA synthases), the regulation of histones and the triggering of the reading of the genome *via* transcription factors ("zinc finger" proteins). Zinc is also involved in stabilising the tertiary structure of some peptide hormones (insulin, thymulin) and in the metabolism of polyunsaturated fatty acids and prostaglandins. Finally, zinc protects cells from damage by free radicals because it is a constituent of superoxide dismutases and an antagonist of iron and copper, thus preventing the Fenton reaction.

Hazard characterisation

A lack of or deficiency in zinc leads to immune reaction disorders, lesions to the skin and skin appendages, impaired wound healing, as well as smell, taste, appetite and digestive disorders (diarrhoea, etc.) which may lead to anorexia. Zinc deficiency leads to slower growth, in terms of both height and weight, among children and delayed sexual maturity among adolescents. The value of zinc in fighting the ageing process, and ultimately in preventing cardiovascular diseases and cancers, remains to be established. The population reference intakes of zinc take into account the type of diet (presence of animal proteins or not). Consequently, two values are proposed for the same population group (Arnaud 2001b). On average, population reference intakes range between 10 and 19 mg/day for an adult depending on the age and the physiological stage. For children between 3 and 18 years old, they are between 7 and 13 mg/day. The SCF has set the tolerable upper intake level at 25 mg/day, based on a maintained status in copper and an adequate lipoprotein metabolism (SCF 2006).

Risk assessment and characterisation

Among the samples analysed, only 5% had a zinc level below the LOD or LOQ. The highest mean concentrations (Table A1) are found in offal (64.0 mg/kg), crustaceans and molluscs (61.9 mg/kg), meat (35.5 mg/kg), delicatessen meats (22.1 mg/kg), poultry and game (20.4 mg/kg). All the other groups have mean concentrations below 20 mg/kg. These average concentration levels are around the same as the values listed in the CIQUAL food composition table (AFSSA 2008d), as well as those listed in TDS 1 for all food groups (Leblanc, Guerin *et al.* 2005).

The mean zinc intake for the French population is estimated at 7.93 mg/day in adults (6.89-8.75) (Table A4) and 6.43 mg/day in children (5.95-7.02) (Table A5). The mean intakes are around the same levels as those estimated during TDS 1, but slightly lower than those estimated by INCA 2 (20-25%), which is consistent with the incomplete coverage of the diet. At the 5th percentile, the intake is estimated at 4.09 mg/day in adults (3.62-4.60) and 3.50 mg/day in children (2.96-3.72). At the 95th percentile, it is estimated at 13.3 mg/day in adults (11.3-14.8) and 10.7 mg/day in children (9.8-11.4).

For both adults and children, the main contributors to zinc intake are meat (25%), followed by milk for children (10%), and delicatessen meats, bread and dried bread products for adults (8% for both food groups).

Taking into account the Estimated Average Requirement (EAR) defined for an intestinal absorption of 30% (diet relatively rich in animal products), which is the case for most of the population, the prevalence of inadequate intakes is estimated at 26% in adults [24; 28] and at 48% in children [46; 51]. Intake levels exceeding tolerable upper intake levels are estimated at 0.08% in adults [-0.05; 0.20], and 0.5% in children [0.12; 0.83].

4.23. Lithium

It has not yet been established that lithium (Li) is an essential element. Lithium plays a role in the nervous system: at pharmacological doses (70-140 mg), it is used to treat certain psychiatric disorders, including manic depression; some data suggest that this effect also occurs at physiological doses.

Hazard characterisation

There is practically no lack of lithium or nutritional deficiencies in lithium in humans. Mean intakes of lithium vary considerably, from 200 to 600 µg/day.

Risk assessment and characterisation

Among the samples analysed, 8% had a lithium level below the LOD or LOQ. The highest mean concentrations (Table A1) are found in crustaceans and molluscs (0.07 mg/kg), pulses (0.07 mg/kg), water (0.07 mg/kg), coffee (0.04 mg/kg) and pasta (0.04 mg/kg). All the other groups have mean concentrations below 0.04 mg/kg. These mean concentrations are 3 times higher than those recorded in TDS 1 (Leblanc, Guerin *et al.* 2005).

The mean lithium intake of the French population is estimated at 48.2 µg/day in adults (38.1-55.1) (Table A4) and 19.8 µg/day in children (16.9-22.0) (Table A5). These mean concentrations are higher than those estimated during TDS 1 (about 1.5 times more). At the 5th percentile, the intake is estimated at 14.9 µg/day in adults (11.3-19.8) and 9.0 µg/day in children (7.58-12.1). At the 95th percentile, it is estimated at 93.6 µg/day in adults (81.5-102.7) and 38.6 µg/day for children (26.7-47.4).

For both adults and children, the main contributor to lithium intake is water (35% and 34%, respectively), followed by coffee (17%) and other hot beverages (14%) for adults.

Since there are no established population reference intakes for lithium, the prevalences of inadequate intakes were not calculated.

4.24. Sodium

Sodium (Na) is the main cation in extracellular liquid (90 %). It is generally found in the form of sodium chloride (NaCl). Sodium is constantly exchanged between extra- and intracellular compartments to maintain its homeostasis within narrow limits. Intracellular sodium concentration is 10% lower than that found in extracellular compartments. Consequently, sodium plays a key role in regulating osmotic pressure and hence the volume of extracellular fluid. Aldosterone and angiotensin II are the principal hormones responsible for sodium homeostasis. Sodium also plays an essential role in nerve and muscle transmissions as well as the composition of intestinal and gastric secretions.

Hazard characterisation

Sodium deficiency is extremely rare in humans. However, it can occur in elderly persons or athletes, respectively due to diarrhoea or significant perspiration losses and inappropriate rehydration. Sodium homeostasis requires a minimum dietary intake of around 0.39-0.78 g every 24 hours (based on 1-2 g of NaCl) (Drüeke and Lacour 2001b). Due to a lack of sufficient data to establish population reference intakes and considering the harmful effects of excessive sodium intakes on the pathogenesis of hypertension and kidney pathologies, it is recommended that the population not exceed a mean intake of 2.36-3.14 g of sodium per day (6-8 g of NaCl) (AFSSA 2008c; WHO 2007).

Risk assessment and characterisation

Among the samples analysed, 5% had a sodium level below the LOD or LOQ. The highest mean concentrations (Table A1) were found in seasonings and sauces (including salt) (21.0 g/kg), delicatessen meats (11.2 g/kg), cheese, bread and dried bread products (6.7 g/kg) as well as pizzas, quiches and savoury pastries (6.3 g/kg). All the other groups had mean concentrations below 6 g/kg. These mean concentrations were of the same order of magnitude as the values listed in the CIQUAL food composition table (AFSSA 2008d), and the means recorded during TDS 1 (Leblanc, Guerin *et al.* 2005).

The mean sodium intake of the French population was estimated at 2.65 g/day in adults (2.52-2.84) (Table A4) and 2.00 g/day for children (1.91-2.09) (Table A5). These mean intake levels had the same order of magnitude as those estimated during TDS 1, given the analytical uncertainty related to sample preparation, and were slightly below those recorded during INCA 2, due to incomplete coverage of the total diet. At the 5th percentile, the intake was estimated at 1.30 g/day in adults (1.22-1.45) and 1.08 g/day in children (0.96-1.20). At the 95th percentile, it was estimated at 4.50 g/day in adults (3.9-4.9) and 3.41 g/day in children (3.0-3.92).

For both adults and children, the main contributors to sodium intake are bread and dried bread products (30% and 19%, respectively), as well as delicatessen meats (11%).

The French guideline value of 3.149 g Na/day is exceeded by 26% of adults [24; 28] and 7% of children [5; 8]. The WHO guideline value of 2.362 g Na/day is exceeded by 58% of adults [55; 60] and 25% of children [23; 28]. These excesses underline the need to continue efforts to reduce sodium intake.

4.25. Molybdenum

Molybdenum (Mo) is an essential trace element: in humans, for whom xanthine oxidase, sulphite oxidase and aldehyde oxidase are the major molybdoenzymes. These enzymes are involved in the metabolism of sulfur-containing amino acids and purines.

Hazard characterisation

No nutritional deficiency in molybdenum has been observed in healthy humans. However, a lack of molybdenum in persons under parenteral nutrition or suffering from malabsorption (Crohn's disease) is associated with high methionine and low uric acid plasma concentrations and with high xanthine and low uric acid and sulfate urinary concentrations (Arnaud 2001a). On a clinical level, the symptoms are tachycardia and neurological disorders. Molybdenum requirements for adults are around 25 µg per day. However, available data do not make it possible to establish a population reference intake. The SCF has established a tolerable upper intake level of 600 µg/day for molybdenum, taking into account its reprotoxic effects (SCF 2006).

Risk assessment and characterisation

Among the samples analysed, 18% had a molybdenum level below the LOD or LOQ. The highest mean concentrations (Table A1) are found in offal (1.01 mg/kg), pulses (0.91 mg/kg) as well as dried fruits, nuts and seeds (0.55 mg/kg). All the other groups have mean concentrations below 0.5 mg/kg. For all the groups, the mean concentrations are slightly lower than those in TDS 1 (1.6 times on average) (Leblanc, Guerin *et al.* 2005).

The mean molybdenum intake of the French population was estimated at 93.9 µg/day in adults (84.3-102.2) (Table A4) and 74.7 µg/day in children (70.7-84.5) (Table A5). These mean intakes are lower than those estimated during TDS 1 (by around 30%), due to lower concentrations. At the 5th percentile, the intake was estimated at 49.1 µg/day in adults (44.0-53.6) and 40.3 µg/day in children (33.8-49.5). At the 95th percentile, it was estimated at 155 µg/day in adults (139-180) and 130 µg/day in children (113-161).

Among adults, the main contributors to molybdenum intake are bread and dried bread products (16%). Among children, milk is the main contributor, with the same contribution as bread and dried bread products (10%).

Since there is no established population reference intake for molybdenum, the prevalences of inadequate intakes were not calculated. No exceeding of tolerable upper intake levels was observed in adults. However, 0.08% of children exceeded the tolerable upper intake levels, although not significantly [-0.07; 0.23].

4.26. Selenium

Selenium (Se) is a metalloid whose physio-chemical properties are similar to those of sulfur and which can therefore act as a substitute in amino acids. In animal tissues, it is found in the form of selenomethionine or selenocysteine. The vast majority of the functions of selenium are performed through selenoproteins. In humans, the selenoproteins identified to date are glutathione peroxidases, deiodinases, selenoprotein P and thioredoxin. Apart from the deiodinases involved in the thyroid hormone metabolism, the others are antioxidant enzymes involved in protection against free radicals (defence against oxidative stress) (glutathione peroxidases, selenoprotein P) or the regulation of the redox status of vitamins C and E (thioredoxin reductase). Furthermore, selenium helps the organism to eliminate certain molecules (xenobiotics and heavy metals). It is involved in inflammatory and immune responses. In humans, there are two forms of reserves: the selenium present as selenomethionine, which depends mainly on food intake, and the selenium available in renal glutathione peroxidase, the only reserve that can be used when dietary intakes decrease.

Hazard characterisation

Selenium deficiency is highlighted when dietary intakes are very low, notably because soils contain very little of this trace element. Symptoms linked to this deficiency may be: muscular degeneration, de-pigmentation of keratinous appendages (hair, nails), anaemia, delayed development of the central nervous system, increased occurrence of infections, and impaired functioning of the heart. Population reference intakes have been established for the required intake levels to achieve optimum plasma glutathione peroxidase (a selenoprotein) activity (Ducros 2001). For adults, these intake levels have been estimated at around 1 µg/kg bw/day, i.e. 50-70 µg/day. For younger people (3-19 years old), the recommended intake ranges from 20 to 50 µg/day. Excessive selenium intakes that may lead to selenosis (gastrointestinal disorders, hair loss, fatigue, irritability) are extremely rare in human diets (EFSA 2009c). The SCF has established a tolerable upper intake level of 300 µg/day for adults; this value ranges from 90 to 205 µg/day for children between 3 and 17 years old (SCF 2006).

Risk assessment and characterisation

Among the samples analysed, 95.5% had a selenium level below the LOD or LOQ. The concentrations of 59 samples were quantified. Nonetheless, given the values found in the literature, only the middle bound (MB) assumption was used for the exposure calculations.

The highest mean concentrations (Table A1) were found in offal (0.329 mg/kg), crustaceans and molluscs (0.254 mg/kg) and fish (0.226 mg/kg). All the other food groups had concentrations below 0.06 mg/kg. These mean concentrations were of the same order of magnitude as the values listed in the CIQUAL food composition table (AFSSA 2008d).

The mean selenium intake of the French population was estimated at 64.4 µg/day in adults (61.4-68.9) (Table A4). Among children, it was estimated at 41.5 µg/day (39.9-44.2) (Table A5). At the 5th percentile, the intake was estimated at 34.6 µg/day (31.0-39.8) in adults and at 23.8 µg/day (19.7-26.2) in children. At the 95th percentile, the intake was estimated at 100.7 µg/day (88.1-111.6) in adults and at 66.2 µg/day (59.1-75.5) in children.

For both adults and children, the main contributor to selenium intake is water (27 and 26%, respectively), followed by coffee for adults (9%) and milk and non-alcoholic beverages for children (10% for both food groups).

The prevalences of inadequate intake levels were estimated at 13% in adults [12; 15] and 18% in children [17; 20]. Nonetheless, the prevalence varies significantly depending on the age group and is particularly high among elderly people (19% [15; 23]). The risk of exceeding the upper safety level is nil for adults and insignificant for children (0.08% [-0.07; 0.2]).

4.27. Potassium

Potassium (K) is the main intracellular cation in the organism (98 %). It is often combined with other elements, such as in potassium chloride. Along with sodium, it is involved in maintaining osmotic pressure. The relationship between intra- and extracellular levels of potassium plays a fundamental role in neuromuscular excitability. Potassium is also involved in insulin secretion and glucidic and protein metabolisms.

Hazard characterisation

Potassium deficiency (often iatrogenic) can result from excessive gastrointestinal (diarrhoea, vomiting) or urinary losses. Its consequences can include muscle weakness, apathy, abdominal swelling and cardiac arrhythmia. Moderate potassium deficiency is rare among young adults. The minimum requirement for adults is estimated at 390-585 mg/day (Drüeke and Lacour 2001a). In Western populations, the requirement is largely covered by dietary intake. Excess potassium intake through food, which is rare, leads to hyperkalaemia, of which cardiac arrhythmia can be a consequence. It is also characterised by decreased renal functioning and impaired insulin production. EFSA considered the data to be insufficient to establish a tolerable upper intake level. The Expert Group on Vitamins and Minerals (EVM 2003) considers that an intake of 3700 mg/day in addition to spontaneous dietary intakes does not seem to cause any major side-effects.

Risk assessment and characterisation

Among the samples analysed, only 4% have a potassium level below the LOD or LOQ. The highest mean concentrations (Table A1) were found in dried fruits, nuts and seeds (7,355 mg/kg), chocolate (5,667 mg/kg) and in sweet and savoury biscuits and bars (5,039 mg/kg). All the other groups had mean concentrations below 5,000 mg/kg. These mean concentrations were of the same order of magnitude as the values listed in the CIQUAL food composition table (AFSSA 2008d).

The mean potassium intake of the French population intake was estimated at 2,854 mg/day in adults (2,563-3,155) (Table A4) and 2,186 mg/day in children (2,046-2,259) (Table A5). These mean concentrations are consistent with those estimated in INCA 2. At the 5th percentile, the intake was estimated at 1,635 mg/day in adults (1,402-1,820) and 1303 mg/day in children (1,120-1,454). At the 95th percentile, it was estimated at 4,333 mg/day in adults (3,793-4,599) and 3,278 mg/day in children (3,099-3,401).

Among children, the main contributors to potassium intake are milk (13%) and potatoes and potato products (9%). Among adults, the main contributors are vegetables excluding potatoes (10%), fruits and coffee (9%).

Since there is no established population reference intake for potassium, the prevalences of inadequate intakes were not calculated.

4.28. Iron

Iron (Fe) plays an essential role in many biological functions: production of haemoglobin, myoglobin, enzymes involved in the respiratory function (oxygen transportation and electron transfer at mitochondrial level). Most of the iron in the body (70%) is in haeminic form (associated with haemoglobin), the rest being in non-haeminic form (transportation and reserve forms).

Hazard characterisation

Although iron deficiency leads to a very advanced stage of anaemia (iron deficiency anaemia), the consequences of moderate deficiency on all these physiological processes have not yet been fully established but may include reduced physical capacity and intellectual performance, reduced resistance to infections, problems during pregnancy and anomalies in maintaining body temperature. Epidemiological data indicate a link between high iron intake and an increased incidence of cardiovascular diseases, type II diabetes and digestive cancers. It is worth underlining the importance of taking into account the different absorption levels between haeminic and non-haeminic iron when defining iron intake requirements. Population reference intakes for iron were established in order to ensure adequate reserves. They were estimated at 9 mg/day in men and at 16 mg/day in pre-menopausal women. They range from 7 to 14 mg/day for children between 3 and 17 years old. EFSA has not been able to establish a tolerable upper intake level for iron, due to a lack of data, and considers that in view of intakes observed in Europe the risk of harmful effects due to excessive intakes (including enriched foods but excluding dietary supplements) is low, except for homozygous persons regarding haemochromatosis (SCF 2006). France has set a tolerable upper intake level of 28 mg/day (Coudray and Hercberg 2001).

Risk assessment and characterisation

Among the samples analysed, only 5% had an iron level below the LOD or LOQ. The highest mean concentrations (Table A1) were found in chocolate (70.3 mg/kg), offal (60.8 mg/kg) and ice creams, sorbets and frozen desserts (45.5 mg/kg) which contain chocolate in particular. All the other food groups had mean concentrations below 30 mg/kg. As a general rule, these mean concentrations were 45% lower on average (up to 100% difference) than the values listed in the CIQUAL food composition table (AFSSA 2008d) probably due to the use of a recent analytical method (inductively coupled plasma mass spectrometry using a collision/reaction chamber (ICP-CCT-MS) rather than the atomic absorption spectrometry used predominantly for the CIQUAL data) and the use of stricter internal quality controls than those used during previous studies. Nonetheless, the exact reasons for such differences need to be explored.

The mean iron intake of the French population was estimated at 7.71 mg/day in adults (7.14-8.28) (Table A4) and 6.57 mg/day in children (6.00-7.48) (Table A5). These intakes are lower (around 40%) than those estimated in INCA 2, certainly due to the use of lower levels in food. At the 5th percentile, the intake was estimated at 4.03 mg/day in adults (3.65-4.56) and 3.40 mg/day in children (3.07-4.33). At the 95th percentile, it was estimated at 12.6 mg/day in adults (10.8-13.1) and 11.1 mg/day in children (9.3-12.5).

For both adults and children, the main contributors to iron intake are meat (10%) and bread and dried bread products (16% and 9%, respectively).

Calculated using a probabilistic method with a risk curve derived from the estimation of the requirement distribution (Institute of Medicine 2001b), the prevalence of inadequate intakes was estimated at between 13% and 67% in adults and between 26% and 74% in children, depending on the age group and gender. The prevalences were notably higher among young girls (64% [58; 69] for 13-15 year-olds and 74% [70; 79] for 16-17 year-olds) and pre-menopausal women (67% [65; 69]). The relatively high prevalences should be compared with the much lower incidences of anaemia and iron-reserve depletion in the general population (around 2 to 11% for adults) (INVS 2007). These data suggest that it is necessary to re-assess nutritional requirements in iron. Furthermore, no exceeding of the tolerable upper intake levels was observed.

4.29. Summary for inorganic contaminants

The results of TDS 2 show that dietary exposure to many inorganic contaminants is low and does not represent a major public health problem in France (Tables 15 and 16). Only certain elements, for which health-based guidance values have recently been lowered by international committees of experts, are associated with mean exposures that are above average (inorganic arsenic and lead) or with high percentiles (cadmium). We cannot therefore rule out a health risk for certain consumer groups. Even though exposure to arsenic and lead has decreased compared to the early 2000s (results of TDS 1), efforts must be continued to reduce exposure to these three elements (Pb, As, Cd), particularly with regard to contaminations of the main contributors identified.

Apart from lead, mercury and arsenic, the results for the population's exposure to different inorganic contaminants appear to be generally higher than those recorded by the first French TDS. For some elements (chromium, nickel and aluminium), this could be partially explained by the use of preparation and/or cooking equipment made of stainless steel or aluminium in the second study, unlike the first. For cadmium, the results underline the need for further contamination studies to identify the reasons for the increases.

Furthermore, routine methods should be implemented to analyse the different forms of speciation for tin and chromium, in particular. This would quantify the exposure risk that may be due to these different forms, whose toxicological effects and potentially related doses appear to be very different.

Finally, for certain elements, the lack of toxicological data makes it impossible to establish a health-based guidance value for chronic exposure (tin, gallium, germanium, strontium, chromium, silver, tellurium, vanadium). In addition, it seems to be impossible to draw any conclusions regarding the risk linked to dietary exposure. For these elements, long-term toxicological studies based on oral intake need to be carried out, particularly for tin, chromium, strontium and vanadium.

4.30. Summary for nutrients

The results of TDS 2 regarding dietary intakes of trace elements show that the requirements of the general population are relatively well covered.

Some prevalences of inadequate intakes may appear to be relatively high, notably for calcium, iron, magnesium and copper (Table 15). It should be noted that conclusions cannot be drawn from prevalences of inadequate intakes as to the risk or lack of risk for the general population. However, as useful indicators they highlight the need to assess the population's nutritional status by means of biomarkers.

It should also be borne in mind that the sampling only covers about 90% of the French population's diet, and that some dietary intakes have thus been underestimated. Furthermore, the prevalences of inadequate intakes were calculated on the basis of population reference intakes published in 2001. These values were established on the basis of relevant literature that was available at the time, which sometimes relied on observations among the population. For some nutrients, some more recent, relevant data suggest that the requirements should be reassessed. Certain elements, such as copper and magnesium, do not seem to pose any particular public health risk due to an inadequate intake. To ensure that there are no deficiencies, biological data is needed on the mineral and trace element concentrations in the French population (Table 16). In addition, the dietary intakes observed among the general population could be used as evidence in favour of reassessing requirements.

In the few cases where observed tolerable upper intake levels were exceeded, excess levels were extremely low and sometimes insignificant. Furthermore, since the total variance has been over-estimated (due to the short observation period of 7 days), the dietary intakes at the high percentiles may be slightly over-estimated. Nevertheless, it should be noted that the study did not take into account dietary intakes through the consumption of food supplements, which might increase the intake of certain trace elements by part of the population.

The results are consistent with previous observations made by ANSES, and highlight the importance of pursuing efforts to reduce sodium intakes and improve the calcium, iron and selenium status in certain consumer groups (Table 16).

Table 15: Summary of results for intakes and exposure (mean, 5th and 95th percentiles) to inorganic contaminants and minerals for the French population, expressed in the unit of the reference value adopted

Element	Type of value adopted	Value (or unit)	Reference	Adults				Children				
				P5	Mean	P95	%>HBGV, UL, or MOE, or %<EAR, PRI	P5	Mean	P95	%>HBGV, UL, or MOE, or %<EAR, PRI	
Total Arsenic	No HBGV for total As	(µg/kg bw/d)	-		0.78	1.79			1.21	2.91		
Inorganic Arsenic	Reference point	0.3 to 8 µg/kg bw/d	(EFSA 2009d)		0.24-0.28	0.46-0.51	MOE=0.6 to 33		0.30-0.39	0.61-0.77		MOE=0.4 to 27
Lead	Reference doses	1.5 µg/kg bw/d	(EFSA 2010b)		0.2	0.35	MOE=4 to 8		0.27	0.57		-
		0.63 µg/kg bw/d	(EFSA 2010b)				MOE=2 to 3					-
		0.5 µg/kg bw/d	(EFSA 2010b)				-					MOE=0.9 to 2
Cadmium	TWI	2.5 µg/kg bw/week	(EFSA 2009a)		1.12	1.89	0.6 [0.3; 1]		1.68	3.15		14.9 [13; 17]
Aluminium	PTWI	1 mg/kg bw/week	(JECFA 2006b)		0.28	0.49	0.2 [0.02; 0.5]		0.44	0.83		1.6 [0.2; 2.2]
Organic mercury	PTWI	1.6 µg/kg bw/week	(JECFA 2004)		0.119	0.427	0.84 [0.4; 1.3]		0.154	0.679		1.11 [0.6; 1.7]
Inorganic mercury	PTWI	0.004 mg/kg bw/week (= 4 µg/kg bw/week)	(JECFA 2010)	LB	0.042	0.182	0		0.098	0.35		0
				UB	1.26	2.03	0		1.82	3.29		1.4 [0.8; 2.2]
Antimony	TDI	6 µg/kg bw/d	(WHO 2003)	LB	0.03	0.05	0		0.04	0.07		0
				UB	0.04	0.07	0		0.06	0.1		0
Silver	No HBGV	(µg/kg bw/d)	-	LB	1.29	2.82			1.6	3.6		
				UB	2.65	4.78			3.47	6.59		
Barium	RfD	0.2 mg/kg bw/d	(US EPA 2005)		0.0064	0.0105	0		0.0102	0.0189		0
Tin	No HBGV for total Sn	(µg/kg bw/d)	-		3.9	17			7.3	31.9		
Gallium	No HBGV	(µg/kg bw/d)	-	LB	0.001	0.007			0.002	0.007		
				UB	0.037	0.058			0.05	0.092		
Germanium	LOAEL	1 mg/kg bw/d (= 1,000 µg/kg bw/d)	(Tao and Bolger 1997)	LB	0.043	0.090	0		0.058	0.130		0
				UB	0.088	0.150	0		0.122	0.230		0
Strontium	RfD	0.6 mg/kg bw/d (= 600 µg/kg bw/d)	(US EPA 1996)		23.6	56.7	0		29.8	59.9		0

Element	Type of value adopted	Value (or unit)	Reference	Adults				Children			
				P5	Mean	P95	%>HBGV, UL, or MOE, or %<EAR, PRI	P5	Mean	P95	%>HBGV, UL, or MOE, or %<EAR, PRI
Tellurium	No HBGV	(µg/kg bw/d)	-	LB	0.02	0.05			0.04	0.09	
				UB	0.06	0.09			0.08	0.16	
Vanadium	No HBGV	(µg/kg bw/d)	-		0.86	1.47		1.06	2.1		
Nickel	TDI	22 µg/kg bw/d	(WHO 2005)		2.33	3.76	0	3.83	7.44	0	
Cobalt	TDI	1.6 to 8 µg/kg bw/d	(AFSSA 2010)		0.18	0.31	0	0.31	0.62	0	
Chromium	No HBGV for total Cr	(µg/d)	-	166	277	413		137	223	333	
				345	786	1419	50 [48; 52]	298	659	1,118	68 [66; 70]
Calcium	UL	2,500 mg/d	(Guéguen 2001) (SCF 2006)				0.05 [-0.05; 0.1]			0	
Manganese	UL	10 mg/d	(Arnaud 2001a)	1.07	2.16	3.55	0	1.46	2.56	0	
Magnesium	UL	6 mg/kg bw/d (mg/d)	(Rayssiguier, Boirie et al. 2001)	180	304	457	65 [63; 67]	136	227	342	53 [51; 56]
							0.05 [-0.06; 0.2]				
Copper	UL	0.8 to 2 mg/d	(Coudray 2001)	0.73	1.94	4.11	33 [31; 35]	0.5	0.93	1.73	73 [71; 76]
							2.6 [1.9; 3.3]				0.8 [0.4; 1.3]
Zinc	UL	3-19 mg/d	(Arnaud 2001b)	4.09	7.93	13.3	26 [24; 28]	3.5	6.43	10.7	48 [46; 51]
							0.08 [-0.05; 0.2]				0.5 [0.1; 0.8]
Lithium	No PRI nor UL	(µg/d)		14.9	48.2	93.6		9	19.8	38.6	
Sodium	Guidance values (max.)	2.362 g Na/d	(WHO 2007)	13	2.65	4.5	58 [55; 60]	1.08	2	3.41	25 [23; 28]
		3.149 g Na/d	(AFSSA 2008c)				26 [24; 28]				7 [5; 8]
Molybdenum	UL	600 µg/d	(SCF 2006)	49.1	93.9	155		40.3	74.7	130	
							0				0.08 [-0.07; 0.2]
Selenium	UL	20-70 µg/d	(Ducros 2001)	34.6	64.4	100.7	13 [12; 15]	23.8	41.5	66.2	18 [17; 20]
		90-300 µg/d	(SCF 2006)				0				0.08 [-0.07; 0.2]
Potassium	No PRI nor UL	(mg/day)	(Institute of Medicine 2001b)	1,635	2,854	4,333		1,303	2,186	3,278	
				4.03	7.71	12.6	13-67	3.4	6.57	11.1	26-74
Iron	UL	28 mg/d	(Coudray and Hercberg 2001)				0			0	

HBGV: health-based guidance value, UL: tolerable upper intake level, MOE: margin of exposure, EAR: estimated average requirement, PRI: population reference intake
* For each individual, depending on age and gender, the dietary intake was compared to the corresponding EAR (see section on Method)

Table 16: Summary of conclusions concerning the assessment of risks linked to exposure to minerals and inorganic contaminants

Substances	Main results		Corrective actions and/or research requirements
	Risk of excess intake	Risk of insufficient intake *	
Antimony, Barium, Nickel	Risk can be ruled out for the general population	-	-
Cobalt	Risk can be ruled out for the general population	-	Need to carry out studies on carcinogenicity and genotoxicity
Inorganic mercury	Theoretical risk that cannot be ruled out with certainty	-	Need to pursue efforts to reduce dietary intakes
Cadmium, Aluminium, Methylmercury, Inorganic Arsenic, Lead	Risk cannot be ruled out for certain consumer groups	-	Need to lower the analytical limits for mercury and lead, at least for the theoretical main contributors identified
Sodium	Risk cannot be ruled out for the general population	-	Need to put in place routine analytical methods for speciation in foodstuffs for arsenic and mercury Need to identify the origin of the differences in contamination increase for cadmium
Tin, Gallium, Germanium, Strontium, Silver, Tellurium, Vanadium	Impossible to draw conclusions regarding the risk linked to dietary intake	-	Need to carry out long-term toxicological studies based on oral intake
Chromium	Impossible to draw conclusions regarding the risk linked to dietary intake	Impossible to draw conclusions regarding coverage of requirements	Need to put in place routine analytical methods for speciation in foodstuffs for tin and chromium
Lithium, Manganese, Potassium, Molybdenum	Risk can be ruled out for the general population	Impossible to draw conclusions regarding coverage of requirements	Need for additional data to establish relevant requirement levels
Zinc	Risk cannot be ruled out for certain consumer groups	Risk cannot be ruled out for certain consumer groups	Need to relate this data to that concerning the nutritional status Need to reassess requirements for calcium, copper, iron and magnesium
Selenium	Risk can be ruled out for the general population		
Copper	Risk cannot be ruled out for the general population		
Calcium, Iron, Magnesium	Risk can be ruled out for the general population	Risk cannot be ruled out for certain consumer groups, although uncertainty remains concerning requirements	

* The absence of results concerning risk of insufficient intake (-) indicates that no requirement was clearly identified, and that only the risk of excess intake was studied (see data sheets)

Table A1: Estimated mean levels of inorganic contaminants and minerals in foods (mg/kg fresh weight)

Food group	Type	%DM	Ag (LB)	Ag (UB)	Al	As	Ba	Ca	Cd	Co	Cr	Cu	Fe	Ga (LB)	Ga (UB)	Ge (LB)	Ge (UB)	Hg (LB)	Hg (UB)
Bread and dried bread products	N	76	0.000	0.042	2.60	0.025	0.911	477	0.0193	0.0115	0.22	1.34	13.8	0.0000	0.0010	0.0008	0.0023	0.000	0.005
Breakfast cereals	N	30	0.000	0.042	0.70	0.009	2.847	1779	0.0033	0.0141	0.28	0.72	15.5	0.0000	0.0010	0.0019	0.0029	0.000	0.005
Pasta	N	33	0.032	0.074	2.87	0.007	0.529	168	0.0114	0.0016	0.23	2.19	7.6	0.0000	0.0010	0.0010	0.0021	0.000	0.005
Rice and wheat products	N	36	0.014	0.056	1.32	0.012	0.506	147	0.0083	0.0020	0.14	1.90	5.9	0.0000	0.0010	0.0005	0.0020	0.000	0.005
Croissant-like pastries	N	79	0.024	0.059	3.45	0.023	0.629	381	0.0137	0.0187	0.40	1.09	15.7	0.0002	0.0012	0.0010	0.0025	0.001	0.006
Sweet and savoury biscuits and bars	R	98	0.080	0.110	4.00	0.026	0.592	386	0.0299	0.0222	0.31	1.63	13.2	0.0000	0.0010	0.0019	0.0030	0.001	0.006
Pastries and cakes	N	71	0.075	0.108	5.43	0.019	0.455	453	0.0085	0.0164	0.32	1.09	15.5	0.0001	0.0011	0.0011	0.0025	0.001	0.006
Milk	R	11	0.025	0.065	0.57	0.012	0.095	1024	0.0011	0.0036	0.12	0.09	0.4	0.0000	0.0010	0.0005	0.0020	0.000	0.005
Ultra-fresh dairy products	R	17	0.025	0.063	0.72	0.012	0.090	1081	0.0018	0.0042	0.15	0.10	0.6	0.0000	0.0010	0.0005	0.0020	0.000	0.005
Cheese	R	44	0.055	0.092	0.63	0.028	0.410	5164	0.0024	0.0153	0.38	0.46	1.1	0.0004	0.0013	0.0010	0.0022	0.001	0.006
Eggs and egg products	R	27	0.044	0.079	0.77	0.014	0.342	490	0.0011	0.0057	0.22	0.73	18.1	0.0000	0.0010	0.0012	0.0025	0.000	0.005
Butter	N	65	0.021	0.063	2.06	0.019	0.170	185	0.0008	0.0455	0.64	0.19	0.8	0.0148	0.0156	0.0079	0.0089	0.001	0.006
Oils	N	100	0.017	0.059	0.69	0.014	0.111	21	0.0005	0.0014	1.00	0.04	0.2	0.0000	0.0010	0.0008	0.0023	0.000	0.005
Margarine	N	60	0.011	0.053	1.68	0.021	0.133	89	0.0010	0.0079	0.59	0.08	0.9	0.0003	0.0013	0.0018	0.0030	0.000	0.005
Meat	R	41	0.050	0.081	0.60	0.019	0.069	165	0.0012	0.0048	0.30	0.81	13.7	0.0000	0.0010	0.0024	0.0035	0.000	0.005
Poultry and game	R	41	0.049	0.083	0.72	0.016	0.047	116	0.0011	0.0049	0.27	1.38	14.2	0.0000	0.0010	0.0014	0.0027	0.000	0.005
Offal	R	33	0.443	0.451	0.47	0.019	0.035	108	0.0526	0.0906	0.24	112.72	60.8	0.0002	0.0011	0.0048	0.0052	0.000	0.005
Delicatessen meats	R	48	0.128	0.158	2.42	0.040	0.100	144	0.0094	0.0066	0.41	1.98	17.5	0.0000	0.0010	0.0046	0.0054	0.005	0.010
Fish	R	37	0.057	0.088	0.87	1.424	0.073	168	0.0073	0.0049	0.24	0.57	5.7	0.0000	0.0010	0.0023	0.0033	0.133	0.134
Crustaceans and molluscs	R	23	6.476	6.476	21.09	2.519	0.235	1666	0.1666	0.0398	0.26	5.58	25.7	0.0004	0.0014	0.0033	0.0040	0.014	0.016
Vegetables (excluding potatoes)	R	12	0.042	0.079	2.51	0.011	0.250	313	0.0122	0.0061	0.12	0.66	4.6	0.0000	0.0010	0.0006	0.0021	0.000	0.005
Potatoes and potato products	R	29	0.042	0.076	0.69	0.010	0.101	176	0.0215	0.0088	0.15	0.85	3.4	0.0000	0.0010	0.0012	0.0024	0.000	0.005
Pulses	R	30	0.058	0.088	4.60	0.014	1.202	407	0.0088	0.0219	0.13	2.50	15.7	0.0000	0.0010	0.0013	0.0027	0.000	0.005
Fruit	R	11	0.052	0.086	1.01	0.010	0.346	144	0.0021	0.0046	0.10	0.64	1.4	0.0000	0.0010	0.0016	0.0028	0.000	0.005
Dried fruits, nuts and seeds	N	82	0.023	0.055	4.67	0.020	1.727	535	0.0170	0.0297	0.27	6.64	14.7	0.0000	0.0010	0.0017	0.0028	0.000	0.005
Ice creams, sorbets and frozen desserts	N	50	0.172	0.193	4.90	0.029	0.621	839	0.0075	0.0357	0.36	1.68	45.5	0.0000	0.0010	0.0008	0.0023	0.000	0.005
Chocolate	N	98	0.064	0.094	15.59	0.049	2.003	1200	0.0286	0.1391	0.87	6.43	70.3	0.0010	0.0019	0.0046	0.0056	0.014	0.017
Sugars and sugar derivatives	N	84	0.083	0.120	1.63	0.015	0.301	119	0.0109	0.0068	0.21	0.27	2.8	0.0000	0.0010	0.0020	0.0031	0.000	0.005
Water	R	-	0.008	0.049	0.23	0.011	0.044	205	0.0005	0.0010	0.01	0.04	0.0	0.0000	0.0010	0.0026	0.0037	0.000	0.005
Non-alcoholic beverages	N	15	0.025	0.066	0.83	0.010	0.122	91	0.0017	0.0030	0.07	0.21	1.1	0.0000	0.0010	0.0015	0.0029	0.000	0.005
Alcoholic beverages	N	3	0.042	0.080	0.65	0.006	0.056	122	0.0009	0.0026	0.08	0.12	1.1	0.0000	0.0010	0.0003	0.0018	0.000	0.005
Coffee	R	-	0.033	0.069	0.54	0.009	0.107	233	0.0008	0.0126	0.05	1.87	0.6	0.0000	0.0010	0.0012	0.0023	0.000	0.005
Other hot beverages	R	9	0.022	0.061	4.10	0.010	0.240	739	0.0031	0.0191	0.12	0.88	5.6	0.0000	0.0010	0.0008	0.0022	0.001	0.006
Pizzas, quiches and savoury pastries	N	52	0.021	0.063	3.40	0.035	0.404	1188	0.0101	0.0065	0.30	0.69	7.5	0.0000	0.0010	0.0011	0.0026	0.000	0.005
Sandwiches and snacks	R	51	0.027	0.062	2.04	0.032	0.380	502	0.0101	0.0117	0.30	0.88	10.7	0.0000	0.0010	0.0015	0.0027	0.001	0.006
Soups and broths	R	8	0.022	0.062	0.68	0.010	0.136	140	0.0059	0.0032	0.06	0.43	1.7	0.0000	0.0010	0.0001	0.0016	0.000	0.005
Mixed dishes	R	32	0.066	0.097	2.71	0.048	0.503	437	0.0133	0.0108	0.24	1.09	9.7	0.0000	0.0010	0.0019	0.0031	0.000	0.005
Dairy-based desserts	R	29	0.021	0.060	3.02	0.023	0.333	887	0.0113	0.0224	0.27	0.97	12.9	0.0000	0.0010	0.0027	0.0038	0.001	0.006
Composites and cooked fruit	N	20	0.083	0.115	1.42	0.007	0.007	366	0.0059	0.0039	0.12	0.51	1.3	0.0001	0.0011	0.0004	0.0019	0.001	0.006
Seasonings and sauces	N	40	0.007	0.049	2.05	0.068	0.368	233	0.0169	0.0108	0.34	0.61	7.8	0.0000	0.0010	0.0010	0.0022	0.001	0.006
Misc. foods	N	25	0.000	0.042	5.61	0.016	0.824	802	0.0229	0.0158	0.22	2.32	29.0	0.0000	0.0010	0.0008	0.0023	0.000	0.005

Food group	Type	%DM	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb (LB)	Sb (UB)	Se	Sn	Sr	Te (LB)	Te (UB)	V	Zn
Bread and dried bread products	N	76	2389	0.0086	406	7.19	0.166	6696	0.097	0.017	0.0009	0.0011	0.029	0.013	0.92	0.0006	0.0015	0.073	7.24
Breakfast cereals	N	30	2260	0.0060	287	3.18	0.110	1104	0.182	0.005	0.0005	0.0009	0.025	0.005	0.84	0.0013	0.0018	0.008	4.55
Pasta	N	33	528	0.0420	273	2.71	0.087	1380	0.050	0.002	0.0015	0.0017	0.031	0.008	0.75	0.0005	0.0015	0.035	4.11
Rice and wheat products	N	36	958	0.0395	269	3.76	0.095	1140	0.038	0.002	0.0009	0.0011	0.025	0.003	0.62	0.0003	0.0013	0.050	4.50
Croissant-like pastries	N	79	1977	0.0063	290	3.64	0.101	5207	0.133	0.011	0.0018	0.0019	0.025	0.011	0.66	0.0005	0.0015	0.085	6.09
Sweet and savoury biscuits and bars	R	98	5039	0.0125	514	4.25	0.262	4686	0.228	0.010	0.0020	0.0021	0.025	0.014	1.96	0.0016	0.0022	0.040	6.16
Pastries and cakes	N	71	2139	0.0104	262	2.03	0.083	2632	0.190	0.009	0.0038	0.0038	0.026	0.035	0.83	0.0010	0.0019	0.023	4.70
Milk	R	11	1679	0.0031	120	0.03	0.046	433	0.036	0.006	0.0001	0.0006	0.025	0.011	0.29	0.0005	0.0013	0.014	3.73
Ultra-fresh dairy products	R	17	1741	0.0053	130	0.15	0.052	475	0.072	0.006	0.0003	0.0008	0.025	0.056	0.38	0.0003	0.0013	0.016	3.78
Cheese	R	44	1225	0.0040	283	0.18	0.073	6701	0.202	0.008	0.0009	0.0012	0.026	1.943	1.73	0.0047	0.0052	0.050	18.69
Eggs and egg products	R	27	1726	0.0116	161	0.36	0.080	1861	0.067	0.004	0.0001	0.0006	0.054	0.020	0.52	0.0005	0.0015	0.026	13.31
Butter	N	65	382	0.0087	32	0.04	0.040	3495	0.054	0.009	0.0010	0.0013	0.033	0.017	0.24	0.0234	0.0240	0.065	0.58
Oils	N	100	16	0.0005	4	0.04	0.009	12	0.039	0.003	0.0002	0.0007	0.025	0.014	0.02	0.0011	0.0017	0.007	0.45
Margarine	N	60	311	0.0022	12	0.02	0.020	1665	0.036	0.009	0.0018	0.0021	0.025	0.036	0.14	0.0008	0.0018	0.042	0.61
Meat	R	41	3946	0.0038	309	0.11	0.017	807	0.051	0.008	0.0012	0.0015	0.026	0.069	0.14	0.0012	0.0019	0.015	35.53
Poultry and game	R	41	4311	0.0024	410	0.20	0.039	1246	0.038	0.004	0.0004	0.0008	0.044	0.012	0.09	0.0009	0.0016	0.013	20.37
Offal	R	33	3743	0.0041	292	2.67	1.010	1181	0.064	0.020	0.0016	0.0018	0.329	0.018	0.07	0.0020	0.0025	0.030	64.01
Delicatessen meats	R	48	3891	0.0076	242	0.49	0.076	1122	0.101	0.014	0.0011	0.0014	0.040	0.035	0.30	0.0024	0.0029	0.079	22.12
Fish	R	37	3806	0.0092	397	0.33	0.020	3874	0.048	0.004	0.0010	0.0013	0.226	0.024	1.10	0.0007	0.0015	0.029	4.14
Crustaceans and molluscs	R	23	2312	0.0702	811	4.85	0.360	4900	0.151	0.113	0.0021	0.0022	0.254	0.019	10.35	0.0016	0.0024	0.224	61.91
Vegetables (excluding potatoes)	R	12	2516	0.0192	186	1.34	0.079	1200	0.093	0.008	0.0006	0.0010	0.025	0.460	1.55	0.0004	0.0013	0.022	2.34
Potatoes and potato products	R	29	3815	0.0163	234	1.03	0.052	1097	0.105	0.005	0.0004	0.0009	0.025	0.041	0.42	0.0003	0.0013	0.015	2.49
Pulses	R	30	2659	0.0653	481	4.69	0.905	1076	0.383	0.013	0.0022	0.0022	0.025	0.030	2.82	0.0019	0.0026	0.021	9.59
Fruit	R	11	2076	0.0095	134	0.86	0.047	16	0.112	0.005	0.0005	0.0010	0.025	0.006	0.79	0.0004	0.0013	0.020	0.90
Dried fruits, nuts and seeds	N	82	7355	0.0170	1069	11.87	0.548	2148	1.019	0.017	0.0004	0.0007	0.025	0.021	3.28	0.0003	0.0013	0.035	18.38
Ice creams, sorbets and frozen desserts	N	50	2920	0.0116	393	1.88	0.090	669	0.353	0.009	0.0018	0.0020	0.025	0.007	1.11	0.0005	0.0015	0.028	4.55
Chocolate	N	98	5667	0.0075	1143	8.87	0.165	837	1.352	0.023	0.0042	0.0042	0.025	0.014	3.17	0.0028	0.0031	0.079	11.96
Sugars and sugar derivatives	N	84	668	0.0048	83	1.19	0.072	176	0.104	0.008	0.0088	0.0089	0.025	0.666	0.39	0.0009	0.0019	0.022	0.82
Water	R	-	4	0.0685	58	0.01	0.003	29	0.017	0.002	0.0002	0.0007	0.025	0.001	2.02	0.0006	0.0015	0.028	0.08
Non-alcoholic beverages	N	15	877	0.0077	80	1.55	0.025	61	0.057	0.006	0.0006	0.0010	0.025	0.012	0.34	0.0003	0.0012	0.019	0.37
Alcoholic beverages	N	3	623	0.0133	69	0.41	0.016	27	0.042	0.009	0.0010	0.0013	0.025	0.007	0.15	0.0006	0.0015	0.066	0.37
Coffee	R	-	1244	0.0443	153	0.66	0.008	44	0.074	0.003	0.0010	0.0013	0.025	0.009	0.37	0.0004	0.0013	0.015	0.26
Other hot beverages	R	9	1648	0.0213	203	1.07	0.040	318	0.205	0.007	0.0011	0.0014	0.025	0.010	0.57	0.0010	0.0018	0.018	3.63
Pizzas, quiches and savoury pastries	N	52	2310	0.0102	237	1.62	0.093	6348	0.093	0.007	0.0012	0.0014	0.025	0.051	0.94	0.0000	0.0010	0.054	9.36
Sandwiches and snacks	R	51	2456	0.0113	297	2.82	0.094	5928	0.093	0.007	0.0007	0.0010	0.026	0.021	0.72	0.0004	0.0013	0.054	16.89
Soups and broths	R	8	1263	0.0229	96	0.58	0.037	2962	0.036	0.005	0.0006	0.0009	0.025	0.009	0.54	0.0002	0.0012	0.019	1.03
Mixed dishes	R	32	2678	0.0180	285	1.97	0.133	3838	0.134	0.008	0.0014	0.0016	0.025	0.119	1.41	0.0012	0.0020	0.043	13.58
Dairy-based desserts	R	29	1883	0.0072	259	1.58	0.061	660	0.266	0.006	0.0030	0.0031	0.025	0.533	0.72	0.0009	0.0017	0.029	3.49
Compotes and cooked fruit	N	20	1247	0.0032	71	1.21	0.043	15	0.064	0.012	0.0010	0.0012	0.028	8.549	0.42	0.0008	0.0016	0.010	0.51
Seasonings and sauces	N	40	3500	0.0167	313	1.49	0.072	21028	0.223	0.013	0.0006	0.0009	0.027	0.649	1.91	0.0008	0.0016	0.096	2.99
Misc. foods	N	25	1695	0.0373	1340	8.88	0.440	1390	0.351	0.020	0.0010	0.0013	0.025	0.017	2.72	0.0014	0.0019	0.038	16.60

Table A2: Estimated exposure (mean and P95) in the French adult population to inorganic contaminants ($\mu\text{g}/\text{kg bw}/\text{day}$)

Food group	As		Asi				Pb		Cd			Al					
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LH)*	P95 (LH)*	Contrib (LH)*	Contrib (HH)*	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)				
														Mean (HH)*	P95 (HH)*		
Bread and dried bread products	0.038	0.090	5	0.008	0.008	0.018	0.018	3	0.027	0.067	0.0350	0.0827	22	3.52	8.17	9	
Breakfast cereals	0.000	0.009	0	0.000	0.000	0.002	0.002	0	0.000	0.009	0	0.0003	0.0076	0	0.04	1.18	0
Pasta	0.006	0.018	1	0.001	0.001	0.004	0.004	0	0.001	0.004	1	0.0088	0.0280	6	2.00	6.36	5
Rice and wheat products	0.007	0.028	1	0.002	0.002	0.007	0.007	1	0.001	0.004	0	0.0026	0.0117	2	0.20	1.22	0
Croissant-like pastries	0.003	0.025	0	0.001	0.001	0.005	0.005	0	0.002	0.011	1	0.0020	0.0153	1	0.47	3.75	1
Sweet and savoury biscuits and bars	0.003	0.023	0	0.001	0.001	0.005	0.005	0	0.001	0.012	1	0.0030	0.0195	2	0.68	5.54	2
Pastries and cakes	0.007	0.026	1	0.001	0.001	0.005	0.005	1	0.002	0.010	1	0.0032	0.0121	2	1.62	7.55	4
Milk	0.016	0.095	2	0.007	0.014	0.043	0.085	3	0.007	0.062	4	0.0015	0.0092	1	0.65	4.50	2
Ultra-fresh dairy products	0.014	0.047	2	0.006	0.012	0.021	0.042	3	0.004	0.017	2	0.0020	0.0079	1	0.88	3.32	2
Cheese	0.007	0.024	1	0.003	0.007	0.011	0.021	1	0.003	0.008	1	0.0010	0.0029	1	0.14	0.46	0
Eggs and egg products	0.003	0.013	0	0.000	0.000	0.001	0.001	0	0.001	0.004	0	0.0002	0.0010	0	0.19	1.22	0
Butter	0.003	0.009	0	0.002	0.003	0.006	0.006	1	0.001	0.004	1	0.0001	0.0004	0	0.22	1.24	1
Oils	0.002	0.006	0	0.001	0.002	0.003	0.006	0	0.000	0.002	0	0.0001	0.0002	0	0.11	0.36	0
Margarine	0.001	0.009	0	0.001	0.001	0.005	0.009	0	0.001	0.006	0	0.0001	0.0006	0	0.08	0.73	0
Meat	0.015	0.040	2	0.000	0.001	0.001	0.004	0	0.006	0.023	3	0.0008	0.0023	0	0.38	1.16	1
Poultry and game	0.007	0.029	1	0.000	0.002	0.000	0.009	0	0.002	0.011	1	0.0004	0.0015	0	0.24	1.03	1
Offal	0.000	0.011	0	0.000	0.000	0.000	0.001	0	0.000	0.012	0	0.0010	0.0265	1	0.01	0.26	0
Delicatessen meats	0.014	0.038	2	0.001	0.002	0.002	0.006	0	0.005	0.015	2	0.0019	0.0069	1	0.74	2.66	2
Fish	0.238	1.255	30	0.002	0.002	0.009	0.009	1	0.001	0.004	0	0.0012	0.0077	1	0.23	1.38	1
Crustaceans and molluscs	0.131	1.262	17	0.002	0.002	0.024	0.024	1	0.005	0.061	3	0.0086	0.1286	5	1.09	10.45	3
Vegetables (excluding potatoes)	0.017	0.041	2	0.011	0.012	0.026	0.030	4	0.014	0.037	7	0.0161	0.0510	10	4.62	14.13	11
Potatoes and potato products	0.008	0.023	1	0.002	0.006	0.007	0.016	1	0.004	0.016	2	0.0186	0.0479	12	0.56	1.53	1
Pulses	0.001	0.015	0	0.001	0.001	0.010	0.011	0	0.001	0.028	1	0.0010	0.0139	1	0.54	7.38	1
Fruit	0.018	0.067	2	0.009	0.010	0.032	0.038	4	0.009	0.032	4	0.0037	0.0150	2	1.80	6.28	4
Dried fruits, nuts and seeds	0.001	0.010	0	0.000	0.000	0.001	0.001	0	0.001	0.009	0	0.0008	0.0112	1	0.17	2.22	0
Ice creams, sorbets and frozen desserts	0.003	0.028	0	0.001	0.003	0.013	0.025	1	0.001	0.009	1	0.0010	0.0088	1	0.54	4.80	1
Chocolate	0.005	0.042	1	0.001	0.001	0.008	0.012	0	0.002	0.013	1	0.0021	0.0159	1	1.18	9.02	3
Sugars and sugar derivatives	0.004	0.014	1	0.001	0.001	0.003	0.004	0	0.002	0.006	1	0.0052	0.0239	3	0.48	1.64	1
Water	0.066	0.231	8	0.066	0.066	0.231	0.231	27	0.022	0.062	11	0.0042	0.0122	3	1.99	5.69	5
Non-alcoholic beverages	0.012	0.067	1	0.012	0.012	0.067	0.067	5	0.009	0.044	4	0.0011	0.0073	1	0.80	4.57	2
Alcoholic beverages	0.015	0.069	2	0.015	0.015	0.069	0.069	6	0.028	0.133	14	0.0015	0.0067	1	1.64	7.58	4
Coffee	0.038	0.161	5	0.038	0.038	0.161	0.161	16	0.010	0.040	5	0.0027	0.0112	2	1.40	5.73	3
Other hot beverages	0.013	0.089	2	0.013	0.013	0.089	0.089	5	0.006	0.047	3	0.0013	0.0087	1	5.10	33.95	13
Pizzas, quiches and savoury pastries	0.010	0.061	1	0.002	0.002	0.012	0.012	1	0.002	0.011	1	0.0033	0.0213	2	1.29	8.81	3
Sandwiches and snacks	0.006	0.059	1	0.001	0.001	0.012	0.012	0	0.001	0.013	1	0.0018	0.0172	1	0.40	4.29	1
Soups and broths	0.012	0.094	2	0.008	0.009	0.060	0.068	3	0.007	0.047	3	0.0055	0.0309	3	1.16	8.43	3
Mixed dishes	0.026	0.254	3	0.013	0.013	0.127	0.127	5	0.005	0.024	2	0.0079	0.0430	5	1.52	7.58	4
Dairy-based desserts	0.006	0.055	1	0.003	0.006	0.025	0.049	1	0.002	0.012	1	0.0025	0.0196	2	1.12	7.86	3
Composites and cooked fruit	0.001	0.010	0	0.001	0.001	0.005	0.006	0	0.003	0.027	1	0.0011	0.0131	1	0.32	3.17	1
Seasonings and sauces	0.006	0.020	1	0.006	0.006	0.020	0.020	2	0.002	0.009	1	0.0019	0.0098	1	0.22	0.75	1
Misc. foods	0.000	0.026	0	0.000	0.000	0.026	0.026	0	0.000	0.032	0	0.0000	0.0363	0	0.01	8.88	0
TOTAL	0.784	1.794	100	0.242	0.278	0.456	0.509	100	0.201	0.348	100	0.1571	0.2652	100	40.34	69.73	100

* LH: low hypothesis; HH: high hypothesis.

Food group	Hg			Sb			Ag			Ba								
	Mean (LB)	P95 (UB)	Contrib (UB)	Mean (LB)	P95 (UB)	Contrib (UB)	Mean (LB)	P95 (UB)	Contrib (UB)	Mean (LB)	P95 (UB)	Contrib (UB)						
Bread and dried bread products	0.0000	0.0080	0.0000	0.0189	0.0000	0.0189	0.0036	0.0045	5	0.000	0.067	0.000	0.158	0	3	1.29	2.97	20
Breakfast cereals	0.0000	0.0003	0.0000	0.0063	0.0000	0.0063	0.0006	0.0012	0	0.000	0.002	0.000	0.053	0	0	0.22	8.05	3
Pasta	0.0000	0.0028	0.0000	0.0088	0.0000	0.0088	0.0036	0.0037	4	0.023	0.046	0.072	0.147	2	2	0.33	1.04	5
Rice and wheat products	0.0000	0.0018	0.0000	0.0077	0.0000	0.0077	0.0026	0.0026	2	0.007	0.023	0.030	0.096	1	1	0.07	0.43	1
Croissant-like pastries	0.0001	0.0009	0.0003	0.0063	0.0013	0.0022	0.0022	0.0022	1	0.006	0.010	0.055	0.079	0	0	0.09	0.68	1
Sweet and savoury biscuits and buns	0.0001	0.0008	0.0004	0.0056	0.0014	0.0026	0.0026	0.0027	1	0.012	0.015	0.097	0.117	1	1	0.08	0.66	1
Pastries and cakes	0.0002	0.0024	0.0012	0.0090	0.0012	0.0064	0.0064	0.0066	5	0.021	0.034	0.092	0.136	2	1	0.17	0.66	3
Milk	0.0006	0.0068	0.0094	0.0364	0.0000	0.0017	0.0047	0.0047	1	0.030	0.080	0.218	0.443	2	3	0.10	0.66	2
Ultra-fresh dairy products	0.0001	0.0060	0.0011	0.0189	0.0011	0.0020	0.0035	0.0035	2	0.033	0.077	0.164	0.258	3	3	0.10	0.35	2
Cheese	0.0002	0.0022	0.0010	0.0061	0.0010	0.0010	0.0013	0.0013	1	0.010	0.026	0.057	0.085	1	1	0.17	0.50	3
Eggs and egg products	0.0000	0.0011	0.0004	0.0042	0.0004	0.0002	0.0005	0.0005	0	0.007	0.015	0.041	0.061	1	1	0.08	0.29	1
Butter	0.0001	0.0009	0.0004	0.0028	0.0004	0.0003	0.0008	0.0009	1	0.003	0.010	0.012	0.031	0	0	0.02	0.08	0
Oils	0.0000	0.0007	0.0000	0.0023	0.0000	0.0001	0.0001	0.0004	0	0.003	0.010	0.012	0.029	0	0	0.02	0.07	0
Margarine	0.0000	0.0003	0.0000	0.0022	0.0000	0.0001	0.0009	0.0010	0	0.001	0.004	0.008	0.025	0	0	0.01	0.07	0
Meat	0.0000	0.0034	0.0000	0.0084	0.0000	0.0011	0.0031	0.0035	3	0.033	0.054	0.140	0.160	3	2	0.03	0.10	1
Poultry and game	0.0000	0.0020	0.0000	0.0078	0.0000	0.0004	0.0009	0.0014	1	0.033	0.045	0.205	0.223	3	2	0.02	0.11	0
Offal	0.0000	0.0001	0.0000	0.0025	0.0000	0.0000	0.0008	0.0008	0	0.009	0.009	0.367	0.367	1	0	0.00	0.02	0
Delicatessen meats	0.0008	0.0028	0.0073	0.0098	0.0000	0.0005	0.0014	0.0016	4	0.026	0.039	0.112	0.128	2	1	0.03	0.10	0
Fish	0.0158	0.0159	0.1035	0.1035	0.0000	0.0002	0.0012	0.0012	1	0.014	0.020	0.083	0.098	1	1	0.02	0.11	0
Crustaceans and molluscs	0.0007	0.0008	0.0065	0.0070	0.0000	0.0001	0.0009	0.0010	3	0.302	0.302	5.350	5.350	24	11	0.01	0.12	0
Vegetables (excluding potatoes)	0.0002	0.0083	0.0013	0.0197	0.0000	0.0016	0.0031	0.0039	4	0.065	0.122	0.228	0.318	5	5	0.50	1.29	8
Potatoes and potato products	0.0000	0.0042	0.0000	0.0110	0.0000	0.0007	0.0010	0.0020	0	0.036	0.064	0.142	0.178	3	2	0.08	0.22	1
Pulses	0.0000	0.0005	0.0010	0.0061	0.0000	0.0002	0.0028	0.0028	1	0.003	0.006	0.052	0.081	0	0	0.10	1.22	2
Fruit	0.0000	0.0100	0.0000	0.0314	0.0000	0.0024	0.0070	0.0088	5	0.102	0.170	0.401	0.576	8	6	0.46	1.78	7
Dried fruits, nuts and seeds	0.0000	0.0002	0.0000	0.0023	0.0000	0.0000	0.0001	0.0003	0	0.001	0.002	0.011	0.024	0	0	0.08	0.99	1
Ice creams, sorbets and frozen desserts	0.0000	0.0006	0.0000	0.0050	0.0000	0.0003	0.0019	0.0021	1	0.019	0.021	0.168	0.189	1	1	0.07	0.61	1
Chocolate	0.0010	0.0013	0.0088	0.0098	0.0000	0.0003	0.0026	0.0026	4	0.004	0.007	0.039	0.054	0	0	0.15	1.12	2
Sugars and sugar derivatives	0.0000	0.0014	0.0000	0.0048	0.0000	0.0031	0.0100	0.0101	11	0.014	0.025	0.047	0.087	1	1	0.09	0.35	1
Water	0.0010	0.0523	0.0070	0.1389	0.0000	0.0062	0.0054	0.0172	4	0.099	0.525	0.430	1.440	8	20	0.43	1.32	7
Non-alcoholic beverages	0.0000	0.0086	0.0000	0.0455	0.0000	0.0016	0.0063	0.0090	3	0.041	0.112	0.216	0.566	3	4	0.22	1.04	3
Alcoholic beverages	0.0000	0.0098	0.0000	0.0439	0.0000	0.0018	0.0043	0.0085	3	0.074	0.155	0.347	0.704	6	6	0.19	0.89	3
Coffee	0.0000	0.0163	0.0000	0.0602	0.0000	0.0036	0.0108	0.0128	10	0.089	0.200	0.581	0.784	7	8	0.22	0.91	3
Other hot beverages	0.0008	0.0109	0.0096	0.0714	0.0000	0.0038	0.0270	0.0270	13	0.039	0.120	0.367	0.806	3	5	0.13	0.90	2
Pizzas, quiches and savoury pastries	0.0000	0.0013	0.0000	0.0079	0.0000	0.0004	0.0027	0.0027	1	0.009	0.020	0.064	0.127	1	1	0.11	0.67	2
Sandwiches and snacks	0.0001	0.0011	0.0022	0.0105	0.0000	0.0002	0.0015	0.0018	0	0.006	0.013	0.071	0.127	0	0	0.07	0.64	1
Soups and broths	0.0000	0.0052	0.0000	0.0315	0.0000	0.0011	0.0064	0.0070	3	0.049	0.087	0.565	0.646	4	3	0.20	1.22	3
Mixed dishes	0.0004	0.0031	0.0038	0.0151	0.0000	0.0010	0.0050	0.0053	3	0.033	0.051	0.221	0.260	3	2	0.21	0.98	3
Dairy-based desserts	0.0004	0.0019	0.0045	0.0115	0.0000	0.0006	0.0047	0.0049	2	0.005	0.017	0.051	0.106	0	1	0.11	0.74	2
Compotes and cooked fruit	0.0002	0.0012	0.0027	0.0111	0.0000	0.0003	0.0021	0.0022	1	0.022	0.028	0.235	0.264	2	1	0.05	0.42	1
Seasonings and sauces	0.0001	0.0010	0.0000	0.0032	0.0000	0.0001	0.0003	0.0005	0	0.002	0.010	0.009	0.034	0	0	0.05	0.18	1
Misc. foods	0.0000	0.0000	0.0000	0.0079	0.0000	0.0000	0.0016	0.0020	0	0.000	0.000	0.000	0.067	0	0	0.00	1.30	0
TOTAL	0.0230	0.1990	0.0722	0.3383	0.0000	0.0404	0.0522	0.0671	100	1.285	2.645	2.824	4.779	100	100	6.40	10.54	100

Food group	Sn			Ga			Ge			Sr		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LB)	P95 (LB)	Contrib (LB)	Mean (UB)	P95 (UB)	Contrib (UB)	Mean (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	0.017	0.040	0	0.0000	0.0016	0	0.0000	0.0038	0	0.0012	0.0036	4
Breakfast cereals	0.000	0.006	0	0.0000	0.0001	0	0.0000	0.0013	0	0.0001	0.0002	0
Pasta	0.007	0.021	0	0.0000	0.0006	0	0.0000	0.0018	0	0.0011	0.0015	2
Rice and wheat products	0.002	0.009	0	0.0000	0.0004	0	0.0000	0.0015	0	0.0003	0.0008	1
Croissant-like pastries	0.002	0.021	0	0.0000	0.0002	2	0.0003	0.0013	0	0.0001	0.0004	0
Sweet and savoury biscuits and bars	0.002	0.011	0	0.0000	0.0001	0	0.0000	0.0008	0	0.0003	0.0004	1
Pastries and cakes	0.045	0.227	1	0.0000	0.0005	2	0.0002	0.0017	2	0.0002	0.0009	1
Milk	0.013	0.101	0	0.0000	0.0012	0	0.0000	0.0067	0	0.0006	0.0024	3
Ultra-fresh dairy products	0.080	0.389	2	0.0000	0.0012	0	0.0000	0.0037	0	0.0005	0.0023	3
Cheese	0.386	2.929	10	0.0001	0.0005	5	0.0006	0.0013	5	0.0004	0.0009	1
Eggs and egg products	0.004	0.019	0	0.0000	0.0002	0	0.0000	0.0008	0	0.0003	0.0005	1
Butter	0.002	0.008	0	0.0010	0.0012	73	0.0078	0.0080	0	0.0022	0.0023	5
Oils	0.002	0.006	0	0.0000	0.0001	0	0.0000	0.0005	0	0.0001	0.0004	0
Margarine	0.002	0.016	0	0.0000	0.0001	2	0.0002	0.0006	2	0.0001	0.0002	0
Meat	0.028	0.044	1	0.0000	0.0007	0	0.0000	0.0017	0	0.0018	0.0025	4
Poultry and game	0.005	0.018	0	0.0000	0.0004	1	0.0002	0.0016	1	0.0006	0.0011	1
Offal	0.000	0.011	0	0.0000	0.0000	0	0.0004	0.0006	0	0.0001	0.0001	0
Delicatessen meats	0.011	0.034	0	0.0000	0.0004	0	0.0000	0.0011	0	0.0013	0.0016	3
Fish	0.005	0.031	0	0.0000	0.0002	0	0.0000	0.0008	0	0.0004	0.0006	1
Crustaceans and molluscs	0.001	0.009	0	0.0000	0.0001	2	0.0007	0.0008	2	0.0002	0.0002	0
Vegetables (excluding potatoes)	0.473	2.722	12	0.0000	0.0016	3	0.0003	0.0038	4	0.0009	0.0032	2
Potatoes and potato products	0.025	0.132	1	0.0000	0.0008	0	0.0000	0.0022	0	0.0010	0.0020	2
Pulses	0.003	0.046	0	0.0000	0.0001	0	0.0000	0.0010	0	0.0001	0.0002	0
Fruit	0.771	6.943	20	0.0000	0.0020	1	0.0000	0.0063	5	0.0024	0.0049	6
Dried fruits, nuts and seeds	0.001	0.010	0	0.0000	0.0000	0	0.0000	0.0005	0	0.0001	0.0001	0
Ice creams, sorbets and frozen desserts	0.015	0.406	0	0.0000	0.0001	0	0.0000	0.0010	0	0.0001	0.0003	0
Chocolate	0.001	0.008	0	0.0001	0.0001	5	0.0008	0.0010	5	0.0004	0.0005	1
Sugars and sugar derivatives	0.362	1.779	9	0.0000	0.0003	0	0.0000	0.0010	0	0.0008	0.0011	2
Water	0.017	0.057	0	0.0000	0.0103	0	0.0000	0.0268	0	0.0139	0.0267	33
Non-alcoholic beverages	0.007	0.037	0	0.0000	0.0017	0	0.0000	0.0091	0	0.0017	0.0042	4
Alcoholic beverages	0.018	0.087	0	0.0000	0.0020	0	0.0000	0.0088	0	0.0001	0.0030	0
Coffee	0.031	0.161	1	0.0000	0.0033	0	0.0000	0.0120	0	0.0048	0.0083	11
Other hot beverages	0.006	0.045	0	0.0000	0.0020	0	0.0000	0.0135	0	0.0014	0.0041	3
Pizzas, quiches and savoury pastries	0.021	0.147	1	0.0000	0.0003	0	0.0000	0.0016	0	0.0004	0.0007	1
Sandwiches and snacks	0.003	0.041	0	0.0000	0.0002	0	0.0000	0.0018	0	0.0003	0.0005	1
Soups and broths	0.012	0.088	0	0.0000	0.0010	0	0.0000	0.0063	0	0.0003	0.0019	1
Mixed dishes	0.097	0.965	2	0.0000	0.0006	1	0.0001	0.0025	1	0.0011	0.0018	3
Dairy-based desserts	0.096	0.120	2	0.0000	0.0003	0	0.0000	0.0019	0	0.0005	0.0009	1
Composites and cooked fruit	1.270	20.329	33	0.0000	0.0002	3	0.0005	0.0022	3	0.0001	0.0004	0
Seasonings and sauces	0.059	0.445	2	0.0000	0.0002	0	0.0000	0.0006	0	0.0003	0.0005	1
Misc. foods	0.000	0.027	0	0.0000	0.0000	0	0.0000	0.0016	0	0.0000	0.0000	0
TOTAL	3.901	16.985	100	0.0014	0.0368	100	0.0074	0.0582	100	0.0425	0.0881	100
												56.65

Food group	Te				V				Ni				Co				
	Mean (LB)	P95 (LB)	P95 (UB)	Contrib (LB)	Contrib (UB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	0.0013	0.0029	0.0034	0.0069	5	0.074	0.176	9	0.09	0.22	4	0.02	0.04	9			
Breakfast cereals	0.0001	0.0001	0.0019	0.0025	0	0.000	0.008	0	0.01	0.30	0	0.00	0.02	0			
Pasta	0.0003	0.0008	0.0009	0.0026	1	0.010	0.038	1	0.04	0.13	2	0.00	0.00	1			
Rice and wheat products	0.0002	0.0005	0.0007	0.0023	1	0.007	0.050	1	0.02	0.07	1	0.00	0.00	1			
Croissant-like pastries	0.0001	0.0002	0.0005	0.0016	0	0.012	0.109	1	0.02	0.18	1	0.00	0.02	2			
Sweet and savoury biscuits and bars	0.0002	0.0003	0.0017	0.0020	1	0.005	0.040	1	0.04	0.36	2	0.00	0.03	2			
Pastries and cakes	0.0003	0.0007	0.0013	0.0027	1	0.007	0.029	1	0.05	0.22	2	0.00	0.02	2			
Milk	0.0007	0.0017	0.0053	0.0096	3	0.019	0.120	2	0.04	0.27	2	0.00	0.03	3			
Ultra-fresh dairy products	0.0004	0.0015	0.0021	0.0049	2	0.018	0.069	2	0.09	0.30	4	0.01	0.02	3			
Cheese	0.0015	0.0017	0.0043	0.0049	6	0.017	0.050	2	0.09	0.26	4	0.01	0.02	4			
Eggs and egg products	0.0002	0.0003	0.0015	0.0016	1	0.006	0.030	1	0.01	0.08	1	0.00	0.01	1			
Butter	0.0073	0.0074	0.0303	0.0305	30	0.007	0.032	1	0.01	0.04	0	0.00	0.02	2			
Oils	0.0002	0.0003	0.0006	0.0009	1	0.001	0.003	0	0.01	0.02	0	0.00	0.00	0			
Margarine	0.0001	0.0001	0.0004	0.0008	0	0.003	0.018	0	0.00	0.02	0	0.00	0.01	0			
Meat	0.0010	0.0014	0.0039	0.0042	4	0.011	0.032	1	0.03	0.10	1	0.01	0.02	3			
Poultry and game	0.0004	0.0007	0.0018	0.0027	2	0.005	0.023	1	0.02	0.07	1	0.00	0.01	1			
Offal	0.0000	0.0000	0.0012	0.0013	0	0.001	0.014	0	0.00	0.04	0	0.00	0.05	1			
Delicatessen meats	0.0009	0.0011	0.0037	0.0039	4	0.027	0.076	3	0.03	0.11	1	0.00	0.01	1			
Fish	0.0001	0.0003	0.0007	0.0012	0	0.005	0.028	1	0.01	0.06	0	0.00	0.01	1			
Crustaceans and molluscs	0.0001	0.0001	0.0009	0.0011	0	0.010	0.111	1	0.01	0.07	0	0.00	0.02	1			
Vegetables (excluding potatoes)	0.0007	0.0021	0.0027	0.0053	3	0.035	0.098	4	0.17	0.45	7	0.01	0.02	5			
Potatoes and potato products	0.0003	0.0011	0.0012	0.0029	1	0.012	0.035	1	0.10	0.30	4	0.01	0.02	4			
Pulses	0.0001	0.0002	0.0033	0.0038	1	0.002	0.026	0	0.03	0.40	1	0.00	0.02	1			
Fruit	0.0006	0.0025	0.0027	0.0079	2	0.034	0.129	4	0.20	0.81	8	0.01	0.03	4			
Dried fruits, nuts and seeds	0.0000	0.0001	0.0002	0.0006	0	0.001	0.017	0	0.05	0.62	2	0.00	0.02	1			
Ice creams, sorbets and frozen desserts	0.0001	0.0002	0.0005	0.0015	0	0.003	0.028	0	0.04	0.35	2	0.00	0.03	2			
Chocolate	0.0002	0.0002	0.0016	0.0018	1	0.006	0.048	1	0.10	0.79	5	0.01	0.08	6			
Sugars and sugar derivatives	0.0002	0.0005	0.0007	0.0017	1	0.008	0.029	1	0.03	0.11	1	0.00	0.01	1			
Water	0.0022	0.0121	0.0108	0.0339	9	0.173	0.565	20	0.19	0.51	8	0.01	0.02	5			
Non-alcoholic beverages	0.0007	0.0024	0.0041	0.0128	3	0.026	0.162	3	0.05	0.23	2	0.00	0.02	2			
Alcoholic beverages	0.0010	0.0029	0.0043	0.0132	4	0.131	0.600	15	0.20	0.97	8	0.01	0.05	6			
Coffee	0.0013	0.0044	0.0083	0.0173	5	0.055	0.255	6	0.15	0.72	6	0.02	0.08	11			
Other hot beverages	0.0002	0.0022	0.0020	0.0137	1	0.025	0.160	3	0.09	0.58	4	0.01	0.04	3			
Pizzas, quiches and savoury pastries	0.0000	0.0003	0.0000	0.0016	0	0.016	0.099	2	0.03	0.19	1	0.00	0.01	1			
Sandwiches and snacks	0.0001	0.0003	0.0009	0.0027	0	0.009	0.102	1	0.02	0.18	1	0.00	0.03	1			
Soups and broths	0.0003	0.0013	0.0029	0.0087	1	0.022	0.178	3	0.07	0.54	3	0.00	0.02	2			
Mixed dishes	0.0006	0.0010	0.0034	0.0047	2	0.027	0.131	3	0.07	0.41	3	0.01	0.03	3			
Dairy-based desserts	0.0003	0.0005	0.0022	0.0032	1	0.007	0.051	1	0.08	0.58	4	0.01	0.05	4			
Composites and cooked fruit	0.0001	0.0003	0.0014	0.0028	1	0.002	0.015	0	0.01	0.11	0	0.00	0.01	0			
Seasonings and sauces	0.0002	0.0003	0.0006	0.0010	1	0.020	0.071	2	0.03	0.11	1	0.00	0.00	1			
Misc. foods	0.0000	0.0000	0.0022	0.0030	0	0.000	0.061	0	0.00	0.56	0	0.00	0.03	0			
TOTAL	0.0243	0.0572	0.0509	0.0940	100	0.863	1.470	100	2.33	3.76	100	0.18	0.31	100			

Table A3: Estimated exposure (mean and P95) in the French child population to inorganic contaminants ($\mu\text{g}/\text{kg bw}/\text{day}$)

Food group	As		Pb				Cd		Asi				Pb		Cd		Al		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (HH)*	P95 (LH)*	Contrib (LH)*	Contrib (HH)*	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	
Bread and dried bread products	0.036	0.094	3	0.007	0.007	0.019	0.019	0.024	0.063	2	2	0.024	0.063	9	0.0327	0.0844	13	3.31	8.31
Breakfast cereals	0.005	0.024	0	0.001	0.001	0.005	0.005	0.001	0.006	0	0	0.001	0.006	0	0.0023	0.0109	1	0.32	1.64
Pasta	0.013	0.038	1	0.003	0.003	0.008	0.008	0.003	0.009	1	1	0.003	0.009	1	0.0202	0.0586	8	4.57	13.16
Rice and wheat products	0.013	0.050	1	0.003	0.003	0.013	0.013	0.005	0.006	1	1	0.005	0.006	1	0.0052	0.0206	2	0.44	2.33
Croissant-like pastries	0.012	0.051	1	0.002	0.002	0.010	0.010	0.002	0.023	1	1	0.002	0.023	2	0.0069	0.0303	3	1.58	7.36
Sweet and savoury biscuits and bars	0.013	0.056	1	0.003	0.003	0.011	0.011	0.007	0.029	1	1	0.007	0.029	2	0.0117	0.0464	5	3.20	14.77
Pastries and cakes	0.018	0.061	1	0.004	0.004	0.012	0.012	0.006	0.023	1	1	0.006	0.023	2	0.0083	0.0290	3	3.55	13.43
Milk	0.072	0.261	6	0.032	0.065	0.117	0.235	0.030	0.158	11	17	0.030	0.158	11	0.0067	0.0249	3	3.01	13.27
Ultra-fresh dairy products	0.031	0.107	3	0.014	0.028	0.048	0.096	0.011	0.041	5	7	0.011	0.041	4	0.0038	0.0138	2	2.00	8.01
Cheese	0.010	0.040	1	0.005	0.009	0.018	0.036	0.004	0.012	2	2	0.004	0.012	1	0.0014	0.0047	1	0.29	1.41
Eggs and egg products	0.004	0.023	0	0.000	0.000	0.001	0.002	0.001	0.006	0	0	0.001	0.006	0	0.0004	0.0020	0	0.29	2.00
Butter	0.004	0.017	0	0.003	0.004	0.011	0.017	0.002	0.007	1	1	0.002	0.007	1	0.0002	0.0007	0	0.39	2.56
Oils	0.003	0.013	0	0.002	0.003	0.007	0.013	0.001	0.003	0	0	0.001	0.003	0	0.0001	0.0004	0	0.17	0.70
Margarine	0.002	0.013	0	0.001	0.002	0.007	0.013	0.001	0.007	0	0	0.001	0.007	0	0.0001	0.0007	0	0.14	1.55
Meat	0.024	0.070	2	0.001	0.002	0.002	0.007	0.001	0.043	4	4	0.010	0.043	4	0.0013	0.0039	1	0.60	1.94
Poultry and game	0.010	0.041	1	0.000	0.003	0.000	0.012	0.003	0.014	0	1	0.003	0.014	1	0.0006	0.0021	0	0.33	1.32
Offal	0.000	0.019	0	0.000	0.000	0.001	0.002	0.000	0.020	0	0	0.000	0.020	0	0.0008	0.0040	0	0.01	0.33
Delicatessen meats	0.022	0.071	2	0.001	0.003	0.004	0.011	0.007	0.024	3	3	0.007	0.024	3	0.0025	0.0100	1	1.52	6.21
Fish	0.508	2.184	42	0.004	0.004	0.015	0.015	0.002	0.008	1	1	0.002	0.008	1	0.0024	0.0130	1	0.42	2.44
Crustaceans and molluscs	0.084	1.508	7	0.002	0.002	0.029	0.029	0.003	0.087	1	0	0.003	0.087	1	0.0040	0.0149	2	0.82	16.69
Vegetables (excluding potatoes)	0.020	0.061	2	0.013	0.015	0.039	0.044	0.007	0.033	4	4	0.017	0.033	6	0.0194	0.0690	8	5.25	20.31
Potatoes and potato products	0.015	0.041	1	0.005	0.011	0.012	0.029	0.002	0.022	2	3	0.007	0.022	3	0.0342	0.0901	14	1.08	3.03
Pulses	0.002	0.026	0	0.001	0.001	0.017	0.019	0.003	0.057	0	0	0.003	0.057	1	0.0017	0.0021	1	1.01	15.06
Fruit	0.019	0.072	2	0.009	0.011	0.034	0.041	0.009	0.034	3	3	0.009	0.034	3	0.0048	0.0222	2	1.76	6.85
Dried fruits, nuts and seeds	0.001	0.011	0	0.000	0.000	0.001	0.001	0.001	0.011	0	0	0.001	0.011	0	0.0006	0.0131	0	0.13	2.16
Ice creams, sorbets and frozen desserts	0.009	0.065	1	0.004	0.008	0.029	0.058	0.003	0.021	1	2	0.003	0.021	1	0.0030	0.0208	1	1.48	10.95
Chocolate	0.025	0.116	2	0.005	0.007	0.023	0.032	0.005	0.021	2	2	0.005	0.021	2	0.0057	0.0229	2	3.40	14.34
Sugars and sugar derivatives	0.004	0.018	0	0.001	0.001	0.004	0.005	0.002	0.009	0	0	0.002	0.009	1	0.0046	0.0305	2	0.51	2.14
Water	0.072	0.223	6	0.072	0.072	0.223	0.223	0.126	0.086	24	19	0.029	0.086	11	0.0052	0.0164	2	2.48	7.15
Non-alcoholic beverages	0.037	0.126	3	0.037	0.037	0.126	0.126	0.028	0.104	12	10	0.028	0.104	10	0.0033	0.0126	1	2.55	9.78
Alcoholic beverages	0.000	0.015	0	0.000	0.000	0.015	0.015	0.000	0.023	0	0	0.000	0.023	0	0.0000	0.0029	0	0.03	1.80
Coffee	0.001	0.077	0	0.001	0.001	0.077	0.077	0.000	0.025	0	0	0.000	0.025	0	0.0001	0.0051	0	0.05	4.10
Other hot beverages	0.007	0.048	1	0.007	0.007	0.048	0.048	0.004	0.022	2	2	0.004	0.022	1	0.0022	0.0149	1	2.46	15.13
Pizzas, quiches and savoury pastries	0.017	0.093	1	0.003	0.003	0.019	0.019	0.003	0.017	1	1	0.003	0.017	1	0.0058	0.0324	2	2.25	12.11
Sandwiches and snacks	0.009	0.069	1	0.002	0.002	0.014	0.014	0.002	0.017	1	0	0.002	0.017	1	0.0028	0.0200	1	0.60	4.45
Soups and broths	0.014	0.123	1	0.009	0.010	0.078	0.088	0.008	0.077	3	3	0.008	0.077	3	0.0068	0.0519	3	1.22	9.72
Mixed dishes	0.046	0.281	4	0.023	0.023	0.141	0.141	0.010	0.035	4	6	0.010	0.035	4	0.0164	0.0668	7	3.36	12.85
Dairy-based desserts	0.020	0.135	2	0.009	0.018	0.061	0.121	0.005	0.030	3	5	0.005	0.030	2	0.0061	0.0297	3	4.00	20.97
Composites and cooked fruit	0.004	0.024	0	0.002	0.002	0.012	0.014	0.001	0.055	3	3	0.004	0.055	3	0.0049	0.0439	2	1.12	8.23
Seasonings and sauces	0.009	0.030	1	0.009	0.009	0.030	0.030	0.004	0.015	1	1	0.004	0.015	1	0.0040	0.0209	2	0.55	2.51
Misc. foods	0.000	0.005	0	0.000	0.000	0.005	0.005	0.000	0.006	0	0	0.000	0.006	0	0.0000	0.0065	0	0.00	1.60
TOTAL	1.215	2.910	100	0.298	0.385	0.613	0.769	0.269	0.567	100	100	0.269	0.567	100	0.2426	0.4472	100	62.25	118.84

* LH: low hypothesis, HH: high hypothesis.

Food group	Hg			Sb			Ag			Ba												
	Mean (LB)	Mean (UB)	P95 (UB)	Contrib (LB)	Contrib (UB)	Contri (MB)	Mean (LB)	Mean (UB)	P95 (UB)	Contrib (LB)	Contrib (UB)	Contri (MB)	Mean (LB)	Mean (UB)	P95 (UB)	Contrib (LB)	Contrib (UB)	Contri (MB)				
Bread and dried bread products	0.0000	0.0076	0.0000	0.0198	0	3	0.0014	0.0018	0.0037	0.0047	4	3	0.0000	0.0064	0.0000	0.167	0	2	1.20	3.04	12	
Breakfast cereals	0.0000	0.0020	0.0000	0.0100	0	1	0.0003	0.0005	0.0018	0.0022	1	1	0.0000	0.0017	0.0000	0.084	0	0	0.30	2.31	3	
Pasta	0.0000	0.0063	0.0000	0.0179	0	2	0.0026	0.0026	0.0075	0.0075	7	5	0.052	0.105	0.150	0.300	3	3	0.74	2.12	7	
Rice and wheat products	0.0000	0.0035	0.0000	0.0146	0	1	0.0011	0.0012	0.0047	0.0047	3	2	0.014	0.043	0.053	0.175	1	1	0.16	0.80	2	
Croissant-like pastries	0.0004	0.0029	0.0024	0.0131	1	1	0.0010	0.0011	0.0050	0.0050	3	2	0.021	0.036	0.034	0.181	1	1	0.31	1.37	3	
Sweet and savoury biscuits and bars	0.0006	0.0055	0.0032	0.0194	2	2	0.0039	0.0039	0.0158	0.0162	11	7	0.047	0.081	0.207	0.290	3	2	0.39	1.63	4	
Pastries and cakes	0.0033	0.0316	0.0327	0.1130	9	11	0.0008	0.0037	0.0041	0.0123	2	7	0.139	0.365	0.573	1.223	9	11	0.44	1.68	4	
Milk	0.0003	0.0133	0.0022	0.0417	1	5	0.0010	0.0022	0.0039	0.0073	3	4	0.080	0.175	0.379	0.580	5	5	0.22	0.77	2	
Ultra-fresh dairy products	0.0001	0.0027	0.0009	0.0091	0	1	0.0005	0.0006	0.0020	0.0023	1	1	0.040	0.057	0.246	0.277	2	2	0.21	0.69	2	
Cheese	0.0000	0.0016	0.0007	0.0080	0	1	0.0000	0.0002	0.0003	0.0009	0	0	0.012	0.022	0.088	0.108	1	1	0.11	0.54	1	
Eggs and egg products	0.0001	0.0014	0.0005	0.0043	0	0	0.0004	0.0004	0.0012	0.0014	1	1	0.005	0.016	0.018	0.052	0	0	0.04	0.12	0	
Butter	0.0000	0.0011	0.0000	0.0046	0	0	0.0001	0.0002	0.0003	0.0007	0	0	0.005	0.014	0.021	0.059	0	0	0.03	0.13	0	
Oils	0.0000	0.0004	0.0000	0.0033	0	0	0.0001	0.0002	0.0011	0.0013	0	0	0.001	0.004	0.009	0.033	0	0	0.01	0.08	0	
Margarine	0.0000	0.0054	0.0000	0.0143	0	2	0.0014	0.0018	0.0052	0.0057	4	3	0.050	0.085	0.208	0.247	3	2	0.05	0.16	1	
Meat	0.0000	0.0028	0.0000	0.0095	0	1	0.0003	0.0005	0.0014	0.0020	1	1	0.039	0.056	0.225	0.245	2	2	0.04	0.16	0	
Poultry and game	0.0000	0.0001	0.0000	0.0036	0	0	0.0000	0.0000	0.0016	0.0016	0	0	0.008	0.008	0.852	0.852	0	0	0.00	0.03	0	
Offal	0.0021	0.0053	0.0159	0.0203	6	2	0.0006	0.0008	0.0023	0.0028	2	1	0.036	0.057	0.146	0.202	2	2	0.06	0.20	1	
Delicatessen meats	0.0218	0.0222	0.1215	0.1215	60	8	0.0005	0.0005	0.0026	0.0026	1	1	0.024	0.037	0.147	0.177	2	2	1	0.05	0.25	0
Fish	0.0005	0.0006	0.0091	0.0103	2	0	0.0001	0.0001	0.0013	0.0014	0	0	0.116	0.117	1.748	1.748	7	3	0.01	0.20	0	
Crustaceans and molluscs	0.0003	0.0103	0.0019	0.0276	1	4	0.0013	0.0021	0.0044	0.0060	3	4	0.089	0.158	0.354	0.465	6	5	0.65	2.13	6	
Vegetables (excluding potatoes)	0.0000	0.0078	0.0000	0.0199	0	3	0.0007	0.0014	0.0019	0.0036	2	3	0.065	0.119	0.232	0.312	4	3	0.16	0.43	2	
Potatoes and potato products	0.0000	0.0008	0.0014	0.0103	0	0	0.0003	0.0003	0.0049	0.0049	1	1	0.005	0.011	0.083	0.139	0	0	0.18	2.19	2	
Pulses	0.0000	0.0105	0.0000	0.0348	0	4	0.0015	0.0025	0.0089	0.0103	4	5	0.114	0.186	0.474	0.655	7	5	0.51	1.91	5	
Fruit	0.0000	0.0001	0.0000	0.0025	0	0	0.0000	0.0000	0.0002	0.0004	0	0	0.000	0.001	0.013	0.024	0	0	0.06	1.14	1	
Dried fruits, nuts and seeds	0.0000	0.0016	0.0000	0.0113	0	1	0.0006	0.0007	0.0044	0.0050	2	1	0.051	0.058	0.383	0.430	3	2	0.19	1.41	2	
Ice creams, sorbets and frozen desserts	0.0026	0.0037	0.0125	0.0166	7	1	0.0013	0.0013	0.0053	0.0053	4	2	0.011	0.024	0.055	0.100	1	1	0.53	2.24	5	
Chocolate	0.0000	0.0014	0.0000	0.0058	0	1	0.0030	0.0030	0.0113	0.0113	8	5	0.025	0.035	0.115	0.156	2	1	0.09	0.45	1	
Sugars and sugar derivatives	0.0004	0.0662	0.0000	0.1571	1	24	0.0011	0.0077	0.0056	0.0194	3	14	0.134	0.679	0.529	1.674	8	20	0.57	1.65	6	
Water	0.0000	0.0241	0.0000	0.0743	0	9	0.0023	0.0042	0.0081	0.0139	6	8	0.110	0.311	0.353	1.015	7	9	0.67	2.23	7	
Non-alcoholic beverages	0.0000	0.0002	0.0000	0.0150	0	0	0.0000	0.0000	0.0023	0.0037	0	0	0.001	0.003	0.132	0.213	0	0	0.00	0.17	0	
Alcoholic beverages	0.0000	0.0005	0.0000	0.0292	0	0	0.0001	0.0001	0.0055	0.0069	0	0	0.004	0.007	0.296	0.398	0	0	0.01	0.34	0	
Coffee	0.0004	0.0039	0.0025	0.0297	1	1	0.0007	0.0009	0.0063	0.0074	2	2	0.016	0.042	0.138	0.316	1	1	0.17	1.17	2	
Other hot beverages	0.0000	0.0023	0.0000	0.0120	0	1	0.0002	0.0008	0.0040	0.0042	2	1	0.016	0.035	0.087	0.194	1	1	0.19	1.04	2	
Pizzas, quiches and savoury pastries	0.0002	0.0015	0.0027	0.0111	0	1	0.0002	0.0003	0.0016	0.0019	1	1	0.007	0.017	0.068	0.135	0	0	0.10	0.72	1	
Sandwiches and snacks	0.0000	0.0058	0.0000	0.0418	0	2	0.0009	0.0012	0.0086	0.0098	3	2	0.058	0.099	0.743	0.884	4	3	0.23	2.02	2	
Soups and broths	0.0004	0.0063	0.0034	0.0238	1	2	0.0019	0.0021	0.0080	0.0086	5	4	0.082	0.119	0.349	0.439	5	3	0.46	1.65	4	
Mixed dishes	0.0013	0.0057	0.0105	0.0298	4	2	0.0014	0.0016	0.0078	0.0082	4	3	0.010	0.049	0.075	0.257	1	1	0.36	1.83	4	
Dairy-based desserts	0.0005	0.0037	0.0045	0.0258	1	1	0.0007	0.0008	0.0056	0.0057	2	1	0.055	0.076	0.433	0.523	3	2	0.16	1.16	2	
Composites and cooked fruit	0.0002	0.0015	0.0010	0.0050	0	1	0.0001	0.0002	0.0005	0.0008	0	0	0.003	0.015	0.014	0.052	0	0	0.08	0.29	1	
Seasonings and sauces	0.0000	0.0000	0.0000	0.0014	0	0	0.0000	0.0000	0.0003	0.0004	0	0	0.000	0.000	0.000	0.012	0	0	0.00	0.24	0	
Misc. foods	0.0365	0.2774	0.1259	0.5257	100	100	0.0367	0.0550	0.0710	0.1002	100	100	1.595	3.467	3.602	6.586	100	100	10.16	18.95	100	
TOTAL																						

Food group	Sn			Ga			Ge			Sr					
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LB)	P95 (LB)	Contrib (LB)	Mean (UB)	P95 (UB)	Contrib (UB)	Mean (MB)	P95 (MB)	Contrib (MB)			
Bread and dried bread products	0.020	0.055	0	0.0000	0.0015	0.0000	0.0040	0.0030	0.0089	0.0011	0.0034	3	1.07	2.68	4
Breakfast cereals	0.002	0.011	0	0.0000	0.0004	0.0000	0.0020	0.0040	0.0056	0.0008	0.0011	1	0.26	1.41	1
Pasta	0.015	0.044	0	0.0000	0.0013	0.0000	0.0036	0.0073	0.0100	0.0035	0.0035	4	1.02	2.90	3
Rice and wheat products	0.004	0.016	0	0.0000	0.0007	0.0000	0.0029	0.0019	0.0063	0.0005	0.0016	1	0.32	1.28	1
Croissant-like pastries	0.009	0.052	0	0.0001	0.0006	0.0005	0.0026	0.0021	0.0055	0.0005	0.0013	1	0.32	1.41	1
Sweet and savoury biscuits and bars	0.006	0.026	0	0.0000	0.0005	0.0000	0.0020	0.0002	0.0075	0.0014	0.0017	2	0.65	2.53	2
Pastries and cakes	0.057	0.328	1	0.0001	0.0011	0.0005	0.0039	0.0005	0.0080	0.0008	0.0023	1	0.64	2.39	2
Milk	0.053	0.249	1	0.0000	0.0056	0.0000	0.0192	0.0174	0.0378	0.0027	0.0108	5	1.74	5.80	6
Ultra-fresh dairy products	0.128	0.623	2	0.0000	0.0036	0.0000	0.0083	0.0055	0.0154	0.0011	0.0049	2	1.05	3.30	4
Cheese	0.152	0.807	2	0.0000	0.0005	0.0002	0.0018	0.0018	0.0034	0.0004	0.0011	1	0.87	2.84	3
Eggs and egg products	0.006	0.037	0	0.0000	0.0003	0.0000	0.0016	0.0023	0.0040	0.0004	0.0008	1	0.17	0.87	1
Butter	0.003	0.011	0	0.0011	0.0014	0.0079	0.0082	0.0140	0.0146	0.0036	0.0038	6	0.04	0.17	0
Oils	0.002	0.010	0	0.0000	0.0002	0.0000	0.0009	0.0008	0.0021	0.0002	0.0005	0	0.00	0.01	0
Margarine	0.003	0.023	0	0.0000	0.0001	0.0002	0.0008	0.0002	0.0019	0.0002	0.0002	0	0.01	0.09	0
Meat	0.041	0.076	1	0.0000	0.0011	0.0000	0.0029	0.0109	0.0127	0.0031	0.0042	5	0.10	0.32	0
Poultry and game	0.006	0.026	0	0.0000	0.0006	0.0002	0.0020	0.0048	0.0067	0.0009	0.0016	2	1.04	0.20	0
Offal	0.000	0.021	0	0.0000	0.0000	0.0004	0.0007	0.0055	0.0055	0.0001	0.0001	0	0.00	0.05	0
Delicatessen meats	0.018	0.058	0	0.0000	0.0007	0.0000	0.0021	0.0074	0.0089	0.0021	0.0027	4	0.17	0.57	1
Fish	0.009	0.050	0	0.0000	0.0004	0.0000	0.0016	0.0038	0.0050	0.0008	0.0012	1	0.45	1.85	2
Crustaceans and molluscs	0.001	0.010	0	0.0000	0.0001	0.0011	0.0013	0.0019	0.0023	0.0001	0.0001	0	0.48	9.68	2
Vegetables (excluding potatoes)	0.609	3.703	8	0.0000	0.0020	0.0001	0.0055	0.0040	0.0109	0.0012	0.0040	2	2.64	7.40	9
Potatoes and potato products	0.048	0.210	1	0.0000	0.0016	0.0000	0.0040	0.0060	0.0097	0.0019	0.0038	3	0.67	1.82	2
Pulses	0.005	0.069	0	0.0000	0.0002	0.0000	0.0018	0.0026	0.0049	0.0002	0.0004	0	0.39	4.22	1
Fruit	1.202	11.159	17	0.0000	0.0021	0.0000	0.0070	0.0067	0.0167	0.0033	0.0051	4	1.10	4.19	4
Dried fruits, nuts and seeds	0.001	0.010	0	0.0000	0.0000	0.0000	0.0005	0.0008	0.0012	0.0000	0.0001	0	0.10	1.84	0
Ice creams, sorbets and frozen desserts	0.058	0.865	1	0.0000	0.0003	0.0000	0.0023	0.0019	0.0052	0.0003	0.0007	0	0.34	2.49	1
Chocolate	0.003	0.014	0	0.0000	0.0004	0.0005	0.0015	0.0077	0.0081	0.0017	0.0019	3	0.85	3.55	3
Sugars and sugar derivatives	0.307	2.283	4	0.0000	0.0003	0.0000	0.0012	0.0031	0.0040	0.0007	0.0010	1	0.12	0.59	0
Water	0.023	0.077	0	0.0000	0.0132	0.0000	0.0310	0.0579	0.0844	0.0151	0.0317	26	7.53	28.56	25
Non-alcoholic beverages	0.022	0.089	0	0.0000	0.0048	0.0000	0.0149	0.0211	0.0389	0.0055	0.0125	9	2.12	6.59	7
Alcoholic beverages	0.000	0.015	0	0.0000	0.0000	0.0000	0.0030	0.0007	0.0045	0.0000	0.0001	0	0.00	0.25	0
Coffee	0.001	0.065	0	0.0000	0.0001	0.0000	0.0058	0.0101	0.0167	0.0002	0.0003	0	0.02	1.28	0
Other hot beverages	0.007	0.046	0	0.0000	0.0007	0.0000	0.0058	0.0048	0.0118	0.0005	0.0015	1	0.40	2.73	1
Pizzas, quiches and savoury pastries	0.037	0.202	1	0.0000	0.0005	0.0000	0.0024	0.0035	0.0069	0.0006	0.0013	1	0.50	2.74	2
Sandwiches and snacks	0.005	0.053	0	0.0000	0.0003	0.0000	0.0019	0.0040	0.0053	0.0004	0.0008	1	0.19	1.47	1
Soups and broths	0.015	0.146	0	0.0000	0.0012	0.0000	0.0084	0.0057	0.0151	0.0004	0.0021	1	0.80	6.01	3
Mixed dishes	0.198	1.194	3	0.0000	0.0012	0.0002	0.0041	0.0092	0.0133	0.0021	0.0036	4	1.32	5.65	4
Dairy-based desserts	0.125	0.075	2	0.0000	0.0009	0.0000	0.0047	0.0124	0.0159	0.0016	0.0027	3	0.68	3.61	2
Composites and cooked fruit	3.935	34.958	54	0.0001	0.0007	0.0009	0.0052	0.0016	0.0079	0.0002	0.0012	0	0.30	2.29	1
Seasonings and sauces	0.132	0.937	2	0.0000	0.0003	0.0000	0.0010	0.0015	0.0024	0.0003	0.0006	1	0.31	1.15	1
Misc. foods	0.000	0.005	0	0.0000	0.0000	0.0000	0.0003	0.0002	0.0006	0.0000	0.0000	0	0.00	0.78	0
TOTAL	7.268	31.928	100	0.0016	0.0503	0.0071	0.0920	0.1344	0.2324	0.0583	0.1218	100	29.80	59.94	100

Food group	Te			V			Ni			Co		
	Mean (LB)	Mean (UB)	P95 (LB)	P95 (UB)	Contrib (LB)	Contrib (UB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	0.0013	0.0029	0.0035	0.0075	3	3	0.069	0.176	6	0.09	0.23	2
Breakfast cereals	0.0006	0.0008	0.0028	0.0038	1	1	0.004	0.018	0	0.07	0.36	2
Pasta	0.0006	0.0019	0.0018	0.0054	2	2	0.023	0.068	2	0.09	0.26	2
Rice and wheat products	0.0003	0.0010	0.0013	0.0042	1	1	0.016	0.090	2	0.03	0.13	1
Croissant-like pastries	0.0003	0.0008	0.0011	0.0034	1	1	0.041	0.203	4	0.07	0.33	1
Sweet and savoury biscuits and bars	0.0010	0.0012	0.0043	0.0051	3	1	0.022	0.090	2	0.20	0.85	5
Pastries and cakes	0.0009	0.0018	0.0035	0.0064	2	2	0.021	0.078	2	0.16	0.64	4
Milk	0.0029	0.0077	0.0138	0.0276	7	9	0.086	0.349	8	0.20	0.73	5
Ultra-fresh dairy products	0.0010	0.0033	0.0051	0.0109	3	4	0.040	0.142	4	0.18	0.65	5
Cheese	0.0028	0.0030	0.0119	0.0125	7	4	0.021	0.072	2	0.12	0.39	3
Eggs and egg products	0.0002	0.0005	0.0021	0.0030	1	1	0.009	0.050	1	0.02	0.13	0
Butter	0.0120	0.0122	0.0486	0.0489	31	15	0.012	0.062	1	0.02	0.06	0
Oils	0.0003	0.0004	0.0013	0.0018	1	1	0.002	0.007	0	0.01	0.04	0
Margarine	0.0001	0.0001	0.0005	0.0011	0	0	0.003	0.028	0	0.00	0.02	0
Meat	0.0017	0.0024	0.0061	0.0069	4	3	0.017	0.052	2	0.05	0.16	1
Poultry and game	0.0005	0.0009	0.0025	0.0036	1	1	0.008	0.032	1	0.02	0.10	1
Offal	0.0000	0.0000	0.0028	0.0028	0	0	0.000	0.022	0	0.00	0.05	0
Delicatessen meats	0.0013	0.0017	0.0047	0.0054	3	2	0.042	0.122	4	0.06	0.21	2
Fish	0.0002	0.0005	0.0012	0.0022	1	1	0.012	0.055	1	0.03	0.14	1
Crustaceans and molluscs	0.0001	0.0001	0.0014	0.0016	0	0	0.007	0.161	1	0.00	0.10	0
Vegetables (excluding potatoes)	0.0008	0.0026	0.0036	0.0076	2	3	0.044	0.143	4	0.21	0.63	6
Potatoes and potato products	0.0005	0.0019	0.0023	0.0051	1	2	0.024	0.068	2	0.18	0.52	5
Pulses	0.0003	0.0004	0.0054	0.0059	1	0	0.004	0.049	0	0.06	0.69	1
Fruit	0.0005	0.0025	0.0027	0.0081	1	3	0.033	0.131	3	0.20	0.85	5
Dried fruits, nuts and seeds	0.0000	0.0000	0.0002	0.0007	0	0	0.001	0.017	0	0.04	0.73	1
Ice creams, sorbets and frozen desserts	0.0002	0.0005	0.0011	0.0034	0	1	0.009	0.063	1	0.11	0.79	3
Chocolate	0.0009	0.0010	0.0040	0.0042	2	1	0.020	0.084	2	0.38	1.61	10
Sugars and sugar derivatives	0.0002	0.0005	0.0010	0.0021	1	1	0.008	0.034	1	0.03	0.16	1
Water	0.0016	0.0146	0.0082	0.0364	4	18	0.195	0.558	18	0.25	0.65	7
Non-alcoholic beverages	0.0018	0.0065	0.0061	0.0205	5	8	0.074	0.251	7	0.13	0.41	3
Alcoholic beverages	0.0000	0.0001	0.0017	0.0044	0	0	0.003	0.217	0	0.00	0.17	0
Coffee	0.0000	0.0001	0.0032	0.0065	0	0	0.002	0.113	0	0.00	0.29	0
Other hot beverages	0.0006	0.0012	0.0045	0.0083	2	1	0.012	0.096	1	0.15	1.01	4
Pizzas, quiches and savoury pastries	0.0000	0.0005	0.0000	0.0024	0	0	0.028	0.150	3	0.05	0.29	1
Sandwiches and snacks	0.0001	0.0004	0.0011	0.0028	0	0	0.014	0.113	1	0.02	0.18	1
Soups and broths	0.0003	0.0015	0.0037	0.0102	1	2	0.026	0.234	2	0.07	0.67	2
Mixed dishes	0.0015	0.0025	0.0064	0.0092	4	3	0.055	0.199	5	0.14	0.60	4
Dairy-based desserts	0.0009	0.0017	0.0051	0.0086	2	2	0.019	0.115	2	0.28	1.41	7
Composites and cooked fruit	0.0004	0.0010	0.0028	0.0067	1	1	0.006	0.036	1	0.04	0.27	1
Seasonings and sauces	0.0002	0.0004	0.0009	0.0015	1	1	0.032	0.121	3	0.05	0.22	1
Misc. foods	0.0000	0.0000	0.0004	0.0005	0	0	0.000	0.011	0	0.00	0.10	0
TOTAL	0.0391	0.0832	0.0878	0.1646	100	100	1.062	2.100	100	3.83	7.44	100

Table A4: Estimated intake (mean, P5 and P95) of inorganic contaminants and minerals (µg/day) by the French adult population

Food group	Cr			Ca			Mn			Mg						
	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)				
Bread and dried bread products	22.31	3.35	54.08	8	29209	3913	71683	4	623	92	1464	29	34020	5276	80363	11
Breakfast cereals	0.94	1.02	24.75	0	3781	4429	90150	0	13	6	349	1	1057	930	27900	0
Pasta	12.16	2.38	38.06	4	6245	1650	18936	1	114	30	347	5	10278	2720	31100	3
Rice and wheat products	6.37	0.87	26.06	4	2525	619	11134	0	60	15	263	3	4128	936	19100	1
Croissant-like pastries	4.13	2.14	29.91	1	3618	1498	26361	0	36	17	242	2	2852	1197	20240	1
Sweet and savoury biscuits and bars	2.92	0.42	19.95	1	2852	356	19899	0	35	4	256	2	4063	425	30561	1
Pastries and cakes	9.99	2.04	37.49	4	11269	2237	45847	1	54	14	206	3	6150	1604	23507	2
Milk	9.92	1.04	52.35	4	87721	10425	456571	11	2	0	13	0	10020	1195	50979	3
Ultra-fresh dairy products	10.73	1.41	34.94	4	92242	4561	291250	12	15	0	55	1	10968	568	33904	4
Cheese	11.17	1.76	32.40	4	149933	22886	448560	19	5	1	15	0	8221	1294	23800	3
Eggs and egg products	3.20	1.25	12.75	1	7543	2681	28754	1	6	2	23	0	2446	966	9725	1
Butter	7.62	1.09	24.96	3	1966	254	6517	0	0	0	1	0	287	31	988	0
Oils	10.79	1.55	32.86	4	113	9	437	0	0	0	0	0	15	2	45	0
Margarine	2.73	0.83	18.71	1	499	84	4179	0	0	0	1	0	72	8	625	0
Meat	13.25	3.15	34.92	5	5671	898	17644	1	5	1	14	0	13827	3406	36428	5
Poultry and game	6.87	1.89	26.19	2	4411	642	20948	1	4	1	18	0	11001	3341	44080	4
Offal	0.34	1.18	7.38	0	151	322	8801	0	4	13	104	0	401	1586	10827	0
Delicatessen meats	9.03	1.49	25.97	3	3650	373	12709	0	11	1	39	1	7088	1279	20355	2
Fish	3.10	0.77	14.16	1	2443	224	10389	0	6	0	40	0	4560	1277	21265	2
Crustaceans and molluscs	0.89	0.49	7.85	0	4053	1557	41025	1	18	2	310	1	2655	1339	26632	1
Vegetables (excluding potatoes)	12.55	1.92	30.95	5	36095	5736	89553	5	170	30	403	8	20409	3471	49714	7
Potatoes and potato products	8.55	1.74	23.14	3	8027	1175	23149	1	61	13	158	3	13631	3054	35796	4
Pulses	0.82	0.95	10.20	0	1830	1911	29657	0	26	31	342	1	2344	271	29529	1
Fruit	13.24	1.35	45.30	5	13731	1111	46666	2	115	6	404	5	16560	1930	52339	5
Dried fruits, nuts and seeds	0.74	0.30	8.79	0	1446	598	17430	0	39	9	474	2	3314	997	38516	1
Ice creams, sorbets and frozen desserts	2.81	2.34	24.58	1	6260	2603	55734	1	15	12	129	1	2943	1538	26106	1
Chocolate	4.49	0.74	32.61	2	6223	651	49950	1	45	5	348	2	5694	954	41593	2
Sugars and sugar derivatives	4.72	0.34	16.80	2	1488	74	5815	0	26	0	116	1	1049	35	4331	0
Water	9.95	0.93	31.35	4	10211	6594	425549	13	4	0	11	0	17591	825	69645	6
Non-alcoholic beverages	7.81	1.14	37.76	3	8095	765	37419	1	44	0	313	2	6872	210	36013	2
Alcoholic beverages	14.29	1.44	67.87	5	14691	1628	72501	2	109	7	545	5	13904	1138	68357	5
Coffee	9.72	0.61	38.70	4	53769	566	308600	7	125	7	471	6	26044	1575	101044	9
Other hot beverages	3.75	0.34	24.17	1	31072	1181	256179	4	138	5	909	6	5466	514	33964	2
Pizzas, quiches and savoury pastries	4.99	3.17	29.60	2	21235	13886	121586	3	36	14	217	2	4872	2536	28379	2
Sandwiches and snacks	3.64	3.42	37.62	1	6043	3420	64980	1	37	39	373	2	3775	3943	36316	1
Soups and broths	5.73	1.17	39.61	2	11096	5036	69086	1	45	22	277	2	6529	3246	39380	2
Mixed dishes	8.99	2.14	43.04	3	15366	2848	72861	2	63	20	293	3	9323	3079	42876	3
Dairy-based desserts	5.03	2.20	37.33	2	17570	12121	104004	2	23	5	176	1	5523	3005	34061	2
Composites and cooked fruit	1.58	1.03	14.22	1	6668	951	78920	1	14	4	157	1	909	553	7853	0
Seasonings and sauces	5.18	0.73	17.01	2	2938	449	9769	0	11	1	37	1	2630	251	8804	1
Misc. foods	0.01	1.59	16.17	0	45	5725	58395	0	0	63	647	0	74	9571	97629	0
TOTAL	277.04	165.77	413.06	100	785694	344693	1419031	100	2158	1067	3545	100	303566	180070	457394	100

Food group	Cu			Zn			Li			Na		
	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	125	19	299	6	609	95	1426	8	0.74	0.12	1.78	2
Breakfast cereals	3	2	77	0	17	15	436	0	0.02	0.02	0.74	0
Pasta	111	22	346	6	139	36	428	2	1.55	0.41	4.71	3
Rice and wheat products	35	9	150	2	81	20	345	1	1.04	0.31	4.30	2
Croissant-like pastries	11	4	77	1	62	29	447	1	0.06	0.03	0.46	0
Sweet and savoury biscuits and bars	15	1	110	1	49	5	344	1	0.08	0.01	0.54	0
Pastries and cakes	24	6	89	1	106	25	443	1	0.25	0.06	1.01	1
Milk	8	1	38	0	324	39	1723	4	0.27	0.03	1.47	1
Ultra-fresh dairy products	9	0	29	0	318	16	994	4	0.40	0.02	1.32	1
Cheese	15	2	44	1	541	84	1605	7	0.10	0.01	0.29	0
Eggs and egg products	11	4	44	1	197	67	762	2	0.16	0.05	0.69	0
Butter	2	0	8	0	8	1	25	0	0.14	0.02	0.51	0
Oils	0	0	1	0	2	0	8	0	0.00	0.00	0.01	0
Margarine	0	0	2	0	3	1	21	0	0.01	0.00	0.08	0
Meat	36	8	95	2	2018	389	5391	25	0.18	0.03	0.47	0
Poultry and game	23	4	106	1	395	96	1558	5	0.09	0.01	0.43	0
Offal	162	504	3993	8	91	358	2192	1	0.01	0.02	0.16	0
Delicatessen meats	37	4	135	2	612	106	1797	8	0.18	0.02	0.58	0
Fish	9	1	43	0	55	10	272	1	0.13	0.02	0.68	0
Crustaceans and molluscs	20	6	211	1	194	37	2948	2	0.22	0.08	2.28	0
Vegetables (excluding potatoes)	70	12	161	4	251	38	611	3	2.36	0.36	5.73	5
Potatoes and potato products	50	11	133	3	137	30	357	2	0.89	0.11	2.56	2
Pulses	14	18	174	1	56	67	663	1	0.31	0.33	4.26	1
Fruit	80	8	259	4	110	9	368	1	1.09	0.03	4.20	2
Dried fruits, nuts and seeds	21	6	246	1	62	8	773	1	0.03	0.00	0.48	0
Ice creams, sorbets and frozen desserts	13	6	112	1	34	16	302	0	0.09	0.07	0.77	0
Chocolate	32	4	243	2	60	10	431	1	0.04	0.01	0.31	0
Sugars and sugar derivatives	4	0	15	0	11	0	45	0	0.09	0.01	0.30	0
Water	72	3	261	4	56	4	199	1	16.72	0.57	50.76	35
Non-alcoholic beverages	16	1	72	1	121	4	623	2	1.09	0.08	5.89	2
Alcoholic beverages	14	1	70	1	121	4	623	2	1.09	0.08	5.89	2
Coffee	698	45	2736	36	73	4	296	1	8.31	0.52	29.79	17
Other hot beverages	58	4	431	3	64	3	558	1	6.76	0.02	46.60	14
Pizzas, quiches and savoury pastries	15	7	87	1	180	115	1022	2	0.24	0.07	1.48	1
Sandwiches and snacks	12	12	108	1	204	141	2142	3	0.16	0.13	1.57	0
Soups and broths	37	7	234	2	75	35	454	1	2.49	0.20	17.46	5
Mixed dishes	43	9	218	2	481	66	3099	6	0.79	0.14	4.12	2
Dairy-based desserts	19	5	138	1	89	51	562	1	0.12	0.07	0.80	0
Composites and cooked fruit	7	4	58	0	6	4	58	0	0.04	0.00	0.40	0
Seasonings and sauces	6	1	20	0	23	3	95	0	0.18	0.02	0.61	0
Misc. foods	0	17	169	0	1	119	1209	0	0.00	0.27	2.72	0
TOTAL	1936	730	4109	100	7935	4095	13251	100	48.18	14.95	93.63	100
												2652987
												1304075
												4500651

Food group	Mo			Se			K			Fe						
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	
Bread and dried bread products	15.1	2.4	35.5	2.9	0.4	6.8	4	229252	33357	530357	8	1255	189	2947	16	
Breakfast cereals	0.4	0.3	12.2	0	0.1	2.1	0	8251	7843	215625	0	48	51	1003	1	
Pasta	3.3	0.9	10.0	4	1.0	3.0	2	17855	4660	55029	1	250	65	773	3	
Rice and wheat products	2.8	0.8	12.4	3	0.6	2.5	1	11518	2075	63401	0	75	15	367	1	
Croissant-like pastries	1.0	0.5	7.6	1	0.2	1.7	0	19692	8486	138600	1	156	57	1093	2	
Sweet and savoury biscuits and bars	1.3	0.2	8.5	1	0.2	0.1	1.3	0	28915	3171	183664	1	122	13	912	2
Pastries and cakes	2.3	0.6	8.8	2	0.8	2.9	1	53205	14304	204564	2	315	71	1314	4	
Milk	3.8	0.4	20.0	4	2.1	11.1	3	137852	15982	706286	5	35	4	208	0	
Ultra-fresh dairy products	4.0	0.4	12.5	4	2.0	5.9	3	145208	7645	451518	5	47	3	162	1	
Cheese	2.0	0.3	6.2	2	0.7	2.0	1	35158	4998	102546	1	28	4	80	0	
Eggs and egg products	1.1	0.5	4.8	1	0.8	3.8	1	29043	5183	137743	1	265	107	1065	3	
Butter	0.5	0.1	1.5	0	0.4	1.2	1	3598	400	12103	0	6	0	24	0	
Oils	0.1	0.0	0.2	0	0.2	0.0	0	52	3	252	0	2	0	6	0	
Margarine	0.1	0.0	1.0	0	0.1	0.8	0	1553	454	11271	0	3	0	27	0	
Meat	0.8	0.2	2.1	1	1.2	3.2	2	178894	44625	472641	6	786	116	2222	10	
Poultry and game	1.2	0.3	4.7	1	1.1	5.1	2	112030	26576	467400	4	259	49	1149	3	
Offal	1.4	5.5	37.4	1	0.5	11.7	1	5123	2071	133900	0	78	323	2297	1	
Delicatessen meats	1.9	0.1	7.4	2	0.9	2.6	1	105715	18220	301216	4	417	46	1346	5	
Fish	0.3	0.0	2.1	0	2.0	13.8	3	41706	10929	207988	1	65	9	378	1	
Crustaceans and molluscs	1.0	0.1	13.8	1	0.8	9.4	1	8729	4157	92314	0	81	32	778	1	
Vegetables (excluding potatoes)	8.4	0.8	22.5	9	2.8	6.2	4	279033	45500	657039	10	562	75	1533	7	
Potatoes and potato products	3.0	0.7	8.2	3	1.4	3.9	2	219842	50464	580821	8	198	43	515	3	
Pulses	6.8	7.0	88.3	7	0.1	2.0	0	13987	16714	176857	0	80	96	1211	1	
Fruit	5.2	0.2	22.8	6	3.4	10.3	5	255913	32670	833938	9	180	21	569	2	
Dried fruits, nuts and seeds	1.9	0.1	23.9	2	0.1	0.8	0	19548	7817	228000	1	41	17	465	1	
Ice creams, sorbets and frozen desserts	0.7	0.4	6.0	1	0.2	1.7	0	22069	16686	193971	1	338	134	3019	4	
Chocolate	0.8	0.1	5.9	1	0.1	1.0	0	29182	4036	220907	1	352	35	2622	5	
Sugars and sugar derivatives	0.7	0.0	2.9	1	0.5	1.6	1	13255	288	56130	0	29	2	116	0	
Water	2.3	0.2	6.2	2	17.3	2.1	27	4576	304	17911	0	36	2	152	0	
Non-alcoholic beverages	1.3	0.1	4.8	1	2.9	14.3	4	84019	642	434411	3	60	3	295	1	
Alcoholic beverages	4.1	0.3	20.3	4	3.6	16.9	6	103241	6500	484574	4	296	15	1503	4	
Coffee	1.2	0.1	5.0	1	5.5	20.0	9	233995	14100	964843	9	54	3	240	1	
Other hot beverages	1.1	0.1	6.9	1	3.2	21.4	5	32944	2820	225429	1	95	1	827	1	
Pizzas, quiches and savoury pastries	1.8	1.2	10.1	2	0.4	3.2	1	40796	26514	234714	1	146	90	833	2	
Sandwiches and snacks	1.2	1.3	11.7	1	0.4	3.4	1	31733	31929	316540	1	135	111	1238	2	
Soups and broths	1.9	0.9	11.4	2	1.8	10.2	3	103212	38714	645750	4	119	57	693	2	
Mixed dishes	4.6	1.1	30.4	5	0.9	4.4	1	89127	28257	420393	3	363	73	1930	5	
Dairy-based desserts	1.2	0.8	7.2	1	0.5	3.2	1	43468	26000	271393	2	259	80	1814	3	
Composites and cooked fruit	0.6	0.1	6.6	1	0.4	3.2	1	16357	10071	144686	1	17	10	153	0	
Seasonings and sauces	0.4	0.1	1.5	0	0.3	1.0	0	23910	1052	96029	1	60	8	204	1	
Misc. foods	0.0	3.1	32.1	0	0.0	1.8	0	94	12107	123493	0	2	207	2113	0	
TOTAL	93.9	49.1	154.9	100	64.4	100.7	100	2833612	1635018	4333144	100	7715	4034	12618	100	

Table A5: Estimated intake (mean, P5 and P95) of inorganic contaminants and minerals (µg/day) by the French child population

Food group	Cr			Ca			Mn			Mg						
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)			
Bread and dried bread products	10.58	1.31	30.00	5	16518	568	5328	3	290	35	792	20	15981	1973	43843	7
Breakfast cereals	4.09	1.02	19.23	2	16979	5314	79211	3	33	6	161	2	3424	930	16380	2
Pasta	13.66	4.28	38.06	6	6935	2357	18857	1	127	43	347	9	11420	3886	31086	5
Rice and wheat products	5.75	0.87	21.00	3	2453	619	9434	0	59	15	232	4	4077	936	16293	2
Croissant-like pastries	6.87	2.12	30.27	3	5974	1284	25458	1	59	15	247	4	4748	1091	19936	2
Sweet and savoury biscuits and bars	5.40	0.54	21.14	2	5266	526	19664	1	71	6	280	5	7965	650	30615	4
Pastries and cakes	9.58	1.83	34.96	4	13224	1864	44254	2	61	12	207	4	7464	1404	25205	3
Milk	19.97	2.49	57.16	9	17490	21786	473393	26	5	1	14	0	19977	2390	54857	9
Ultra-fresh dairy products	10.37	1.80	29.17	5	85828	16240	236021	13	12	1	38	1	10048	1693	26945	4
Cheese	6.82	1.08	20.96	3	84895	12732	262850	13	3	0	9	0	4641	698	13997	2
Eggs and egg products	2.09	0.97	10.37	1	4943	1649	23977	1	4	0	19	0	1602	563	7914	1
Butter	5.42	0.65	15.69	2	1380	152	4057	0	0	0	1	0	207	26	736	0
Oils	7.13	1.11	23.46	3	77	9	320	0	0	0	1	0	10	2	33	0
Margarine	1.47	0.44	10.27	1	229	44	2144	0	0	0	0	0	32	4	318	0
Meat	10.24	2.38	27.73	5	3992	656	12860	1	4	1	11	0	10680	2712	27094	5
Poultry and game	4.45	1.21	15.37	2	3087	497	14297	0	3	1	10	0	7444	2209	26061	3
Offal	0.12	0.88	4.88	0	53	219	5416	0	1	9	59	0	153	1052	6101	0
Delicatessen meats	6.92	1.02	20.95	3	3153	242	11006	0	8	0	27	1	5176	949	15481	2
Fish	2.91	1.07	10.79	1	1874	248	8720	0	9	0	45	1	3988	1596	15424	2
Crustaceans and molluscs	0.33	0.27	6.00	0	1720	1449	35200	0	4	1	174	0	858	847	15862	0
Vegetables (excluding potatoes)	7.36	0.86	20.61	3	20789	2386	57643	3	102	13	263	7	12276	1618	31047	5
Potatoes and potato products	7.95	1.74	20.51	4	8330	1246	23499	1	58	13	144	4	12669	2957	31543	6
Pulses	0.74	0.91	8.96	0	1554	1571	19179	0	23	31	277	2	2032	2343	25993	1
Fruit	6.21	0.85	20.33	3	6524	649	2505	1	69	4	250	5	9168	1250	27617	4
Dried fruits, nuts and seeds	0.30	0.13	5.02	0	583	266	9960	0	16	4	279	1	1340	586	28114	1
Ice creams, sorbets and frozen desserts	3.62	2.34	24.99	2	8009	4435	55134	1	19	12	129	1	3769	2077	25826	2
Chocolate	7.26	0.92	29.26	3	12815	1421	56036	2	104	6	479	7	10260	1218	43495	5
Sugars and sugar derivatives	2.20	0.34	8.80	1	1043	53	4520	0	11	0	65	1	756	24	3360	0
Water	6.46	0.69	18.25	3	5532	5383	213279	8	3	0	7	0	7537	653	23674	3
Non-alcoholic beverages	10.76	1.23	33.83	5	11882	715	35324	2	69	0	319	5	9659	202	32875	4
Alcoholic beverages	0.17	0.17	13.48	0	196	163	15510	0	1	2	107	0	179	152	15968	0
Coffee	0.24	0.37	14.39	0	1533	445	135971	0	3	5	172	0	592	1095	37929	0
Other hot beverages	2.77	0.23	23.93	1	15911	1181	125451	2	24	2	201	2	4380	357	40714	2
Pizzas, quiches and savoury pastries	4.63	1.59	22.99	2	19672	6943	94764	3	33	13	165	2	4501	1694	22380	2
Sandwiches and snacks	3.25	2.18	25.38	1	5091	2810	42062	1	31	28	246	2	3205	2760	25800	1
Soups and broths	2.95	0.78	20.86	1	5589	2843	36243	1	23	15	152	2	3385	2026	21091	1
Mixed dishes	9.37	2.13	32.14	4	18620	3609	65693	3	67	16	240	5	9945	2682	34435	4
Dairy-based desserts	7.07	2.20	31.79	3	22810	10864	97886	3	30	8	131	2	7909	3194	33971	3
Composites and cooked fruit	2.01	1.03	11.77	1	7455	951	61840	1	19	4	127	1	1202	654	6943	1
Seasonings and sauces	3.51	0.44	12.81	2	2193	251	8365	0	9	1	32	1	2031	160	7651	1
Misc. foods	0.00	0.63	0.63	0	2	2290	2290	0	0	25	25	0	3	3829	3829	0
TOTAL	222.99	137.45	333.20	100	658903	298267	1117687	100	1465	716	2559	100	226693	136428	342441	100

Food group	Cu			Zn			Li			Na		
	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	59	7	164	6	286	36	784	4	0.36	0.04	1.00	2
Breakfast cereals	9	2	46	1	55	15	262	1	0.06	0.02	0.26	0
Pasta	125	41	346	13	154	52	423	2	1.72	0.59	4.69	9
Rice and wheat products	33	9	123	4	78	20	290	1	0.96	0.31	3.39	5
Croissant-like pastries	18	3	78	2	103	29	442	2	0.10	0.03	0.46	1
Sweet and savoury biscuits and bars	31	2	127	3	93	10	341	1	0.16	0.02	0.60	1
Pastries and cakes	29	5	100	3	139	25	461	2	0.26	0.05	0.87	1
Milk	14	2	42	2	645	83	1802	10	0.56	0.07	1.67	3
Ultra-fresh dairy products	9	1	25	1	293	55	794	5	0.38	0.06	1.10	2
Cheese	8	1	29	1	309	47	981	5	0.07	0.01	0.23	0
Eggs and egg products	7	3	37	1	131	55	615	2	0.11	0.05	0.56	1
Butter	2	0	5	0	5	1	16	0	0.10	0.01	0.34	1
Oils	0	0	1	0	2	0	6	0	0.00	0.00	0.01	0
Margarine	0	0	1	0	2	0	11	0	0.01	0.00	0.04	0
Meat	28	6	72	3	1618	302	4150	25	0.14	0.02	0.39	1
Poultry and game	14	3	55	1	260	69	934	4	0.05	0.01	0.22	0
Offal	53	433	2581	6	31	223	1346	0	0.00	0.02	0.09	0
Delicatessen meats	25	3	80	3	451	80	1429	7	0.15	0.02	0.49	1
Fish	7	2	28	1	48	14	201	1	0.14	0.02	0.57	1
Crustaceans and molluscs	7	4	139	1	48	23	920	1	0.07	0.05	1.38	0
Vegetables (excluding potatoes)	40	5	103	4	159	17	434	2	1.38	0.13	3.74	7
Potatoes and potato products	45	10	114	5	132	30	329	2	0.85	0.12	2.24	4
Pulses	13	16	163	1	50	66	663	1	0.27	0.31	3.33	1
Fruit	39	6	126	4	58	7	198	1	0.50	0.02	2.13	3
Dried fruits, nuts and seeds	9	4	175	1	25	4	454	0	0.01	0.00	0.26	0
Ice creams, sorbets and frozen desserts	16	9	110	2	44	24	299	1	0.11	0.07	0.78	1
Chocolate	54	5	231	6	105	12	445	2	0.08	0.01	0.32	0
Sugars and sugar derivatives	2	0	11	0	7	0	30	0	0.04	0.01	0.17	0
Water	53	2	179	6	38	3	132	1	6.78	0.46	19.72	34
Non-alcoholic beverages	21	1	68	2	27	1	83	0	1.11	0.08	3.34	6
Alcoholic beverages	0	0	12	0	1	1	123	0	0.01	0.01	0.91	0
Coffee	17	35	998	2	2	3	142	0	0.20	0.37	12.38	1
Other hot beverages	19	2	167	2	78	4	685	1	0.48	0.01	4.79	2
Pizzas, quiches and savoury pastries	14	5	66	1	167	61	824	3	0.22	0.07	1.13	1
Sandwiches and snacks	10	10	80	1	178	114	1428	3	0.13	0.09	1.02	1
Soups and broths	19	5	126	2	40	21	255	1	1.19	0.13	8.45	6
Mixed dishes	41	8	155	4	420	78	1641	7	0.72	0.11	2.91	4
Dairy-based desserts	29	7	129	3	123	52	524	2	0.16	0.07	0.65	1
Composites and cooked fruit	8	5	48	1	9	4	54	0	0.06	0.02	0.38	0
Seasonings and sauces	5	0	23	1	20	2	90	0	0.15	0.01	0.60	1
Misc. foods	0	7	7	0	0	47	47	0	0.00	0.11	0.11	0
TOTAL	929	496	1734	100	6431	3503	10670	100	19.84	8.97	38.60	100
												107740
												3414954

Food group	Mo			Se			K			Fe						
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)			
Bread and dried bread products	7.2	0.9	19.6	10	1.4	0.2	3.8	3	109343	12729	297000	5	593	68	1607	9
Breakfast cereals	1.2	0.3	5.4	2	0.3	0.1	1.5	1	26685	7843	124500	1	254	62	1188	4
Pasta	3.7	1.2	10.0	5	1.1	0.4	2.9	3	19751	6657	54367	1	276	93	757	4
Rice and wheat products	2.6	0.8	10.1	4	0.6	0.2	2.1	1	11846	2075	55157	1	76	15	318	1
Croissant-like pastries	1.7	0.5	7.7	2	0.4	0.1	1.7	1	32584	8486	136471	1	263	49	1129	4
Sweet and savoury biscuits and bars	2.5	0.2	10.4	3	0.4	0.0	1.4	1	50808	5340	183571	2	255	17	1044	4
Pastries and cakes	2.6	0.5	8.3	3	0.8	0.2	2.7	2	58801	1179	195231	3	387	74	1307	6
Milk	7.6	1.0	20.6	10	4.1	0.5	11.3	10	274397	34500	771429	13	70	9	226	1
Ultra-fresh dairy products	3.8	0.7	10.1	5	1.9	0.4	5.4	5	131534	21357	355189	6	44	6	137	1
Cheese	1.2	0.2	3.8	2	0.4	0.1	1.2	1	19954	2777	64405	1	17	3	52	0
Eggs and egg products	0.7	0.4	3.5	1	0.5	0.2	3.4	1	19553	4530	119314	1	173	73	834	3
Butter	0.3	0.0	0.9	0	0.3	0.0	0.8	1	2490	320	7634	0	4	0	19	0
Oils	0.0	0.0	0.1	0	0.2	0.0	0.6	0	36	3	223	0	1	0	5	0
Margarine	0.1	0.0	0.5	0	0.1	0.0	0.4	0	783	282	6199	0	2	0	18	0
Meat	0.6	0.1	1.6	1	0.9	0.2	2.4	2	138057	32811	346283	6	639	93	1792	10
Poultry and game	0.8	0.2	3.0	1	0.7	0.1	2.9	2	76538	18450	278403	4	153	31	630	2
Offal	0.5	3.1	22.8	1	0.1	0.9	8.4	0	1951	13250	83479	0	34	209	1321	1
Delicatessen meats	1.2	0.1	4.5	2	0.6	0.1	1.9	2	79047	12732	243213	4	289	31	957	4
Fish	0.5	0.0	2.3	1	1.3	0.2	6.8	3	36644	10929	138411	2	53	14	228	1
Crustaceans and molluscs	0.4	0.1	11.2	0	0.3	0.1	7.4	1	2949	3321	60149	0	29	22	632	0
Vegetables (excluding potatoes)	5.7	0.4	16.5	8	1.6	0.2	3.9	4	154691	20650	383643	7	334	31	1029	5
Potatoes and potato products	2.8	0.7	7.3	4	1.3	0.3	3.1	3	293355	51536	511857	9	187	39	473	3
Pulses	6.2	7.0	76.4	8	0.1	0.2	1.6	0	12149	15857	151857	1	74	58	1078	1
Fruit	2.3	0.1	9.6	3	1.6	0.3	5.1	4	132874	18900	427026	6	92	14	281	1
Dried fruits, nuts and seeds	0.8	0.1	14.0	1	0.0	0.0	0.4	0	7878	3474	130286	0	16	8	290	0
Ice creams, sorbets and frozen desserts	0.9	0.5	5.9	1	0.3	0.2	1.7	1	28331	16686	191886	1	432	182	2987	7
Chocolate	1.4	0.1	6.2	2	0.3	0.0	1.1	1	55917	7179	235231	3	453	55	1813	7
Sugars and sugar derivatives	0.5	0.0	2.2	2	0.2	0.0	0.8	1	6314	192	31214	0	24	1	111	0
Water	1.5	0.2	3.7	2	11.0	1.6	26.4	26	3272	233	13541	0	27	2	116	0
Non-alcoholic beverages	1.5	0.1	4.0	2	4.1	0.4	12.3	10	122696	752	414633	6	83	3	304	1
Alcoholic beverages	0.0	0.1	4.1	0	0.1	0.0	3.8	0	1504	1181	123975	0	3	4	296	0
Coffee	0.0	0.0	2.1	0	0.1	0.3	8.0	0	6013	10700	358571	0	1	1	102	0
Other hot beverages	0.8	0.1	6.7	1	0.6	0.0	5.1	1	37180	2811	333571	2	128	4	1271	2
Pizzas, quiches and savoury pastries	1.7	0.6	8.1	2	0.4	0.1	2.0	1	37803	13257	184714	2	135	50	672	2
Sandwiches and snacks	1.0	0.9	8.4	1	0.3	0.3	2.3	1	27048	22400	223086	1	116	90	901	2
Soups and broths	1.0	0.5	6.9	1	0.9	0.7	5.9	2	52364	19357	347871	2	64	32	414	1
Mixed dishes	4.4	0.9	18.8	6	1.0	0.2	3.4	2	93622	23964	329654	4	321	66	1236	5
Dairy-based desserts	1.6	0.7	6.8	2	0.7	0.4	2.9	2	61802	26400	265650	3	389	87	1786	6
Composites and cooked fruit	0.9	0.1	7.3	1	0.5	0.3	2.9	1	21521	10500	130243	1	23	11	136	0
Seasonings and sauces	0.4	0.0	1.6	1	0.2	0.0	0.9	1	26125	602	119719	1	53	5	207	1
Misc. foods	0.0	1.3	1.3	0	0.0	0.1	0.1	0	3	4843	4843	0	0	0	83	0
TOTAL	74.7	40.3	130.0	100	415	23.8	66.2	100	2186213	1302652	3278030	100	6566	3400	11087	100

5. Persistent organic pollutants

The values given in brackets after the exposure values are the means and minimum and maximum 95th percentiles observed in the different regions. For elements with high censoring rates (> 60%), two assumptions were considered: the lowerbound (LB) and upperbound (UB). In this case the values in brackets correspond to the minimum regional lowerbound and the maximum regional upperbound.

5.1. Dioxins, furans and PCBs

Polychlorinated dibenzodioxins (PCDDs), polychlorinated dibenzofurans (PCDFs) and polychlorinated biphenyls (PCBs) are aromatic compounds which group together 75, 135 and 209 congeners respectively. These congeners, differentiated by the number and position of chlorine atoms on the aromatic rings, are chemically very stable, insoluble in water but highly soluble in lipids, and are not highly biodegradable. They accumulate throughout the food chain particularly in animal fats; food consumption is the main vector of contamination among the general population (more than 90% of exposure).

While dioxins and furans (PCDD/Fs) are formed during thermal (fires, incinerations, etc.) or chemical processes, PCBs are industrial chemical mixtures which were manufactured and used until 1987 for their insulating properties and stability.

Hazard characterisation

From a toxicological viewpoint, 12 PCB congeners behave like PCDD/Fs, by bonding to the Ah (Aryl hydrocarbon) cell receptor. They are called 'dioxin-like' PCBs (DL-PCBs), as opposed to the other PCBs which are called 'non dioxin-like' (NDL-PCBs). For risk assessment, DL-PCBs and PCDD/Fs are addressed together.

The binding of dioxins and DL-PCBs to the Ah receptor induces changes in the transcription of the RNA messengers which encode the enzymes involved in cellular responses. However, no relationship linking these changes to a proven toxic effect has been established; moreover, not all the effects of these molecules pass through this receptor but involve other toxic action mechanisms.

The critical effects selected are on reproduction and development, and immunological effects observed in baby rats exposed to 2,3,7,8-TCDD. This compound (the main congener to which the population was exposed in the Seveso accident in July 1976) is the only one of the 17 PCDD/F congeners to have been classified as carcinogenic to humans by the IARC (group 1) due to the increase in the incidence of cancers among occupationally exposed people and the induction of cancers in animals.

Exposure to PCDD/Fs and DL-PCBs is assessed using toxic equivalency factors (TEF), weighting factors which express the toxicity of all congeners having the same toxicological activity using the same unit of measurement, the toxic equivalents (TEQs) (AFSSA 2005b) (Table 17). In 2001, JECFA defined a provisional tolerable monthly intake (PTMI) at 70 pg TEQ WHO₉₈/kg bw/month (JECFA 2001a), or 2.33 pg TEQ WHO₉₈/kg bw/day.

Table 17: Toxic equivalency factors (TEFs) for congeners of dioxins, furans and DL-PCBs

Dioxins (PCDDs)	TEF _{WHO}
2,3,7,8 - Tetrachlorodibenzodioxin	1
1,2,3,7,8 - Pentachlorodibenzodioxin	1
1,2,3,4,7,8 - Hexachlorodibenzodioxin	0.1
1,2,3,6,7,8 - Hexachlorodibenzodioxin	0.1
1,2,3,7,8,9 - Hexachlorodibenzodioxin	0.1
1,2,3,4,6,7,8 - Heptachlorodibenzodioxin	0.01
Octachlorodibenzodioxin	0.0001
Furans (PCDFs)	
2,3,7,8 - Tetrachlorodibenzofuran	0.1
1,2,3,7,8 - Pentachlorodibenzofuran	0.05
2,3,4,7,8 - Pentachlorodibenzofuran	0.5
1,2,3,4,7,8 - Hexachlorodibenzofuran	0.1
1,2,3,6,7,8 - Hexachlorodibenzofuran	0.1
2,3,4,6,7,8 - Hexachlorodibenzofuran	0.1
1,2,3,7,8,9 - Hexachlorodibenzofuran	0.1
1,2,3,4,6,7,8 - Heptachlorodibenzofuran	0.01
1,2,3,4,7,8,9 - Heptachlorodibenzofuran	0.01
Octachlorodibenzofuran	0.0001
Non-ortho DL-PCBs	
77 (3,3',4,4'-tetrachlorobiphenyl)	0.0001
81 (3,4,4',5'-tetrachlorobiphenyl)	0.0001
126 (3,3',4,4',5'-pentachlorobiphenyl)	0.1
169 (3,3',4,4,5,5'-hexachlorobiphenyl)	0.01
Mono-ortho DL-PCBs	
105 (2,3,3',4,4'-pentachlorobiphenyl)	0.0001
114 (2,3,4,4',5'-pentachlorobiphenyl)	0.0005
118 (2,3',4,4',5'-pentachlorobiphenyl)	0.0001
123 (2',3,4,4',5'-pentachlorobiphenyl)	0.0001
156 (2,3,3',4,4',5'-hexachlorobiphenyl)	0.0005
157 (2,3,3',4,4',5'-hexachlorobiphenyl)	0.0005
167 (2,3',4,4',5,5'-hexachlorobiphenyl)	0.00001
189 (2,3,3',4,4',5,5'-heptachlorobiphenyl)	0.00001

NDL-PCBs group together PCB congeners which are non-dioxin-like, since they do not have the same toxic action mechanism *via* the Ah receptor. NDL-PCBs have significant interactions with several receptors but no receptors have been identified as interacting with all NDL-PCBs, thus making it impossible to define a TEF.

The PCB mixtures used during the toxicity studies particularly affect the liver, thyroid, immune system, reproduction and behaviour, and are carcinogenic. The effects on the liver and thyroid are the main critical effects reported in adult animals (weaned rats) exposed to individual congeners.

Toxicological studies performed in monkeys using congener mixtures which are representative of PCB profiles found in the environment or in human milk have nonetheless shown that brain development in fetuses could be altered at doses below those leading to toxicity in adult animals. These data were therefore retained as being the most relevant for establishing the health-based guidance value of 20 ng/kg bw/day which is applied to all 209 PCB congeners (IPCS 2003; RIVM, Baars *et al.* 2001). Since the sum of the six PCB congeners most frequently found in food matrices (PCB-28, 52, 101, 138, 153 and 180) accounts for up to 50% of all the congeners present (EFSA 2005), a TDI of 10 ng/kg bw/day was retained by AFSSA for this congener group (AFSSA 2007a). These congeners are called indicator PCBs (PCBi).

Risk assessment and characterisation

Estimation of concentrations in foodstuffs

The proportion of censored data (undetected congener) is generally low. At a maximum, it reaches 57% for 1,2,3,7,8,9 HCDF.

The highest mean concentrations in dioxins and DL-PCBs are found in fish (0.65 pg TEQ WHO₉₈/g fresh weight) and molluscs and crustaceans (0.48 pg TEQ WHO₉₈/g fresh weight) (Table B1). The highest mean concentrations for the six NDL-PCBs (PCB 28, 52, 101, 138, 153, 180) are also found in fish (5263 pg/g fresh weight) and molluscs and crustaceans (2192 pg/g fresh weight).

Compared with the data from the 2001-2004 monitoring plans (AFSSA 2005b) regarding the analysis of raw food commodities, the contamination of food by dioxins and DL-PCBs recorded in TDS 2 is lower, except for offal, for which the concentrations are similar. The concentrations of dioxins and furans in certain food groups are lower by a factor of two (meat, vegetables), three (poultry, crustaceans) or even five (eggs). A decrease in dioxin concentrations was observed between 2000 and 2005, as well as a 60% decrease in the population's total exposure (AFSSA 2005b; CSHPF 2000). The contamination differences observed for DL-PCBs, and therefore the sum of dioxins and DL-PCBs, are slightly lower (by a factor of 1.3 to 3). The dioxin and DL-PCB contamination of fish sampled in TDS 2 is equivalent to that of the farmed trout in the monitoring plans of 2001-2004, which were the least contaminated fish at that time (factor 3.8). Concerning the six NDL-PCBs, concentrations were also lower, by a factor of 4 (milk), 5 (eggs, meat), and even 9 (poultry), compared with the results of the 2002-2006 administration plans (AFSSA 2007a).

Estimation of the exposure of the French population

The French population's daily mean exposure to PCDD/Fs+DL-PCBs was estimated at 0.47 pg TEQ WHO₉₈/kg bw/day in adults (0.39-0.51) and 0.76 pg TEQ WHO₉₈/kg bw/day in children (0.70-0.85) (Tables B2 and B3). Exposure at the 95th percentile was 1.00 and 1.69 pg TEQ WHO₉₈/kg bw/day, respectively for adults and children (0.79-1.14 and 1.54-2.12, respectively). The population's mean exposure to the 6 NDL-PCBs was 1.83 ng/kg bw/day in adults (1.40-2.04) and 2.84 ng/kg bw/day in children (2.40-3.38). Exposure at the 95th percentile was 5.05 ng/kg bw/day and 6.86 ng/kg bw/day, respectively (3.51-6.06 and 5.16-10.4 respectively). For both adults and children, fish are the main contributors to total PCB exposure (37 and 30%, respectively). They are also the second most important vector for dioxins and DL-PCBs, after butter (20%). Generally, dairy products are significant contributors to dioxin and PCB exposure. For children, the most consumed foodstuff is milk, which therefore has a vector rate equal to that of ultra-fresh dairy products and cheese, which have more fat content and thus higher concentrations. Finally, meat contributes to dioxin and PCB exposure at equivalent rates for both adults and children (around 10%).

For the sum of PCDD/Fs+DL-PCBs, the health-based guidance value was exceeded, although not significantly, among adults, by less than 0.05% [-0.05; 0.15], and among children, by 0.8% [0.3; 1.3]. For the six NDL-PCBs (and therefore for all PCBs), 0.7% of adults [0.3; 1.0] and 2.2% of children [1.4; 3.0] exceeded the health-based guidance value.

Exposure to dioxins and DL-PCBs among women of childbearing age was 0.46 pg TEQ WHO₉₈/kg bw/day on average. At the 95th percentile of exposure it was 1 pg TEQ WHO₉₈/kg bw/day. Concerning the six NDL-PCBs, mean exposure among women of childbearing age was 1.81 ng/kg bw/day (P₉₅ = 4.93 ng/kg bw/day). Non-significant health-based guidance value excesses were observed for dioxins and DL-PCBs (0.7% [-0.03; 1.4]) and for NDL-PCBs (0.2% [-0.2; 0.6]).

We should nonetheless bear in mind that the TDS 2 sampling did not cover the whole diet, and that the exposure was probably underestimated in comparison with the 2005 and 2007 estimations. Although most dairy products, meat products, eggs and egg products as well as molluscs and crustaceans were well covered by the sampling (around 80% to 100%, Table 5), only 52.3% of fish consumption was sampled.

To ensure that the exposures calculated, particularly those related to fish consumption, were not underestimated, an additional exposure simulation was performed taking into account total fish consumption. The contamination values of sampled fish were applied to fish consumed but not sampled. The assignment of a sampled species to a non-sampled species was done on the basis of an analysis of the data from the CALIPSO study (Marchand, Antignac *et al.* 2006); the species were matched when the dioxin and PCB concentrations in the CALIPSO study were of the same order of magnitude. This made it possible to take into account the fat content as well as the potentially different metabolisms between species which have identical fat contents but sometimes very different contaminant concentrations. The exposure was then calculated using the method described in the Method section. The mean exposure to dioxins and DL-PCBs calculated in this way was 0.57 pg TEQ WHO₉₈/kg bw/day in adults and 0.88 pg TEQ WHO₉₈/kg bw/day in children (not presented). Exposures at the 95th percentile were respectively 1.29 and 2.02 pg TEQ WHO₉₈/kg bw/day. Mean exposure to the 6 NDL-PCBs was 2.71 ng/kg bw/day in adults and 3.77 ng/kg bw/day in children. Exposures at the 95th percentile were respectively 7.90 ng/kg bw/day and 11.7 ng/kg bw/day. Individual exposure levels were unchanged for 50% of adults and 65% of children, for whom fish consumption was therefore completely covered by the TDS 2 sampling. The contribution of fish to the total dioxin and DL-PCB exposure was 35% in adults and 26% in children. The contribution of fish to the total PCB exposure was 58% in adults and 47% in children. Health-based guidance value excesses for the sum of dioxins and DL-PCBs were 0.6% [0.3; 0.9] in adults and 3.2% [2.3; 4.1] in children, and for the six NDL-PCBs, 2.6% [1.9; 3.3] and 6.5% [5.2; 7.8] respectively.

These additional analyses therefore yielded results close to those calculated using the study data alone (without extrapolation to all fish consumed) and thus confirmed the quality of sampling and the importance of covering the main contributors to exposure.

The TDS 2 results show a significant reduction in the French population's exposure to dioxins and PCBs (by a factor of approximately 4) compared with previous assessments made in 2005 and 2007, based on different assessment methods. This trend is consistent with the reduction in both food and environmental contamination observed in Europe and around the world, and certainly reflects the effectiveness of the European management measures implemented to reduce contamination. However, the health-based guidance values are still exceeded by a small proportion of consumers (Table 18); it is therefore necessary to continue efforts to reduce exposure to dioxins and PCBs.

Table 18: Summary of results for exposure to PCDD/Fs, DL-PCBs and NDL-PCBs among the French population

Substances	Health-based guidance value	Scenario*	Adults			Children		
			Mean	95 th percentile	%>Health-based guidance value [CI _{95%}]	Mean	95 th percentile	%>Health-based guidance value [CI _{95%}]
PCDD/F+DL-PCB, pg TEQ WHO ₉₈ /kg bw/day	PTMI: 70 pg TEQ _{WHO-98} /kg bw/month = 2.33 pg TEQ _{WHO-98} /kg bw/day (JECFA 2001a)	1	0.47	1.00	<0.05 [0.05; 0.15]	0.76	1.69	0.8 [0.3; 1.3]
		2	0.57	1.29	0.6 [0.3; 0.9]	0.88	2.02	3.2 [2.3; 4.1]
6 NDL-PCB, ng/kg bw/day	TDI: 10 ng/kg bw/day (AFSSA 2007a; IPCS 2003)	1	1.83	5.05	0.7 [0.3; 1.0]	2.84	6.86	2.2 [1.4; 3.0]
		2	2.71	7.90	2.6 [1.9; 3.3]	3.77	11.7	6.5 [5.2; 7.8]

* Scenario 1: taking into account TDS 2 sampling only; Scenario 2: taking into account TDS 2 sampling and all seafood products consumed.

Table B1: Estimated food contamination with PCDD/Fs (pg TEQ WHO₉₈/g fresh weight), DL-PCBs (pg TEQ WHO₉₈/g fresh weight), sum of PCDD/Fs+DL-PCBs (pg TEQ WHO₉₈/g fresh weight) and 6 NDL-PCBs (PCBs 28, 52, 101, 138, 153, 180) (pg/g fresh weight)

Food group	Type	n	Fats (%)	PCDD/Fs	DL-PCBs	PCDD/ Fs+DL-PCBs	6 NDL-PCBs
Milk	R	38	1.2	0.006	0.009	0.015	44
Ultra-fresh dairy products	R	75	3.8	0.017	0.026	0.043	118
Cheese	R	32	22.1	0.053	0.096	0.149	403
Eggs and egg products	R	30	11.4	0.020	0.011	0.031	88
Butter	N	6	78.4	0.214	0.337	0.551	1,184
Oils	N	6	99.9	0.044	0.010	0.054	135
Margarine	N	4	85.3	0.036	0.029	0.065	115
Meat	R	64	13.6	0.026	0.029	0.055	235
Poultry and game	R	38	9.4	0.018	0.010	0.027	82
Offal	R	16	7.7	0.094	0.065	0.159	262
Delicatessen meats	R	80	25.7	0.026	0.024	0.050	230
Fish	R	46	8.3	0.104	0.549	0.652	5,263
Crustaceans and molluscs	R	37	2.2	0.200	0.280	0.480	2,192
Vegetables (excluding potatoes)	R	3	3.1	0.004	0.000	0.006	30
Pizzas, quiches and savoury pastries	N	4	14.7	0.027	0.038	0.065	217
Sandwiches and snacks	R	18	10.9	0.030	0.029	0.058	219
Mixed dishes	R	61	8.6	0.016	0.021	0.037	157
Dairy-based desserts	R	22	4.6	0.014	0.018	0.032	96
Seasonings and sauces	N	3	48.4	0.011	0.019	0.031	103

Table B2: Estimated exposure (mean and P95) in the French adult population to PCDD/Fs (pg TEQ WHO₉₈/kg bw/day), DL-PCBs (pg TEQ WHO₉₈/kg bw/day) and the 6 NDL-PCBs (pg/kg bw/day) and contribution of foods (%)

Food group	PCDD/Fs			DL-PCBs			PCDD/Fs+ DL-PCBs			6 NDL-PCBs		
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Milk	0.007	0.037	3.8	0.010	0.054	3.3	0.016	0.090	3.5	46	270	2.5
Ultra-fresh dairy products	0.015	0.047	8.3	0.021	0.070	7.1	0.035	0.115	7.6	98	324	5.4
Cheese	0.023	0.065	13.3	0.044	0.121	15.0	0.067	0.185	14.3	176	491	9.6
Eggs and egg products	0.004	0.018	2.5	0.002	0.011	0.8	0.007	0.027	1.4	20	88	1.1
Butter	0.036	0.115	20.4	0.058	0.186	19.9	0.094	0.300	20.1	203	658	11.1
Oils	0.007	0.025	3.9	0.001	0.005	0.5	0.008	0.030	1.8	21	81	1.1
Margarine	0.002	0.016	1.3	0.002	0.013	0.7	0.004	0.029	0.9	9	63	0.5
Meat	0.017	0.045	9.8	0.029	0.079	9.8	0.046	0.119	9.8	178	473	9.7
Poultry and game	0.006	0.024	3.3	0.003	0.014	1.1	0.009	0.038	1.9	30	116	1.6
Offal	0.002	0.074	1.2	0.001	0.059	0.5	0.004	0.130	0.8	5	137	0.3
Delicatessen meats	0.007	0.026	4.2	0.006	0.032	2.1	0.013	0.058	2.9	70	255	3.8
Fish	0.019	0.133	10.8	0.073	0.545	25.1	0.092	0.643	19.7	684	5258	37.4
Crustaceans and molluscs	0.009	0.099	5.3	0.013	0.170	4.4	0.022	0.288	4.8	101	1280	5.6
Vegetables (excluding potatoes)	0.000	0.005	0.2	0.000	0.002	0.1	0.001	0.006	0.1	3	34	0.2
Pizzas, quiches and savoury pastries	0.005	0.032	2.6	0.007	0.045	2.4	0.012	0.077	2.5	43	271	2.4
Sandwiches and snacks	0.005	0.050	2.8	0.005	0.053	1.7	0.010	0.102	2.1	38	372	2.1
Mixed dishes	0.007	0.040	4.1	0.010	0.061	3.3	0.017	0.097	3.6	73	388	4.0
Dairy-based desserts	0.004	0.024	2.1	0.006	0.038	1.9	0.009	0.063	2.0	27	182	1.5
Seasonings and sauces	0.000	0.003	0.2	0.001	0.005	0.2	0.001	0.008	0.2	3	29	0.2
TOTAL	0.176	0.325	100	0.291	0.682	100	0.467	0.999	100	1827.2	5054	100

Table B3: Estimated exposure (mean and P95) in the French child population to PCDD/Fs (pg TEQ WHO₉₈/kg bw/day), DL-PCBs (pg TEQ WHO₉₈/kg bw/day) and the 6 ND-L-PCBs (pg/kg bw/day) and contribution of foods (%)

Food group	PCDD/Fs			DL-PCBs			PCDD/Fs+ DL-PCBs			6 ND-L-PCBs		
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Milk	0.032	0.110	10.8	0.047	0.166	10.0	0.079	0.288	10.3	225	826	7.9
Ultra-fresh dairy products	0.033	0.104	11.1	0.047	0.157	10.0	0.080	0.263	10.5	222	718	7.8
Cheese	0.029	0.097	10.0	0.055	0.186	11.7	0.084	0.281	11.0	219	737	7.7
Eggs and egg products	0.006	0.032	2.1	0.003	0.020	0.7	0.009	0.051	1.2	28	151	1.0
Butter	0.058	0.200	19.8	0.095	0.327	20.2	0.153	0.531	20.0	333	1141	11.7
Oils	0.010	0.047	3.4	0.002	0.010	0.4	0.012	0.057	1.6	29	144	1.0
Margarine	0.003	0.025	1.0	0.002	0.019	0.5	0.005	0.042	0.7	9	75	0.3
Meat	0.028	0.080	9.6	0.049	0.143	10.5	0.078	0.224	10.2	298	828	10.5
Poultry and game	0.007	0.028	2.4	0.004	0.015	0.8	0.011	0.044	1.4	39	148	1.4
Offal	0.001	0.097	0.5	0.001	0.080	0.2	0.002	0.177	0.3	4	222	0.1
Delicatessen meats	0.012	0.043	4.2	0.011	0.057	2.3	0.023	0.092	3.0	119	432	4.2
Fish	0.023	0.158	7.8	0.082	0.574	17.4	0.105	0.779	13.7	860	5988	30.3
Crustaceans and molluscs	0.006	0.104	1.9	0.009	0.205	1.8	0.014	0.311	1.9	62	1572	2.2
Vegetables (excluding potatoes)	0.001	0.007	0.2	0.000	0.003	0.1	0.001	0.011	0.1	4	57	0.1
Pizzas, quiches and savoury pastries	0.008	0.044	2.8	0.013	0.065	2.7	0.021	0.106	2.7	77	382	2.7
Sandwiches and snacks	0.008	0.065	2.5	0.007	0.061	1.6	0.015	0.119	2.0	57	438	2.0
Mixed dishes	0.017	0.069	5.8	0.022	0.093	4.8	0.039	0.154	5.2	163	659	5.7
Dairy-based desserts	0.011	0.057	3.9	0.019	0.098	4.0	0.030	0.154	4.0	87	442	3.1
Seasonings and sauces	0.001	0.005	0.2	0.001	0.009	0.2	0.002	0.014	0.2	6	50	0.2
TOTAL	0.295	0.639	100	0.469	1.032	100	0.764	1.685	100	2841.2	6863	100

5.2. Perfluorinated compounds

Perfluorinated compounds make up a large family of contaminants (several hundred compounds) of anthropogenic origin that includes perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). These substances are highly stable (having high thermal, chemical and biological resistance) and amphiphilic, giving them a surfactant property. They are therefore used in numerous industrial applications and common consumer products: stain- and water-resistant treatments (clothes, rugs, carpets, furniture), non-stick coatings (kitchen utensils, paper including food packaging) and certain specialised applications (cosmetics, fire-fighting foam, plant protection products).

Some perfluorinated compounds such as PFOS and PFOA persist in the environment and can accumulate in animals and humans. They are also the final breakdown products of numerous perfluorinated compounds in the environment and living organisms. As a result, they contaminate several compartments of the environment (water, soil, air) and accumulate in the food chain. Food, and particularly seafood products, is a significant source of exposure to perfluorinated compounds in humans (EFSA 2008a).

Hazard assessment

Perfluorinated compounds are cumulative poisons that bind to plasma proteins. The apparent half-lives corresponding to the elimination of PFOS and PFOA are respectively around 5 years and 4 years on average in humans. After absorption, they are chiefly found in the liver, blood and kidneys.

Toxicity studies have primarily examined PFOS and PFOA. The main toxic effects reported in animals have been observed in the liver, reproductive and developmental functions, the immune and hormonal systems and lipid metabolism. PFOS and PFOA are not genotoxic but have neoplastic-type effects.

The most recent health-based guidance values for PFOS and PFOA were proposed by EFSA in 2008 (EFSA 2008a). For PFOS, a TDI of 0.15 µg/kg bw/day was proposed based on a 182-day study that showed effects on lipid and thyroid hormone levels in monkeys (NOAEL of 0.03 mg/kg bw/day, uncertainty factor of 200). For PFOA, a TDI of 1.5 µg/kg bw/day was selected based on a two-generation study in rats that highlighted maternal hepatotoxicity (BMDL₁₀ of 0.3 mg/kg bw/day, uncertainty factor of 200).

Risk assessment and characterisation

Estimation of concentrations in foods

Out of 16 detected compounds, 14 were included in the analysis. Perfluorotridecanoic acid (PFTrDA) and perfluorotetradecanoic acid (PFTeDA) were not taken into account since only 40% and 32% respectively of the analyses could be interpreted for the matrices in question.

The percentage of censored data (non-detected element) was high. It ranged from 91% (PFOS) to 100% (PFBA, PFDS, PFHpS and PFPA). Out of a total of 8,765 analyses, only 203 had a quantified result, and PFOS was the most frequently quantified compound (53 results, or 9% of the analyses). These observations were consistent with those published by the United Kingdom in 2009 (FSA 2009).

As most of the compounds were not detected in the various matrices, considering the lowerbound (LB), almost all concentrations were equal to zero (Table C1). More particularly, PFPA, PFHpS, PFDS and PFBA were not detected in any matrices. Water and seafood products were the foods for which the most substances were detected and quantified: six in water (PFBS, PFHpA, PFHxA, PFHxS, PFOA, PFOS) and molluscs and crustaceans (PFDA, PFDoA, PFNA, PFOA, PFOS, PFUnA), and five in fish (PFHpA, PFHxA, PFOA, PFOS, PFUnA). PFOA was quantified in meats, poultry and game, delicatessen meats, seafood products, vegetables excluding potatoes, water and mixed dishes. The highest mean concentrations were found in molluscs and crustaceans: 0.007 µg/kg (LB) and 0.044 µg/kg (UB). PFOS was quantified in meats, delicatessen meats, seafood products, vegetables excluding potatoes, water and mixed dishes. The highest mean concentrations were found in molluscs and crustaceans: 0.18 µg/kg (LB) and 0.19 µg/kg (UB). These concentrations were lower (up to a factor of 100) than those observed in Europe (EFSA 2008a), and more specifically in the United Kingdom (FSA 2009), but had the same order of magnitude as the levels observed in Asia and North America (EFSA 2008a). However, these differences should be put into perspective given the lower analytical limits in TDS 2 (by a factor of around 100). Regarding water, the quantified results for PFOA and PFOS had the same order of magnitude as the concentrations used by EFSA in its report, which were respectively 9 ng/L and 7 ng/L (EFSA 2008a). It should be noted that in a few matrices, the concentration (LB) of some compounds (PFBA, PFUnA, etc.) was higher than that of PFOS and PFOA.

Estimation of exposure in the French population

In adults, mean exposure to PFOA for the upperbound (UB) was estimated at 0.74 ng/kg bw/day (Table C2) (0.53-0.93). Mean exposure to PFOS for the upperbound was estimated at 0.66 ng/kg bw/day (0.59-0.78). At the 95th percentile, upperbound exposure levels were estimated at 1.50 ng/kg bw/day for PFOA (0.94-1.90) and 1.15 ng/kg bw/day for PFOS (0.98-1.39). Since there was a large amount of censored data, exposure concentrations depended greatly on the analytical limits. Given that those of TDS 2 were very low, the estimated exposure concentrations were lower than those estimated in Germany and the United Kingdom, by a factor of approximately 2 to 100 (EFSA 2008a).

In women of childbearing age, mean exposure to PFOA for the upperbound was estimated at 0.78 ng/kg bw/day (Table C4 in the Annex). Mean exposure to PFOS for the upperbound was estimated at 0.67 ng/kg bw/day. At the 95th percentile, upperbound exposure concentrations were estimated at 1.62 ng/kg bw/day for PFOA and 1.17 ng/kg bw/day for PFOS.

In children, upperbound mean exposure to PFOA was estimated at 1.55 ng/kg bw/day (1.26-1.88) (Table C3). Mean exposure to PFOS was estimated at 1.38 ng/kg bw/day (1.20-1.57). At the 95th percentile, upperbound exposure concentrations were estimated at 3.24 ng/kg bw/day for PFOA (2.58-4.37) and 2.88 ng/kg bw/day for PFOS (2.26-4.01).

The breakdown of upperbound (UB) exposure concentrations for the other compounds is shown in Tables C2 and C3. Lowerbound (LB) exposure concentrations are not shown. On average, they were all lower than 0.035 ng/kg bw/day in adults (PFOS and PFHpA) and 0.05 ng/kg bw/day for children (PFHpA). At the 95th percentile, lowerbound exposure remained lower than 0.13 ng/kg bw/day in adults (PFOS) and 0.19 ng/kg bw/day in children (PFOS).

Considering the lowerbound (not shown), only the foods in which perfluorinated compounds were quantified appear as being contributors to exposure: these were primarily water (around 60% for PFOA) and seafood products (around 65% for PFOS).

Even for the upperbound, EFSA's health-based guidance values were not exceeded for PFOA or PFOS, in adults or in children (Table 19). PFOA and PFOS therefore do not pose a health risk to the French population in the current state of knowledge. Nevertheless, it would be advisable to continue studying the toxicity of these compounds, and particularly their carcinogenic and endocrine disruptor potential.

Given the lack of data to establish health-based guidance values for perfluorinated compounds other than PFOA and PFOS, it is not possible to draw a conclusion as to the risk related to these other compounds. It would be advisable to undertake long-term toxicological studies on oral exposure to these compounds in order to establish a health-based guidance value.

Table 19: Exposure to PFOS and PFOA in the French population (ng/kg bw/day)

Substance	Health-based guidance value		Adults			Children		
			Mean	95 th percentile	%>Health-based guidance value [CI _{95%}]	Mean	95 th percentile	%>Health-based guidance value [CI _{95%}]
PFOS	TDI of 150 ng/kg bw/day (EFSA 2008a)	LB	0.04	0.13	0	0.05	0.19	0
		UB	0.66	1.15	0	1.38	2.88	0
PFOA	TDI of 1,500 ng/kg bw/day (EFSA 2008a)	LB	0.01	0.03	0	0.01	0.04	0
		UB	0.74	1.50	0	1.55	3.24	0

Table C1: Estimated food contamination with perfluorinated compounds (ng/g fresh weight)

Food group	Type	n	PFBA		PFBS		PFDA		PFDS		PFDoA		PFHpA		PFHpS		PFHxA		PFHxS		PFNA		PFOA		PFOS		PFPA		PFUnA		PFTeDA		PFTrDA	
			UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	
Bread and dried bread products	N	7	0.337	0	0.291	0	0.038	0.029	0	0.068	0.072	0	0.084	0	0.042	0	0.061	0	0.076	0	0.104	0.252	0	0.462										
Breakfast cereals	N	3	0.113	0	0.090	0	0.013	0.010	0	0.022	0.024	0	0.029	0	0.014	0	0.020	0	0.025	0	0.042	0.090	0	0.169										
Croissant-like pastries	N	3	0.277	0	0.237	0	0.031	0.024	0	0.055	0.059	0	0.069	0	0.035	0	0.050	0	0.062	0	0.089	0.209	0	0.383										
Sweet and savoury biscuits and bars	N	4	0.380	0	0.253	0	0.056	0.045	0	0.087	0.083	0	0.125	0	0.063	0	0.079	0	0.086	0	0.177	0.404	0	0.766	0	1.372	0	0.915						
Pastries and cakes	N	8	0.238	0	0.176	0	0.042	0.027	0	0.050	0.050	0	0.061	0	0.039	0	0.054	0	0.066	0	0.108	0.249	0	0.305	0	1.187	0	0.791						
Milk	R	38	0.253	0	0.105	0	0.057	0.089	0	0.183	0.087	0	0.147	0	0.055	0	0.077	0	0.081	0	0.071	0.176	0	0.484	0	0.494	0	0.148						
Ultra-fresh dairy products	R	75	0.211	0	0.134	0	0.058	0.078	0	0.198	0.067	0	0.128	0	0.053	0	0.094	0	0.088	0	0.079	0.145	0	0.450	0	0.793	0	0.499						
Cheese	R	32	0.229	0	0.105	0	0.041	0.047	0	0.098	0.041	0	0.068	0	0.041	0	0.073	0	0.055	0	0.071	0.139	0	0.298										
Eggs and egg products	R	30	0.109	0	0.055	0	0.022	0.009	0	0.014	0.018	0	0.031	0	0.015	0	0.027	0	0.033	0	0.024	0.043	0	0.157	0	0.500	0	0.370						
Butter	N	1	0.494	0	0.092	0	0.049	0.143	0	0.049	0.075	0	0.148	0	0.075	0	0.049	0	0.069	0	0.094	0.247	0	0.197										
Meat	R	64	0.439	0	0.101	0	0.032	0.033	0	0.038	0.041	0	0.072	0	0.030	0	0.037	0.001	0.056	0.003	0.048	0.106	0	0.293	0	0.437	0	0.313						
Poultry and game	R	38	0.453	0	0.092	0	0.000	0.030	0.050	0	0.035	0	0.068	0	0.032	0	0.036	0.001	0.049	0	0.041	0.111	0	0.302	0	0.401	0	0.289						
Offal	R	16	0.333	0	0.739	0.140	0.147	0.383	0	0.042	0.093	0.186	0	0.186	0	0.376	0.028	0.068	0	0.038	0	0.381	0.206	0.016	0.043	0	0.402							
Delicatessen meats	R	79	0.543	0	0.126	0	0.034	0.051	0	0.045	0.065	0.077	0	0.080	0	0.049	0	0.048	0.001	0.064	0.004	0.060	0.148	0	0.255	0	0.424	0	0.275					
Fish	R	46	0.098	0	0.042	0	0.026	0.028	0	0.050	0.068	0.025	0.002	0.042	0	0.012	0	0.039	0.001	0.023	0.089	0.099	0.077	0.114	0.135	0	0.067	0.074	0.118					
Crustaceans and molluscs	R	37	0.234	0	0.068	0.023	0.038	0.036	0.015	0.030	0.055	0.047	0	0.114	0	0.046	0.002	0.042	0.007	0.044	0.180	0.189	0.146	0.014	0.079	0.003	0.039	0.041	0.054					
Vegetables (excluding potatoes)	R	60	0.129	0	0.048	0	0.009	0.009	0	0.015	0.016	0.021	0	0.030	0	0.013	0.000	0.015	0.001	0.030	0.000	0.015	0.045	0	0.078	0	0.043	0	0.032					
Potatoes and potato products	R	1	0.116	0	0.086	0	0.023	0.022	0	0.023	0.047	0.089	0	0.047	0	0.022	0	0.023	0	0.023	0	0.022	0.047	0	0.023									
Pulses	R	1	0.689	0	0.320	0	0.043	0.041	0	0.129	0.123	0	0.172	0	0.081	0	0.129	0	0.344	0	0.123	0.215	0	0.689										
Chocolate	N	1	0.971	0	0.135	0	0.049	0.047	0	0.097	0.139	0	0.194	0	0.184	0	0.194	0	0.097	0	0.093	0.388	0	0.008										
Water	R	6	0.005	0.001	0.002	0	0.001	0.001	0	0.001	0.028	0.016	0.002	0.008	0.002	0.002	0	0.001	0.001	0.016	0.001	0.002	0.004	0	0.008									
Sandwiches and snacks	R	3	0.261	0	0.097	0	0.026	0.015	0	0.053	0.026	0.050	0	0.078	0	0.040	0	0.042	0	0.037	0	0.050	0.105	0	0.157									
Mixed dishes	R	19	0.276	0	0.081	0	0.026	0.027	0	0.040	0.028	0.043	0	0.064	0	0.031	0	0.035	0.001	0.035	0.001	0.041	0.087	0	0.258	0	0.474	0	0.286					
Dairy-based desserts	R	22	0.194	0	0.090	0	0.024	0.031	0	0.045	0.039	0.033	0	0.056	0	0.024	0	0.038	0	0.041	0	0.040	0.114	0	0.254	0	0.583	0	0.583					
Seasonings and sauces	N	3	0.575	0	0.087	0	0.035	0.060	0	0.041	0.085	0.150	0	0.116	0	0.100	0	0.036	0	0.209	0	0.153	0.100	0	0.310									

Levels of contamination with PFBA, PFDS, PFPA and PFHpS, under the LB hypothesis, are not shown in this Table: they are all equal to zero.

Table C2: Estimated UB exposure (mean and P95) in the French adult population to perfluorinated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	PFBA		PFBS		PFDA		PFDS		PFDoA		PFHpA		PFHpS								
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib						
Bread and dried bread products	0.51	1.19	19.7	0.34	0.84	29.20	0.05	0.12	15.5	0.05	0.11	11.6	0.10	0.24	12.54	0.10	0.24	13.3	0.10	0.24	14.4
Breakfast cereals	0.01	0.17	0.2	0.01	0.16	0.49	0.00	0.02	0.2	0.00	0.01	0.1	0.00	0.03	0.16	0.00	0.03	0.2	0.00	0.04	0.2
Croissant-like pastries	0.05	0.39	1.9	0.04	0.29	3.26	0.01	0.04	1.6	0.00	0.03	1.1	0.01	0.08	1.22	0.01	0.08	1.3	0.01	0.08	1.5
Sweet and savoury biscuits and bars	0.05	0.38	2.0	0.03	0.21	2.43	0.01	0.04	1.6	0.00	0.04	1.2	0.01	0.08	1.26	0.01	0.08	1.4	0.01	0.07	1.4
Pastries and cakes	0.10	0.42	4.0	0.07	0.32	6.18	0.01	0.06	3.7	0.01	0.04	2.4	0.02	0.08	2.50	0.02	0.10	3.0	0.02	0.08	2.9
Milk	0.32	1.73	12.3	0.13	0.82	11.49	0.07	0.40	20.9	0.11	0.65	26.8	0.24	1.60	29.80	0.14	0.75	18.3	0.11	0.64	16.1
Ultra-fresh dairy products	0.25	0.90	9.7	0.14	0.57	12.14	0.07	0.22	20.5	0.09	0.32	23.2	0.25	0.95	30.46	0.11	0.34	14.2	0.08	0.25	11.1
Cheese	0.09	0.26	3.3	0.04	0.11	3.16	0.02	0.06	5.9	0.02	0.04	3.9	0.04	0.12	4.78	0.02	0.07	3.0	0.01	0.05	2.1
Eggs and egg products	0.02	0.10	1.0	0.01	0.05	1.04	0.00	0.02	1.4	0.00	0.01	0.4	0.00	0.01	0.37	0.00	0.02	0.5	0.00	0.02	0.6
Butter	0.01	0.23	0.5	0.00	0.04	0.22	0.00	0.02	0.4	0.00	0.07	1.0	0.00	0.02	0.17	0.00	0.05	0.4	0.00	0.03	0.3
Meat	0.32	0.98	12.6	0.07	0.22	6.36	0.02	0.06	6.5	0.02	0.08	5.9	0.03	0.07	3.20	0.04	0.10	4.7	0.03	0.08	4.2
Poultry and game	0.14	0.63	5.6	0.03	0.15	2.99	0.01	0.04	3.1	0.01	0.06	3.3	0.01	0.05	1.57	0.02	0.07	2.4	0.01	0.05	2.0
Offal	0.01	0.17	0.3	0.02	0.44	1.30	0.00	0.08	0.8	0.01	0.23	2.0	0.00	0.02	0.10	0.00	0.06	0.3	0.02	0.45	2.2
Delicatessen meats	0.21	0.72	8.3	0.04	0.14	3.74	0.01	0.04	3.6	0.02	0.05	4.3	0.02	0.05	1.96	0.02	0.07	2.9	0.02	0.07	3.1
Fish	0.02	0.08	0.7	0.01	0.04	0.70	0.01	0.03	1.6	0.01	0.03	1.5	0.01	0.04	1.07	0.02	0.08	2.0	0.01	0.03	0.7
Crustaceans and molluscs	0.01	0.13	0.4	0.00	0.03	0.29	0.00	0.02	0.7	0.00	0.02	0.5	0.00	0.02	0.21	0.00	0.03	0.4	0.00	0.02	0.4
Vegetables (excluding potatoes)	0.17	0.45	6.8	0.06	0.16	5.01	0.01	0.03	3.4	0.01	0.03	2.8	0.02	0.05	2.42	0.02	0.06	2.9	0.03	0.07	3.9
Potatoes and potato products	0.03	0.12	1.3	0.02	0.09	2.13	0.01	0.02	2.0	0.01	0.02	1.6	0.01	0.02	0.82	0.01	0.05	1.8	0.03	0.10	3.7
Pulses	0.05	0.72	1.9	0.02	0.33	1.98	0.00	0.04	0.9	0.00	0.04	0.7	0.01	0.13	1.15	0.01	0.13	1.2	0.01	0.13	1.3
Chocolate	0.02	0.72	0.9	0.00	0.10	0.28	0.00	0.04	0.4	0.00	0.03	0.3	0.00	0.07	0.29	0.00	0.14	0.6	0.00	0.10	0.5
Water	0.03	0.11	1.3	0.02	0.05	1.36	0.01	0.02	1.6	0.01	0.04	2.3	0.01	0.02	0.74	0.17	0.78	22.9	0.17	0.69	23.9
Sandwiches and snacks	0.05	0.47	2.0	0.02	0.17	1.62	0.01	0.05	1.5	0.00	0.03	0.7	0.01	0.09	1.26	0.01	0.05	0.7	0.01	0.09	1.4
Mixed dishes	0.02	0.29	0.7	0.01	0.10	0.51	0.00	0.03	0.6	0.00	0.02	0.3	0.00	0.05	0.41	0.00	0.03	0.3	0.00	0.05	0.4
Dairy-based desserts	0.05	0.35	1.9	0.02	0.16	1.94	0.01	0.04	1.7	0.01	0.05	1.8	0.01	0.08	1.44	0.01	0.06	1.1	0.01	0.06	1.2
Seasonings and sauces	0.02	0.17	0.7	0.00	0.02	0.22	0.00	0.01	0.3	0.00	0.02	0.4	0.00	0.01	0.14	0.00	0.03	0.3	0.00	0.05	0.7
TOTAL	2.57	4.39	100	1.16	2.08	100	0.34	0.64	100	0.40	0.85	100	0.81	1.95	100	0.76	1.54	100	0.70	1.45	100

Food group	PFHxA		PFHxS		PFNA		PFOA		PFOS		PFPA		PFUnA					
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib			
Bread and dried bread products	0.14	0.34	16.5	0.07	0.16	17.6	0.08	0.20	0.25	14.4	0.43	27.2	0.46	1.09	30.7	0.90	2.17	27.7
Breakfast cereals	0.00	0.04	0.2	0.00	0.03	0.2	0.00	0.04	0.04	0.2	0.00	0.4	0.00	0.11	0.3	0.01	0.19	0.3
Croissant-like pastries	0.01	0.10	1.5	0.01	0.05	1.7	0.01	0.06	0.08	1.5	0.02	2.5	0.04	0.33	2.8	0.08	0.65	2.4
Sweet and savoury biscuits and bars	0.02	0.11	1.7	0.01	0.05	1.8	0.01	0.06	0.08	1.4	0.02	3.0	0.05	0.38	3.4	0.10	0.76	3.1
Pastries and cakes	0.03	0.11	3.1	0.01	0.06	3.7	0.02	0.08	0.09	3.1	0.04	6.0	0.10	0.43	6.9	0.16	0.70	4.9
Milk	0.18	1.02	21.4	0.07	0.36	18.3	0.10	0.56	0.57	14.0	0.09	13.7	0.22	1.17	14.7	0.62	3.54	19.2
Ultra-fresh dairy products	0.14	0.47	16.6	0.06	0.20	15.9	0.10	0.35	0.34	13.3	0.09	13.4	0.17	0.56	11.1	0.50	2.03	15.4
Cheese	0.02	0.07	2.6	0.02	0.05	4.4	0.03	0.10	0.05	2.5	0.03	3.8	0.05	0.15	3.4	0.09	0.27	2.7
Eggs and egg products	0.01	0.03	0.8	0.00	0.01	0.9	0.01	0.03	0.04	1.0	0.01	0.8	0.01	0.04	0.7	0.03	0.15	1.0
Butter	0.00	0.07	0.5	0.00	0.03	0.6	0.00	0.02	0.03	0.3	0.00	0.4	0.01	0.11	0.5	0.01	0.09	0.2
Meat	0.05	0.12	5.5	0.02	0.06	5.9	0.02	0.06	0.09	4.8	0.04	5.5	0.07	0.19	4.8	0.20	0.61	6.1
Poultry and game	0.03	0.10	2.9	0.01	0.05	3.1	0.01	0.05	0.07	2.5	0.02	2.3	0.04	0.15	2.6	0.09	0.35	2.8
Offal	0.00	0.09	0.4	0.01	0.22	2.0	0.00	0.03	0.02	0.1	0.01	1.2	0.00	0.11	0.3	0.00	0.02	0.0
Delicatessen meats	0.03	0.08	3.3	0.02	0.05	4.2	0.02	0.05	0.07	3.3	0.02	3.0	0.05	0.16	3.6	0.10	0.30	3.0
Fish	0.01	0.04	1.0	0.00	0.02	0.7	0.01	0.03	0.02	0.7	0.01	2.2	0.01	0.06	1.0	0.02	0.13	0.6
Crustaceans and molluscs	0.01	0.05	0.6	0.00	0.02	0.7	0.00	0.02	0.02	0.3	0.01	1.8	0.01	0.07	0.5	0.00	0.04	0.1
Vegetables (excluding potatoes)	0.04	0.09	4.1	0.02	0.04	4.1	0.02	0.05	0.11	5.4	0.02	3.1	0.06	0.15	3.9	0.11	0.28	3.3
Potatoes and potato products	0.01	0.05	1.6	0.01	0.02	1.7	0.01	0.02	0.02	0.9	0.01	1.0	0.01	0.05	0.9	0.01	0.02	0.2
Pulses	0.01	0.18	1.4	0.01	0.08	1.6	0.01	0.13	0.36	3.4	0.01	1.3	0.02	0.22	1.0	0.05	0.72	1.5
Chocolate	0.00	0.14	0.5	0.00	0.14	1.2	0.00	0.14	0.07	0.3	0.00	0.3	0.01	0.29	0.6			
Water	0.08	0.31	9.4	0.02	0.07	4.8	0.01	0.02	0.71	23.2	0.02	2.6	0.03	0.12	2.3	0.06	0.20	1.8
Sandwiches and snacks	0.02	0.14	1.8	0.01	0.07	2.1	0.01	0.07	0.07	1.0	0.01	1.5	0.02	0.19	1.4	0.03	0.28	0.9
Mixed dishes	0.00	0.08	0.6	0.00	0.04	0.6	0.00	0.04	0.04	0.3	0.00	0.4	0.01	0.10	0.4	0.02	0.40	0.6
Dairy-based desserts	0.01	0.10	1.5	0.01	0.04	1.5	0.01	0.06	0.08	1.4	0.01	1.8	0.03	0.20	2.2	0.07	0.49	2.2
Seasonings and sauces	0.00	0.03	0.4	0.00	0.03	0.8	0.00	0.01	0.07	0.9	0.00	0.5	0.00	0.03	0.2	0.00	0.10	0.1
TOTAL	0.86	1.67	100	0.38	0.70	100	0.49	0.97	1.50	100	0.66	1.15	1.50	2.60	100	3.23	6.19	100

Table C3: Estimated UB exposure (mean and P95) in the French child population to perfluorinated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	PFBA		PFBS		PFDA		PFDS		PFDoA		PFHpA		PFHpS			
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	
Bread and dried bread products	0.48	1.24	9.1	0.31	0.05	0.12	6.1	0.04	0.11	4.3	0.10	0.25	4.4	0.10	0.24	6.3
Breakfast cereals	0.05	0.23	0.9	0.03	0.01	0.02	0.6	0.00	0.02	0.4	0.01	0.05	0.4	0.01	0.04	0.6
Croissant-like pastries	0.18	0.85	3.3	0.13	0.02	0.09	2.3	0.02	0.08	1.5	0.04	0.17	1.6	0.04	0.16	2.4
Sweet and savoury biscuits and bars	0.20	0.89	3.7	0.11	0.02	0.10	2.8	0.02	0.09	2.0	0.04	0.18	1.9	0.05	0.18	2.5
Pastries and cakes	0.19	0.81	3.6	0.17	0.03	0.12	3.5	0.02	0.08	1.9	0.04	0.16	1.8	0.05	0.17	2.8
Milk	1.44	4.78	27.1	0.57	0.33	1.14	40.3	0.49	1.83	47.9	1.14	4.41	51.8	0.63	2.23	34.2
Ultra-fresh dairy products	0.56	1.85	10.5	0.31	0.16	0.48	19.1	0.21	0.65	20.3	0.53	1.87	24.3	0.24	0.75	11.7
Cheese	0.10	0.36	1.9	0.05	0.02	0.07	2.7	0.02	0.07	1.8	0.04	0.16	2.0	0.03	0.10	1.2
Eggs and egg products	0.04	0.20	0.7	0.02	0.01	0.04	0.8	0.00	0.01	0.2	0.00	0.03	0.2	0.01	0.03	0.4
Butter	0.03	0.42	0.5	0.01	0.00	0.04	0.3	0.01	0.12	0.8	0.00	0.04	0.1	0.01	0.08	0.3
Meat	0.54	1.57	10.2	0.12	0.04	0.10	4.3	0.04	0.11	3.5	0.04	0.12	1.9	0.06	0.16	3.0
Poultry and game	0.18	0.75	3.3	0.05	0.01	0.06	1.8	0.02	0.07	1.6	0.02	0.07	0.8	0.03	0.10	1.3
Offal	0.00	0.22	0.1	0.01	0.00	0.16	0.3	0.01	0.36	0.6	0.00	0.03	0.0	0.00	0.08	0.1
Delicatessen meats	0.32	1.04	6.0	0.07	0.02	0.07	2.4	0.02	0.09	2.4	0.02	0.08	1.1	0.04	0.11	2.2
Fish	0.04	0.19	0.8	0.02	0.02	0.07	1.9	0.02	0.08	1.8	0.01	0.07	0.6	0.04	0.19	1.0
Crustaceans and molluscs	0.01	0.09	0.1	0.00	0.00	0.04	0.2	0.00	0.02	0.1	0.00	0.02	0.0	0.00	0.05	0.1
Vegetables (excluding potatoes)	0.24	0.71	4.5	0.09	0.02	0.05	2.0	0.02	0.05	1.5	0.03	0.09	1.2	0.03	0.10	1.8
Potatoes and potato products	0.07	0.23	1.3	0.05	0.01	0.05	1.7	0.01	0.04	1.3	0.01	0.05	0.6	0.03	0.09	1.7
Pulses	0.09	1.21	1.7	0.04	0.01	0.08	0.7	0.01	0.07	0.5	0.02	0.23	0.8	0.02	0.23	1.1
Chocolate	0.19	1.21	3.6	0.03	0.01	0.06	1.2	0.01	0.06	0.9	0.02	0.12	0.9	0.04	0.24	1.8
Water	0.05	0.15	1.0	0.02	0.01	0.02	1.0	0.01	0.05	1.3	0.01	0.03	0.4	0.26	1.07	15.2
Sandwiches and snacks	0.07	0.49	1.3	0.03	0.01	0.05	0.9	0.00	0.03	0.4	0.01	0.10	0.7	0.01	0.05	0.4
Mixed dishes	0.07	0.53	1.4	0.02	0.01	0.06	1.0	0.01	0.04	0.5	0.01	0.10	0.6	0.01	0.06	0.4
Dairy-based desserts	0.14	0.75	2.7	0.07	0.02	0.09	2.0	0.02	0.12	2.2	0.04	0.19	1.7	0.02	0.13	1.4
Seasonings and sauces	0.03	0.27	0.6	0.00	0.00	0.02	0.2	0.00	0.03	0.3	0.00	0.02	0.1	0.00	0.04	0.3
TOTAL	5.29	10.92	100	2.34	1.03	1.85	100	1.03	2.56	100	2.19	6.00	100	1.73	3.99	100

Food group	PFHxA			PFHxS			PFNA			PFOA			PFOS			PFPA			PFUnA		
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Bread and dried bread products	0.14	0.35	6.7	0.06	0.16	7.3	0.08	0.20	7.0	0.10	0.25	6.4	0.17	0.45	12.5	0.44	1.15	13.6	0.86	2.25	12.0
Breakfast cereals	0.01	0.07	0.7	0.01	0.03	0.7	0.01	0.04	0.7	0.01	0.05	0.6	0.02	0.09	1.3	0.05	0.23	1.4	0.09	0.45	1.3
Croissant-like pastries	0.05	0.24	2.3	0.02	0.11	2.6	0.03	0.14	2.7	0.04	0.17	2.5	0.06	0.31	4.4	0.15	0.80	4.6	0.28	1.58	3.9
Sweet and savoury biscuits and bars	0.06	0.28	2.9	0.03	0.12	3.2	0.03	0.15	3.0	0.04	0.19	2.7	0.08	0.35	5.8	0.20	0.92	6.1	0.39	1.77	5.3
Pastries and cakes	0.05	0.20	2.4	0.03	0.12	3.3	0.04	0.17	3.5	0.05	0.21	3.3	0.08	0.32	5.8	0.22	0.98	6.8	0.25	1.11	3.4
Milk	0.83	2.80	40.8	0.31	1.04	36.0	0.42	1.57	36.5	0.46	1.54	29.9	0.40	1.30	29.2	0.98	3.43	30.5	2.79	10.13	38.7
Ultra-fresh dairy products	0.32	1.06	15.8	0.13	0.45	15.5	0.22	0.82	19.5	0.22	0.78	14.0	0.20	0.70	14.2	0.37	1.25	11.5	1.07	4.03	14.8
Cheese	0.03	0.09	1.3	0.02	0.07	2.1	0.04	0.12	3.1	0.02	0.08	1.5	0.03	0.11	2.2	0.06	0.21	1.9	0.12	0.38	1.6
Eggs and egg products	0.01	0.05	0.5	0.00	0.03	0.6	0.01	0.04	0.6	0.01	0.07	0.7	0.01	0.05	0.6	0.01	0.09	0.5	0.04	0.29	0.6
Butter	0.01	0.12	0.4	0.00	0.06	0.5	0.00	0.04	0.2	0.00	0.06	0.2	0.01	0.08	0.4	0.01	0.21	0.4	0.01	0.17	0.1
Meat	0.08	0.21	3.8	0.04	0.10	4.1	0.04	0.11	3.5	0.06	0.16	3.7	0.06	0.16	4.3	0.12	0.32	3.6	0.32	1.05	4.5
Poultry and game	0.03	0.13	1.7	0.02	0.07	2.0	0.02	0.07	1.7	0.03	0.10	1.7	0.02	0.08	1.5	0.05	0.19	1.7	0.13	0.50	1.8
Offal	0.00	0.14	0.1	0.01	0.36	0.6	0.00	0.06	0.1	0.00	0.03	0.0	0.01	0.36	0.4	0.00	0.14	0.1	0.00	0.04	0.0
Delicatessen meats	0.05	0.14	2.3	0.02	0.06	2.7	0.03	0.08	2.4	0.04	0.13	2.6	0.03	0.10	2.3	0.09	0.28	2.7	0.15	0.50	2.1
Fish	0.02	0.08	0.9	0.01	0.04	1.0	0.01	0.06	1.3	0.01	0.06	0.8	0.02	0.16	1.6	0.03	0.14	1.0	0.03	0.19	0.4
Crustaceans and molluscs	0.00	0.06	0.2	0.00	0.04	0.2	0.00	0.03	0.1	0.00	0.03	0.1	0.01	0.26	0.7	0.01	0.08	0.2	0.00	0.05	0.0
Vegetables (excluding potatoes)	0.05	0.15	2.4	0.02	0.07	2.6	0.03	0.09	2.5	0.06	0.19	3.6	0.03	0.09	2.1	0.08	0.24	2.6	0.16	0.51	2.2
Potatoes and potato products	0.03	0.09	1.4	0.01	0.04	1.6	0.01	0.05	1.2	0.01	0.05	0.9	0.01	0.04	1.0	0.03	0.09	0.9	0.01	0.05	0.2
Pulses	0.02	0.30	1.1	0.01	0.14	1.3	0.02	0.23	1.5	0.05	0.60	3.0	0.02	0.22	1.2	0.03	0.38	0.9	0.09	1.21	1.3
Chocolate	0.04	0.24	1.9	0.04	0.23	4.1	0.04	0.24	3.3	0.02	0.12	1.2	0.02	0.12	1.3	0.08	0.49	2.3	—	—	—
Water	0.12	0.38	6.0	0.03	0.08	3.1	0.01	0.03	1.0	0.26	0.96	16.7	0.03	0.07	1.9	0.05	0.15	1.5	0.09	0.27	1.2
Sandwiches and snacks	0.02	0.15	1.1	0.01	0.08	1.3	0.01	0.08	1.0	0.01	0.07	0.7	0.01	0.09	1.0	0.03	0.20	0.9	0.04	0.30	0.6
Mixed dishes	0.02	0.15	1.0	0.01	0.07	1.1	0.01	0.08	0.9	0.01	0.07	0.6	0.01	0.09	0.9	0.03	0.20	0.8	0.07	0.67	1.0
Dairy-based desserts	0.04	0.20	1.9	0.02	0.08	1.9	0.03	0.15	2.4	0.03	0.17	2.0	0.04	0.20	2.8	0.11	0.54	3.3	0.20	1.17	2.8
Seasonings and sauces	0.01	0.06	0.3	0.01	0.05	0.6	0.00	0.02	0.2	0.01	0.10	0.7	0.01	0.07	0.6	0.01	0.04	0.2	0.01	0.23	0.1
TOTAL	2.02	4.43	100	0.86	1.88	100	1.14	2.48	100	1.55	3.24	100	1.38	2.88	100	3.23	6.67	100	7.21	15.99	100

5.3. Brominated flame retardants

Brominated flame retardants (BFRs) are chemical substances incorporated in the plastic parts of electronic devices (computers, televisions) and electronic circuits to give them fire-retardant properties. They are also found in foams and padding materials (domestic and industrial), car and aircraft interiors and some textiles.

This family encompasses numerous structurally different compounds, including:

- tetrabromobisphenol A (TBBPA);
- hexabromocyclododecane (HBCD);
- polybrominated biphenyls (PBBs), which are prohibited in Europe and have not been manufactured since 2000;
- polybrominated diphenyl ethers (PBDEs), of which only deca-BDE (BDE-209) is authorised in Europe (except in electrical and electronic devices).

Hazard characterisation

Data obtained in animals indicate that BFRs have toxic effects particularly on hepatic, hormonal, reproductive, nervous and immunological functions. Some compounds can accumulate in the body. Data on carcinogenicity are still limited, but PBDEs, PBBs and HBCDs are not genotoxic. Epidemiological studies are difficult to interpret on account of numerous methodological biases.

It is still hard to characterise the chronic human toxicity of these compounds, which have often been studied in the form of mixtures in experimental studies, and which have different modes of action. In the family of PBDEs, the toxicity and stability of compounds tend to decrease as the number of bromine atoms increases.

In a recent opinion on PBBs, EFSA considered it was difficult to define a health-based guidance value, but proposed comparing data on exposure to PBBs with a NOAEL of 0.15 mg/kg bw/day observed in rats (induction of hepatic carcinomas by a mode of action with a threshold) (EFSA 2010c).

Regarding PBDEs, 7 to 8 congeners are generally chosen for studies. In 2006, AFSSA concluded that it was not possible to define a health-based guidance value (AFSSA 2006). JECFA considers that no harmful effects can occur in rodents after oral exposure to BDE-47 and BDE-99 (known to be the most toxic) at levels lower than 100 µg/kg bw/day (JECFA 2006b). Given that the chemical structure of PBDEs is similar to that of NDL-PCBs (see Section on dioxins and PCBs), their modes of action should be similar (Kodavanti, Ward *et al.* 2005). Pending the defining of a health-based guidance value for PBDEs and as a precautionary measure, the experts from the ANSES Expert Committee on Physical and chemical contaminants and residues proposed comparing exposure to the eight PBDEs with the threshold of 10 ng/kg bw/day defined by AFSSA in 2007 for the six NDL-PCBs that are most frequently found in food (neurodevelopmental effects) (AFSSA 2007a).

Regarding HBCDs, there is no relevant health-based guidance value at the present time. The bioaccumulative potential of these compounds should be taken into account in future toxicity studies.

Several assessment studies are in progress at EFSA (PBDE, HBCD and TBBPA in particular) and will be published shortly.

Risk assessment and characterisation

Estimation of concentrations in foods

The percentage of censored data (non-detected congeners) for brominated flame retardants was highly variable: it ranged from 7.1% for BDE-99 to 96.9% for BB-101. PBBs (BB-52, 101 and 153), undoubtedly due to their prohibition, were generally detected less than PBDEs (BDE-28, 47, 99, 100, 153, 154, 183, 209).

The highest mean concentrations for the sum of the three HBCD congeners (alpha, beta and gamma) were found in fish (LB=0.133 ng/g FW, UB=0.141 ng/g FW), delicatessen meats (LB=0.132 ng/g FW, UB=0.140 ng/g FW), crustaceans and molluscs (LB=0.131 ng/g FW, UB=0.135 ng/g FW) and meat (LB=0.120 ng/g FW, UB=0.126 ng/g FW) (Table D1). The other groups all had mean concentrations lower than 0.1 ng/g FW.

For the sum of the three PBB congeners, the highest concentrations were found in oils (LB=0 ng/g FW, UB=0.019 ng/g FW) and margarine (LB=0 ng/g FW, UB=0.015 ng/g FW) (Table D1). Given the high percentage of non-detected congeners, the lowerbound (LB) estimates were zero for several food groups.

For the sum of the seven PBDE congeners (excluding BDE-209), the food groups with the highest concentrations were fish (LB=0.495 ng/g FW, UB=0.496 ng/g FW), crustaceans and molluscs (LB=0.101 ng/g FW, UB=0.103 ng/g FW) and butter (LB=0.076 ng/g FW, UB=0.080 ng/g FW) (Table D1). All of the food groups had concentrations that were around 4 to 12 times lower than those given for Europe in the JECFA report (JECFA 2006b). These differences may be related to the 2002 prohibition of certain formulations through the publication of a Directive on electrical and electronic equipment (2002/95/EC, 2002/96/EC, 2003/11/EC) applicable as of 1 July 2006. Moreover, the data used by JECFA in 2005 were not solely European, but also American, while the PBDE profiles used in the United States can be extremely different from those used in Europe before their prohibition.

When congener BDE-209 was added to the sum of the seven PBDE congeners, i.e. for the sum of the eight PBDEs, the most contaminated groups also included dairy-based desserts (LB=0.290 ng/g FW, UB=0.292 ng/g FW), sandwiches and snacks (LB=0.152 ng/g FW, UB=0.154 ng/g FW) and margarine (LB=0.153 ng/g FW, UB=0.157 ng/g FW).

Estimation of exposure in the French population

Hexabromocyclododecane

Mean daily exposure to the sum of the three HBCD congeners was 0.165 ng/kg bw/day in adults for the lowerbound (0.091-0.351) and 0.211 ng/kg bw/day for the upperbound (0.133-0.401) (Table D2). In children, mean exposure was 0.237 ng/kg bw/day for the lowerbound (0.152-0.402) and 0.320 ng/kg bw/day for the upperbound (0.231-0.488) (Table D3).

At the 95th percentile, exposure in adults was 0.391 ng/kg bw/day for the lowerbound (0.194-1.335) and 0.448 ng/kg bw/day for the upperbound (0.240-1.379). In children, exposure at the 95th percentile was 0.616 ng/kg bw/day for the lowerbound (0.326-1.490) and 0.734 ng/kg bw/day for the upperbound (0.406-1.638). The main contributors for adults and children were delicatessen meats (27-29%), meat (15-21%), fish for adults (14%) and mixed dishes for children (14%).

Given the lack of data to establish a health-based guidance value for HBCD, it is not possible to draw a conclusion as to the risk related to this compound. It would be advisable to undertake long-term toxicological studies on oral exposure in order to establish a health-based guidance value.

Polybrominated biphenyls

Mean exposure in adults to the sum of the 3 PBB congeners was 0.001 ng/kg bw/day for the lowerbound (0.001-0.002) and 0.017 ng/kg bw/day for the upperbound (0.015-0.019) (Table D2). In children, mean exposure was 0.001 ng/kg bw/day for the lowerbound (0.001-0.003) and 0.030 ng/kg bw/day for the upperbound (0.027-0.033) (Table D3). At the 95th percentile, exposure in adults was 0.006 ng/kg bw/day for the lowerbound (0.003-0.010) and 0.028 ng/kg bw/day for the upperbound (0.023-0.034). In children, it was 0.008 ng/kg bw/day for the lowerbound (0.004-0.016) and 0.059 ng/kg bw/day for the upperbound (0.052-0.071). In both adults and children, the main contributors to exposure were fish (around 80%), since levels were estimated at zero for numerous food groups for the lowerbound.

In light of the NOAEL of 0.15 mg/kg bw/day that was recently used by EFSA for PBBs, the margin of exposure (MOE) in children, at the 95th exposure percentile, was 2.5 million for the upperbound (Table 20). Risk related to PBB exposure therefore does not appear to be a public health problem.

Seven polybrominated diphenyl ethers

In adults, mean exposure to the sum of the seven PBDE congeners was 0.202 ng/kg bw/day for the lowerbound (0.144-0.235) and 0.212 ng/kg bw/day for the upperbound (0.153-0.244) (Table D2). In children, exposure was 0.313 ng/kg bw/day for the lowerbound (0.252-0.389) and 0.331 ng/kg bw/day for the upperbound (0.272-0.409) (Table D3). At the 95th percentile, exposure in adults was 0.636 ng/kg bw/day for the lowerbound (0.411-0.787) and 0.643 ng/kg bw/day for the upperbound (0.422-0.798). In children, exposure at the 95th percentile was 0.868 ng/kg bw/day for the lowerbound (0.548-1.268) and 0.894 ng/kg bw/day for the upperbound (0.628-1.301). The main contributors were fish for both adults and children (>33%).

These exposure levels were 12 to 15 times lower than the estimates for the general French population in 2006 on the basis of INCA 1 consumption data and French and international contamination data (AFSSA 2006).

Eight polybrominated diphenyl ethers

When congener PBDE 209 was added to the previous sum, exposure levels increased by a factor of 2 to 3. In adults, mean exposure was 0.540 ng/kg bw/day for the lowerbound (0.463-0.648) and 0.550 ng/kg bw/day for the upperbound (0.472-0.659) (Table D2). In children, mean exposure was 1.008 ng/kg bw/day for the lowerbound (0.888-1.217) and 1.026 ng/kg bw/day for the upperbound (0.907-1.238) (Table D3). At the 95th percentile, exposure in adults was 1.164 ng/kg bw/day for the lowerbound (0.892-1.419) and 1.176 ng/kg bw/day for the upperbound (0.898-1.436). In children, it was 2.337 ng/kg bw/day for the lowerbound (2.013-3.039) and 2.368 ng/kg bw/day for the upperbound (2.037-3.086). Irrespective of the assumption, the highest contributors to exposure for adults and children were dairy-based desserts (15-23%), fish (12-17%), and ultra-fresh dairy products (11-15%).

When adopting a conservative approach, the 95th exposure percentile in children to all of the eight PBDEs for the upperbound was over 40,000 times lower than the value used by JECFA of 100 µg/kg bw/day for the two congeners known to be the most toxic (BDE-47 and 99), below which no toxic effects appear (Table 20). This exposure level was also lower than the value of 10 ng/kg bw/day proposed by the ANSES Expert Committee on physical and chemical contaminants and residues to characterise risk related to PBDEs. PBDEs therefore do not pose a health risk to the French population in the current state of knowledge. Nevertheless, it would be advisable to continue research into the toxicity of these compounds.

Table 20: Exposure (mean and 95th percentile) to brominated compounds in the French population (ng/kg bw/day), margin of exposure (MOE) at the 95th exposure percentile

Substance	Toxicological value		Adults				Children			
			Mean	P95	MOE (P95)	%>toxicological value	Mean	P95	MOE (P95)	%>toxicological value
HBCDs	-	LB	0.165	0.391			0.237	0.616		
		UB	0.211	0.448			0.320	0.734		
PBBs	NOAEL of 0.15 mg/kg bw/day (EFSA 2010c)	LB	0.001	0.006	25.10 ⁶		0.001	0.008	19.10 ⁶	
		UB	0.017	0.028	5.10 ⁶		0.030	0.059	2.5.10 ⁶	
7 PBDEs	-	LB	0.202	0.636			0.313	0.868		
		UB	0.212	0.643			0.331	0.894		
8 PBDEs	No adverse effect level for 2 congeners (BDE-47 and BDE-99) of 100 µg/kg bw/day (JECFA 2006b); TDI of 10 ng/kg bw/day for the 6 NDL-PCBs (AFSSA 2007a; IPCS 2003)	LB	0.540	1.164	86000	0	1.008	2.337	43000	0
		UB	0.550	1.176	85000	0	1.026	2.368	42000	0

Table D1: Estimated food contamination with brominated compounds (ng/g fresh weight)

Food group	Type	n	HBCD alpha		HBCD beta		HBCD gamma		Total HBCD		BB 52		BB 101		BB 153		Total PBB		
			MB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	
Milk	R	37	0.001	0.0001	0.0006	0.0002	0.0013	0.0012	0.0028	0	0.0001	0	0.0002	0.00001	0.0002	0.00001	0.0002	0.00007159	0.0005
Ultra-fresh dairy products	R	74	0.005	0.0007	0.0024	0.0011	0.0040	0.0072	0.0117	0	0.0002	0	0.0003	0	0.0006	0	0.0006	0	0.0011
Cheese	R	31	0.007	0.0002	0.0025	0.0000	0.0110	0.0068	0.0201	0	0.0004	0	0.0014	0.00009	0.0021	0.00009	0.0021	0.00009	0.0039
Eggs and egg products	R	30	0.016	0.0007	0.0019	0.0023	0.0076	0.0191	0.0257	0	0.0002	0	0.0008	0	0.0012	0	0.0012	0	0.0022
Butter	N	6	0.007	0.0000	0.0083	0.0008	0.0189	0.0081	0.0345	0	0.0011	0	0.0017	0	0.0054	0	0.0054	0	0.0081
Oils	N	3	0.012	0.0000	0.0149	0.0000	0.0471	0.0117	0.0736	0	0.0041	0	0.0082	0	0.0071	0	0.0071	0	0.0194
Margarine	N	4	0.005	0.0000	0.0065	0.0000	0.0188	0.0054	0.0307	0	0.0013	0	0.0031	0	0.0105	0	0.0105	0	0.0149
Meat	R	64	0.117	0.0016	0.0030	0.0011	0.0057	0.1201	0.1262	0	0.0002	0	0.0008	0.00005	0.0011	0.00005	0.0011	0.00005	0.0021
Poultry and game	R	38	0.051	0.0007	0.0014	0.0005	0.0058	0.0522	0.0583	0	0.0002	0	0.0008	0	0.0010	0	0.0010	0	0.0020
Offal	R	16	0.022	0.0004	0.0017	0.0044	0.0107	0.0266	0.0342	0	0.0004	0	0.0012	0.00146	0.0020	0.00146	0.0020	0.00146	0.0036
Delicatessen meats	R	80	0.127	0.0019	0.0035	0.0028	0.0104	0.1319	0.1410	0	0.0004	0	0.0012	0.00010	0.0017	0.00010	0.0017	0.00010	0.0033
Fish	R	45	0.127	0.0018	0.0064	0.0048	0.0083	0.1332	0.1414	0.00260	0.0028	0.00189	0.0025	0.00179	0.0028	0.00179	0.0028	0.00628	0.0081
Crustaceans and molluscs	R	37	0.114	0.0077	0.0097	0.0087	0.0109	0.1309	0.1350	0.00099	0.0011	0.00006	0.0009	0.00040	0.0011	0.00040	0.0011	0.00144	0.0031
Vegetables (excluding potatoes)	R	3	0.003	0.0000	0.0007	0.0003	0.0031	0.0030	0.0066	0	0.0003	0	0.0007	0	0.0007	0	0.0007	0	0.0016
Pizzas, quiches and savoury pastries	N	4	0.022	0.0004	0.0013	0.0000	0.0069	0.0229	0.0307	0	0.0002	0	0.0009	0	0.0015	0	0.0015	0	0.0025
Sandwiches and snacks	R	18	0.023	0.0003	0.0016	0.0003	0.0057	0.0236	0.0303	0	0.0003	0	0.0012	0.00000381	0.0012	0.00003	0.0012	0.00003	0.0024
Mixed dishes	R	61	0.034	0.0017	0.0021	0.0052	0.0076	0.0411	0.0441	0	0.0003	0	0.0009	0.00003	0.0012	0.00003	0.0012	0.00003	0.0024
Dairy-based desserts	R	22	0.003	0.0003	0.0014	0.0002	0.0049	0.0038	0.0097	0	0.0003	0	0.0008	0	0.0013	0	0.0013	0	0.0024
Seasonings and sauces	N	3	0.004	0.0000	0.0079	0.0000	0.0252	0.0035	0.0366	0	0.0016	0	0.0039	0	0.0036	0	0.0036	0	0.0091

Food group	Type	n	BDE 28		BDE 47		BDE 99		BDE 100		BDE 153		BDE 154		BDE 183		BDE 209		Total 7 PBDE		Total 8 PBDE		
			MB	UB	MB	UB	MB	UB	MB	UB	MB	UB	MB	UB	MB	UB	MB	UB	MB	UB	MB	UB	MB
Milk	R	37	0.0001	0.0008	0.0005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	0.0004	0.0004	0.0002	0.0002	0.0002	0.0002	0.0006	0.0006
Ultra-fresh dairy products	R	74	0.0001	0.0041	0.0024	0.0006	0.0008	0.0008	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0017	0.0023	0.032	0.010	0.011	0.010	0.011	0.042	0.043
Cheese	R	31	0.0004	0.0107	0.0079	0.0018	0.0008	0.0008	0.0008	0.0006	0.0006	0.0006	0.0006	0.0006	0.0001	0.0030	0.040	0.022	0.025	0.022	0.025	0.062	0.065
Eggs and egg products	R	30	0.0002	0.0037	0.0043	0.0009	0.0025	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0042	0.0059	0.049	0.017	0.018	0.017	0.018	0.066	0.068
Butter	N	6	0.0008	0.0315	0.0209	0.0044	0.0045	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	0.0121	0.0160	0.045	0.076	0.080	0.076	0.080	0.121	0.125
Oils	N	3	0.0012	0.0009	0.0019	0.0014	0.0067	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0000	0.0124	0.006	0.018	0.030	0.018	0.030	0.024	0.036
Margarine	N	4	0.0003	0.0135	0.0129	0.0030	0.0041	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0066	0.0102	0.110	0.043	0.047	0.043	0.047	0.153	0.157
Meat	R	64	0.0002	0.0087	0.0085	0.0021	0.0032	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0010	0.0024	0.052	0.025	0.026	0.025	0.026	0.077	0.079
Poultry and game	R	38	0.0002	0.0061	0.0078	0.0021	0.0028	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0048	0.0069	0.041	0.025	0.027	0.025	0.027	0.067	0.069
Offal	R	16	0.0003	0.0057	0.0040	0.0010	0.0012	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0002	0.0028	0.052	0.013	0.016	0.013	0.016	0.065	0.068
Delicatessen meats	R	80	0.0004	0.0144	0.0163	0.0025	0.0063	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0107	0.0125	0.077	0.053	0.055	0.053	0.055	0.130	0.131
Fish	R	45	0.0199	0.2940	0.0513	0.0768	0.0130	0.0130	0.0130	0.0130	0.0130	0.0130	0.0130	0.0130	0.0033	0.0047	0.043	0.495	0.496	0.495	0.496	0.538	0.539
Crustaceans and molluscs	R	37	0.0027	0.0498	0.0191	0.0141	0.0038	0.0038	0.0038	0.0038	0.0038	0.0038	0.0038	0.0038	0.0058	0.0078	0.029	0.101	0.103	0.101	0.103	0.130	0.132
Vegetables (excluding potatoes)	R	3	0.0002	0.0051	0.0042	0.0010	0.0038	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0137	0.0142	0.062	0.029	0.030	0.029	0.030	0.091	0.092
Pizzas, quiches and savoury pastries	N	4	0.0004	0.0078	0.0069	0.0009	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0000	0.0019	0.068	0.017	0.019	0.017	0.019	0.086	0.087
Sandwiches and snacks	R	18	0.0004	0.0144	0.0122	0.0022	0.0046	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0091	0.0109	0.108	0.045	0.047	0.045	0.047	0.152	0.154
Mixed dishes	R	61	0.0002	0.0077	0.0060	0.0011	0.0016	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011	0.0015	0.0026	0.059	0.019	0.020	0.019	0.020	0.078	0.079
Dairy-based desserts	R	22	0.0002	0.0043	0.0030	0.0007	0.0011	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0028	0.0042	0.278	0.013	0.014	0.013	0.014	0.290	0.292
Seasonings and sauces	N	3	0.0004	0.0004	0.0023	0.0007	0.0036	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0006	0.0069	0.037	0.009	0.016	0.009	0.016	0.046	0.052

Table D2: Estimated exposure (mean and P95) in the French adult population to brominated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	HBCD						PBB						7 PBDE						8 PBDE					
	Mean		P95		Contrib		Mean		P95		Contrib		Mean		P95		Contrib		Mean		P95		Contrib	
	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB
Milk	0.002	0.004	0.018	0.023	1.1	1.7	0.000	0.001	0.000	0.003	0.2	3.5	0.002	0.002	0.011	0.014	0.9	1.1	0.005	0.006	0.028	0.031	1.0	1.0
Ultra-fresh dairy products	0.007	0.012	0.019	0.024	4.5	5.6	0.000	0.001	0.000	0.002	0.0	6.7	0.010	0.011	0.019	0.021	5.0	5.1	0.061	0.062	0.131	0.132	11.4	11.3
Cheese	0.003	0.008	0.004	0.013	1.6	4.0	0.000	0.002	0.000	0.003	3.5	10.5	0.011	0.012	0.017	0.019	5.3	5.7	0.023	0.025	0.038	0.040	4.3	4.5
Eggs and egg products	0.004	0.006	0.020	0.023	2.5	2.6	0.000	0.000	0.000	0.002	0.0	2.8	0.004	0.005	0.023	0.023	2.1	2.2	0.015	0.015	0.061	0.061	2.8	2.8
Butter	0.001	0.006	0.004	0.017	0.8	2.8	0.000	0.002	0.000	0.005	0.0	9.1	0.015	0.016	0.046	0.048	7.5	7.4	0.025	0.026	0.077	0.079	4.6	4.7
Oils	0.001	0.009	0.005	0.029	0.9	4.4	0.000	0.002	0.000	0.008	0.0	14.5	0.002	0.004	0.006	0.011	1.0	1.7	0.003	0.004	0.009	0.014	0.5	0.8
Margarine	0.000	0.002	0.002	0.010	0.2	0.9	0.000	0.001	0.000	0.006	0.0	5.9	0.002	0.003	0.015	0.016	1.2	1.3	0.009	0.009	0.054	0.055	1.6	1.6
Meat	0.034	0.038	0.034	0.037	20.7	18.0	0.000	0.001	0.000	0.002	3.8	8.6	0.014	0.015	0.024	0.025	7.0	7.1	0.048	0.049	0.092	0.093	8.9	8.9
Poultry and game	0.012	0.014	0.048	0.056	7.2	6.7	0.000	0.001	0.000	0.002	0.0	4.4	0.011	0.011	0.045	0.046	5.3	5.4	0.036	0.037	0.164	0.164	6.6	6.6
Offal	0.001	0.001	0.017	0.019	0.3	0.3	0.000	0.000	0.001	0.002	2.4	0.4	0.000	0.000	0.009	0.010	0.1	0.1	0.001	0.001	0.030	0.031	0.2	0.2
Delicatessen meats	0.044	0.046	0.075	0.078	26.5	22.0	0.000	0.001	0.000	0.002	3.1	6.8	0.019	0.019	0.030	0.031	9.3	9.1	0.047	0.047	0.070	0.070	8.6	8.6
Fish	0.022	0.024	0.144	0.149	13.7	11.3	0.001	0.001	0.006	0.006	80.4	7.5	0.081	0.081	0.518	0.518	39.9	38.3	0.090	0.090	0.554	0.556	16.6	16.3
Crustaceans and molluscs	0.005	0.006	0.060	0.060	3.2	2.6	0.000	0.000	0.001	0.001	6.0	1.0	0.005	0.005	0.056	0.056	2.6	2.5	0.007	0.007	0.070	0.070	1.3	1.3
Vegetables (excluding potatoes)	0.001	0.001	0.004	0.009	0.4	0.5	0.000	0.000	0.000	0.002	0.0	1.0	0.003	0.003	0.032	0.032	1.4	1.4	0.009	0.009	0.098	0.098	1.7	1.7
Pizzas, quiches and savoury pastries	0.003	0.005	0.023	0.031	1.7	2.3	0.000	0.001	0.000	0.003	0.0	3.3	0.003	0.004	0.018	0.020	1.5	1.7	0.020	0.021	0.108	0.111	3.7	3.7
Sandwiches and snacks	0.006	0.007	0.090	0.095	3.6	3.4	0.000	0.001	0.000	0.004	0.0	3.2	0.008	0.008	0.074	0.077	4.0	3.9	0.027	0.027	0.240	0.243	5.0	5.0
Mixed dishes	0.017	0.019	0.120	0.120	10.5	8.8	0.000	0.001	0.000	0.004	0.6	6.3	0.008	0.008	0.029	0.031	3.8	3.9	0.034	0.035	0.126	0.128	6.3	6.3
Dairy-based desserts	0.001	0.003	0.007	0.015	0.6	1.3	0.000	0.000	0.000	0.003	0.0	2.9	0.004	0.004	0.024	0.025	1.8	1.8	0.079	0.079	0.429	0.432	14.6	14.4
Seasonings and sauces	0.000	0.001	0.001	0.010	0.1	0.5	0.000	0.000	0.000	0.003	0.0	1.6	0.000	0.000	0.003	0.005	0.1	0.2	0.001	0.001	0.012	0.014	0.2	0.3
Total	0.165	0.211	0.391	0.448	100.0	100.0	0.001	0.017	0.006	0.028	100.0	100.0	0.202	0.212	0.636	0.643	100.0	100.0	0.540	0.550	1.164	1.176	100.0	100.0

Table D3: Estimated exposure (mean and P95) in the French child population to brominated compounds (ng/kg bw/day) and contribution of foods (%)

	HBDD						PBB						7 PBDE						8 PBDE					
	Mean		P95		Contrib		Mean		P95		Contrib		Mean		P95		Contrib		Mean		P95		Contrib	
	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB
Milk	0.008	0.017	0.042	0.065	3.5	5.2	0.000	0.003	0.000	0.009	1.3	8.7	0.009	0.011	0.034	0.041	2.8	3.3	0.019	0.021	0.075	0.082	1.9	2.1
Ultra-fresh dairy products	0.012	0.023	0.020	0.035	5.2	7.1	0.000	0.003	0.000	0.004	0.0	8.9	0.022	0.023	0.036	0.037	7.0	6.9	0.147	0.148	0.259	0.259	14.6	14.4
Cheese	0.003	0.010	0.005	0.017	1.3	3.2	0.000	0.002	0.000	0.004	2.0	6.9	0.012	0.014	0.023	0.025	4.0	4.2	0.026	0.027	0.044	0.046	2.6	2.7
Eggs and egg products	0.006	0.008	0.036	0.045	2.5	2.5	0.000	0.001	0.000	0.003	0.0	2.3	0.006	0.007	0.043	0.045	2.0	2.1	0.023	0.023	0.112	0.113	2.3	2.3
Butter	0.002	0.010	0.006	0.030	0.9	3.0	0.000	0.003	0.000	0.008	0.0	8.7	0.025	0.026	0.073	0.076	7.9	7.8	0.041	0.042	0.122	0.125	4.0	4.1
Oils	0.002	0.013	0.009	0.057	0.9	4.2	0.000	0.004	0.000	0.015	0.0	12.3	0.003	0.005	0.012	0.022	0.9	1.6	0.004	0.007	0.017	0.027	0.4	0.6
Margarine	0.000	0.002	0.003	0.020	0.2	0.8	0.000	0.001	0.000	0.009	0.0	4.1	0.004	0.004	0.032	0.034	1.1	1.1	0.012	0.013	0.114	0.117	1.2	1.2
Meat	0.035	0.041	0.053	0.061	14.8	13.0	0.000	0.002	0.000	0.004	5.0	7.9	0.023	0.024	0.042	0.043	7.2	7.2	0.077	0.078	0.154	0.157	7.6	7.6
Poultry and game	0.016	0.019	0.063	0.069	6.8	6.0	0.000	0.001	0.000	0.003	0.0	3.5	0.015	0.016	0.059	0.061	4.8	4.8	0.048	0.049	0.161	0.164	4.7	4.7
Offal	0.000	0.000	0.024	0.029	0.1	0.1	0.000	0.000	0.001	0.002	1.6	0.2	0.000	0.000	0.015	0.017	0.1	0.1	0.001	0.001	0.047	0.048	0.1	0.1
Delicatessen meats	0.069	0.074	0.116	0.122	29.0	23.0	0.000	0.002	0.000	0.003	3.9	6.6	0.031	0.032	0.053	0.053	10.0	9.8	0.078	0.079	0.112	0.112	7.7	7.7
Fish	0.032	0.035	0.196	0.204	13.5	10.9	0.001	0.002	0.009	0.011	81.3	7.8	0.109	0.109	0.710	0.711	34.7	33.1	0.125	0.126	0.755	0.756	12.4	12.2
Crustaceans and molluscs	0.004	0.004	0.100	0.102	1.5	1.2	0.000	0.000	0.002	0.002	4.1	0.4	0.004	0.004	0.095	0.096	1.4	1.3	0.005	0.005	0.102	0.103	0.5	0.5
Vegetables (excluding potatoes)	0.000	0.001	0.006	0.012	0.2	0.3	0.000	0.000	0.000	0.003	0.0	0.7	0.004	0.004	0.054	0.055	1.2	1.2	0.012	0.012	0.161	0.161	1.2	1.1
Pizzas, quiches and savoury pastries	0.005	0.009	0.029	0.039	2.1	2.8	0.000	0.001	0.000	0.004	0.0	3.4	0.006	0.006	0.026	0.029	1.8	1.9	0.036	0.036	0.151	0.155	3.5	3.6
Sandwiches and snacks	0.006	0.008	0.069	0.076	2.7	2.6	0.000	0.001	0.000	0.005	0.0	2.7	0.013	0.013	0.097	0.098	4.1	4.0	0.040	0.041	0.265	0.267	4.0	4.0
Mixed dishes	0.032	0.036	0.110	0.112	13.6	11.1	0.000	0.003	0.000	0.006	0.8	9.2	0.018	0.020	0.042	0.045	5.9	5.9	0.078	0.079	0.174	0.177	7.7	7.7
Dairy-based desserts	0.002	0.008	0.009	0.031	1.0	2.3	0.000	0.001	0.000	0.005	0.0	4.2	0.010	0.011	0.041	0.046	3.1	3.3	0.235	0.236	0.906	0.910	23.3	23.0
Seasonings and sauces	0.000	0.002	0.002	0.014	0.1	0.6	0.000	0.000	0.000	0.004	0.0	1.6	0.000	0.001	0.004	0.006	0.2	0.3	0.003	0.003	0.023	0.024	0.3	0.3
Total	0.237	0.320	0.616	0.734	100.0	100.0	0.001	0.030	0.008	0.059	100.0	100.0	0.313	0.331	0.868	0.894	100.0	100.0	1.008	1.026	2.337	2.368	100.0	100.0

5.4. Summary for persistent organic pollutants

Table 21: Risk assessment conclusions for exposure to persistent organic pollutants

Substance	Primary results	Corrective actions and/or research requirements
PBBs	Risk can be ruled out for the general population	-
PBDEs, PFOS and PFOA	Risk can be ruled out for the general population	Need to undertake long-term toxicological studies on oral exposure
Other perfluorinated compounds, HBCDs	Impossible to draw a conclusion as to risk related to dietary exposure	Need to undertake long-term toxicological studies on oral exposure
Dioxins and PCBs	Risk cannot be ruled out for certain consumer groups	Need to continue efforts to reduce dietary exposure

6. Mycotoxins

Mycotoxins are secondary metabolites produced by the toxinogenic strains of several fungi species that belong particularly to the *Aspergillus*, *Penicillium*, *Fusarium* and *Byssochlamys* genera. The toxicity of mycotoxins in humans and animals varies depending on the type of toxin and species. Mycotoxin production in plants, before harvest and during storage, depends on the strain, substrate and temperature and humidity conditions. Damage to the substrate favours infestation or installation of the mould strain on the substrate. Mycotoxins are generally thermostable. During the processing of contaminated plants, they persist more or less partially depending on the type of process. As some plant species that are likely to be contaminated are used in animal feed, chronic animal exposure to certain mycotoxins can cause disorders such as decreased zootechnical performance (particularly reduced weight gain), and due to their transfer and/or metabolisation, can result in the contamination of certain animal products such as milk and offal.

The values given in parentheses after the intake and exposure levels correspond to the minimum and maximum mean and 95th percentile values observed in the various regions. Regarding the elements for which censoring was high (>60%), two assumptions were considered: the lowerbound (LB) and upperbound (UB). In this case, the values shown in parentheses correspond to the minimum regional LB and maximum regional UB values.

The breakdown of mean mycotoxin concentrations found in foods is given in Table E1. Mycotoxin exposure levels in the adult and child populations are given in Tables E2 and E3, along with each food group's contribution to mean exposure. Contamination and exposure concentrations for aflatoxins B₂, G₁, G₂ and M₁ and for Verrucarol, Beta zearalanol and Beta zearalenol for the lowerbound (LB) are not shown in the tables: they were all equal to zero.

In general, it is difficult to compare the contamination results from TDS 1 and TDS 2 for mycotoxins since the analytical limits (LOD, LOQ) were higher in TDS 1 (by up to a factor of 8), which resulted in high censoring for certain mycotoxins. Furthermore, since sampling was different for the two studies, it is not possible to compare mean contamination concentrations between the food groups. It should be noted that this TDS 2 sampling took into account the variability of mycotoxin contamination between years (sampling for the three years 2007, 2008 and 2009) and seasons (multi-season samples).

6.1. Aflatoxins

The discovery of aflatoxins (AFs) in the early 1960s led to the discovery of the family of mycotoxins. Aflatoxins are produced before harvest or during storage by toxinogenic strains of fungi species that belong to the *Aspergillus* genus. There are various forms of aflatoxins: In areas with a subtropical or Mediterranean climate, aflatoxins B₁ (the main form), B₂, G₁ and G₂ are primarily found in dried fruits and seeds (particularly peanuts) and cereals and their by-products. AFM₁ is a metabolite of AFB₁ found in the milk of animals that have ingested AFB₁, and is therefore found in dairy products.

Hazard characterisation

In animals, acute toxicity studies primarily show severe hemorrhagic episodes as well as liver and kidney failure. Aflatoxin, and particularly AFB₁, is considered to be one of the most powerful natural genotoxic carcinogens. Experimental data show that the carcinogenic potential of AFM₁ is considered to be ten times lower than that of AFB₁. IARC considers AFB₁ as 'carcinogenic to humans' (group 1), and AFM₁ as 'possibly carcinogenic to humans' (group 2B) (IARC 1993b). Based on epidemiological data in humans, JECFA calculated an excess risk per unit for exposure to aflatoxin in Europe of $0.013 \cdot 10^{-5} (\text{ng/kg bw/day})^{-1}$ (JECFA 1998). In other words, lifetime exposure to 1 ng aflatoxins/kg bw/day increases the incidence of liver cancer by 13 cases per year for 100 million people.

Risk assessment and characterisation

The percentage of censored data (non-detected or non-quantified mycotoxin) was very high, ranging from 99.6% (AFB₁) to 100% (AFB₂, AFG₁, AFG₂, AFM₁). Aflatoxins were detected in samples of dark chocolate only. For the lowerbound (LB), the mean concentration found in chocolate was 0.03 µg/kg for AFB₁.

The breakdown of exposure concentrations for the various aflatoxins is shown in Table E1. Considering toxicity that was 10 times lower for AFM₁ (Table 22), for the lowerbound (LB), mean exposure to the sum of the aflatoxins was 0.0019 ng/kg bw/day in adults (0.0012-0.0024) and 0.0013 ng/kg bw/day in children (0.0005-0.0034). At the 95th percentile, it was 0.012 ng/kg bw/day (0.006-0.017) and 0.008 ng/kg bw/day (0-0.021), respectively. For the upperbound (UB), mean exposure was 0.89 ng/kg bw/day in adults (0.85-0.95) and 1.56 ng/kg bw/day in children (1.45-1.67). At the 95th percentile, it was 1.54 ng/kg bw/day (1.44-1.72) and 2.96 ng/kg bw/day (2.53-3.30), respectively. The TDS 1 estimates (for the middlebound, MB) were within the LB-UB exposure interval from TDS 2. For the lowerbound, only chocolate contributed to aflatoxin exposure, and more particularly exposure to AFB₁ and AFG₂.

Based on demographic data from the French population, and statistics regarding the proportion of carriers of the hepatitis B surface antigen (the incidence of cancer depends on whether or not individuals are carriers of the antigen), the number of excess cases of liver cancer likely to be observed in the adult French population was estimated. Since liver cancer is rare before the age of 50 years and epidemiological studies take into account adults only, this figure was not estimated in children. For the lowerbound, the number of excess cancer cases in the adult French population was estimated at 0.01. For the upperbound, it was 5.2.

Table 22: Estimations of aflatoxin exposure and the number of cancer cases in mainland France per year

		Exposure (ng/kg bw/d)		Estimated number of excess liver cancer cases/100,000 people/year	Estimated number of excess liver cancer cases/year in the French population*
		Mean	95 th percentile		
Adults	LB	0.0019	0.012	0.00002	0.01
	UB	0.89	1.54	0.011	5.2
Children	LB	0.0013	0.008	NE	-
	UB	1.56	2.96	NE	-

* On the basis of 47.3 million adults in 2010 (www.insee.fr); NE: not estimated.

Irrespective of the assumption used (LB or UB), the increase in the number of excess liver cancer cases in the population appears negligible (<0.07% for the upperbound) in relation to the estimated number of cases in France for 2010 (<http://www.invs.sante.fr/>).

6.2. Ochratoxin A

Ochratoxins A, B (OTA, OTB) and C are produced by toxigenic strains of several species of fungi, that belong specifically to the genera *Aspergillus* and *Penicillium*. OTA (the most widespread form) can propagate in the field or during storage, in many plant foods, including: wheat, maize, rice, coffee, cocoa, oilseeds, grapes, etc., primarily in temperate climate zones. Because of the potential contamination of animal feed, foodstuffs of animal origin intended for human consumption may also be contaminated, especially offal.

Hazard characterisation

In humans as in animals, the kidney is the primary target organ for OTA toxicity, especially the proximal tubule. Among animal species, pigs are considered to be the most susceptible. Prolonged exposure leads to glycosuria, enzymuria, proteinuria, and deterioration of tubular function (AFSSA 2009c). In humans, OTA would thus be associated with the kidney disease known as Balkan endemic nephropathy. It would also have immunotoxic and neurotoxic effects. In rodents, OTA is teratogenic and causes craniofacial abnormalities and central nervous system anomalies. The IARC considers OTA to be 'possibly carcinogenic to humans' (group 2B) (IARC 1993b). In 2007 JECFA confirmed the PTWI value proposed in 1995 of 100 ng/kg bw/week, based on the early onset of nephrotoxic effects in pigs (JECFA 1996; JECFA 2007). Based on the same effects, in 2006 EFSA proposed a PTWI of 120 ng/kg bw/wk (LOAEL = 8 µg/kg bw/day) (EFSA 2006) and reconfirmed it in 2010 on the basis of two new studies (EFSA 2010a).

Risk assessment and characterisation

The proportion of censored data (undetected or unquantified mycotoxin) was 99.5% for OTA and 99.6% for OTB. For the lowerbound (LB), food groups with the highest mean concentrations were bread and dried bread products (0.13 µg/kg), pasta (0.1 µg/kg), rice and wheat products (0.07 µg/kg), delicatessen meats (0.05 µg/kg) and breakfast cereals (0.03 µg/kg). Breakfast cereals also appeared to be the group with the highest OTB levels (0.03 µg/kg).

For the lowerbound (LB), mean exposure to OTA was 0.28 ng/kg bw/d in adults (0.23-0.39) and 0.23 ng/kg bw/d in children (0.19-0.28). At the 95th percentile, it was 0.61 ng/kg bw/d (0.55-0.78) and 0.58 ng/kg bw/d (0.47-0.85), respectively. For the upperbound (UB), mean exposure to OTA was 1.91 ng/kg bw/d in adults (1.76-2.09) and 2.82 ng/kg bw/d in children (2.65-3.01). At the 95th percentile, it was 3.23 ng/kg bw/d (2.71-3.73) and 5.26 ng/kg bw/d (4.71-6.22), respectively. These exposures were below the estimates made during TDS 1 (average UB of 1.1 to 1.5 times lower than the average middlebound (MB) of TDS 1). Irrespective of the model, in adults as well as children, bread and dried bread products appeared to be the main contributor to OTA exposure (20-80%). In adults, alcoholic beverages also appeared to be the main contributor (23% for the lowerbound, as a result of the quantification of OTA in wine).

For both the lowerbound and upperbound assumptions, no exceeding of the PTWI selected by EFSA was observed in adults or children. The 95th percentile of exposure accounted for less than 20% of the PTWI in adults and less than 50% of the PTWI in children. Therefore, the risk related to ochratoxin A exposure does not constitute a public health problem.

6.3. Patulin

Patulin (PAT) is a mycotoxin produced by toxigenic strains of species of fungi belonging to the genera *Aspergillus*, *Penicillium* and *Byssosclamyces* in areas with a temperate climate. It is found in some cereals, but mainly in fruit, particularly apples and products derived from them (juice, sauces, etc.), the most common contamination occurring in bruised or rotting fruit.

Hazard characterisation

Signs of acute as well as chronic poisoning are mainly neurological, but also include weight loss, gastrointestinal disorders and hormonal disturbances. Patulin is also cytotoxic and genotoxic. The IARC considers it to be 'not classifiable as to its carcinogenicity in humans' (group 3) (IARC 1986). JECFA proposed a provisional tolerable maximum daily intake (PMTDI) of 0.4 µg/kg bw/d based on a study in rats (from a NOAEL of 43 µg/kg bw/d) (JECFA 1995). This value was confirmed by the SCF in 1996 and 2000 (SCF 1996; SCF 2000a).

Risk assessment and characterisation

Patulin was not quantified in any sample, but was detected only in samples containing apple. Also, food groups with the highest concentrations were compotes and cooked fruit (1 µg/kg), non-alcoholic beverages (0.12 µg/kg) and fruit (0.04 µg/kg) (Table E1).

For the lowerbound (LB), mean exposure to patulin was 0.63 ng/kg bw/d in adults (0.27-2.71) and 1.21 ng/kg bw/d in children (0.85-1.96) (Tables E2 and E3). At the 95th percentile, it was 3.21 ng/kg bw/d (1.63-10.4) and 6.86 ng/kg bw/d (3.50-7.90), respectively. For the upperbound (UB) mean exposure to patulin was 21.2 ng/kg bw/d in adults (18.6-26.5) and 39.3 ng/kg bw/d in children (35.0-44.9). At the 95th percentile, it was 50.5 ng/kg bw/d (39.9-65.0) and 96.5 ng/kg bw/d (88.0-110.7), respectively. These exposures were below the estimates made during TDS 1 (average UB lower by a factor of 1.1 compared to the middlebound (MB) exposures of TDS 1). In adults, irrespective of the model, fruit appeared to be the main contributor to patulin exposure (45-50%), followed by compotes and cooked fruit (38% for the lowerbound). In children, the main contributors to exposure were non-alcoholic beverages (about 40% irrespective of the model) and compotes and cooked fruit (47% for the lowerbound).

For both the lowerbound and upperbound, no exceeding of the SCF PMTDI was observed in adults or in children. The 95th percentile of exposure was less than 20% of the PMTDI in adults and less than 30% of the PMTDI in children. Therefore, the risk related to patulin exposure does not constitute a public health problem.

6.4. Trichothecenes

Trichothecenes (TCTs) are mycotoxins produced by toxigenic strains of species of fungi belonging to the genus *Fusarium*. They grow on grains (wheat, maize, rice, barley, etc.) but also on dried fruits, directly in the field or during harvesting or storage in areas with a temperate climate. Natural trichothecenes are classified into four groups according to their chemical structure: Group A includes T-2 toxin, HT-2 toxin, diacetoxyscirpenol (DAS) and monoacetoxyscirpenol (MAS); Group B includes nivalenol (NIV), deoxynivalenol (DON), de-epoxy derivative of DON (DOM-1), 3-acetyl-deoxynivalenol (3-Ac-DON), 15-acetyl-deoxynivalenol (15-Ac-DON) and fusarenon X (FusX); Group C includes crotochine in particular; Group D includes verrucarins, roridins and satratoxins. Groups A and B are most commonly found in food, and exposure to Groups C and D is mainly *via* the respiratory route.

Hazard characterisation

Group A trichothecenes induce haematological alterations in animals, as well as reprotoxic effects: inhibition of hormone secretion, neonatal deformities, foetal death, foetal resorption, etc. Immunotoxic effects have also been observed in mice. The IARC considers the T-2 toxin to be 'not classifiable as to its carcinogenicity in humans' (group 3) (IARC 1993b). Concerning the Group B trichothecenes, DON, NIV and fusarenon X are considered as 'not classifiable as to its carcinogenicity in humans' (group 3) (IARC 1993b) due to a lack of data and occasional contradictory studies. DON can have immunotoxic and haematotoxic effects in animals.

In 2001, JECFA proposed a PMTDI of 60 ng/kg bw/d for the T-2 toxin and HT-2 toxin, alone or combined, based on immunotoxic and haematotoxic effects observed in pigs (LOAEL of 0.029 mg/kg bw/d) (JECFA 2001b). This value was confirmed by the SCF (SCF 2002), but EFSA has not issued an opinion. For DON, JECFA and the SCF had selected a TDI of 1 µg/kg bw/d based on a study on growth retardation in mice (from a NOAEL of 0.1 mg/kg bw/d) (JECFA 2001b; SCF 2002). This value was confirmed by EFSA (EFSA 2007). In 2010, JECFA extended this maximum dose to the group DON and its acetylated derivatives (3-Ac-DON and 15-Ac-DON), since their toxicity is considered to be equivalent (JECFA 2010). For NIV, the SCF defined a TDI of 0.7 µg/kg bw/d based on the immunotoxic and haematotoxic effects observed in mice (LOAEL = 0.7 mg/kg bw/d) (SCF 2002).

Risk assessment and characterisation

The proportion of censored data (mycotoxin undetected or unquantified) was between 55% (DON) and 100% (T-2 and HT-2 toxins, DOM-1, 3-Ac-DON, fusarenon-X, MAS, verrucarol). For the lowerbound (LB), the highest concentrations of DON were found in bread and dried bread products (132 µg/kg), pizzas, quiches and savoury pastries (101 µg/kg) and sandwiches and snacks (83 µg/kg) (Table E1). The metabolites 3-Ac-DON and 15-Ac-DON were found on average only at concentrations lower than 2 ng/g, irrespective of the group considered. For the lowerbound (LB), the highest concentrations of NIV were found in the rice and wheat products group (18.3 µg/kg), followed by mixed dishes (7.7 µg/kg), pasta (6.5 µg/kg) and sandwiches and snacks (5.1 µg/kg). Finally, the highest concentrations of T-2 toxin were found in the rice and wheat products group (2 µg/kg) and in biscuits (1.1 µg/kg). The highest concentrations of HT-2 toxin were found in pasta and dried fruits (3 µg/kg), bread and dried bread products (2.1 µg/kg) and lastly, the rice and wheat products group (2 µg/kg).

Deoxynivalenol (DON)

The details of exposures (means and 95th percentiles) to DON and its acetylated derivatives (3-Ac-DON and 15-Ac-DON) are shown in Tables E2 and E3. For the lowerbound (LB), average total exposure to DON and its acetylated derivatives was 373 ng/kg bw/d in adults (346-410) and 544 ng/kg bw/d in children (514-603). At the 95th percentile, it was 716 ng/kg bw/d (604-865) and 1018 ng/kg bw/d (933-1190), respectively. For the upperbound (UB) mean exposure was 411 ng/kg bw/d in adults (382-449) and 615 ng/kg bw/d in children (582-678). At the 95th percentile, it was 768 ng/kg bw/d (662-945) and 1131 ng/kg bw/d (1050-1312), respectively. Exposure to DON was only slightly higher than the estimates made during TDS 1. In adults and children, bread and dried bread products appeared to be the main contributors to exposure to DON (60% and 40%, respectively for the lowerbound).

Acetylated derivatives accounted for 0.1% of the mean exposure to DON for the lowerbound and approximately 10% for the upperbound. For the lowerbound, exceeding of JECFA health-based guidance value by 0.5% was observed (DON + acetylated derivatives) in adults [0.2; 0.8] and by 5% in children [4; 6]. For the upperbound, 0.7% was observed in adults [0.3; 1.1] and 10% in children [8; 11].

Nivalenol (NIV)

Concerning NIV, for the lowerbound (LB), mean exposure was 20.3 ng/kg bw/d in adults (18.4-22.6) and 30.6 ng/kg bw/d in children (25.9-38.3) (Tables E2 and E3). At the 95th percentile, it was 45.3 ng/kg bw/d (40.0-60.0) and 71.9 ng/kg bw/d (56.1-85.8), respectively. For the upperbound (UB) mean exposure was 34.1 ng/kg bw/d in adults (32.2-36.6) and 59.0 ng/kg bw/d (54.6-66.4) in children. At the 95th percentile, it was 66.6 ng/kg bw/d (57.5-86.0) and 118.6 ng/kg bw/d (90.6-133.6), respectively. These exposures were more than twice as low as estimates made during TDS 1. In adults and children, bread and dried bread products appeared to be the main contributors to NIV exposure (20-50%).

Even for the upperbound, no exceeding of the SCF TDI was observed in adults or in children. The 95th percentile of exposure accounted for less than 15% of the TDI in adults and less than 20% of the TDI in children.

T-2 and HT-2 toxins

Concerning the T-2 toxin, for the lowerbound (LB), mean exposure was 1.78 ng/kg bw/d (1.45-2.08) in adults and 4.0 ng/kg bw/d in children (3.40-4.99) (Tables E2 and E3). At the 95th percentile it was 4.83 ng/kg bw/d (3.52-6.29) and 9.03 ng/kg bw/d (7.54-10.9) respectively. For the upperbound (UB) mean exposure was 19.6 ng/kg bw/d in adults (18.6-26.5) and 38.0 ng/kg bw/d in children (35.0-44.9). At the 95th percentile, it was 36.5 ng/kg bw/d (31.0-40.6) and 72.8 ng/kg bw/d (66.0-85.6), respectively. For the upperbound, 0.2% exceeding of JECFA PMTDI for the T-2 toxin was observed in adults [0.02; 0.5] and 11% in children [9;12], but none for the lowerbound.

Concerning the HT-2 toxin, for the lowerbound (LB), mean exposure was 7.16 ng/kg bw/d in adults (6.68-7.69) and 10.5 ng/kg bw/d in children (9.67-12.1). At the 95th percentile, it was 14.5 ng/kg bw/d (13.2-16.7) and 22.3 ng/kg bw/d (18.9-24.7), respectively. For the upperbound (UB) mean exposure was 32.2 ng/kg bw/d in adults (30.4-33.9) and 53.1 ng/kg bw/d in children (50.5-57.6). At the 95th percentile, it was 58.9 ng/kg bw/d (51.1-70.7) and 104.0 ng/kg bw/d (88.8-120.2), respectively. Pastas were the main contributor to exposure to the T-2 toxin (20-45%), and HT-2 toxin (20-60%).

For the upperbound, exceeding of JECFA PMTDI by 4% was observed for the HT-2 toxin in adults [3; 5] and 35% in children [32; 37], but none for the lowerbound. For the lowerbound, exceeding of the combined PMTDI by 0.1% (no significance) for T-2+HT-2 toxins was observed in children [-0.05; 0.3] but none in adults. For the upperbound, exceeding of the combined PMTDI by 30% was observed in adults [28; 32] and 74% in children combined [72; 77].

Overall, these results indicate the need for continuing efforts to reduce dietary exposure to DON and its derivatives. In addition, the analytical limits for T-2 and HT-2 toxins should be lowered, at least for the main contributors identified.

6.5. Zearalenone

Zearalenone (ZEA) is a mycotoxin produced in the field and during storage by toxigenic strains of species of fungi belonging to the genera *Fusarium* and *Aspergillus* in conditions of high humidity in areas with a temperate climate. It is found mainly in cereal (wheat, maize, rice, etc.), but also in animal products through the contamination of feed.

Hazard characterisation

The IARC considers this mycotoxin to be 'not classifiable as to its carcinogenicity in humans' (group 3) (IARC 1993b). Zearalenone and some of its metabolites have oestrogenic activity. They induce reproductive disorders in animals: decreased fertility, embryo-foetal resorption, reduction in brood size, decreased hormone levels, etc. Based on these effects in monkeys, in 1999 the French High Council for Public Health (CSHPF) established a TDI of 0.1 µg/kg bw/d (CSHPF 1999). That same year, JECFA established a PMTDI of 0.5 µg/kg bw/d for zearalenone and its metabolites on the basis of hormonal effects observed in sows (LOAEL of 200 µg/kg bw/d) (JECFA 2000). Finally, in 2000 the SCF established a temporary TDI of 0.2 µg ZEA/kg bw/d from a study in pigs (from a NOAEL of 40 µg/kg bw/d) (SCF 2000b).

Risk assessment and characterisation

The censoring rate (undetected or unquantified mycotoxin) for ZEA is 99.6%. Its metabolites (Alpha zearalanol (α-ZAL), Beta zearalanol (β-ZAL), Alpha zearalenol (α-ZOL), Beta zearalenol (β-ZOL)), although screened for, have not been quantified or even detected in any sample (Beta zearalanol, Beta zearalenol). For the lowerbound (LB), the highest levels of ZEA were found in sweet or savoury biscuits and cereal bars (3 µg/kg) and in chocolate (1.55 µg/kg), with the other groups all showing levels lower than or equal to 1.5 µg/kg (Table E1).

For the lowerbound (LB), mean exposure to ZEA was 5.90 ng/kg bw/d in adults (5.53-6.39) and 11.5 ng/kg bw/d in children (10.8-12.5) (Tables E2 and E3). At the 95th percentile, it was 10.8 ng/kg bw/d (9.4-12.0) and 22.7 ng/kg bw/d (20.6-24.4), respectively. For the upperbound (UB) mean exposure to ZEA was 25.5 ng/kg bw/d in adults (23.9-27.6) and 46.2 ng/kg bw/d in children (44.1-49.8). At the 95th percentile, it was 42.5 ng/kg bw/d (38.5-47.5) and 87.5 ng/kg bw/d (84.1-99.3), respectively. These exposures were below the estimates made during TDS 1 (UB exposures were lower by a factor of approximately 1.5 than the middlebound exposures of TDS 1). For the lowerbound, in adults and children, bread and dried bread products appeared to be the main contributors to exposure to ZEA (41% and 20%, respectively), followed by pasta (14% and 16%, respectively) and pastries and cakes (10% and 12%).

For both the lowerbound and upperbound models, no exceeding of the SCF TDI for ZEA was observed in adults or children. The 95th percentile of exposure accounted for less than 25% of the TDI in adults and less than 50% of the TDI in children. Therefore, the risk related to ZEA exposure does not constitute a public health problem.

6.6. Fumonisin

Fumonisin, including B1 and B2 (FB1 and FB2), the predominant forms, are produced by toxigenic species of fungi belonging to the genus *Fusarium*. FB1 and FB2 are mainly found in grains, especially maize, in areas with a somewhat temperate climate.

Hazard characterisation

Fumonisin disrupts the synthesis of sphingolipids, molecules involved in cell structure, growth and differentiation. The IARC considers FB1 and FB2 to be 'possibly carcinogenic to humans' (group 2B) (IARC 2002). FB1 induces the onset of liver carcinomas and adenomas in rats and has been linked to cases of equine leucoencephalomalacia and pulmonary oedema in pigs. In humans, it has been associated with cases of oesophageal cancer. Some studies in animals have also shown immunotoxic as well as embryotoxic (morphological anomalies, embryonic mortality, etc.) and neurotoxic (delayed nervous system development, neurodegeneration) effects from FB1. For FB1, the SCF established a TDI of 2 µg/kg bw/d (SCF 2003) from nephrotoxic effects observed in rats (from a NOAEL of 0.2 mg/kg bw/d). For its part, JECFA established a PMTDI, from the same effects, of 2 µg/kg bw/d for the group of fumonisins FB1, B2 and B3 individually or in combination (JECFA 2001b).

Risk assessment and characterisation

The censoring rates (undetected or unquantified mycotoxin) for fumonisins were 87% for FB1 and 97% for FB2. For the lowerbound (LB), sweet or savoury biscuits and cereal bars were the groups that showed the highest levels (35 µg/kg of FB1 and 75 µg/kg of FB2) followed by breakfast cereals (8 µg/kg of FB1 and 1.7 µg/kg de FB2) (Table E1).

For the lowerbound (LB), mean exposure to FB1 was 7.45 ng/kg bw/d in adults (5.98-9.62) and 15.4 ng/kg bw/d in children (11.8-18.6) (Tables E2 and E3). At the 95th percentile, it was 22.9 (14.1-28.9) and 50.4 ng/kg bw/d (41.1-62.5), respectively. For the upperbound (UB) mean exposure to FB1 was 29.0 ng/kg bw/d in adults (26.1-33.1) and 44.6 ng/kg bw/d in children (38.8-50.0). At the 95th percentile, it was 65.6 ng/kg bw/d (52.9-81.1) and 106.4 ng/kg bw/d (88.2-150.8), respectively. Concerning FB2, for the lowerbound (LB), mean exposure was 2.44 ng/kg bw/d in adults (1.70-3.46) and 6.48 ng/kg bw/d in children (4.65-7.92). At the 95th percentile, it was 10.1 (6.8-13.3) and 23.8 ng/kg bw/d (18.0-31.6), respectively. For the upperbound (UB) mean exposure to FB2 was 15.8 ng/kg bw/d in adults (13.6-18.8) and 30.4 ng/kg bw/d in children (24.6-34.3). At the 95th percentile, it was 42.2 ng/kg bw/d (33.6-46.7) and 83.3 ng/kg bw/d (65.3-106.7), respectively. Estimates made during TDS 1 on adult exposure to FB1 and FB2 combined were between the high and low estimates of this TDS 2, for the mean as at the 95th percentile. For children, TDS 1 estimates were equivalent to the low estimates of TDS 2.

In adults, for the lowerbound (LB), bread and dried bread products appeared to be the main contributors to exposure to FB1 (36%), followed by savoury and sweet biscuits, and cereal bars (35%). Biscuits also contributed to exposure to FB2 (58%), as well as non-alcoholic beverages (36%). In children as well, biscuits and non-alcoholic beverages appeared to be the main contributors to exposure to FB1 (35% and 30%, respectively), as well as FB2 (45% and 41%, respectively).

For both the lowerbound and upperbound assumptions, no exceeding of the PMTDI established by JECFA was observed in adults or children, for FB1 and FB2 alone or in combination. The 95th percentile of exposure accounted for less than 10% of the PMTDI in adults as well as children. Therefore, the risk related to exposure to fumonisins does not constitute a public health problem.

6.7. Summary for mycotoxins

These results on the French population's exposure to mycotoxins show that the health-based guidance values were seldom exceeded compared to the previous 2000-2004 assessment (TDS 1) (Table 23). They reveal decreased exposure, particularly for ochratoxin A, nivalenol, patulin and zearalenone, which was probably partly related to the introduction of regulations related to maximum levels of certain mycotoxins in foods in 2006. Exposure to fumonisins and aflatoxins was equivalent to the concentrations estimated in TDS 1, whereas exposure to deoxynivalenol increased.

Furthermore, the large quantity of censored data should be highlighted. It would thus be advisable to continue efforts to lower the analytical limits, at least in the matrices identified as being theoretical major contributors, particularly for toxins T-2 and HT-2, in order to eliminate the risk of exceeding the health-based guidance values (Table 24). Moreover, risk assessment related to mycotoxin exposure should be periodically repeated (3-5-year cycles), given that levels greatly depend on varying and evolving weather conditions between seasons and years.

Table 23: Summary of exposure results (mean and 95th percentile) to mycotoxins in the French population (ng/kg bw/day) and percentage of subjects that exceeded the health-based guidance values (HBGVs)

Substance	HBGV		Adults			Children		
			Mean	95 th percentile	%>HBGV [CI _{95%}]	Mean	95 th percentile	%>HBGV [CI _{95%}]
OTA	PTWI of 120 ng/kg bw/week = 17 ng/kg bw/day (EFSA 2010a)	LB	0.28	0.61	0	0.23	0.58	0
		UB	1.91	3.23	0	2.82	5.26	0
PAT	PMTDI of 0.4 µg/kg bw/day = 400 ng/kg bw/day (SCF 2000a)	LB	0.63	3.21	0	1.21	6.86	0
		UB	21.2	50.5	0	39.3	96.5	0
DON+3-Ac-DON+15-Ac-DON	TDI of 1 µg/kg bw/day = 1,000 ng/kg bw/day (JECFA 2010)	LB	373	716	0.5 [0.1; 0.8]	544	1018	5 [4; 6]
		UB	411	768	0.7 [0.3; 1.1]	615	1131	10 [8; 11]
NIV	TDI of 0.7 µg/kg bw/day = 700 ng/kg bw/day (SCF 2002)	LB	20.3	45.3	0	30.6	71.9	0
		UB	34.1	66.6	0	59.0	118.6	0
T-2	PMTDI of 60 ng/kg bw/day (JECFA 2001b)	LB	1.78	4.83	0	4.0	9.03	0
		UB	19.6	36.5	0.2 [0.02; 0.5]	38.0	72.8	11 [9; 12]
HT-2	PMTDI of 60 ng/kg bw/day (JECFA 2001b)	LB	7.16	14.5	0	10.5	22.3	0
		UB	32.2	58.9	4 [3; 5]	53.1	104.0	35 [32; 37]
ZEA	TDI of 0.2 µg/kg bw/day = 200 ng/kg bw/day (SCF 2000b)	LB	5.90	10.8	0	11.5	22.7	0
		UB	25.5	42.5	0	46.2	87.5	0
FB1	PMTDI of 2 µg/kg bw/day = 2,000 ng/kg bw/day (JECFA 2001b)	LB	7.45	22.9	0	15.4	50.4	0
		UB	29.0	65.6	0	44.6	106.4	0
FB2	PMTDI of 2 µg/kg bw/day = 2,000 ng/kg bw/day (JECFA 2001b)	LB	2.44	10.1	0	6.48	23.8	0
		UB	15.8	42.2	0	30.4	83.3	0
FB1+FB2	PMTDI of 2 µg/kg bw/day = 2,000 ng/kg bw/day (JECFA 2001b)	LB	9.89	32.5	0	21.9	73.7	0
		UB	44.9	101.1	0	75.2	182.0	0

Table 24: Risk assessment conclusions for exposure to mycotoxins

Substances	Primary results	Corrective actions and/or research requirements
Ochratoxin A, Aflatoxins, Patulin, Nivalenol, Fumonisin, Zearalenone	Risk can be ruled out for the general population	-
Deoxynivalenol and its acetylated derivatives (3-Ac-DON+15-Ac-DON)	Risk cannot be ruled out for the general population	Need to continue efforts to reduce dietary exposure
Toxins T-2 and HT-2	Theoretical risk cannot be ruled out with certainty	Need to lower the analytical limits, at least for the identified theoretical major contributors

Table E1: Estimated mean levels of mycotoxins in food ($\mu\text{g}/\text{kg}$ fresh weight)

Food group	n	type	Aflatoxins					Ochratoxins			Patulin		Trichothecenes											
			AFB1 (LB)	AFB1 (UB)	AFB2 (UB)	AFG1 (UB)	AFG2 (UB)	AFM1 (UB)	OTA (LB)	OTA (UB)	OTB (LB)	OTB (UB)	Pat (LB)	Pat (UB)	DON (LB)	DON (UB)	DON3 (LB)	DON3 (UB)	DON15 (LB)	DON15 (UB)	NIV (LB)	NIV (UB)	T2 (LB)	T2 (UB)
Bread and dried bread products	14	N	0	0.05	0.05	0.05	0.05	0.129	0.393	0.014	0.221			132.1	132.1	0.2	3.5	0	3	2.6	6.4	0.4	4	
Breakfast cereals	6	N	0	0.05	0.05	0.05	0.033	0.25	0.033	0.25			8.5	10.8	0	3	0.5	4.2	1.5	6.5	1	5.3		
Pasta	4	N	0	0.05	0.05	0.05	0.1	0.35	0	0.2			56.3	56.3	0	3	0	3	6.5	10	0.8	4.75		
Rice and wheat products	6	N	0	0.05	0.05	0.05	0.067	0.3	0	0.2			57.5	58.5	0	3	0	3	18.3	19.3	2	7.7		
Croissant-like pastries	6	N	0	0.05	0.05	0.05	0	0.2	0	0.2			73.3	73.3	0	3	0	3	0	3	0	3		
Sweet and savoury biscuits and bars	8	N	0	0.05	0.05	0.05	0	0.2	0	0.2			58.4	61.9	0	3	1.9	4.5	1.9	4.5	1.1	5.6		
Pastries and cakes	18	N	0	0.05	0.05	0.05	0	0.2	0	0.2			54.2	55.0	0	3	0	3	0	3	0	3		
Milk	38	R																						
Ultra-fresh dairy products	14	R																						
Cheese	17	R																						
Eggs and egg products	31	R	0	0.05	0.05	0.05																		
Butter	3	N																						
Poultry and game	36	R	0	0.05	0.05	0.05	0	0.2	0	0.2														
Offal	13	R	0	0.05	0.05	0.05	0	0.2	0	0.2			0	3	0	3	0	3	0	3	0	3	0	3
Delicatessen meats	80	R	0	0.05	0.05	0.05	0.047	0.253	0.028	0.224			0.2	3.4	0	3	0	3	0	3	0	3	0	3
Vegetables (excluding potatoes)	17	R	0	0.05	0.05	0.05	0	0.2	0	0.2			1.5	6	0	3	0.1	3.3	0	3	0	3	0	3
Fruits	39	R											0.042	6.097										
Dried fruits, nuts and seeds	2	N	0	0.05	0.05	0.05	0	0.2	0	0.2			0	3	0	3	0	3	1.5	6.5	0	3	0	3
Chocolate	10	N	0.03	0.075	0.05	0.05	0	0.2	0	0.2														
Non-alcoholic beverages	25	N					0.002	0.016	0.0004	0.012			0.115	3.654										
Alcoholic beverages	6	N					0.017	0.025	0	0.01														
Coffee	30	R					0	0.01	0	0.01														
Other hot beverages	23	R					0	0.01	0	0.01														
Pizzas, quiches and savoury pastries	4	N					0	0.2	0	0.2														
Sandwiches and snacks	28	R					0.013	0.219	0.006	0.209			101.3	101.3	0	3	0	3	0	3	0	3	0.75	4.75
Mixed dishes	65	R					0.018	0.227	0	0.2			83.0	83.0	0	3	0	3	5.1	7.6	0.2	3.4	0.1	3.2
Dairy-based desserts	28	R					0	0.2	0	0.2			20.7	23.4	0	3	0	3	7.7	10.6	0.1	3.1	0.1	3.1
Compotes and cooked fruit	6	N										1	8.333											

Levels of contamination with AFB2, AFG1, AFG2, AFM1, VER, Beta zearalenol and Beta zearalanol, under the LB hypothesis, are not shown in this Table: they are all equal to zero. A blank indicates that no analysis was performed.

Food group	n	type	Trichothecenes										Zearalenone						Fumonisin							
			HT ₂ (LB)	HT ₂ (UB)	DAS (LB)	DAS (UB)	DOM ₁ (LB)	DOM ₁ (UB)	FusX (LB)	FusX (UB)	Ver (LB)	MAS (LB)	MAS (UB)	ZEA (LB)	ZEA (UB)	α-ZAL (LB)	α-ZAL (UB)	β-ZAL (LB)	β-ZAL (UB)	α-ZOL (LB)	α-ZOL (UB)	β-ZOL (LB)	β-ZOL (UB)	FB ₁ (LB)	FB ₁ (UB)	FB ₂ (LB)
Bread and dried bread products	14	N	2.1	8	0.2	3.5	0	3	0.2	3.5	3	0.2	3.5	1.5	5	0.2	3.5	0.2	3.5	3	3	3	1.4	5.4	0.3	3.1
Breakfast cereals	6	N	1	5.3	0	3	0	3	0	3	3	0	3	1.3	4.4	0	3	0	3	3	3	8	13.3	1.7	8.7	
Pasta	4	N	3	10	0	3	0	3	0	3	3	0	3	1.1	4.1	0	3	0	3	3	3					
Rice and wheat products	6	N	2	7.7	0	3	0	3	0	3	3	1	5.3	0.8	3.3	0	3	0	3	3	3					
Croissant-like pastries	6	N	0.5	4.2	0	3	0	3	0	3	3	0.5	4.2	1.5	5	0	3	0	3	3	3					
Sweet and savoury biscuits and bars	8	N	1.5	6.5	0	3	0	3	0	3	3	0.8	4.8	3	5.8	0	3	0	3	3	3	35	36.5	75	75	
Pastries and cakes	18	N	0.5	4.2	0	3	0	3	0	3	3	0	3	1.3	4.6	0	3	0	3	3	3					
Milk	38	R																								
Ultra-fresh dairy products	14	R																								
Cheese	17	R																								
Eggs and egg products	31	R												0	1.5	0	3	0	3	3	3					
Butter	3	N																								
Poultry and game	36	R												0	1.5	0	3	0	3	3	3					
Offal	13	R	0	3	0	3	0	3	0	3	3	0	3	0	1.5	0	3	0	3	3	3					
Delicatessen meats	80	R	0	3	0	3	0	3	0	3	3	0	3	0	1.5	0	3	0	3	3	3					
Vegetables (excluding potatoes)	17	R	0	3	0	3	0	3	0	3	3	0	3	0.4	2.4	0	3	0	3	3	3					
Fruits	39	R												0	1.5	0	3	0	3	3	3					
Dried fruits, nuts and seeds	2	N	3	10	0	3	0	3	0	3	3	0	3													
Chocolate	10	N												1.55	4.1	0	3	0	3	3	3					
Non-alcoholic beverages	25	N												0.0	0.2	0	0.3	0	0.3	0.3	0.3	1.1	4.7	0.2	2.7	
Alcoholic beverages	6	N																				0.3	3.3	0	2	
Coffee	30	R																								
Other hot beverages	23	R												0.1	0.4	0	0.3	0	0.3	0.3	0.3					
Pizzas, quiches and savoury pastries	4	N	0	3	0	3	0	3	0	3	3	0	3	1.5	5	0	3	0	3	3	3					
Sandwiches and snacks	28	R	0	3	0	3	0	3	0	3	3	0	3	0.6	3.0	0	3	0	3	3	3					
Mixed dishes	65	R	0.2	3.4	0	3	0.1	3.3	0	3	3	0	3	0.3	2.3	0	3	0	3	3	3					
Dairy-based desserts	28	R	0.2	3.4	0	3	0	3	0	3	3	0	3	0.7	3.1	0	3	0	3	3	3					
Composites and cooked fruit	6	N												0.75	3.25	0	3	0	3	3	3					

Table E2: Estimated exposure (mean and P95) in the French adult population to mycotoxins (ng/kg bw/day) and contribution of foods (%)

Food group	Aflatoxins														
	AFB1			AFB2			AFG1			AFG2			AFM1		
	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)
Bread and dried bread products	0	0.080	0	0.188	0	36.1	0.080	0.188	36.4	0.080	0.188	36.4	0.080	0.188	36.4
Breakfast cereals	0	0.003	0	0.063	0	1.2	0.003	0.063	1.2	0.003	0.063	1.2	0.003	0.063	1.2
Pasta	0	0.028	0	0.088	0	12.5	0.028	0.088	12.6	0.028	0.088	12.6	0.028	0.088	12.6
Rice and wheat products	0	0.018	0	0.077	0	8.2	0.018	0.077	8.3	0.018	0.077	8.3	0.018	0.077	8.3
Croissant-like pastries	0	0.007	0	0.054	0	3.3	0.007	0.054	3.3	0.007	0.054	3.3	0.007	0.054	3.3
Sweet and savoury biscuits and bars	0	0.006	0	0.041	0	2.5	0.006	0.041	2.5	0.006	0.041	2.5	0.006	0.041	2.5
Pastries and cakes	0	0.022	0	0.083	0	9.8	0.022	0.083	9.9	0.022	0.083	9.9	0.022	0.083	9.9
Milk													0.001	0.007	4.6
Ultra-fresh dairy products													0.012	0.037	43.5
Cheese													0.004	0.011	14.9
Eggs and egg products	0	0.011	0	0.040	0	4.8	0.011	0.040	4.8	0.011	0.040	4.8	0.011	0.040	4.8
Butter													0.002	0.005	5.8
Poultry and game	0	0.020	0	0.076	0	8.8	0.020	0.076	8.9	0.020	0.076	8.9	0.020	0.076	8.9
Offal	0	0.001	0	0.025	0	0.5	0.001	0.025	0.5	0.001	0.025	0.5	0.001	0.025	0.5
Delicatessen meats	0	0.020	0	0.057	0	9.0	0.020	0.057	9.1	0.020	0.057	9.1	0.020	0.057	9.1
Vegetables (excluding potatoes)	0	0.001	0	0.029	0	0.5	0.001	0.029	0.5	0.001	0.029	0.5	0.001	0.029	0.5
Fruits															
Dried fruits, nuts and seeds	0	0.001	0	0.022	0	0.3	0.001	0.022	0.3	0.001	0.022	0.3	0.001	0.022	0.3
Chocolate	0.0019	0.005	0.022465	0.039	100	2.4	0.004	0.033	1.7	0.004	0.033	1.7	0.004	0.033	1.7
Non-alcoholic beverages															
Alcoholic beverages															
Coffee															
Other hot beverages															
Pizzas, quiches and savoury pastries															
Sandwiches and snacks															
Mixed dishes															
Dairy-based desserts															
Compotes and cooked fruit															
TOTAL	0.0019	0.223	0.013	0.385	100	100	0.221	0.384	100	0.221	0.384	100	0.221	0.384	100

Exposure and levels of contamination with AFB2, AFG1, AFG2, AFM1, VER, Beta zearalenol and Beta zearalanol, under the LB hypothesis, are not shown in this Table: they are all equal to zero.

Food group	Ochratoxins												Patulin					
	OTA						OTB						PAT					
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	0.172	0.580	0.395	1.325	61.5	30.3	0.018	0.348	0.110	0.868	60.5	22.1						
Breakfast cereals	0.003	0.014	0.100	0.384	0.9	0.8	0.003	0.014	0.100	0.384	8.8	0.9						
Pasta	0.006	0.120	0.067	0.410	2.2	6.3	0	0.111	0	0.351	0	7.0						
Rice and wheat products	0.007	0.084	0.078	0.385	2.6	4.4	0	0.073	0	0.306	0	4.6						
Croissant-like pastries	0	0.030	0	0.217	0.0	1.5	0	0.030	0	0.217	0	1.9						
Sweet and savoury biscuits and bars	0	0.022	0	0.165	0.0	1.2	0	0.022	0	0.165	0	1.4	0	0.05	0	3.17	0	0.3
Pastries and cakes	0	0.087	0	0.332	0.0	4.6	0	0.087	0	0.332	0	5.5	0	2.62	0	9.96	0	12.4
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game	0	0.079	0	0.305	0.0	4.1	0	0.079	0	0.305	0	5.0						
Offal	0	0.004	0	0.102	0.0	0.2	0	0.004	0	0.102	0	0.3						
Delicatessen meats	0.017	0.099	0.067	0.273	6.0	5.2	0.008	0.087	0.057	0.248	26.6	5.5						
Vegetables (excluding potatoes)	0	0.024	0	0.204	0.0	1.3	0	0.024	0	0.204	0	1.5						
Fruits	0	0.326	0	1.114	0.0	17.0	0	0.326	0	1.114	0	20.7	0.28	10.59	1.84	36.49	45.0	50.0
Dried fruits, nuts and seeds	0	0.003	0	0.088	0.0	0.1	0	0.003	0	0.088	0	0.2						
Chocolate	0	0.015	0	0.132	0.0	0.8	0	0.015	0	0.132	0	1.0						
Non-alcoholic beverages	0.001	0.020	0.003	0.105	0.2	1.0	0.000	0.018	0	0.096	0.4	1.1	0.08	5.66	0.78	30.59	13.3	26.7
Alcoholic beverages	0.065	0.077	0.335	0.372	23.3	4.0	0	0.018	0	0.085	0	1.1						
Coffee	0	0.033	0	0.120	0.0	1.7	0	0.033	0	0.120	0	2.1						
Other hot beverages	0	0.020	0	0.135	0.0	1.1	0	0.020	0	0.135	0	1.3						
Pizzas, quiches and savoury pastries	0	0.052	0	0.314	0.0	2.7	0	0.052	0	0.314	0	3.3						
Sandwiches and snacks	0.003	0.043	0.066	0.447	1.0	2.2	0.001	0.040	0.034	0.401	3.6	2.5						
Mixed dishes	0.006	0.120	0.069	0.531	2.1	6.3	0	0.111	0	0.506	0	7.0						
Dairy-based desserts	0	0.063	0	0.375	0.0	3.3	0	0.063	0	0.375	0	3.968						
Composites and cooked fruit													0.24	1.58	3.36	15.71	38.5	7.5
TOTAL	0.280	1.915	0.613	3.232	100	100	0.030	1.579	0.151	2.714	100	100	0.63	21.17	3.21	50.46	100	100

Food group	Trichothecenes																	
	DON					DON3					DON15							
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	
Bread and dried bread products	226.3	226.3	529.9	529.9	60.7	59.7	0.27	5.45	1.66	14.14	100	33.9	0	4.82	0	11.31	0	30.8
Breakfast cereals	0.5	0.6	13.6	13.6	0.1	0.1	0	0.16	0	3.75	0	1.0	0.02	0.21	0.69	4.84	13.5	1.3
Pasta	30.6	30.6	96.6	96.6	8.2	8.1	0	1.67	0	5.27	0	10.4	0	1.67	0	5.27	0	10.7
Rice and wheat products	5.7	6.6	50.1	52.0	1.5	1.7	0	1.10	0	4.59	0	6.8	0	1.10	0	4.59	0	7.0
Croissant-like pastries	11.6	11.6	84.4	84.4	3.1	3.1	0	0.44	0	3.25	0	2.8	0	0.44	0	3.25	0	2.8
Sweet and savoury biscuits and bars	6.7	7.1	47.5	50.1	1.8	1.9	0	0.33	0	2.47	0	2.1	0.14	0.44	1.36	2.95	84.7	2.8
Pastries and cakes	38.2	38.5	156.7	156.7	10.3	10.2	0	1.31	0	4.98	0	8.2	0	1.31	0	4.98	0	8.4
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game																		
Offal	0	0.1	0	1.5	0.0	0.0	0	0.06	0	1.53	0	0.4	0	0.06	0	1.53	0	0.4
Delicatessen meats	0.1	1.5	0.6	4.3	0.0	0.4	0	1.21	0	3.39	0	7.5	0	1.21	0	3.39	0	7.7
Vegetables (excluding potatoes)	0.2	0.8	1.9	7.1	0.0	0.2	0	0.37	0	3.06	0	2.3	0.00	0.37	0.06	3.06	1.9	2.4
Fruits																		
Dried fruits, nuts and seeds	0	0.0	0	1.3	0.0	0.0	0	0.04	0	1.32	0	0.3	0	0.04	0	1.32	0	0.3
Chocolate																		
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																		
Pizzas, quiches and savoury pastries	23.8	23.8	140.9	140.9	6.4	6.3	0	0.77	0	4.71	0	4.8	0	0.77	0	4.71	0	5.0
Sandwiches and snacks	16.1	16.1	178.0	178.0	4.3	4.2	0	0.58	0	5.32	0	3.6	0	0.58	0	5.32	0	3.7
Mixed dishes	12.1	13.4	63.7	66.0	3.2	3.5	0	1.66	0	7.59	0	10.3	0	1.66	0	7.59	0	10.6
Dairy-based desserts	1.1	2.0	16.3	19.4	0.3	0.5	0	0.94	0	5.62	0	5.8	0	0.94	0	5.62	0	6.0
Composites and cooked fruit																		
TOTAL	373.1	378.9	715.2	721.8	100	100	0.27	16.09	1.61	28.53	100	100	0.17	15.63	0.87	26.89	100	100

Food group	Trichothecenes																	
	Niv				T2 Toxin				HT2 Toxin									
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	10.11	13.29	25.71	31.92	49.9	39.0	0.31	5.55	1.69	14.20	17.7	28.3	4.33	14.93	10.35	35.16	60.5	46.4
Breakfast cereals	0.08	0.34	1.88	8.13	0.4	1.0	0.06	0.30	1.84	8.13	3.5	1.5	0.06	0.30	1.84	8.13	0.9	0.9
Pasta	3.61	5.55	11.42	17.57	17.8	16.3	0.79	3.50	2.56	11.14	44.3	17.9	1.67	5.55	5.27	17.57	23.3	17.3
Rice and wheat products	1.88	2.80	17.23	19.57	9.3	8.2	0.19	1.53	1.53	7.35	10.4	7.8	0.19	1.53	1.53	7.35	2.6	4.8
Croissant-like pastries	0	0.44	0	3.25	0.0	1.3	0.00	0.45	0	3.25	0.1	2.3	0.04	0.53	0.56	4.00	0.5	1.7
Sweet and savoury biscuits and bars	0.14	0.44	1.36	2.96	0.7	1.3	0.15	0.68	1.15	4.99	8.4	3.5	0.16	0.69	1.23	5.33	2.2	2.2
Pastries and cakes	0	1.31	0	4.98	0.0	3.8	0	1.31	0	4.98	0.0	6.7	0.60	2.71	3.01	11.38	8.3	8.4
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game																		
Offal	0	0.06	0	1.53	0.0	0.2	0	0.06	0	1.53	0.0	0.3	0	0.06	0	1.53	0.0	0.2
Delicatessen meats	0	1.21	0	3.39	0.0	3.5	0	1.21	0	3.39	0.0	6.2	0	1.21	0	3.39	0.0	3.8
Vegetables (excluding potatoes)	0	0.37	0	3.06	0.0	1.1	0	0.37	0	3.06	0.0	1.9	0	0.37	0	3.06	0.0	1.1
Fruits																		
Dried fruits, nuts and seeds	0.02	0.09	0.66	2.86	0.1	0.3	0	0.04	0	1.32	0.0	0.2	0.04	0.14	1.32	4.40	0.6	0.4
Chocolate																		
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																		
Pizzas, quiches and savoury pastries	0	0.77	0	4.71	0.0	2.3	0.07	0.93	0.84	5.95	3.7	4.7	0	0.77	0	4.71	0.0	2.4
Sandwiches and snacks	0.95	1.43	14.73	16.59	4.7	4.2	0.07	0.74	1.37	7.23	4.0	3.8	0	0.58	0	5.32	0.0	1.8
Mixed dishes	3.47	5.04	26.33	29.68	17.1	14.8	0.11	1.92	1.34	9.56	6.1	9.8	0.07	1.82	0.99	9.06	0.9	5.7
Dairy-based desserts	0.01	0.97	0.09	5.83	0.1	2.8	0.03	1.02	0.54	6.63	1.9	5.2	0.01	0.97	0	6.25	0.2	3.0
Composites and cooked fruit																		
TOTAL	20.28	34.13	45.34	66.64	100	100	1.78	19.60	4.83	36.54	100	100	7.16	32.16	14.51	58.92	100	100

Food group	Trichothecenes																				
	DAS						DOM-1						FusX						Ver		
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (UB)	P95 (UB)	
Bread and dried bread products	0.27	5.45	1.66	14.14	100	33.9	0	4.82	0	11.31	0	30.9	0.27	5.45	1.66	14.14	100	33.9	4.82	11.31	31.2
Breakfast cereals	0	0.16	0	3.75	0	1.0	0	0.16	0	3.75	0	1.0	0	0.16	0	3.75	0	1.0	0.16	3.75	1.0
Pasta	0	1.67	0	5.27	0	10.4	0	1.67	0	5.27	0	10.7	0	1.67	0	5.27	0	10.4	1.67	5.27	10.8
Rice and wheat products	0	1.10	0	4.59	0	6.8	0	1.10	0	4.59	0	7.0	0	1.10	0	4.59	0	6.8	1.10	4.59	7.1
Croissant-like pastries	0	0.44	0	3.25	0	2.8	0	0.44	0	3.25	0	2.8	0	0.44	0	3.25	0	2.8	0.44	3.25	2.9
Sweet and savoury biscuits and bars	0	0.33	0	2.47	0	2.1	0	0.33	0	2.47	0	2.1	0	0.33	0	2.47	0	2.1	0.33	2.47	2.1
Pastries and cakes	0	1.31	0	4.98	0	8.2	0	1.31	0	4.98	0	8.4	0	1.31	0	4.98	0	8.2	1.31	4.98	8.5
Milk																					
Ultra-fresh dairy products																					
Cheese																					
Eggs and egg products																					
Butter																					
Poultry and game																					
Offal	0	0.06	0	1.53	0	0.4	0	0.06	0	1.53	0	0.4	0	0.06	0	1.53	0	0.4	0.06	1.53	0.4
Delicatessen meats	0	1.21	0	3.39	0	7.5	0	1.21	0	3.39	0	7.7	0	1.21	0	3.39	0	7.5	1.21	3.39	7.8
Vegetables (excluding potatoes)	0	0.37	0	3.06	0	2.3	0	0.37	0	3.06	0	2.3	0	0.37	0	3.06	0	2.3	0.37	3.06	2.4
Fruits																					
Dried fruits, nuts and seeds	0	0.04	0	1.32	0	0.3	0	0.04	0	1.32	0	0.3	0	0.04	0	1.32	0	0.3	0.04	1.32	0.3
Chocolate																					
Non-alcoholic beverages																					
Alcoholic beverages																					
Coffee																					
Other hot beverages																					
Pizzas, quiches and savoury pastries	0	0.77	0	4.71	0	4.8	0	0.77	0	4.71	0	5.0	0	0.77	0	4.71	0	4.8	0.77	4.71	5.0
Sandwiches and snacks	0	0.58	0	5.32	0	3.6	0	0.58	0	5.32	0	3.7	0	0.58	0	5.32	0	3.6	0.58	5.32	3.7
Mixed dishes	0	1.66	0	7.59	0	10.3	0.07	1.83	1.14	8.65	100	11.7	0	1.66	0	7.59	0	10.3	1.66	7.59	10.8
Dairy-based desserts	0	0.94	0	5.62	0	5.8	0	0.94	0	5.62	0	6.0	0	0.94	0	5.62	0	5.8	0.94	5.62	6.1
Compotes and cooked fruit																					
TOTAL	0.27	16.09	1.61	28.53	100	100	0.07	15.63	0	27.15	100	100	0.27	16.09	1.61	28.53	100	100	15.46	26.49	100

Exposure and levels of contamination with AFB₂, AFG₁, AFG₂, AFM₁, VER, Beta zearalenol and Beta zearalanol, under the LB hypothesis, are not shown in this Table: they are all equal to zero.

Food group	Trichothecenes										Zearalenone									
	MAS					ZEA					Alpha zearalanol									
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)		
Bread and dried bread products	0.05	4.93	0.29	11.36	15.3	30.5	2.41	8.03	5.65	18.85	40.9	31.6	0.27	5.45	1.66	14.14	100	22.1		
Breakfast cereals	0	0.16	0	3.75	0	1.0	0.07	0.24	1.88	6.25	1.2	1.0	0	0.16	0	3.75	0	0.6		
Pasta	0	1.67	0	5.27	0	10.3	0.81	2.72	2.57	8.70	13.7	10.7	0	1.67	0	5.27	0	6.7		
Rice and wheat products	0.07	1.27	0.77	5.78	24.6	7.9	0.06	0.70	0.56	3.42	1.1	2.8	0	1.10	0	4.59	0	4.5		
Croissant-like pastries	0.12	0.71	1.14	5.61	38.5	4.4	0.22	0.74	1.62	5.41	3.8	2.9	0	0.44	0	3.25	0	1.8		
Sweet and savoury biscuits and bars	0.07	0.48	0.56	3.53	21.7	3.0	0.29	0.64	1.92	4.44	4.9	2.5	0	0.33	0	2.47	0	1.3		
Pastries and cakes	0	1.31	0	4.98	0	8.1	0.60	2.05	2.26	7.58	10.1	8.1	0	1.31	0	4.98	0	5.3		
Milk																				
Ultra-fresh dairy products																				
Cheese																				
Eggs and egg products							0	0.32	0	1.21	0.0	1.3	0	0.64	0	2.41	0	2.6		
Butter																				
Poultry and game							0	0.59	0	2.28	0.0	2.3	0	1.18	0	4.57	0	4.8		
Offal	0	0.06	0	1.53	0	0.4	0	0.03	0	0.76	0.0	0.1	0	0.06	0	1.53	0	0.2		
Delicatessen meats	0	1.21	0	3.39	0	7.5	0	0.60	0	1.70	0.0	2.4	0	1.21	0	3.39	0	4.9		
Vegetables (excluding potatoes)	0	0.37	0	3.06	0	2.3	0.08	0.36	0.83	3.48	1.3	1.4	0	0.37	0	3.06	0	1.5		
Fruits							0	2.48	0	8.36	0.0	9.8	0	4.97	0	16.71	0	20.1		
Dried fruits, nuts and seeds	0	0.04	0	1.32	0	0.3														
Chocolate							0.14	0.31	1.16	2.19	2.5	1.2	0	0.23	0	1.98	0	0.9		
Non-alcoholic beverages							0.01	0.29	0.13	1.56	0.2	1.1	0	0.52	0	2.73	0	2.1		
Alcoholic beverages																				
Coffee																				
Other hot beverages							0.02	0.35	0.18	2.20	0.3	1.4	0	0.61	0	4.06	0	2.5		
Pizzas, quiches and savoury pastries	0	0.77	0	4.71	0	4.8	0.39	1.29	2.36	7.86	6.6	5.1	0	0.77	0	4.71	0	3.1		
Sandwiches and snacks	0	0.58	0	5.32	0	3.6	0.15	0.65	1.75	6.42	2.6	2.5	0	0.58	0	5.32	0	2.3		
Mixed dishes	0	1.66	0	7.59	0	10.3	0.15	1.18	1.05	5.47	2.5	4.6	0	1.66	0	7.59	0	6.7		
Dairy-based desserts	0	0.94	0	5.62	0	5.8	0.33	1.25	2.17	8.14	5.7	4.9	0	0.94	0	5.62	0	3.8		
Composites and cooked fruit							0.16	0.63	1.85	7.02	2.7	2.5	0	0.51	0	5.06	0	2.1		
TOTAL	0.30	16.16	1.32	27.97	100	100	5.90	25.46	10.80	42.50	100	100	0.27	24.70	1.61	42.30	100	100		

Food group	Zearalenone						Fumonisin																		
	Alpha zearalenol			Beta zearalenol			FB1			FB2															
	mean (LB)	P95 (LB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (LB)	P95 (LB)	contrib (LB)	mean (LB)	P95 (LB)	contrib (LB)													
Bread and dried bread products	0.27	5.45	1.66	14.14	100	22.1	4.82	11.31	20.0	4.82	11.31	20.0	2.70	13.49	7.04	34.29	36.2	46.4	0.06	3.47	0.39	8.52	2.7	21.9	
Breakfast cereals	0	0.16	0	3.75	0	0.6	0.16	3.75	0.7	0.16	3.75	0.7	0.32	0.64	8.57	15.63	4.2	2.2	0.08	0.42	1.68	9.64	3.2	2.7	
Pasta	0	1.67	0	5.27	0	6.7	1.67	5.27	6.9	1.67	5.27	6.9													
Rice and wheat products	0	1.10	0	4.59	0	4.5	1.10	4.59	4.6	1.10	4.59	4.6													
Croissant-like pastries	0	0.44	0	3.25	0	1.8	0.44	3.25	1.8	0.44	3.25	1.8	0	0.00	0	1.20	0.0	0.0							
Sweet and savoury biscuits and bars	0	0.33	0	2.47	0	1.3	0.33	2.47	1.4	0.33	2.47	1.4	2.63	2.79	26.06	26.13	35.2	9.6	1.41	1.41	19.48	19.48	57.7	8.9	
Pastries and cakes	0	1.31	0	4.98	0	5.3	1.31	4.98	5.4	1.31	4.98	5.4													
Milk																									
Ultra-fresh dairy products																									
Cheese																									
Eggs and egg products	0	0.64	0	2.41	0	2.6	0.64	2.41	2.7	0.64	2.41	2.7													
Butter																									
Poultry and game	0	1.18	0	4.57	0	4.8	1.18	4.57	4.9	1.18	4.57	4.9													
Offal	0	0.06	0	1.53	0	0.2	0.06	1.53	0.3	0.06	1.53	0.3													
Delicatessen meats	0	1.21	0	3.39	0	4.9	1.21	3.39	5.0	1.21	3.39	5.0													
Vegetables (excluding potatoes)	0	0.37	0	3.06	0	1.5	0.37	3.06	1.5	0.37	3.06	1.5													
Fruits	0	4.97	0	16.71	0	20.1	4.97	16.71	20.6	4.97	16.71	20.6													
Dried fruits, nuts and seeds																									
Chocolate	0	0.23	0	1.98	0	0.9	0.23	1.98	1.0	0.23	1.98	1.0													
Non-alcoholic beverages	0	0.52	0	2.73	0	2.1	0.52	2.73	2.2	0.52	2.73	2.2	1.34	6.65	7.50	31.23	18.0	22.9	0.88	6.88	5.78	34.00	36.1	43.4	
Alcoholic beverages													0.45	5.42	3.49	28.57	6.0	18.6	0	3.62	0	17.07	0.0	22.8	
Coffee																									
Other hot beverages	0	0.61	0	4.06	0	2.5	0.61	4.06	2.5	0.61	4.06	2.5													
Pizzas, quiches and savoury pastries	0	0.77	0	4.71	0	3.1	0.77	4.71	3.2	0.77	4.71	3.2													
Sandwiches and snacks	0	0.58	0	5.32	0	2.3	0.58	5.32	2.4	0.58	5.32	2.4													
Mixed dishes	0	1.66	0	7.59	0	6.7	1.66	7.59	6.9	1.66	7.59	6.9													
Dairy-based desserts	0	0.94	0	5.62	0	3.8	0.94	5.62	3.9	0.94	5.62	3.9													
Composites and cooked fruit	0	0.51	0	5.06	0	2.1	0.51	5.06	2.1	0.51	5.06	2.1													
TOTAL	0.27	24.70	1.61	42.30	100	100	24.07	40.73	100	24.07	40.73	100	7.45	29.08	22.90	65.56	100	100	2.44	15.85	10.08	42.20	100	100	

Exposure and levels of contamination with AFB₂, AFG₁, AFG₂, AFB₁, VER, Beta zearalenol and Beta zearalenol, under the LB hypothesis, are not shown in this Table; they are all equal to zero.

Table E3: Estimated exposure (mean and P95) in the French child population to mycotoxins (ng/kg bw/day) and contribution of foods (%)

Food group	Aflatoxins																	
	AFB1			AFB2			AFG1			AFG2			AFM1					
	mean (LB)	mean (UB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	
Bread and dried bread products	0	0.076	0	0.198	0	19.6	0.076	0.198	19.7	0.076	0.198	19.7	0.076	0.198	19.7			
Breakfast cereals	0	0.020	0	0.099	0	5.2	0.020	0.099	5.2	0.020	0.099	5.2	0.020	0.099	5.2			
Pasta	0	0.063	0	0.179	0	16.2	0.063	0.179	16.2	0.063	0.179	16.2	0.063	0.179	16.2			
Rice and wheat products	0	0.035	0	0.146	0	9.1	0.035	0.146	9.1	0.035	0.146	9.1	0.035	0.146	9.1			
Croissant-like pastries	0	0.025	0	0.112	0	6.5	0.025	0.112	6.5	0.025	0.112	6.5	0.025	0.112	6.5			
Sweet and savoury biscuits and bars	0	0.023	0	0.100	0	5.9	0.023	0.100	6.0	0.023	0.100	6.0	0.023	0.100	6.0			
Pastries and cakes	0	0.050	0	0.171	0	12.7	0.050	0.171	12.8	0.050	0.171	12.8	0.050	0.171	12.8			
Milk																0.006	0.019	10.4
Ultra-fresh dairy products																0.026	0.083	47.7
Cheese																0.005	0.017	9.3
Eggs and egg products	0	0.015	0	0.080	0	3.9	0.015	0.080	3.9	0.015	0.080	3.9	0.015	0.080	3.9			
Butter																0.003	0.008	4.7
Poultry and game	0	0.027	0	0.095	0	7.0	0.027	0.095	7.1	0.027	0.095	7.1	0.027	0.095	7.1	0.005	0.019	10.1
Offal	0	0.001	0	0.036	0	0.2	0.001	0.036	0.2	0.001	0.036	0.2	0.001	0.036	0.2	0.000	0.007	0.3
Delicatessen meats	0	0.033	0	0.104	0	8.4	0.033	0.104	8.4	0.033	0.104	8.4	0.033	0.104	8.4	0.006	0.019	10.7
Vegetables (excluding potatoes)	0	0.003	0	0.048	0	0.7	0.003	0.048	0.7	0.003	0.048	0.7	0.003	0.048	0.7			
Fruits																		
Dried fruits, nuts and seeds	0	0.000	0	0.047	0	0.1	0.000	0.047	0.1	0.000	0.047	0.1	0.000	0.047	0.1			
Chocolate	0.0013	0.017	0.013	0.072	100	4.4	0.016	0.065	4.2	0.016	0.065	4.2	0.016	0.065	4.2	0.003	0.013	5.9
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																0.000	0.004	0.9
Pizzas, quiches and savoury pastries																		
Sandwiches and snacks																		
Mixed dishes																		
Dairy-based desserts																		
Compotes and cooked fruit																		
TOTAL	0.0013	0.390	0.008	0.739	100	100	0.388	0.739	100	0.388	0.739	100	0.388	0.739	100	0.054	0.130	100

Exposure and levels of contamination with AFB2, AFG1, AFG2, AFM1, VER, Beta zearalenol and Beta zearalanol, under the LB hypothesis, are not shown in this Table; they are all equal to zero.

Food group	Ochratoxins												Patulin					
	OTA				OTB				PAT									
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	0.169	0.559	0.412	1.400	74.9	19.8	0.007	0.317	0.054	0.804	37.2	12.6						
Breakfast cereals	0.002	0.085	0.029	0.426	1.0	3.0	0.002	0.085	0.029	0.426	11.9	3.4						
Pasta	0.009	0.266	0.086	0.767	4.1	9.4	0	0.252	0	0.714	0	10.0						
Rice and wheat products	0.019	0.170	0.156	0.667	8.5	6.0	0	0.142	0	0.585	0	5.6						
Croissant-like pastries	0	0.101	0	0.449	0.0	3.6	0	0.101	0	0.449	0	4.0						
Sweet and savoury biscuits and bars	0	0.093	0	0.400	0.0	3.3	0	0.093	0	0.400	0	3.7	0	0.28	0	7.50	0	0.7
Pastries and cakes	0	0.198	0	0.686	0.0	7.0	0	0.198	0	0.686	0	7.9	0	5.94	0	20.57	0	15.1
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game	0	0.110	0	0.379	0.0	3.9	0	0.110	0	0.379	0	4.4						
Offal	0	0.003	0	0.143	0.0	0.1	0	0.003	0	0.143	0	0.1						
Delicatessen meats	0.012	0.144	0.065	0.458	5.1	5.1	0.007	0.137	0.034	0.436	36.4	5.4						
Vegetables (excluding potatoes)	0	0.037	0	0.321	0.0	1.3	0	0.037	0	0.321	0	1.5						
Fruits	0	0.340	0	1.239	0.0	12.0	0	0.340	0	1.239	0	13.5	0.14	10.74	1.03	39.13	11.4	27.4
Dried fruits, nuts and seeds	0	0.002	0	0.188	0.0	0.1	0	0.002	0	0.188	0	0.1						
Chocolate	0	0.065	0	0.260	0.0	2.3	0	0.065	0	0.260	0	2.6						
Non-alcoholic beverages	0.001	0.054	0.009	0.164	0.6	1.9	0.000	0.050	0.004	0.151	2.2	2.0	0.49	17.20	3.27	59.35	40.5	43.8
Alcoholic beverages	0.001	0.001	0.060	0.074	0.3	0.0	0	0.000	0	0.031	0	0.0						
Coffee	0	0.001	0	0.058	0.0	0.0	0	0.001	0	0.058	0	0.0						
Other hot beverages	0	0.007	0	0.058	0.0	0.2	0	0.007	0	0.058	0	0.3						
Pizzas, quiches and savoury pastries	0	0.091	0	0.479	0.0	3.2	0	0.091	0	0.479	0	3.6						
Sandwiches and snacks	0.004	0.060	0.070	0.431	1.6	2.1	0.002	0.058	0.046	0.400	12.2	2.3						
Mixed dishes	0.009	0.250	0.082	0.904	3.9	8.8	0	0.237	0	0.821	0	9.4						
Dairy-based desserts	0	0.187	0	0.932	0.0	6.6	0	0.187	0	0.932	0	7.4						
Composites and cooked fruit													0.57	4.70	5.64	33.33	47.1	12.0
TOTAL	0.226	2.821	0.584	5.253	100	100	0.019	2.509	0.107	4.771	100	100	1.21	39.25	6.86	96.45	100	100

Food group	Trichothecenes																	
	DON					DON3					DON15							
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	219.3	219.3	572.9	572.9	40.4	39.5	0.11	4.84	0.82	12.63	100	16.7	0	4.59	0	11.90	0	15.3
Breakfast cereals	4.0	4.8	20.8	23.2	0.7	0.9	0	1.22	0	5.97	0	4.2	0	2.18	2.40	10.83	57.8	7.3
Pasta	69.4	69.4	199.0	199.0	12.8	12.5	0	3.78	0	10.71	0	13.1	0	3.78	0	10.71	0	12.6
Rice and wheat products	14.3	16.0	98.7	99.3	2.6	2.9	0	2.12	0	8.78	0	7.3	0	2.12	0	8.78	0	7.1
Croissant-like pastries	40.4	40.4	190.9	190.9	7.4	7.3	0	1.51	0	6.73	0	5.2	0	1.51	0	6.73	0	5.1
Sweet and savoury biscuits and bars	24.2	25.7	97.9	105.4	4.5	4.6	0	1.39	0	6.00	0	4.8	0.29	1.62	2.13	6.59	41.0	5.4
Pastries and cakes	70.7	71.4	273.1	274.1	13.0	12.9	0	2.97	0	10.29	0	10.3	0	2.97	0	10.29	0	9.9
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game																		
Offal	0.0	0.0	0.0	2.1	0.0	0.0	0	0.04	0	2.14	0	0.1	0	0.04	0	2.14	0	0.1
Delicatessen meats	0.1	2.2	0.7	6.7	0.0	0.4	0	1.96	0	6.22	0	6.8	0	1.96	0	6.22	0	6.5
Vegetables (excluding potatoes)	0.3	1.1	2.7	9.1	0.0	0.2	0	0.55	0	4.82	0	1.9	0.01	0.57	0.13	5.15	1.2	1.9
Fruits																		
Dried fruits, nuts and seeds	0.0	0.0	0.0	2.8	0.0	0.0	0	0.03	0	2.83	0	0.1	0	0.03	0	2.83	0	0.1
Chocolate																		
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																		
Pizzas, quiches and savoury pastries	42.1	42.1	223.2	223.2	7.7	7.6	0	1.37	0	7.18	0	4.7	0	1.37	0	7.18	0	4.6
Sandwiches and snacks	22.4	22.4	190.5	190.5	4.1	4.0	0	0.82	0	5.61	0	2.8	0	0.82	0	5.61	0	2.7
Mixed dishes	34.6	36.6	124.1	133.1	6.4	6.6	0	3.55	0	12.32	0	12.3	0	3.55	0	12.32	0	11.9
Dairy-based desserts	1.7	4.4	19.3	28.1	0.3	0.8	0	2.80	0	13.98	0	9.7	0	2.80	0	13.98	0	9.4
Composites and cooked fruit																		
TOTAL	543.5	555.9	1018.0	1028.8	100	100	0.11	28.94	0.80	54.00	100	100	0.71	29.90	2.78	57.33	100	100

Food group	Trichothecenes																	
	NIV				Tz Toxin				HTz Toxin									
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)						
Bread and dried bread products	9.78	12.94	26.28	33.76	32.0	21.9	0.15	4.93	0.95	12.63	3.7	13.0	4.18	14.34	10.90	37.25	39.9	27.0
Breakfast cereals	0.61	2.65	2.98	12.93	2.0	4.5	0.45	2.26	2.48	11.14	11.1	5.9	0.45	2.26	2.48	11.14	4.3	4.3
Pasta	8.19	12.60	23.21	35.71	26.8	21.4	1.82	8.03	5.36	23.21	45.6	21.1	3.78	12.60	10.71	35.71	36.1	23.7
Rice and wheat products	4.76	6.43	33.73	35.71	15.6	10.9	0.45	3.18	3.06	13.51	11.4	8.4	0.45	3.18	3.06	13.51	4.3	6.0
Croissant-like pastries	0	1.51	0	6.74	0.0	2.6	0	1.51	0	6.73	0.0	4.0	0.09	1.73	0.79	8.12	0.9	3.3
Sweet and savoury biscuits and bars	0.29	1.62	2.13	6.59	1.0	2.8	0.58	2.73	2.67	12.22	14.4	7.2	0.64	2.89	2.84	12.41	6.1	5.4
Pastries and cakes	0	2.97	0	10.29	0.0	5.0	0	2.97	0	10.29	0.0	7.8	0.69	4.58	4.31	17.14	6.6	8.6
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game																		
Offal	0	0.04	0	2.14	0.0	0.1	0	0.04	0	2.14	0.0	0.1	0	0.04	0	2.14	0.0	0.1
Delicatessen meats	0	1.96	0	6.22	0.0	3.3	0	1.96	0	6.22	0.0	5.1	0	1.96	0	6.22	0.0	3.7
Vegetables (excluding potatoes)	0	0.55	0	4.82	0.0	0.9	0	0.55	0	4.82	0.0	1.4	0	0.55	0	4.82	0.0	1.0
Fruits																		
Dried fruits, nuts and seeds	0.01	0.06	1.41	6.13	0.0	0.1	0	0.03	0	2.83	0.0	0.1	0.03	0.09	2.83	9.43	0.3	0.2
Chocolate																		
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																		
Pizzas, quiches and savoury pastries	0	1.37	0	7.18	0.0	2.3	0.12	1.65	1.13	8.38	3.1	4.4	0	1.37	0	7.18	0.0	2.6
Sandwiches and snacks	1.11	1.85	15.44	18.67	3.6	3.1	0.07	0.98	1.39	8.05	1.7	2.6	0	0.82	0	5.61	0.0	1.5
Mixed dishes	5.78	9.61	33.20	41.25	18.9	16.3	0.29	4.22	2.32	16.57	7.2	11.1	0.15	3.91	1.59	14.86	1.5	7.4
Dairy-based desserts	0.01	2.82	0	13.98	0.0	4.8	0.07	2.97	0.89	16.67	1.8	7.8	0.01	2.82	0	13.98	0.1	5.3
Compotes and cooked fruit																		
TOTAL	30.54	58.98	71.88	118.61	100	100	4.00	38.01	9.03	72.83	100	100	10.47	53.13	22.30	103.96	100	100

Food group	Trichothecenes																				
	DAS						DOM-1						FusX						Ver		
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (UB)	P95 (UB)	
Bread and dried bread products	0.11	4.84	0.82	12.63	100	16.7	0	4.59	0	11.90	0	15.9	0.11	4.84	0.82	12.63	100	16.7	4.59	11.90	16.0
Breakfast cereals	0	1.22	0	5.97	0	4.2	0	1.22	0	5.97	0	4.2	0	1.22	0	5.97	0	4.2	1.22	5.97	4.3
Pasta	0	3.78	0	10.71	0	13.1	0	3.78	0	10.71	0	13.1	0	3.78	0	10.71	0	13.1	3.78	10.71	13.2
Rice and wheat products	0	2.12	0	8.78	0	7.3	0	2.12	0	8.78	0	7.3	0	2.12	0	8.78	0	7.3	2.12	8.78	7.4
Croissant-like pastries	0	1.51	0	6.73	0	5.2	0	1.51	0	6.73	0	5.2	0	1.51	0	6.73	0	5.2	1.51	6.73	5.3
Sweet and savoury biscuits and bars	0	1.39	0	6.00	0	4.8	0	1.39	0	6.00	0	4.8	0	1.39	0	6.00	0	4.8	1.39	6.00	4.8
Pastries and cakes	0	2.97	0	10.29	0	10.3	0	2.97	0	10.29	0	10.3	0	2.97	0	10.29	0	10.3	2.97	10.29	10.4
Milk																					
Ultra-fresh dairy products																					
Cheese																					
Eggs and egg products																					
Butter																					
Poultry and game																					
Offal	0	0.04	0	2.14	0	0.1	0	0.04	0	2.14	0	0.1	0	0.04	0	2.14	0	0.1	0.04	2.14	0.1
Delicatessen meats	0	1.96	0	6.22	0	6.8	0	1.96	0	6.22	0	6.8	0	1.96	0	6.22	0	6.8	1.96	6.22	6.8
Vegetables (excluding potatoes)	0	0.55	0	4.82	0	1.9	0	0.55	0	4.82	0	1.9	0	0.55	0	4.82	0	1.9	0.55	4.82	1.9
Fruits																					
Dried fruits, nuts and seeds	0	0.03	0	2.83	0	0.1	0	0.03	0	2.83	0	0.1	0	0.03	0	2.83	0	0.1	0.03	2.83	0.1
Chocolate																					
Non-alcoholic beverages																					
Alcoholic beverages																					
Coffee																					
Other hot beverages																					
Pizzas, quiches and savoury pastries	0	1.37	0	7.18	0	4.7	0	1.37	0	7.18	0	4.7	0	1.37	0	7.18	0	4.7	1.37	7.18	4.8
Sandwiches and snacks	0	0.82	0	5.61	0	2.8	0	0.82	0	5.61	0	2.8	0	0.82	0	5.61	0	2.8	0.82	5.61	2.8
Mixed dishes	0	3.55	0	12.32	0	12.3	0.10	3.79	1.20	13.57	100	13.1	0	3.55	0	12.32	0	12.3	3.55	12.32	12.4
Dairy-based desserts	0	2.80	0	13.98	0	9.7	0	2.80	0	13.98	0	9.7	0	2.80	0	13.98	0	9.7	2.80	13.98	9.8
Compotes and cooked fruit																					
TOTAL	0.11	28.94	0.80	54.00	100	100	0.10	28.93	0	54.66	100	100	0.11	28.94	0.80	54.00	100	100	28.69	54.00	100

Exposure and levels of contamination with AFB₂, AFG₁, AFG₂, AFM₁, VER, Beta zearalenol and Beta zearalanol, under the LB hypothesis, are not shown in this Table: they are all equal to zero.

Food group	Trichothecenes						Zearalenone											
	MAS						ZEA											
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)						
Bread and dried bread products	0.04	4.68	0.24	11.97	5.107	15.3	2.29	7.64	5.95	19.84	20.0	16.5	0.11	4.84	0.82	12.63	100	11.8
Breakfast cereals	0	1.22	0	5.97	0	4.0	0.53	1.84	2.57	8.72	4.6	4.0	0	1.22	0	5.97	0	3.0
Pasta	0	3.78	0	10.71	0	12.4	1.86	6.22	5.36	17.86	16.2	13.4	0	3.78	0	10.71	0	9.2
Rice and wheat products	0.17	2.51	1.59	10.00	21.4	8.2	0.16	1.42	1.13	5.80	1.4	3.1	0	2.12	0	8.78	0	5.2
Croissant-like pastries	0.43	2.52	2.79	12.64	55.1	8.2	0.76	2.52	3.37	11.22	6.6	5.4	0	1.51	0	6.73	0	3.7
Sweet and savoury biscuits and bars	0.14	1.72	0.82	6.84	18.4	5.7	0.92	2.43	3.95	10.07	8.1	5.3	0	1.39	0	6.00	0	3.4
Pastries and cakes	0	2.97	0	10.29	0	9.7	1.34	4.61	4.70	16.29	11.7	10.0	0	2.97	0	10.29	0	7.3
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products							0	0.46	0	2.40	0.0	1.0	0	0.92	0	4.80	0	2.2
Butter																		
Poultry and game							0	0.82	0	2.84	0.0	1.8	0	1.65	0	5.69	0	4.0
Offal	0	0.04	0	2.14	0	0.1	0	0.02	0	1.07	0.0	0.0	0	0.04	0	2.14	0	0.1
Delicatessen meats	0	1.96	0	6.22	0	6.4	0	0.98	0	3.11	0.0	2.1	0	1.96	0	6.22	0	4.8
Vegetables (excluding potatoes)	0	0.55	0	4.82	0	1.8	0.09	0.48	0.97	4.05	0.8	1.0	0	0.55	0	4.82	0	1.3
Fruits							0	2.60	0	9.64	0.0	5.6	0	5.21	0	19.29	0	12.7
Dried fruits, nuts and seeds	0	0.03	0	2.83	0	0.1												
Chocolate							0.37	0.96	2.16	3.94	3.3	2.1	0	0.97	0	3.90	0	2.4
Non-alcoholic beverages							0.06	0.87	0.38	2.96	0.6	1.9	0	1.44	0	4.46	0	3.5
Alcoholic beverages																		
Coffee																		
Other hot beverages							0.07	0.27	0.54	1.79	0.6	0.6	0	0.20	0	1.73	0	0.5
Pizzas, quiches and savoury pastries	0	1.37	0	7.18	0	4.5	0.68	2.28	3.59	11.96	6.0	4.9	0	1.37	0	7.18	0	3.3
Sandwiches and snacks	0	0.82	0	5.61	0	2.7	0.19	0.85	1.71	7.14	1.7	1.8	0	0.82	0	5.61	0	2.0
Mixed dishes	0	3.55	0	12.32	0	11.6	0.52	3.00	2.43	11.02	4.6	6.5	0	3.55	0	12.32	0	8.7
Dairy-based desserts	0	2.80	0	13.98	0	9.2	1.13	4.04	5.91	21.11	9.9	8.7	0	2.80	0	13.98	0	6.8
Compotes and cooked fruit							0.48	1.97	3.81	14.51	4.2	4.3	0	1.68	0	12.41	0	4.1
TOTAL	0.78	30.51	3.05	57.70	100	100	11.46	46.29	22.67	87.45	100	100	0.11	40.99	0.80	78.31	100	100

Food group	Zearalenone						Fumonisin																		
	Alpha zearalenol			Beta zearalanol			FB1			FB2															
	mean (LB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (LB)	P95 (UB)	contrib (LB)	mean (UB)	P95 (UB)	contrib (LB)	mean (LB)	P95 (UB)	contrib (UB)										
Bread and dried bread products	0.11	4.84	0.82	12.63	100	11.8	4.59	11.90	11.3	4.59	11.90	11.3	2.58	13.06	7.23	34.65	16.7	29.3	0.04	3.21	0	8.15	0.6	10.6	
Breakfast cereals	0	1.22	0	5.97	0	3.0	1.22	5.97	3.0	1.22	5.97	3.0	2.80	5.17	18.05	26.24	18.2	11.6	0.79	3.98	3.87	19.35	12.2	13.1	
Pasta	0	3.78	0	10.71	0	9.2	3.78	10.71	9.3	3.78	10.71	9.3													
Rice and wheat products	0	2.12	0	8.78	0	5.2	2.12	8.78	5.2	2.12	8.78	5.2													
Croissant-like pastries	0	1.51	0	6.73	0	3.7	1.51	6.73	3.7	1.51	6.73	3.7													
Sweet and savoury biscuits and bars	0	1.39	0	6.00	0	3.4	1.39	6.00	3.4	1.39	6.00	3.4	5.44	6.20	40.00	40.99	35.3	13.9	2.91	2.91	38.96	38.96	45.0	9.6	
Pastries and cakes	0	2.97	0	10.29	0	7.3	2.97	10.29	7.3	2.97	10.29	7.3													
Milk																									
Ultra-fresh dairy products																									
Cheese																									
Eggs and egg products	0	0.92	0	4.80	0	2.2	0.92	4.80	2.2	0.92	4.80	2.2													
Butter																									
Poultry and game	0	1.65	0	5.69	0	4.0	1.65	5.69	4.0	1.65	5.69	4.0													
Offal	0	0.04	0	2.14	0	0.1	0.04	2.14	0.1	0.04	2.14	0.1													
Delicatessen meats	0	1.96	0	6.22	0	4.8	1.96	6.22	4.8	1.96	6.22	4.8													
Vegetables (excluding potatoes)	0	0.55	0	4.82	0	1.3	0.55	4.82	1.3	0.55	4.82	1.3													
Fruits	0	5.21	0	19.29	0	12.7	5.21	19.29	12.8	5.21	19.29	12.8													
Dried fruits, nuts and seeds																									
Chocolate	0	0.97	0	3.90	0	2.4	0.97	3.90	2.4	0.97	3.90	2.4													
Non-alcoholic beverages	0	1.44	0	4.46	0	3.5	1.44	4.46	3.5	1.44	4.46	3.5	4.54	20.02	17.52	66.96	29.5	44.9	2.69	20.00	12.62	69.80	41.6	65.9	
Alcoholic beverages													0.01	0.11	1.04	9.37	0.1	0.3	0	0.07	0	6.28	0.0	0.2	
Coffee																									
Other hot beverages	0	0.20	0	1.73	0	0.5	0.20	1.73	0.5	0.20	1.73	0.5													
Pizzas, quiches and savoury pastries	0	1.37	0	7.18	0	3.3	1.37	7.18	3.4	1.37	7.18	3.4													
Sandwiches and snacks	0	0.82	0	5.61	0	2.0	0.82	5.61	2.0	0.82	5.61	2.0													
Mixed dishes	0	3.55	0	12.32	0	8.7	3.55	12.32	8.7	3.55	12.32	8.7													
Dairy-based desserts	0	2.80	0	13.98	0	6.8	2.80	13.98	6.9	2.80	13.98	6.9													
Compotes and cooked fruit	0	1.68	0	12.41	0	4.1	1.68	12.41	4.1	1.68	12.41	4.1													
TOTAL	0.11	40.99	0.80	78.31	100	100	40.73	78.14	100	40.73	78.14	100	15.40	44.64	50.37	106.40	100	100	6.48	30.36	23.83	83.33	100	100	

7. Phytoestrogens

Phytoestrogens are polyphenolic non-steroidal compounds. Their biological activities vary, and only part of them is based on their more or less marked structural similarity to 17 β -estradiol and their ability to bind to estrogen receptors (ER α and especially ER β). This functional definition is based on the existence of *in vivo* (uterotrophy, vaginal cornification) and *in vitro* estrogen activity for acceptable concentrations that are around 1,000 times higher than those for estradiol, concentrations which correspond to the circulating levels of phytoestrogens observed from traditional dietary intake in Asian countries.

The main phytoestrogens belong to the classes of isoflavones, coumestans and lignans (Table 25):

- isoflavones include genistein and biochanin A, daidzein, formononetin and glycitein; they are found in beans such as soybeans, lentils and chickpeas, as well as in red clover, walnuts, rye, hops and tea;
- lignans include matairesinol and secoisolaricirecinol; they are found in flax seeds, whole-grain cereals, fruits and vegetables (cherries, apples, pears, carrots, onions, garlic), tea and coffee; these precursors are transformed in the body into the active metabolites enterolignans, enterodiol and enterolactone, which are also found in foods of animal origin, and particularly dairy products;
- coumestans primarily include coumestrol; it is found in young bean sprouts such as clover and alfalfa and in spinach.

Phytoestrogens are naturally found in plants mainly as glycosides and are absorbed in the body as aglycons (genistein, biochanin A, daidzein, formononetin, glycitein, coumestrol). They are then conjugated in the liver and excreted in the urine and faeces as glucuronides. The bioavailability of phytoestrogens varies greatly between individuals, with some subjects producing equol (one of the active isoflavone metabolites, derived from daidzein) and others not. Plasma concentrations of phytoestrogens are a reliable marker of dietary intake (AFSSA 2005c).

Table 25: Primary phytoestrogens

Isoflavones			Coumestanes	Lignans and enterolignans
Daidzin ↓ Formononetin ↓ Daidzein ↓ Equol	Genistin ↓ Biochanin A ↓ Genistein	Glycitin ↓ Glycitein	Coumestrol	Matairesinol Secoisolaricirecinol ↓ Enterolactone Enterodiol

Hazard characterisation

Among the phytoestrogens, soy isoflavones have been studied the most frequently, and it is primarily on the basis of the latter that conclusions can be drawn as to their beneficial or harmful effects.

While several studies have examined the protective effects of phytoestrogens on bone, cardiac, cerebral and cognitive functions and certain cancers (breast, endometrium, prostate), these compounds are not presently considered to be essential. There are therefore no defined nutritional references for them.

On the other hand, harmful effects have been reported in terms of thyroid function (increased thyroid hormone requirements in subjects with hypothyroidism), immunity (including allergic reactions related to soy protein), certain cancers (breast) and the reproductive organs (pre- and neo-natal and adult exposure). The dualistic effects that have been highlighted in animal models regarding mammary tumours (protective effects of isoflavones on cellular tumourisation versus proliferating effects on existing tumours) suggest that significant consumption of soy-based products in menopausal women should be avoided (AFSSA 2005c). Moreover, given the lack of data on their long-term toxicity, it is recommended to not exclusively use infant formulas made with soy proteins for children under the age of 3 years (AFSSA 2005c). Studies examining genistein only have not highlighted particular toxicity for doses of up to 1 mg/kg bw/day. AFSSA suggested that this maximum intake limit should be used for all isoflavone aglycons and coumestans (AFSSA 2005c).

Risk assessment and characterisation

Estimation of concentrations in foods

The percentage of censored data (non-detected or non-quantified element) was relatively high. It was at least 40% (Secoisolariciresinol) and reached 99% (Biochanin A). Nevertheless, given the shortage of data in the literature on most of the tested compounds in the sampled matrices for an interpretation of the censored data, only the lowerbound (LB) was used and the censored data were replaced with zero. Application of the upperbound (UB) could have resulted in over-estimation of exposure due to the high analytical limits, primarily because of highly marked 'matrix' effects and the small test portion required (around one gram).

Concentrations varied greatly from one food to another in a same group, which is why national means are presented for each food (Table F1). This variability is due to the complexity of interactions between phytoestrogens and the plant matrix, and the existence of precursors which means that the reproducibility of the extraction process warrants improvement. Furthermore, various environmental parameters are likely to influence the qualitative and quantitative profile of phytoestrogens, such as the species, culture conditions, variety, stage of maturity and process.

The highest mean concentrations of isoflavones were found in soy-based products: tofu (100 µg biochanin A/100 g, 21 mg daidzein/100 g, 76.8 µg formononetin/100 g, 28 mg genistein/100 g, 3.6 mg glycitein/100 g), soy beverages (up to 7.9 mg genistein/100 g), soy-based cutlets (up to 6.3 mg genistein/100 g) and soy desserts (up to 3.7 mg genistein/100 g). The highest mean concentrations of lignans were also found in soy-based products (up to 260 µg secoisolariciresinol/100 g). Coumestans (coumestrol) were primarily found in canned mung beans (220 µg/100 g).

Estimation of the French population's intake

In adults, total mean isoflavone intake was estimated at 497 µg/day, including 194 µg of daidzein and 264 µg of genistein (Table F2). Mean lignan intake was estimated at 15 µg/day, mainly in the form of secoisolariciresinol (14 µg/day). Mean coumestrol intake totalled 1891 ng/day. These intakes were probably underestimated given that some known contributors (Suzuki, Rylander-Rudqvist *et al.* 2008; Touillaud, Thiebaut *et al.* 2007) could not be analysed. For example, tea and coffee appear in the literature as major contributors to phytoestrogen intake (up to 25% of intake depending on the substance) (Boker, Van der Schouw *et al.* 2002; de Kleijn, van der Schouw *et al.* 2001). However, in most cases, concentrations were analysed based on dry matter, and not the food as consumed. In TDS 2, as tea and coffee were reconstituted, the matrix effect was so significant during the analysis of these foods that a reliable result could not be guaranteed. Therefore, these foods were not taken into account in the assessment of intake.

In children, total mean isoflavone intake was estimated at 234 µg/day, mainly as genistein (123 µg/day) and daidzein (90 µg/day) (Table F3). Mean lignan intake was estimated at 7.8 µg/day, mainly in the form of secoisolariciresinol (7 µg/day). Mean coumestrol intake totalled 990 ng/day.

At the 95th percentile for the entire population, intakes were often lower than the mean, due to a particular distribution of intake data. The foods with the highest concentrations were soy-based foods, which are not frequently consumed in the general population. Therefore, intakes were relatively low, or even zero, for certain substances, except in the individuals who consumed these products, for whom intake was very high.

On average, exposure to isoflavones+coumestrol+equol totalled 8163 ng/kg bw/day in adults and 9806 ng/kg bw/day in children (Table 26). Median exposure was 240 and 464 ng/kg bw/day, respectively. The maximum limit was exceeded by 0.07% of adults [-0.05; 0.2] and 0.5% of children [0.1; 0.8].

Table 26: Exposure to phytoestrogens in the French population (ng/kg bw/day)

		Isoflavones	Coumestrol	Lignans	Isoflavones+ Coumestrol+Equol
Adults	Mean	8,084	29	236	8,163
	Median	176	9.25	94	240
	P95	2,275	104	647	2,607
	P99	213,587	287	4,016	213,593
Children	Mean	9,567	33	276	9,806
	Median	267	11	117	464
	P95	1,490	123	580	2231
	P99	52,460	260	580	52,749

Soy-based products, and particularly soy beverages, appeared to be the main contributors to isoflavone and lignan intake: over 80% of glycitein intake for example in adults and in children, and over 75% of matairesinol intake (Tables F2 and F3). Milk, on account of its consumption, particularly by children, also strongly contributed to the intake of certain isoflavones (equol, formononetin). In adults and children, coumestrol intake was almost solely linked to consumption of green beans (76 and 91%).

In consumers of soy-based products only, mean exposure to isoflavones+coumestrol+equol totalled 106 µg/kg bw/day in adults and 318 µg/kg bw/day in children (Table 27); over 70% of this exposure was linked to the consumption of soy-based beverages (not shown).

Table 27: Exposure to phytoestrogens only in consumers of soy-based products (µg/kg bw/day)

Substance	Adults, n=154		Children, n=45	
	Mean	95 th percentile	Mean	95 th percentile
Isoflavones	106	541	318	1,612
Coumestrol	0.12	0.62	0.16	0.53
Lignans	1.64	6.51	3.88	18.2
Isoflavones+ Coumestrol+Equol	106	541	318	1,613

The TDS 2 used improved food composition data for phytoestrogens versus those used in 2005, when intake levels were first estimated by AFSSA. This new assessment revealed that the subjects with the highest intakes, and particularly those that reached the maximum exposure limit (n=8), were adults and children who consumed large amounts of soy-based products (soy beverages, soy desserts, soy-based vegetable cutlets, tofu, etc.). The estimated phytoestrogen intakes in this study remained below the maximum intake limit in the general population proposed by AFSSA in 2005 (1 mg/kg bw/day). However, it would be advisable to continue research into the potentially harmful effects of these substances, to obtain more data (particularly for dairy products), to improve the quantification of their levels in complex foods (offal) or foods requiring reconstitution (tea, coffee) and to more narrowly assess the exposure of regular consumers of soy-based products through a consumption study specific to this population (Table 28). Moreover, the new data on phytoestrogens in relation to composition, exposure and effects (particularly on bones) show a need to re-assess the maximum intake limit that was proposed in 2005. It may therefore become possible to take into account the estrogen effects of lignan metabolites, whose intakes, particularly through dairy products, are not negligible.

Table 28: Risk assessment conclusions for phytoestrogen intake

Substances	Primary results	Research requirements
Isoflavones, Coumestrol, Equol	Risk can be ruled out for the general population	Need to re-assess the maximum intake limit
Lignans	-	Need to assess the estrogen effects of metabolites
All phytoestrogens	-	Need to improve analytical techniques for the quantification of levels in complex matrices and matrices as consumed

Table F1: Estimated mean levels of phytoestrogens in foods (µg/100g fresh weight)

Food group	Food	n	Biochanin A	Daidzein	Formononetin	Genistein	Glycitein	Coumestrol	Equl	Secoisolarici-resinol	Matairesinol	Lignans	Isoflavones	Isoflavones + Coumestrol
Milk	semi-skimmed milk	16	0	0.112	0.201	0.068	0.729	0	3.25	0.18	0.0205	0.139	1.109	1.11
	full fat milk	10	0.058	0.062	0.36	0.043	0.718	0.005	3.32	0.083	0.0078	0.09	1.24	1.24
Eggs and egg products	skimmed milk	11	0	0.108	0.18	0.021	0.964	0	4.34	0	0.0082	0.008	1.28	1.28
	hard-boiled egg	14	0	7.36	0	2.56	1.009	0	15.697	0.485	0	0.485	10.9	10.9
Oils	scrambled egg, omelette	15	0	7.30	0	2.89	0.899	0	1.26	1.8	0	1.8	11.1	11.1
	soybean oil	2	0	153	0	546	52.3	0	0	0	0	0	751	751
Vegetables (excluding potatoes)	artichoke	14	0	0	0	0	0	0	0	9.66	0	9.66	0	0
	carrot	16	0	0	0	0	0	0	0	5.25	0	5.25	0	0
	cauliflower	16	0	0	0	0	0	0	0	3.4	0	3.4	0	0
	raw cucumber	9	0	0.041	0	0	0	0	0	0.34	0	0.34	0.041	0.041
	courgette	16	0	0	0	0	0	0	0	6.12	0	6.12	0	0
	celery	10	0	0.07	0	0	0	0	0	8.99	0	8.99	0.07	0.07
	celeriac	2	0	0.18	0	0	0	0	0	7.51	0	7.51	0.18	0.18
	endive	16	0	0	0	0	0	0	0	2.07	0	2.07	0	0
	canned beansprouts	1	0	150	0	136	0	220	0	34.2	0	34.2	286	506
	beans	15	0	33.9	0	34	2.829	7.72	0	25.5	0	25.5	70.9	78.6
	sweetcorn	15	0	0	0	0	0	0	0	0.576	0	0.576	0	0
	turnip	11	0	0	0	0	0	0	0	3.23	0	3.23	0	0
	onion	15	0	0	0	0	0	0	0	28.4	0	28.4	0	0
	peas	16	0	0.316	0	0.016	1.027	0	0	0	0	0	1.36	1.36
	leek	12	0	0	0	0	0	0	0	15.21	0	15.21	0	0
	bell pepper	9	0	0	0	0	0	0	0	4.07	0	4.07	0	0
radish	10	0	0	0	0	0	0	0	0	0	0	0	0	
lettuce	16	0	0	0	0	0	0	0	1.29	0	1.29	0	0	
tomato	16	0	0	0	0.154	0	0	0	1.47	0	1.47	0.154	0.154	
spinach	15	0	0.031	0	0	0	0	0	0	0	0	0	0.031	
Pulses	lentils	1	0	0	0	0	0	0	0	2.99	0	2.99	0	0
	soy or soy milk (tonyu) drink	2	5	5610	30.2	7909	1397	0	0	90.3	52.15	142	14951	14951
Non-alcoholic beverages	soy-based vegetable cutlets	2	0	5650	23.4	6348	790	0	0	260	38.3	298	12811	12811
	chocolate flavoured soy dessert	2	0	2489.5	17.2	3296	122	0	0	128	0	128	5924	5924
Dairy-based desserts	soy dessert with fruit	2	23	2842.5	573	3695	149	54.5	16	223	0	223	6767	6821
	plain soy dessert	2	0	1920	4.34	2559	70	0	0	139	32.4	171	4553	4553
Seasonings and sauces	ketchup	2	0	0	0	0	0	0	0	2.19	0	2.19	0	0
	mayonnaise	2	0	1.76	0	0	0.25	0	0	21.0	0	21.0	2.01	2.01
	soy sauce	2	0	629	0	177	141	0	0	0	0	0	947	947
Misc. foods	meat-free tomato sauce	2	0	0	0	0	0	0	0	0	0	0	0	0
	tofu	2	100	21295	76.8	28229	3615	0	0	407	62	469	53316	53316

Table F2: Estimated intake (mean and P95) of phytoestrogens (ng/day) by the French adult population and contribution of foods (%)

Food group	Food	Biochanin A			Daidzein			Equol			Formononetin		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Misc. foods	tofu	55.578	728.5714	19.032	11835.26	15514928.57	6.096	0	0	42.68	55954.29	3.18	
Non-alcoholic beverages	soy or soy milk (tonyu) drink	113.824	15803.57	38.977	127710.8	17731607.14	65.784	0	0	687.04	95390.36	51.187	
Seasonings and sauces	ketchup	0	0	0	0	0	0	0	0	0	0	0	
	mayonnaise	0	0	0	18.39	188.57	0.009	0	0	0	0	0	
	soy sauce	0	0	0	568.95	49421.43	0.293	0	0	0	0	0	
Dairy-based desserts	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	
	chocolate flavoured soy dessert	0	0	0	9450.22	2578410.71	4.868	0	0	65.14	17772.86	4.853	
	soy dessert with fruit	117.791	19714.29	40.336	14557.4	2436428.57	7.498	81.94	13714.29	2.436	293.66	49148.57	
	plain soy dessert	0	0	0	16593.93	1920000	8.548	0	0	37.51	4340	2.795	
Oils	soybean oil	0	0	0	8.73	4371.43	0.004	24.41.45	16425	0	0	0	
Milk	semi-skimmed milk	0	0	0	79.55	6375	0.041	140.94	1531.94	10.5	1531.94	10.5	
	skimmed milk	0	0	0	8.11	504	0.004	360.4	23257.5	10.716	14.04	1135.75	
	full fat milk	4.018	700	1.376	7.38	626.79	0.004	262.22	16975	7.797	35.74	2975	
Vegetables (excluding potatoes)	artichoke	0	0	0	0	0	0	0	0	0	0	0	
	carrot	0	0	0	0	0	0	0	0	0	0	0	
	celery	0	0	0	0.33	40.61	0	0	0	0	0	0	
	celeriac	0	0	0	1.46	51.43	0.001	0	0	0	0	0	
	cauliflower	0	0	0	0	0	0	0	0	0	0	0	
	raw cucumber	0	0	0	1.87	53.08	0.001	0	0	0	0	0	
	courgette	0	0	0	0	0	0	0	0	0	0	0	
	endive	0	0	0	0	0	0	0	0	0	0	0	
	spinach	0	0	0	0.7	35.63	0	0	0	0	0	0	
	canned beansprouts	0	0	0	110.46	58928.57	0.057	0	0	0	0	0	
	beans	0	0	0	6325.57	26986.45	3.258	0	0	0	0	0	
	sweetcorn	0	0	0	0	0	0	0	0	0	0	0	
	turnip	0	0	0	0	0	0	0	0	0	0	0	
	onion	0	0	0	0	0	0	0	0	0	0	0	
	peas	0	0	0	20.09	214.29	0.01	0	0	0	0	0	
	leek	0	0	0	0	0	0	0	0	0	0	0	
	bell pepper	0	0	0	0	0	0	0	0	0	0	0	
radish	0	0	0	0	0	0	0	0	0	0	0		
lettuce	0	0	0	0	0	0	0	0	0	0	0		
tomato	0	0	0	0	0	0	0	0	0	0	0		
Pulses	lentils	0	0	0	0	0	0	0	0	0	0	0	
Eggs and egg products	scrambled egg, omelette	0	0	0	727.11	3844	0.375	132	1479.43	3.925	0	0	
	hard-boiled egg	0	0	0	316.77	2162.39	0.163	75.8	1062.64	2.254	0	0	
Mixed dishes	soy-based vegetable cutlets	0	0	0	5232.29	1614285.71	2.705	0	0	0	21.71	6671.43	
TOTAL		292.026	0	100	194137.74	70647.46	100	3363.21	15955.25	100	1342.21	2355.5	

Food group	Food	Genistein			Glycitein			Matairesinol			Secoisolariciresinol		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Misc. foods	tofu	15689.02	20566842.86	5.953	2009.13	2633785.71	5.275	34.67	4545557	2.23	226.2	296528.57	1.641
Non-alcoholic beverages	soy or soy milk (tonyuu) drink	180035.8	24996508.93	68.314	31802.49	4415517.86	83.502	1187.19	164831.25	76.364	2055.67	285412.5	14.913
Seasonings and sauces	ketchup	0	0	0	0	0	0	0	0	0	16.4	919.8	0.119
	mayonnaise	0	0	0	2.61	26.79	0.007	0	0	0	219.71	2253.21	1.594
	soy sauce	160.1	13907.14	0.061	127.54	11078.57	0.335	0	0	0	0	0	0
Dairy-based desserts	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
	chocolate flavoured soy dessert	12509.83	3413196.43	4.747	463.12	126357.14	1.216	0	0	0	487.07	132892.5	3.533
	soy dessert with fruit	18923.34	3167142.86	7.18	763.08	127714.29	2.004	0	0	0	1141.62	191070	8.282
Oils	plain soy dessert	22116.6	2559000	8.392	604.99	70000	1.588	279.81	32375	17.998	1201.76	139050	8.718
	soybean oil	31.15	15591.43	0.012	2.99	1494.29	0.008	0	0	0	0	0	0
Milk	semi-skimmed milk	49.06	564.75	0.019	590.13	5466.25	1.549	11.74	141.75	0.755	98.43	1982.14	0.714
	skimmed milk	1	108.04	0	74.8	6772.5	0.196	0.41	35.14	0.026	0	0	0
Vegetables (excluding potatoes)	full fat milk	5.5	506.25	0.002	45.51	6190	0.119	0.89	117	0.057	6.11	950	0.044
	artichoke	0	0	0	0	0	0	0	0	0	148.7	5140.8	1.079
	carrot	0	0	0	0	0	0	0	0	0	598.19	3467.61	4.34
	celery	0	0	0	0	0	0	0	0	0	49.08	4472	0.356
	celeriac	0	0	0	0	0	0	0	0	0	60.79	2145.71	0.441
	cauliflower	0	0	0	0	0	0	0	0	0	135.48	2832	0.983
	raw cucumber	0	0	0	0	0	0	0	0	0	14.6	352.26	0.106
	courgette	0	0	0	0	0	0	0	0	0	294.92	3735	2.139
	endive	0	0	0	0	0	0	0	0	0	99.76	1301.79	0.724
	spinach	0	0	0	0	0	0	0	0	0	0	0	0
	canned beansprouts	99.85	53270	0.038	0	0	0	0	0	0	25.18	13431.79	0.183
	beans	6838.8	32963.9	2.595	563.09	3301.18	1.478	0	0	0	5021.05	23103.76	36.425
	sweetcorn	0	0	0	0	0	0	0	0	0	6.77	224.47	0.049
	turnip	0	0	0	0	0	0	0	0	0	11.02	1624.29	0.08
	onion	0	0	0	0	0	0	0	0	0	494.35	5492.14	3.586
	peas	1.04	21	0	62.78	713.13	0.165	0	0	0	0	0	0
leek	0	0	0	0	0	0	0	0	0	215.75	5970.7	1.565	
bell pepper	0	0	0	0	0	0	0	0	0	56.58	2069.46	0.41	
radish	0	0	0	0	0	0	0	0	0	0	0	0	
lettuce	0	0	0	0	0	0	0	0	0	155.49	888.69	1.128	
tomato	31.66	226.61	0.012	0	0	0	0	0	0	300.96	2066.51	2.183	
Pulses	lentils	0	0	0	0	0	0	0	0	142.63	2345.05	1.035	
Eggs and egg products	scrambled egg, omelette	294.66	1542.86	0.112	90.92	455	0.239	0	0	0	201.33	1620	1.461
	hard-boiled egg	118.39	854.59	0.045	41.37	301.27	0.109	0	0	0	18.93	184.19	0.137
Mixed dishes	soy-based vegetable cutlets	5900.69	1813571.43	2.239	734.86	22587.14	1.929	35.59	10940	2.29	241.62	74261.43	1.753
TOTAL		263542.75	84538.32	100	38085.8	12299.06	100	1554.65	215	100	13784.65	41740.51	100

Food group	Food	Coumestrol			Lignans			Isoflavones			Isoflavones+ Coumestrol+Equl		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Misc. foods	tofu	0	0	0	260.88	341984.14	1.701	29631.67	38844368.57	5.957	29631.67	38844368.57	5.895
Non-alcoholic beverages	soy or soy milk (tonyuu) drink	0	0	0	3242.85	450243.75	21.141	340349.96	47254827.86	68.426	340349.96	47254827.86	67.71
Seasonings and sauces	ketchup	0	0	0	16.4	919.8	0.107	0	0	0	0	0	0
	mayonnaise	0	0	0	2197.1	2253.21	1.432	21	215.36	0.004	21	215.36	0.004
	soy sauce	0	0	0	0	0	0	856.59	74407.14	0.172	856.59	74407.14	0.17
Dairy-based desserts	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
	chocolate flavoured soy dessert	0	0	0	487.07	132892.5	3.175	22488.31	6135737.14	4.521	22488.31	6135737.14	4.474
	soy dessert with fruit	279.11	46714.29	14.757	1141.62	191070	7.442	34655.27	5800148.57	6.967	35016.32	5860577.14	6.966
Oils	plain soy dessert	0	0	0	1481.57	171425	9.659	39353.02	4553340	7.912	39353.02	4553340	7.829
Milk	soybean oil	0	0	0	0	0	0	42.87	21457.14	0.009	42.87	21457.14	0.009
	semi-skimmed milk	0	0	0	110.17	2068.93	0.718	859.68	7719.43	0.173	3301.13	24075	0.657
	skimmed milk	0	0	0	0.41	35.14	0.003	97.94	7332.5	0.02	458.35	26162.5	0.091
	full fat milk	0.22	43.2	0.012	7	950	0.046	98.15	10115	0.02	360.59	27090	0.072
	artichoke	0	0	0	148.7	5140.8	0.969	0	0	0	0	0	0
	carrot	0	0	0	598.19	3467.61	3.9	0	0	0	0	0	0
	celery	0	0	0	49.08	4472	0.32	0.33	40.61	0	0.33	40.61	0
	celeriac	0	0	0	60.79	2145.71	0.396	1.46	51.43	0	1.46	51.43	0
	cauliflower	0	0	0	135.48	2832	0.883	0	0	0	0	0	0
	raw cucumber	0	0	0	14.6	352.26	0.095	1.87	53.08	0	1.87	53.08	0
Vegetables (excluding potatoes)	courgette	0	0	0	294.92	3735	1.923	0	0	0	0	0	0
	endive	0	0	0	99.76	1301.79	0.65	0	0	0	0	0	0
	spinach	0	0	0	0	0	0	0.7	35.63	0	0.7	35.63	0
	canned beansprouts	162.01	86428.57	8.566	25.18	13431.79	0.164	210.32	112198.57	0.042	372.33	198627.14	0.074
	beans	1444.79	6923.35	76.387	5021.05	23103.76	32.733	13727.46	60740.46	2.76	15172.25	66124.79	3.018
	sweetcorn	0	0	0	6.77	224.47	0.044	0	0	0	0	0	0
	turnip	0	0	0	11.02	1624.29	0.072	0	0	0	0	0	0
	onion	0	0	0	494.35	5492.14	3.223	0	0	0	0	0	0
	peas	0	0	0	0	0	0	83.9	884.29	0.017	83.9	884.29	0.017
	leek	0	0	0	215.75	5970.7	1.407	0	0	0	0	0	0
	bell pepper	0	0	0	56.58	2069.46	0.369	0	0	0	0	0	0
	radish	0	0	0	0	0	0	0	0	0	0	0	0
	lettuce	0	0	0	155.49	888.69	1.014	0	0	0	0	0	0
Pulses	tomato	0	0	0	300.96	2066.51	1.962	31.66	226.61	0.006	31.66	226.61	0.006
	lentils	0	0	0	142.63	2345.05	0.93	0	0	0	0	0	0
	scrambled egg, omelette	0	0	0	201.33	1620	1.313	112.69	5675.36	0.224	1244.69	6578.75	0.248
Eggs and egg products	hard-boiled egg	0	0	0	18.93	184.19	0.123	476.53	3403.44	0.096	552.33	3727.48	0.11
	soy-based vegetable cutlets	0	0	0	277.21	85201.43	1.807	11909.55	3660385.71	2.394	11909.55	3660385.71	2.369
TOTAL		1891.41	6805.29	100	15339.3	42759.22	100	497400.52	150151.55	100	502655.15	172041.43	100

Table F3: Estimated intake (mean and P95) of phytoestrogens (ng/day) by the French child population (3-18 years) and contribution of foods (%)

Food group	Food	Biochanin A			Daidzein			Equol			Formononetin		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Misc. foods	tofu	2.041	2857.14	2.144	434.53	608428.57	0.485	0	0	1.57	2194.29	0.178	
Non-alcoholic beverages	soy or soy milk (tonyu) drink	65.779	17857.14	69.13	73803.74	20035714.29	82.307	0	0	397.04	107785.71	44.996	
Seasonings and sauces	ketchup	0	0	0	0	0	0	0	0	0	0	0	
	mayonnaise	0	0	0	15.84	150.86	0.018	0	0	0	0	0	
	soy sauce	0	0	0	231.19	53914.29	0.258	0	0	0	0	0	
	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	
Dairy-based desserts	chocolate flavoured soy dessert	0	0	0	3067.31	1066928.57	3.421	0	0	21.14	7354.29	2.396	
	soy dessert with fruit	20.24	9857.14	21.271	2501.39	1218214.29	2.79	0.231	14.08	6857.14	0.231		
	plain soy dessert	0	0	0	2262.95	960000	2.524	0	0	5.12	2170	0.58	
	semi-skimmed milk	0	0	0	168.77	717.4	0.188	86.247	5258.96	17910	329.51	1682.5	
Milk	skimmed milk	0	0	0	5.1	433.75	0.006	3.189	194.48	13024.8	8.1	917.87	
	full fat milk	6.768	816	7.113	7.28	487.5	0.008	7.663	467.26	20683.93	57.63	3108.57	
Vegetables (excluding potatoes)	artichoke	0	0	0	0	0	0	0	0	0	0	0	
	carrot	0	0	0	0	0	0	0	0	0	0	0	
	celery	0	0	0	0.05	10.03	0	0	0	0	0	0	
	celeriac	0	0	0	0.41	32.14	0	0	0	0	0	0	
	cauliflower	0	0	0	0	0	0	0	0	0	0	0	
	raw cucumber	0	0	0	1.45	20.64	0.002	0	0	0	0	0	
	courgette	0	0	0	0	0	0	0	0	0	0	0	
	endive	0	0	0	0	0	0	0	0	0	0	0	
	spinach	0	0	0	0.58	35.63	0.001	0	0	0	0	0	
	canned beansprouts	0	0	0	24.35	17142.86	0.027	3.189	194.48	13024.8	8.1	917.87	
	beans	0	0	0	3999.97	17044.07	4.461	0	0	0	0	0	
	sweetcorn	0	0	0	0	0	0	0	0	0	0	0	
	turnip	0	0	0	0	0	0	0	0	0	0	0	
	onion	0	0	0	0	0	0	0	0	0	0	0	
	peas	0	0	0	18.2	151.07	0.02	0	0	0	0	0	
	leek	0	0	0	0	0	0	0	0	0	0	0	
	bell pepper	0	0	0	0	0	0	0	0	0	0	0	
radish	0	0	0	0	0	0	0	0	0	0	0		
lettuce	0	0	0	0	0	0	0	0	0	0	0		
tomato	0	0	0	0	0	0	0	0	0	0	0		
Pulses	lentils	0	0	0	0	0	0	0	0	0	0	0	
	scrambled egg, omelette	0	0	0	474.82	2987.43	0.53	1.581	96.43	1109.57	0	0	
Eggs and egg products	hard-boiled egg	0	0	0	211.21	1744.97	0.236	0.747	45.53	728.19	0	0	
Mixed dishes	soy-based vegetable cutlets	0	0	0	2134.1	968571.43	2.38	0	0	0	0	0	
TOTAL		93.133	0	100	89669.39	18504.16	100	100	6097.56	17732.29	882.39	1973.32	

Food group	Food	Genistein			Glycitein			Matairesinol			Secoisolaricresinol		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Misc. foods	tofu	576.02	806542.86	0.47	73.76	103285.71	0.347	1.27	1782.57	0.165	8.3	11628.57	0.18
Non-alcoholic beverages	soy or soy milk (tony) drink	104042.23	28244642.86	84.859	18378.58	4989285.71	86.519	686.07	186250	88.988	1187.96	322500	16.829
Seasonings and sauces	ketchup	0	0	0	0	0	0	0	0	0	39.42	563.14	0.558
	mayonnaise	0	0	0	2.25	21.43	0.011	0	0	0	189.25	1802.57	2.681
	soy sauce	65.06	15171.43	0.053	51.83	12085.71	0.244	0	0	0	0	0	0
Dairy-based desserts	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
	chocolate flavoured soy dessert	4060.38	1412357.14	3.312	150.32	52285.71	0.708	0	0	0	158.09	54990	2.24
	soy dessert with fruit	3251.59	1583571.43	2.652	131.12	63857.14	0.617	0	0	0	196.16	95535	2.779
Milk	plain soy dessert	3016.09	1279500	2.46	82.5	35000	0.388	38.16	16187.5	4.949	163.89	69525	2.322
	semi-skimmed milk	114.18	601.71	0.093	1348.02	6046.86	6.346	26.5	182.25	3.437	260.18	2312.5	3.686
	skimmed milk	1.16	189	0.001	44.01	6137.5	0.207	0.82	184.5	0.106	0	0	0
Vegetables (excluding potatoes)	full fat milk	4.36	393.75	0.004	128.33	7693.71	0.604	1.06	91	0.137	9.46	1107.43	0.134
	artichoke	0	0	0	0	0	0	0	0	0	67.22	3032.68	0.952
	carrot	0	0	0	0	0	0	0	0	0	418.37	2771.43	5.927
	celery	0	0	0	0	0	0	0	0	0	9.74	2795	0.138
	celeriac	0	0	0	0	0	0	0	0	0	16.93	1341.07	0.24
	cauliflower	0	0	0	0	0	0	0	0	0	111.98	2580	1.586
	raw cucumber	0	0	0	0	0	0	0	0	0	10.71	194.35	0.152
	courgette	0	0	0	0	0	0	0	0	0	123.33	2957.14	1.747
	endive	0	0	0	0	0	0	0	0	0	17.36	502.56	0.246
	spinach	0	0	0	0	0	0	0	0	0	0	0	0
	canned beansprouts	22.02	15496.73	0.018	0	0	0	0	0	0	5.55	3907.43	0.079
	beans	4848.21	20964.23	3.546	343.54	2138.05	1.617	0	0	0	3175.5	14762.79	44.985
	sweetcorn	0	0	0	0	0	0	0	0	0	7.4	182.86	0.105
turnip	0	0	0	0	0	0	0	0	0	4.25	1517.74	0.06	
onion	0	0	0	0	0	0	0	0	0	164.37	2443.21	2.328	
peas	0.84	14.38	0.001	53.55	525	0.252	0	0	0	0	0	0	
leek	0	0	0	0	0	0	0	0	0	63.48	4011.43	0.899	
bell pepper	0	0	0	0	0	0	0	0	0	20.35	1163.2	0.288	
radish	0	0	0	0	0	0	0	0	0	0	0	0	
lettuce	0	0	0	0	0	0	0	0	0	0	0	0	
tomato	18.52	157.29	0.015	0	0	0	0	0	0	51.89	399.91	0.735	
Pulses	lentils	0	0	0	0	0	0	0	0	171.93	1271.7	2.521	
	scrambled egg, omelette	198.26	1282.86	0.162	57.56	390	0.271	0	0	132.97	1705.49	1.884	
	hard-boiled egg	71.16	811.56	0.058	25.77	250.96	0.121	0	0	129.37	1620	1.833	
Eggs and egg products	soy-based vegetable cutlets	2397.55	10881.42.86	1.955	298.58	135514.29	1.406	14.46	6564	1.876	98.17	44556.86	1.391
	TOTAL	122606.23	21104.63	100	21242.25	7626.81	100	770.97	184.29	100	7059.05	17616.78	100

Food group	Food	Coumestrol			Lignans			Isoflavones			Isoflavones+ Coumestrol+Equl		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Misc. foods	tofu	0	0	0	9.58	13411.14	0.122	1087.92	1523308.57	0.464	1087.92	1523308.57	0.45
Non-alcoholic beverages	soy or soy milk (tonyuu) drink	0	0	0	1874.04	508750	23.934	196687.37	53395285.71	83.877	196687.37	53395285.71	81.416
	ketchup	0	0	0	39.42	563.14	0.504	0	0	0	0	0	0
Seasonings and sauces	mayonnaise	0	0	0	189.25	1802.57	2.417	18.09	172.29	0.008	18.09	172.29	0.007
	soy sauce	0	0	0	0	0	0	348.07	81171.43	0.148	348.07	81171.43	0.144
	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
	chocolate flavoured soy dessert	0	0	0	158.09	54990	2.019	7299.15	25389571	3.113	7299.15	25389571	3.021
Dairy-based desserts	soy dessert with fruit	47.96	23357.14	4.842	196.16	95535	2.505	5954.79	2900074.29	2.539	6016.83	2930288.57	2.491
	plain soy dessert	0	0	0	202.04	85712.5	2.58	5366.65	2276670	2.289	5366.65	2276670	2.221
	semi-skimmed milk	0	0	0	286.68	2413.75	3.661	1960.48	8220	0.836	7219.44	25611.89	2.988
Milk	skimmed milk	0	0	0	0.82	184.5	0.01	58.36	7382.5	0.025	252.84	20519.87	0.105
	full fat milk	0.83	98	0.084	10.51	1107.43	0.134	204.37	10899.43	0.087	672.46	28306.29	0.278
	artichoke	0	0	0	67.22	3032.68	0.859	0	0	0	0	0	0
	carrot	0	0	0	418.37	2771.43	5.343	0	0	0	0	0	0
	celery	0	0	0	9.74	2795	0.124	0.05	10.03	0	0.05	10.03	0
	celeriac	0	0	0	16.93	1341.07	0.216	0.41	32.14	0	0.41	32.14	0
	cauliflower	0	0	0	111.98	2580	1.43	0	0	0	0	0	0
	raw cucumber	0	0	0	10.71	194.35	0.137	1.45	20.64	0.001	1.45	20.64	0.001
	courgette	0	0	0	123.33	2957.14	1.575	0	0	0	0	0	0
	endive	0	0	0	17.36	502.56	0.222	0	0	0	0	0	0
	spinach	0	0	0	0	0	0	0.58	35.63	0	0.58	35.63	0
Vegetables (excluding potatoes)	canned beansprouts	35.72	25142.86	3.607	5.55	3907.43	0.071	46.37	32639.58	0.02	82.09	57782.44	0.034
	beans	902.54	4867.98	91.126	3175.5	14762.79	40.555	8691.72	38782.96	3.707	9594.25	43847.21	3.971
	sweetcorn	0	0	0	7.4	182.86	0.095	0	0	0	0	0	0
	turnip	0	0	0	4.25	1517.74	0.054	0	0	0	0	0	0
	onion	0	0	0	164.37	2443.21	2.099	0	0	0	0	0	0
	peas	0	0	0	0	0	0	72.59	660	0.031	72.59	660	0.03
	leek	0	0	0	63.48	4011.43	0.811	0	0	0	0	0	0
	bell pepper	0	0	0	20.35	1163.2	0.26	0	0	0	0	0	0
	radish	0	0	0	0	0	0	0	0	0	0	0	0
	lettuce	0	0	0	51.89	399.91	0.663	0	0	0	0	0	0
	tomato	0	0	0	177.93	1271.7	2.272	18.52	157.29	0.008	18.52	157.29	0.008
Pulses	lentils	0	0	0	132.97	1705.49	1.698	0	0	0	0	0	0
Eggs and egg products	scrambled egg, omelette	0	0	0	129.37	1620	1.652	730.64	4540.29	0.312	827.07	5789.3	0.342
	hard-boiled egg	0	0	0	15.35	184.19	0.196	308.14	2432.47	0.131	353.67	3347.59	0.146
Mixed dishes	soy-based vegetable cutlets	0	0	0	112.64	5120.86	1.439	4839.06	2196231.43	2.064	4839.06	2196231.43	2.003
TOTAL		990.43	4067.47	100	7830.02	17616.78	100	234495.41	44586.93	100	241583.4	59844.3	100

8. General conclusion

The conclusions of the Second French Total Diet Study (TDS 2) are mentioned in the ANSES Opinion dated 21 June 2011.

AFNOR (1998) NF V03-110, Analyse des produits agricoles et alimentaires - Procédure de validation intra-laboratoire d'une méthode alternative par rapport à une méthode de référence - Cas de méthodes d'analyse quantitatives. AFNOR, Saint-Denis, France.

AFNOR (2002a) NF EN 13804, Produits alimentaires - Dosage des éléments traces - Critères de performance, généralités et préparation des échantillons. AFNOR, Saint-Denis, France.

AFNOR (2002b) NF EN 13805, Produits alimentaires – Détermination des éléments traces – Digestion Sous Pression. AFNOR, Saint-Denis, France.

AFNOR (2003) XP T 90-210, Protocole d'évaluation d'une méthode alternative d'analyse physico-chimique quantitative par rapport à une méthode de référence. AFNOR, Saint-Denis, France.

AFSSA (2005a) Banque de données de composition REGAL gérée par le Centre Informatique sur la Qualité des Aliments de l'AFSSA. AFSSA, Maisons-Alfort, France.

AFSSA (2005b) Rapport de l'Agence française de sécurité sanitaire des aliments. Dioxines, furanes et PCB de type dioxine: Evaluation de l'exposition de la population française. AFSSA, Maisons-Alfort, France.

AFSSA (2005c) Sécurité et bénéfices des phyto-estrogènes apportés par l'alimentation - Recommandations. AFSSA, Maisons-Alfort, France.

AFSSA (2006) Avis de l'Agence française de sécurité sanitaire des aliments relatif à l'évaluation des risques liés à la présence de retardateurs de flamme bromés dans les aliments. AFSSA, Maisons-Alfort, France.

AFSSA (2007a) Avis de l'Agence française de sécurité sanitaire des aliments relatif à l'établissement de teneurs maximales pertinentes en polychlorobiphényles qui ne sont pas de type dioxine (PCB « non dioxin-like », PCB-NDL) dans divers aliments. AFSSA, Maisons-Alfort, France.

AFSSA (2007b) Avis de l'Agence française de sécurité sanitaire des aliments relatif à l'évaluation des risques sanitaires liés aux situations de dépassement de la limite de qualité du baryum dans les eaux destinées à la consommation humaine. AFSSA, Maisons-Alfort, France.

AFSSA (2007c) Évaluation des risques sanitaires liés aux situations de dépassement des limites et références de qualité des eaux destinées à la consommation humaine – Tome 1. AFSSA, Maisons-Alfort, France.

AFSSA (2008a) Avis de l'Agence Française de Sécurité Sanitaire des Aliments: actualisation de l'exposition par voie alimentaire de la population française à l'aluminium. AFSSA, Maisons-Alfort, France.

AFSSA (2008b) Avis de l'Agence française de sécurité sanitaire des aliments relatif à la demande d'informations générales sur la toxicité du Nickel dans la chaîne alimentaire. AFSSA, Maisons-Alfort, France.

AFSSA (2008c) Modification de l'étiquetage nutritionnel: propositions, arguments et pistes de recherche Maisons-Alfort, France.

AFSSA (2008d) Table de composition nutritionnelle des aliments Ciqua 2008. <http://www.afssa.fr/TableCIQUAL/>. AFSSA.

AFSSA (2009a) Avis de l'Agence Française de Sécurité Sanitaire des Aliments relatif à la teneur maximale en arsenic inorganique recommandée pour les algues laminaires et aux modalités de consommation de ces algues compte tenu de leur teneur élevée en iode. AFSSA, Maisons-Alfort, France.

AFSSA (2009b) Étude Individuelle Nationale des Consommations Alimentaires (INCA 2) (2006-2007). AFSSA, Maisons-Alfort, France.

AFSSA (2009c) Évaluation des risques liés à la présence de mycotoxines dans les chaînes alimentaires humaine et animale. AFSSA, Maisons-Alfort, France.

AFSSA (2010) Avis de l'Agence française de sécurité sanitaire des aliments relatif à une demande d'appui scientifique et technique sur la migration de cobalt de plats à gratin en porcelaine destinés à entrer en contact avec des aliments. AFSSA, Maisons-Alfort, France.

AFSSA, AFSSE, IFEN (2004) Observatoire des Résidus de Pesticides, Etude de faisabilité (Rapport final au 30 juin 2004).

Antignac JP, Cariou R, Le Bizec B, André F (2003) Identification of phytoestrogens in milk by liquid chromatography-electrospray tandem mass spectrometry. *Mass Spectrometry* 17(12), 1256-1264.

Antignac JP, Cariou R, Le Bizec B, André F (2004) New data regarding phytoestrogens content in bovine milk. *Food Chem* 87, 275-281.

Antignac JP, Gaudin-Hirret I, Naegeli H, Cariou R, Elliott C, Le Bizec B (2009) Multifunctional sample preparation procedure for measuring phytoestrogens in milk, cereals, and baby-food by liquid-chromatography tandem mass spectrometry with subsequent determination of their estrogenic activity using transcriptomic assay. *Anal Chim Acta* 637, 55-63.

Antignac JP, Marchand P, Gade C, Matayron G, Qannari el M, Le Bizec B, Andre F (2006) Studying variations in the PCDD/PCDF profile across various food products using multivariate statistical analysis. *Anal Bioanal Chem* 384(1), 271-9. [In eng]

Arnaud J (2001a) Autres oligoéléments. In 'Apports nutritionnels conseillés pour la population française, 3^e édition.' Ed. Tec&Doc. pp. 170-176. (Lavoisier: Paris, France)

Arnaud J (2001b) Zinc. In 'Apports nutritionnels conseillés pour la population française, 3^e édition.' Ed. Tec&Doc. pp. 155-158. (Lavoisier: Paris, France)

ATSDR (2004) Toxicological Profile for Strontium. <http://www.atsdr.cdc.gov/ToxProfiles/tp.asp?id=656&tid=120>. ATSDR, Atlanta, GA, USA.

ATSDR (2005) Toxicological Profile for Tin and Tin Compounds. <http://www.atsdr.cdc.gov/toxprofiles/tp55.pdf>. ATSDR, Atlanta, GA, USA.

ATSDR (2009) Toxicological profile for Vanadium (Draft for Public Comment). ATSDR, Atlanta, GA, USA.

Bemrah N, Leblanc JC, Volatier JL (2008) Assessment of dietary exposure in the French population to 13 selected food colours, preservatives, antioxidants, stabilizers, emulsifiers and sweeteners. *Food addit Contam Part B* 1(1), 2-14.

Black AE (2000) Critical evaluation of energy intake using the Goldberg cut-off for energy intake: basal metabolic rate. A practical guide to its calculation, use and limitations. *Int J Obes Relat Metab Disord* 24, 1119-1130.

Boker LK, Van der Schouw YT, De Kleijn MJ, Jacques PF, Grobbee DE, Peeters PH (2002) Intake of dietary phytoestrogens by Dutch women. *J Nutr* 132(6), 1319-28. [In eng]

CAC (2005) Codex Alimentarius Commission Procedure Manual, CCFAC Guidelines for exposure assessment of contaminants and toxins in food or food groups, 15th edition.

Cariou R, Debrauwer L, Antignac JP, Rathahao E, Le Bizec B, Martins N, Zalko D, André F (2006) Comparison of analytical strategies for the chromatographic-mass spectrometric measurement of brominated flame retardants: 1. Polybrominated diphenylethers. *Journal of Chromatographic Science* 44(8), 489-497.

Chekri R, Noël L, Vastel C, Millour S, Kadar A, Guérin T (2010) Determination of calcium, magnesium, sodium and potassium contents in foodstuffs by micro-sampling Flame Atomic Absorption spectrometric method (FAAS) after closed vessel microwave digestion: Method validation. *J AOAC Int* 93(6), 1888-1896.

Commission européenne (1998) Report on Methodologies for the Monitoring of Food Additive Intake Across the European Union. Final Report Submitted by the Task Coordinator 16 January 1998, Reports of a Working Group on Scientific Cooperation on Questions Relating to Food. Task 4.2. SCOOP/INT/REPORT/2.

Coudray C (2001) Cuivre. In 'Apports nutritionnels conseillés pour la population française, 3^e édition.' Ed. Tec&Doc. pp. 158-161. (Lavoisier: Paris, France)

Coudray C, Hercberg S (2001) Fer. In 'Apports nutritionnels conseillés pour la population française, 3^e édition.' Ed. Tec&Doc. pp. 150-155. (Lavoisier: Paris, France)

CSHPF (1999) 'Les mycotoxines dans l'alimentation - Évaluation et gestion du risque.' (Lavoisier: Paris, France)

CSHPF (2000) Rapport du Conseil Supérieur d'Hygiène Publique de France. Dioxines: données de contamination et d'exposition de la population française.

de Kleijn MJ, van der Schouw YT, Wilson PW, Adlercreutz H, Mazur W, Grobbee DE, Jacques PF (2001) Intake of dietary phytoestrogens is low in postmenopausal women in the United States: the Framingham study(1-4). *J Nutr* 131(6), 1826-32. [In eng]

Debrauwer L, Riu A, Jouahri M, Rathahao E, Jouanin I, Antignac JP, Cariou R, Le Bizec B, Zalko D (2005) Probing new approaches using atmospheric pressure photo ionisation for the analysis of brominated flame retardants and their related degradation products by LC-MS. *Journal of Chromatography A* 1082(1), 98-109.

Decision Commission 2002/657/EC of 12 August 2002 implementing Council Directive 96/23/EC concerning the performance of analytical methods and the interpretation of results (notified under document number C(2002) 3044).

Directive 91/414 of the Council of 15 July 1991 concerning the placing of plant protection products on the market.

Drüeke TB, Lacour B (2001a) Potassium. In 'Apports nutritionnels conseillés pour la population française, 3e édition.' Ed. Tec&Doc. pp. 127-130. (Lavoisier: Paris, France)

Drüeke TB, Lacour B (2001b) Sodium. In 'Apports nutritionnels conseillés pour la population française, 3e édition.' Ed. Tec&Doc. pp. 120-127. (Lavoisier: Paris, France)

Dubuisson C, Lioret S, Touvier M, Dufour A, Calamassi-Tran G, Volatier JL, Lafay L (2010) Trends in food and nutritional intakes of French adults from 1999 to 2007: results from the INCA surveys. *Br J Nutr* 103(7), 1035-48. [In eng]

Ducros V (2001) Sélénium. In 'Apports nutritionnels conseillés pour la population française, 3e édition.' Ed. Tec&Doc. pp. 165-168. (Lavoisier: Paris, France)

EFSA (2004) Opinion of the Scientific Panel on Contaminants in the Food Chain on a request from the Commission to assess the health risks to consumers associated with exposure to organotins in foodstuffs. EFSA, Parma, Italy.

EFSA (2005) Opinion of the Scientific Panel on contaminants in the food chain on a request from the Commission related to the presence of non dioxin-like polychlorinated biphenyls (PCB) in feed and food (Question N° EFSA-Q-2003-114). EFSA, Parma, Italy.

EFSA (2006) Opinion of the Scientific Panel on contaminants in the food chain related to ochratoxin A in food (Question N° EFSA-Q-2005-154). EFSA, Parma, Italy.

EFSA (2007) Opinion of the Scientific Panel on Contaminants in the Food Chain on a request from the Commission related to Deoxynivalenol (DON) as undesirable substance in animal feed (Question N° EFSA-Q-2003-036). EFSA, Parma, Italy.

EFSA (2008a) Scientific Opinion of the Panel on Contaminants in the Food chain. Perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA) and their salts (Question No EFSA-Q-2004-163). EFSA, Parma, Italy.

EFSA (2008b) Scientific Opinion of the Panel on Food Additives, Flavourings, Processing Aids and Food Contact Materials (AFC). Safety of aluminium from dietary intake (Question Nos EFSA-Q-2006-168 and EFSA-Q-2008-254). EFSA, Parma, Italy.

EFSA (2009a) Scientific Opinion of the Panel on Contaminants in the Food Chain. Cadmium in food. EFSA, Parma, Italy.

EFSA (2009b) Scientific Opinion of the Panel on Food Additives and Nutrient Sources added to Food (ANS). Chromium nitrate as a source of chromium added for nutritional purposes to food supplements (Question No EFSA-Q-2005-216). EFSA, Parma, Italy.

EFSA (2009c) Scientific Opinion of the Panel on Food Additives and Nutrient Sources added to Food. L-selenomethionine as a source of selenium added for nutritional purposes to food supplements. EFSA, Parma, Italy.

EFSA (2009d) Scientific Opinion on Arsenic in Food. EFSA, Parma, Italy.

EFSA (2010a) Opinion of the Scientific Panel on contaminants in the food chain related. Statement on recent scientific information on the toxicity of Ochratoxin A. EFSA, Parma, Italy.

EFSA (2010b) Scientific Opinion on Lead in Food. EFSA, Parma, Italy.

EFSA (2010c) Scientific Opinion on Polybrominated Biphenyls (PBBs) in Food. EFSA, Parma, Italy.

EFSA (2010d) Scientific Opinion on the safety of trivalent chromium as a nutrient added for nutritional purposes to foodstuffs for particular nutritional uses and foods intended for the general population (including food supplements). EFSA, Parma, Italy.

EVM (2003) Safe Upper levels for Vitamins and Minerals. Report of the Expert Group on Vitamins and Minerals (EVM).

FSA (2009) Survey of fluorinated chemicals in food. Food survey. Information sheet number 05/09.

GEMS-Food Euro (1995) Report on a workshop in the frame of GEMS-Food Euro, EUR/HFA target 22. Second workshop on reliable evaluation of low-level contamination of food. 26-27 May 1995. Kulmbach, Federal Republic of Germany.

Goldberg GR, Black AE, Jebb SA, Cole TJ, Murgatroyd PR, Coward WA, Prentice AM (1991) Critical evaluation of energy intake data using fundamental principles of energy physiology. 1. Derivation of cut-off values to identify under-recording. *Eur J Clin Nutr* 45(569-581).

Guéant JL, Namour F, Aimone-Gastin I, Nicolas JP (2001) Vitamine B12. In 'Apports nutritionnels conseillés pour la population française, 3e édition.' Ed. Tec&Doc. pp. 211-215. (Lavoisier: Paris, France)

Guéguen L (2001) Calcium. In 'Apports nutritionnels conseillés pour la population française, 3e édition.' Ed. Tec&Doc. pp. 131-140. (Lavoisier: Paris, France)

Herbstman JB, Sjodin A, et al. (2010) Prenatal exposure to PBDEs and neurodevelopment. *Environ Health Perspect* 118(5), 712-9. [In eng]

Hercberg S, Deheeger M, Preziosi P (1994) 'Portions Alimentaires: Manuel Photos pour l'Estimation des Quantités (Food Portions: Photo Manual for Quantity Estimation).' (PolyTechnica: Paris)

Hunt CD, Johnson LK (2006) Magnesium requirements: new estimations for men and women by cross-sectional statistical analyses of metabolic magnesium balance data. *Am J Clin Nutr* 84(4), 843-52. [In eng]

IARC (1986) IARC Monographs on the evaluation of carcinogenic risks to humans. Patulin. IARC, Lyon, France.

IARC (1989) Monograph on evaluation of carcinogenic risks to humans. IARC, Lyon, France.

IARC (1990) IARC Monographs on the evaluation of carcinogenic risks to humans. Chromium and Chromium Compounds. IARC, Lyon, France.

IARC (1993a) IARC Monographs on the evaluation of carcinogenic risks to humans. Beryllium, cadmium, mercury, and exposures in the glass manufacturing industry. IARC, Lyon, France.

IARC (1993b) IARC Monographs on the evaluation of carcinogenic risks to humans. Some Naturally Occurring Substances: Food Items and constituents, Heterocyclic Aromatic Amines and Mycotoxins. IARC, Lyon, France.

IARC (2002) IARC Monographs on the evaluation of carcinogenic risks to humans. Fumonisin B1. IARC, Lyon, France.

Institute of Medicine (2001a) Arsenic, Boron, Nickel, Silicon, and Vanadium. In 'Dietary Reference Intake for vitamin A, vitamin K, arsenic, boron, chromium, copper, iodine, iron, manganese, molybdenum, nickel, silicon, vanadium, and zinc.' Ed. NA Press. pp. 502-553: Washington DC, USA.

Institute of Medicine (2001b) Iron. In 'Dietary Reference Intake for vitamin A, vitamin K, arsenic, boron, chromium, copper, iodine, iron, manganese, molybdenum, nickel, silicon, vanadium, and zinc.' Ed. NA Press. pp. 290-393: Washington DC, USA.

INVS (2007) Étude nationale nutrition santé ENNS, 2006 - Situation nutritionnelle en France en 2006 selon les indicateurs d'objectif et les repères du Programme national nutrition santé (PNNS). INVS, Saint-Maurice, France.

IPCS (2003) Polychlorinated biphenyls: human health aspects, Concise International Chemical Assessment Document (CICAD) 55. WHO, Geneva, Switzerland.

JECFA (1995) Evaluations of certain food additives and contaminants. WHO Technical Report Series 589.

JECFA (1996) Toxicological evaluation of certain food additives and contaminants. WHO Food Additive Series 35. WHO, Geneva, Switzerland.

JECFA (1998) Evaluations of certain food additives and contaminants. WHO Food additives Series 40. IPCS, WHO, Geneva, Switzerland

JECFA (2000) Zearalenone. Safety evaluation of certain food additives and contaminants prepared by the Fifty-third meeting of the Joint FAO/WHO Expert Committee on Food Additives. WHO Food Additives Series 44. WHO, Geneva, Switzerland.

JECFA (2001a) Joint FAO/WHO Expert Committee on Food Additives. Summary and conclusions of the Fifty-seventh meeting, Rome, 5-14 June 2001.

JECFA (2001b) Safety evaluation of certain mycotoxins in food prepared by the fifty-sixth meeting of the Joint FAO/WHO Expert Committee on Food Additives. WHO Food Additives Series 47.

JECFA (2004) Safety evaluation of certain food additives and contaminants/ prepared by the sixty-first meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA), Rome, 10-19 June 2003. WHO, Geneva, Switzerland.

JECFA (2005) Joint FAO/WHO Expert Committee on Food Additives. Summary and conclusions of the Fifty-seventh meeting, Rome, 8-17 February 2005. FAO/WHO, Rome, Italy.

JECFA (2006a) Evaluation of certain food additives and contaminants. 67th report of the joint FAO/WHO expert committee on food additive. WHO Technical Report Series 940. FAO/WHO, Rome, Italy.

JECFA (2006b) Joint FAO/WHO Expert Committee on food additives. Sixty-fourth meeting. Rome, 8-17 February 2005. FAO/WHO, Rome, Italy.

JECFA (2007) Evaluation of certain food additives and contaminants. 68th report of the joint FAO/WHO expert committee on food additive. WHO Technical Report Series 947.

JECFA (2010) Joint FAO/WHO Expert Committee on food additives. Summary and conclusions. Seventy-second meeting. Rome, 16-25 February 2010. FAO/WHO, Rome, Italy.

JECFA (2011a) Evaluation of certain food additives and contaminants. 72nd report of the joint FAO/WHO expert committee on food additive. WHO Technical Report Series 959.

JECFA (2011b) Evaluation of certain food additives and contaminants. 73rd report of the joint FAO/WHO expert committee on food additive. WHO Technical Report Series 960.

JOCE (2004) Commission Directive 2004/73/EC, 29th time Council directive 67/548EEC. Official Journal of the European Communities.

Kodavanti PR, Ward TR, Ludewig G, Robertson LW, Birnbaum LS (2005) Polybrominated Diphenyl Ether (PBDE) effects in rat neuronal cultures: 14C-PBDE accumulation, biological effects, and structure-activity relationships. *Toxicol Sci* 88(1), 181-192. [In eng]

Laurent C, Marchand P, Feidt C, Le Bizec B, Rychen G (2005) Tissue distribution and bioconcentration factors of PCDD/Fs in the liver and adipose tissue following chronic ingestion of contaminated milk in rats. *Chemosphere* 60(7), 929-38. [In eng]

Leblanc JC, Guerin T, Noel L, Calamassi-Tran G, Volatier JL, Verger P (2005) Dietary exposure estimates of 18 elements from the 1st French Total Diet Study. *Food Addit Contam* 22(7), 624-41. [In eng]

Leblanc JC, Tard A, Volatier JL, Verger P (2005) Estimated dietary exposure to principal food mycotoxins from the first French Total Diet Study. *Food Addit Contam* 22(7), 652-72. [In eng]

LeMoullec N, Deheeger M, et al. (1996) Validation du manuel photos utilisé pour l'enquête alimentaire SUVIMAX. *Cah Nutr Diet* 31, 158-164.

- Lioret S, Dubuisson C, Dufour A, Touvier M, Calamassi-Tran G, Maire B, Volatier JL, Lafay L (2010)** Trends in food intake in French children from 1999 to 2007: results from the INCA (étude Individuelle Nationale des Consommations Alimentaires) dietary surveys. *Br J Nutr* 103(4), 585-601. [In eng]
- Marchand P, Antignac JP, et al. (2006)** Factors (trophic levels, fish specie, habitat, fat content...) influencing PCDD/F, PCB and PBDE concentration in fish retailed in France. *Organohalogen Compounds* 28, 608-611.
- Martin A, Azais-Braesco V, et al. (2001)** 'Apports nutritionnels conseillés pour la population française.' (Lavoisier: Paris)
- Ménard C, Héraud F, Nougadère A, Volatier JL, Leblanc JC (2008)** Relevance of integrating agricultural practices in pesticide dietary intake indicator. *Food Chem Toxicol* 46(10), 3240-53.
- Millour S, Noël L, Chekri R, Vastel C, Kadar A, Guérin T (2010)** Internal Quality Controls applied in Inductively Coupled Plasma Mass Spectrometry multi-elemental analysis for the 2nd French Total Diet Study. *Accredit Qual Assur* 15, 503-513.
- Millour S, Noël L, Kadar A, Chekri R, Vastel C, Guérin T (2011)** Simultaneous analysis of 21 elements in foodstuffs by ICP-MS after closed-vessel microwave digestion: Method validation. *J. Food Comp. Anal.* 24(1), 111-120.
- Noël L, Leblanc JC, Guérin T (2003)** Determination of several elements in duplicate meals from catering establishment using closed vessel microwave digestion with inductively coupled plasma mass spectrometry detection: estimation of daily dietary intake. *Food Addit Contam* 20(1), 44-56.
- NZFSA (2009)** 2009 New Zealand Total Diet Study. <http://www.nzfsa.govt.nz/science/research-projects/total-diet-survey/2009.htm>. Wellington, New Zealand.
- OEHHA (2010)** DRAFT - Public Health Goal for Hexavalent Chromium in Drinking Water. OEHHA.
- Rayssiguier Y, Boirie Y, Durlach J (2001)** Magnésium. In 'Apports nutritionnels conseillés pour la population française, 3e édition.' Ed. Tec&Doc. pp. 146-149. (Lavoisier: Paris, France)
- RIVM, Baars AJ, Theelen RMC, Janssen PJ, Hesse J, van Apeldoorn ME, Meijerink MC, Verdam L, Zeilmaker MJ (2001)** Rijksinstituut voor Volksgezondheid en Milieu (National Institute of Public Health and the Environment). Re-evaluation of human toxicological maximum permissible risk levels. RIVM, Pays-Bas.
- Roussel AM (2001)** Chrome. In 'Apports nutritionnels conseillés pour la population française, 3e édition.' Ed. Tec&Doc. pp. 168-170. (Lavoisier: Paris, France)
- SCF (1996)** Reports of the Scientific Committee for Food, Thirty-fifth series.
- SCF (2000a)** Minute statement on Patulin expressed by the Scientific Committee on Food during the plenary meeting. Brussel, Belgium.
- SCF (2000b)** Opinion of the Scientific Committee on food on *Fusarium* toxins. Part 2: Zeralenone (ZEA). Brussel, Belgium.
- SCF (2002)** Opinion of the Scientific Committee on Food on *Fusarium* toxins. Part 6: Group evaluation of T-2 toxin, HT-2 toxin, nivalenol and deoxynivalenol. Brussel, Belgium.
- SCF (2003)** Updated opinion of the Scientific Committee on Food on Fumonisin B₁, B₂ and B₃. Brussel, Belgium.
- SCF (2006)** Tolerable upper intake levels for vitamins and minerals.
- Schofield WN (1985)** Predicting basal metabolic rate, new standards and review of previous work. *Hum Nutr Clin Nutr* 39, 5-41.
- Sirot V, Guerin T, Mauras Y, Garraud H, Volatier JL, Leblanc JC (2008)** Methylmercury exposure assessment using dietary and biomarker data among frequent seafood consumers in France, CALIPSO study. *Environ Res* 107, 30-8. [In eng]
- Sirot V, Guerin T, Volatier JL, Leblanc JC (2009)** Dietary exposure and biomarkers of arsenic in consumers of fish and shellfish from France. *Sci Total Environ* 407(6), 1875-85. [In eng]
- Sirot V, Volatier JL, Calamassi-Tran G, Dubuisson C, Menard C, Dufour A, Leblanc JC (2009)** Core food of the French food supply: second Total Diet Study. *Food Addit Contam Part A Chem Anal Control Expo Risk Assess* 26(5), 623-39. [In eng]

Suzuki R, Rylander-Rudqvist T, Saji S, Bergkvist L, Adlercreutz H, Wolk A (2008) Dietary lignans and postmenopausal breast cancer risk by oestrogen receptor status: a prospective cohort study of Swedish women. *Br J Cancer* 98(3), 636-40. [In eng]

Tao SH, Bolger PM (1997) Hazard assessment of germanium supplements. *Regul Toxicol Pharmacol* 25(3), 211-9. [In eng]

Touillaud MS, Thiebaut AC, Fournier A, Niravong M, Boutron-Ruault MC, Clavel-Chapelon F (2007) Dietary lignan intake and postmenopausal breast cancer risk by estrogen and progesterone receptor status. *J Natl Cancer Inst* 99(6), 475-86. [In eng]

Touvier M, Lioret S, Vanrullen I, Bocle JC, Boutron-Ruault MC, Berta JL, Volatier JL (2006) Vitamin and mineral inadequacy in the French population: estimation and application for the optimization of food fortification. *Int J Vitam Nutr Res* 76(6), 343-51. [In eng]

UNEP (2001) Stockholm Convention on Persistent Organic Pollutants, United Nation Environment Program, Stockholm Convention Secretariat.

US EPA (1996) Strontium (CASRN 7440-24-6) US EPA, Washington, DC, USA.

US EPA (1997) Silver (CASRN 7440-22-4). US EPA, Washington, DC, USA.

US EPA (2005) Toxicological review of baryum and compounds (CAS No. 7440-39-3). US EPA, Washington, DC, USA.

Van den Berg M, Birnbaum L, et al. (1998) Toxic equivalency factors (TEFs) for PCBs, PCDDs, PCDFs for humans and wildlife. *Environ Health Perspect* 106(12), 775-92. [In eng]

Veyrand B, Kadar H, Barbarossa A, Durand S, Marchand P, Antignac JP, Pagliuca G, Le Bizet B. Compared analytical development and validation based on liquid chromatography coupled to tandem or high resolution mass spectrometry for measuring perfluorinated compounds in milk. In '29th International Symposium on Halogenated Environmental Organic Pollutants and POPs', 12-17 September 2010, San Antonio, Texas, USA,

WHO (1997) Guidelines for predicting dietary intake of pesticides residues (revised), Prepared by the Global Environment Monitoring System – Food Contamination Monitoring and Assessment Programme (GEMS/Food) in collaboration with the Codex Committee on Pesticide Residues WHO/FSF/FOS/97.7 (accessible sur www.who.int).

WHO (2002) GEMS/Food Total Diet Studies, Report of the 2nd International Workshop on Total Diet Studies Brisbane, Australia, 4-15 february 2002.

WHO (2003) Antimony in drinking-water. Background document for preparation of WHO Guidelines for drinking-water quality (WHO/SDE/WSH/03.04/74). WHO, Geneva, Switzerland.

WHO (2005) Nickel in Drinking-water, Background document for development of WHO Guidelines for Drinking-water Quality.

WHO (2007) Reducing salt intake in populations. Report of a WHO forum and technical meeting, Paris, France.

Yost LJ, Tao SH, Egan S, Barraj LM, Smith KM, Tsuji JS, Lowney YW, Schoof RA, Rachman NJ (2004) Estimation of dietary intake of inorganic arsenic in US children. *Hum Ecol Risk Assess* 10, 473-483.

Annex 1: List of foods sampled in the study

Food groups*	Foods	Type
Offal	Liver	Regional
Misc. foods	Tofu	National
Other hot beverages	Instant hot chocolate drink	Regional
	Sweet cocoa powder for chocolate drink	Regional
	Tea or herbal tea	Regional
Butter	Butter	National
	60-62 % low-fat butter	National
	Salted butter	National
Sweet or savoury biscuits and bars	Fruit pulp biscuits	National
	Aperitif biscuit	National
	Dry biscuit	National
	Dry chocolate biscuit	National
	Salted potato crisps	Regional
Alcoholic beverages	Beer	National
	Champagne	National
	Cider	National
	Ready-mixed pastis	National
	Wine	National
Non-alcoholic beverages	Soya drink	National
	Drinks made from herbal tea extracts	National
	Fizzy orange juice drink with pulp	National
	Still orange drink	National
	Pineapple juice made from concentrate	National
	Multivitamin fruit juice from 100% pure juice	National
	Apple juice from pasteurised concentrate	National
	Orange juice from pasteurised concentrate	National
	Fresh unsweetened orange juice	National
	Lemonade	National
	Pure pasteurised grape juice	National
	Syrup with fruit extracts to be diluted	National
	Soda	National
Coffee	Black coffee	Regional
	Instant soluble coffee	Regional

Food groups*	Foods	Type
Breakfast cereals	Chocolate cereals	National
	Muesli	National
	Cornflakes	National
Delicatessen meats	Chipolata	Regional
	Foie gras	Regional
	Ham	Regional
	Cooked ham	Regional
	Lard, bacon	Regional
	Spicy lamb sausage (merguez)	Regional
	Pâté	Regional
	Frankfurter sausage	Regional
	Dried sausage	Regional
Chocolate	Chocolate biscuit bar	National
	Milk chocolate	National
	Milk chocolate with dried fruit	National
	Dark chocolate	National
	Chocolate spread	National
Compotes and cooked fruit	Reduced sugar stewed fruit compote	National
	Non-apple stewed fruit compotes	National
	Apple compote	National
	Canned fruit in syrup	National
Seasonings and sauces	Ketchup	National
	Mayonnaise	National
	Soy sauce	National
	Tomato meat sauce	National
	Meat-free tomato sauce	National
	Vinaigrette	National
Crustaceans and molluscs	Scallop	Regional
	Shrimp	Regional
	Oyster	Regional
	Boiled mussels	Regional
Water	Sparkling mineral water	National
	Still mineral water national brand 1	National
	Spring water	Regional
	Tap water	Regional
	Mineral water national brand 2	National
	Still mineral water national brand 3	National
	Perrier	National
	Still mineral water national brand 4	National
Still mineral water national brand 5	National	

Food groups*	Foods	Type
Dairy-based desserts	Chocolate dairy dessert (viennois or liégeois)	National
	Fruit clafoutis	Regional
	Creme caramel	National
	Cream dessert	National
	Chocolate-flavoured soya dessert	National
	Soya dessert with fruit	National
	Natural soya dessert	National
	Egg custard	Regional
	Refrigerated chocolate mousse	National
Cheese	Camembert and related cheeses	National
	Cantal, morbier and related cheeses	National
	Goat cheese	National
	Edam and related cheeses	National
	Fromage blanc (not low-fat)	Regional
	Cheese and mini cheeses	National
	Cheese spread	National
	Gruyere	National
	Roquefort	National
Fruit	Apricot	Regional
	Banana	National
	Cherry	Regional
	Clementine or mandarin	National
	Strawberry	Regional
	Kiwi	National
	Melon	Regional
	Fresh orange	National
	Grapefruit	National
	Peach	Regional
	Pear	Regional
	Fresh apple	Regional
	White grapes	Regional
Dried fruits, nuts and seeds	Dried fruit	National
	Oilseed	National
Ice cream, sorbets and frozen desserts	Ice cream	National
Oils	Rapeseed oil	National
	Soybean oil	National
	Sunflower oil	National
	Virgin olive oil	National
	Mixed oils	National

Food groups*	Foods	Type
Milk	Semi-skimmed milk	Regional
	Skimmed milk	Regional
	Whole milk	Regional
Vegetables (excluding potatoes)	Artichoke	Regional
	Carrot	Regional
	Celery	Regional
	Celeriac	Regional
	Cauliflower	Regional
	Cucumber	Regional
	Courgette	Regional
	Endive	Regional
	Spinach	Regional
	Soya bean sprouts	National
	Bean	Regional
	Corn	Regional
	Turnip	Regional
	Onion	Regional
	Peas	Regional
	Leek	Regional
	Pepper	Regional
	Radish	Regional
	Ratatouille	Regional
	Lettuce	Regional
Tomato	Regional	
Pulses	White beans	Regional
	Lentils	Regional
Margarine	Low-fat margarine	National
	Sunflower margarine in a tub	National
Eggs and egg products	Scrambled eggs, omelette	Regional
	Boiled egg	Regional
Bread and dried bread products	Baguette	National
	Rusk	National
	Multigrain bread	National
	Granary or wholemeal bread	National
	Farmhouse bread	National
	Packaged, sliced bread	National
	Toast	National
Pasta	Pasta	National
	Egg pasta	National

Food groups*	Foods	Type
Pastries and cakes	Fruitcake	National
	Choux pastry cake	National
	Pancake or waffle	National
	Pancake with sugar	National
	Cake	National
	Chocolate cake	National
	Soft cake, filled or not	National
	Soft chocolate cake	National
	Tart or tartlet	National
Pizzas, quiches and savoury pastries	Pizza	National
	Quiche lorraine	National
Mixed dishes	Cassoulet (meat and bean casserole)	Regional
	Dressed sauerkraut	Regional
	Poultry cordon bleu	Regional
	Garnished couscous	Regional
	Savoury pancake	Regional
	Soy-based vegetable cutlet	National
	Shepherd's pie	Regional
	Paella	Regional
	Ravioli type stuffed pasta	Regional
	Meat and vegetable stew (Pot-au-feu)	Regional
	Industrial tabbouleh	Regional
	Veal and veal-based dishes	Regional
Fish	Pollack or coley	Regional
	Fried breaded fish	Regional
	Salmon	Regional
	Smoked salmon	Regional
	Tuna	Regional
	Canned tuna	Regional
Potatoes	Boiled potatoes	Regional
	Sauteed potatoes or chips	Regional
	Mashed potato	Regional
Rice and wheat products	Precooked durum wheat	National
	Rice	National
	Semolina	National
Sandwiches and snacks	Hamburger	Regional
	Sandwich	Regional

Food groups*	Foods	Type
Soups and broths	Vegetable soup (in carton)	National
	Homemade vegetable soup	Regional
	Chicken noodle soup	Regional
	Cream of tomato soup	National
Sugars and sugar derivatives	Sweets	National
	Jam	National
	Honey	National
	Sugar	National
Ultra-fresh dairy products	Cream	Regional
	Fermented milk and yoghurt drinks	Regional
	Yoghurt	Regional
	Whole milk yoghurt	Regional
	Semi-skimmed milk yoghurt	Regional
Meat	Beef steak	Regional
	Pork chop	Regional
	Lamb	Regional
	Roast pork	Regional
Croissant-like pastries	Brioche cake and bread	National
	Chocolate croissant	National
	Croissant	National
Poultry and game	Duck	Regional
	Sautéed turkey cutlet	Regional
	Roast turkey	Regional
	Chicken	Regional

* According to the nomenclature of the INCA 2 study.

Annex 2: List of equipment used for preparing samples

- Aluminium or stainless steel pressure cooker
- Pots and pans made of aluminium or stainless steel
- Cooking utensils made of glass, stainless steel or aluminium
- Buckets, plastic pots
- Plastic tray (for weighing food)
- Aluminium tray (for cooking food)
- Spoons, forks and knives made of stainless steel or aluminium
- Stainless steel vegetable peelers with plastic handle
- Black plastic or stainless steel kitchenware: spatulas, ladles, paddles, skimmers, large spoon, cake server, etc.)
- Aluminium couscous cooker
- Plastic juicer
- Stainless steel whisk with black plastic handle
- Stainless steel and aluminium Chinese strainers
- Stainless steel frying skimmer
- Professional deep fryer with stainless steel tank
- Professional bain marie with stainless steel tank
- Oven with stainless steel coating
- Grill with cast iron coating
- Stainless steel and aluminium pans
- Coffee maker with glass bowl
- Household waffle-iron with TEFAL® type finish
- Frying pan and pancake pan with TEFAL® type or stainless steel coat
- Silicone, aluminium and glass cake moulds
- Plastic funnels
- Polyethylene cutting board
- Electronic weighing scales with a stainless steel surface that may be in contact with food
- Stainless steel, plastic kitchen mixer
- Blender (Robot cup) with stainless steel bowl and blades, plastic lid and spatula
- Transparent plastic food cover for microwave
- Polyethylene rolling pin
- Metal apple corer with black plastic handle
- Brush for preparing moulds with oil or butter
- Stainless steel ladle
- Plastic scraper
- Bags used to freeze foods (-24°C): multilayer polyamide/polyethylene freezer bags

Protocol for cleaning equipment

The cleaning procedure was carried out in three or six stages, according to the type of equipment and its intended use.

■ Cleaning procedure in six stages:

- cleaning procedure using paper towels and hot water (45°C) to remove 'coarse' stains;
- cleaning in the strict sense of applying a detergent solution to remove residual dirt that adheres to surfaces. The composition of cleaning products for materials and articles coming into contact with food products must respect certain rules. The components of these cleaning products are set out in a positive list (Directive 98/8/EC, Decree of 8 September 1999, published in the OJ of 27 November 1999). The minimum contact time recommended by the technical guidelines thus depends on the product but is generally about 20 to 30 minutes;
- intermediate rinsing with warm water (45°C) with the aim of eliminating residual impurities (stains) that have been loosened by the detergent. This step also removes residual detergent and facilitates the action of the disinfectant applied in the next stage;
- disinfection aiming to destroy micro-organisms still present at this stage. The composition of disinfectants coming into contact with food products is subject to strict guidelines. The components of these disinfectants are also in a positive list (Directive 98/8/EC, Decree of 8 September 1999, OJ of 27 November 1999);
- a final rinse mandated by the Decree of 27 October 1975 is carried out with drinking water. Rinsing with distilled or de-ionised water is also recommended;
- drying of equipment to prevent the development of micro-organisms that could survive after cleaning and disinfection.

Note: the degreasing action comes from the detergent. The disinfectant is never a degreaser.

■ Cleaning procedure in three stages: this method of cleaning is a simplified procedure in which stages of cleaning, intermediate rinsing and disinfection are grouped into a single stage known as sanitation. Sanitation has the advantage of being faster during the repeated handling of materials. Thus the cleaning process is carried out in three steps:

- pre-cleaning with paper towels and warm water (45°C) to remove 'coarse' stains.
- simultaneous cleaning and disinfection with a product that combines detergent and disinfectant.
- final rinse with drinking water and then rinse with distilled or deionised water (cold to bring the equipment to the same temperature as the samples). The equipment is then dried to avoid development of micro-organisms that could survive after cleaning and disinfection.

Note: in this instance the degreasing agent comes from the detergent in the detergent/disinfectant product.

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Table A6: Estimated exposure (mean and P95) in women of childbearing age (18-45 years) to inorganic contaminants (µg/kg bw/day)

Food group	As			Asi			Pb			Cd			Al		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LH)*	P95 (LH)*	Contrib (LH)*	Mean (HH)*	P95 (HH)*	Contrib (HH)*	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	0.030	0.082	4	0.006	0.016	2	0.021	0.060	12	0.0270	0.0715	18	2.80	7.02	7
Breakfast cereals	0.001	0.009	0	0.000	0.002	0	0.000	0.007	0	0.0004	0.0056	0	0.05	0.89	0
Pasta	0.006	0.018	1	0.001	0.004	0	0.001	0.004	1	0.0093	0.0280	6	2.11	6.29	5
Rice and wheat products	0.008	0.026	1	0.002	0.007	1	0.001	0.003	1	0.0029	0.0098	2	0.22	1.33	1
Croissant-like pastries	0.005	0.028	1	0.001	0.006	0	0.002	0.012	1	0.0028	0.0184	2	0.62	4.64	2
Sweet and savoury biscuits and bars	0.005	0.029	1	0.001	0.006	0	0.002	0.013	1	0.0046	0.0237	3	1.04	6.25	3
Pastries and cakes	0.008	0.023	1	0.002	0.005	1	0.003	0.009	2	0.0036	0.0116	2	1.82	8.15	4
Milk	0.020	0.095	2	0.009	0.043	4	0.008	0.054	4	0.0019	0.0091	1	0.78	4.60	2
Ultra-fresh dairy products	0.016	0.047	2	0.007	0.021	3	0.005	0.018	3	0.0024	0.0081	2	0.94	3.36	2
Cheese	0.007	0.024	1	0.003	0.011	1	0.002	0.007	1	0.0009	0.0028	1	0.12	0.44	0
Eggs and egg products	0.003	0.016	0	0.000	0.001	0	0.001	0.005	0	0.0002	0.0011	0	0.16	1.04	0
Butter	0.003	0.009	0	0.002	0.003	0	0.001	0.004	1	0.0001	0.0004	0	0.21	1.18	1
Oils	0.002	0.006	0	0.001	0.002	0	0.000	0.002	0	0.0001	0.0002	0	0.12	0.35	0
Margarine	0.001	0.007	0	0.001	0.004	0	0.000	0.004	0	0.0001	0.0004	0	0.08	0.73	0
Meat	0.013	0.039	2	0.000	0.001	0	0.006	0.022	3	0.0007	0.0021	0	0.34	1.18	1
Poultry and game	0.006	0.026	1	0.000	0.002	0	0.002	0.010	1	0.0004	0.0014	0	0.23	0.97	1
Offal	0.000	0.009	0	0.000	0.000	0	0.000	0.009	0	0.0009	0.0211	1	0.01	0.31	0
Delicatessen meats	0.013	0.038	2	0.001	0.002	0	0.004	0.015	2	0.0019	0.0075	1	0.69	2.53	2
Fish	0.284	1.334	34	0.002	0.009	1	0.001	0.004	1	0.0015	0.0088	1	0.28	2.21	1
Crustaceans and molluscs	0.127	1.230	15	0.002	0.023	1	0.004	0.055	2	0.0082	0.1300	5	1.02	9.87	2
Vegetables (excluding potatoes)	0.016	0.043	2	0.010	0.028	4	0.013	0.035	7	0.0155	0.0511	10	4.28	14.54	10
Potatoes and potato products	0.008	0.025	1	0.002	0.008	1	0.004	0.013	2	0.0186	0.0499	12	0.55	1.53	1
Pulses	0.001	0.017	0	0.001	0.011	0	0.001	0.026	1	0.0008	0.0139	1	0.49	8.55	1
Fruit	0.014	0.044	2	0.006	0.021	3	0.007	0.024	4	0.0029	0.0127	2	1.41	4.88	3
Dried fruits, nuts and seeds	0.001	0.010	0	0.000	0.001	0	0.001	0.010	0	0.0006	0.0112	0	0.12	1.85	0
Ice creams, sorbets and frozen desserts	0.004	0.026	0	0.002	0.004	1	0.001	0.008	1	0.0012	0.0085	1	0.66	4.39	2
Chocolate	0.006	0.044	1	0.001	0.002	0	0.002	0.013	1	0.0027	0.0161	2	1.47	8.43	4
Sugars and sugar derivatives	0.004	0.015	1	0.001	0.003	0	0.002	0.006	1	0.0045	0.0204	3	0.47	1.71	1
Water	0.075	0.246	9	0.075	0.246	31	0.035	0.067	14	0.0049	0.0132	3	2.32	6.34	6
Non-alcoholic beverages	0.015	0.063	2	0.015	0.063	6	0.011	0.046	6	0.0014	0.0069	1	0.91	4.49	2
Alcoholic beverages	0.005	0.042	1	0.005	0.042	2	0.010	0.083	5	0.0006	0.0043	0	0.61	4.92	2
Coffee	0.037	0.209	5	0.037	0.209	15	0.010	0.054	6	0.0027	0.0163	2	1.51	7.91	4
Other hot beverages	0.016	0.097	2	0.016	0.097	7	0.009	0.058	5	0.0015	0.0084	1	6.20	33.29	15
Pizzas, quiches and savoury pastries	0.011	0.054	1	0.002	0.011	1	0.002	0.009	1	0.0038	0.0189	2	1.49	7.84	4
Sandwiches and snacks	0.007	0.046	1	0.001	0.009	0	0.001	0.011	1	0.0022	0.0131	1	0.49	3.16	1
Soups and broths	0.008	0.072	1	0.005	0.046	2	0.004	0.037	2	0.0041	0.0305	3	0.75	6.66	2
Mixed dishes	0.025	0.214	3	0.012	0.107	5	0.005	0.019	2	0.0079	0.0383	5	1.53	6.63	4
Dairy-based desserts	0.007	0.056	1	0.003	0.025	1	0.002	0.012	1	0.0023	0.0121	2	1.38	8.33	3
Composites and cooked fruit	0.001	0.009	0	0.000	0.001	0	0.003	0.022	1	0.0011	0.0120	1	0.29	2.62	1
Seasonings and sauces	0.006	0.021	1	0.006	0.021	3	0.003	0.009	2	0.0022	0.0117	1	0.25	1.02	1
Misc. foods	0.000	0.026	0	0.000	0.026	0	0.000	0.032	0	0.0000	0.0363	0	0.01	8.88	0
TOTAL	0.824	1.896	100	0.244	0.487	100	0.184	0.343	100	0.1509	0.2652	100	40.80	72.64	100

* LH: low hypothesis; HH: high hypothesis.

Food group	Hg			Sb			Ag				
	Mean (LB)	P95 (LB)	Contrib (UB)	Mean (UB)	P95 (UB)	Contrib (LB)	Mean (LB)	P95 (LB)	Contrib (UB)		
Bread and dried bread products	0.0000	0.0063	0.0000	0.0160	0.0015	0.0031	0.0038	0.0000	0.135	0	2
Breakfast cereals	0.0000	0.0003	0.0000	0.0055	0.0001	0.0007	0.0009	0.0000	0.046	0	0
Pasta	0.0000	0.0030	0.0000	0.0085	0.0012	0.0036	0.0036	0.072	0.143	2	2
Rice and wheat products	0.0000	0.0020	0.0000	0.0068	0.0007	0.0024	0.0025	0.028	0.084	1	1
Croissant-like pastries	0.0001	0.0011	0.0013	0.0068	0.0004	0.0025	0.0026	0.014	0.091	1	1
Sweet and savoury biscuits and bars	0.0002	0.0011	0.0017	0.0059	0.0005	0.0028	0.0029	0.102	0.129	2	1
Pastries and cakes	0.0002	0.0026	0.0013	0.0080	0.0017	0.0062	0.0063	0.081	0.124	2	1
Milk	0.0006	0.0082	0.0071	0.0367	0.0003	0.0018	0.0054	0.200	0.460	3	4
Ultra-fresh dairy products	0.0001	0.0068	0.0008	0.0185	0.0005	0.0019	0.0034	0.173	0.263	3	3
Cheese	0.0002	0.0019	0.0010	0.0061	0.0003	0.0004	0.0013	0.010	0.088	1	1
Eggs and egg products	0.0000	0.0011	0.0004	0.0046	0.0000	0.0001	0.0006	0.015	0.066	1	1
Butter	0.0001	0.0009	0.0005	0.0029	0.0002	0.0003	0.0009	0.010	0.031	0	0
Oils	0.0000	0.0008	0.0000	0.0022	0.0000	0.0001	0.0003	0.010	0.028	0	0
Margarine	0.0000	0.0002	0.0000	0.0018	0.0001	0.0007	0.0008	0.005	0.020	0	0
Meat	0.0000	0.0030	0.0000	0.0077	0.0010	0.0027	0.0030	0.142	0.160	3	2
Poultry and game	0.0000	0.0019	0.0000	0.0067	0.0002	0.0003	0.0013	0.228	0.235	3	2
Offal	0.0000	0.0001	0.0000	0.0025	0.0000	0.0000	0.0006	0.169	0.169	0	0
Delicatessen meats	0.0008	0.0027	0.0081	0.0098	0.0004	0.0013	0.0016	0.147	0.179	2	2
Fish	0.0169	0.0171	0.0943	0.0946	0.0002	0.0003	0.0017	0.024	0.087	1	1
Crustaceans and molluscs	0.0007	0.0008	0.0073	0.0073	0.0001	0.0010	0.0010	0.185	3.718	16	7
Vegetables (excluding potatoes)	0.0003	0.0082	0.0013	0.0200	0.0010	0.0016	0.0033	0.119	0.321	5	5
Potatoes and potato products	0.0000	0.0041	0.0000	0.0111	0.0003	0.0007	0.0010	0.165	0.196	3	3
Pulses	0.0000	0.0004	0.0010	0.0064	0.0001	0.0001	0.0029	0.039	0.078	0	0
Fruit	0.0000	0.0078	0.0000	0.0225	0.0017	0.0034	0.0059	0.140	0.372	8	5
Dried fruits, nuts and seeds	0.0000	0.0001	0.0000	0.0033	0.0000	0.0001	0.0003	0.008	0.019	0	0
Ice creams, sorbets and frozen desserts	0.0000	0.0007	0.0000	0.0045	0.0003	0.0019	0.0020	0.154	0.173	2	1
Chocolate	0.0012	0.0016	0.0088	0.0092	0.0004	0.0025	0.0035	0.038	0.054	0	0
Sugars and sugar derivatives	0.0000	0.0014	0.0000	0.0048	0.0032	0.0118	0.0118	0.026	0.057	1	1
Water	0.0008	0.0610	0.0035	0.1575	0.0014	0.0073	0.0057	0.619	1.704	10	24
Non-alcoholic beverages	0.0000	0.0117	0.0000	0.0494	0.0013	0.0021	0.0069	0.230	0.632	4	6
Alcoholic beverages	0.0000	0.0036	0.0000	0.0253	0.0007	0.0031	0.0053	0.209	0.430	3	2
Coffee	0.0000	0.0157	0.0000	0.0714	0.0027	0.0035	0.0145	0.202	0.750	8	8
Other hot beverages	0.0009	0.0137	0.0115	0.0742	0.0048	0.0048	0.0270	0.147	0.364	8.553	4
Pizzas, quiches and savoury pastries	0.0000	0.0015	0.0000	0.0067	0.0005	0.0024	0.0024	0.023	0.057	1	1
Sandwiches and snacks	0.0001	0.0033	0.0017	0.0075	0.0002	0.0011	0.0014	0.008	0.059	1	1
Soups and broths	0.0000	0.0038	0.0000	0.0298	0.0006	0.0010	0.0050	0.062	0.444	3	2
Mixed dishes	0.0003	0.0032	0.0028	0.0124	0.0009	0.0010	0.0047	0.057	0.254	3	2
Dairy-based desserts	0.0005	0.0020	0.0047	0.0104	0.0005	0.0006	0.0035	0.017	0.032	0.888	0
Compotes and cooked fruit	0.0002	0.0011	0.0020	0.0084	0.0002	0.0018	0.0019	0.024	0.191	0.211	2
Seasonings and sauces	0.0002	0.0011	0.0011	0.0033	0.0001	0.0002	0.0003	0.011	0.009	0.035	0
Misc. foods	0.0000	0.0000	0.0000	0.0079	0.0000	0.0000	0.0016	0.000	0.067	0	0
TOTAL	0.0245	0.2055	0.0722	0.3613	0.0286	0.0415	0.0701	2.574	4.664	100	100

Food group	Ba			Sn			Ga			Ge			
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LB)	P95 (LB)	Contrib (LB)	Mean (UB)	P95 (UB)	Contrib (UB)	
Bread and dried bread products	1.02	2.64	16	0.015	0.038	0	0.0000	0.0013	0.0000	0.0032	0.0024	0.0072	3
Breakfast cereals	0.23	6.30	4	0.000	0.004	0	0.0000	0.0001	0.0000	0.0011	0.0019	0.0031	0
Pasta	0.34	1.01	6	0.007	0.021	0	0.0000	0.0006	0.0000	0.0017	0.0035	0.0048	2
Rice and wheat products	0.08	0.43	1	0.002	0.008	0	0.0000	0.0004	0.0000	0.0014	0.0010	0.0030	1
Croissant-like pastries	0.12	0.77	2	0.003	0.025	0	0.0000	0.0002	0.0003	0.0014	0.0012	0.0028	0
Sweet and savoury biscuits and bars	0.13	0.76	2	0.002	0.013	0	0.0000	0.0002	0.0000	0.0010	0.0029	0.0032	1
Pastries and cakes	0.19	0.64	3	0.042	0.192	1	0.0000	0.0005	0.0002	0.0016	0.0010	0.0032	1
Milk	0.12	0.69	2	0.015	0.089	0	0.0000	0.0015	0.0000	0.0071	0.0030	0.0158	2
Ultra-fresh dairy products	0.12	0.35	2	0.101	0.419	3	0.0000	0.0013	0.0000	0.0036	0.0030	0.0074	1
Cheese	0.15	0.46	2	0.248	1.746	7	0.0000	0.0004	0.0003	0.0013	0.0012	0.0023	1
Eggs and egg products	0.07	0.35	1	0.004	0.022	0	0.0000	0.0002	0.0000	0.0009	0.0017	0.0024	1
Butter	0.02	0.08	0	0.002	0.008	0	0.0011	0.0012	0.0081	0.0082	0.0088	0.0092	5
Oils	0.02	0.07	0	0.002	0.005	0	0.0000	0.0002	0.0000	0.0004	0.0005	0.0011	0
Margarine	0.01	0.05	0	0.002	0.013	0	0.0000	0.0001	0.0001	0.0005	0.0008	0.0012	0
Meat	0.03	0.09	0	0.016	0.033	0	0.0000	0.0006	0.0000	0.0015	0.0057	0.0065	4
Poultry and game	0.02	0.09	0	0.004	0.015	0	0.0000	0.0004	0.0002	0.0014	0.0030	0.0041	1
Offal	0.00	0.02	0	0.000	0.009	0	0.0000	0.0000	0.0004	0.0006	0.0021	0.0021	0
Delicatessen meats	0.03	0.11	0	0.010	0.034	0	0.0000	0.0004	0.0000	0.0011	0.0016	0.0041	3
Fish	0.02	0.16	0	0.006	0.034	0	0.0000	0.0002	0.0001	0.0010	0.0007	0.0032	1
Crustaceans and molluscs	0.01	0.15	0	0.001	0.007	0	0.0000	0.0001	0.0003	0.0008	0.0015	0.0018	0
Vegetables (excluding potatoes)	0.49	1.26	8	0.432	2.510	13	0.0000	0.0016	0.0003	0.0038	0.0028	0.0074	2
Potatoes and potato products	0.08	0.23	1	0.025	0.118	1	0.0000	0.0008	0.0000	0.0022	0.0020	0.0060	2
Pulses	0.08	1.13	1	0.002	0.041	0	0.0000	0.0001	0.0000	0.0011	0.0016	0.0026	0
Fruit	0.37	1.38	6	0.838	7.747	25	0.0000	0.0016	0.0000	0.0045	0.0072	0.0110	4
Dried fruits, nuts and seeds	0.06	1.01	1	0.001	0.010	0	0.0000	0.0000	0.0000	0.0005	0.0005	0.0010	0
Ice creams, sorbets and frozen desserts	0.08	0.56	1	0.018	0.457	1	0.0000	0.0001	0.0000	0.0009	0.0008	0.0020	0
Chocolate	0.19	1.05	3	0.001	0.008	0	0.0001	0.0002	0.0008	0.0010	0.0034	0.0037	1
Sugars and sugar derivatives	0.08	0.30	1	0.309	1.488	9	0.0000	0.0003	0.0000	0.0010	0.0008	0.0028	2
Water	0.51	1.47	8	0.021	0.079	1	0.0000	0.0120	0.0000	0.0302	0.0309	0.0894	35
Non-alcoholic beverages	0.29	1.12	5	0.009	0.038	0	0.0000	0.0023	0.0000	0.0099	0.0056	0.0093	5
Alcoholic beverages	0.07	0.51	1	0.007	0.049	0	0.0000	0.0007	0.0000	0.0051	0.0007	0.0079	0
Coffee	0.20	1.14	3	0.033	0.186	1	0.0000	0.0031	0.0000	0.0143	0.0318	0.0419	11
Other hot beverages	0.16	0.87	3	0.008	0.042	0	0.0000	0.0026	0.0000	0.0143	0.0124	0.0299	4
Pizzas, quiches and savoury pastries	0.12	0.59	2	0.024	0.131	1	0.0000	0.0003	0.0000	0.0013	0.0020	0.0040	1
Sandwiches and snacks	0.09	0.54	1	0.004	0.037	0	0.0000	0.0002	0.0000	0.0015	0.0025	0.0039	1
Soups and broths	0.14	1.01	2	0.008	0.076	0	0.0000	0.0008	0.0000	0.0060	0.0028	0.0103	0
Mixed dishes	0.22	0.87	4	0.084	0.866	2	0.0000	0.0006	0.0002	0.0023	0.0018	0.0073	2
Dairy-based desserts	0.13	0.72	2	0.053	0.022	2	0.0000	0.0003	0.0000	0.0016	0.0043	0.0051	1
Composites and cooked fruit	0.04	0.34	1	0.986	17.582	29	0.0000	0.0002	0.0004	0.0017	0.0003	0.0026	0
Seasonings and sauces	0.06	0.18	1	0.073	0.547	2	0.0000	0.0002	0.0000	0.0006	0.0005	0.0017	1
Misc. foods	0.00	1.30	0	0.000	0.027	0	0.0000	0.0000	0.0000	0.0016	0.0012	0.0036	0
TOTAL	6.22	10.32	100	3.418	16.533	100	0.0014	0.0379	0.0070	0.0627	0.0914	0.1620	100

Food group	Sr			Te			V			Ni			Co		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LB)	P95 (LB)	Contrib (LB)	Mean (UB)	P95 (UB)	Contrib (UB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	0.91	2.41	4	0.0011	0.0023	0.0030	0.0063	0.0019	4	0.062	0.173	8	0.08	0.21	3
Breakfast cereals	0.06	1.14	0	0.0001	0.0001	0.0014	0.0019	0	0	0.001	0.007	0	0.01	0.24	1
Pasta	0.47	1.39	2	0.0003	0.0009	0.0009	0.0026	1	2	0.011	0.038	1	0.04	0.13	2
Rice and wheat products	0.18	0.63	1	0.0002	0.0006	0.0007	0.0020	1	1	0.008	0.051	1	0.02	0.06	1
Croissant-like pastries	0.13	0.81	1	0.0001	0.0003	0.0006	0.0018	0	1	0.016	0.112	2	0.02	0.18	1
Sweet and savoury biscuits and bars	0.26	1.30	1	0.0003	0.0004	0.0020	0.0024	1	1	0.008	0.047	1	0.06	0.41	3
Pastries and cakes	0.30	0.99	1	0.0003	0.0008	0.0012	0.0025	1	1	0.009	0.027	1	0.06	0.24	3
Milk	0.46	2.24	2	0.0008	0.0021	0.0055	0.0103	4	4	0.022	0.128	3	0.05	0.27	2
Ultra-fresh dairy products	0.54	1.48	2	0.0005	0.0017	0.0023	0.0049	2	3	0.020	0.072	2	0.10	0.34	4
Cheese	0.58	1.82	3	0.0013	0.0015	0.0040	0.0046	6	3	0.015	0.052	2	0.08	0.23	3
Eggs and egg products	0.11	0.54	0	0.0002	0.0003	0.0017	0.0018	1	1	0.006	0.033	1	0.01	0.08	1
Butter	0.02	0.10	0	0.0073	0.0074	0.0305	0.0307	31	13	0.007	0.030	1	0.01	0.04	1
Oils	0.00	0.01	0	0.0002	0.0003	0.0006	0.0008	1	1	0.001	0.003	0	0.01	0.02	0
Margarine	0.01	0.06	0	0.0000	0.0001	0.0003	0.0007	0	0	0.002	0.015	0	0.00	0.01	0
Meat	0.05	0.16	0	0.0009	0.0013	0.0034	0.0040	4	2	0.010	0.028	1	0.03	0.09	1
Poultry and game	0.03	0.11	0	0.0004	0.0007	0.0018	0.0024	2	1	0.005	0.019	1	0.01	0.06	1
Offal	0.00	0.04	0	0.0000	0.0000	0.0011	0.0011	0	0	0.000	0.011	0	0.00	0.05	0
Delicatessen meats	0.09	0.29	0	0.0009	0.0011	0.0039	0.0041	4	2	0.026	0.080	3	0.03	0.11	1
Fish	0.36	2.27	2	0.0001	0.0003	0.0007	0.0014	1	1	0.007	0.033	1	0.01	0.07	1
Crustaceans and molluscs	0.65	7.72	3	0.0001	0.0001	0.0009	0.0011	0	0	0.009	0.094	1	0.01	0.07	0
Vegetables (excluding potatoes)	2.12	5.75	9	0.0007	0.0021	0.0030	0.0054	3	4	0.034	0.098	4	0.17	0.51	7
Potatoes and potato products	0.33	0.77	1	0.0003	0.0010	0.0012	0.0030	1	2	0.012	0.037	2	0.10	0.29	4
Pulses	0.17	3.69	1	0.0001	0.0002	0.0035	0.0039	0	0	0.002	0.033	0	0.02	0.38	1
Fruit	0.90	3.68	4	0.0004	0.0019	0.0021	0.0056	2	3	0.026	0.101	3	0.15	0.65	7
Dried fruits, nuts and seeds	0.10	1.72	0	0.0000	0.0000	0.0002	0.0006	0	0	0.001	0.016	0	0.04	0.62	2
Ice creams, sorbets and frozen desserts	0.15	1.00	1	0.0001	0.0002	0.0004	0.0013	0	0	0.004	0.025	0	0.05	0.32	2
Chocolate	0.30	1.67	1	0.0003	0.0003	0.0017	0.0018	1	1	0.008	0.047	1	0.13	0.76	6
Sugars and sugar derivatives	0.09	0.38	0	0.0002	0.0005	0.0007	0.0017	1	1	0.008	0.028	1	0.03	0.10	1
Water	8.88	28.65	38	0.0022	0.0140	0.0099	0.0366	9	24	0.196	0.616	24	0.22	0.57	10
Non-alcoholic beverages	1.09	4.36	5	0.0009	0.0032	0.0042	0.0135	4	6	0.036	0.157	4	0.06	0.22	3
Alcoholic beverages	0.12	0.86	1	0.0004	0.0011	0.0027	0.0080	2	2	0.049	0.366	6	0.07	0.58	3
Coffee	0.62	3.07	3	0.0012	0.0042	0.0086	0.0217	5	7	0.054	0.310	7	0.14	0.87	6
Other hot beverages	0.79	4.48	3	0.0002	0.0027	0.0018	0.0143	1	5	0.031	0.202	4	0.10	0.49	5
Pizzas, quiches and savoury pastries	0.32	1.60	1	0.0000	0.0003	0.0000	0.0013	0	1	0.018	0.088	2	0.03	0.17	2
Sandwiches and snacks	0.17	1.09	1	0.0001	0.0003	0.0007	0.0021	0	1	0.012	0.077	1	0.02	0.16	1
Soups and broths	0.52	3.89	2	0.0003	0.0010	0.0029	0.0082	1	2	0.015	0.142	2	0.05	0.48	2
Mixed dishes	0.71	3.61	3	0.0007	0.0012	0.0030	0.0044	3	2	0.028	0.125	3	0.07	0.38	3
Dairy-based desserts	0.24	1.34	1	0.0003	0.0006	0.0022	0.0031	1	1	0.008	0.045	1	0.10	0.58	4
Compotes and cooked fruit	0.07	0.63	0	0.0001	0.0003	0.0013	0.0023	0	0	0.002	0.012	0	0.01	0.09	0
Seasonings and sauces	0.22	0.79	1	0.0002	0.0003	0.0006	0.0010	1	1	0.021	0.070	3	0.03	0.13	1
Misc. foods	0.00	4.30	0	0.0000	0.0000	0.0022	0.0029	0	0	0.000	0.061	0	0.00	0.56	0
TOTAL	23.14	45.93	100	0.0239	0.0578	0.0495	0.0975	100	100	0.806	1.419	100	2.26	3.69	100

Table A7: Estimated intake (mean, P5 and P95) of inorganic contaminants and minerals (µg/day) by women of childbearing age (18-45 years)

Food group	Cr			Ca			Mn			Mg						
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)				
Bread and dried bread products	14.75	2.13	36.06	6	23011	2585	60420	3	430	63	1059	24	23381	3587	58074	9
Breakfast cereals	1.15	0.88	14.52	0	4619	3220	67613	1	14	6	233	1	1193	930	19500	0
Pasta	11.03	2.38	33.30	5	5715	1179	17679	1	104	22	311	6	9402	1943	29143	4
Rice and wheat products	6.10	0.14	19.60	3	2467	619	8999	0	59	15	220	3	4054	936	17421	2
Croissant-like pastries	4.89	2.14	31.52	2	4197	1498	24784	1	42	17	240	2	3305	1273	19000	1
Sweet and savoury biscuits and bars	3.83	0.48	20.76	2	3716	369	19969	1	47	4	273	3	5416	599	32425	2
Pastries and cakes	9.47	1.75	30.90	4	1303	1864	35845	2	54	12	164	3	6266	1193	19645	2
Milk	10.09	0.74	45.05	4	91662	6950	427000	13	3	0	12	0	10626	836	49678	4
Ultra-fresh dairy products	10.75	1.21	30.19	5	92646	3716	259774	13	16	0	54	1	11186	426	32377	4
Cheese	8.41	1.17	23.86	4	110611	21769	324284	15	4	1	12	0	6125	1117	17352	2
Eggs and egg products	2.68	0.83	14.28	1	6430	1585	31044	1	5	1	23	0	2083	531	10125	1
Butter	6.73	1.09	22.13	3	1743	254	5300	0	0	0	1	0	252	29	844	0
Oils	10.00	1.33	29.03	4	101	9	379	0	0	0	1	0	13	2	39	0
Margarine	1.67	0.83	12.01	1	271	65	2151	0	0	0	1	0	39	6	308	0
Meat	9.93	2.64	26.03	4	3987	708	12778	1	4	1	10	0	10326	3168	26300	4
Poultry and game	5.51	1.64	20.94	2	3403	620	17057	0	3	1	13	0	9055	2847	34496	4
Offal	0.25	1.18	6.44	0	172	376	8801	0	8	18	73	0	295	2114	8835	0
Delicatessen meats	7.25	1.23	20.92	3	2816	306	9425	0	3	0	32	0	5567	957	15049	2
Fish	3.26	0.77	13.91	1	2520	171	19366	0	6	0	41	0	4718	1094	21634	2
Crustaceans and molluscs	0.76	0.43	6.60	0	3728	1426	42980	1	16	1	290	1	2067	859	20070	1
Vegetables (excluding potatoes)	10.89	1.38	29.26	5	30518	4468	79672	4	146	27	333	8	17743	3020	40579	7
Potatoes and potato products	7.47	1.30	21.27	3	6942	944	18961	1	54	11	137	3	12080	2754	32382	5
Pulses	0.62	0.95	8.83	0	1199	1918	17629	0	18	31	290	1	1563	2786	21867	1
Fruit	9.18	0.89	29.43	4	9671	670	31650	1	82	4	297	5	12018	1374	34929	5
Dried fruits, nuts and seeds	0.45	0.29	6.56	0	878	581	12682	0	25	7	427	1	2088	997	33737	1
Ice creams, sorbets and frozen desserts	2.99	2.34	18.23	2	6664	1854	41950	1	16	12	94	1	3134	1154	19650	1
Chocolate	5.11	0.83	27.55	2	7417	714	41894	1	53	6	341	3	6576	1074	35805	3
Sugars and sugar derivatives	4.03	0.34	13.89	2	1305	53	5288	0	20	0	89	0	917	24	4034	0
Water	10.73	1.08	33.84	5	104543	7297	427336	15	4	1	11	0	16251	832	52208	6
Non-alcoholic beverages	9.34	1.07	37.28	4	9177	735	32520	1	48	0	285	3	7509	202	30685	3
Alcoholic beverages	4.24	0.86	28.70	2	4264	814	29189	1	32	4	223	2	4056	760	28074	2
Coffee	8.11	0.29	44.86	3	50523	440	375717	7	104	6	477	6	21409	1382	111500	8
Other hot beverages	3.97	0.36	23.80	2	36720	1181	256179	5	158	5	881	9	5711	625	29286	2
Pizzas, quiches and savoury pastries	4.74	2.46	19.82	2	20281	914	86786	3	35	13	162	2	4706	1694	21179	2
Sandwiches and snacks	4.05	3.42	23.94	2	6914	3050	47980	1	40	36	229	2	4192	3943	23460	2
Soups and broths	3.19	1.17	25.98	1	6780	5036	56071	1	28	21	227	2	4167	3063	31399	2
Mixed dishes	8.09	1.96	33.62	3	15091	3007	62467	2	58	20	238	3	8614	2823	33749	3
Dairy-based desserts	5.32	2.20	28.97	2	16565	10864	88709	2	23	8	144	1	5636	3005	30652	2
Composites and cooked fruit	1.23	1.11	9.63	1	5314	951	48000	1	10	4	99	1	713	553	5786	0
Seasonings and sauces	4.94	0.62	15.24	2	2768	376	8977	0	10	1	36	1	2490	183	8285	1
Misc. foods	0.02	3.17	16.17	0	71	11450	58395	0	1	127	647	0	119	19143	97629	0
TOTAL	237.21	140.49	349.22	100	718724	287365	1399037	100	1780	856	3096	100	257264	149301	389707	100

Food group	Cu			Zn			Li			Na			
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	
Bread and dried bread products	85	14	214	5	421	64	1044	0.08	1.25	1	535154	79779	1349425
Breakfast cereals	3	1	55	0	19	15	311	0.02	0.42	0	4163	3084	64753
Pasta	101	22	303	6	128	26	394	0.29	4.39	3	73278	15964	223500
Rice and wheat products	33	9	111	2	79	20	275	0.30	3.24	2	36614	2914	119586
Croissant-like pastries	12	4	73	1	73	31	433	0.07	0.47	0	61432	25264	387243
Sweet and savoury biscuits and bars	20	1	123	1	64	9	367	0.01	0.58	0	40757	5157	192443
Pastries and cakes	24	4	78	1	111	24	348	0.05	0.77	1	72756	14000	218293
Milk	7	0	34	0	341	24	1577	0.02	1.43	1	38030	3007	177989
Ultra-fresh dairy products	9	0	28	1	324	12	929	0.02	1.19	1	39249	1723	113517
Cheese	11	1	38	1	403	80	1161	0.01	0.25	0	126404	16216	389524
Eggs and egg products	9	3	48	1	165	51	835	0.05	0.66	0	26394	5015	145286
Butter	2	0	7	0	7	1	22	0.01	0.46	0	17869	266	94865
Oils	0	0	1	0	2	0	8	0.00	0.01	0	57	4	274
Margarine	0	0	2	0	2	1	13	0.01	0.05	0	4658	2336	34869
Meat	27	8	68	2	1573	375	4193	0.03	0.34	0	25057	6937	69623
Poultry and game	18	4	82	1	319	76	1143	0.01	0.37	0	24926	7475	84782
Offal	116	673	3908	7	66	359	1874	0.00	0.03	0	1384	5364	32314
Delicatessen meats	30	3	104	2	471	81	1439	0.02	0.51	0	229768	31472	714764
Fish	9	1	52	1	58	12	269	0.02	0.73	0	37277	6354	190679
Crustaceans and molluscs	14	4	173	1	112	25	1668	0.06	1.49	0	13415	8036	128571
Vegetables (excluding potatoes)	60	10	127	4	216	29	500	0.33	5.23	5	78131	1981	219586
Potatoes and potato products	44	9	124	3	122	24	357	0.09	2.09	2	42109	554	133226
Pulses	10	18	163	1	40	67	640	0.34	3.11	0	5676	10214	96857
Fruit	55	6	165	3	80	7	255	0.02	3.19	2	1582	64	532
Dried fruits, nuts and seeds	13	5	221	1	40	7	695	0.00	0.31	0	4727	591	83520
Ice creams, sorbets and frozen desserts	13	5	84	1	36	12	228	0.09	0.58	0	5295	550	33450
Chocolate	36	5	222	2	69	12	362	0.01	0.24	0	4607	144	28291
Sugars and sugar derivatives	3	0	13	0	9	0	38	0.01	0.25	0	1087	31	5314
Water	77	3	265	5	57	5	193	0.71	41.59	33	15659	1207	48643
Non-alcoholic beverages	17	1	67	1	21	1	74	0.10	3.19	2	4937	478	19027
Alcoholic beverages	4	1	29	0	35	2	243	0.04	2.10	1	824	124	5639
Coffee	565	29	2852	35	63	3	290	0.39	34.76	17	3826	188	19327
Other hot beverages	68	3	433	4	58	3	425	0.02	4.897	19	7062	628	38954
Pizzas, quiches and savoury pastries	14	5	65	1	173	63	763	0.07	1.10	1	98962	54804	408571
Sandwiches and snacks	13	11	78	1	238	141	1428	0.15	1.01	0	85952	75450	485036
Soups and broths	22	7	223	1	50	33	418	0.20	14.95	3	108201	54393	831857
Mixed dishes	37	8	147	2	412	66	2235	0.11	2.98	2	136693	38857	575920
Dairy-based desserts	21	6	117	1	84	52	434	0.12	0.66	0	12274	7343	62754
Composites and cooked fruit	5	5	40	0	5	4	40	0.04	0.31	0	142	79	1116
Seasonings and sauces	6	0	19	0	23	3	80	0.01	0.58	0	140907	12343	465696
Misc. foods	0	33	169	0	1	237	1209	0.53	2.72	0	123	19857	101271
TOTAL	1618	584	3782	100	6570	3447	10541	11.47	85.58	100	2167417	1070433	3323662

Food group	Mo			Se			K			Fe					
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)		
Bread and dried bread products	10.3	1.6	25.7	1.9	0.3	5.0	3	156575	24891	396000	7	860	133	2131	13
Breakfast cereals	0.5	0.3	7.0	0.1	0.1	1.5	0	9286	7843	148214	0	62	50	891	1
Pasta	3.0	0.6	9.3	0.9	0.2	2.7	2	16392	3329	50594	1	229	46	705	4
Rice and wheat products	2.7	0.7	9.9	0.6	0.2	2.0	1	11450	2075	57968	0	74	15	345	1
Croissant-like pastries	1.2	0.5	8.0	0.3	0.1	1.7	0	22970	9900	136007	1	178	57	1082	3
Sweet and savoury biscuits and bars	1.7	0.2	9.9	0.3	0.0	1.3	0	38692	4050	183664	2	164	13	978	3
Pastries and cakes	2.3	0.5	7.0	0.8	0.2	2.4	1	52192	11443	172757	2	331	55	1202	5
Milk	4.0	0.3	18.5	2.2	0.2	10.4	4	145415	11720	647036	6	37	3	175	1
Ultra-fresh dairy products	4.1	0.3	11.1	2.0	0.1	5.7	4	147668	5957	423045	6	49	2	162	1
Cheese	1.5	0.2	4.8	0.5	0.1	1.6	1	26096	3332	77277	1	21	3	60	0
Eggs and egg products	1.0	0.3	4.8	0.7	0.2	3.5	1	25110	4300	137465	1	223	73	1128	3
Butter	0.4	0.1	1.3	0.3	0.1	1.0	1	3208	400	10572	0	5	0	20	0
Oils	0.0	0.0	0.1	0.2	0.0	0.7	0	35	3	113	0	2	0	6	0
Margarine	0.1	0.0	0.5	0.1	0.0	0.5	0	904	423	7018	0	2	0	19	0
Meat	0.6	0.1	1.6	0.9	0.3	2.3	2	135582	39486	327200	6	616	114	1754	9
Poultry and game	1.0	0.3	3.9	0.9	0.2	3.7	2	93165	24686	348069	4	196	46	908	3
Offal	1.0	7.7	26.2	1	0.4	1.0	11.3	3758	2750	11900	0	60	367	2055	1
Delicatessen meats	1.4	0.1	5.3	2	0.7	2.1	1	83272	12732	24761	3	309	39	1041	5
Fish	0.4	0.0	2.1	0	0.2	1.3	3	42773	10929	204514	2	67	9	369	1
Crustaceans and molluscs	0.9	0.1	16.8	1	0.6	0.1	8.0	7613	3957	89400	0	65	19	630	1
Vegetables (excluding potatoes)	7.3	0.8	19.3	9	2.4	0.4	5.8	248926	30146	605780	10	472	65	1310	7
Potatoes and potato products	2.7	0.5	7.2	3	1.2	0.3	3.6	193655	42929	538857	8	174	37	449	3
Pulses	5.3	8.3	81.0	7	0.1	0.2	1.7	9637	17571	156000	0	57	116	1213	1
Fruit	3.1	0.1	12.0	4	2.3	0.3	6.9	181430	17807	532308	8	124	12	392	2
Dried fruits, nuts and seeds	1.2	0.1	21.5	2	0.0	0.6	0	11807	7600	179570	0	25	17	348	0
Ice creams, sorbets and frozen desserts	0.7	0.3	4.5	1	0.2	0.2	1.3	23510	12514	146000	1	360	33	2273	6
Chocolate	0.9	0.1	5.0	1	0.2	0.0	0.9	34027	5664	171500	1	391	49	2261	6
Sugars and sugar derivatives	0.6	0.0	2.3	1	0.4	0.0	1.4	10438	192	43322	0	27	1	104	0
Water	2.4	0.3	6.3	3	18.1	2.1	43.9	4793	336	17859	0	38	3	144	1
Non-alcoholic beverages	1.3	0.1	4.2	2	3.5	0.4	14.0	94031	681	376184	4	62	3	244	1
Alcoholic beverages	1.2	0.1	8.6	2	1.0	0.2	6.8	30846	3250	21223	1	88	6	618	1
Coffee	1.0	0.1	5.0	1	4.6	0.3	22.0	21134	13650	1085700	9	46	2	253	1
Other hot beverages	1.2	0.1	6.3	2	3.7	0.1	21.4	31960	3029	176786	1	86	2	569	1
Pizzas, quiches and savoury pastries	1.7	0.6	7.5	2	0.4	0.2	1.8	38922	18071	165714	2	141	50	622	2
Sandwiches and snacks	1.3	1.3	8.2	2	0.4	0.4	2.1	35087	30531	190400	1	153	111	821	2
Soups and broths	1.4	0.8	11.0	2	1.1	0.9	8.9	63090	38714	484429	3	76	56	592	1
Mixed dishes	4.0	0.9	21.9	5	0.9	0.2	3.3	81130	21857	332196	3	310	67	1372	5
Dairy-based desserts	1.2	0.7	6.2	2	0.5	0.4	2.5	43459	26000	233714	2	278	79	1710	4
Compotes and cooked fruit	0.5	0.1	5.7	1	0.3	0.2	2.3	12963	10071	105000	1	13	10	113	0
Seasonings and sauces	0.4	0.0	1.4	1	0.3	0.0	0.9	23950	602	103214	1	58	7	194	1
Misc. foods	0.0	6.3	32.1	0	0.0	0.4	1.8	150	24214	133493	0	3	414	2113	0
TOTAL	77.6	39.8	130.3	100	58.0	28.6	99.6	2407102	1345791	3627534	100	6530	3415	10381	100

Table A8: Estimated exposure (mean and P95) in elderly people (65 years and older) to inorganic contaminants (µg/kg bw/day)

Food group	As			Asi			Pb			Cd			Al		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (HH)*	P95 (HH)*	Contrib (HH)*	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	0.049	0.103	7	0.010	0.021	4	0.032	0.066	4	0.0435	0.0969	27	4.35	8.87	11
Breakfast cereals	0.000	0.022	0	0.000	0.004	0	0.000	0.007	0	0.0002	0.0105	0	0.03	1.64	0
Pasta	0.004	0.014	1	0.001	0.003	0	0.001	0.003	0	0.0064	0.0218	4	1.44	4.90	4
Rice and wheat products	0.004	0.019	1	0.001	0.005	0	0.001	0.003	0	0.0018	0.0088	1	0.12	0.75	0
Croissant-like pastries	0.002	0.020	0	0.000	0.004	0	0.001	0.009	0	0.0011	0.0131	1	0.19	3.75	0
Sweet and savoury biscuits and bars	0.001	0.009	0	0.000	0.002	0	0.000	0.004	0	0.0009	0.0078	1	0.17	2.14	0
Pastries and cakes	0.005	0.022	1	0.001	0.004	0	0.002	0.009	1	0.0024	0.0104	1	1.26	7.98	3
Milk	0.013	0.088	2	0.006	0.039	2	0.006	0.052	3	0.0013	0.0098	1	0.53	4.59	1
Ultra-fresh dairy products	0.011	0.040	1	0.005	0.018	2	0.003	0.021	2	0.0011	0.0069	1	0.81	3.20	2
Cheese	0.008	0.029	1	0.004	0.013	2	0.003	0.008	1	0.0011	0.0028	1	0.16	0.47	0
Eggs and egg products	0.003	0.012	0	0.000	0.001	0	0.001	0.003	0	0.0003	0.0010	0	0.19	1.12	0
Butter	0.003	0.010	0	0.002	0.006	1	0.001	0.004	1	0.0001	0.0004	0	0.23	1.35	1
Oils	0.002	0.007	0	0.001	0.002	1	0.001	0.002	1	0.0001	0.0002	0	0.13	0.39	0
Margarine	0.002	0.013	0	0.001	0.002	1	0.001	0.008	1	0.0001	0.0008	0	0.11	0.76	0
Meat	0.011	0.032	2	0.000	0.001	0	0.004	0.015	2	0.0007	0.0017	0	0.34	0.94	1
Poultry and game	0.004	0.020	1	0.000	0.000	0	0.001	0.008	1	0.0004	0.0016	0	0.16	0.70	0
Offal	0.000	0.007	0	0.000	0.000	0	0.000	0.008	0	0.0013	0.0335	1	0.01	0.42	0
Delicatessen meats	0.012	0.032	2	0.001	0.002	0	0.004	0.012	2	0.0015	0.0061	1	0.48	1.90	1
Fish	0.216	1.100	29	0.002	0.008	1	0.001	0.008	1	0.0011	0.0079	1	0.24	0.74	1
Crustaceans and molluscs	0.133	1.267	18	0.003	0.024	1	0.006	0.062	3	0.0085	0.1286	5	1.16	10.34	3
Vegetables (excluding potatoes)	0.019	0.043	3	0.012	0.014	5	0.016	0.039	7	0.0175	0.0468	11	5.57	14.17	14
Potatoes and potato products	0.008	0.023	1	0.002	0.007	1	0.004	0.019	2	0.0193	0.0523	12	0.55	1.57	1
Pulses	0.002	0.015	0	0.001	0.011	0	0.002	0.026	1	0.0013	0.0117	1	0.73	6.76	2
Fruit	0.026	0.087	4	0.012	0.015	5	0.013	0.034	6	0.0052	0.0220	3	2.41	7.85	6
Dried fruits, nuts and seeds	0.001	0.010	0	0.000	0.001	0	0.001	0.008	0	0.0007	0.0080	0	0.17	2.46	0
Ice creams, sorbets and frozen desserts	0.002	0.023	0	0.001	0.020	0	0.001	0.007	0	0.0005	0.0059	0	0.31	3.83	1
Chocolate	0.001	0.018	0	0.000	0.004	0	0.001	0.016	0	0.0015	0.0203	1	0.86	12.98	2
Sugars and sugar derivatives	0.005	0.015	1	0.001	0.003	0	0.002	0.007	1	0.0069	0.0290	4	0.53	1.68	1
Water	0.063	0.242	8	0.063	0.242	26	0.021	0.064	10	0.0039	0.0121	2	1.80	5.65	5
Non-alcoholic beverages	0.004	0.046	1	0.004	0.046	2	0.006	0.052	3	0.0005	0.0051	0	0.37	3.69	1
Alcoholic beverages	0.020	0.075	3	0.020	0.075	9	0.039	0.148	18	0.0020	0.0073	1	2.28	8.44	6
Coffee	0.034	0.107	5	0.034	0.107	14	0.009	0.030	4	0.0022	0.0088	1	1.00	3.33	3
Other hot beverages	0.013	0.092	2	0.013	0.092	6	0.006	0.054	3	0.0009	0.0059	1	4.97	41.80	13
Pizzas, quiches and savoury pastries	0.004	0.042	1	0.001	0.008	0	0.001	0.007	0	0.0012	0.0148	1	0.44	6.11	1
Sandwiches and snacks	0.001	0.051	0	0.000	0.010	0	0.000	0.009	0	0.0002	0.0131	0	0.05	2.50	0
Soups and broths	0.023	0.102	3	0.015	0.016	6	0.011	0.049	5	0.0096	0.0339	6	2.24	10.98	6
Mixed dishes	0.025	0.272	3	0.012	0.013	5	0.004	0.024	2	0.0062	0.0412	4	1.13	6.83	3
Dairy-based desserts	0.004	0.037	1	0.002	0.034	1	0.001	0.010	1	0.0034	0.0505	2	0.89	6.12	2
Compotes and cooked fruit	0.002	0.012	0	0.001	0.005	0	0.004	0.042	2	0.0016	0.0184	1	0.47	5.21	1
Seasonings and sauces	0.006	0.021	1	0.006	0.021	2	0.002	0.009	1	0.0014	0.0064	1	0.15	0.59	0
Misc. foods	0.000	0.002	0	0.000	0.000	0	0.000	0.003	0	0.0000	0.0034	0	0.00	0.82	0
TOTAL	0.747	1.688	100	0.239	0.272	100	0.214	0.350	100	0.1600	0.2765	100	39.01	69.50	100

* LH: low hypothesis, HH: high hypothesis.

Food group	Hg				Sb				Ag									
	Mean (LB)	P95 (LB)	P95 (UB)	Contrib (UB)	Mean (LB)	P95 (LB)	P95 (UB)	Contrib (LB)	Contrib (UB)	Mean (LB)	P95 (LB)	P95 (UB)	Contrib (LB)	Contrib (UB)				
Bread and dried bread products	0.0000	0.0100	0.0000	0.0213	0	5	0.0019	0.0024	0.0041	0.0052	7	6	0.000	0.084	0.000	0.179	0	3
Breakfast cereals	0.0000	0.0002	0.0000	0.0083	0	0	0.0000	0.0000	0.0018	0.0022	0	0	0.000	0.001	0.000	0.070	0	0
Pasta	0.0000	0.0020	0.0000	0.0067	0	1	0.0008	0.0008	0.0028	0.0028	3	2	0.016	0.033	0.056	0.112	1	1
Rice and wheat products	0.0000	0.0012	0.0000	0.0066	0	1	0.0004	0.0004	0.0017	0.0019	2	1	0.005	0.015	0.019	0.074	0	1
Croissant-like pastries	0.0000	0.0004	0.0013	0.0059	0	0	0.0002	0.0002	0.0022	0.0022	1	0	0.004	0.006	0.048	0.079	0	0
Sweet and savoury biscuits and bars	0.0000	0.0002	0.0006	0.0021	0	0	0.0001	0.0001	0.0010	0.0010	0	0	0.003	0.005	0.035	0.041	0	0
Pastries and cakes	0.0001	0.0019	0.0010	0.0083	1	1	0.0009	0.0010	0.0052	0.0053	4	2	0.018	0.028	0.095	0.139	1	1
Milk	0.0004	0.0055	0.0024	0.0343	2	3	0.0001	0.0006	0.0015	0.0039	0	2	0.028	0.067	0.263	0.420	2	2
Ultra-fresh dairy products	0.0002	0.0049	0.0020	0.0179	1	3	0.0003	0.0007	0.0013	0.0027	1	2	0.035	0.069	0.180	0.250	2	2
Cheese	0.0002	0.0025	0.0011	0.0063	1	1	0.0004	0.0005	0.0010	0.0014	1	1	0.011	0.029	0.055	0.077	1	1
Eggs and egg products	0.0000	0.0012	0.0002	0.0043	0	1	0.0000	0.0002	0.0001	0.0005	0	0	0.008	0.017	0.044	0.067	1	1
Butter	0.0001	0.0010	0.0005	0.0027	0	1	0.0002	0.0003	0.0008	0.0009	1	1	0.004	0.011	0.012	0.033	0	0
Oils	0.0000	0.0009	0.0000	0.0025	0	0	0.0000	0.0001	0.0001	0.0004	0	0	0.004	0.011	0.012	0.031	0	0
Margarine	0.0000	0.0005	0.0000	0.0031	0	0	0.0002	0.0002	0.0013	0.0015	1	1	0.002	0.006	0.011	0.039	0	0
Meat	0.0000	0.0029	0.0000	0.0072	0	2	0.0006	0.0008	0.0022	0.0025	2	2	0.029	0.047	0.106	0.127	2	2
Poultry and game	0.0000	0.0015	0.0000	0.0067	0	1	0.0001	0.0003	0.0007	0.0012	1	1	0.024	0.033	0.163	0.182	2	1
Offal	0.0000	0.0001	0.0000	0.0028	0	0	0.0000	0.0000	0.0006	0.0007	0	0	0.008	0.009	0.175	0.191	1	0
Delicatessen meats	0.0002	0.0020	0.0006	0.0064	1	1	0.0003	0.0004	0.0012	0.0014	1	1	0.025	0.036	0.112	0.124	2	1
Fish	0.0132	0.0134	0.0813	0.0813	70	7	0.0002	0.0002	0.0011	0.0012	1	1	0.015	0.020	0.072	0.081	1	1
Crustaceans and molluscs	0.0007	0.0009	0.0064	0.0064	4	0	0.0001	0.0001	0.0007	0.0008	0	0	0.464	0.464	7.243	7.246	32	17
Vegetables (excluding potatoes)	0.0002	0.0092	0.0012	0.0207	1	5	0.0010	0.0017	0.0027	0.0038	4	4	0.067	0.131	0.234	0.294	5	5
Potatoes and potato products	0.0000	0.0044	0.0000	0.0122	0	2	0.0004	0.0008	0.0011	0.0023	1	2	0.038	0.068	0.156	0.207	3	2
Pulses	0.0000	0.0006	0.0015	0.0049	0	0	0.0002	0.0002	0.0025	0.0025	1	1	0.005	0.009	0.041	0.083	0	0
Fruit	0.0001	0.0134	0.0000	0.0335	0	7	0.0022	0.0034	0.0086	0.0097	8	9	0.130	0.221	0.449	0.627	9	8
Dried fruits, nuts and seeds	0.0000	0.0002	0.0000	0.0026	0	0	0.0000	0.0000	0.0002	0.0004	0	0	0.001	0.002	0.013	0.029	0	0
Ice creams, sorbets and frozen desserts	0.0000	0.0003	0.0000	0.0039	0	0	0.0001	0.0001	0.0014	0.0016	0	0	0.011	0.012	0.134	0.151	1	0
Chocolate	0.0009	0.0009	0.0141	0.0141	5	0	0.0001	0.0001	0.0018	0.0018	1	0	0.004	0.004	0.063	0.063	0	0
Sugars and sugar derivatives	0.0000	0.0016	0.0000	0.0052	0	1	0.0029	0.0029	0.0094	0.0094	11	7	0.013	0.027	0.041	0.082	1	1
Water	0.0011	0.0480	0.0089	0.1313	6	25	0.0012	0.0058	0.0054	0.0189	5	15	0.086	0.475	0.372	1.327	6	17
Non-alcoholic beverages	0.0000	0.0031	0.0000	0.0242	0	2	0.0002	0.0005	0.0026	0.0049	1	1	0.016	0.042	0.104	0.305	1	2
Alcoholic beverages	0.0000	0.0131	0.0000	0.0488	0	7	0.0011	0.0024	0.0042	0.0095	4	6	0.100	0.209	0.359	0.773	7	8
Coffee	0.0000	0.0142	0.0000	0.0407	0	7	0.0024	0.0031	0.0070	0.0085	9	8	0.078	0.176	0.478	0.635	5	6
Other hot beverages	0.0006	0.0110	0.0096	0.0738	3	6	0.0041	0.0041	0.0300	0.0300	16	11	0.041	0.123	0.461	0.771	3	4
Pizzas, quiches and savoury pastries	0.0000	0.0005	0.0000	0.0053	0	0	0.0001	0.0002	0.0019	0.0019	1	0	0.003	0.007	0.044	0.088	0	0
Sandwiches and snacks	0.0001	0.0002	0.0073	0.0098	0	0	0.0000	0.0000	0.0008	0.0010	0	0	0.001	0.001	0.051	0.072	0	0
Soups and broths	0.0000	0.0094	0.0000	0.0357	0	5	0.0016	0.0020	0.0070	0.0075	6	5	0.103	0.170	0.873	0.960	7	6
Mixed dishes	0.0003	0.0024	0.0041	0.0151	2	1	0.0008	0.0008	0.0049	0.0053	3	2	0.026	0.039	0.204	0.238	2	1
Dairy-based desserts	0.0001	0.0018	0.0023	0.0132	1	1	0.0006	0.0007	0.0032	0.0033	2	2	0.005	0.018	0.061	0.133	0	1
Composites and cooked fruit	0.0003	0.0019	0.0040	0.0175	2	1	0.0003	0.0004	0.0032	0.0032	1	1	0.033	0.042	0.346	0.483	2	2
Seasonings and sauces	0.0001	0.0009	0.0005	0.0032	0	0	0.0001	0.0001	0.0003	0.0005	0	0	0.003	0.010	0.013	0.040	0	0
Misc. foods	0.0000	0.0000	0.0000	0.0007	0	0	0.0000	0.0000	0.0001	0.0002	0	0	0.000	0.000	0.000	0.006	0	0
TOTAL	0.0189	0.1902	0.0653	0.3213	100	100	0.0266	0.0390	0.0500	0.0633	100	100	1.466	2.778	4.853	6.523	100	100

Food group	Ba			Sn			Ga			Ge		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LB)	P95 (LB)	Contrib (LB)	Mean (UB)	P95 (UB)	Contrib (UB)
Bread and dried bread products	1.56	3.26	25	0.021	0.050	0	0.0000	0.0043	0	0.0015	0.0045	6
Breakfast cereals	0.12	6.37	2	0.000	0.010	0	0.0000	0.0017	0	0.0001	0.0001	0
Pasta	0.24	0.79	4	0.005	0.016	0	0.0000	0.0013	0	0.0008	0.0011	1
Rice and wheat products	0.05	0.44	1	0.001	0.006	0	0.0000	0.0013	0	0.0002	0.0005	0
Croissant-like pastries	0.04	0.61	1	0.002	0.018	0	0.0000	0.0003	0	0.0001	0.0002	0
Sweet and savoury biscuits and bars	0.02	0.27	0	0.000	0.004	0	0.0000	0.0003	0	0.0001	0.0001	0
Pastries and cakes	0.13	0.55	2	0.045	0.241	1	0.0000	0.0001	1	0.0001	0.0007	1
Milk	0.09	0.61	1	0.011	0.087	0	0.0000	0.0060	0	0.0005	0.0020	3
Ultra-fresh dairy products	0.09	0.34	1	0.054	0.235	1	0.0000	0.0036	0	0.0004	0.0018	1
Cheese	0.19	0.48	3	0.572	3.479	13	0.0001	0.0007	6	0.0004	0.0009	1
Eggs and egg products	0.08	0.29	1	0.005	0.020	0	0.0000	0.0009	0	0.0003	0.0006	1
Butter	0.03	0.08	0	0.002	0.008	0	0.0014	0.0086	73	0.0024	0.0025	4
Oils	0.02	0.07	0	0.002	0.007	0	0.0000	0.0005	0	0.0001	0.0004	0
Margarine	0.02	0.10	0	0.004	0.024	0	0.0000	0.0003	2	0.0003	0.0004	0
Meat	0.03	0.09	1	0.024	0.032	1	0.0000	0.0001	0	0.0013	0.0020	2
Poultry and game	0.02	0.15	0	0.004	0.018	0	0.0000	0.0015	1	0.0004	0.0008	1
Offal	0.00	0.02	0	0.000	0.011	0	0.0000	0.0002	0	0.0001	0.0001	0
Delicatessen meats	0.02	0.08	0	0.011	0.032	0	0.0000	0.0010	0	0.0010	0.0013	2
Fish	0.02	0.11	0	0.004	0.028	0	0.0000	0.0008	0	0.0004	0.0005	1
Crustaceans and molluscs	0.01	0.10	0	0.001	0.009	0	0.0000	0.0010	2	0.0002	0.0002	0
Vegetables (excluding potatoes)	0.56	1.46	9	0.674	3.396	15	0.0001	0.0042	5	0.0010	0.0036	3
Potatoes and potato products	0.08	0.24	1	0.026	0.107	1	0.0000	0.0024	0	0.0011	0.0021	3
Pulses	0.14	1.03	2	0.004	0.048	0	0.0000	0.0010	0	0.0001	0.0003	0
Fruit	0.61	2.02	10	0.515	0.688	11	0.0000	0.0067	1	0.0038	0.0071	7
Dried fruits, nuts and seeds	0.06	0.84	1	0.001	0.011	0	0.0000	0.0005	0	0.0001	0.0001	0
Ice creams, sorbets and frozen desserts	0.04	0.49	1	0.002	0.006	0	0.0000	0.0008	0	0.0000	0.0001	0
Chocolate	0.09	1.24	1	0.001	0.007	0	0.0001	0.0015	4	0.0002	0.0002	0
Sugars and sugar derivatives	0.11	0.44	2	0.498	2.144	11	0.0000	0.0010	0	0.0009	0.0012	1
Water	0.41	1.32	6	0.016	0.056	0	0.0000	0.0261	0	0.0127	0.0246	26
Non-alcoholic beverages	0.11	0.72	2	0.003	0.026	0	0.0000	0.0048	0	0.0005	0.0014	2
Alcoholic beverages	0.26	1.01	4	0.025	0.094	1	0.0000	0.0098	0	0.0001	0.0040	7
Coffee	0.20	0.69	3	0.025	0.120	1	0.0000	0.0081	0	0.0043	0.0073	8
Other hot beverages	0.10	0.82	2	0.005	0.031	0	0.0000	0.0140	0	0.0016	0.0042	6
Pizzas, quiches and savoury pastries	0.04	0.46	1	0.007	0.024	0	0.0000	0.0011	0	0.0001	0.0003	0
Sandwiches and snacks	0.01	0.46	0	0.001	0.051	0	0.0000	0.0010	0	0.0000	0.0000	0
Soups and broths	0.37	1.35	6	0.024	0.129	1	0.0000	0.0071	0	0.0007	0.0035	5
Mixed dishes	0.14	0.90	2	0.062	0.270	1	0.0000	0.0024	0	0.0008	0.0013	1
Dairy-based desserts	0.09	0.60	1	0.190	3.684	4	0.0000	0.0026	0	0.0003	0.0007	0
Composites and cooked fruit	0.07	0.56	1	1.646	21.263	36	0.0001	0.0035	3	0.0001	0.0006	1
Seasonings and sauces	0.05	0.19	1	0.039	0.336	1	0.0000	0.0006	0	0.0003	0.0005	0
Misc. foods	0.00	0.12	0	0.000	0.003	0	0.0000	0.0001	0	0.0000	0.0000	0
TOTAL	6.35	10.98	100	4.532	17.506	100	0.0019	0.0362	100	0.0392	0.0841	100

Food group	Sr			Te			V			Ni			Co			
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LB)	P95 (LB)	Contrib (LB)	Mean (UB)	P95 (UB)	Contrib (UB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)	
Bread and dried bread products	1.42	2.84	6	0.0016	0.0035	7	0.0035	0.0079	6	0.089	0.169	10	0.11	0.23	5	
Breakfast cereals	0.03	1.14	0	0.0000	0.0001	0	0.0001	0.0034	0	0.000	0.017	0	0.01	0.36	0	
Pasta	0.32	1.08	1	0.0002	0.0006	1	0.0006	0.0020	1	0.007	0.027	1	0.03	0.10	1	
Rice and wheat products	0.11	0.54	0	0.0001	0.0004	0	0.0004	0.0018	0	0.004	0.030	0	0.01	0.05	0	
Croissant-like pastries	0.04	0.67	0	0.0000	0.0001	0	0.0001	0.0013	0	0.005	0.109	1	0.01	0.18	0	
Sweet and savoury biscuits and bars	0.04	0.39	0	0.0001	0.0001	0	0.0001	0.0008	0	0.002	0.014	0	0.01	0.04	0	
Pastries and cakes	0.21	1.08	1	0.0002	0.0005	1	0.0005	0.0022	1	0.005	0.024	1	0.03	0.18	1	
Milk	0.31	1.86	1	0.0005	0.0014	2	0.0014	0.0077	2	0.017	0.123	2	0.04	0.26	2	
Ultra-fresh dairy products	0.39	1.51	2	0.0003	0.0012	1	0.0012	0.0041	1	0.015	0.069	2	0.07	0.29	3	
Cheese	0.72	1.82	3	0.0016	0.0018	7	0.0018	0.0053	3	0.018	0.055	2	0.09	0.23	4	
Eggs and egg products	0.13	0.42	1	0.0001	0.0004	1	0.0004	0.0014	1	0.007	0.028	1	0.02	0.09	1	
Butter	0.03	0.11	0	0.0079	0.0080	33	0.0080	0.0320	14	0.008	0.035	1	0.01	0.04	1	
Oils	0.00	0.01	0	0.0002	0.0003	1	0.0003	0.0009	1	0.001	0.004	0	0.01	0.02	0	
Margarine	0.02	0.11	0	0.0001	0.0002	0	0.0002	0.0012	0	0.004	0.026	1	0.00	0.03	0	
Meat	0.07	0.21	0	0.0008	0.0012	3	0.0012	0.0033	2	0.008	0.025	1	0.03	0.08	1	
Poultry and game	0.03	0.16	0	0.0002	0.0005	1	0.0005	0.0014	1	0.004	0.018	0	0.01	0.07	1	
Offal	0.00	0.04	0	0.0000	0.0001	0	0.0001	0.0009	0	0.001	0.015	0	0.00	0.04	0	
Delicatessen meats	0.09	0.27	0	0.0009	0.0011	4	0.0011	0.0038	2	0.024	0.064	3	0.03	0.08	1	
Fish	0.33	0.93	1	0.0001	0.0003	1	0.0003	0.0007	1	0.005	0.027	1	0.01	0.06	0	
Crustaceans and molluscs	0.58	5.85	2	0.0001	0.0001	0	0.0001	0.0008	0	0.012	0.153	1	0.01	0.07	0	
Vegetables (excluding potatoes)	2.53	6.46	11	0.0007	0.0023	3	0.0023	0.0053	4	0.040	0.102	5	0.19	0.54	8	
Potatoes and potato products	0.31	0.95	1	0.0003	0.0011	1	0.0011	0.0033	2	0.012	0.037	1	0.10	0.30	4	
Pulses	0.30	2.96	1	0.0002	0.0003	1	0.0003	0.0036	1	0.003	0.025	0	0.04	0.20	2	
Fruit	1.45	5.09	6	0.0009	0.0033	4	0.0033	0.0098	6	0.048	0.166	5	0.28	0.97	12	
Dried fruits, nuts and seeds	0.12	1.66	1	0.0000	0.0000	0	0.0000	0.0006	0	0.001	0.018	0	0.04	0.49	2	
Ice creams, sorbets and frozen desserts	0.07	0.87	0	0.0000	0.0001	0	0.0001	0.0004	0	0.002	0.022	0	0.02	0.28	1	
Chocolate	0.13	1.82	1	0.0001	0.0001	0	0.0001	0.0014	0	0.004	0.060	0	0.06	0.85	3	
Sugars and sugar derivatives	0.12	0.49	1	0.0002	0.0005	1	0.0005	0.0017	1	0.009	0.033	1	0.03	0.13	2	
Water	9.44	57.42	40	0.0022	0.0112	9	0.0112	0.0333	20	0.165	0.549	19	0.17	0.50	8	
Non-alcoholic beverages	0.30	2.28	1	0.0002	0.0008	1	0.0008	0.0068	1	0.010	0.095	1	0.03	0.18	1	
Alcoholic beverages	0.43	1.67	2	0.0013	0.0039	5	0.0039	0.0049	7	0.178	0.654	20	0.28	1.10	12	
Coffee	0.54	1.48	2	0.0012	0.0039	5	0.0039	0.0126	7	0.049	0.178	6	0.12	0.52	6	
Other hot beverages	0.61	3.82	3	0.0001	0.0022	1	0.0022	0.0157	4	0.025	0.160	3	0.07	0.42	3	
Pizzas, quiches and savoury pastries	0.11	1.25	0	0.0000	0.0000	0	0.0000	0.0011	0	0.006	0.069	1	0.01	0.13	0	
Sandwiches and snacks	0.01	0.64	0	0.0000	0.0000	0	0.0000	0.0010	0	0.001	0.045	0	0.00	0.07	0	
Soups and broths	1.34	4.93	6	0.0004	0.0023	2	0.0023	0.0088	4	0.043	0.213	5	0.13	0.68	6	
Mixed dishes	0.54	3.24	2	0.0003	0.0007	1	0.0007	0.0035	1	0.019	0.110	2	0.04	0.30	2	
Dairy-based desserts	0.20	1.56	1	0.0002	0.0005	1	0.0005	0.0036	1	0.005	0.033	1	0.06	0.51	3	
Composites and cooked fruit	0.12	1.08	0	0.0002	0.0005	1	0.0005	0.0016	1	0.003	0.020	0	0.02	0.13	1	
Seasonings and sauces	0.20	0.69	1	0.0002	0.0003	1	0.0003	0.0008	1	0.021	0.089	2	0.02	0.10	1	
Misc. foods	0.00	0.40	0	0.0000	0.0000	0	0.0000	0.0003	0	0.000	0.006	0	0.00	0.05	0	
TOTAL	23.75	71.07	100	0.0239	0.0560	100	0.0882	0.0932	100	2.26	1.488	100	3.65	0.17	0.25	100

Table A9: Estimated intake (mean, P5 and P95) of inorganic contaminants and minerals (µg/day) by elderly people (65 years and older)

Food group	Cr				Ca				Mn				Mg			
	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	29.01	8.97	64.46	11	36835	9548	84,897	5	767	252	1529	34	41860	14300	85330	14
Breakfast cereals	0.57	0.88	35.65	0	2192	3220	139500	0	8	11	271	0	621	1170	27300	0
Pasta	8.91	2.38	28.54	3	4577	1179	15086	1	83	22	268	4	7533	1943	24869	3
Rice and wheat products	4.24	0.69	18.90	2	1696	1237	9897	0	42	29	250	2	2750	1871	15779	1
Croissant-like pastries	2.44	1.78	32.76	1	1849	1284	26803	0	19	15	247	1	1483	1091	21217	0
Sweet and savoury biscuits and bars	0.99	0.24	11.99	0	1044	223	9501	0	11	3	134	0	1200	251	12888	0
Pastries and cakes	8.66	3.09	37.43	3	9129	2486	45032	1	45	14	213	2	4752	1311	21135	2
Milk	8.90	0.94	54.10	3	76232	10540	437850	10	2	0	13	0	8569	1161	52560	3
Ultra-fresh dairy products	9.35	1.62	33.41	3	79980	5803	322054	11	13	0	49	1	9075	715	32152	3
Cheese	12.51	2.09	32.29	5	164862	24374	447671	22	6	1	16	0	9036	1351	23419	3
Eggs and egg products	3.81	1.46	13.06	1	8800	3054	29423	1	7	2	21	0	2838	1037	9206	1
Butter	8.56	1.09	24.12	3	2247	286	6642	0	0	0	1	0	329	35	1131	0
Oils	12.84	1.55	37.36	5	145	12	541	0	0	0	1	0	17	2	48	0
Margarine	4.55	1.70	26.45	2	920	174	5498	0	0	0	1	0	135	17	801	0
Meat	12.43	2.62	31.75	5	5156	965	13955	1	5	1	13	0	12425	3282	31554	4
Poultry and game	6.16	1.79	28.41	2	3483	527	18520	0	4	1	18	0	8800	3057	38006	3
Offal	0.44	0.88	5.58	0	162	219	3385	0	5	9	70	0	507	1052	9776	0
Delicatessen meats	8.16	1.37	23.77	3	2694	293	8235	0	9	1	31	0	6961	1332	21223	2
Fish	2.93	0.53	14.16	1	2578	171	10150	0	5	0	41	0	4267	1094	18180	1
Crustaceans and molluscs	0.96	0.51	7.83	0	4353	743	39806	1	19	2	318	1	3149	1756	29808	1
Vegetables (excluding potatoes)	13.55	3.61	30.23	5	43232	11387	98003	6	200	59	455	9	23971	6470	53360	8
Potatoes and potato products	8.73	1.79	23.22	3	7839	1265	22157	1	61	13	160	3	13616	2879	36748	5
Pulses	1.16	0.95	8.80	0	2574	1504	16971	0	36	31	290	2	3296	2354	23429	1
Fruit	18.52	2.51	53.25	7	20302	2346	65047	3	161	14	500	7	22225	3950	59592	7
Dried fruits, nuts and seeds	0.64	0.38	7.05	0	1249	726	13757	0	29	6	390	1	2604	997	3169	1
Ice creams, sorbets and frozen desserts	1.66	2.34	21.09	1	3786	5394	48542	1	9	12	109	0	1775	2526	22738	1
Chocolate	2.80	0.52	38.83	1	1710	326	16374	0	20	3	274	1	3189	609	43183	1
Sugars and sugar derivatives	5.48	0.67	18.65	2	1709	158	6234	0	35	0	147	2	1236	82	4967	0
Water	9.13	0.79	28.00	3	91580	6790	369057	12	4	1	10	0	17902	661	77215	6
Non-alcoholic beverages	3.37	0.66	28.76	1	4657	707	48600	1	23	0	402	1	4397	128	44860	1
Alcoholic beverages	20.18	1.73	80.03	7	19698	1628	74100	3	159	9	614	7	19662	1411	72994	7
Coffee	9.03	0.79	31.04	3	40023	745	207579	5	114	8	326	5	23856	1474	72077	8
Other hot beverages	2.71	0.27	18.27	1	23983	928	224840	3	143	12	989	6	3948	446	26064	1
Pizzas, quiches and savoury pastries	2.20	3.17	19.82	1	9099	13886	86786	1	14	14	162	1	1940	2536	21179	1
Sandwiches and snacks	0.40	1.54	25.67	0	551	2210	34185	0	5	15	294	0	409	1343	22904	0
Soups and broths	10.97	1.95	43.28	4	19963	5036	72800	3	82	22	298	4	11625	3396	43191	4
Mixed dishes	6.88	2.45	44.14	2	11049	2848	72861	2	43	24	230	2	6604	2895	38511	2
Dairy-based desserts	3.59	2.20	23.53	1	16989	9986	128888	2	20	5	200	1	4806	2186	25045	2
Composites and cooked fruit	2.33	1.12	17.32	1	10021	951	109104	1	19	4	183	1	1336	727	10481	0
Seasonings and sauces	5.56	0.99	19.77	2	3007	523	10481	0	11	1	44	0	2629	275	10536	1
Misc. foods	0.00	2.38	2.38	0	15	8588	8588	0	0	95	95	0	25	14357	14357	0
TOTAL	275.32	185.18	393.89	100	741970	369331	1241101	100	2237	1247	3590	100	297359	187161	451164	100

Food group	Cu			Zn			Li			Na						
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)			
Bread and dried bread products	154	52	323	8	750	258	1565	10	0.91	0.30	1.87	2	1021334	308950	2162179	37
Breakfast cereals	2	3	77	0	10	19	436	0	0.01	0.02	0.49	0	1890	3084	107900	0
Pasta	81	22	260	4	102	26	331	1	1.14	0.29	3.75	2	59353	15964	191571	2
Rice and wheat products	24	12	145	1	54	41	325	1	0.71	0.31	3.39	1	24932	9331	104979	1
Croissant-like pastries	5	3	86	0	35	24	447	0	0.04	0.03	0.46	0	30098	21054	387386	1
Sweet and savoury biscuits and bars	4	1	44	0	16	4	168	0	0.03	0.01	0.26	0	13380	2579	91043	0
Pastries and cakes	18	8	83	1	78	25	365	1	0.21	0.07	1.03	0	54836	23807	242625	2
Milk	7	1	39	0	279	44	1589	4	0.22	0.03	1.31	0	31150	4177	188100	1
Ultra-fresh dairy products	7	1	27	0	265	20	927	4	0.33	0.03	1.18	1	31518	2675	113867	1
Cheese	16	2	47	1	587	93	1489	8	0.11	0.02	0.31	0	203241	22803	546439	7
Eggs and egg products	13	4	41	1	232	86	738	3	0.20	0.07	0.72	0	35192	8315	125857	1
Butter	3	0	8	0	9	1	25	0	0.16	0.02	0.52	0	24571	332	152300	1
Oils	1	0	1	0	3	0	10	0	0.00	0.00	0.01	0	90	5	421	0
Margarine	1	0	3	0	5	2	29	0	0.02	0.01	0.11	0	12445	4671	71006	0
Meat	34	7	83	2	1797	297	4917	24	0.15	0.03	0.41	0	31580	7804	79078	1
Poultry and game	23	5	124	1	337	86	1497	5	0.07	0.01	0.40	0	24592	8412	109785	1
Offal	203	496	3287	11	116	223	2080	2	0.01	0.02	0.09	0	2069	3705	44958	0
Delicatessen meats	35	3	131	2	567	102	1804	8	0.14	0.03	0.44	0	288911	49604	922446	11
Fish	9	1	37	0	54	7	262	1	0.12	0.01	0.73	0	38742	7016	231179	1
Crustaceans and molluscs	25	3	272	1	292	52	3646	4	0.27	0.11	2.69	1	19288	8036	174651	1
Vegetables (excluding potatoes)	81	22	184	4	283	68	659	4	2.61	0.68	6.12	5	97542	5029	268992	4
Potatoes and potato products	51	10	130	3	134	30	359	2	0.89	0.11	2.67	2	42118	317	140630	2
Pulses	20	16	157	1	79	67	572	1	0.43	0.24	3.33	1	10283	5336	96857	0
Fruit	106	16	275	6	149	18	479	2	1.49	0.07	5.04	3	2649	200	8747	0
Dried fruits, nuts and seeds	16	5	204	1	46	6	632	1	0.04	0.01	0.55	0	5403	473	75738	0
Ice creams, sorbets and frozen desserts	8	11	97	0	21	29	263	0	0.05	0.07	0.67	0	3017	4301	38706	0
Chocolate	22	2	314	1	35	6	482	0	0.02	0.00	0.22	0	802	34	8726	0
Sugars and sugar derivatives	4	0	18	0	14	1	49	0	0.10	0.01	0.32	0	754	81	2315	0
Water	60	5	235	3	49	5	200	1	16.15	0.69	54.61	33	14292	1332	46509	1
Non-alcoholic beverages	10	0	92	1	13	1	123	0	0.35	0.04	3.65	1	1824	109	15188	0
Alcoholic beverages	19	2	71	1	178	9	709	2	1.29	0.09	5.11	3	3681	248	13523	0
Coffee	629	45	1975	33	62	4	199	1	7.44	0.52	21.63	15	4075	223	10984	0
Other hot beverages	59	4	477	3	32	2	221	0	7.80	0.07	58.23	16	3911	523	27125	0
Pizzas, quiches and savoury pastries	6	7	65	0	74	115	763	1	0.09	0.07	1.10	0	46852	65371	428464	2
Sandwiches and snacks	1	4	70	0	16	55	736	0	0.01	0.04	0.50	0	9227	28900	484571	0
Soups and broths	68	13	262	4	134	43	514	2	4.72	0.39	20.42	10	272523	74857	1083857	10
Mixed dishes	34	10	228	2	419	66	3778	6	0.65	0.16	4.09	1	99693	31971	551529	4
Dairy-based desserts	15	2	100	1	84	48	626	1	0.11	0.07	0.86	0	13502	7676	148200	0
Compotes and cooked fruit	10	5	69	1	9	4	73	0	0.06	0.02	0.53	0	267	79	1899	0
Seasonings and sauces	5	1	18	0	21	3	86	0	0.17	0.02	0.62	0	157605	19082	691200	6
Misc. foods	0	25	25	0	0	178	178	0	0.00	0.40	0.40	0	26	14893	14893	0
TOTAL	1885	778	3801	100	7437	4198	12403	100	49.31	16.06	97.99	100	2739257	1409111	4598996	100

Food group	Mo			Se			K			Fe				
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	
Bread and dried bread products	18.8	6.5	38.6	3.6	1.1	7.5	286785	94757	595000	10	1554	516	3193	21
Breakfast cereals	0.2	0.4	8.6	0.0	0.1	2.5	4783	8893	207500	0	30	32	2310	0
Pasta	2.4	0.6	8.0	0.7	0.2	2.3	13086	3329	42606	0	183	46	593	2
Rice and wheat products	1.9	0.7	8.3	2	0.4	2.0	7551	4150	47100	0	51	29	353	1
Croissant-like pastries	0.6	0.5	8.3	1	0.1	1.7	10758	8457	141429	0	74	46	1352	1
Sweet and savoury biscuits and bars	0.5	0.1	4.0	0.1	0.0	0.7	9395	1850	106786	0	34	11	406	0
Pastries and cakes	1.8	0.6	7.6	2	0.6	2.6	44208	18400	223071	2	231	71	1558	3
Milk	3.4	0.4	20.9	3	1.8	10.7	120047	15009	736800	4	28	4	200	0
Ultra-fresh dairy products	3.4	0.5	12.5	4	1.7	5.9	119637	9939	417857	4	40	3	146	1
Cheese	2.3	0.3	6.2	2	0.8	2.2	40708	5553	107961	1	31	5	82	0
Eggs and egg products	1.4	0.5	4.8	1	1.0	4.2	31160	8331	118989	1	312	125	1007	4
Butter	0.5	0.1	1.5	1	0.4	1.2	4162	545	12798	0	7	1	31	0
Oils	0.1	0.0	0.2	0	0.3	0.8	75	3	360	0	2	0	7	0
Margarine	0.2	0.0	1.3	0	0.2	1.1	2706	888	16931	0	4	1	29	0
Meat	0.7	0.1	2.0	1	1.1	3.3	160638	44175	493339	6	677	96	2056	9
Poultry and game	1.0	0.2	4.9	1	0.8	3.9	85271	26831	352328	3	252	46	1380	3
Offal	1.7	3.1	31.9	2	0.6	10.4	6358	13250	11857	0	100	245	1641	1
Delicatessen meats	1.7	0.1	6.8	2	0.9	2.3	99061	17825	328396	3	379	46	1271	5
Fish	0.3	0.0	2.3	0	0.1	1.3	39696	10929	195605	1	59	5	353	1
Crustaceans and molluscs	1.0	0.1	11.4	1	0.9	1.1	8918	5246	89866	0	94	43	760	1
Vegetables (excluding potatoes)	9.1	1.6	24.0	9	3.1	6.6	317670	87089	736269	11	646	158	1602	9
Potatoes and potato products	2.9	0.7	8.0	3	1.5	4.3	223120	50464	643393	8	198	39	504	3
Pulses	9.1	6.3	80.9	9	0.2	1.4	19536	12786	167143	1	123	88	1213	2
Fruit	8.3	0.5	31.5	9	4.7	12.0	345710	56406	973189	12	251	43	696	3
Dried fruits, nuts and seeds	1.4	0.1	19.5	1	0.1	0.6	17085	10423	190327	1	34	18	387	0
Ice creams, sorbets and frozen desserts	0.4	0.6	5.2	0	0.1	1.4	13214	18771	168943	0	205	292	2630	3
Chocolate	0.3	0.1	4.0	0	0.0	0.6	13190	3399	167336	0	286	30	4145	4
Sugars and sugar derivatives	0.7	0.1	3.2	1	0.5	1.7	17308	673	69168	1	32	3	120	0
Water	2.2	0.2	6.6	2	1.9	4.3	4589	318	21551	0	32	3	142	0
Non-alcoholic beverages	0.8	0.1	10.5	1	1.1	10.0	54824	972	557800	2	52	3	318	1
Alcoholic beverages	5.9	0.4	22.8	6	4.9	17.7	145816	9750	545490	5	434	25	1700	6
Coffee	1.0	0.1	3.5	1	5.1	13.4	232671	13650	702000	8	48	3	174	1
Other hot beverages	0.8	0.1	5.5	1	3.4	23.6	16499	1873	101507	1	40	2	344	1
Pizzas, quiches and savoury pastries	0.7	1.2	7.5	1	0.2	1.8	17599	26514	165714	1	60	90	622	1
Sandwiches and snacks	0.1	0.5	6.7	0	0.1	1.9	3579	12200	198371	0	14	43	806	0
Soups and broths	3.3	0.7	13.8	3	3.2	11.4	182302	40661	749314	6	213	57	782	3
Mixed dishes	2.9	1.2	21.3	3	0.7	4.2	63029	24214	395911	2	291	75	2192	4
Dairy-based desserts	1.1	0.7	7.2	1	0.5	3.6	39081	22350	246286	1	188	67	1545	3
Composites and cooked fruit	0.9	0.1	8.2	1	0.6	4.6	24244	14100	185143	1	25	13	195	0
Seasonings and sauces	0.4	0.1	1.5	0	0.3	1.1	16375	1204	71893	1	55	10	211	1
Misc. foods	0.0	4.7	4.7	0	0.0	0.3	32	18161	18161	0	1	311	311	0
TOTAL	96.4	53.5	151.2	100	64.4	37.6	2862472	1842324	4389837	100	7370	4149	12206	100

Table A10: Estimated exposure (mean and P95) in children aged 3 to 6 years to inorganic contaminants (µg/kg bw/day)

Food group	As			Asi			Pb			Cd			Al		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LH)*	P95 (LH)*	Contrib (LH)*	Mean (HH)*	P95 (HH)*	Contrib (HH)*	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	0.038	0.107	2	0.008	0.008	0.021	0.008	0.021	2	0.024	0.066	6	0.0339	0.0861	10
Breakfast cereals	0.007	0.035	0	0.001	0.007	0.007	0.001	0.007	0	0.002	0.007	0	0.0032	0.0168	1
Pasta	0.018	0.050	1	0.004	0.004	0.010	0.004	0.010	1	0.004	0.012	1	0.0274	0.0758	8
Rice and wheat products	0.020	0.065	1	0.005	0.005	0.016	0.005	0.016	1	0.003	0.008	1	0.0081	0.0258	2
Croissant-like pastries	0.017	0.060	1	0.003	0.003	0.012	0.003	0.012	1	0.008	0.027	2	0.0100	0.0373	3
Sweet and savoury biscuits and bars	0.022	0.070	1	0.004	0.004	0.014	0.004	0.014	1	0.011	0.039	3	0.0189	0.0571	6
Pastries and cakes	0.026	0.079	1	0.005	0.005	0.016	0.005	0.016	1	0.009	0.035	2	0.0120	0.0375	4
Milk	0.135	0.450	7	0.061	0.122	0.202	0.054	0.136	14	0.056	0.251	14	0.0128	0.0421	4
Ultra-fresh dairy products	0.060	0.151	3	0.027	0.054	0.068	0.014	0.036	6	0.020	0.067	5	0.0072	0.0201	2
Cheese	0.016	0.052	1	0.007	0.014	0.023	0.004	0.023	2	0.006	0.020	1	0.0021	0.0070	1
Eggs and egg products	0.006	0.035	0	0.000	0.001	0.002	0.004	0.004	0	0.001	0.010	0	0.0005	0.0031	0
Butter	0.007	0.024	0	0.005	0.007	0.016	0.007	0.024	1	0.003	0.011	1	0.0003	0.0009	0
Oils	0.005	0.016	0	0.003	0.005	0.009	0.016	0.016	1	0.001	0.004	0	0.0002	0.0005	0
Margarine	0.003	0.019	0	0.001	0.003	0.010	0.001	0.010	0	0.001	0.014	0	0.0001	0.0012	0
Meat	0.031	0.078	2	0.001	0.003	0.002	0.007	0.007	0	0.012	0.050	3	0.0017	0.0055	1
Poultry and game	0.013	0.046	1	0.000	0.004	0.000	0.014	0.014	0	0.003	0.016	0	0.0007	0.0029	0
Offal	0.000	0.019	0	0.000	0.000	0.001	0.002	0.002	0	0.000	0.011	0	0.0005	0.0019	0
Delicatessen meats	0.030	0.088	2	0.002	0.005	0.004	0.013	0.013	0	0.010	0.032	3	0.0032	0.0132	1
Fish	0.801	2.849	44	0.006	0.006	0.020	0.020	0.020	1	0.003	0.012	1	0.0039	0.0181	1
Crustaceans and molluscs	0.110	1.430	6	0.002	0.002	0.027	0.027	0.027	0	0.004	0.096	1	0.0049	0.1039	1
Vegetables (excluding potatoes)	0.030	0.081	2	0.019	0.022	0.052	0.058	0.058	4	0.024	0.074	6	0.0287	0.0962	8
Potatoes and potato products	0.021	0.051	1	0.006	0.014	0.015	0.035	0.035	1	0.009	0.025	2	0.0453	0.1013	13
Pulses	0.002	0.028	0	0.001	0.002	0.018	0.020	0.020	0	0.003	0.057	1	0.0018	0.0247	1
Fruit	0.031	0.097	2	0.015	0.017	0.045	0.054	0.054	3	0.014	0.037	4	0.0087	0.0347	3
Dried fruits, nuts and seeds	0.001	0.010	0	0.000	0.000	0.001	0.001	0.001	0	0.001	0.011	0	0.0007	0.0131	0
Ice creams, sorbets and frozen desserts	0.012	0.095	1	0.006	0.011	0.043	0.085	0.085	1	0.004	0.030	1	0.0045	0.0314	1
Chocolate	0.031	0.138	2	0.006	0.009	0.028	0.039	0.039	1	0.006	0.026	2	0.0069	0.0278	2
Sugars and sugar derivatives	0.007	0.023	0	0.001	0.002	0.005	0.006	0.006	0	0.003	0.012	1	0.0069	0.0420	2
Water	0.099	0.284	5	0.099	0.099	0.284	0.284	0.284	22	0.038	0.088	10	0.0071	0.0204	2
Non-alcoholic beverages	0.050	0.145	3	0.050	0.050	0.145	0.145	0.145	11	0.043	0.123	11	0.0047	0.0162	1
Alcoholic beverages	0.000	0.012	0	0.000	0.000	0.012	0.012	0.012	0	0.000	0.013	0	0.0000	0.0033	0
Coffee	0.000	0.023	0	0.000	0.000	0.023	0.023	0.023	0	0.000	0.008	0	0.0000	0.0013	0
Other hot beverages	0.010	0.062	1	0.010	0.010	0.062	0.062	0.062	2	0.005	0.020	1	0.0034	0.0191	1
Pizzas, quiches and savoury pastries	0.020	0.113	1	0.004	0.004	0.023	0.023	0.023	1	0.004	0.020	1	0.0065	0.0380	2
Sandwiches and snacks	0.009	0.167	0	0.002	0.002	0.033	0.033	0.033	0	0.002	0.034	0	0.0038	0.0417	1
Soups and broths	0.020	0.166	1	0.013	0.015	0.106	0.119	0.119	3	0.012	0.171	3	0.0097	0.0766	3
Mixed dishes	0.066	0.429	4	0.033	0.033	0.214	0.214	0.214	8	0.013	0.052	3	0.0226	0.0875	7
Dairy-based desserts	0.033	0.199	2	0.015	0.030	0.089	0.179	0.179	3	0.008	0.041	2	0.0096	0.0422	3
Compotes and cooked fruit	0.007	0.032	0	0.003	0.004	0.015	0.018	0.018	1	0.017	0.101	4	0.0017	0.0670	3
Seasonings and sauces	0.012	0.037	1	0.012	0.012	0.037	0.037	0.037	3	0.005	0.020	1	0.0052	0.0244	2
Misc. foods	0.000	0.005	0	0.000	0.000	0.005	0.005	0.005	0	0.000	0.006	0	0.0000	0.0065	0
TOTAL	1.825	4.282	100	0.440	0.589	0.941	1.160	1.160	100	0.395	0.753	100	0.3385	0.5463	100

* LH: low hypothesis; HH: high hypothesis.

Food group	Hg			Sb			Ag		
	Mean (LB)	P95 (LB)	Contrib (UB)	Mean (LB)	P95 (UB)	Contrib (LB)	Mean (LB)	P95 (LB)	Contrib (UB)
Bread and dried bread products	0.0000	0.0080	0.0000	0.0015	0.0019	0.0041	0.0000	0.0000	0.183
Breakfast cereals	0.0000	0.0029	0.0000	0.0005	0.0007	0.0026	0.0000	0.0000	0.120
Pasta	0.0000	0.0085	0.0000	0.0035	0.0098	0.0101	0.070	0.197	0.400
Rice and wheat products	0.0000	0.0055	0.0000	0.0017	0.0018	0.0061	0.021	0.071	0.213
Croissant-like pastries	0.0006	0.0043	0.0030	0.0015	0.0015	0.0062	0.031	0.168	0.227
Sweet and savoury biscuits and bars	0.0012	0.0054	0.0050	0.0026	0.0027	0.0091	0.086	0.108	0.344
Pastries and cakes	0.0009	0.0080	0.0048	0.0061	0.0062	0.0237	0.069	0.118	0.307
Milk	0.0064	0.0591	0.0595	0.0015	0.0068	0.0066	0.263	0.684	0.995
Ultra-fresh dairy products	0.0006	0.0256	0.0067	0.0021	0.0043	0.0084	0.164	0.344	0.683
Cheese	0.0002	0.0040	0.0009	0.0008	0.0010	0.0027	0.074	0.099	0.321
Eggs and egg products	0.0000	0.0024	0.0009	0.0001	0.0003	0.0005	0.018	0.033	0.192
Butter	0.0001	0.0023	0.0005	0.0006	0.0007	0.0019	0.008	0.026	0.077
Oils	0.0000	0.0019	0.0000	0.0001	0.0003	0.0004	0.009	0.025	0.078
Margarine	0.0000	0.0006	0.0000	0.0002	0.0003	0.0019	0.001	0.007	0.018
Meat	0.0000	0.0072	0.0000	0.0019	0.0024	0.0075	0.064	0.111	0.238
Poultry and game	0.0000	0.0036	0.0000	0.0004	0.0007	0.0023	0.046	0.068	0.246
Offal	0.0000	0.0001	0.0000	0.0000	0.0000	0.0015	0.003	0.003	0.239
Delicatessen meats	0.0019	0.0064	0.0141	0.0008	0.0011	0.0027	0.045	0.075	0.180
Fish	0.0376	0.0381	0.2147	0.0008	0.0009	0.0037	0.037	0.156	0.244
Crustaceans and molluscs	0.0007	0.0008	0.0113	0.0001	0.0001	0.0013	0.083	0.083	2.006
Vegetables (excluding potatoes)	0.0005	0.0155	0.0034	0.0019	0.0031	0.0075	0.136	0.240	0.442
Potatoes and potato products	0.0000	0.0104	0.0000	0.0009	0.0019	0.0023	0.090	0.162	0.339
Pulses	0.0000	0.0009	0.0008	0.0004	0.0004	0.0049	0.007	0.013	0.100
Fruit	0.0000	0.0169	0.0000	0.0024	0.0040	0.0126	0.186	0.299	0.666
Dried fruits, nuts and seeds	0.0000	0.0002	0.0000	0.0000	0.0000	0.0001	0.000	0.002	0.013
Ice creams, sorbets and frozen desserts	0.0000	0.0022	0.0000	0.0010	0.0011	0.0072	0.071	0.081	0.562
Chocolate	0.0030	0.0043	0.0143	0.0016	0.0016	0.0065	0.013	0.028	0.064
Sugars and sugar derivatives	0.0000	0.0022	0.0000	0.0046	0.0046	0.0149	0.039	0.055	0.135
Water	0.0005	0.0909	0.0000	0.0017	0.0106	0.0075	0.186	0.938	0.691
Non-alcoholic beverages	0.0000	0.0332	0.0000	0.0030	0.0057	0.0095	0.155	0.433	0.492
Alcoholic beverages	0.0000	0.0001	0.0000	0.0000	0.0000	0.0037	0.000	0.011	0.063
Coffee	0.0000	0.0001	0.0000	0.0000	0.0000	0.0022	0.000	0.001	0.105
Other hot beverages	0.0006	0.0033	0.0028	0.0007	0.0011	0.0082	0.022	0.057	0.149
Pizzas, quiches and savoury pastries	0.0000	0.0026	0.0000	0.0008	0.0009	0.0049	0.018	0.039	0.107
Sandwiches and snacks	0.0002	0.0016	0.0052	0.0002	0.0003	0.0022	0.005	0.016	0.067
Soups and broths	0.0000	0.0080	0.0000	0.0013	0.0018	0.0131	0.070	0.127	0.902
Mixed dishes	0.0005	0.0084	0.0049	0.0024	0.0027	0.0105	0.116	0.166	0.486
Dairy-based desserts	0.0022	0.0102	0.0174	0.0025	0.0028	0.0120	0.017	0.087	0.109
Compotes and cooked fruit	0.0010	0.0079	0.0064	0.0018	0.0018	0.0081	0.113	0.160	0.813
Seasonings and sauces	0.0003	0.0021	0.0015	0.0002	0.0003	0.0006	0.004	0.020	0.018
Misc. foods	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.000	0.000	0.012
TOTAL	0.0590	0.4173	0.2015	0.0541	0.0817	0.0853	2.341	5.121	8.495

Food group	Ba			Sn			Ga			Ge			
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LB)	P95 (LB)	Contrib (LB)	Mean (UB)	P95 (LB)	Contrib (LB)	Contrib (UB)
Bread and dried bread products	1.25	3.34	9	0.022	0.068	0	0.0000	0.0016	0.0044	0.0036	0.0033	0.0098	2
Breakfast cereals	0.28	2.02	2	0.003	0.017	0	0.0000	0.0006	0.0029	0.0016	0.0058	0.0077	1
Pasta	1.00	2.82	7	0.020	0.057	0	0.0000	0.0017	0.0048	0.0047	0.0094	0.0133	4
Rice and wheat products	0.26	1.09	2	0.006	0.020	0	0.0000	0.0011	0.0035	0.0024	0.0025	0.0076	1
Croissant-like pastries	0.46	1.49	3	0.013	0.065	0	0.0001	0.0009	0.0027	0.0007	0.0025	0.0060	1
Sweet and savoury biscuits and bars	0.66	2.18	5	0.010	0.030	0	0.0000	0.0008	0.0025	0.0029	0.0080	0.0090	3
Pastries and cakes	0.62	2.00	4	0.009	0.034	1	0.0001	0.0016	0.0050	0.0013	0.0051	0.0111	2
Milk	0.84	2.78	6	0.008	0.043	1	0.0000	0.0105	0.0283	0.0051	0.0204	0.0300	6
Ultra-fresh dairy products	0.43	1.01	3	0.023	0.030	2	0.0000	0.0050	0.0126	0.0021	0.0095	0.0221	3
Cheese	0.32	1.06	2	0.113	0.032	1	0.0000	0.0008	0.0025	0.0006	0.0016	0.0023	1
Eggs and egg products	0.17	0.90	1	0.009	0.051	0	0.0000	0.0005	0.0022	0.0001	0.0036	0.0061	1
Butter	0.06	0.15	0	0.005	0.018	0	0.0019	0.0023	0.0094	0.0063	0.0066	0.0221	7
Oils	0.05	0.18	0	0.004	0.013	0	0.0000	0.0004	0.0012	0.0003	0.0009	0.0029	0
Margarine	0.02	0.14	0	0.005	0.036	0	0.0000	0.0002	0.0013	0.0004	0.0025	0.0032	0
Meat	0.07	0.19	1	0.066	0.127	1	0.0000	0.0014	0.0034	0.0054	0.0141	0.0141	5
Poultry and game	0.04	0.17	0	0.008	0.030	0	0.0000	0.0007	0.0025	0.0013	0.0064	0.0077	2
Offal	0.00	0.03	0	0.000	0.021	0	0.0000	0.0004	0.0007	0.0000	0.0001	0.0040	0
Delicatessen meats	0.07	0.25	1	0.026	0.082	0	0.0000	0.0009	0.0025	0.0029	0.0090	0.0106	3
Fish	0.08	0.31	1	0.014	0.067	0	0.0000	0.0006	0.0021	0.0013	0.0019	0.0056	2
Crustaceans and molluscs	0.01	0.26	0	0.001	0.009	0	0.0001	0.0001	0.0024	0.0002	0.0002	0.0073	0
Vegetables (excluding potatoes)	0.99	3.01	7	0.959	5.106	9	0.0000	0.0030	0.0079	0.0018	0.0061	0.0168	2
Potatoes and potato products	0.21	0.53	1	0.071	0.291	1	0.0000	0.0021	0.0053	0.0025	0.0051	0.0120	3
Pulses	0.20	2.65	1	0.005	0.066	0	0.0000	0.0002	0.0024	0.0002	0.0004	0.0027	0
Fruit	0.82	2.44	6	1.761	0.124	17	0.0000	0.0034	0.0083	0.0038	0.0081	0.0139	5
Dried fruits, nuts and seeds	0.07	1.14	0	0.001	0.009	0	0.0000	0.0000	0.0004	0.0000	0.0001	0.0010	0
Ice creams, sorbets and frozen desserts	0.27	2.04	2	0.115	1.787	1	0.0000	0.0004	0.0033	0.0004	0.0030	0.0087	1
Chocolate	0.64	2.74	4	0.004	0.017	0	0.0000	0.0004	0.0020	0.0020	0.0090	0.0090	2
Sugars and sugar derivatives	0.14	0.63	1	0.453	3.132	4	0.0000	0.0004	0.0016	0.0011	0.0039	0.0050	1
Water	0.78	1.93	5	0.031	0.127	0	0.0000	0.0181	0.0408	0.0206	0.0436	0.1017	25
Non-alcoholic beverages	1.02	3.42	7	0.034	0.128	0	0.0000	0.0066	0.0169	0.0072	0.0169	0.0515	9
Alcoholic beverages	0.00	0.07	0	0.000	0.005	0	0.0000	0.0000	0.0015	0.0000	0.0011	0.0034	0
Coffee	0.00	0.16	0	0.000	0.017	0	0.0000	0.0000	0.0020	0.0001	0.0033	0.0046	0
Other hot beverages	0.27	1.64	2	0.008	0.039	0	0.0000	0.0009	0.0066	0.0019	0.0040	0.0160	1
Pizzas, quiches and savoury pastries	0.22	1.22	2	0.041	0.248	0	0.0000	0.0005	0.0028	0.0007	0.0041	0.0085	1
Sandwiches and snacks	0.10	1.52	1	0.004	0.063	0	0.0000	0.0003	0.0030	0.0005	0.0081	0.0105	1
Soups and broths	0.32	2.77	2	0.021	0.229	0	0.0000	0.0016	0.0101	0.0005	0.0029	0.0214	1
Mixed dishes	0.62	2.42	4	0.311	1.259	3	0.0000	0.0016	0.0064	0.0027	0.0048	0.0193	3
Dairy-based desserts	0.64	3.08	4	0.092	0.076	1	0.0000	0.0017	0.0064	0.0027	0.0163	0.0198	3
Composites and cooked fruit	0.35	1.75	2	5.488	37.495	53	0.0002	0.0016	0.0031	0.0024	0.0022	0.0107	0
Seasonings and sauces	0.11	0.37	1	0.171	1.052	2	0.0000	0.0004	0.0011	0.0005	0.0009	0.0031	1
Misc. foods	0.00	0.24	0	0.000	0.005	0	0.0000	0.0000	0.0003	0.0000	0.0002	0.0006	0
TOTAL	14.45	22.54	100	10.314	42.603	100	0.0026	0.0750	0.1082	0.0838	0.1791	0.3082	100

Food group	Sr			Te			V			Ni			Co		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LB)	P95 (LB)	Contrib (LB)	Mean (UB)	P95 (UB)	Contrib (UB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	1.14	3.10	3	0.0014	0.0030	0.0079	0.0030	0.0036	2	0.073	0.204	5	0.09	0.25	2
Breakfast cereals	0.35	1.76	1	0.0008	0.0011	0.0041	0.0011	0.0056	1	0.005	0.027	0	0.10	0.53	2
Pasta	1.38	3.87	3	0.0009	0.0026	0.0071	0.0026	0.0071	1	0.030	0.079	2	0.12	0.34	2
Rice and wheat products	0.50	1.60	1	0.0005	0.0016	0.0051	0.0016	0.0051	1	0.027	0.115	2	0.05	0.16	1
Croissant-like pastries	0.48	1.66	1	0.0004	0.0011	0.0039	0.0011	0.0039	1	0.062	0.238	4	0.10	0.40	2
Sweet and savoury biscuits and bars	1.06	3.84	2	0.0017	0.0020	0.0057	0.0020	0.0063	3	0.036	0.111	2	0.33	1.17	6
Pastries and cakes	0.96	3.74	2	0.0013	0.0026	0.0084	0.0026	0.0084	2	0.030	0.115	2	0.23	0.78	4
Milk	3.24	8.10	8	0.0053	0.0143	0.0380	0.0143	0.0380	9	0.163	0.545	11	0.38	1.33	7
Ultra-fresh dairy products	2.04	4.86	5	0.0019	0.0063	0.0161	0.0063	0.0161	3	0.076	0.236	5	0.34	0.95	6
Cheese	1.30	3.80	3	0.0047	0.0051	0.0171	0.0051	0.0171	8	0.031	0.097	2	0.18	0.57	3
Eggs and egg products	0.25	1.36	1	0.0004	0.0008	0.0035	0.0008	0.0041	1	0.014	0.087	1	0.03	0.21	1
Butter	0.06	0.28	0	0.0209	0.0211	0.0769	0.0211	0.0769	34	0.021	0.103	1	0.03	0.10	1
Oils	0.01	0.02	0	0.0005	0.0007	0.0024	0.0007	0.0024	1	0.003	0.009	0	0.02	0.06	0
Margarine	0.02	0.17	0	0.0001	0.0002	0.0009	0.0002	0.0017	0	0.005	0.038	0	0.00	0.04	0
Meat	0.13	0.33	0	0.0022	0.0032	0.0091	0.0032	0.0094	4	0.022	0.060	1	0.07	0.16	1
Poultry and game	0.06	0.24	0	0.0007	0.0012	0.0044	0.0012	0.0044	1	0.010	0.035	1	0.03	0.15	1
Offal	0.00	0.08	0	0.0000	0.0000	0.0013	0.0000	0.0016	0	0.000	0.020	0	0.00	0.05	0
Delicatessen meats	0.22	0.67	1	0.0016	0.0023	0.0057	0.0023	0.0064	3	0.057	0.143	4	0.08	0.28	1
Fish	0.69	2.08	2	0.0003	0.0008	0.0037	0.0008	0.0037	1	0.018	0.069	1	0.05	0.19	1
Crustaceans and molluscs	0.62	10.87	1	0.0001	0.0001	0.0014	0.0001	0.0016	0	0.009	0.186	1	0.01	0.10	0
Vegetables (excluding potatoes)	3.98	11.59	9	0.0013	0.0041	0.0112	0.0041	0.0112	2	0.064	0.202	4	0.32	0.88	6
Potatoes and potato products	0.89	2.18	2	0.0006	0.0026	0.0060	0.0026	0.0060	1	0.033	0.093	2	0.23	0.59	4
Pulses	0.46	7.30	1	0.0003	0.0004	0.0049	0.0004	0.0053	0	0.004	0.052	0	0.06	0.87	1
Fruit	1.72	5.23	4	0.0009	0.0041	0.0039	0.0041	0.0114	1	0.055	0.203	4	0.33	1.03	6
Dried fruits, nuts and seeds	0.11	1.68	0	0.0000	0.0000	0.0006	0.0000	0.0006	0	0.001	0.014	0	0.04	0.73	1
Ice creams, sorbets and frozen desserts	0.47	3.65	1	0.0002	0.0007	0.0016	0.0007	0.0049	0	0.013	0.093	1	0.15	1.16	3
Chocolate	1.03	4.42	2	0.0011	0.0012	0.0044	0.0012	0.0052	2	0.024	0.105	2	0.46	2.03	8
Sugars and sugar derivatives	0.18	0.78	0	0.0004	0.0008	0.0012	0.0008	0.0027	1	0.012	0.045	1	0.05	0.19	1
Water	9.99	43.21	23	0.0022	0.0201	0.0116	0.0201	0.0452	4	0.270	0.677	18	0.34	0.81	6
Non-alcoholic beverages	2.90	7.91	7	0.0023	0.0088	0.0072	0.0088	0.0235	4	0.096	0.273	6	0.19	0.56	3
Alcoholic beverages	0.00	0.09	0	0.0000	0.0000	0.0027	0.0000	0.0034	0	0.001	0.186	0	0.00	0.04	0
Coffee	0.00	0.41	0	0.0000	0.0000	0.0034	0.0000	0.0044	0	0.000	0.031	0	0.00	0.05	0
Other hot beverages	0.60	3.38	1	0.0010	0.0017	0.0051	0.0017	0.0104	2	0.019	0.131	1	0.23	1.35	4
Pizzas, quiches and savoury pastries	0.56	3.22	1	0.0000	0.0005	0.0000	0.0005	0.0028	0	0.032	0.181	2	0.06	0.35	1
Sandwiches and snacks	0.19	1.97	0	0.0001	0.0004	0.0016	0.0004	0.0034	0	0.013	0.157	1	0.03	0.25	0
Soups and broths	1.09	8.03	3	0.0005	0.0021	0.0054	0.0021	0.0161	1	0.037	0.362	2	0.08	0.81	1
Mixed dishes	1.84	7.87	4	0.0022	0.0034	0.0093	0.0034	0.0120	4	0.075	0.280	5	0.21	0.98	4
Dairy-based desserts	1.21	4.79	3	0.0016	0.0030	0.0078	0.0030	0.0122	3	0.032	0.164	2	0.51	2.46	9
Composites and cooked fruit	0.67	3.22	2	0.0008	0.0021	0.0036	0.0021	0.0091	1	0.011	0.048	1	0.08	0.36	1
Seasonings and sauces	0.42	1.73	1	0.0003	0.0006	0.0012	0.0006	0.0019	1	0.044	0.134	3	0.07	0.29	1
Misc. foods	0.00	0.78	0	0.0000	0.0000	0.0004	0.0000	0.0005	0	0.000	0.011	0	0.00	0.10	0
TOTAL	42.82	77.95	100	0.0615	0.1267	0.2077	0.1267	0.2077	100	1.530	2.821	100	5.71	9.16	100

Table A11: Estimated intake (mean, P5 and P95) of inorganic contaminants and minerals (µg/day) by children aged 3 to 6 years

Food group	Cr			Ca			Mn			Mg						
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)				
Bread and dried bread products	5.81	0.80	15.50	3	9919	855	31943	2	160	22	443	14	8890	1196	24563	5
Breakfast cereals	3.42	0.76	15.28	2	14355	2989	60782	2	25	6	115	2	2779	585	11700	1
Pasta	10.03	2.38	26.16	5	5059	1179	12964	1	93	22	239	8	8333	1943	21371	4
Rice and wheat products	5.11	0.84	18.90	3	2272	619	8041	0	55	15	178	5	3803	936	13164	2
Croissant-like pastries	5.80	1.29	20.30	3	5015	1318	17713	1	49	15	178	4	4007	1091	13029	2
Sweet and savoury biscuits and bars	5.56	0.91	17.04	3	5454	739	16023	1	74	9	229	7	8106	898	25940	4
Pastries and cakes	8.01	1.66	23.94	4	10966	1607	37349	2	51	12	173	5	6404	1311	20940	3
Milk	23.66	2.95	73.79	12	20154	26040	498893	32	6	1	14	1	23140	2868	57229	12
Ultra-fresh dairy products	12.93	2.97	33.49	7	104966	20223	248063	17	15	2	40	1	1219	2589	27813	6
Cheese	6.18	1.02	22.25	3	73639	12499	249101	12	2	0	8	0	3978	676	13273	2
Eggs and egg products	1.85	0.91	9.53	1	4449	1738	26707	1	3	1	18	0	1417	688	7659	1
Butter	5.62	0.54	15.41	3	1423	127	4153	0	0	0	1	0	211	15	736	0
Oils	7.54	0.93	26.18	4	77	6	281	0	0	0	1	0	10	1	33	0
Margarine	1.30	0.78	10.44	1	190	44	1995	0	0	0	0	0	27	4	299	0
Meat	7.56	1.42	18.96	4	2758	357	8693	0	3	0	8	0	7856	1669	18404	4
Poultry and game	3.11	1.02	9.71	2	2290	344	10378	0	2	1	6	0	5349	1740	17358	3
Offal	0.05	0.68	3.01	0	11	194	645	0	1	9	26	0	58	833	3754	0
Delicatessen meats	5.21	0.83	16.30	3	2328	187	7959	0	6	0	19	1	4020	835	10690	2
Fish	2.60	1.15	9.55	1	1636	248	5162	0	8	0	35	1	3685	1596	12763	2
Crustaceans and molluscs	0.21	0.18	3.08	0	1054	599	19075	0	3	1	52	0	528	669	6857	0
Vegetables (excluding potatoes)	6.30	0.84	17.63	3	1757	2375	49157	3	86	13	221	8	10508	1543	27636	5
Potatoes and potato products	5.77	1.39	14.69	3	6208	1174	15879	1	41	10	95	4	9088	2850	20286	5
Pulses	0.45	0.28	5.17	0	1027	1571	12571	0	15	14	185	1	1316	1733	17329	1
Fruit	6.00	0.76	18.77	3	6053	535	18197	1	71	4	225	6	9318	1089	26404	5
Dried fruits, nuts and seeds	0.17	0.13	2.68	0	333	266	5312	0	9	4	181	1	789	591	14291	0
Ice creams, sorbets and frozen desserts	3.00	1.93	24.99	2	6441	3356	45265	1	16	12	129	1	3042	1572	22500	2
Chocolat	4.90	0.92	20.03	3	8668	1303	35593	1	69	6	263	6	6848	1218	27316	4
Sugars and sugar derivatives	2.05	0.34	8.02	1	985	53	3876	0	10	0	60	1	714	24	2876	0
Water	4.94	0.59	13.50	3	41099	4510	140052	6	2	0	5	0	5843	501	18100	3
Non-alcoholic beverages	8.50	1.23	23.62	4	10333	586	31359	2	67	0	303	6	8814	206	30183	5
Alcoholic beverages	0.02	0.17	1.92	0	28	163	4700	0	0	2	10	0	13	152	1411	0
Coffee	0.02	0.41	1.58	0	126	851	19716	0	0	4	26	0	49	900	4222	0
Other hot beverages	2.44	0.20	18.61	1	13925	1181	78750	2	17	2	151	2	3871	357	23518	2
Pizzas, quiches and savoury pastries	2.78	1.59	17.75	1	11802	6043	74718	2	20	7	122	2	2684	1268	16725	1
Sandwiches and snacks	1.49	1.84	18.51	1	2347	2810	24049	0	14	25	177	1	1439	2685	16110	1
Soups and broths	2.31	0.78	19.81	1	4446	2843	27814	1	19	15	143	2	2785	2026	17627	1
Mixed dishes	7.01	1.62	26.86	4	14579	2848	49620	2	52	13	199	5	7745	1786	27778	4
Dairy-based desserts	7.47	2.20	30.59	4	25640	11012	91156	4	31	10	128	3	8826	3606	30576	5
Composites and cooked fruit	2.81	1.01	12.64	1	10610	951	68144	2	24	4	123	2	1748	579	8100	1
Seasonings and sauces	2.73	0.31	9.38	1	1654	225	4839	0	6	1	23	1	1522	137	5245	1
Misc. foods	0.00	0.63	0.63	0	7	2290	2290	0	0	25	25	0	12	3829	3829	0
TOTAL	192.70	125.45	268.83	100	632884	324522	1075910	100	1128	591	1820	100	191674	133801	271615	100

Food group	Cu			Zn			Li			Na						
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)			
Bread and dried bread products	33	5	88	5	159	21	439	3	0.20	0.03	0.57	1	213497	31264	583121	14
Breakfast cereals	7	1	33	1	45	9	187	1	0.04	0.01	0.19	0	12441	2936	55491	1
Pasta	91	22	238	13	112	26	285	2	1.26	0.29	3.22	8	67047	15964	175607	4
Rice and wheat products	30	9	97	4	72	20	249	1	0.87	0.24	2.86	5	31489	4666	104979	2
Croissant-like pastries	15	4	51	2	87	24	299	2	0.09	0.02	0.34	1	71948	17188	269889	5
Sweet and savoury biscuits and bars	32	3	99	5	95	15	292	2	0.17	0.02	0.50	1	5015	10040	139949	3
Pastries and cakes	25	5	83	4	120	25	374	2	0.23	0.04	0.71	1	75038	14000	226893	5
Milk	16	2	46	2	744	91	1858	14	0.64	0.07	1.76	4	82652	10320	209111	5
Ultra-fresh dairy products	10	2	24	1	356	81	831	7	0.46	0.08	1.11	3	41837	9553	96255	3
Cheese	6	1	20	1	268	42	882	5	0.07	0.01	0.24	0	83825	10329	311075	6
Eggs and egg products	7	3	35	1	117	55	574	2	0.10	0.06	0.54	1	19086	7339	129643	1
Butter	2	0	5	0	6	1	16	0	0.11	0.01	0.35	1	15164	177	104877	1
Oils	0	0	1	0	2	0	6	0	0.00	0.00	0.01	0	43	2	195	0
Margarine	0	0	1	0	1	1	11	0	0.00	0.00	0.03	0	3645	2102	28029	0
Meat	21	5	51	3	1203	257	2971	23	0.10	0.01	0.28	1	18758	4391	48299	1
Poultry and game	9	2	37	1	185	60	617	4	0.04	0.01	0.16	0	13910	4911	44638	1
Offal	21	307	1291	3	13	209	716	0	0.00	0.01	0.06	0	224	2477	11914	0
Delicatessen meats	18	2	53	3	341	65	930	7	0.11	0.01	0.40	1	159808	29762	469906	11
Fish	6	2	25	1	44	13	161	1	0.13	0.02	0.53	1	31661	4009	112886	2
Crustaceans and molluscs	3	3	55	0	23	19	330	0	0.05	0.05	0.57	0	345	4799	49639	0
Vegetables (excluding potatoes)	33	5	83	5	137	17	388	3	1.21	0.12	3.27	7	50724	3063	142572	3
Potatoes and potato products	33	9	71	5	95	25	212	2	0.63	0.09	1.69	4	40012	671	113808	3
Pulses	8	7	96	1	32	27	399	1	0.17	0.21	2.44	1	4289	2807	48429	0
Fruit	38	5	121	5	61	7	178	1	0.51	0.01	2.04	3	1123	59	4676	0
Dried fruits, nuts and seeds	5	3	94	1	15	4	295	0	0.01	0.00	0.17	0	1782	338	35380	0
Ice creams, sorbets and frozen desserts	13	7	94	2	35	18	256	1	0.09	0.05	0.78	1	5098	2676	34133	0
Chocolate	36	5	134	5	70	12	281	1	0.05	0.01	0.23	0	4876	672	20164	0
Sugars and sugar derivatives	2	0	10	0	6	0	25	0	0.04	0.01	0.14	0	1426	31	5479	0
Water	41	1	134	6	28	2	97	1	5.79	0.41	14.80	36	7396	833	20471	0
Non-alcoholic beverages	19	1	62	3	23	1	77	0	0.90	0.07	2.60	6	4608	190	16009	0
Alcoholic beverages	0	0	2	0	0	1	7	0	0.00	0.01	0.07	0	6	25	1143	0
Coffee	1	16	142	0	0	2	11	0	0.02	0.28	1.44	0	8	129	722	0
Other hot beverages	16	2	93	2	69	7	519	1	0.18	0.01	1.10	1	6302	517	41593	0
Pizzas, quiches and savoury pastries	8	3	50	1	100	57	626	2	0.13	0.04	0.81	1	58374	32686	373386	4
Sandwiches and snacks	4	8	47	1	86	102	714	2	0.06	0.08	0.54	0	29507	57800	346800	2
Soups and broths	15	5	112	2	35	20	287	1	0.90	0.13	7.53	6	76518	37429	541929	5
Mixed dishes	30	5	119	4	287	58	1224	5	0.53	0.07	2.08	3	126552	34857	444004	8
Dairy-based desserts	31	7	105	4	135	58	478	3	0.17	0.07	0.59	1	18616	7800	64661	1
Composites and cooked fruit	11	4	51	2	12	3	61	0	0.09	0.02	0.47	1	355	79	1676	0
Seasonings and sauces	4	0	17	1	15	1	63	0	0.11	0.01	0.43	1	86869	7957	319550	6
Misc. foods	0	7	0	0	0	47	47	0	0.00	0.11	0.11	0	12	3971	3971	0
TOTAL	703	439	1118	100	5235	3120	7851	100	16.25	7.72	28.47	100	1520074	919747	2271344	100

Food group	Mo			Se			K			Fe						
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)				
	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)				
Bread and dried bread products	4.0	0.6	10.6	0.8	0.1	2.1	2	2	60632	8486	161229	3	328	45	880	6
Breakfast cereals	0.9	0.2	3.8	1	0.3	1.2	1	1	21701	4446	90225	1	217	50	990	4
Pasta	2.7	0.6	6.9	0.8	0.2	2.0	2	2	14378	3329	36614	1	201	46	510	4
Rice and wheat products	2.4	0.3	7.6	0.5	0.2	1.7	1	1	11237	2075	39981	1	72	15	250	1
Croissant-like pastries	1.5	0.3	5.2	0.3	0.1	1.2	1	1	27476	7964	94207	1	223	49	801	4
Sweet and savoury biscuits and bars	2.7	0.4	9.8	0.4	0.1	1.1	1	1	49848	7275	152211	3	267	25	829	5
Pastries and cakes	2.2	0.5	6.8	0.7	0.2	2.4	2	2	49571	9536	154932	3	335	61	1130	6
Milk	8.9	1.0	22.7	4.8	0.6	11.8	14	14	318794	37080	807857	17	81	10	230	2
Ultra-fresh dairy products	4.6	1.2	10.9	2.3	0.4	5.7	7	7	157671	32768	376014	8	54	10	137	1
Cheese	1.1	0.2	4.2	0.3	0.1	1.3	1	1	17661	2777	67943	1	16	2	56	0
Eggs and egg products	0.7	0.4	3.4	1	0.5	3.7	1	1	16852	3686	101271	1	150	68	755	3
Butter	0.3	0.0	0.9	0.3	0.0	0.8	1	1	2547	240	8400	0	4	0	21	0
Oils	0.0	0.0	0.1	0.2	0.0	0.6	0	0	34	2	158	0	1	0	4	0
Margarine	0.0	0.0	0.5	0.1	0.0	0.4	0	0	674	324	5354	0	2	0	17	0
Meat	0.4	0.1	1.2	0.7	0.1	1.6	2	2	102133	21200	260396	5	471	71	1337	9
Poultry and game	0.6	0.2	1.9	0.5	0.1	1.9	1	1	55559	16632	179589	3	99	26	382	2
Offal	0.2	2.9	13.0	0.1	0.9	3.3	0	0	720	10300	51371	0	14	92	1010	0
Delicatessen meats	1.0	0.1	3.2	0.5	0.1	1.3	1	1	58734	12664	158407	3	225	28	651	4
Fish	0.4	0.0	1.8	1.2	0.2	7.0	4	4	33238	10929	113788	2	48	14	186	1
Crustaceans and molluscs	0.3	0.0	5.5	0	0.2	3.6	1	1	1897	1805	28071	0	19	16	271	0
Vegetables (excluding potatoes)	5.0	0.5	13.1	1.4	0.2	3.4	4	4	132149	13000	351659	7	284	28	917	5
Potatoes and potato products	2.0	0.6	4.7	0.9	0.2	2.1	3	3	146227	45107	320196	8	131	36	316	3
Pulses	3.7	2.5	51.5	6	0.1	1.1	0	0	7794	8843	98143	0	44	48	539	1
Fruit	2.2	0.1	7.3	1.6	0.3	4.3	4	4	133145	16922	391743	7	92	14	273	2
Dried fruits, nuts and seeds	0.5	0.1	9.1	1	0.0	0.2	0	0	4479	3474	69486	0	9	8	155	0
Ice creams, sorbets and frozen desserts	0.7	0.4	5.3	1	0.2	1.7	1	1	23060	11680	190736	1	346	182	2309	7
Chocolate	0.9	0.1	4.0	2	0.0	0.7	1	1	37729	7179	156071	2	303	55	1325	6
Sugars and sugar derivatives	0.4	0.0	1.8	1	0.2	0.7	1	1	5825	192	29571	0	22	1	86	0
Water	1.1	0.1	2.4	8.3	1.0	16.5	23	23	2547	208	11236	0	20	1	94	0
Non-alcoholic beverages	1.2	0.1	3.3	3.1	0.4	9.4	9	9	114662	1021	371308	6	73	3	229	1
Alcoholic beverages	0.0	0.1	0.4	0	0.0	0.7	0	0	248	1181	43286	0	4	4	29	0
Coffee	0.0	0.0	0.2	0	0.2	1.0	0	0	513	8000	41271	0	0	1	6	0
Other hot beverages	0.7	0.1	5.1	0.4	0.0	3.3	1	1	32599	2191	218606	2	121	4	825	2
Pizzas, quiches and savoury pastries	1.0	0.6	6.2	0.2	0.1	1.6	1	1	22694	13257	143886	1	81	45	507	2
Sandwiches and snacks	0.5	0.7	5.7	1	0.1	3.3	0	0	12178	16440	146400	1	52	54	515	1
Soups and broths	0.9	0.6	6.1	0.7	0.7	4.8	2	2	42208	10893	271857	2	53	38	373	1
Mixed dishes	3.5	0.8	14.4	6	0.7	2.7	2	2	70903	14714	256161	4	231	49	1011	4
Dairy-based desserts	1.8	0.7	6.0	0.7	0.4	2.7	2	2	68467	26500	237239	4	417	90	1599	8
Composites and cooked fruit	1.6	0.1	8.3	0.7	0.2	3.2	2	2	31913	10500	147000	2	34	11	159	1
Seasonings and sauces	0.3	0.0	1.3	0	0.0	0.5	0	0	18754	526	90389	1	39	4	137	1
Misc. foods	0.0	1.3	1.3	0	0.1	0.1	0	0	15	4843	4843	0	0	83	83	0
TOTAL	63.1	37.8	97.9	35.3	22.7	53.5	100	100	1909463	1149412	2751065	100	5180	2841	8004	100

Table A12: Estimated exposure (mean and P95) in children aged 7 to 10 years to inorganic contaminants (µg/kg bw/day)

Food group	As			Asi			Pb			Cd			Al		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LH)*	P95 (LH)*	Contrib (LH)*	Mean (HH)*	P95 (HH)*	Contrib (HH)*	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	0.043	0.102	3	0.009	0.009	0.020	0.009	0.020	3	0.028	0.068	9	0.0379	0.0937	14
Breakfast cereals	0.006	0.023	0	0.001	0.005	0.005	0.001	0.005	0	0.001	0.006	0	0.0027	0.0109	1
Pasta	0.014	0.037	1	0.003	0.007	0.007	0.003	0.007	1	0.003	0.009	1	0.0215	0.0571	8
Rice and wheat products	0.013	0.045	1	0.003	0.003	0.011	0.003	0.011	1	0.002	0.005	1	0.0049	0.0184	2
Croissant-like pastries	0.013	0.050	1	0.003	0.003	0.010	0.003	0.010	1	0.006	0.022	2	0.0079	0.0335	3
Sweet and savoury biscuits and bars	0.016	0.056	1	0.003	0.003	0.011	0.003	0.011	1	0.008	0.032	3	0.0140	0.0464	5
Pastries and cakes	0.021	0.064	2	0.004	0.004	0.013	0.004	0.013	1	0.008	0.026	3	0.0101	0.0317	4
Milk	0.077	0.215	6	0.034	0.069	0.097	0.034	0.069	11	0.030	0.175	10	0.0069	0.0236	3
Ultra-fresh dairy products	0.034	0.089	3	0.015	0.031	0.040	0.015	0.031	5	0.013	0.059	4	0.0040	0.0119	1
Cheese	0.012	0.037	1	0.005	0.011	0.017	0.005	0.011	2	0.004	0.012	1	0.0016	0.0047	1
Eggs and egg products	0.005	0.023	0	0.000	0.001	0.001	0.000	0.001	0	0.001	0.006	0	0.0004	0.0023	0
Butter	0.005	0.017	0	0.003	0.005	0.011	0.003	0.011	1	0.002	0.007	1	0.0002	0.0006	0
Oils	0.003	0.013	0	0.002	0.003	0.007	0.003	0.007	1	0.001	0.003	0	0.0001	0.0003	0
Margarine	0.002	0.014	0	0.001	0.002	0.008	0.001	0.002	0	0.001	0.008	0	0.0001	0.0007	0
Meat	0.028	0.082	2	0.001	0.003	0.002	0.003	0.002	0	0.012	0.043	4	0.0015	0.0041	1
Poultry and game	0.011	0.044	1	0.000	0.003	0.000	0.003	0.000	0	0.004	0.016	1	0.0007	0.0023	0
Offal	0.001	0.023	0	0.000	0.000	0.001	0.000	0.001	0	0.001	0.027	0	0.0012	0.0438	0
Delicatessen meats	0.025	0.083	2	0.001	0.004	0.004	0.001	0.004	0	0.008	0.030	3	0.0027	0.0110	1
Fish	0.592	2.126	44	0.004	0.004	0.015	0.004	0.015	1	0.002	0.008	1	0.0025	0.0126	1
Crustaceans and molluscs	0.068	1.666	5	0.001	0.001	0.032	0.001	0.032	0	0.003	0.076	1	0.0038	0.1943	1
Vegetables (excluding potatoes)	0.023	0.071	2	0.015	0.017	0.046	0.015	0.046	5	0.019	0.053	6	0.0222	0.0835	8
Potatoes and potato products	0.017	0.046	1	0.005	0.012	0.014	0.005	0.012	2	0.007	0.024	3	0.0387	0.0956	14
Pulses	0.003	0.029	0	0.002	0.002	0.019	0.002	0.019	0	0.004	0.076	1	0.0024	0.0249	1
Fruit	0.020	0.065	2	0.010	0.011	0.031	0.010	0.031	3	0.010	0.039	3	0.0049	0.0212	2
Dried fruits, nuts and seeds	0.001	0.014	0	0.000	0.000	0.001	0.000	0.001	0	0.001	0.015	0	0.0006	0.0181	0
Ice creams, sorbets and frozen desserts	0.010	0.067	1	0.005	0.009	0.030	0.005	0.030	1	0.003	0.021	1	0.0036	0.0238	1
Chocolate	0.029	0.121	2	0.006	0.008	0.024	0.006	0.024	2	0.006	0.021	2	0.0069	0.0245	3
Sugars and sugar derivatives	0.005	0.017	0	0.001	0.001	0.003	0.001	0.003	0	0.002	0.009	1	0.0057	0.0313	2
Water	0.080	0.253	6	0.080	0.080	0.253	0.080	0.253	24	0.029	0.094	10	0.0058	0.0164	2
Non-alcoholic beverages	0.041	0.128	3	0.041	0.041	0.128	0.041	0.128	13	0.029	0.109	10	0.0038	0.0140	1
Alcoholic beverages	0.000	0.007	0	0.000	0.000	0.007	0.000	0.007	0	0.000	0.012	0	0.0000	0.0020	0
Coffee	0.000	0.141	0	0.000	0.000	0.141	0.000	0.141	0	0.000	0.049	0	0.0000	0.0068	0
Other hot beverages	0.007	0.057	1	0.007	0.007	0.057	0.007	0.057	2	0.004	0.026	1	0.0023	0.0234	1
Pizzas, quiches and savoury pastries	0.018	0.084	1	0.004	0.004	0.017	0.004	0.017	1	0.003	0.016	1	0.0059	0.0292	2
Sandwiches and snacks	0.007	0.066	0	0.001	0.001	0.013	0.001	0.013	0	0.001	0.017	0	0.0023	0.0188	1
Soups and broths	0.016	0.098	1	0.010	0.012	0.063	0.010	0.063	3	0.010	0.085	3	0.0082	0.0519	3
Mixed dishes	0.043	0.153	3	0.022	0.022	0.077	0.022	0.077	7	0.010	0.033	4	0.0171	0.0559	6
Dairy-based desserts	0.022	0.139	2	0.010	0.020	0.063	0.010	0.063	3	0.006	0.030	2	0.0073	0.0266	3
Composites and cooked fruit	0.005	0.019	0	0.002	0.003	0.009	0.002	0.003	1	0.009	0.055	3	0.0051	0.0390	2
Seasonings and sauces	0.010	0.037	1	0.010	0.010	0.037	0.010	0.037	3	0.004	0.016	1	0.0048	0.0286	2
TOTAL	1.346	2.937	100	0.325	0.422	0.611	0.422	0.744	100	0.297	0.580	100	0.2718	0.4439	100
															117.48

* LH: low hypothesis; HH: high hypothesis.

Food group	Hg				Sb				Ag				
	Mean (LB)	P95 (LB)	P95 (UB)	Contrib (UB)	Mean (LB)	P95 (LB)	P95 (UB)	Contrib (LB)	Mean (LB)	P95 (LB)	P95 (UB)	Contrib (LB)	Contrib (UB)
Bread and dried bread products	0.0000	0.0089	0.0000	0.0211	0.0017	0.0021	0.0041	0.0052	0.0000	0.075	0.000	0.177	2
Breakfast cereals	0.0000	0.0024	0.0000	0.0097	0.0004	0.0005	0.0017	0.0022	0.0000	0.020	0.000	0.081	1
Pasta	0.0000	0.0067	0.0000	0.0182	0.0028	0.0028	0.0073	0.0073	0.0055	0.112	0.146	0.292	3
Rice and wheat products	0.0000	0.0034	0.0000	0.0116	0.0011	0.0012	0.0039	0.0041	0.013	0.042	0.046	0.140	1
Croissant-like pastries	0.0004	0.0032	0.0022	0.0112	0.0011	0.0012	0.0050	0.0050	0.023	0.040	0.123	0.189	1
Sweet and savoury biscuits and bars	0.0008	0.0038	0.0036	0.0141	0.0018	0.0018	0.0079	0.0079	0.062	0.077	0.248	0.288	4
Pastries and cakes	0.0007	0.0066	0.0033	0.0206	0.0046	0.0046	0.0168	0.0169	0.058	0.098	0.234	0.299	3
Milk	0.0034	0.0334	0.0338	0.0999	0.0009	0.0039	0.0044	0.0108	0.145	0.386	0.538	1.090	10
Ultra-fresh dairy products	0.0004	0.0145	0.0026	0.0349	0.0010	0.0023	0.0032	0.0061	0.086	0.190	0.356	0.541	5
Cheese	0.0002	0.0032	0.0012	0.0087	0.0006	0.0008	0.0021	0.0023	0.050	0.070	0.269	0.287	2
Eggs and egg products	0.0000	0.0019	0.0006	0.0077	0.0001	0.0002	0.0003	0.0010	0.015	0.027	0.078	0.121	1
Butter	0.0001	0.0015	0.0007	0.0040	0.0004	0.0005	0.0014	0.0014	0.005	0.017	0.018	0.049	0
Oils	0.0000	0.0012	0.0000	0.0042	0.0001	0.0002	0.0003	0.0007	0.005	0.015	0.022	0.056	0
Margarine	0.0000	0.0005	0.0000	0.0034	0.0002	0.0002	0.0014	0.0014	0.001	0.006	0.011	0.035	0
Meat	0.0000	0.0062	0.0000	0.0155	0.0016	0.0020	0.0052	0.0058	0.059	0.099	0.232	0.260	3
Poultry and game	0.0000	0.0031	0.0000	0.0103	0.0003	0.0006	0.0024	0.0024	0.044	0.064	0.246	0.254	2
Offal	0.0000	0.0001	0.0000	0.0036	0.0000	0.0000	0.0021	0.0021	0.016	0.016	1.150	1.150	0
Delicatessen meats	0.0025	0.0062	0.0185	0.0203	0.0007	0.0009	0.0026	0.0032	0.040	0.065	0.143	0.203	2
Fish	0.0220	0.0226	0.1046	0.1046	0.0006	0.0006	0.0026	0.0026	0.031	0.045	0.160	0.182	2
Crustaceans and molluscs	0.0004	0.0005	0.0083	0.0087	0.0001	0.0001	0.0013	0.0013	0.055	0.055	1.520	1.520	3
Vegetables (excluding potatoes)	0.0003	0.0116	0.0018	0.0270	0.0015	0.0023	0.0056	0.0063	0.099	0.177	0.356	0.484	6
Potatoes and potato products	0.0000	0.0088	0.0000	0.0213	0.0007	0.0015	0.0037	0.0037	0.070	0.132	0.238	0.306	4
Pulses	0.0000	0.0011	0.0019	0.0105	0.0004	0.0004	0.0065	0.0065	0.006	0.014	0.070	0.154	0
Fruit	0.0001	0.0115	0.0000	0.0338	0.0013	0.0024	0.0042	0.0074	0.123	0.202	0.414	0.547	7
Dried fruits, nuts and seeds	0.0000	0.0001	0.0000	0.0029	0.0000	0.0000	0.0002	0.0004	0.000	0.001	0.015	0.034	0
Ice creams, sorbets and frozen desserts	0.0000	0.0019	0.0000	0.0116	0.0008	0.0009	0.0057	0.0064	0.061	0.069	0.398	0.447	4
Chocolate	0.0030	0.0044	0.0128	0.0171	0.0015	0.0015	0.0055	0.0055	0.013	0.028	0.059	0.117	1
Sugars and sugar derivatives	0.0000	0.0017	0.0000	0.0058	0.0004	0.0034	0.0125	0.0125	0.029	0.041	0.112	0.166	2
Water	0.0005	0.0737	0.0000	0.1643	0.0012	0.0084	0.0058	0.0205	0.136	0.743	0.514	1.710	8
Non-alcoholic beverages	0.0000	0.0250	0.0000	0.0754	0.0025	0.0045	0.0085	0.0139	0.119	0.326	0.416	1.015	7
Alcoholic beverages	0.0000	0.0001	0.0000	0.0046	0.0000	0.0000	0.0023	0.0023	0.000	0.001	0.026	0.051	0
Coffee	0.0000	0.0001	0.0000	0.0625	0.0000	0.0000	0.0135	0.0135	0.000	0.001	0.181	0.525	0
Other hot beverages	0.0005	0.0039	0.0019	0.0297	0.0007	0.0009	0.0048	0.0074	0.018	0.043	0.180	0.405	1
Pizzas, quiches and savoury pastries	0.0000	0.0023	0.0000	0.0113	0.0007	0.0008	0.0038	0.0038	0.016	0.036	0.087	0.175	1
Sandwiches and snacks	0.0001	0.0012	0.0025	0.0091	0.0002	0.0002	0.0017	0.0017	0.006	0.014	0.067	0.129	0
Soups and broths	0.0000	0.0071	0.0000	0.0409	0.0012	0.0015	0.0089	0.0089	0.066	0.118	0.722	0.762	4
Mixed dishes	0.0004	0.0069	0.0033	0.0196	0.0022	0.0024	0.0081	0.0086	0.089	0.131	0.332	0.404	5
Dairy-based desserts	0.0015	0.0063	0.0116	0.0244	0.0016	0.0018	0.0077	0.0080	0.012	0.054	0.069	0.250	1
Composites and cooked fruit	0.0005	0.0041	0.0045	0.0200	0.0008	0.0009	0.0042	0.0051	0.061	0.084	0.433	0.505	4
Seasonings and sauces	0.0002	0.0017	0.0011	0.0052	0.0002	0.0003	0.0007	0.0010	0.003	0.017	0.015	0.061	0
TOTAL	0.0379	0.3030	0.1126	0.4992	0.0408	0.0608	0.0686	0.0958	1.689	3.749	3.297	6.319	100

Food group	Ba			Sn			Ga			Ge		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LB)	P95 (LB)	Contrib (LB)	Mean (UB)	P95 (UB)	Contrib (UB)
Bread and dried bread products	1.41	3.28	13	0.023	0.068	0	0.0000	0.0018	0.0042	0.0032	0.0095	3
Breakfast cereals	0.24	0.93	2	0.003	0.010	0	0.0000	0.0005	0.0019	0.0040	0.0055	1
Pasta	0.79	2.06	7	0.016	0.043	0	0.0000	0.0013	0.0036	0.0071	0.0097	4
Rice and wheat products	0.13	0.64	1	0.004	0.014	0	0.0000	0.0007	0.0023	0.0017	0.0050	1
Croissant-like pastries	0.34	1.23	3	0.010	0.055	0	0.0001	0.0006	0.0022	0.0014	0.0051	1
Sweet and savoury biscuits and bars	0.46	1.89	4	0.007	0.027	0	0.0000	0.0006	0.0020	0.0020	0.0075	3
Pastries and cakes	0.51	1.64	5	0.065	0.386	1	0.0001	0.0013	0.0040	0.0027	0.0091	2
Milk	0.46	1.40	4	0.054	0.232	1	0.0000	0.0060	0.0156	0.0174	0.0307	4
Ultra-fresh dairy products	0.24	0.63	2	0.109	0.484	1	0.0000	0.0028	0.0069	0.0056	0.0145	2
Cheese	0.25	0.69	2	0.140	1.287	1	0.0000	0.0006	0.0017	0.0021	0.0039	1
Eggs and egg products	0.13	0.50	1	0.007	0.039	0	0.0000	0.0004	0.0014	0.0009	0.0048	1
Butter	0.04	0.11	0	0.004	0.011	0	0.0012	0.0015	0.0117	0.0042	0.0137	6
Oils	0.03	0.11	0	0.003	0.010	0	0.0000	0.0002	0.0008	0.0006	0.0020	0
Margarine	0.01	0.09	0	0.004	0.025	0	0.0000	0.0001	0.0003	0.0015	0.0019	0
Meat	0.06	0.16	1	0.043	0.079	0	0.0000	0.0013	0.0000	0.0037	0.0128	6
Poultry and game	0.04	0.24	0	0.007	0.029	0	0.0000	0.0006	0.0022	0.0010	0.0054	2
Offal	0.00	0.03	0	0.000	0.023	0	0.0000	0.0000	0.0007	0.0001	0.0074	0
Delicatessen meats	0.07	0.21	1	0.020	0.057	0	0.0000	0.0008	0.0022	0.0024	0.0081	4
Fish	0.06	0.31	1	0.009	0.043	0	0.0000	0.0004	0.0017	0.0035	0.0046	1
Crustaceans and molluscs	0.01	0.18	0	0.000	0.011	0	0.0000	0.0000	0.0010	0.0019	0.0023	0
Vegetables (excluding potatoes)	0.74	2.12	7	0.717	4.210	7	0.0001	0.0023	0.0056	0.0045	0.0108	2
Potatoes and potato products	0.19	0.46	2	0.055	0.199	1	0.0000	0.0018	0.0043	0.0043	0.0110	3
Pulses	0.24	2.19	2	0.007	0.069	0	0.0000	0.0002	0.0021	0.0005	0.0050	0
Fruit	0.54	1.92	5	1.295	13.450	13	0.0000	0.0023	0.0068	0.0055	0.0163	4
Dried fruits, nuts and seeds	0.06	1.57	1	0.001	0.012	0	0.0000	0.0000	0.0006	0.0001	0.0009	0
Ice creams, sorbets and frozen desserts	0.23	1.44	2	0.072	0.865	1	0.0000	0.0004	0.0023	0.0024	0.0062	1
Chocolate	0.63	2.41	6	0.004	0.016	0	0.0001	0.0004	0.0017	0.0022	0.0088	3
Sugars and sugar derivatives	0.11	0.45	1	0.379	2.336	4	0.0000	0.0003	0.0012	0.0012	0.0040	1
Water	0.64	1.66	6	0.025	0.083	0	0.0000	0.0146	0.0328	0.0353	0.0662	26
Non-alcoholic beverages	0.67	2.13	6	0.026	0.096	0	0.0000	0.0050	0.0151	0.0136	0.0391	10
Alcoholic beverages	0.00	0.07	0	0.000	0.007	0	0.0000	0.0000	0.0009	0.0000	0.0007	0
Coffee	0.00	0.90	0	0.000	0.106	0	0.0000	0.0000	0.0125	0.0001	0.0094	0
Other hot beverages	0.18	1.59	2	0.008	0.033	0	0.0000	0.0007	0.0058	0.0015	0.0062	1
Pizzas, quiches and savoury pastries	0.20	0.94	2	0.038	0.202	0	0.0000	0.0005	0.0023	0.0031	0.0062	1
Sandwiches and snacks	0.08	0.67	1	0.004	0.047	0	0.0000	0.0002	0.0018	0.0004	0.0055	1
Soups and broths	0.28	2.02	3	0.017	0.122	0	0.0000	0.0014	0.0082	0.0025	0.0148	1
Mixed dishes	0.50	1.38	4	0.179	1.382	2	0.0000	0.0013	0.0038	0.0040	0.0113	4
Dairy-based desserts	0.40	1.76	4	0.187	0.060	2	0.0000	0.0010	0.0042	0.0030	0.0124	3
Compotes and cooked fruit	0.18	0.96	2	5.984	32.539	62	0.0001	0.0008	0.0040	0.0014	0.0062	0
Seasonings and sauces	0.09	0.33	1	0.166	1.063	2	0.0000	0.0003	0.0010	0.0007	0.0014	1
TOTAL	11.24	18.02	100	9.689	35.238	100	0.0017	0.0552	0.0096	0.0881	0.1409	100

Food group	Sr		Te					V			Ni		Co					
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LB)	Mean (UB)	P95 (LB)	P95 (UB)	Contrib (LB)	Contrib (UB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)			
Bread and dried bread products	1.27	3.20	4	0.0016	0.0033	0.0040	0.0082	4	4	0.083	0.196	7	0.10	0.27	2	0.02	0.04	5
Breakfast cereals	0.29	1.31	1	0.0007	0.0009	0.0028	0.0038	2	1	0.004	0.018	0	0.09	0.35	2	0.01	0.03	2
Pasta	1.08	2.83	3	0.0007	0.0020	0.0018	0.0055	2	2	0.024	0.068	2	0.10	0.26	2	0.00	0.01	1
Rice and wheat products	0.30	1.08	1	0.0003	0.0010	0.0011	0.0033	1	1	0.014	0.070	1	0.03	0.10	1	0.00	0.01	1
Croissant-like pastries	0.35	1.37	1	0.0003	0.0008	0.0011	0.0034	1	1	0.042	0.200	4	0.07	0.31	2	0.01	0.04	3
Sweet and savoury biscuits and bars	0.77	2.74	2	0.0012	0.0014	0.0046	0.0051	3	2	0.026	0.101	2	0.23	0.92	5	0.02	0.08	6
Pastries and cakes	0.77	2.57	2	0.0011	0.0022	0.0038	0.0065	3	2	0.026	0.084	2	0.20	0.66	5	0.02	0.06	5
Milk	1.84	5.07	6	0.0032	0.0084	0.0127	0.0233	7	9	0.089	0.289	8	0.21	0.62	5	0.02	0.06	6
Ultra-fresh dairy products	1.15	2.82	3	0.0012	0.0036	0.0049	0.0091	3	4	0.043	0.131	4	0.20	0.60	5	0.01	0.03	4
Cheese	1.03	2.68	3	0.0034	0.0037	0.0119	0.0125	8	4	0.025	0.077	2	0.14	0.37	3	0.01	0.03	3
Eggs and egg products	0.20	0.84	1	0.0003	0.0006	0.0027	0.0031	1	1	0.010	0.053	1	0.02	0.15	1	0.00	0.01	1
Butter	0.04	0.18	0	0.0003	0.0014	0.0012	0.0047	30	14	0.014	0.068	1	0.02	0.07	0	0.01	0.03	2
Oils	0.00	0.01	0	0.0003	0.0004	0.0012	0.0016	1	0	0.002	0.007	0	0.01	0.04	0	0.00	0.00	0
Margarine	0.01	0.10	0	0.0001	0.0002	0.0005	0.0013	0	0	0.004	0.029	0	0.00	0.03	0	0.00	0.01	0
Meat	0.11	0.45	0	0.0019	0.0027	0.0066	0.0069	4	3	0.020	0.059	2	0.06	0.19	1	0.01	0.03	3
Poultry and game	0.05	0.23	0	0.0006	0.0011	0.0025	0.0037	1	1	0.009	0.038	1	0.03	0.11	1	0.00	0.01	1
Offal	0.00	0.08	0	0.0001	0.0001	0.0038	0.0038	0	0	0.001	0.030	0	0.00	0.08	0	0.00	0.06	0
Delicatessen meats	0.20	0.67	1	0.0015	0.0019	0.0048	0.0058	3	2	0.048	0.145	4	0.07	0.22	2	0.00	0.02	1
Fish	0.56	2.08	2	0.0002	0.0006	0.0011	0.0022	0	1	0.014	0.066	1	0.03	0.16	1	0.00	0.01	1
Crustaceans and molluscs	0.37	6.95	1	0.0001	0.0001	0.0017	0.0018	0	0	0.007	0.060	1	0.00	0.10	0	0.00	0.03	0
Vegetables (excluding potatoes)	3.06	7.84	9	0.0009	0.0029	0.0038	0.0076	2	3	0.052	0.174	4	0.24	0.62	6	0.01	0.03	4
Potatoes and potato products	0.77	2.03	2	0.0006	0.0022	0.0026	0.0057	1	2	0.028	0.069	2	0.21	0.60	5	0.02	0.04	5
Pulses	0.52	4.93	2	0.0003	0.0005	0.0065	0.0070	1	1	0.005	0.050	0	0.07	0.75	2	0.00	0.05	1
Fruit	1.20	4.35	4	0.0005	0.0027	0.0025	0.0081	1	3	0.035	0.127	3	0.20	0.71	5	0.01	0.03	3
Dried fruits, nuts and seeds	0.10	2.30	0	0.0000	0.0000	0.0003	0.0009	0	0	0.001	0.020	0	0.03	1.00	1	0.00	0.03	0
Ice creams, sorbets and frozen desserts	0.40	2.59	1	0.0002	0.0006	0.0012	0.0035	0	1	0.011	0.077	1	0.13	0.82	3	0.01	0.08	4
Chocolate	1.02	3.83	3	0.0011	0.0012	0.0046	0.0047	2	1	0.023	0.087	2	0.45	1.63	10	0.04	0.16	12
Sugars and sugar derivatives	0.14	0.56	0	0.0003	0.0006	0.0010	0.0021	1	1	0.009	0.035	1	0.04	0.15	1	0.00	0.01	1
Water	8.37	24.42	25	0.0016	0.0162	0.0087	0.0386	4	18	0.217	0.625	19	0.28	0.71	7	0.01	0.03	3
Non-alcoholic beverages	2.18	6.49	7	0.0020	0.0068	0.0060	0.0202	4	7	0.083	0.288	7	0.15	0.39	3	0.01	0.03	3
Alcoholic beverages	0.00	0.12	0	0.0000	0.0000	0.0017	0.0021	0	0	0.001	0.014	0	0.00	0.09	0	0.00	0.00	0
Coffee	0.01	2.48	0	0.0000	0.0000	0.0026	0.0125	0	0	0.000	0.190	0	0.00	0.17	0	0.00	0.06	0
Other hot beverages	0.40	3.04	1	0.0006	0.0011	0.0031	0.0083	1	1	0.012	0.107	1	0.15	1.16	3	0.01	0.11	4
Pizzas, quiches and savoury pastries	0.51	2.48	2	0.0000	0.0005	0.0000	0.0023	0	1	0.029	0.136	2	0.05	0.27	1	0.00	0.02	1
Sandwiches and snacks	0.15	1.56	0	0.0001	0.0003	0.0009	0.0024	0	0	0.011	0.123	1	0.02	0.17	0	0.00	0.02	1
Soups and broths	0.99	6.09	3	0.0004	0.0019	0.0039	0.0055	1	2	0.029	0.184	2	0.08	0.71	2	0.00	0.04	1
Mixed dishes	1.36	4.72	4	0.0018	0.0028	0.0060	0.0086	4	3	0.059	0.179	5	0.15	0.51	4	0.01	0.04	3
Dairy-based desserts	0.75	3.05	2	0.0010	0.0018	0.0054	0.0081	2	2	0.021	0.093	2	0.31	1.36	7	0.03	0.13	8
Composites and cooked fruit	0.33	1.82	1	0.0006	0.0012	0.0024	0.0053	1	1	0.007	0.029	1	0.05	0.22	1	0.00	0.01	1
Seasonings and sauces	0.35	1.43	1	0.0003	0.0005	0.0010	0.0017	1	1	0.036	0.134	3	0.06	0.24	1	0.00	0.01	1
TOTAL	33.02	55.51	100	0.0437	0.0920	0.0848	0.1550	100	100	1.173	2.138	100	4.30	7.23	100	0.35	0.56	100

Table A13: Estimated intake (mean, P5 and P95) of inorganic contaminants and minerals (µg/day) by children aged 7 to 10 years

Food group	Cr				Ca				Mn				Mg			
	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	9.93	1.88	25.98	4	16921	2138	55070	2	278	45	698	19	15322	2675	39060	7
Breakfast cereals	4.29	1.53	18.33	2	17889	5979	77389	3	32	9	138	2	3480	1170	15210	2
Pasta	12.77	4.76	35.68	6	6457	2357	17679	1	118	43	326	8	10634	3886	29143	5
Rice and wheat products	4.96	1.68	18.90	2	2032	619	7423	0	48	15	175	3	3355	936	11457	1
Croissant-like pastries	7.08	2.14	30.27	3	5935	1284	23223	1	59	15	232	4	4689	1091	18179	2
Sweet and savoury biscuits and bars	6.16	0.56	24.45	3	6131	486	22738	1	82	6	301	6	9152	599	34003	4
Pastries and cakes	10.19	2.36	33.72	5	14510	2448	42876	2	66	15	214	5	8271	1604	27088	4
Milk	20.32	2.99	51.80	9	180213	30580	474300	26	5	1	14	0	20728	3414	52290	9
Ultra-fresh dairy products	11.53	1.91	31.17	5	93338	16240	261656	14	13	1	36	1	10880	1650	28836	5
Cheese	7.45	1.53	20.89	3	91339	12829	270801	13	3	1	8	0	5014	796	14277	2
Eggs and egg products	2.21	1.04	10.57	1	5235	1670	22479	1	4	1	17	0	1709	606	7671	1
Butter	5.56	0.54	14.65	2	1416	127	3575	0	0	0	1	0	214	15	740	0
Oils	7.26	1.48	26.10	3	81	11	386	0	0	0	1	0	10	2	35	0
Margarine	1.82	0.44	10.27	1	275	44	2144	0	0	0	0	0	39	4	318	0
Meat	10.08	2.42	24.39	5	4022	773	10901	1	4	1	10	0	10589	3042	25103	5
Poultry and game	4.26	1.25	13.74	2	2878	517	13811	0	2	1	8	0	7222	2209	20641	3
Offal	0.13	0.88	4.88	0	67	219	3791	0	2	9	48	0	184	1052	6101	0
Delicatessen meats	7.09	0.94	20.62	3	3281	299	12120	0	8	1	23	1	5185	878	14546	2
Fish	3.07	0.89	11.57	1	2096	248	9795	0	10	0	42	1	4151	1596	14522	2
Crustaceans and molluscs	0.26	0.26	5.82	0	1169	1407	23429	0	4	1	177	0	613	669	13773	0
Vegetables (excluding potatoes)	7.70	1.04	20.31	3	22279	2893	57445	3	108	14	265	7	13127	1848	33272	6
Potatoes and potato products	7.91	1.77	21.33	4	8344	1352	23738	1	57	15	146	4	12486	2993	30396	6
Pulses	0.87	0.95	9.46	0	1732	1571	15771	0	27	31	310	2	2297	2343	23429	1
Fruit	6.03	0.88	20.01	3	6509	649	21932	1	70	4	248	5	9320	1215	25455	4
Dried fruits, nuts and seeds	0.22	0.11	4.35	0	422	208	8374	0	11	4	296	1	947	562	23429	0
Ice creams, sorbets and frozen desserts	3.92	2.50	25.26	2	8636	4437	54760	1	21	13	130	1	4067	2246	25923	2
Chocolate	7.27	1.04	24.40	3	13109	1421	48431	2	103	7	430	7	10317	1340	36300	5
Sugars and sugar derivatives	2.36	0.34	8.72	1	1114	53	4459	0	12	0	67	1	813	24	3267	0
Water	6.28	0.64	17.42	3	59205	5310	231723	9	3	0	7	0	7008	554	18554	3
Non-alcoholic beverages	9.48	1.15	25.53	4	10786	612	34111	2	70	0	437	5	8905	192	30562	4
Alcoholic beverages	0.03	0.17	2.16	0	37	163	5288	0	0	1	18	0	23	152	1825	0
Coffee	0.03	0.37	14.37	0	304	165	178903	0	0	5	234	0	88	829	38308	0
Other hot beverages	2.53	0.25	18.24	1	14990	1273	108156	2	20	2	161	1	4177	357	29566	2
Pizzas, quiches and savoury pastries	3.79	1.59	19.82	2	16107	6943	86786	2	27	13	162	2	3676	1694	21179	2
Sandwiches and snacks	2.01	2.18	20.34	1	3138	1954	32907	0	19	25	163	1	2003	2715	18150	1
Soups and broths	3.12	0.78	20.20	1	612	2518	33089	1	25	11	159	2	3724	1698	20891	2
Mixed dishes	9.19	3.19	27.93	4	18288	5493	52857	3	65	20	179	4	9519	3200	25692	4
Dairy-based desserts	7.56	2.20	30.71	3	24510	8965	96032	4	32	8	131	2	8534	3107	31250	4
Composites and cooked fruit	2.44	1.29	10.48	1	8200	1296	51018	1	24	4	109	2	1456	691	6736	1
Seasonings and sauces	3.48	0.44	13.60	2	2169	225	8956	0	9	1	37	1	2040	137	9359	1
TOTAL	222.61	148.23	313.39	100	680376	336251	1099047	100	1442	828	2324	100	225967	150217	316852	100

Food group	Cu			Zn			Li			Na						
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)			
Bread and dried bread products	57	9	147	6	275	49	699	4	0.35	0.06	0.87	2	365622	57250	942421	19
Breakfast cereals	9	2	40	1	56	19	243	1	0.05	0.02	0.23	0	15411	4624	64740	1
Pasta	116	43	325	13	143	52	388	2	1.61	0.59	4.39	9	85293	31929	239464	4
Rice and wheat products	27	9	106	3	65	20	244	1	0.81	0.31	3.08	4	29973	11664	116643	2
Croissant-like pastries	17	3	68	2	105	29	444	2	0.11	0.03	0.44	1	88547	25264	364321	5
Sweet and savoury biscuits and bars	35	2	141	4	107	9	406	2	0.18	0.01	0.63	1	57634	6446	185636	3
Pastries and cakes	32	7	103	4	154	30	468	2	0.27	0.06	0.85	1	90112	21643	272643	5
Milk	15	2	42	2	667	101	1808	11	0.58	0.09	1.61	3	37375	12029	187740	4
Ultra-fresh dairy products	10	2	25	1	319	55	886	5	0.43	0.06	1.13	2	73739	5710	102738	2
Cheese	9	1	30	1	332	49	1001	5	0.08	0.01	0.24	0	104109	19624	282456	5
Eggs and egg products	8	3	35	1	141	55	601	2	0.11	0.05	0.55	1	21157	4866	103000	1
Butter	2	0	5	0	6	1	16	0	0.10	0.01	0.34	1	16067	111	101171	1
Oils	0	0	1	0	2	0	6	0	0.00	0.00	0.01	0	49	5	292	0
Margarine	0	0	2	0	2	0	11	0	0.01	0.00	0.04	0	5094	1168	29057	0
Meat	27	6	67	3	1571	299	3775	25	0.14	0.02	0.36	1	25938	7389	64570	1
Poultry and game	11	3	42	1	243	75	732	4	0.05	0.01	0.18	0	19507	5683	58536	1
Offal	63	496	1749	7	37	223	1164	1	0.00	0.02	0.09	0	643	3705	20700	0
Delicatessen meats	24	3	74	3	450	79	1375	7	0.16	0.02	0.61	1	215502	33084	602820	11
Fish	8	2	31	1	50	14	206	1	0.15	0.02	0.62	1	37800	5545	150461	2
Crustaceans and molluscs	4	4	81	0	23	19	482	0	0.05	0.05	1.31	0	4061	4799	80383	0
Vegetables (excluding potatoes)	43	6	105	5	170	19	436	3	1.41	0.11	3.94	8	62187	2677	173896	3
Potatoes and potato products	45	12	108	5	131	30	319	2	0.84	0.11	2.21	5	53286	7856	161964	3
Pulses	15	16	175	2	59	66	663	1	0.30	0.33	3.33	2	8301	9500	107930	0
Fruit	38	6	122	4	57	7	180	1	0.49	0.01	1.96	3	1085	83	4461	0
Dried fruits, nuts and seeds	6	4	154	1	17	4	483	0	0.01	0.00	0.26	0	2066	351	58000	0
Ice creams, sorbets and frozen desserts	17	10	110	2	47	26	299	1	0.12	0.07	0.79	1	6854	1315	43251	0
Chocolate	53	5	197	6	106	14	376	2	0.08	0.01	0.28	0	7911	727	31109	0
Sugars and sugar derivatives	3	0	11	0	7	0	29	0	0.04	0.01	0.16	0	1556	31	7725	0
Water	49	2	169	5	35	3	122	1	6.01	0.54	16.99	32	9486	853	30205	0
Non-alcoholic beverages	20	1	63	2	27	1	78	0	0.99	0.06	2.94	5	5833	205	17808	0
Alcoholic beverages	0	0	2	0	0	0	21	0	0.00	0.01	0.10	0	8	25	1286	0
Coffee	2	36	1285	0	0	2	91	0	0.03	0.37	13.07	0	14	166	5810	0
Other hot beverages	18	2	162	2	74	3	550	1	0.33	0.01	2.42	2	6713	534	46500	0
Pizzas, quiches and savoury pastries	11	5	65	1	136	61	763	2	0.18	0.07	1.10	1	79487	32686	408571	4
Sandwiches and snacks	6	9	54	1	115	112	1099	2	0.08	0.09	0.66	0	41329	59750	344914	2
Soups and broths	21	5	132	2	46	21	247	1	1.30	0.13	7.77	7	94284	39571	446857	5
Mixed dishes	39	8	116	4	414	97	1326	7	0.68	0.12	2.32	4	157446	43666	467858	8
Dairy-based desserts	31	8	133	3	131	42	524	2	0.17	0.07	0.62	1	18833	6411	72493	1
Compotes and cooked fruit	10	5	42	1	11	4	49	0	0.07	0.03	0.37	0	309	79	1391	0
Seasonings and sauces	5	0	24	1	22	1	100	0	0.14	0.01	0.61	1	113465	11936	425904	6
TOTAL	909	531	1575	100	6352	3736	10403	100	18.53	9.13	32.24	100	1964057	1143303	3114145	100

Food group	Mo			Se			K			Fe						
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)				
	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)				
Bread and dried bread products	6.9	1.2	17.5	9	1.3	0.2	3.5	3	104598	17057	274371	5	567	92	1437	9
Breakfast cereals	1.2	0.4	4.9	2	0.3	0.1	1.4	1	27134	8893	115607	1	271	92	1155	4
Pasta	3.4	1.2	9.3	4	1.0	0.4	2.7	2	18366	6657	49929	1	256	93	695	4
Rice and wheat products	2.2	0.8	8.4	3	0.5	0.2	1.8	1	9577	2075	39293	0	61	15	257	1
Croissant-like pastries	1.8	0.5	7.7	2	0.4	0.1	1.7	1	32834	8486	132943	2	249	49	973	4
Sweet and savoury biscuits and bars	3.0	0.2	12.0	4	0.4	0.0	1.5	1	57871	4229	201154	3	295	16	1283	4
Pastries and cakes	2.8	0.7	8.0	4	0.9	0.2	2.7	2	64257	15257	197600	3	436	74	1499	7
Milk	7.8	1.2	19.6	10	4.3	0.7	10.9	11	284445	45000	735000	13	73	11	219	1
Ultra-fresh dairy products	4.2	0.8	10.5	5	2.1	0.4	5.7	5	141915	20786	377571	6	49	6	152	1
Cheese	1.4	0.3	3.8	2	0.4	0.1	1.2	1	21604	3863	60637	1	19	4	50	0
Eggs and egg products	0.8	0.3	3.3	1	0.6	0.2	3.6	1	18966	4623	107667	1	189	73	861	3
Butter	0.3	0.0	0.9	0	0.3	0.0	0.7	1	2563	200	6676	0	4	0	19	0
Oils	0.0	0.0	0.1	0	0.2	0.0	0.6	0	41	3	194	0	1	0	5	0
Margarine	0.1	0.0	0.5	0	0.1	0.0	0.4	0	956	282	5996	0	3	0	24	0
Meat	0.6	0.1	1.5	1	0.9	0.3	2.0	2	136468	39486	338491	6	616	93	1516	9
Poultry and game	0.8	0.2	2.7	1	0.6	0.1	2.4	2	74044	18399	234728	3	132	33	491	2
Offal	0.6	3.1	21.1	1	0.2	0.5	8.4	0	2335	13250	83479	0	40	245	1641	1
Delicatessen meats	1.2	0.1	4.6	2	0.7	0.1	1.7	2	78321	12031	239907	4	290	30	948	4
Fish	0.5	0.0	2.3	1	1.2	0.2	6.4	3	38218	10929	136250	2	55	14	230	1
Crustaceans and molluscs	0.3	0.1	8.9	0	0.2	0.1	7.4	1	2225	3957	57874	0	23	16	648	0
Vegetables (excluding potatoes)	6.1	0.6	16.8	8	1.6	0.3	3.9	4	156719	26286	383357	7	357	41	1051	5
Potatoes and potato products	2.8	0.7	7.4	4	1.3	0.4	3.0	3	201340	51725	501893	9	184	56	462	3
Pulses	7.4	7.0	80.7	10	0.2	0.2	1.8	0	13914	16357	167143	1	79	58	1000	1
Fruit	2.3	0.1	9.6	3	1.6	0.3	4.6	4	134192	21019	407700	6	92	14	266	1
Dried fruits, nuts and seeds	0.5	0.1	14.9	1	0.0	0.0	0.4	0	5723	2714	121886	0	12	6	242	0
Ice creams, sorbets and frozen desserts	0.9	0.5	6.0	1	0.3	0.2	1.7	1	30606	16686	197571	1	465	79	2936	7
Chocolate	1.5	0.3	5.2	2	0.3	0.0	1.0	1	56474	8071	201000	3	451	55	1600	7
Sugars and sugar derivatives	0.5	0.0	2.0	1	0.2	0.0	0.8	1	6915	192	32857	0	25	1	99	0
Water	1.4	0.2	3.4	2	10.5	1.6	22.2	26	3392	255	14272	0	25	2	114	0
Non-alcoholic beverages	1.7	0.1	3.7	2	3.5	0.4	9.8	9	110653	1099	384873	5	83	5	314	1
Alcoholic beverages	0.0	0.1	0.6	0	0.0	0.0	0.8	0	315	1181	48696	0	1	1	51	0
Coffee	0.0	0.0	1.4	0	0.0	0.3	8.8	0	879	7329	374500	0	0	1	51	0
Other hot beverages	0.8	0.1	5.7	1	0.5	0.0	4.2	1	34570	2811	239246	2	125	4	859	2
Pizzas, quiches and savoury pastries	1.4	0.6	7.5	2	0.3	0.1	1.8	1	30961	13257	165714	1	111	50	622	2
Sandwiches and snacks	0.7	0.9	5.5	1	0.2	0.3	1.6	0	16946	19234	153874	1	76	86	801	1
Soups and broths	1.2	0.4	7.2	2	1.0	0.4	5.7	2	57508	15943	349714	3	71	30	416	1
Mixed dishes	4.0	1.1	16.4	5	0.9	0.3	2.7	2	90143	30736	249000	4	309	73	965	5
Dairy-based desserts	1.8	0.7	6.6	2	0.7	0.3	3.0	2	66666	23043	271393	3	419	90	1843	6
Composites and cooked fruit	1.0	0.2	7.1	1	0.6	0.3	3.0	1	25790	13346	123900	1	27	11	134	0
Seasonings and sauces	0.4	0.0	1.6	1	0.2	0.0	0.9	1	25527	526	122928	1	53	4	248	1
TOTAL	76.3	44.7	134.1	100	40.5	24.1	59.6	100	2185973	1430129	3170930	100	6595	3829	9736	100

Table A14 : Estimated exposure (mean and P95) in children aged 11 to 14 years to inorganic contaminants (µg/kg bw/day)

Food group	As		Asi				Pb		Cd			Al		
	Mean (MB)	P95 (MB)	Mean (LH)*	Mean (HH)*	P95 (LH)*	P95 (HH)*	Contrib (LH)*	Contrib (HH)*	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	0.033	0.079	0.007	0.007	0.016	0.016	3	2	0.022	0.057	11	0.0298	0.0750	15
Breakfast cereals	0.004	0.019	0	0.001	0.004	0.004	0	0	0.001	0.009	1	0.0020	0.0093	1
Pasta	0.012	0.035	0.002	0.002	0.007	0.007	1	1	0.003	0.008	1	0.0181	0.0536	9
Rice and wheat products	0.011	0.041	0.003	0.003	0.010	0.010	1	1	0.001	0.005	1	0.0046	0.0186	2
Croissant-like pastries	0.009	0.047	0.002	0.002	0.009	0.009	1	1	0.004	0.022	2	0.0055	0.0292	3
Sweet and savoury biscuits and bars	0.009	0.035	0.002	0.002	0.007	0.007	1	1	0.004	0.020	2	0.0078	0.0305	4
Pastries and cakes	0.013	0.047	0.003	0.003	0.010	0.010	1	1	0.004	0.015	2	0.0062	0.0221	3
Milk	0.045	0.169	0.020	0.040	0.076	0.152	9	14	0.020	0.117	10	0.0041	0.0135	2
Ultra-fresh dairy products	0.016	0.047	0.007	0.015	0.021	0.042	3	5	0.006	0.020	3	0.0022	0.0081	1
Cheese	0.008	0.034	0.003	0.007	0.015	0.030	1	2	0.003	0.010	1	0.0010	0.0030	0
Eggs and egg products	0.003	0.016	0	0.000	0.001	0.002	0	0	0.001	0.004	0	0.0002	0.0014	0
Butter	0.003	0.012	0	0.002	0.008	0.012	1	1	0.001	0.005	1	0.0001	0.0005	0
Oils	0.002	0.007	0	0.001	0.004	0.007	0	1	0.000	0.002	0	0.0001	0.0002	0
Margarine	0.001	0.007	0	0.001	0.004	0.007	0	0	0.000	0.004	0	0.0001	0.0004	0
Meat	0.020	0.053	0.001	0.002	0.002	0.005	0	1	0.008	0.032	4	0.0010	0.0026	1
Poultry and game	0.008	0.029	0.000	0.002	0.000	0.009	0	1	0.002	0.012	0	0.0005	0.0018	0
Offal	0.000	0.018	0	0.000	0.001	0.002	0	0	0.000	0.013	0	0.0008	0.0420	0
Delicatessen meats	0.018	0.054	0.001	0.003	0.003	0.008	0	1	0.006	0.017	3	0.0022	0.0086	1
Fish	0.360	1.527	0.003	0.003	0.011	0.011	1	1	0.001	0.005	1	0.0020	0.0111	1
Crustaceans and molluscs	0.092	1.870	0.002	0.002	0.036	0.036	1	1	0.003	0.088	2	0.0038	0.1419	2
Vegetables (excluding potatoes)	0.015	0.046	0.010	0.011	0.029	0.033	4	4	0.013	0.044	6	0.0149	0.0590	8
Potatoes and potato products	0.012	0.037	0.004	0.009	0.011	0.026	2	3	0.005	0.017	3	0.0286	0.0737	14
Pulses	0.002	0.026	0	0.001	0.017	0.019	0	0	0.002	0.046	1	0.0012	0.0205	1
Fruit	0.014	0.054	0.001	0.008	0.025	0.030	3	3	0.006	0.023	3	0.0033	0.0142	2
Dried fruits, nuts and seeds	0.001	0.012	0	0.000	0.001	0.001	0	0	0.001	0.013	0	0.0007	0.0158	0
Ice creams, sorbets and frozen desserts	0.007	0.055	0.003	0.007	0.025	0.049	1	2	0.002	0.018	1	0.0022	0.0171	1
Chocolate	0.023	0.098	0.005	0.006	0.020	0.027	2	2	0.005	0.021	2	0.0047	0.0207	2
Sugars and sugar derivatives	0.003	0.016	0	0.001	0.003	0.005	0	0	0.002	0.008	1	0.0037	0.0260	2
Water	0.059	0.173	0.059	0.059	0.173	0.173	26	20	0.024	0.063	11	0.0043	0.0131	2
Non-alcoholic beverages	0.030	0.098	0.030	0.030	0.098	0.098	13	10	0.022	0.076	11	0.0024	0.0077	1
Alcoholic beverages	0.000	0.011	0	0.000	0.011	0.011	0	0	0.000	0.016	0	0.0000	0.0018	0
Coffee	0.001	0.077	0	0.001	0.077	0.077	0	0	0.000	0.025	0	0.0001	0.0051	0
Other hot beverages	0.005	0.039	0.005	0.005	0.039	0.039	2	2	0.003	0.021	2	0.0017	0.0124	1
Pizzas, quiches and savoury pastries	0.016	0.081	0.003	0.003	0.016	0.016	1	1	0.003	0.014	1	0.0054	0.0284	3
Sandwiches and snacks	0.007	0.066	0.001	0.001	0.013	0.013	1	0	0.002	0.015	1	0.0023	0.0188	1
Soups and broths	0.011	0.129	0.007	0.008	0.083	0.093	3	3	0.006	0.056	3	0.0053	0.0550	3
Mixed dishes	0.046	0.255	0.023	0.023	0.128	0.128	10	8	0.008	0.034	4	0.0151	0.0668	8
Dairy-based desserts	0.012	0.075	0.006	0.011	0.034	0.067	2	4	0.003	0.019	2	0.0047	0.0279	2
Composites and cooked fruit	0.002	0.014	0	0.001	0.006	0.008	0	0	0.004	0.034	2	0.0020	0.0238	1
Seasonings and sauces	0.007	0.023	0.007	0.007	0.023	0.023	3	2	0.004	0.012	2	0.0032	0.0199	2
TOTAL	0.941	2.168	100	0.233	0.291	0.467	100	100	0.206	0.390	100	0.1977	0.3516	100

* LH: low hypothesis; HH: high hypothesis.

Food group	Hg			Sb			Ag					
	Mean (LB)	P95 (LB)	Contrib (UB)	Mean (LB)	P95 (LB)	Contrib (UB)	Mean (LB)	P95 (LB)	Contrib (UB)			
	Mean (UB)	P95 (UB)	Contrib (LB)	Mean (UB)	P95 (UB)	Contrib (LB)	Mean (UB)	P95 (UB)	Contrib (LB)			
Bread and dried bread products	0.0000	0.0069	0.0000	0.0167	0.0031	0.0039	0.0000	0.058	0.000	0.140	0	2
Breakfast cereals	0.0000	0.0017	0.0000	0.0080	0.0016	0.0020	0.0000	0.015	0.000	0.068	0	1
Pasta	0.0000	0.0057	0.0000	0.0163	0.0069	0.0069	0.0000	0.095	0.037	0.274	4	4
Rice and wheat products	0.0000	0.0032	0.0000	0.018	0.0010	0.0033	0.0000	0.039	0.047	0.149	1	1
Croissant-like pastries	0.0000	0.0023	0.0019	0.018	0.0008	0.0048	0.0000	0.030	0.134	0.173	1	1
Sweet and savoury biscuits and bars	0.0005	0.0020	0.0025	0.0086	0.0010	0.0044	0.0000	0.042	0.151	0.188	3	2
Pastries and cakes	0.0004	0.0043	0.0023	0.0147	0.0027	0.0094	0.0000	0.061	0.132	0.219	3	2
Milk	0.0020	0.0195	0.0260	0.0641	0.0005	0.0022	0.0000	0.227	0.387	0.724	7	8
Ultra-fresh dairy products	0.0002	0.0073	0.0018	0.0204	0.0012	0.0036	0.0000	0.091	0.188	0.303	3	3
Cheese	0.0001	0.0020	0.0008	0.0069	0.0005	0.0010	0.0000	0.033	0.101	0.142	1	1
Eggs and egg products	0.0000	0.0010	0.0001	0.0048	0.0000	0.0002	0.0000	0.008	0.054	0.070	1	1
Butter	0.0000	0.0009	0.0003	0.0029	0.0003	0.0008	0.0000	0.011	0.012	0.033	0	0
Oils	0.0000	0.0007	0.0000	0.0025	0.0001	0.0004	0.0000	0.009	0.013	0.031	0	0
Margarine	0.0000	0.0003	0.0000	0.0016	0.0001	0.0006	0.0000	0.003	0.006	0.019	0	0
Meat	0.0000	0.0044	0.0000	0.011	0.0015	0.0048	0.0000	0.067	0.163	0.197	3	3
Poultry and game	0.0000	0.0023	0.0000	0.0082	0.0004	0.0011	0.0000	0.047	0.198	0.226	3	2
Offal	0.0000	0.0001	0.0000	0.0029	0.0000	0.0008	0.0000	0.005	0.026	0.291	0	0
Delicatessen meats	0.0021	0.0047	0.0197	0.0256	0.0007	0.0020	0.0000	0.049	0.142	0.171	3	2
Fish	0.0172	0.0174	0.1044	0.1044	0.0004	0.0014	0.0000	0.026	0.108	0.132	1	1
Crustaceans and molluscs	0.0006	0.0007	0.0103	0.0112	0.0001	0.0014	0.0000	0.144	2.719	2.719	11	5
Vegetables (excluding potatoes)	0.0002	0.0077	0.0015	0.0192	0.0015	0.0033	0.0000	0.115	0.221	0.307	5	4
Potatoes and potato products	0.0000	0.0065	0.0000	0.0168	0.0011	0.0016	0.0000	0.052	0.173	0.234	4	4
Pulses	0.0000	0.0006	0.0023	0.0087	0.0002	0.0045	0.0000	0.101	0.149	0.149	0	0
Fruit	0.0000	0.0073	0.0000	0.0235	0.0019	0.0069	0.0000	0.128	0.360	0.440	6	5
Dried fruits, nuts and seeds	0.0000	0.0001	0.0000	0.0025	0.0000	0.0001	0.0000	0.001	0.005	0.021	0	0
Ice creams, sorbets and frozen desserts	0.0000	0.0013	0.0000	0.0113	0.0006	0.0041	0.0000	0.049	0.325	0.365	3	2
Chocolate	0.0025	0.0034	0.0116	0.0150	0.0011	0.0042	0.0000	0.022	0.051	0.100	1	1
Sugars and sugar derivatives	0.0000	0.0011	0.0000	0.0053	0.0000	0.0020	0.0000	0.026	0.114	0.137	1	1
Water	0.0004	0.0536	0.0000	0.1270	0.0041	0.0139	0.0000	0.557	0.529	1.380	10	21
Non-alcoholic beverages	0.0000	0.0197	0.0000	0.0593	0.0034	0.0075	0.0111	0.252	0.253	0.701	7	9
Alcoholic beverages	0.0000	0.0001	0.0000	0.0063	0.0000	0.0021	0.0000	0.002	0.090	0.102	0	0
Coffee	0.0000	0.0003	0.0000	0.0292	0.0001	0.0054	0.0069	0.004	0.394	0.516	0	0
Other hot beverages	0.0004	0.0032	0.0028	0.0298	0.0007	0.0062	0.0076	0.035	0.121	0.286	1	1
Pizzas, quiches and savoury pastries	0.0000	0.0022	0.0000	0.0101	0.0007	0.0036	0.0037	0.033	0.079	0.170	1	1
Sandwiches and snacks	0.0001	0.0013	0.0026	0.0107	0.0001	0.0013	0.0018	0.015	0.078	0.122	1	1
Soups and broths	0.0000	0.0046	0.0000	0.0297	0.0008	0.0084	0.0085	0.066	1.120	1.120	5	4
Mixed dishes	0.0005	0.0058	0.0044	0.0235	0.0018	0.0073	0.0076	0.105	0.324	0.394	6	4
Dairy-based desserts	0.0008	0.0037	0.0066	0.0178	0.0009	0.0065	0.0065	0.032	0.038	0.177	1	1
Compotes and cooked fruit	0.0003	0.0017	0.0035	0.0130	0.0004	0.0025	0.0027	0.028	0.294	0.324	2	1
Seasonings and sauces	0.0001	0.0012	0.0009	0.0042	0.0002	0.0004	0.0006	0.012	0.010	0.039	0	0
TOTAL	0.0288	0.2128	0.0877	0.3428	0.0417	0.0735	0.0531	2.690	2.735	4.330	100	100

Food group	Ba			Sn			Ga			Ge		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LB)	P95 (LB)	Contrib (LB)	Mean (UB)	P95 (UB)	Contrib (UB)
Bread and dried bread products	1.08	2.60	13	0.017	0.044	0	0.0000	0.0014	0.0000	0.0014	0.0033	0
Breakfast cereals	0.46	7.39	6	0.002	0.009	0	0.0000	0.0003	0.0000	0.0016	0.0016	0
Pasta	0.67	1.94	8	0.013	0.040	0	0.0000	0.0011	0.0000	0.0033	0.0033	0
Rice and wheat products	0.14	0.75	2	0.003	0.013	0	0.0000	0.0006	0.0000	0.0024	0.0024	0
Croissant-like pastries	0.24	1.20	3	0.008	0.051	0	0.0001	0.0004	0.0004	0.0024	0.0024	5
Sweet and savoury biscuits and bars	0.24	1.11	3	0.004	0.017	0	0.0000	0.0003	0.0000	0.0014	0.0014	0
Pastries and cakes	0.32	1.07	4	0.055	0.326	1	0.0001	0.0008	0.0004	0.0029	0.0029	5
Milk	0.28	1.16	3	0.037	0.178	1	0.0000	0.0035	0.0000	0.0102	0.0102	0
Ultra-fresh dairy products	0.12	0.36	1	0.089	0.352	2	0.0000	0.0014	0.0000	0.0041	0.0041	0
Cheese	0.17	0.57	2	0.165	1.427	3	0.0000	0.0004	0.0003	0.0015	0.0015	3
Eggs and egg products	0.07	0.34	1	0.004	0.022	0	0.0000	0.0002	0.0000	0.0010	0.0010	0
Butter	0.02	0.08	0	0.002	0.008	0	0.0008	0.0009	0.0061	0.0062	0.0062	65
Oils	0.02	0.07	0	0.001	0.007	0	0.0000	0.0001	0.0000	0.0005	0.0005	0
Margarine	0.01	0.05	0	0.002	0.013	0	0.0000	0.0001	0.0001	0.0004	0.0004	1
Meat	0.04	0.12	1	0.029	0.056	1	0.0000	0.0009	0.0000	0.0022	0.0022	1
Poultry and game	0.03	0.13	0	0.006	0.023	0	0.0000	0.0005	0.0002	0.0017	0.0017	1
Offal	0.00	0.02	0	0.000	0.010	0	0.0000	0.0000	0.0003	0.0007	0.0007	0
Delicatessen meats	0.04	0.15	1	0.014	0.046	0	0.0000	0.0005	0.0000	0.0015	0.0015	0
Fish	0.03	0.16	0	0.008	0.049	0	0.0000	0.0003	0.0000	0.0011	0.0011	0
Crustaceans and molluscs	0.01	0.20	0	0.001	0.010	0	0.0000	0.0001	0.0016	0.0018	0.0018	2
Vegetables (excluding potatoes)	0.49	1.42	6	0.455	2.377	9	0.0000	0.0015	0.0001	0.0039	0.0039	3
Potatoes and potato products	0.13	0.33	2	0.034	0.142	1	0.0000	0.0013	0.0000	0.0034	0.0034	0
Pulses	0.13	1.75	2	0.004	0.076	0	0.0000	0.0001	0.0000	0.0015	0.0015	0
Fruit	0.38	1.60	5	0.733	9.543	15	0.0000	0.0015	0.0000	0.0047	0.0047	0
Dried fruits, nuts and seeds	0.06	1.38	1	0.001	0.011	0	0.0000	0.0000	0.0000	0.0005	0.0005	0
Ice creams, sorbets and frozen desserts	0.16	1.18	2	0.027	0.556	1	0.0000	0.0003	0.0000	0.0023	0.0023	0
Chocolate	0.47	2.12	6	0.003	0.012	0	0.0001	0.0003	0.0005	0.0014	0.0014	5
Sugars and sugar derivatives	0.07	0.38	1	0.248	1.901	5	0.0000	0.0002	0.0000	0.0011	0.0011	0
Water	0.46	1.27	6	0.019	0.065	0	0.0000	0.0106	0.0000	0.0254	0.0254	0
Non-alcoholic beverages	0.53	1.63	6	0.015	0.071	0	0.0000	0.0039	0.0000	0.0119	0.0119	0
Alcoholic beverages	0.00	0.08	0	0.000	0.006	0	0.0000	0.0000	0.0000	0.0013	0.0013	0
Coffee	0.00	0.42	0	0.001	0.086	0	0.0000	0.0001	0.0000	0.0058	0.0058	0
Other hot beverages	0.13	0.98	2	0.007	0.095	0	0.0000	0.0006	0.0000	0.0058	0.0058	0
Pizzas, quiches and savoury pastries	0.18	0.88	2	0.034	0.184	1	0.0000	0.0004	0.0000	0.0020	0.0020	0
Sandwiches and snacks	0.09	0.69	1	0.004	0.052	0	0.0000	0.0002	0.0000	0.0019	0.0019	0
Soups and broths	0.18	1.66	2	0.013	0.165	0	0.0000	0.0009	0.0000	0.0059	0.0059	0
Mixed dishes	0.40	1.51	5	0.169	1.466	3	0.0000	0.0011	0.0003	0.0039	0.0039	3
Dairy-based desserts	0.23	1.10	3	0.163	1.990	3	0.0000	0.0006	0.0000	0.0032	0.0032	0
Compotes and cooked fruit	0.07	0.61	1	2.376	34.958	49	0.0001	0.0003	0.0007	0.0026	0.0026	4
Seasonings and sauces	0.07	0.22	1	0.101	0.903	2	0.0000	0.0002	0.0000	0.0008	0.0008	0
TOTAL	8.25	15.51	100	4.867	23.284	100	0.0012	0.0383	0.0062	0.0606	0.0606	100

Food group	Sr			Te			V			Ni			Co		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LB)	P95 (LB)	Contrib (LB)	Mean (UB)	P95 (UB)	Contrib (UB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	0.96	2.21	4	0.0012	0.0026	0.0030	0.0064	4	4	0.061	0.145	7	0.08	0.18	3
Breakfast cereals	0.25	1.54	1	0.0005	0.0007	0.0023	0.0041	2	2	0.003	0.015	0	0.07	0.33	2
Pasta	0.92	2.65	4	0.0006	0.0017	0.0016	0.0039	2	3	0.021	0.059	3	0.08	0.24	3
Rice and wheat products	0.29	1.18	1	0.0003	0.0009	0.0011	0.0035	1	1	0.015	0.083	2	0.03	0.10	1
Croissant-like pastries	0.25	1.16	1	0.0002	0.0006	0.0010	0.0031	1	1	0.030	0.157	4	0.05	0.26	2
Sweet and savoury biscuits and bars	0.42	1.80	2	0.0006	0.0008	0.0029	0.0031	2	2	0.014	0.062	2	0.12	0.61	4
Pastries and cakes	0.47	1.70	2	0.0007	0.0014	0.0024	0.0048	2	2	0.015	0.058	2	0.11	0.42	4
Milk	1.08	3.17	5	0.0018	0.0048	0.0084	0.0141	6	8	0.053	0.193	6	0.12	0.46	4
Ultra-fresh dairy products	0.56	1.57	2	0.0005	0.0018	0.0022	0.0054	2	3	0.022	0.076	3	0.10	0.28	3
Cheese	0.67	2.23	3	0.0017	0.0019	0.0073	0.0078	6	3	0.016	0.067	2	0.09	0.28	3
Eggs and egg products	0.11	0.55	0	0.0002	0.0003	0.0016	0.0022	1	1	0.006	0.033	1	0.01	0.08	0
Butter	0.03	0.13	0	0.0002	0.0003	0.0017	0.0037	29	13	0.009	0.043	1	0.01	0.04	0
Oils	0.00	0.01	0	0.0002	0.0003	0.0007	0.0010	1	0	0.001	0.004	0	0.01	0.02	0
Margarine	0.01	0.05	0	0.0000	0.0001	0.0003	0.0006	0	0	0.002	0.013	0	0.00	0.01	0
Meat	0.09	0.35	0	0.0013	0.0019	0.0050	0.0056	5	3	0.014	0.042	2	0.04	0.11	1
Poultry and game	0.04	0.19	0	0.0004	0.0008	0.0021	0.0031	1	1	0.006	0.022	1	0.02	0.08	1
Offal	0.00	0.03	0	0.0000	0.0000	0.0014	0.0015	0	0	0.000	0.020	0	0.00	0.05	0
Delicatessen meats	0.14	0.47	1	0.0011	0.0014	0.0044	0.0047	4	2	0.034	0.100	4	0.05	0.15	2
Fish	0.32	1.31	1	0.0002	0.0004	0.0008	0.0015	1	1	0.008	0.035	1	0.02	0.10	1
Crustaceans and molluscs	0.54	9.67	2	0.0001	0.0001	0.0016	0.0018	0	0	0.008	0.174	1	0.01	0.09	0
Vegetables (excluding potatoes)	1.98	5.64	8	0.0006	0.0020	0.0028	0.0059	2	3	0.032	0.091	4	0.16	0.42	5
Potatoes and potato products	0.56	1.46	2	0.0004	0.0016	0.0016	0.0039	1	3	0.020	0.060	2	0.16	0.42	5
Pulses	0.29	3.61	1	0.0002	0.0003	0.0054	0.0061	1	0	0.003	0.049	0	0.04	0.63	1
Fruit	0.82	2.82	3	0.0004	0.0018	0.0025	0.0066	2	3	0.024	0.111	3	0.14	0.66	5
Dried fruits, nuts and seeds	0.10	2.01	0	0.0000	0.0000	0.0003	0.0008	0	0	0.001	0.017	0	0.04	0.88	1
Ice creams, sorbets and frozen desserts	0.29	2.11	1	0.0001	0.0004	0.0011	0.0034	0	1	0.007	0.063	1	0.09	0.67	3
Chocolate	0.75	3.28	3	0.0008	0.0009	0.0035	0.0035	3	1	0.018	0.079	2	0.34	1.53	11
Sugars and sugar derivatives	0.09	0.55	0	0.0002	0.0004	0.0007	0.0018	1	1	0.006	0.029	1	0.03	0.14	1
Water	6.31	26.38	27	0.0013	0.0118	0.0069	0.0289	4	19	0.156	0.435	19	0.21	0.50	7
Non-alcoholic beverages	1.75	5.23	7	0.0016	0.0055	0.0053	0.0161	6	9	0.060	0.198	7	0.09	0.28	3
Alcoholic beverages	0.00	0.11	0	0.0000	0.0000	0.0015	0.0020	0	0	0.002	0.105	0	0.00	0.06	0
Coffee	0.01	1.28	0	0.0000	0.0001	0.0007	0.0093	0	0	0.001	0.111	0	0.00	0.30	0
Other hot beverages	0.31	2.24	1	0.0005	0.0009	0.0037	0.0072	2	2	0.010	0.069	1	0.11	0.82	4
Pizzas, quiches and savoury pastries	0.47	2.40	2	0.0000	0.0004	0.0000	0.0020	0	1	0.026	0.132	3	0.05	0.26	2
Sandwiches and snacks	0.17	1.54	1	0.0001	0.0003	0.0012	0.0030	0	1	0.012	0.097	1	0.02	0.17	1
Soups and broths	0.66	5.08	3	0.0002	0.0011	0.0030	0.0089	1	2	0.022	0.234	3	0.07	0.67	2
Mixed dishes	1.23	5.47	5	0.0012	0.0021	0.0049	0.0074	4	3	0.052	0.214	6	0.13	0.58	4
Dairy-based desserts	0.43	2.25	2	0.0006	0.0011	0.0030	0.0049	2	2	0.012	0.068	1	0.18	0.85	6
Composites and cooked fruit	0.13	1.11	1	0.0002	0.0005	0.0022	0.0040	1	1	0.003	0.024	0	0.02	0.16	1
Seasonings and sauces	0.26	0.84	1	0.0002	0.0004	0.0007	0.0012	1	1	0.026	0.096	3	0.05	0.17	2
TOTAL	23.74	42.63	100	0.0283	0.0622	0.0563	0.1040	100	100	0.834	1.448	100	2.92	5.53	100
															0.46

Table A15: Estimated intake (mean, P5 and P95) of inorganic contaminants and minerals (µg/day) by children aged 11 to 14 years

Food group	Cr			Ca			Mn			Mg		
	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	12.47	2.01	34.11	5	184.01	2138	48600	3	339	55	872	21
Breakfast cereals	4.75	1.02	20.94	2	19495	5314	83700	3	42	6	291	3
Pasta	16.17	3.57	42.81	7	8276	2357	21214	1	151	43	391	9
Rice and wheat products	6.98	1.73	24.46	3	3014	619	11562	0	72	15	267	4
Croissant-like pastries	7.64	2.14	35.34	3	6206	1925	27077	1	63	20	276	4
Sweet and savoury biscuits and bars	5.05	0.48	19.55	2	4897	356	19664	1	64	5	272	4
Pastries and cakes	10.78	1.80	37.74	5	15037	1727	55162	2	67	12	220	4
Milk	19.16	2.54	55.25	8	165843	20914	470571	25	5	1	14	0
Ultra-fresh dairy products	8.50	1.45	25.42	4	73440	12586	206071	11	11	1	32	1
Cheese	7.24	1.08	19.38	3	94781	14625	279529	14	3	1	9	0
Eggs and egg products	2.09	0.91	10.20	1	4852	1609	25757	1	4	1	19	0
Butter	5.54	1.07	15.84	2	1409	254	4119	0	0	0	1	0
Oils	6.70	1.24	22.95	3	71	9	338	0	0	0	1	0
Margarine	1.39	0.83	9.57	1	221	44	2016	0	0	0	0	0
Meat	11.33	2.64	28.58	5	4712	656	14637	1	5	1	13	0
Poultry and game	5.22	1.42	19.63	2	3707	628	18882	1	3	1	11	0
Offal	0.16	1.36	4.73	0	66	388	10832	0	2	16	71	0
Delicatessen meats	7.78	1.21	24.66	3	3447	234	11702	1	9	1	31	1
Fish	3.10	1.07	11.54	1	1929	231	8331	0	8	0	40	1
Crustaceans and molluscs	0.45	0.30	8.76	0	2359	1821	40821	0	5	1	244	0
Vegetables (excluding potatoes)	7.69	0.83	21.75	3	22077	1735	62097	3	106	11	280	7
Potatoes and potato products	8.83	1.74	20.51	4	9132	1746	26504	1	64	14	155	4
Pulses	0.67	1.29	7.76	0	1511	1697	24257	0	21	31	264	1
Fruit	6.13	0.89	19.99	3	6874	964	21894	1	68	4	248	4
Dried fruits, nuts and seeds	0.36	0.20	7.33	0	713	398	14525	0	23	11	519	1
Ice creams, sorbets and frozen desserts	4.16	2.50	23.95	2	9340	5394	55134	1	22	15	124	1
Chocolate	8.42	1.04	33.17	4	14048	1498	56857	2	124	9	630	8
Sugars and sugar derivatives	2.31	0.20	10.20	1	1123	53	5430	0	13	0	77	1
Water	7.25	0.74	20.70	3	60225	6138	243334	9	3	0	8	0
Non-alcoholic beverages	11.77	1.25	35.53	5	12840	612	38518	2	70	0	254	4
Alcoholic beverages	0.08	0.37	6.33	0	126	339	8139	0	1	1	34	0
Coffee	0.15	0.29	16.18	0	1070	129	150943	0	2	4	194	0
Other hot beverages	3.20	0.25	24.29	1	17788	1181	131746	3	26	2	261	2
Pizzas, quiches and savoury pastries	5.62	2.23	23.75	2	23790	8286	100671	4	40	13	187	2
Sandwiches and snacks	3.17	2.63	25.28	1	5274	2135	44029	1	31	28	242	2
Soups and broths	3.38	0.57	24.21	1	6083	2938	44433	1	25	11	170	2
Mixed dishes	10.93	2.97	44.69	5	21768	5493	83583	3	79	21	339	5
Dairy-based desserts	6.65	2.20	30.26	3	22102	11012	102623	3	28	11	128	2
Composites and cooked fruit	1.53	0.87	11.53	1	6133	1436	77300	1	15	4	178	1
Seasonings and sauces	3.71	0.35	12.95	2	2412	349	7671	0	9	1	31	1
TOTAL	238.52	143.67	338.40	100	676588	286328	1128664	100	1622	819	2783	100
									243957		146683	356629

Food group	Cu			Zn			Li			Na						
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	
Bread and dried bread products	69	11	178	7	334	54	844	5	0.42	0.07	1.04	2	451765	62529	1188043	20
Breakfast cereals	11	2	58	1	66	15	365	1	0.07	0.02	0.53	0	16821	4624	78996	1
Pasta	148	39	390	14	184	52	466	3	2.06	0.59	5.27	10	107770	15964	287357	5
Rice and wheat products	40	9	150	4	95	20	365	1	1.17	0.31	4.29	5	42821	11664	141429	2
Croissant-like pastries	18	5	80	2	112	31	533	2	0.11	0.03	0.50	1	93758	25264	442125	4
Sweet and savoury biscuits and bars	28	2	113	3	86	5	334	1	0.14	0.01	0.65	1	49318	5157	210123	2
Pastries and cakes	31	5	101	3	151	25	517	2	0.28	0.05	0.96	1	90776	16400	311400	4
Milk	13	1	41	1	614	77	1708	9	0.52	0.04	1.69	2	67052	7786	191025	3
Ultra-fresh dairy products	7	1	22	1	252	47	688	4	0.32	0.05	0.99	1	30386	5221	86018	1
Cheese	9	1	32	1	347	48	995	5	0.07	0.01	0.22	0	104161	10993	300125	5
Eggs and egg products	7	3	35	1	128	53	637	2	0.11	0.05	0.54	0	19975	4437	116229	1
Butter	2	0	5	0	6	1	16	0	0.10	0.01	0.34	0	16758	221	104434	1
Oils	0	0	1	0	2	0	6	0	0.00	0.00	0.01	0	42	4	246	0
Margarine	0	0	1	0	1	1	10	0	0.01	0.00	0.04	0	3888	2336	25693	0
Meat	31	7	75	3	1775	306	4477	25	0.15	0.03	0.44	1	28952	6291	73299	1
Poultry and game	16	3	69	2	306	75	1155	4	0.06	0.01	0.21	0	23890	6924	79296	1
Offal	71	600	2719	7	43	47	1486	1	0.00	0.03	0.11	0	735	4954	39771	0
Delicatessen meats	28	3	84	3	519	81	1583	7	0.17	0.02	0.49	1	244840	32839	743679	11
Fish	7	2	32	1	51	15	201	1	0.14	0.02	0.52	1	38385	7264	14457	2
Crustaceans and molluscs	9	8	189	1	58	24	1323	2	0.10	0.06	0.24	0	8109	9707	148766	0
Vegetables (excluding potatoes)	42	5	105	4	159	13	432	2	1.50	0.14	3.81	7	59540	901	179671	3
Potatoes and potato products	51	12	120	5	146	33	334	2	0.95	0.12	2.40	4	55516	1677	139475	3
Pulses	12	17	157	1	46	75	572	1	0.26	0.33	3.36	1	6243	11073	8714	0
Fruit	39	5	138	4	59	6	199	1	0.51	0.03	2.11	2	1080	59	4175	0
Dried fruits, nuts and seeds	12	6	269	1	38	12	845	1	0.01	0.00	0.17	0	4498	973	101500	0
Ice creams, sorbets and frozen desserts	19	11	110	2	51	29	299	1	0.13	0.07	0.76	1	7428	4301	43963	0
Chocolate	64	6	284	6	123	14	514	2	0.09	0.01	0.38	0	8218	672	32929	0
Sugars and sugar derivatives	3	0	13	0	7	0	34	0	0.04	0.00	0.19	0	1525	31	9044	0
Water	59	2	195	6	47	4	160	1	7.29	0.47	25.73	34	11167	833	36129	1
Non-alcoholic beverages	22	1	69	2	27	1	93	0	1.24	0.08	3.89	6	6704	476	22640	0
Alcoholic beverages	0	0	5	0	0	0	26	0	0.00	0.02	0.23	0	29	59	1429	0
Coffee	9	35	1078	1	1	1	160	0	0.11	0.40	13.61	1	61	136	8100	0
Other hot beverages	22	2	158	2	89	3	628	1	0.53	0.01	6.04	2	8164	534	64479	0
Pizzas, quiches and savoury pastries	16	5	75	2	201	61	885	3	0.26	0.07	1.27	1	118036	49821	513179	5
Sandwiches and snacks	10	10	76	1	185	114	1609	3	0.14	0.12	1.09	1	63894	65644	482580	3
Soups and broths	20	3	139	2	42	20	272	1	1.35	0.10	10.49	6	87727	46214	641643	4
Mixed dishes	49	9	219	5	508	97	2088	7	0.86	0.15	3.54	4	189275	47496	707214	9
Dairy-based desserts	27	10	128	3	121	52	549	2	0.15	0.07	0.72	1	17310	7800	93281	1
Composites and cooked fruit	6	3	52	1	6	4	63	0	0.04	0.02	0.36	0	180	79	1692	0
Seasonings and sauces	6	0	23	1	21	2	87	0	0.17	0.01	0.63	1	122440	11936	431411	6
TOTAL	1034	535	1850	100	7006	3983	10916	100	21.65	10.24	41.65	100	2209234	1180185	3393344	100

Food group	Mo				Se				K				Fe			
	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	8.4	1.4	21.6	11	1.6	0.2	4.1	4	127153	20839	327043	5	691	113	1784	10
Breakfast cereals	1.4	0.3	9.0	2	0.4	0.1	1.9	1	32278	7843	184821	1	289	62	1262	4
Pasta	4.4	1.2	11.2	6	1.3	0.4	3.6	3	23635	6657	59914	1	330	93	868	5
Rice and wheat products	3.2	0.8	10.7	4	0.7	0.2	2.5	2	14703	2075	67286	1	94	15	392	1
Croissant-like pastries	1.9	0.5	9.0	2	0.4	0.1	2.0	1	35020	11150	158400	2	271	63	1195	4
Sweet and savoury biscuits and bars	2.2	0.2	9.8	3	0.3	0.0	1.4	1	48500	4193	189751	2	232	15	986	3
Pastries and cakes	2.9	0.5	9.8	4	0.9	0.2	3.1	2	65511	10350	215929	3	407	74	1303	6
Milk	7.2	0.9	19.4	9	3.9	0.4	11.3	9	259692	31071	755000	11	65	6	226	1
Ultra-fresh dairy products	3.2	0.7	8.9	4	1.6	0.3	4.5	4	114274	17946	315714	5	37	5	109	1
Cheese	1.3	0.2	3.8	2	0.4	0.1	1.2	1	21441	2777	62221	1	18	3	56	0
Eggs and egg products	0.7	0.3	3.4	1	0.5	0.2	2.9	1	20599	4605	119314	1	172	72	845	2
Butter	0.3	0.1	1.0	0	0.3	0.1	0.8	1	2560	400	8291	0	4	0	21	0
Oils	0.0	0.0	0.1	0	0.2	0.0	0.6	0	32	3	251	0	1	0	5	0
Margarine	0.1	0.0	0.5	0	0.1	0.0	0.4	0	747	324	5410	0	2	0	15	0
Meat	0.7	0.1	1.8	1	1.0	0.3	2.6	2	155037	33657	367900	7	697	97	1948	10
Poultry and game	0.9	0.3	3.7	1	0.8	0.2	3.3	2	85558	17712	283658	4	184	45	724	3
Offal	0.7	0.5	26.9	1	0.2	1.4	7.9	0	2633	20600	98286	0	46	183	1257	1
Delicatessen meats	1.2	0.1	4.5	2	0.7	0.1	2.1	2	92648	12732	281861	4	314	35	1009	4
Fish	0.4	0.0	2.1	1	1.5	0.2	7.9	3	38623	9686	148777	2	57	14	265	1
Crustaceans and molluscs	0.5	0.1	14.2	1	0.4	0.1	10.5	1	4051	2762	92100	0	39	23	768	1
Vegetables (excluding potatoes)	5.5	0.2	17.2	7	1.7	0.2	4.1	4	163594	20650	401043	7	344	21	1060	5
Potatoes and potato products	3.2	0.7	7.2	4	1.4	0.4	3.2	3	228968	50464	550321	10	209	46	496	3
Pulses	5.4	0.3	69.4	7	0.1	0.2	1.4	0	11546	16714	151857	0	72	80	1213	1
Fruit	2.5	0.1	10.9	3	1.6	0.3	5.3	4	133810	17796	436199	6	91	12	278	1
Dried fruits, nuts and seeds	1.2	0.2	26.1	1	0.0	0.0	0.6	0	9431	5211	190000	0	20	12	423	0
Ice creams, sorbets and frozen desserts	1.0	0.6	5.9	1	0.3	0.2	1.6	1	32851	18771	191886	1	505	292	2987	7
Chocolate	1.6	0.2	6.1	2	0.3	0.0	1.3	1	63617	7264	258429	3	538	55	2390	7
Sugars and sugar derivatives	0.5	0.0	2.6	1	0.2	0.0	1.0	1	7184	192	38454	0	25	1	128	0
Water	1.6	0.2	4.2	2	12.1	1.8	30.1	27	3628	243	14620	0	33	2	118	0
Non-alcoholic beverages	1.5	0.1	4.6	2	4.5	0.4	14.2	10	130510	642	432011	6	87	3	371	1
Alcoholic beverages	0.0	0.1	1.4	0	0.0	0.1	1.8	0	1023	2834	59036	0	1	1	95	0
Coffee	0.0	0.1	2.3	0	0.1	0.3	8.0	0	3355	5700	403993	0	1	1	115	0
Other hot beverages	1.0	0.1	6.7	1	0.6	0.0	6.3	1	42390	2811	336614	2	137	2	1187	2
Pizzas, quiches and savoury pastries	2.0	0.6	8.7	3	0.5	0.2	2.1	2	45766	16429	192229	2	162	50	721	2
Sandwiches and snacks	1.1	1.1	7.5	1	0.3	0.3	2.2	1	26440	24850	208823	1	116	97	901	2
Soups and broths	1.1	0.5	7.8	1	1.0	0.5	6.8	2	57294	28229	371143	2	68	28	455	1
Mixed dishes	5.3	1.2	24.4	7	1.2	0.3	4.9	3	110293	34171	432507	5	390	79	1571	5
Dairy-based desserts	1.6	0.8	7.8	2	0.7	0.4	3.3	1	59916	26500	289500	3	364	81	1686	5
Composites and cooked fruit	0.7	0.1	4.7	1	0.4	0.3	2.7	1	15444	10500	122576	1	16	11	125	0
Seasonings and sauces	0.4	0.0	1.6	1	0.3	0.0	0.9	1	30249	602	121556	1	58	7	200	1
TOTAL	78.8	41.4	134.2	100	44.5	24.7	66.6	100	2322103	1387378	3298413	100	7190	4001	11287	100

Table A16: Estimated exposure (mean and P95) in children aged 15 to 17 years to inorganic contaminants ($\mu\text{g}/\text{kg bw}/\text{day}$)

Food group	As			Asi			Pb			Cd			Al		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LH)*	P95 (LH)*	Contrib (LH)*	Mean (HH)*	P95 (HH)*	Contrib (HH)*	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	0.030	0.084	4	0.006	0.017	3	0.020	0.056	3	0.0274	0.0774	18	2.69	7.36	7
Breakfast cereals	0.002	0.012	0	0.000	0.002	0	0.001	0.003	0	0.0011	0.0061	1	0.15	0.96	0
Pasta	0.008	0.023	1	0.002	0.005	1	0.002	0.005	1	0.0129	0.0347	9	2.92	7.80	8
Rice and wheat products	0.008	0.034	1	0.002	0.008	1	0.001	0.004	1	0.0030	0.0118	2	0.25	1.71	1
Croissant-like pastries	0.007	0.032	1	0.001	0.006	1	0.003	0.014	2	0.0037	0.0175	3	1.11	5.86	3
Sweet and savoury biscuits and bars	0.006	0.035	1	0.001	0.007	1	0.003	0.019	2	0.0052	0.0279	3	1.32	8.85	4
Pastries and cakes	0.008	0.031	1	0.002	0.006	1	0.003	0.010	2	0.0040	0.0149	3	1.77	8.00	5
Milk	0.030	0.106	4	0.013	0.048	7	0.012	0.064	7	0.0027	0.0095	2	1.14	5.79	3
Ultra-fresh dairy products	0.012	0.040	2	0.006	0.018	3	0.004	0.015	2	0.0018	0.0075	1	0.70	2.99	2
Cheese	0.005	0.017	1	0.002	0.004	1	0.002	0.006	1	0.0006	0.0024	0	0.12	0.47	0
Eggs and egg products	0.002	0.017	0	0.000	0.001	0	0.001	0.002	0	0.0002	0.0011	0	0.17	1.44	0
Butter	0.002	0.007	0	0.001	0.002	1	0.001	0.003	1	0.0001	0.0003	0	0.16	0.81	0
Oils	0.002	0.005	0	0.001	0.002	0	0.000	0.001	0	0.0000	0.0002	0	0.09	0.31	0
Margarine	0.001	0.007	0	0.000	0.004	0	0.000	0.005	0	0.0000	0.0005	0	0.05	0.56	0
Meat	0.016	0.048	2	0.000	0.002	0	0.007	0.032	4	0.0008	0.0027	1	0.39	1.18	1
Poultry and game	0.006	0.029	1	0.000	0.000	0	0.002	0.010	0	0.0004	0.0015	0	0.24	1.01	1
Offal	0.000	0.013	0	0.000	0.000	0	0.000	0.001	0	0.0005	0.0029	0	0.00	0.23	0
Delicatessen meats	0.013	0.042	2	0.001	0.002	0	0.005	0.016	3	0.0017	0.0077	1	0.84	3.18	2
Fish	0.242	1.136	35	0.002	0.008	1	0.001	0.004	1	0.0010	0.0056	1	0.20	1.07	1
Crustaceans and molluscs	0.066	0.936	10	0.001	0.018	1	0.002	0.057	1	0.0033	0.0866	2	0.53	11.05	1
Vegetables (excluding potatoes)	0.012	0.032	2	0.007	0.008	4	0.010	0.032	6	0.0106	0.0354	7	2.86	10.05	8
Potatoes and potato products	0.009	0.026	1	0.003	0.007	2	0.005	0.016	3	0.0223	0.0612	15	0.72	2.21	2
Pulses	0.001	0.020	0	0.001	0.013	1	0.002	0.027	1	0.0012	0.0179	1	0.70	6.37	2
Fruit	0.010	0.043	1	0.005	0.020	3	0.005	0.021	3	0.0023	0.0156	2	1.02	4.36	3
Dried fruits, nuts and seeds	0.001	0.021	0	0.000	0.000	0	0.001	0.011	0	0.0005	0.0083	0	0.15	4.30	0
Ice creams, sorbets and frozen desserts	0.004	0.036	1	0.002	0.004	1	0.001	0.012	2	0.0013	0.0116	1	0.73	5.90	2
Chocolate	0.016	0.070	2	0.003	0.004	2	0.003	0.013	2	0.0038	0.0157	3	2.18	8.12	6
Sugars and sugar derivatives	0.002	0.010	0	0.000	0.002	0	0.001	0.005	1	0.0018	0.0102	1	0.25	1.21	1
Water	0.049	0.152	7	0.049	0.152	27	0.023	0.114	14	0.0034	0.0094	2	1.59	4.58	4
Non-alcoholic beverages	0.024	0.088	4	0.024	0.088	13	0.018	0.063	11	0.0020	0.0069	1	1.83	6.65	5
Alcoholic beverages	0.001	0.031	0	0.001	0.031	0	0.001	0.064	1	0.0001	0.0029	0	0.08	3.59	0
Coffee	0.004	0.084	1	0.004	0.084	2	0.001	0.022	2	0.0003	0.0051	0	0.17	4.10	0
Other hot beverages	0.005	0.037	1	0.005	0.037	3	0.003	0.013	2	0.0012	0.0125	1	1.65	12.67	4
Pizzas, quiches and savoury pastries	0.015	0.076	2	0.003	0.015	2	0.003	0.013	2	0.0032	0.0266	3	2.05	11.02	6
Sandwiches and snacks	0.014	0.067	2	0.003	0.013	2	0.003	0.014	2	0.0040	0.0166	3	0.86	3.63	2
Soups and broths	0.007	0.045	1	0.004	0.005	2	0.004	0.035	2	0.0032	0.0201	2	0.66	5.56	2
Mixed dishes	0.027	0.116	4	0.014	0.058	8	0.006	0.022	4	0.0101	0.0408	7	2.07	7.60	6
Dairy-based desserts	0.011	0.082	2	0.005	0.010	3	0.002	0.015	1	0.0022	0.0135	1	1.63	9.35	4
Compotes and cooked fruit	0.001	0.010	0	0.000	0.001	0	0.002	0.023	1	0.0010	0.0109	1	0.25	2.54	1
Seasonings and sauces	0.006	0.022	1	0.006	0.006	3	0.003	0.010	2	0.0024	0.0132	2	0.32	1.34	1
TOTAL	0.685	1.494	100	0.181	0.223	100	0.165	0.314	100	0.1493	0.2614	100	36.62	65.81	100

* LH: low hypothesis; HH: high hypothesis.

Food group	Hg				Sb				Ag							
	Mean (LB)	P95 (LB)	P95 (UB)	Contrib (UB)	Mean (LB)	P95 (LB)	P95 (UB)	Contrib (LB)	Mean (LB)	P95 (UB)	P95 (LB)	Contrib (UB)				
Bread and dried bread products	0.0000	0.0063	0.0000	0.0171	0	0.0012	0.0015	0.0033	0.0042	5	0.000	0.053	0.000	0.144	0	2
Breakfast cereals	0.0000	0.0010	0.0000	0.0050	0	0.0002	0.0002	0.0009	0.0012	1	0.000	0.008	0.000	0.042	0	0
Pasta	0.0000	0.0040	0.0000	0.0106	0	0.0017	0.0017	0.0045	0.0045	8	0.033	0.067	0.089	0.178	3	3
Rice and wheat products	0.0000	0.0021	0.0000	0.0083	0	0.0007	0.0007	0.0029	0.0030	3	0.008	0.025	0.034	0.105	1	1
Croissant-like pastries	0.0003	0.0018	0.0021	0.0084	2	0.0005	0.0006	0.0025	0.0026	2	0.008	0.018	0.059	0.093	1	1
Sweet and savoury biscuits and bars	0.0003	0.0014	0.0026	0.0084	2	0.0006	0.0006	0.0043	0.0043	3	0.022	0.027	0.149	0.174	2	1
Pastries and cakes	0.0002	0.0027	0.0017	0.0099	1	0.0018	0.0018	0.0076	0.0077	8	0.021	0.038	0.106	0.141	2	2
Milk	0.0016	0.0133	0.0187	0.0480	8	0.0004	0.0016	0.0021	0.0057	2	0.056	0.150	0.253	0.507	5	7
Ultra-fresh dairy products	0.0001	0.0054	0.0033	0.0184	1	0.0004	0.0008	0.0017	0.0030	2	0.031	0.069	0.161	0.277	3	3
Cheese	0.0001	0.0013	0.0007	0.0051	1	0.0002	0.0003	0.0010	0.0012	1	0.014	0.023	0.084	0.093	1	1
Eggs and egg products	0.0000	0.0009	0.0008	0.0043	0	0.0000	0.0001	0.0002	0.0006	0	0.005	0.011	0.038	0.055	0	1
Butter	0.0000	0.0006	0.0003	0.0022	0	0.0002	0.0002	0.0006	0.0006	1	0.002	0.007	0.009	0.024	0	0
Oils	0.0000	0.0005	0.0000	0.0019	0	0.0000	0.0001	0.0001	0.0003	0	0.003	0.007	0.012	0.025	0	0
Margarine	0.0000	0.0002	0.0000	0.0018	0	0.0001	0.0001	0.0007	0.0008	0	0.000	0.002	0.007	0.021	0	0
Meat	0.0000	0.0036	0.0000	0.0099	0	0.0009	0.0012	0.0035	0.0039	4	0.035	0.058	0.154	0.186	3	3
Poultry and game	0.0000	0.0019	0.0000	0.0078	0	0.0002	0.0003	0.0008	0.0015	1	0.031	0.042	0.217	0.220	3	2
Offal	0.0000	0.0000	0.0000	0.0024	0	0.0000	0.0000	0.0010	0.0010	0	0.005	0.005	0.309	0.309	0	0
Delicatessen meats	0.0017	0.0035	0.0141	0.0177	9	0.0004	0.0005	0.0013	0.0017	2	0.023	0.036	0.109	0.145	2	2
Fish	0.0097	0.0099	0.0540	0.0545	52	0.0002	0.0002	0.0011	0.0012	1	0.011	0.017	0.080	0.122	1	1
Crustaceans and molluscs	0.0005	0.0005	0.0077	0.0077	3	0.0001	0.0001	0.0009	0.0009	0	0.209	0.209	6.142	6.142	20	10
Vegetables (excluding potatoes)	0.0002	0.0059	0.0013	0.0157	1	0.0007	0.0012	0.0021	0.0032	3	0.055	0.093	0.206	0.254	5	4
Potatoes and potato products	0.0000	0.0050	0.0000	0.0133	0	0.0004	0.0009	0.0011	0.0024	2	0.044	0.078	0.171	0.221	4	4
Pulses	0.0001	0.0006	0.0014	0.0088	0	0.0002	0.0002	0.0030	0.0030	1	0.004	0.007	0.041	0.105	0	0
Fruit	0.0000	0.0060	0.0000	0.0197	0	0.0014	0.0019	0.0154	0.0159	6	0.068	0.109	0.376	0.499	7	5
Dried fruits, nuts and seeds	0.0000	0.0002	0.0000	0.0048	0	0.0000	0.0000	0.0003	0.0007	0	0.001	0.002	0.017	0.049	0	0
Ice creams, sorbets and frozen desserts	0.0000	0.0008	0.0000	0.0065	0	0.0003	0.0003	0.0024	0.0027	1	0.026	0.029	0.202	0.237	2	1
Chocolate	0.0016	0.0024	0.0071	0.0091	9	0.0008	0.0008	0.0032	0.0032	4	0.007	0.015	0.032	0.064	1	1
Sugars and sugar derivatives	0.0000	0.0007	0.0000	0.0033	0	0.0007	0.0017	0.0059	0.0059	8	0.011	0.017	0.046	0.075	1	1
Water	0.0003	0.0437	0.0000	0.1119	2	0.0009	0.0052	0.0036	0.0129	4	0.086	0.447	0.333	1.144	8	20
Non-alcoholic beverages	0.0000	0.0179	0.0000	0.0533	0	0.0018	0.0032	0.0061	0.0102	8	0.077	0.228	0.247	0.706	7	10
Alcoholic beverages	0.0000	0.0006	0.0000	0.0209	0	0.0001	0.0001	0.0017	0.0037	0	0.005	0.010	0.140	0.307	0	0
Coffee	0.0000	0.0016	0.0000	0.0286	0	0.0003	0.0004	0.0062	0.0062	1	0.013	0.023	0.296	0.388	1	1
Other hot beverages	0.0002	0.0030	0.0019	0.0251	1	0.0007	0.0008	0.0064	0.0065	3	0.012	0.034	0.140	0.292	1	2
Pizzas, quiches and savoury pastries	0.0000	0.0020	0.0000	0.0096	0	0.0006	0.0007	0.0034	0.0034	3	0.014	0.031	0.080	0.159	1	1
Sandwiches and snacks	0.0002	0.0021	0.0025	0.0094	1	0.0003	0.0004	0.0012	0.0017	1	0.010	0.024	0.069	0.125	1	1
Soups and broths	0.0000	0.0029	0.0000	0.0200	0	0.0004	0.0006	0.0035	0.0041	2	0.021	0.043	0.350	0.402	2	2
Mixed dishes	0.0003	0.0039	0.0021	0.0143	1	0.0011	0.0013	0.0050	0.0051	5	0.046	0.069	0.193	0.253	4	3
Dairy-based desserts	0.0007	0.0023	0.0060	0.0147	4	0.0006	0.0007	0.0040	0.0042	3	0.005	0.019	0.036	0.100	0	1
Compotes and cooked fruit	0.0001	0.0009	0.0023	0.0093	1	0.0002	0.0002	0.0018	0.0021	1	0.016	0.020	0.194	0.213	2	1
Seasonings and sauces	0.0001	0.0010	0.0008	0.0036	1	0.0001	0.0001	0.0003	0.0006	0	0.002	0.009	0.007	0.037	0	0
TOTAL	0.0187	0.1644	0.0552	0.2740	100	0.0221	0.0331	0.0386	0.0548	100	1.041	2.181	1.944	3.632	100	100

Food group	Ba			Sn			Ga			Ge		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LB)	P95 (LB)	Contrib (LB)	Mean (UB)	P95 (UB)	Contrib (UB)
Bread and dried bread products	0.98	2.62	16	0.015	0.041	0	0.0000	0.0013	0.0034	0.0009	0.0028	4
Breakfast cereals	0.21	2.59	3	0.001	0.006	0	0.0000	0.0002	0.0010	0.0004	0.0006	1
Pasta	0.47	1.26	8	0.010	0.026	0	0.0000	0.0008	0.0021	0.0016	0.0022	3
Rice and wheat products	0.09	0.46	1	0.002	0.010	0	0.0000	0.0004	0.0017	0.0003	0.0009	1
Croissant-like pastries	0.19	0.96	3	0.004	0.024	0	0.0001	0.0004	0.0017	0.0003	0.0007	1
Sweet and savoury biscuits and bars	0.16	1.08	3	0.003	0.015	0	0.0000	0.0002	0.0012	0.0006	0.0007	1
Pastries and cakes	0.20	0.74	3	0.034	0.206	1	0.0000	0.0005	0.0018	0.0003	0.0011	1
Milk	0.19	0.71	3	0.021	0.094	2	0.0000	0.0023	0.0078	0.0010	0.0044	3
Ultra-fresh dairy products	0.09	0.33	1	0.063	0.299	1	0.0000	0.0011	0.0037	0.0004	0.0020	1
Cheese	0.10	0.38	2	0.196	1.286	6	0.0000	0.0003	0.0010	0.0002	0.0005	1
Eggs and egg products	0.06	0.30	1	0.003	0.018	0	0.0000	0.0002	0.0009	0.0002	0.0004	1
Butter	0.02	0.06	0	0.001	0.006	0	0.0006	0.0008	0.0045	0.0017	0.0018	3
Oils	0.01	0.05	0	0.001	0.005	0	0.0000	0.0001	0.0004	0.0001	0.0003	0
Margarine	0.01	0.05	0	0.001	0.013	0	0.0000	0.0000	0.0005	0.0001	0.0001	0
Meat	0.03	0.11	1	0.027	0.055	1	0.0000	0.0007	0.0020	0.0020	0.0027	6
Poultry and game	0.02	0.12	0	0.004	0.018	0	0.0000	0.0004	0.0016	0.0005	0.0010	1
Offal	0.00	0.02	0	0.000	0.015	0	0.0000	0.0000	0.0009	0.0000	0.0001	0
Delicatessen meats	0.03	0.11	1	0.011	0.041	0	0.0000	0.0004	0.0011	0.0013	0.0016	4
Fish	0.02	0.11	0	0.004	0.025	0	0.0000	0.0002	0.0008	0.0003	0.0005	1
Crustaceans and molluscs	0.01	0.12	0	0.001	0.007	0	0.0000	0.0000	0.0006	0.0001	0.0014	0
Vegetables (excluding potatoes)	0.35	1.10	6	0.255	1.599	8	0.0000	0.0012	0.0029	0.0006	0.0022	2
Potatoes and potato products	0.11	0.32	2	0.033	0.181	1	0.0000	0.0010	0.0027	0.0011	0.0024	3
Pulses	0.12	1.80	2	0.004	0.049	0	0.0000	0.0001	0.0017	0.0001	0.0003	0
Fruit	0.27	1.22	4	1.028	11.159	31	0.0000	0.0012	0.0039	0.0012	0.0028	3
Dried fruits, nuts and seeds	0.06	0.91	1	0.001	0.020	0	0.0000	0.0000	0.0010	0.0001	0.0013	0
Ice creams, sorbets and frozen desserts	0.09	0.81	2	0.016	0.363	0	0.0000	0.0002	0.0013	0.0001	0.0004	0
Chocolate	0.34	1.34	6	0.002	0.012	0	0.0000	0.0002	0.0009	0.0010	0.0012	3
Sugars and sugar derivatives	0.04	0.21	1	0.114	0.767	3	0.0000	0.0001	0.0007	0.0004	0.0005	1
Water	0.38	1.17	6	0.015	0.077	0	0.0000	0.0087	0.0224	0.0100	0.0208	28
Non-alcoholic beverages	0.46	1.47	7	0.012	0.043	0	0.0000	0.0036	0.0107	0.0034	0.0087	10
Alcoholic beverages	0.01	0.40	0	0.001	0.039	0	0.0000	0.0001	0.0042	0.0000	0.0002	0
Coffee	0.02	0.32	0	0.003	0.065	0	0.0000	0.0003	0.0057	0.0006	0.0107	2
Other hot beverages	0.10	1.08	2	0.004	0.045	0	0.0000	0.0006	0.0039	0.0004	0.0012	1
Pizzas, quiches and savoury pastries	0.17	0.82	3	0.033	0.183	1	0.0000	0.0004	0.0019	0.0006	0.0012	2
Sandwiches and snacks	0.15	0.55	2	0.008	0.053	0	0.0000	0.0004	0.0017	0.0006	0.0011	2
Soups and broths	0.10	0.68	2	0.006	0.059	0	0.0000	0.0006	0.0040	0.0002	0.0010	1
Mixed dishes	0.28	1.14	4	0.134	0.800	4	0.0000	0.0007	0.0026	0.0013	0.0022	4
Dairy-based desserts	0.15	1.08	2	0.024	0.032	0	0.0000	0.0004	0.0023	0.0008	0.0012	2
Compotes and cooked fruit	0.04	0.35	1	1.182	20.500	35	0.0000	0.0002	0.0019	0.0001	0.0003	0
Seasonings and sauces	0.05	0.20	1	0.077	0.577	2	0.0000	0.0002	0.0007	0.0002	0.0004	1
TOTAL	6.19	11.63	100	3.354	18.358	100	0.0009	0.0303	0.0517	0.0352	0.0733	100

Food group	Sr			Te			V			Ni			Co		
	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (LB)	P95 (LB)	Contrib (LB)	Mean (UB)	P95 (UB)	Contrib (UB)	Mean (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	0.86	2.29	5	0.0011	0.0024	0.0034	0.0068	0.0054	8	0.07	0.18	3	0.01	0.04	7
Breakfast cereals	0.13	0.81	1	0.0003	0.0004	0.0015	0.0020	0.0002	0	0.04	0.22	2	0.00	0.02	2
Pasta	0.65	1.72	4	0.0004	0.0012	0.0011	0.0032	0.014	2	0.06	0.16	3	0.00	0.00	1
Rice and wheat products	0.18	0.79	1	0.0002	0.0006	0.0008	0.0025	0.0009	1	0.02	0.08	1	0.00	0.01	1
Croissant-like pastries	0.21	1.03	1	0.0001	0.0004	0.0007	0.0021	0.0030	1	0.05	0.27	2	0.01	0.03	4
Sweet and savoury biscuits and bars	0.28	1.81	2	0.0004	0.0005	0.0027	0.0030	0.009	2	0.08	0.62	4	0.01	0.06	4
Pastries and cakes	0.29	1.08	2	0.0004	0.0009	0.0018	0.0032	0.009	2	0.07	0.29	3	0.01	0.03	3
Milk	0.73	2.43	4	0.0012	0.0033	0.0060	0.0120	0.035	6	0.08	0.31	4	0.01	0.03	5
Ultra-fresh dairy products	0.42	1.48	2	0.0004	0.0013	0.0023	0.0051	0.017	2	0.07	0.31	3	0.00	0.02	3
Cheese	0.41	1.36	2	0.0012	0.0013	0.0043	0.0045	0.010	6	0.05	0.19	3	0.00	0.02	2
Eggs and egg products	0.09	0.44	0	0.0001	0.0003	0.0016	0.0017	0.005	1	0.01	0.06	0	0.00	0.01	1
Butter	0.02	0.08	0	0.0002	0.0006	0.0020	0.0206	0.005	26	0.01	0.03	0	0.00	0.01	2
Oils	0.00	0.01	0	0.0000	0.0002	0.0006	0.0008	0.001	1	0.01	0.02	0	0.00	0.00	0
Margarine	0.01	0.07	0	0.0000	0.0001	0.0003	0.0007	0.002	0	0.00	0.02	0	0.00	0.00	0
Meat	0.05	0.19	0	0.0011	0.0016	0.0045	0.0047	0.011	5	0.04	0.11	2	0.01	0.02	3
Poultry and game	0.03	0.13	0	0.0003	0.0006	0.0022	0.0032	0.005	2	0.01	0.06	1	0.00	0.01	1
Offal	0.00	0.05	0	0.0000	0.0000	0.0010	0.0011	0.000	0	0.00	0.07	0	0.00	0.04	0
Delicatessen meats	0.11	0.36	1	0.0007	0.0010	0.0034	0.0039	0.025	4	0.03	0.11	2	0.00	0.01	1
Fish	0.21	0.88	1	0.0001	0.0002	0.0005	0.0012	0.005	0	0.01	0.06	1	0.00	0.01	1
Crustaceans and molluscs	0.42	8.40	2	0.0001	0.0001	0.0014	0.0016	0.005	0	0.00	0.08	0	0.00	0.02	0
Vegetables (excluding potatoes)	1.38	3.75	8	0.0004	0.0015	0.0019	0.0038	0.026	2	0.12	0.33	6	0.01	0.02	4
Potatoes and potato products	0.44	1.28	2	0.0003	0.0013	0.0014	0.0035	0.015	1	0.13	0.36	6	0.01	0.03	6
Pulses	0.26	4.03	1	0.0002	0.0003	0.0035	0.0039	0.003	1	0.04	0.63	2	0.00	0.03	1
Fruit	0.61	2.43	3	0.0003	0.0015	0.0020	0.0052	0.019	2	0.12	0.60	5	0.00	0.02	3
Dried fruits, nuts and seeds	0.11	3.28	1	0.0000	0.0000	0.0001	0.0013	0.001	0	0.03	0.46	1	0.00	0.01	1
Ice creams, sorbets and frozen desserts	0.17	1.39	1	0.0001	0.0002	0.0007	0.0020	0.004	0	0.05	0.43	2	0.01	0.04	3
Chocolate	0.56	2.16	3	0.0006	0.0006	0.0024	0.0026	0.013	3	0.24	0.96	11	0.02	0.10	13
Sugars and sugar derivatives	0.05	0.32	0	0.0001	0.0003	0.0005	0.0011	0.004	1	0.01	0.09	1	0.00	0.00	0
Water	5.11	21.94	28	0.0011	0.0097	0.0058	0.0250	0.126	5	0.17	0.42	8	0.01	0.02	4
Non-alcoholic beverages	1.62	5.22	9	0.0014	0.0050	0.0052	0.0144	0.052	7	0.08	0.24	4	0.01	0.02	3
Alcoholic beverages	0.02	0.65	0	0.0001	0.0002	0.0017	0.0057	0.009	0	0.01	0.47	0	0.00	0.02	0
Coffee	0.06	1.14	0	0.0001	0.0004	0.0025	0.0065	0.006	1	0.01	0.31	1	0.00	0.04	1
Other hot beverages	0.26	2.36	1	0.0003	0.0008	0.0046	0.0065	0.009	2	0.08	0.87	4	0.01	0.08	4
Pizzas, quiches and savoury pastries	0.45	2.25	2	0.0000	0.0004	0.0000	0.0019	0.025	4	0.05	0.24	2	0.00	0.02	2
Sandwiches and snacks	0.26	1.05	1	0.0001	0.0005	0.0009	0.0033	0.021	1	0.03	0.16	2	0.00	0.03	3
Soups and broths	0.39	2.87	2	0.0001	0.0007	0.0013	0.0046	0.013	1	0.03	0.32	1	0.00	0.01	1
Mixed dishes	0.80	3.25	4	0.0009	0.0015	0.0044	0.0055	0.033	4	0.08	0.36	4	0.01	0.02	4
Dairy-based desserts	0.27	1.71	1	0.0004	0.0003	0.0031	0.0042	0.009	2	0.12	0.76	5	0.01	0.07	6
Compotes and cooked fruit	0.07	0.71	0	0.0001	0.0003	0.0014	0.0028	0.001	1	0.01	0.11	0	0.00	0.01	0
Seasonings and sauces	0.21	0.74	1	0.0001	0.0003	0.0005	0.0010	0.020	1	0.04	0.14	2	0.00	0.01	1
TOTAL	18.15	37.42	100	0.0209	0.0480	0.0412	0.0798	0.662	100	2.17	3.92	100	0.18	0.32	100

Table A17: Estimated intake (mean, P5 and P95) of inorganic contaminants and minerals (µg/day) by children aged 15 to 17 years

Food group	Cr			Ca			Mn			Mg		
	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)
Bread and dried bread products	14.49	1.61	40.18	6	20952	2280	60328	3	390	50	1080	23
Breakfast cereals	3.71	1.53	20.37	2	15481	5979	82371	2	31	9	178	2
Pasta	15.90	4.76	40.44	7	8056	2357	20036	1	147	43	369	9
Rice and wheat products	6.09	1.73	26.56	3	2566	619	10944	0	61	15	239	4
Croissant-like pastries	6.79	2.14	32.05	3	6810	1711	28300	1	63	20	265	4
Sweet and savoury biscuits and bars	4.57	0.53	27.36	2	4264	487	25062	1	59	5	383	4
Pastries and cakes	8.96	1.83	31.39	4	11645	1864	41670	2	55	12	195	3
Milk	16.37	2.49	55.39	7	145823	2057	45174	23	4	0	14	0
Ultra-fresh dairy products	8.14	1.72	28.89	3	69015	6272	229171	11	10	0	41	1
Cheese	6.09	0.65	20.78	3	75925	12187	262850	12	3	0	9	0
Eggs and egg products	2.18	1.04	11.19	1	5185	2696	25757	1	4	2	21	0
Butter	4.88	0.71	17.14	2	1244	254	4259	0	0	0	1	0
Oils	7.02	1.55	23.46	3	77	12	316	0	0	0	1	0
Margarine	1.27	0.41	13.01	1	215	42	2625	0	0	0	1	0
Meat	12.13	3.42	32.37	5	4431	1014	14317	1	5	1	14	0
Poultry and game	5.28	1.71	17.30	2	3508	480	17871	1	3	1	12	0
Offal	0.11	1.07	7.51	0	65	165	5416	0	11	11	66	0
Delicatessen meats	7.53	1.17	24.78	3	3524	389	13226	1	9	1	39	1
Fish	2.78	0.96	11.82	1	1751	248	10285	0	8	0	47	0
Crustaceans and molluscs	0.39	0.65	5.33	0	2466	1980	44000	0	6	2	142	0
Vegetables (excluding potatoes)	7.65	1.21	21.00	3	20647	2576	63105	3	108	18	298	6
Potatoes and potato products	9.33	1.80	26.48	4	9682	1310	25250	2	68	13	179	4
Pulses	0.97	1.39	14.56	0	1940	3143	22080	0	29	60	370	2
Fruit	6.79	0.89	23.22	3	6640	719	24383	1	68	5	275	4
Dried fruits, nuts and seeds	0.48	0.21	12.05	0	933	415	23668	0	21	4	308	1
Ice creams, sorbets and frozen desserts	3.21	2.34	31.24	1	7205	5394	65978	1	17	12	161	1
Chocolate	8.44	0.92	32.98	4	15482	1421	61582	2	118	6	559	7
Sugars and sugar derivatives	2.01	0.33	9.10	1	908	53	4982	0	8	0	51	0
Water	7.42	0.80	21.26	3	60500	6330	195335	10	3	0	8	0
Non-alcoholic beverages	13.89	2.20	40.25	6	14003	1102	41088	2	70	0	263	4
Alcoholic beverages	0.66	0.42	19.05	0	698	391	17643	0	4	2	161	0
Coffee	0.87	0.41	14.39	0	5440	453	13471	1	11	6	172	1
Other hot beverages	2.98	0.20	34.40	1	18426	1181	190100	3	34	1	230	2
Pizzas, quiches and savoury pastries	6.65	3.17	33.10	3	28477	13886	141979	4	49	14	243	3
Sandwiches and snacks	7.09	3.41	27.25	3	10732	4270	49191	2	68	38	276	4
Soups and broths	2.91	0.97	20.86	1	5497	4650	33371	1	22	19	137	1
Mixed dishes	10.32	2.45	37.42	4	19705	4695	75156	3	74	20	272	4
Dairy-based desserts	6.43	2.20	47.63	3	18089	12121	112696	3	27	6	172	2
Composites and cooked fruit	1.10	0.79	12.05	0	4505	951	61840	1	10	4	114	1
Seasonings and sauces	4.18	0.62	14.15	2	2557	376	10026	0	10	1	38	1
TOTAL	238.04	135.62	387.02	100	635067	255277	1141474	100	1679	710	3113	100
												243376
												132841
												393583

Food group	Cu			Zn			Li			Na				
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Contrib (MB)	
Bread and dried bread products	81	11	223	7	385	49	1069	5	0.49	1.30	534648	62529	151107	23
Breakfast cereals	8	2	51	1	51	19	290	1	0.05	0.02	13553	5395	77071	1
Pasta	145	43	368	13	178	52	440	2	2.00	4.98	106217	31929	271393	5
Rice and wheat products	34	9	139	3	81	20	332	1	1.01	4.32	37029	11664	163300	2
Croissant-like pastries	21	5	91	2	107	31	504	1	0.10	0.03	86169	25264	414979	4
Sweet and savoury biscuits and bars	26	3	179	2	78	11	462	1	0.12	0.68	42658	6454	207600	2
Pastries and cakes	25	5	105	2	122	25	423	2	0.23	0.80	78771	16800	261014	3
Milk	12	2	43	1	541	77	1680	8	0.46	0.07	59302	7003	189450	3
Ultra-fresh dairy products	7	1	24	1	237	23	789	3	0.31	0.03	28490	2731	94270	1
Cheese	8	1	32	1	274	45	984	4	0.06	0.01	91570	8793	330776	4
Eggs and egg products	8	4	44	1	135	62	649	2	0.12	0.05	22853	7606	138443	1
Butter	2	0	6	0	5	1	18	0	0.09	0.01	12083	221	69734	1
Oils	0	0	1	0	2	0	8	0	0.00	0.00	44	5	232	0
Margarine	0	0	2	0	1	0	14	0	0.00	0.00	3534	1211	35121	0
Meat	33	9	87	3	1953	513	5446	27	0.16	0.05	29074	8903	77149	1
Poultry and game	19	4	80	2	310	102	1311	4	0.07	0.01	24949	7688	86585	1
Offal	52	270	2581	5	30	224	1790	0	0.00	0.02	571	4929	29786	0
Delicatessen meats	28	3	114	3	493	89	1523	7	0.15	0.02	233422	40579	729396	10
Fish	6	2	32	1	44	14	216	1	0.12	0.02	33919	7023	160571	1
Crustaceans and molluscs	12	7	251	1	97	46	2646	1	0.09	0.11	9070	12654	186857	0
Vegetables (excluding potatoes)	43	7	106	4	170	19	480	2	1.40	0.14	62942	1510	178337	3
Potatoes and potato products	54	10	146	5	158	31	457	2	0.96	0.16	64872	6432	217875	3
Pulses	16	32	224	2	64	133	903	1	0.33	0.52	8870	11073	118714	0
Fruit	39	7	139	4	57	8	241	1	0.48	0.02	1004	84	4762	0
Dried fruits, nuts and seeds	12	4	175	1	32	4	502	0	0.03	0.00	3710	338	60320	0
Ice creams, sorbets and frozen desserts	14	11	134	1	39	29	363	1	0.10	0.07	5730	4301	51680	0
Chocolate	61	5	266	6	122	12	485	2	0.09	0.01	9467	727	38603	0
Sugars and sugar derivatives	2	0	12	0	5	0	30	0	0.04	0.01	1353	31	7023	0
Water	63	3	210	6	42	3	155	1	8.36	0.41	11234	1047	39126	0
Non-alcoholic beverages	24	1	75	2	29	1	99	0	1.36	0.17	7895	1008	26388	0
Alcoholic beverages	1	0	17	0	4	1	185	0	0.06	0.02	166	59	4957	0
Coffee	63	35	998	6	7	3	142	0	0.75	0.37	400	188	7200	0
Other hot beverages	23	1	204	2	79	4	896	1	0.97	0.00	7796	534	91942	0
Pizzas, quiches and savoury pastries	20	7	97	2	244	115	1200	3	0.33	0.07	138750	65371	682314	6
Sandwiches and snacks	21	13	91	2	364	165	1680	5	0.28	0.16	142653	82571	625183	6
Soups and broths	17	6	136	2	35	30	211	0	1.14	0.16	78066	54286	494929	3
Mixed dishes	46	8	188	4	466	83	1816	6	0.80	0.11	17828	53286	599616	8
Dairy-based desserts	24	6	161	2	99	52	600	1	0.13	0.07	13830	8077	91464	1
Compotes and cooked fruit	5	3	47	0	4	4	45	0	0.03	0.02	128	79	1517	0
Seasonings and sauces	6	1	28	1	23	3	95	0	0.18	0.02	130968	13925	506925	6
TOTAL	1080	494	2387	100	7167	3398	12118	100	23.48	9.16	2315976	1129769	4025267	100

Food group	Mo			Se			K			Fe					
	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)	Mean (MB)	P5 (MB)	P95 (MB)			
	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)	Contrib (MB)			
Bread and dried bread products	9.7	1.3	27.2	1.9	0.2	5.2	4	148378	1957	406950	6	802	104	2257	11
Breakfast cereals	1.1	0.4	5.8	0.3	0.1	1.6	1	24676	8893	137899	1	329	83	1320	3
Pasta	4.3	1.2	10.6	1.2	0.4	3.2	3	22927	6657	56286	1	230	93	795	4
Rice and wheat products	2.8	0.8	11.8	0.6	0.2	2.5	1	12264	2075	62889	1	79	15	367	1
Croissant-like pastries	1.7	0.5	8.2	0.4	0.1	1.9	1	34897	11150	148571	2	317	63	1427	4
Sweet and savoury biscuits and bars	1.9	0.2	9.9	0.3	0.0	1.8	1	44544	6075	210600	2	211	23	1433	3
Pastries and cakes	2.4	0.5	8.0	0.8	0.2	2.6	2	52922	10350	196557	2	347	71	1427	5
Milk	6.3	0.8	18.9	3.5	0.4	11.3	7	228684	28114	725000	10	57	8	220	1
Ultra-fresh dairy products	3.0	0.5	10.4	1.6	0.2	5.4	3	108809	9894	354643	5	36	4	143	0
Cheese	1.1	0.1	3.8	0.4	0.0	1.3	1	18289	2330	65990	1	15	2	50	0
Eggs and egg products	0.8	0.4	4.5	0.6	0.2	3.7	1	22111	7319	198857	1	179	86	873	2
Butter	0.3	0.0	1.0	0.2	0.1	0.9	1	2235	400	7903	0	4	0	15	0
Oils	0.0	0.0	0.1	0.0	0.0	0.5	0	37	3	418	0	1	0	4	0
Margarine	0.0	0.0	0.6	0.1	0.0	0.5	0	699	162	7045	0	2	0	18	0
Meat	0.7	0.2	2.1	1.1	0.4	2.9	2	159342	51825	412132	7	787	147	2452	11
Poultry and game	0.9	0.2	3.5	0.9	0.2	3.7	2	92333	24914	390933	4	207	46	814	3
Offal	0.5	0.5	32.4	1	0.1	10.4	0	1927	9321	128429	0	34	209	2524	0
Delicatessen meats	1.3	0.1	6.1	0.7	0.1	2.2	1	85895	14067	271691	4	329	44	1184	5
Fish	0.4	0.0	2.3	1	1.1	0.2	2	35722	15729	152979	2	47	9	199	1
Crustaceans and molluscs	0.3	0.1	8.6	0.3	0.1	8.0	1	3801	6643	62629	0	38	56	569	1
Vegetables (excluding potatoes)	6.1	0.4	18.4	1.7	0.3	4.2	4	165852	24464	444411	7	343	42	993	5
Potatoes and potato products	3.4	0.7	9.5	1.5	0.3	4.1	3	238185	52143	660500	10	226	40	608	3
Pulses	8.1	7.0	107.6	10	0.2	0.4	0	15197	31714	196286	1	102	116	1255	1
Fruit	2.3	0.2	10.2	3	1.7	0.3	4	129516	27940	529171	6	90	17	359	1
Dried fruits, nuts and seeds	0.9	0.1	15.5	1	0.0	1.1	0	12845	5429	319961	1	26	12	663	0
Ice creams, sorbets and frozen desserts	0.8	0.6	7.3	1	0.2	2.1	0	25333	18771	245350	1	389	292	3507	5
Chocolate	1.7	0.2	7.1	2	0.3	0.0	1	65841	7179	258864	3	518	55	1936	7
Sugars and sugar derivatives	0.4	0.0	1.7	1	0.2	0.0	0	4918	192	29611	0	21	1	89	0
Water	1.8	0.2	4.4	2	13.1	34.1	28	3467	295	15259	0	31	2	119	0
Non-alcoholic beverages	1.6	0.2	4.6	2	5.3	0.9	12	139341	778	523718	6	87	3	316	1
Alcoholic beverages	0.2	0.1	5.6	0	0.2	0.1	0	5208	1417	171634	0	11	5	444	0
Coffee	0.1	0.1	2.1	0	0.5	0.3	1	22813	12550	358571	1	5	2	102	0
Other hot beverages	0.9	0.1	8.8	1	0.8	0.0	2	39604	2811	482167	2	132	3	1611	2
Pizzas, quiches and savoury pastries	2.4	1.2	11.9	3	0.6	0.3	2	54639	26514	272986	2	198	90	973	3
Sandwiches and snacks	2.2	1.2	8.8	3	0.6	0.4	1	58901	33525	263771	3	242	123	1200	3
Soups and broths	1.0	0.7	5.9	1	0.8	0.7	2	50160	36714	292757	2	60	48	378	1
Mixed dishes	4.6	1.1	19.8	6	1.1	0.3	2	103323	29595	369557	4	354	73	1399	5
Dairy-based desserts	1.4	0.8	8.6	2	0.5	0.4	1	49705	26400	317821	2	346	75	2466	5
Composites and cooked fruit	0.5	0.1	5.1	1	0.3	0.2	1	11190	10500	123977	0	12	11	124	0
Seasonings and sauces	0.4	0.0	1.8	1	0.3	0.1	1	30094	876	143736	1	60	7	244	1
TOTAL	80.5	39.5	138.5	46.1	24.3	77.9	100	2326623	1225546	3693281	100	7295	3485	13082	100

Table B4: Estimated exposure (mean and P95) in women of childbearing age (18-45 years) to PCDD/F (pg TEQ WHO₉₈/kg bw/day), DL-PCBs (pg TEQ WHO₉₈/kg bw/day) and the 6 NDL-PCBs (pg/kg bw/day) and contribution of foods (%)

Food group	PCDD/F			DL-PCBs			PCDD/F+ DL-PCBs			6 NDL-PCBs		
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Milk	0.008	0.037	4.4	0.011	0.057	3.9	0.019	0.092	4.1	54	277	3.0
Ultra-fresh dairy products	0.017	0.047	9.7	0.024	0.069	8.2	0.041	0.115	8.8	112	340	6.2
Cheese	0.020	0.063	11.5	0.038	0.117	13.1	0.058	0.176	12.5	153	488	8.4
Eggs and egg products	0.004	0.019	2.4	0.002	0.011	0.8	0.007	0.029	1.4	20	93	1.1
Butter	0.036	0.118	20.7	0.058	0.192	20.3	0.095	0.310	20.5	204	681	11.3
Oils	0.007	0.027	4.1	0.001	0.006	0.5	0.009	0.032	1.9	21	82	1.2
Margarine	0.002	0.013	1.0	0.001	0.011	0.5	0.003	0.023	0.7	6	46	0.3
Meat	0.015	0.042	8.8	0.027	0.074	9.4	0.042	0.119	9.2	164	473	9.1
Poultry and game	0.005	0.021	2.9	0.003	0.013	1.0	0.008	0.034	1.7	27	99	1.5
Offal	0.002	0.074	1.0	0.001	0.061	0.5	0.003	0.135	0.7	4	135	0.2
Delicatessen meats	0.007	0.026	3.9	0.006	0.029	1.9	0.012	0.049	2.7	63	245	3.5
Fish	0.019	0.130	11.1	0.072	0.472	24.8	0.091	0.614	19.6	676	4318	37.4
Crustaceans and molluscs	0.008	0.097	4.7	0.011	0.140	3.9	0.020	0.277	4.2	92	1127	5.1
Vegetables (excluding potatoes)	0.000	0.004	0.2	0.000	0.002	0.1	0.001	0.006	0.1	3	31	0.2
Pizzas, quiches and savoury pastries	0.005	0.026	2.8	0.008	0.035	2.7	0.013	0.061	2.7	47	209	2.6
Sandwiches and snacks	0.007	0.050	3.9	0.007	0.046	2.4	0.014	0.095	3.0	52	357	2.9
Mixed dishes	0.008	0.038	4.4	0.010	0.051	3.6	0.018	0.087	3.9	77	358	4.3
Dairy-based desserts	0.004	0.022	2.2	0.006	0.038	2.2	0.010	0.061	2.2	29	173	1.6
Seasonings and sauces	0.000	0.004	0.3	0.001	0.006	0.2	0.001	0.010	0.2	4	31	0.2
TOTAL	0.175	0.349	100	0.288	0.699	100	0.463	0.996	100	1808.0	4934	100

Table B5: Estimated exposure (mean and P95) in elderly people (65 years and older) to PCDD/F (pg TEQ WHO₉₈/kg bw/day), DL-PCBs (pg TEQ WHO₉₈/kg bw/day) and the 6 NDL-PCBs (pg/kg bw/day) and contribution of foods (%)

Food group	PCDD/F			DL-PCBs			PCDD/F+ DL-PCBs			6 NDL-PCBs		
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Milk	0.005	0.033	3.1	0.008	0.056	2.7	0.013	0.089	2.9	37	276	2.2
Ultra-fresh dairy products	0.012	0.039	7.0	0.017	0.057	6.0	0.029	0.099	6.4	79	268	4.6
Cheese	0.026	0.066	15.0	0.048	0.120	17.1	0.074	0.191	16.3	193	470	11.3
Eggs and egg products	0.005	0.017	2.9	0.003	0.010	1.0	0.008	0.030	1.7	22	78	1.3
Butter	0.040	0.116	22.9	0.064	0.190	22.9	0.104	0.306	22.9	223	658	13.1
Oils	0.008	0.026	4.6	0.002	0.005	0.6	0.010	0.031	2.1	24	83	1.4
Margarine	0.004	0.021	2.1	0.003	0.019	1.1	0.007	0.040	1.5	15	87	0.9
Meat	0.016	0.041	9.0	0.024	0.070	8.5	0.040	0.110	8.7	154	419	9.1
Poultry and game	0.005	0.027	3.1	0.003	0.016	1.1	0.009	0.043	1.9	24	103	1.4
Offal	0.003	0.047	1.5	0.002	0.039	0.7	0.004	0.087	1.0	6	126	0.4
Delicatessen meats	0.005	0.016	3.0	0.003	0.008	1.0	0.008	0.027	1.7	45	158	2.7
Fish	0.021	0.151	12.1	0.071	0.519	25.3	0.092	0.685	20.2	643	5259	37.8
Crustaceans and molluscs	0.011	0.099	6.4	0.016	0.203	5.6	0.027	0.301	5.9	121	1674	7.1
Vegetables (excluding potatoes)	0.000	0.004	0.2	0.000	0.002	0.1	0.001	0.006	0.1	3	32	0.2
Pizzas, quiches and savoury pastries	0.003	0.041	1.4	0.004	0.053	1.3	0.006	0.095	1.3	21	295	1.2
Sandwiches and snacks	0.000	0.015	0.2	0.000	0.018	0.1	0.001	0.033	0.2	3	145	0.2
Mixed dishes	0.005	0.034	3.1	0.008	0.065	2.7	0.013	0.099	2.9	53	359	3.1
Dairy-based desserts	0.004	0.035	2.3	0.006	0.040	2.1	0.010	0.075	2.2	29	276	1.7
Seasonings and sauces	0.000	0.002	0.1	0.000	0.004	0.1	0.000	0.006	0.1	2	23	0.1
TOTAL	0.174	0.307	100	0.280	0.663	100	0.454	0.988	100	1699	4905	100

Table B6: Estimated exposure (mean and P95) in children aged 3 to 6 years to PCDD/F (pg TEQ WHO₉₈/kg bw/day), DL-PCBs (pg TEQ WHO₉₈/kg bw/day) and the 6 NDL-PCBs (pg/kg bw/day) and contribution of foods (%)

Food group	PCDD/F			DL-PCBs			PCDD/F+ DL-PCBs			6 NDL-PCBs		
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Milk	0.062	0.200	13.3	0.092	0.293	12.5	0.154	0.542	12.8	441	1495	10.2
Ultra-fresh dairy products	0.064	0.157	13.8	0.092	0.226	12.5	0.157	0.411	13.0	432	1098	10.0
Cheese	0.045	0.141	9.7	0.083	0.257	11.3	0.128	0.398	10.7	326	987	7.6
Eggs and egg products	0.009	0.046	2.0	0.005	0.035	0.7	0.015	0.077	1.2	44	290	1.0
Butter	0.100	0.269	21.5	0.161	0.443	21.9	0.261	0.712	21.7	567	1591	13.2
Oils	0.018	0.068	3.8	0.004	0.014	0.5	0.021	0.082	1.8	51	208	1.2
Margarine	0.005	0.030	1.0	0.004	0.028	0.5	0.008	0.058	0.7	15	135	0.3
Meat	0.038	0.096	8.3	0.066	0.170	9.0	0.105	0.249	8.7	394	971	9.1
Poultry and game	0.009	0.033	1.8	0.005	0.018	0.6	0.013	0.049	1.1	49	177	1.1
Offal	0.001	0.081	0.3	0.001	0.067	0.1	0.002	0.148	0.2	3	283	0.1
Delicatessen meats	0.015	0.046	3.3	0.011	0.053	1.5	0.027	0.092	2.2	147	447	3.4
Fish	0.029	0.243	6.4	0.111	0.833	15.1	0.140	1.075	11.7	1209	7592	28.1
Crustaceans and molluscs	0.008	0.106	1.6	0.013	0.226	1.8	0.021	0.311	1.7	95	1789	2.2
Vegetables (excluding potatoes)	0.001	0.009	0.2	0.000	0.004	0.0	0.001	0.013	0.1	6	70	0.1
Pizzas, quiches and savoury pastries	0.010	0.064	2.1	0.015	0.096	2.0	0.024	0.160	2.0	88	577	2.1
Sandwiches and snacks	0.007	0.068	1.6	0.008	0.063	1.1	0.015	0.128	1.3	59	460	1.4
Mixed dishes	0.023	0.095	4.8	0.028	0.123	3.8	0.050	0.207	4.2	216	910	5.0
Dairy-based desserts	0.020	0.071	4.4	0.035	0.136	4.7	0.055	0.206	4.6	157	594	3.7
Seasonings and sauces	0.001	0.008	0.2	0.002	0.017	0.2	0.002	0.026	0.2	8	89	0.2
TOTAL	0.464	0.743	100	0.736	1.400	100	1.200	2.171	100	4306	10066	100

Table B7: Estimated exposure (mean and P95) in children aged 7 to 10 years to PCDD/F (pg TEQ WHO₉₈/kg bw/day), DL-PCBs (pg TEQ WHO₉₈/kg bw/day) and the 6 NDL-PCBs (pg/kg bw/day) and contribution of foods (%)

Food group	PCDD/F			DL-PCBs			PCDD/F+ DL-PCBs			6 NDL-PCBs		
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Milk	0.033	0.093	10.2	0.048	0.145	9.3	0.081	0.234	9.6	232	708	7.4
Ultra-fresh dairy products	0.036	0.090	11.1	0.051	0.151	9.9	0.087	0.244	10.4	246	686	7.8
Cheese	0.035	0.095	10.7	0.064	0.172	12.3	0.098	0.278	11.7	259	725	8.2
Eggs and egg products	0.007	0.034	2.2	0.004	0.021	0.7	0.011	0.054	1.3	33	166	1.0
Butter	0.064	0.185	19.7	0.103	0.304	20.1	0.167	0.489	19.9	364	1097	11.6
Oils	0.011	0.042	3.3	0.002	0.009	0.4	0.013	0.051	1.5	31	136	1.0
Margarine	0.004	0.025	1.2	0.003	0.020	0.6	0.007	0.044	0.8	12	81	0.4
Meat	0.032	0.085	9.7	0.055	0.158	10.8	0.087	0.249	10.4	339	906	10.8
Poultry and game	0.008	0.030	2.4	0.004	0.015	0.8	0.012	0.047	1.4	44	152	1.4
Offal	0.002	0.141	0.7	0.001	0.118	0.3	0.004	0.259	0.4	6	279	0.2
Delicatessen meats	0.014	0.046	4.4	0.013	0.070	2.5	0.027	0.106	3.2	141	503	4.5
Fish	0.027	0.172	8.2	0.091	0.574	17.8	0.118	0.788	14.0	966	6237	30.8
Crustaceans and molluscs	0.005	0.091	1.4	0.007	0.148	1.3	0.011	0.239	1.3	50	1297	1.6
Vegetables (excluding potatoes)	0.001	0.007	0.2	0.000	0.003	0.1	0.001	0.011	0.1	5	57	0.1
Pizzas, quiches and savoury pastries	0.008	0.046	2.6	0.013	0.065	2.5	0.021	0.108	2.6	79	410	2.5
Sandwiches and snacks	0.007	0.064	2.0	0.006	0.062	1.2	0.013	0.119	1.5	48	475	1.5
Mixed dishes	0.020	0.069	6.1	0.026	0.099	5.1	0.046	0.163	5.5	185	651	5.9
Dairy-based desserts	0.013	0.049	3.9	0.021	0.082	4.1	0.033	0.125	4.0	96	359	3.1
Seasonings and sauces	0.001	0.006	0.2	0.001	0.011	0.3	0.002	0.017	0.2	7	63	0.2
TOTAL	0.325	0.585	100	0.515	1.019	100	0.840	1.551	100	3142	7166	100

Table B8: Estimated exposure (mean and P95) in children aged 11 to 14 years to PCDD/F (pg TEQ WHO₉₈/kg bw/day), DL-PCBs (pg TEQ WHO₉₈/kg bw/day) and the 6 NDL-PCBs (pg/kg bw/day) and contribution of foods (%)

Food group	PCDD/F			DL-PCBs			PCDD/F+ DL-PCBs			6 NDL-PCBs		
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Milk	0.020	0.063	9.1	0.028	0.090	8.2	0.048	0.143	8.5	135	452	6.3
Ultra-fresh dairy products	0.017	0.047	7.9	0.024	0.070	7.0	0.041	0.116	7.3	114	306	5.3
Cheese	0.022	0.075	10.1	0.041	0.129	12.0	0.063	0.201	11.3	168	540	7.8
Eggs and egg products	0.004	0.018	1.9	0.002	0.011	0.7	0.006	0.029	1.1	19	101	0.9
Butter	0.041	0.124	18.7	0.066	0.197	19.1	0.106	0.322	19.0	232	720	10.8
Oils	0.006	0.026	2.9	0.001	0.006	0.4	0.008	0.032	1.4	19	87	0.9
Margarine	0.002	0.012	0.8	0.001	0.010	0.4	0.003	0.021	0.6	6	42	0.3
Meat	0.023	0.063	10.6	0.039	0.106	11.3	0.062	0.166	11.1	240	685	11.2
Poultry and game	0.006	0.025	2.9	0.003	0.013	1.0	0.010	0.037	1.7	34	137	1.6
Offal	0.001	0.096	0.6	0.001	0.080	0.3	0.002	0.177	0.4	4	164	0.2
Delicatessen meats	0.011	0.037	4.8	0.010	0.062	2.9	0.020	0.093	3.7	101	390	4.7
Fish	0.020	0.157	9.0	0.065	0.499	18.8	0.084	0.642	15.0	673	4827	31.4
Crustaceans and molluscs	0.006	0.136	2.9	0.009	0.230	2.7	0.016	0.361	2.8	64	2153	3.0
Vegetables (excluding potatoes)	0.000	0.004	0.2	0.000	0.002	0.0	0.001	0.006	0.1	3	31	0.1
Pizzas, quiches and savoury pastries	0.008	0.038	3.7	0.012	0.061	3.6	0.020	0.100	3.6	74	371	3.5
Sandwiches and snacks	0.007	0.071	3.3	0.007	0.061	1.9	0.014	0.127	2.5	50	438	2.3
Mixed dishes	0.015	0.054	6.8	0.020	0.078	5.7	0.034	0.132	6.1	143	588	6.7
Dairy-based desserts	0.008	0.042	3.6	0.013	0.067	3.7	0.020	0.106	3.6	59	349	2.8
Seasonings and sauces	0.001	0.004	0.2	0.001	0.008	0.3	0.001	0.012	0.2	4	41	0.2
TOTAL	0.217	0.389	100	0.344	0.725	100	0.561	1.150	100	2144	6119	100

Table B9: Estimated exposure (mean and P95) in children aged 15 to 17 years to PCDD/F (pg TEQ WHO₉₈/kg bw/day), DL-PCBs (pg TEQ WHO₉₈/kg bw/day) and the 6 NDL-PCBs (pg/kg bw/day) and contribution of foods (%)

Food group	PCDD/F			DL-PCBs			PCDD/F+ DL-PCBs			6 NDL-PCBs		
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Milk	0.012	0.041	7.8	0.018	0.064	6.8	0.030	0.105	7.2	84	288	5.1
Ultra-fresh dairy products	0.013	0.045	8.1	0.019	0.075	7.2	0.032	0.122	7.5	87	345	5.3
Cheese	0.014	0.052	8.7	0.026	0.097	10.2	0.040	0.143	9.6	107	384	6.5
Eggs and egg products	0.003	0.019	2.1	0.002	0.013	0.8	0.005	0.031	1.3	16	91	1.0
Butter	0.027	0.097	16.7	0.043	0.148	16.7	0.070	0.242	16.7	151	509	9.2
Oils	0.005	0.021	2.9	0.001	0.005	0.4	0.006	0.026	1.4	13	67	0.8
Margarine	0.001	0.014	0.8	0.001	0.010	0.4	0.002	0.023	0.6	4	51	0.3
Meat	0.019	0.055	11.8	0.034	0.105	13.2	0.053	0.164	12.7	204	647	12.4
Poultry and game	0.005	0.016	2.8	0.002	0.009	0.9	0.007	0.026	1.6	27	109	1.6
Offal	0.001	0.0124	0.5	0.001	0.0103	0.2	0.001	0.0228	0.3	2	191	0.1
Delicatessen meats	0.008	0.030	5.2	0.009	0.045	3.3	0.017	0.074	4.1	80	304	4.9
Fish	0.016	0.141	9.8	0.056	0.489	21.8	0.072	0.620	17.2	548	4396	33.5
Crustaceans and molluscs	0.004	0.091	2.7	0.006	0.160	2.2	0.010	0.227	2.4	39	1513	2.4
Vegetables (excluding potatoes)	0.000	0.005	0.2	0.000	0.002	0.1	0.001	0.007	0.1	3	35	0.2
Pizzas, quiches and savoury pastries	0.007	0.037	4.2	0.011	0.052	4.1	0.017	0.087	4.1	65	326	3.9
Sandwiches and snacks	0.010	0.058	6.0	0.010	0.045	3.8	0.019	0.092	4.6	75	327	4.6
Mixed dishes	0.010	0.042	6.5	0.013	0.059	5.1	0.024	0.098	5.7	98	413	6.0
Dairy-based desserts	0.004	0.030	2.7	0.007	0.043	2.6	0.011	0.075	2.6	31	206	1.9
Seasonings and sauces	0.000	0.003	0.3	0.001	0.006	0.3	0.001	0.008	0.3	4	31	0.2
TOTAL	0.160	0.328	100	0.259	0.631	100	0.419	0.958	100	1639	4738	100

Table C4: Estimated UB exposure (mean and P95) in women of child-bearing age (18-45 years) to perfluorinated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	PFBA		PFBS		PFDA		PFDS		PFDoA		PFHpA		PFHpS								
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib						
Bread and dried bread products	0.40	0.99	15.4	0.27	0.74	23.3	0.04	0.11	11.68	0.04	0.09	8.6	0.08	0.20	8.9	0.08	0.20	9.5	0.08	0.20	10.6
Breakfast cereals	0.01	0.14	0.3	0.01	0.12	0.6	0.00	0.02	0.27	0.00	0.01	0.2	0.00	0.03	0.2	0.00	0.03	0.2	0.00	0.03	0.2
Croissant-like pastries	0.07	0.40	2.5	0.05	0.31	4.3	0.01	0.04	1.99	0.01	0.04	1.4	0.01	0.08	1.5	0.01	0.08	1.6	0.01	0.08	1.8
Sweet and savoury biscuits and bars	0.07	0.41	2.8	0.04	0.23	3.6	0.01	0.04	2.22	0.01	0.04	1.7	0.01	0.08	1.6	0.01	0.08	1.9	0.01	0.08	1.9
Pastries and cakes	0.11	0.36	4.1	0.08	0.29	7.0	0.01	0.05	3.82	0.01	0.04	2.4	0.02	0.08	2.4	0.02	0.08	3.0	0.02	0.08	3.0
Milk	0.39	1.76	15.0	0.15	0.82	13.0	0.09	0.41	24.09	0.13	0.65	29.8	0.31	1.81	34.7	0.17	0.82	20.6	0.14	0.69	18.7
Ultra-fresh dairy products	0.28	0.92	10.7	0.15	0.54	13.3	0.08	0.23	22.41	0.10	0.32	24.7	0.28	0.95	31.1	0.12	0.34	14.5	0.09	0.24	11.8
Cheese	0.08	0.25	3.0	0.03	0.11	2.8	0.02	0.05	4.66	0.01	0.04	3.2	0.03	0.12	3.8	0.02	0.07	2.4	0.01	0.04	1.8
Eggs and egg products	0.02	0.11	0.9	0.01	0.06	1.0	0.00	0.02	1.21	0.00	0.01	0.4	0.00	0.01	0.3	0.00	0.01	0.4	0.00	0.01	0.5
Butter	0.01	0.22	0.5	0.00	0.04	0.2	0.00	0.02	0.38	0.00	0.06	0.9	0.00	0.02	0.2	0.00	0.04	0.3	0.00	0.03	0.3
Meat	0.29	0.97	11.3	0.07	0.23	5.8	0.02	0.06	5.56	0.02	0.08	4.9	0.02	0.07	2.6	0.03	0.09	3.8	0.03	0.08	3.5
Poultry and game	0.14	0.60	5.3	0.03	0.14	2.9	0.01	0.04	2.65	0.01	0.06	2.8	0.01	0.04	1.3	0.02	0.06	2.0	0.01	0.05	1.7
Offal	0.01	0.16	0.2	0.01	0.37	1.0	0.00	0.08	0.57	0.01	0.19	1.3	0.00	0.02	0.1	0.00	0.04	0.2	0.01	0.38	1.5
Delicatessen meats	0.20	0.73	7.9	0.04	0.14	3.6	0.01	0.04	3.27	0.02	0.06	3.8	0.01	0.05	1.6	0.02	0.06	2.5	0.02	0.08	2.7
Fish	0.02	0.09	0.8	0.01	0.04	0.9	0.01	0.03	1.86	0.01	0.04	1.8	0.01	0.05	1.1	0.02	0.09	2.2	0.01	0.03	0.8
Crustaceans and molluscs	0.01	0.12	0.3	0.00	0.03	0.3	0.00	0.02	0.62	0.00	0.02	0.4	0.00	0.02	0.2	0.00	0.03	0.4	0.00	0.02	0.3
Vegetables (excluding potatoes)	0.17	0.42	6.4	0.06	0.16	4.9	0.01	0.03	3.16	0.01	0.03	2.5	0.02	0.05	2.1	0.02	0.06	2.5	0.03	0.08	3.6
Potatoes and potato products	0.04	0.12	1.4	0.03	0.09	2.3	0.01	0.02	1.97	0.01	0.02	1.6	0.01	0.02	0.8	0.01	0.02	1.7	0.03	0.10	3.6
Pulses	0.05	0.77	1.8	0.02	0.36	1.9	0.00	0.05	0.81	0.00	0.05	0.6	0.01	0.14	1.0	0.01	0.14	1.0	0.01	0.14	1.1
Chocolate	0.03	0.50	1.3	0.00	0.07	0.4	0.00	0.03	0.47	0.00	0.02	0.4	0.00	0.05	0.4	0.01	0.10	0.8	0.00	0.07	0.6
Water	0.04	0.13	1.6	0.02	0.06	1.7	0.01	0.02	1.80	0.01	0.04	2.7	0.01	0.02	0.8	0.22	0.93	26.1	0.20	0.74	25.9
Sandwiches and snacks	0.06	0.39	2.5	0.02	0.15	2.1	0.01	0.04	1.84	0.00	0.02	0.9	0.01	0.08	1.5	0.01	0.04	0.8	0.01	0.07	1.6
Mixed dishes	0.03	0.27	1.0	0.01	0.08	0.8	0.00	0.03	0.79	0.00	0.02	0.4	0.00	0.05	0.5	0.00	0.03	0.3	0.00	0.04	0.6
Dairy-based desserts	0.05	0.26	1.8	0.02	0.15	2.1	0.01	0.03	1.50	0.01	0.04	1.7	0.01	0.06	1.3	0.01	0.04	0.9	0.01	0.04	1.0
Seasonings and sauces	0.03	0.21	1.0	0.00	0.03	0.3	0.00	0.01	0.40	0.00	0.02	0.6	0.00	0.01	0.2	0.00	0.03	0.4	0.01	0.05	0.9
TOTAL	2.59	4.43	100	1.15	2.02	100	0.36	0.68	100	0.42	0.90	100	0.90	2.13	100	0.84	1.69	100	0.75	1.56	100

Food group	PFHxA			PFHXS			PFNA			PFOA			PFO5			PFPA			PFUnA				
	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95		
Bread and dried bread products	0.11	12.3	0.05	0.13	13.3	0.07	13.2	0.08	0.21	10.7	0.14	0.36	21.2	0.36	0.92	0.71	23.8	0.92	0.36	0.01	0.4	1.84	21.6
Breakfast cereals	0.00	0.2	0.00	0.02	0.3	0.00	0.3	0.00	0.03	0.2	0.00	0.05	0.5	0.01	0.10	0.01	0.4	0.01	0.01	0.10	0.19	0.4	
Croissant-like pastries	0.02	1.9	0.01	0.05	2.1	0.01	2.2	0.01	0.08	1.8	0.02	0.15	3.3	0.05	0.39	0.10	3.6	0.05	0.05	0.10	0.76	3.2	
Sweet and savoury biscuits and bars	0.02	2.4	0.01	0.05	2.5	0.01	2.4	0.01	0.08	1.9	0.03	0.16	4.3	0.07	0.41	0.14	4.8	0.07	0.07	0.14	0.82	4.4	
Pastries and cakes	0.03	3.1	0.01	0.05	3.8	0.02	4.0	0.03	0.09	3.2	0.04	0.15	6.3	0.11	0.40	0.16	7.5	0.11	0.11	0.16	0.63	4.9	
Milk	0.22	1.03	0.08	0.36	21.2	0.11	21.9	0.12	0.59	15.8	0.11	0.52	16.1	0.27	1.18	0.74	17.7	0.27	0.27	0.74	3.82	22.7	
Ultra-fresh dairy products	0.16	17.5	0.07	0.20	16.8	0.11	22.2	0.11	0.32	13.9	0.10	0.29	14.7	0.18	0.54	0.54	12.0	0.18	0.18	0.54	2.12	16.6	
Cheese	0.02	2.2	0.01	0.05	3.8	0.03	5.5	0.02	0.05	2.1	0.02	0.07	3.4	0.05	0.15	0.07	3.0	0.05	0.05	0.07	0.24	2.3	
Eggs and egg products	0.01	0.8	0.00	0.01	0.8	0.00	1.0	0.01	0.04	0.8	0.01	0.03	0.8	0.01	0.04	0.03	0.6	0.01	0.01	0.03	0.14	0.8	
Butter	0.00	0.4	0.00	0.03	0.5	0.00	0.3	0.00	0.03	0.2	0.00	0.04	0.4	0.01	0.11	0.01	0.5	0.01	0.01	0.01	0.09	0.2	
Meat	0.04	4.6	0.02	0.06	5.1	0.02	4.3	0.03	0.09	4.0	0.03	0.09	4.9	0.06	0.18	0.18	4.3	0.06	0.06	0.18	0.58	5.6	
Poultry and game	0.02	2.6	0.01	0.04	2.8	0.01	2.4	0.02	0.06	2.3	0.01	0.05	2.1	0.04	0.14	0.08	2.5	0.04	0.04	0.08	0.34	2.6	
Offal	0.00	0.3	0.01	0.19	1.4	0.00	0.2	0.00	0.02	0.1	0.01	0.19	0.8	0.00	0.10	0.00	0.2	0.00	0.00	0.00	0.02	0.0	
Delicatessen meats	0.03	2.9	0.01	0.04	3.7	0.02	3.1	0.02	0.07	2.9	0.02	0.06	2.8	0.05	0.17	0.09	3.4	0.05	0.05	0.09	0.30	2.8	
Fish	0.01	1.1	0.00	0.02	0.9	0.01	1.7	0.01	0.03	0.8	0.02	0.11	2.5	0.02	0.07	0.02	1.1	0.02	0.02	0.07	0.14	0.7	
Crustaceans and molluscs	0.00	0.5	0.00	0.02	0.6	0.00	0.4	0.00	0.02	0.2	0.01	0.15	1.7	0.01	0.07	0.01	0.4	0.01	0.01	0.00	0.04	0.1	
Vegetables (excluding potatoes)	0.04	3.9	0.02	0.04	3.9	0.02	3.8	0.04	0.12	5.0	0.02	0.05	2.9	0.06	0.15	0.10	3.8	0.06	0.06	0.10	0.29	3.2	
Potatoes and potato products	0.01	1.6	0.01	0.02	1.7	0.01	1.4	0.01	0.02	0.9	0.01	0.02	1.0	0.01	0.05	0.01	0.9	0.01	0.01	0.01	0.02	0.2	
Pulses	0.01	1.3	0.01	0.09	1.4	0.01	1.7	0.02	0.38	2.9	0.01	0.14	1.2	0.01	0.24	0.01	0.9	0.01	0.01	0.05	0.77	1.4	
Chocolate	0.01	0.7	0.01	0.09	1.6	0.01	1.3	0.00	0.05	0.4	0.00	0.05	0.5	0.01	0.20	0.01	0.9	0.01	0.01	0.01	0.02	0.2	
Water	0.10	10.5	0.02	0.07	5.6	0.01	1.8	0.20	0.74	25.6	0.02	0.06	3.2	0.04	0.13	0.04	2.7	0.04	0.04	0.07	0.22	2.2	
Sandwiches and snacks	0.02	2.1	0.01	0.06	2.5	0.01	2.1	0.01	0.06	1.2	0.01	0.07	1.9	0.03	0.16	0.03	1.7	0.03	0.03	0.04	0.23	1.2	
Mixed dishes	0.01	0.8	0.00	0.03	0.9	0.00	0.8	0.00	0.04	0.5	0.00	0.04	0.7	0.01	0.08	0.01	0.6	0.01	0.01	0.03	0.36	0.8	
Dairy-based desserts	0.01	1.4	0.01	0.03	1.4	0.01	1.8	0.01	0.06	1.4	0.01	0.07	1.9	0.04	0.20	0.06	2.3	0.04	0.04	0.06	0.36	2.0	
Seasonings and sauces	0.01	0.6	0.00	0.04	1.1	0.00	0.3	0.01	0.07	1.2	0.01	0.05	1.0	0.00	0.04	0.00	0.3	0.00	0.00	0.00	0.13	0.1	
TOTAL	0.91	1.78	0.39	0.70	100	0.51	100	0.78	1.62	100	0.67	1.17	100	1.52	2.67	3.26	100	1.52	1.52	3.26	6.50	100	

Table C5: Estimated UB exposure (mean and P95) in elderly people (65 years and older) to perfluorinated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	PFBA		PFBS		PFDA		PFDS		PFDoA		PFHpA		PFHpS						
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib				
Bread and dried bread products	0.63	1.34	265	0.44	1.02	39.4	0.07	0.14	215	0.06	0.12	15.5	0.13	0.27	18.8	0.13	0.26	20.1	
Breakfast cereals	0.00	0.23	0.2	0.00	0.13	0.3	0.00	0.02	0.1	0.00	0.02	0.1	0.00	0.05	0.1	0.00	0.04	0.1	
Croissant-like pastries	0.03	0.31	1.1	0.02	0.28	1.6	0.00	0.03	0.9	0.00	0.03	0.7	0.01	0.06	0.8	0.01	0.07	0.9	
Sweet and savoury biscuits and bars	0.02	0.16	0.7	0.01	0.09	0.9	0.00	0.02	0.6	0.00	0.02	0.5	0.00	0.03	0.5	0.00	0.03	0.5	
Pastries and cakes	0.09	0.39	3.6	0.05	0.23	4.9	0.01	0.06	3.2	0.01	0.04	2.2	0.02	0.08	2.5	0.02	0.07	2.7	
Milk	0.26	1.63	11.1	0.11	0.75	10.0	0.06	0.39	19.3	0.09	0.62	25.3	0.17	1.51	24.9	0.11	0.66	15.9	
Ultra-fresh dairy products	0.21	0.78	9.0	0.12	0.61	11.1	0.05	0.20	17.5	0.08	0.28	21.4	0.19	0.84	27.6	0.09	0.32	12.6	
Cheese	0.09	0.28	3.9	0.04	0.10	3.4	0.02	0.06	7.3	0.02	0.05	4.7	0.04	0.12	6.4	0.03	0.07	3.7	
Eggs and egg products	0.03	0.10	1.2	0.01	0.05	1.2	0.01	0.02	1.8	0.00	0.01	0.6	0.00	0.02	0.5	0.00	0.02	0.6	
Butter	0.01	0.23	0.6	0.00	0.04	0.2	0.00	0.02	0.5	0.00	0.07	1.2	0.00	0.02	0.2	0.00	0.05	0.4	
Meat	0.26	0.69	11.1	0.06	0.16	5.1	0.02	0.05	5.9	0.02	0.05	5.4	0.02	0.05	3.2	0.03	0.08	4.2	
Poultry and game	0.11	0.57	4.7	0.02	0.11	2.1	0.01	0.04	2.9	0.01	0.06	3.0	0.01	0.05	1.6	0.01	0.05	2.1	
Offal	0.01	0.19	0.4	0.02	0.35	1.6	0.00	0.07	1.1	0.01	0.18	2.6	0.00	0.02	0.2	0.00	0.05	0.3	
Delicatessen meats	0.18	0.55	7.4	0.03	0.10	3.0	0.01	0.03	3.3	0.01	0.04	4.0	0.01	0.04	1.9	0.02	0.05	2.6	
Fish	0.02	0.08	0.7	0.01	0.04	0.7	0.00	0.03	1.5	0.01	0.03	1.4	0.01	0.04	1.2	0.01	0.08	2.0	
Crustaceans and molluscs	0.01	0.17	0.6	0.00	0.04	0.3	0.00	0.03	0.7	0.00	0.02	0.5	0.00	0.02	0.2	0.00	0.03	0.5	
Vegetables (excluding potatoes)	0.20	0.55	8.6	0.07	0.21	6.0	0.01	0.03	4.3	0.01	0.04	3.5	0.02	0.08	3.5	0.03	0.07	3.7	
Potatoes and potato products	0.03	0.12	1.1	0.02	0.09	1.8	0.01	0.02	1.7	0.01	0.02	1.4	0.01	0.02	0.8	0.01	0.05	1.6	
Pulses	0.06	0.61	2.7	0.03	0.28	2.6	0.00	0.04	1.3	0.00	0.04	1.0	0.01	0.11	1.8	0.01	0.11	1.7	
Chocolate	0.00	0.23	0.0	0.00	0.03	0.0	0.00	0.01	0.0	0.00	0.01	0.0	0.00	0.02	0.0	0.00	0.03	0.0	
Water	0.03	0.10	1.3	0.01	0.05	1.2	0.00	0.02	1.5	0.01	0.03	2.3	0.01	0.02	0.8	0.17	0.77	23.8	
Sandwiches and snacks	0.01	0.27	0.2	0.00	0.10	0.2	0.00	0.03	0.2	0.00	0.01	0.1	0.00	0.05	0.2	0.00	0.03	0.1	
Mixed dishes	0.01	0.73	0.5	0.00	0.13	0.3	0.00	0.09	0.5	0.00	0.09	0.3	0.00	0.09	0.3	0.00	0.07	0.3	
Dairy-based desserts	0.05	0.56	2.3	0.02	0.21	2.0	0.01	0.07	2.0	0.01	0.05	2.0	0.01	0.08	1.7	0.01	0.10	1.4	
Seasonings and sauces	0.01	0.14	0.4	0.00	0.02	0.1	0.00	0.01	0.2	0.00	0.01	0.3	0.00	0.01	0.1	0.00	0.02	0.2	
TOTAL	2.37	3.66	100	1.11	1.95	100	0.31	0.57	100	0.36	0.79	100	0.67	1.46	100	0.69	1.50	100	1.30

Food group	PFHxA			PFHxS			PFNA			PFOA			PFOS			PFPA			PFUnA		
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Bread and dried bread products	0.17	0.38	22.2	0.08	0.17	23.8	0.11	0.22	23.1	0.13	0.28	19.5	0.22	0.48	35.2	0.55	1.23	39.5	1.07	2.44	34.7
Breakfast cereals	0.00	0.07	0.1	0.00	0.03	0.1	0.00	0.04	0.2	0.00	0.05	0.1	0.00	0.09	0.2	0.00	0.23	0.2	0.01	0.45	0.2
Croissant-like pastries	0.01	0.08	1.0	0.00	0.04	1.0	0.00	0.06	1.0	0.01	0.07	0.8	0.01	0.11	1.6	0.02	0.28	1.8	0.05	0.56	1.6
Sweet and savoury biscuits and bars	0.01	0.05	0.7	0.00	0.02	0.7	0.00	0.03	0.6	0.00	0.03	0.5	0.01	0.06	1.1	0.02	0.16	1.2	0.03	0.32	1.1
Pastries and cakes	0.02	0.11	3.0	0.01	0.05	3.3	0.01	0.07	3.2	0.02	0.08	2.6	0.03	0.15	5.3	0.08	0.36	5.8	0.14	0.72	4.6
Milk	0.15	0.90	19.2	0.06	0.34	16.5	0.08	0.58	17.8	0.08	0.52	12.4	0.08	0.49	12.2	0.18	1.12	12.9	0.53	3.32	17.3
Ultra-fresh dairy products	0.12	0.46	15.9	0.05	0.19	14.8	0.09	0.39	18.9	0.08	0.35	12.0	0.07	0.30	11.9	0.14	0.46	10.0	0.42	1.79	13.5
Cheese	0.02	0.07	3.1	0.02	0.05	5.4	0.04	0.10	7.8	0.02	0.05	2.9	0.03	0.08	4.5	0.06	0.16	4.0	0.10	0.26	3.1
Eggs and egg products	0.01	0.03	1.0	0.00	0.01	1.1	0.01	0.03	1.5	0.01	0.04	1.4	0.01	0.02	1.0	0.01	0.05	0.8	0.04	0.15	1.2
Butter	0.00	0.07	0.6	0.00	0.04	0.7	0.00	0.02	0.3	0.00	0.03	0.3	0.00	0.04	0.5	0.01	0.12	0.5	0.01	0.09	0.2
Meat	0.04	0.10	5.2	0.02	0.06	5.4	0.02	0.05	4.5	0.03	0.08	4.4	0.03	0.08	4.8	0.06	0.14	4.3	0.16	0.43	5.3
Poultry and game	0.02	0.08	2.6	0.01	0.04	2.6	0.01	0.04	2.3	0.01	0.06	2.2	0.01	0.06	2.0	0.03	0.12	2.2	0.07	0.32	2.3
Offal	0.00	0.09	0.6	0.01	0.18	2.7	0.00	0.03	0.4	0.00	0.02	0.1	0.01	0.18	1.5	0.01	0.11	0.4	0.00	0.02	0.0
Delicatessen meats	0.02	0.06	3.1	0.01	0.04	4.1	0.02	0.05	3.3	0.02	0.07	3.1	0.02	0.05	2.6	0.05	0.13	3.2	0.08	0.23	2.6
Fish	0.01	0.04	1.0	0.00	0.02	0.7	0.01	0.03	1.4	0.00	0.02	0.7	0.01	0.10	2.1	0.01	0.06	0.9	0.02	0.12	0.5
Crustaceans and molluscs	0.01	0.07	0.8	0.00	0.02	0.8	0.00	0.02	0.5	0.00	0.02	0.4	0.01	0.17	1.8	0.01	0.09	0.6	0.00	0.04	0.1
Vegetables (excluding potatoes)	0.04	0.11	5.2	0.02	0.05	5.2	0.02	0.07	5.1	0.05	0.16	7.2	0.02	0.08	3.8	0.07	0.18	4.7	0.13	0.44	4.1
Potatoes and potato products	0.01	0.05	1.4	0.01	0.02	1.5	0.01	0.02	1.2	0.01	0.02	0.8	0.01	0.02	0.8	0.01	0.05	0.8	0.01	0.02	0.2
Pulses	0.02	0.15	2.0	0.01	0.07	2.2	0.01	0.11	2.6	0.03	0.30	4.6	0.01	0.11	1.8	0.02	0.19	1.4	0.06	0.61	2.0
Chocolate	0.00	0.05	0.0	0.00	0.04	0.1	0.00	0.05	0.0	0.00	0.02	0.0	0.00	0.02	0.0	0.00	0.09	0.0	-	-	-
Water	0.07	0.30	8.7	0.02	0.06	4.4	0.01	0.02	1.4	0.15	0.65	21.6	0.02	0.05	2.4	0.03	0.11	2.0	0.05	0.19	1.7
Sandwiches and snacks	0.00	0.08	0.2	0.00	0.04	0.3	0.00	0.04	0.2	0.00	0.04	0.1	0.00	0.05	0.2	0.00	0.11	0.2	0.00	0.16	0.1
Mixed dishes	0.00	0.14	0.4	0.00	0.04	0.4	0.00	0.06	0.3	0.00	0.07	0.2	0.00	0.05	0.2	0.00	0.14	0.2	0.02	1.83	0.7
Dairy-based desserts	0.01	0.12	1.8	0.01	0.07	1.8	0.01	0.09	2.1	0.01	0.13	1.6	0.01	0.10	2.0	0.03	0.18	2.2	0.08	0.93	2.7
Seasonings and sauces	0.00	0.03	0.3	0.00	0.03	0.5	0.00	0.01	0.1	0.00	0.06	0.6	0.00	0.04	0.4	0.00	0.02	0.1	0.00	0.09	0.1
TOTAL	0.78	1.51	100	0.34	0.61	100	0.46	0.86	100	0.68	1.34	100	0.62	1.05	100	1.40	2.34	100	3.09	5.55	100

Table C6: Estimated UB exposure (mean and P95) in children aged 3 to 6 years to perfluorinated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	PFBA		PFBS		PFDA		PFDS		PFDoA		PFHpA		PFHpS						
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95					
Bread and dried bread products	0.50	1.32	6.1	0.33	0.93	9.2	0.05	0.14	3.8	0.05	0.12	2.6	0.10	0.26	3.6	0.10	0.28	4.2	
Breakfast cereals	0.07	0.36	0.8	0.04	0.20	1.1	0.01	0.04	0.5	0.01	0.03	0.3	0.01	0.07	0.5	0.01	0.07	0.5	
Croissant-like pastries	0.27	1.06	3.3	0.20	0.68	5.5	0.03	0.11	2.1	0.02	0.10	1.3	0.05	0.21	1.9	0.05	0.20	2.3	
Sweet and savoury biscuits and bars	0.32	1.19	4.0	0.19	0.68	5.2	0.04	0.12	2.8	0.03	0.12	1.9	0.07	0.24	1.8	0.08	0.23	2.7	
Pastries and cakes	0.27	1.13	3.2	0.24	0.92	6.6	0.04	0.16	3.0	0.03	0.12	1.5	0.05	0.24	1.4	0.07	0.27	2.7	
Milk	2.67	8.38	32.6	1.05	3.35	29.1	0.61	1.60	44.9	0.93	2.82	51.9	2.09	6.04	54.6	1.18	3.56	42.1	
Ultra-fresh dairy products	1.09	2.61	13.3	0.59	1.84	16.5	0.30	0.77	22.0	0.41	0.95	23.0	1.03	3.31	26.8	0.46	1.12	16.5	
Cheese	0.15	0.45	1.8	0.07	0.22	2.1	0.03	0.13	2.4	0.03	0.09	1.6	0.06	0.20	1.6	0.04	0.12	1.3	
Eggs and egg products	0.06	0.33	0.7	0.03	0.18	0.8	0.01	0.06	0.8	0.00	0.02	0.2	0.01	0.04	0.2	0.01	0.04	0.3	
Butter	0.04	0.56	0.5	0.01	0.10	0.2	0.00	0.06	0.3	0.01	0.16	0.7	0.00	0.06	0.1	0.01	0.11	0.3	
Meat	0.73	2.13	8.9	0.16	0.46	4.4	0.05	0.12	3.4	0.05	0.16	2.7	0.05	0.15	1.4	0.08	0.18	2.7	
Poultry and game	0.22	0.90	2.7	0.06	0.24	1.7	0.02	0.07	1.4	0.02	0.09	1.1	0.02	0.09	0.6	0.03	0.11	1.1	
Offal	0.00	0.22	0.0	0.01	0.65	0.2	0.00	0.20	0.1	0.00	0.34	0.2	0.00	0.03	0.0	0.00	0.08	0.0	
Delicatessen meats	0.43	1.40	5.3	0.10	0.28	2.7	0.03	0.08	1.9	0.03	0.10	1.9	0.03	0.08	0.9	0.05	0.14	1.7	
Fish	0.06	0.24	0.8	0.03	0.12	0.9	0.02	0.10	1.7	0.03	0.12	1.6	0.02	0.09	0.6	0.06	0.26	2.2	
Crustaceans and molluscs	0.01	0.09	0.1	0.00	0.05	0.1	0.00	0.05	0.2	0.00	0.02	0.1	0.00	0.02	0.0	0.00	0.07	0.1	
Vegetables (excluding potatoes)	0.36	0.88	4.3	0.13	0.32	3.6	0.02	0.06	1.8	0.02	0.06	1.3	0.04	0.11	1.1	0.05	0.12	1.7	
Potatoes and potato products	0.09	0.26	1.1	0.06	0.19	1.8	0.02	0.05	1.3	0.02	0.05	0.9	0.02	0.05	0.5	0.04	0.10	1.3	
Pulses	0.10	1.64	1.2	0.05	0.76	1.3	0.01	0.10	0.5	0.01	0.10	0.3	0.02	0.31	0.5	0.02	0.31	0.7	
Chocolate	0.23	1.65	2.9	0.03	0.23	0.9	0.01	0.08	0.9	0.01	0.08	0.6	0.02	0.16	0.6	0.05	0.33	1.7	
Water	0.07	0.23	0.8	0.03	0.08	0.9	0.01	0.03	0.8	0.02	0.08	1.1	0.01	0.05	0.3	0.36	1.63	12.7	
Sandwiches and snacks	0.07	0.80	0.9	0.03	0.30	0.7	0.01	0.08	0.5	0.00	0.05	0.2	0.01	0.16	0.4	0.01	0.08	0.3	
Mixed dishes	0.09	0.61	1.1	0.03	0.22	0.9	0.01	0.07	0.7	0.01	0.05	0.3	0.02	0.12	0.5	0.01	0.07	0.3	
Dairy-based desserts	0.25	0.94	3.0	0.12	0.45	3.4	0.03	0.12	2.1	0.04	0.17	2.3	0.07	0.28	1.7	0.04	0.18	1.5	
Seasonings and sauces	0.05	0.37	0.6	0.01	0.08	0.2	0.00	0.03	0.2	0.00	0.05	0.3	0.00	0.03	0.1	0.01	0.06	0.2	
TOTAL	8.19	14.03	100	3.61	6.50	100	1.37	2.52	100	1.78	3.58	100	3.82	7.83	100	2.81	5.16	100	2.40

Food group	PFHxA			PFHxS			PFNA			PFOA			PFOS			PFPA			PFUnA		
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Bread and dried bread products	0.14	0.36	4.3	0.07	0.17	4.7	0.08	0.23	4.5	0.11	0.29	4.3	0.18	0.45	8.2	0.46	1.15	9.0	0.89	2.31	7.6
Breakfast cereals	0.02	0.11	0.6	0.01	0.05	0.6	0.01	0.06	0.6	0.01	0.07	0.5	0.03	0.14	1.2	0.07	0.36	1.3	0.13	0.72	1.1
Croissant-like pastries	0.07	0.31	2.1	0.03	0.14	2.5	0.05	0.17	2.4	0.06	0.21	2.3	0.09	0.39	4.2	0.22	1.02	4.4	0.43	2.03	3.7
Sweet and savoury biscuits and bars	0.10	0.36	3.0	0.05	0.16	3.3	0.06	0.19	3.1	0.07	0.24	2.8	0.13	0.47	6.1	0.33	1.19	6.4	0.63	2.38	5.4
Pastries and cakes	0.07	0.30	2.0	0.04	0.17	2.8	0.06	0.23	3.0	0.07	0.25	3.0	0.11	0.48	5.1	0.30	1.26	6.0	0.32	1.66	2.7
Milk	1.54	4.83	46.2	0.57	1.69	41.4	0.77	2.28	41.2	0.86	2.37	35.0	0.74	2.06	34.2	1.83	5.65	36.0	5.18	15.59	44.2
Ultra-fresh dairy products	0.62	1.57	18.5	0.26	0.64	18.6	0.43	1.31	22.7	0.42	1.11	17.0	0.38	1.00	17.4	0.73	1.78	14.3	2.09	6.05	17.8
Cheese	0.04	0.11	1.1	0.02	0.09	1.8	0.05	0.19	2.7	0.04	0.11	1.5	0.04	0.14	2.0	0.09	0.27	1.7	0.18	0.65	1.5
Eggs and egg products	0.02	0.10	0.5	0.01	0.04	0.6	0.01	0.06	0.6	0.02	0.11	0.7	0.01	0.06	0.6	0.02	0.13	0.5	0.07	0.37	0.6
Butter	0.01	0.17	0.4	0.01	0.08	0.5	0.00	0.06	0.2	0.01	0.08	0.2	0.01	0.11	0.4	0.02	0.28	0.4	0.02	0.22	0.1
Meat	0.10	0.25	3.1	0.05	0.13	3.4	0.05	0.13	2.7	0.07	0.20	3.0	0.08	0.19	3.5	0.15	0.39	3.0	0.41	1.41	3.5
Poultry and game	0.04	0.15	1.3	0.02	0.08	1.5	0.02	0.09	1.3	0.03	0.11	1.3	0.03	0.10	1.2	0.07	0.25	1.4	0.16	0.55	1.4
Offal	0.00	0.14	0.1	0.00	0.33	0.3	0.00	0.06	0.0	0.00	0.03	0.0	0.00	0.33	0.2	0.00	0.14	0.0	0.00	0.03	0.0
Delicatessen meats	0.06	0.17	1.9	0.03	0.08	2.3	0.04	0.10	2.0	0.06	0.18	2.3	0.04	0.12	2.0	0.12	0.37	2.4	0.21	0.60	1.8
Fish	0.03	0.11	0.8	0.01	0.06	1.0	0.02	0.09	1.2	0.02	0.07	0.7	0.04	0.23	1.7	0.05	0.18	1.0	0.05	0.29	0.4
Crustaceans and molluscs	0.00	0.07	0.1	0.00	0.05	0.2	0.00	0.03	0.1	0.00	0.03	0.1	0.01	0.34	0.6	0.01	0.11	0.1	0.00	0.05	0.0
Vegetables (excluding potatoes)	0.07	0.18	2.2	0.03	0.09	2.4	0.04	0.11	2.2	0.08	0.25	3.4	0.04	0.11	2.0	0.12	0.31	2.4	0.23	0.60	2.0
Potatoes and potato products	0.04	0.10	1.1	0.02	0.05	1.2	0.02	0.05	0.9	0.02	0.05	0.7	0.02	0.05	0.8	0.04	0.10	0.7	0.02	0.05	0.1
Pulses	0.02	0.41	0.7	0.01	0.19	0.8	0.02	0.31	1.0	0.05	0.82	2.0	0.02	0.29	0.8	0.03	0.51	0.6	0.10	1.64	0.9
Chocolate	0.05	0.33	1.4	0.04	0.31	3.2	0.05	0.33	2.5	0.02	0.16	1.0	0.02	0.16	1.0	0.09	0.66	1.8	-	-	-
Water	0.16	0.46	4.9	0.04	0.10	2.6	0.02	0.05	0.8	0.35	1.16	14.3	0.04	0.09	1.6	0.07	0.19	1.3	0.12	0.45	1.0
Sandwiches and snacks	0.02	0.24	0.6	0.01	0.12	0.8	0.01	0.13	0.6	0.01	0.11	0.4	0.01	0.15	0.6	0.03	0.32	0.6	0.04	0.48	0.4
Mixed dishes	0.03	0.18	0.8	0.01	0.08	0.9	0.01	0.09	0.7	0.01	0.08	0.5	0.02	0.10	0.7	0.03	0.23	0.7	0.08	0.84	0.6
Dairy-based desserts	0.07	0.28	2.0	0.03	0.12	2.0	0.05	0.21	2.6	0.06	0.24	2.3	0.07	0.25	3.3	0.19	0.72	3.8	0.36	1.52	3.1
Seasonings and sauces	0.01	0.07	0.3	0.01	0.07	0.6	0.00	0.03	0.2	0.02	0.15	0.7	0.01	0.11	0.6	0.01	0.09	0.2	0.01	0.63	0.1
TOTAL	3.33	6.16	100	1.39	2.51	100	1.88	3.89	100	2.45	4.51	100	2.18	4.06	100	5.08	8.90	100	11.73	23.96	100

Table C7: Estimated UB exposure (mean and P95) in children aged 7 to 10 years to perfluorinated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	PFBA		PFBS		PFDA		PFDS		PFDoA		PFHpA		PFHpS														
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib												
Bread and dried bread products	0.56	1.35	95	0.37	0.89	14.0	0.06	0.14	6.4	0.05	0.13	4.6	0.11	0.27	5.8	0.11	0.27	5.8	0.11	0.27	5.8	0.11	0.27	5.8	0.11	0.27	5.8
Breakfast cereals	0.06	0.22	0.9	0.03	0.14	1.2	0.01	0.02	0.6	0.01	0.02	0.5	0.01	0.04	0.4	0.01	0.04	0.6	0.01	0.04	0.6	0.01	0.04	0.6	0.01	0.04	0.6
Croissant-like pastries	0.19	0.86	3.2	0.14	0.53	5.2	0.02	0.09	2.2	0.02	0.08	1.5	0.04	0.17	1.5	0.04	0.17	1.9	0.04	0.17	1.9	0.04	0.17	1.9	0.04	0.17	1.9
Sweet and savoury biscuits and bars	0.24	0.94	4.0	0.14	0.52	5.2	0.03	0.11	3.1	0.02	0.09	2.2	0.05	0.19	2.0	0.05	0.19	2.8	0.05	0.19	2.8	0.05	0.19	2.8	0.05	0.19	2.8
Pastries and cakes	0.23	0.87	3.8	0.21	0.77	7.8	0.04	0.13	4.0	0.02	0.09	2.1	0.05	0.18	2.0	0.05	0.18	2.0	0.05	0.18	2.0	0.05	0.18	2.0	0.05	0.18	2.0
Milk	1.53	4.14	25.7	0.60	2.14	22.9	0.35	0.94	38.6	0.52	1.57	45.9	1.25	4.40	51.2	1.25	4.40	51.2	1.25	4.40	51.2	1.25	4.40	51.2	1.25	4.40	51.2
Ultra-fresh dairy products	0.61	1.63	10.2	0.33	1.09	12.6	0.17	0.41	18.7	0.23	0.60	20.3	0.58	1.78	23.7	0.58	1.78	23.7	0.58	1.78	23.7	0.58	1.78	23.7	0.58	1.78	23.7
Cheese	0.12	0.42	2.1	0.06	0.19	2.2	0.03	0.08	2.8	0.02	0.06	2.0	0.05	0.17	2.1	0.05	0.17	2.1	0.05	0.17	2.1	0.05	0.17	2.1	0.05	0.17	2.1
Eggs and egg products	0.04	0.18	0.7	0.02	0.10	0.8	0.01	0.04	0.9	0.00	0.02	0.3	0.01	0.02	0.2	0.01	0.02	0.2	0.01	0.02	0.2	0.01	0.02	0.2	0.01	0.02	0.2
Butter	0.03	0.32	0.5	0.01	0.06	0.2	0.00	0.03	0.3	0.01	0.09	0.8	0.00	0.03	0.1	0.01	0.03	0.1	0.01	0.03	0.1	0.01	0.03	0.1	0.01	0.03	0.1
Meat	0.62	1.88	10.4	0.14	0.36	5.1	0.04	0.10	4.4	0.04	0.11	3.6	0.05	0.12	1.9	0.05	0.12	1.9	0.05	0.12	1.9	0.05	0.12	1.9	0.05	0.12	1.9
Poultry and game	0.19	0.75	3.3	0.05	0.19	2.1	0.02	0.06	1.8	0.02	0.07	1.5	0.02	0.07	0.8	0.02	0.07	0.8	0.02	0.07	0.8	0.02	0.07	0.8	0.02	0.07	0.8
Offal	0.01	0.22	0.1	0.02	0.06	0.6	0.00	0.00	0.4	0.01	0.03	0.8	0.00	0.03	0.0	0.00	0.03	0.0	0.00	0.03	0.0	0.00	0.03	0.0	0.00	0.03	0.0
Delicatessen meats	0.37	1.13	6.2	0.08	0.25	3.2	0.02	0.08	2.5	0.03	0.09	2.5	0.03	0.09	1.2	0.03	0.09	1.2	0.03	0.09	1.2	0.03	0.09	1.2	0.03	0.09	1.2
Fish	0.05	0.19	0.8	0.03	0.10	1.0	0.02	0.08	2.0	0.02	0.11	2.0	0.02	0.06	0.6	0.02	0.06	0.6	0.02	0.06	0.6	0.02	0.06	0.6	0.02	0.06	0.6
Crustaceans and molluscs	0.00	0.08	0.1	0.00	0.04	0.1	0.00	0.04	0.2	0.00	0.02	0.1	0.00	0.03	0.0	0.00	0.03	0.0	0.00	0.03	0.0	0.00	0.03	0.0	0.00	0.03	0.0
Vegetables (excluding potatoes)	0.27	0.71	4.6	0.10	0.30	3.9	0.02	0.05	2.1	0.02	0.05	1.6	0.03	0.09	1.3	0.03	0.09	1.3	0.03	0.09	1.3	0.03	0.09	1.3	0.03	0.09	1.3
Potatoes and potato products	0.08	0.23	1.4	0.06	0.17	2.3	0.02	0.05	1.8	0.02	0.04	1.4	0.02	0.05	0.7	0.02	0.05	0.7	0.02	0.05	0.7	0.02	0.05	0.7	0.02	0.05	0.7
Pulses	0.13	1.23	2.2	0.06	0.57	2.3	0.01	0.08	0.9	0.01	0.07	0.7	0.02	0.23	1.0	0.02	0.23	1.0	0.02	0.23	1.0	0.02	0.23	1.0	0.02	0.23	1.0
Chocolate	0.21	1.21	3.6	0.03	0.17	1.1	0.01	0.06	1.2	0.01	0.06	0.9	0.02	0.12	0.9	0.02	0.12	0.9	0.02	0.12	0.9	0.02	0.12	0.9	0.02	0.12	0.9
Water	0.06	0.17	1.0	0.03	0.07	1.0	0.01	0.03	1.0	0.02	0.05	1.4	0.01	0.03	0.4	0.01	0.03	0.4	0.01	0.03	0.4	0.01	0.03	0.4	0.01	0.03	0.4
Sandwiches and snacks	0.06	0.46	1.0	0.02	0.17	0.8	0.01	0.05	0.7	0.00	0.03	0.3	0.01	0.09	0.5	0.01	0.09	0.5	0.01	0.09	0.5	0.01	0.09	0.5	0.01	0.09	0.5
Mixed dishes	0.10	0.59	1.6	0.03	0.20	1.2	0.01	0.06	1.1	0.01	0.04	0.6	0.02	0.11	0.7	0.01	0.11	0.7	0.01	0.11	0.7	0.01	0.11	0.7	0.01	0.11	0.7
Dairy-based desserts	0.16	0.64	2.6	0.08	0.30	2.9	0.02	0.08	2.0	0.02	0.11	2.2	0.04	0.16	1.6	0.04	0.16	1.6	0.04	0.16	1.6	0.04	0.16	1.6	0.04	0.16	1.6
Seasonings and sauces	0.03	0.31	0.5	0.00	0.04	0.2	0.00	0.02	0.2	0.00	0.03	0.3	0.00	0.02	0.1	0.00	0.02	0.1	0.00	0.02	0.1	0.00	0.02	0.1	0.00	0.02	0.1
TOTAL	5.94	9.82	100	2.64	4.72	100	0.90	1.62	100	1.13	2.31	100	2.43	5.74	100	1.95	3.83	100	1.69	3.06	100	1.69	3.06	100	1.69	3.06	100

Food group	PFHxA			PFHXS			PFNA			PFOA			PFOS			PFPA			PFUnA		
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Bread and dried bread products	0.16	0.39	7.1	0.07	0.18	7.7	0.09	0.23	7.4	0.12	0.28	6.7	0.20	0.49	13.0	0.52	1.29	14.2	1.01	2.56	12.6
Breakfast cereals	0.02	0.07	0.7	0.01	0.03	0.8	0.01	0.04	0.7	0.01	0.04	0.6	0.02	0.09	1.4	0.05	0.22	1.5	0.11	0.44	1.3
Croissant-like pastries	0.05	0.25	2.3	0.02	0.11	2.5	0.03	0.14	2.6	0.04	0.17	2.3	0.06	0.32	4.2	0.16	0.84	4.4	0.31	1.67	3.8
Sweet and savoury biscuits and bars	0.07	0.28	3.2	0.03	0.12	3.5	0.04	0.15	3.3	0.05	0.20	2.9	0.10	0.36	6.2	0.24	0.94	6.6	0.46	1.88	5.8
Pastries and cakes	0.06	0.22	2.6	0.04	0.13	3.7	0.05	0.19	4.0	0.07	0.23	3.7	0.10	0.36	6.5	0.27	1.05	7.5	0.30	1.34	3.7
Milk	0.88	2.37	39.2	0.33	0.89	34.3	0.44	1.38	34.7	0.50	1.34	28.4	0.43	1.13	27.7	1.05	2.83	28.8	2.95	8.68	36.9
Ultra-fresh dairy products	0.35	0.95	15.5	0.14	0.40	14.9	0.24	0.75	18.9	0.23	0.69	13.4	0.21	0.63	13.7	0.40	1.12	11.1	1.13	3.14	14.1
Cheese	0.03	0.11	1.4	0.02	0.08	2.3	0.04	0.14	3.3	0.03	0.08	1.6	0.04	0.12	2.3	0.07	0.26	2.0	0.13	0.35	1.7
Eggs and egg products	0.01	0.05	0.5	0.01	0.02	0.6	0.01	0.04	0.7	0.01	0.07	0.7	0.01	0.05	0.6	0.02	0.08	0.5	0.05	0.31	0.6
Butter	0.01	0.09	0.4	0.00	0.05	0.5	0.00	0.03	0.2	0.00	0.04	0.3	0.01	0.06	0.4	0.02	0.16	0.4	0.01	0.13	0.2
Meat	0.09	0.22	4.0	0.04	0.11	4.3	0.05	0.12	3.6	0.07	0.17	3.8	0.07	0.17	4.5	0.13	0.33	3.6	0.38	1.29	4.8
Poultry and game	0.04	0.13	1.8	0.02	0.07	2.1	0.02	0.08	1.8	0.03	0.10	1.8	0.02	0.08	1.5	0.06	0.18	1.7	0.15	0.60	1.9
Offal	0.00	0.14	0.2	0.01	0.39	0.9	0.00	0.06	0.1	0.00	0.03	0.0	0.01	0.39	0.6	0.00	0.14	0.1	0.00	0.05	0.0
Delicatessen meats	0.05	0.15	2.4	0.03	0.07	2.8	0.03	0.09	2.5	0.05	0.14	2.7	0.04	0.11	2.4	0.10	0.28	2.9	0.17	0.59	2.1
Fish	0.02	0.08	0.9	0.01	0.05	1.1	0.02	0.07	1.4	0.01	0.06	0.8	0.03	0.17	1.6	0.04	0.15	1.0	0.03	0.21	0.4
Crustaceans and molluscs	0.00	0.06	0.1	0.00	0.04	0.2	0.00	0.03	0.1	0.00	0.03	0.1	0.01	0.24	0.5	0.00	0.08	0.1	0.00	0.05	0.0
Vegetables (excluding potatoes)	0.06	0.17	2.6	0.03	0.08	2.8	0.03	0.09	2.6	0.07	0.21	3.8	0.03	0.09	2.2	0.10	0.26	2.7	0.19	0.53	2.3
Potatoes and potato products	0.03	0.10	1.5	0.02	0.04	1.7	0.02	0.05	1.3	0.02	0.05	1.0	0.02	0.04	1.0	0.03	0.10	0.9	0.02	0.05	0.2
Pulses	0.03	0.31	1.5	0.02	0.14	1.6	0.02	0.23	2.0	0.07	0.61	3.8	0.02	0.22	1.5	0.04	0.38	1.1	0.13	1.23	1.7
Chocolate	0.04	0.24	1.9	0.04	0.23	4.2	0.04	0.24	3.4	0.02	0.12	1.2	0.02	0.12	1.3	0.09	0.48	2.3	-	-	-
Water	0.13	0.42	6.0	0.03	0.08	3.1	0.01	0.04	1.0	0.29	0.95	16.5	0.03	0.08	1.9	0.06	0.16	1.6	0.10	0.33	1.3
Sandwiches and snacks	0.02	0.14	0.8	0.01	0.07	0.9	0.01	0.07	0.7	0.01	0.07	0.5	0.01	0.09	0.7	0.02	0.18	0.6	0.04	0.28	0.4
Mixed dishes	0.03	0.17	1.2	0.01	0.08	1.3	0.01	0.09	1.1	0.01	0.08	0.7	0.02	0.09	1.0	0.03	0.21	0.9	0.10	0.70	1.3
Dairy-based desserts	0.04	0.18	1.9	0.02	0.08	1.9	0.03	0.12	2.4	0.03	0.14	2.0	0.04	0.18	2.8	0.12	0.49	3.2	0.22	0.93	2.8
Seasonings and sauces	0.01	0.06	0.3	0.01	0.05	0.5	0.00	0.02	0.2	0.01	0.10	0.6	0.01	0.08	0.5	0.01	0.05	0.2	0.01	0.23	0.2
TOTAL	2.24	4.04	100	0.96	1.70	100	1.26	2.44	100	1.74	3.05	100	1.54	2.57	100	3.63	6.19	100	8.01	15.60	100

Table C8: Estimated UB exposure (mean and P95) in children aged 11 to 14 years to perfluorinated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	PFBA			PFBS			PFDA			PFDS			PFDoA			PFHpA			PFHpS		
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Bread and dried bread products	0.43	1.06	11.2	0.28	0.71	16.4	0.04	0.11	8.1	0.04	0.10	5.8	0.09	0.21	6.3	0.09	0.21	7.2	0.09	0.21	7.9
Breakfast cereals	0.04	0.20	1.1	0.03	0.17	1.6	0.00	0.02	0.8	0.00	0.02	0.6	0.01	0.04	0.6	0.01	0.04	0.7	0.01	0.04	0.8
Croissant-like pastries	0.15	0.81	3.8	0.11	0.50	6.1	0.02	0.09	2.9	0.01	0.08	2.0	0.03	0.16	2.1	0.03	0.16	2.5	0.03	0.16	2.8
Sweet and savoury biscuits and bars	0.13	0.57	3.3	0.07	0.32	4.2	0.01	0.06	2.5	0.01	0.05	1.9	0.03	0.11	1.9	0.03	0.12	2.3	0.02	0.11	2.3
Pastries and cakes	0.15	0.64	4.0	0.13	0.50	7.8	0.02	0.08	4.0	0.02	0.06	2.3	0.03	0.13	2.4	0.04	0.14	3.4	0.03	0.13	3.1
Milk	0.90	2.81	23.2	0.37	1.36	21.7	0.20	0.66	36.8	0.31	1.13	45.5	0.68	2.48	49.0	0.39	1.12	32.2	0.32	0.95	29.2
Ultra-fresh dairy products	0.29	0.75	7.6	0.18	0.56	10.5	0.08	0.26	15.2	0.11	0.32	16.1	0.28	1.00	20.6	0.13	0.37	10.8	0.10	0.30	9.0
Cheese	0.08	0.29	2.1	0.04	0.13	2.2	0.02	0.06	3.1	0.01	0.05	2.1	0.03	0.11	2.5	0.02	0.07	1.7	0.01	0.05	1.3
Eggs and egg products	0.02	0.11	0.6	0.01	0.06	0.7	0.00	0.02	0.8	0.00	0.01	0.2	0.00	0.02	0.2	0.00	0.02	0.3	0.00	0.02	0.4
Butter	0.02	0.27	0.5	0.00	0.05	0.2	0.00	0.03	0.4	0.01	0.08	0.9	0.00	0.03	0.1	0.00	0.05	0.3	0.00	0.04	0.3
Meat	0.43	1.19	11.2	0.10	0.28	5.6	0.03	0.08	5.2	0.03	0.09	4.4	0.03	0.09	2.4	0.05	0.12	3.9	0.04	0.10	3.3
Poultry and game	0.15	0.64	4.0	0.04	0.17	2.3	0.01	0.05	2.3	0.01	0.06	2.1	0.02	0.06	1.1	0.02	0.08	1.8	0.02	0.06	1.5
Offal	0.00	0.21	0.1	0.01	0.56	0.6	0.00	0.08	0.4	0.01	0.29	0.8	0.00	0.03	0.0	0.00	0.05	0.1	0.01	0.57	1.0
Delicatessen meats	0.26	0.84	6.8	0.06	0.16	3.3	0.02	0.04	2.9	0.02	0.07	3.0	0.02	0.06	1.5	0.03	0.08	2.3	0.03	0.09	2.5
Fish	0.03	0.11	0.8	0.02	0.06	0.9	0.01	0.05	2.0	0.01	0.06	1.9	0.01	0.05	0.8	0.03	0.13	2.4	0.01	0.04	0.9
Crustaceans and molluscs	0.01	0.10	0.2	0.00	0.06	0.1	0.00	0.06	0.4	0.00	0.03	0.2	0.00	0.02	0.1	0.00	0.05	0.2	0.00	0.03	0.2
Vegetables (excluding potatoes)	0.18	0.45	4.5	0.06	0.18	3.5	0.01	0.03	2.1	0.01	0.03	1.6	0.02	0.06	1.4	0.02	0.07	1.9	0.03	0.08	2.5
Potatoes and potato products	0.06	0.20	1.5	0.04	0.15	2.6	0.01	0.04	2.1	0.01	0.04	1.6	0.01	0.04	0.8	0.02	0.08	2.0	0.05	0.15	4.2
Pulses	0.06	0.92	1.6	0.03	0.43	1.6	0.00	0.06	0.7	0.00	0.05	0.5	0.01	0.17	0.8	0.01	0.17	0.9	0.01	0.16	1.0
Chocolate	0.18	1.19	4.6	0.02	0.17	1.4	0.01	0.06	1.6	0.01	0.06	1.3	0.02	0.12	1.3	0.04	0.24	2.9	0.03	0.17	2.3
Water	0.04	0.11	1.1	0.02	0.05	1.1	0.01	0.02	1.2	0.01	0.04	1.6	0.01	0.02	0.5	0.21	0.86	17.5	0.21	0.82	19.4
Sandwiches and snacks	0.06	0.48	1.6	0.02	0.18	1.4	0.01	0.05	1.1	0.00	0.03	0.5	0.01	0.10	0.9	0.01	0.05	0.5	0.01	0.09	1.1
Mixed dishes	0.06	0.43	1.5	0.02	0.13	1.1	0.01	0.05	1.1	0.00	0.04	0.6	0.01	0.08	0.7	0.01	0.05	0.5	0.01	0.07	0.9
Dairy-based desserts	0.10	0.59	2.6	0.05	0.24	2.8	0.01	0.07	2.0	0.01	0.08	2.2	0.02	0.11	1.7	0.02	0.10	1.4	0.02	0.10	1.5
Seasonings and sauces	0.02	0.19	0.6	0.00	0.03	0.2	0.00	0.01	0.3	0.00	0.02	0.4	0.00	0.01	0.1	0.00	0.03	0.3	0.01	0.05	0.6
TOTAL	3.86	7.06	100	1.72	3.14	100	0.55	1.07	100	0.68	1.50	100	1.38	3.45	100	1.20	2.28	100	1.08	2.05	100

Food group	PFHxA			PFHxS			PFNA			PFOA			PFOS			PFPA			PFUnA				
	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95	Contrib	
Bread and dried bread products	0.12	8.8	0.30	0.06	0.14	0.07	9.0	0.09	0.22	8.1	0.16	0.38	15.6	0.40	1.00	17.2	0.78	1.96	153				
Breakfast cereals	0.01	0.9	0.06	0.01	0.03	0.01	0.9	0.01	0.04	0.8	0.02	0.08	1.6	0.04	0.20	1.7	0.08	0.40	1.5				
Croissant-like pastries	0.04	2.9	0.24	0.02	0.11	0.03	3.2	0.03	0.17	2.8	0.05	0.30	5.2	0.13	0.78	5.6	0.25	1.57	4.9				
Sweet and savoury biscuits and bars	0.04	2.7	0.17	0.02	0.07	0.02	2.7	0.03	0.11	2.3	0.05	0.22	5.0	0.13	0.57	5.4	0.25	1.13	4.9				
Pastries and cakes	0.04	2.9	0.16	0.02	0.08	0.03	4.0	0.04	0.16	3.7	0.06	0.24	6.5	0.17	0.66	7.5	0.22	0.92	4.3				
Milk	0.52	36.8	1.60	0.19	0.57	0.27	33.6	0.29	0.97	26.2	0.25	0.80	25.5	0.61	1.81	26.4	1.79	6.80	35.0				
Ultra-fresh dairy products	0.18	12.5	0.51	0.07	0.21	0.13	16.0	0.12	0.34	10.9	0.11	0.30	11.0	0.20	0.54	8.7	0.59	1.79	11.5				
Cheese	0.02	1.4	0.07	0.01	0.05	0.03	3.5	0.02	0.07	1.6	0.02	0.09	2.4	0.05	0.17	2.0	0.08	0.28	1.7				
Eggs and egg products	0.01	0.4	0.04	0.00	0.01	0.01	0.5	0.01	0.04	0.7	0.01	0.04	0.6	0.01	0.05	0.4	0.03	0.13	0.6				
Butter	0.01	0.4	0.08	0.00	0.04	0.03	0.3	0.00	0.04	0.3	0.00	0.05	0.4	0.01	0.14	0.4	0.01	0.11	0.2				
Meat	0.06	4.4	0.16	0.03	0.08	0.03	4.7	0.03	0.12	4.1	0.05	0.13	4.9	0.09	0.23	4.0	0.27	0.76	5.2				
Poultry and game	0.03	2.1	0.11	0.01	0.05	0.02	2.3	0.02	0.08	1.9	0.02	0.06	1.8	0.05	0.17	2.0	0.11	0.41	2.1				
Offal	0.00	0.2	0.09	0.01	0.29	0.00	0.9	0.00	0.02	0.1	0.01	0.29	0.6	0.00	0.13	0.1	0.00	0.03	0.0				
Delicatessen meats	0.04	2.7	0.11	0.02	0.06	0.02	3.2	0.02	0.10	2.9	0.03	0.08	2.7	0.07	0.20	3.0	0.13	0.35	2.5				
Fish	0.01	0.9	0.05	0.01	0.03	0.01	1.4	0.01	0.03	0.8	0.01	0.07	1.5	0.02	0.09	1.0	0.02	0.09	0.4				
Crustaceans and molluscs	0.00	0.3	0.08	0.00	0.04	0.00	0.2	0.00	0.03	0.1	0.01	0.31	1.4	0.01	0.11	0.2	0.00	0.06	0.1				
Vegetables (excluding potatoes)	0.04	2.5	0.10	0.02	0.05	0.02	2.6	0.04	0.13	3.7	0.02	0.06	2.1	0.06	0.16	2.6	0.11	0.32	2.2				
Potatoes and potato products	0.02	1.7	0.08	0.01	0.04	0.01	1.5	0.01	0.04	1.1	0.01	0.04	1.1	0.02	0.08	1.0	0.01	0.04	0.2				
Pulses	0.02	1.1	0.23	0.01	0.11	0.01	1.4	0.03	0.46	2.7	0.01	0.16	1.1	0.02	0.29	0.8	0.06	0.92	1.2				
Chocolate	0.04	2.5	0.24	0.03	0.23	0.04	4.4	0.02	0.12	1.6	0.02	0.11	1.7	0.07	0.48	3.0	-	-	-				
Water	0.10	7.0	0.33	0.02	0.06	0.01	3.6	0.01	0.82	19.4	0.02	0.06	2.1	0.04	0.11	1.7	0.07	0.21	1.4				
Sandwiches and snacks	0.02	1.3	0.14	0.01	0.07	0.01	1.6	0.01	0.07	0.8	0.01	0.09	1.2	0.02	0.19	1.1	0.04	0.29	0.7				
Mixed dishes	0.02	1.1	0.12	0.01	0.05	0.01	1.2	0.01	0.06	0.7	0.01	0.06	0.9	0.02	0.14	0.9	0.06	0.67	1.1				
Dairy-based desserts	0.03	1.9	0.15	0.01	0.07	0.02	2.3	0.02	0.11	1.9	0.03	0.14	2.6	0.07	0.33	3.0	0.14	0.82	2.8				
Seasonings and sauces	0.00	0.4	0.04	0.00	0.04	0.00	0.2	0.01	0.08	0.8	0.01	0.05	0.7	0.00	0.03	0.2	0.01	0.15	0.1				
TOTAL	1.40	2.65	1.08	0.60	1.08	0.80	100	1.11	2.18	100	1.00	1.82	100	2.32	4.11	100	5.10	10.23	100				

Table C9: Estimated UB exposure (mean and P95) in children aged 15 to 17 years to perfluorinated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	PFBA		PFBS		PFDA		PFDS		PFDoA		PFHpA		PFHpS								
	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib						
Bread and dried bread products	0.39	1.07	13.6	0.25	0.68	19.8	0.04	0.11	10.1	0.04	0.10	7.5	0.08	0.21	9.0	0.08	0.21	9.5			
Breakfast cereals	0.02	0.13	0.8	0.01	0.09	1.1	0.00	0.01	0.6	0.00	0.01	0.4	0.00	0.03	0.5	0.00	0.03	0.6			
Croissant-like pastries	0.10	0.47	3.3	0.08	0.41	6.5	0.01	0.05	2.7	0.01	0.04	1.7	0.02	0.09	2.2	0.02	0.10	2.5			
Sweet and savoury biscuits and bars	0.08	0.61	2.9	0.05	0.34	3.8	0.01	0.06	2.2	0.01	0.06	1.7	0.02	0.12	2.0	0.02	0.12	2.0			
Pastries and cakes	0.09	0.42	3.1	0.08	0.35	5.9	0.01	0.06	3.1	0.01	0.04	1.9	0.02	0.08	1.8	0.02	0.09	2.4			
Milk	0.60	2.16	20.7	0.24	0.91	18.6	0.14	0.50	33.9	0.20	0.81	42.3	0.49	2.22	47.2	0.26	0.93	26.7			
Ultra-fresh dairy products	0.21	0.69	7.4	0.13	0.53	9.9	0.06	0.25	16.0	0.08	0.29	16.7	0.23	0.92	21.8	0.10	0.34	11.1			
Cheese	0.05	0.22	1.8	0.02	0.09	1.8	0.01	0.05	2.8	0.01	0.03	1.9	0.02	0.11	2.1	0.01	0.06	1.5			
Eggs and egg products	0.02	0.11	0.7	0.01	0.06	0.8	0.00	0.02	0.9	0.00	0.01	0.3	0.00	0.01	0.3	0.00	0.01	0.4			
Butter	0.01	0.24	0.4	0.00	0.05	0.2	0.00	0.02	0.3	0.00	0.07	0.6	0.00	0.02	0.1	0.00	0.05	0.2			
Meat	0.34	1.07	11.9	0.08	0.25	6.4	0.02	0.07	5.9	0.02	0.07	5.0	0.03	0.08	2.7	0.04	0.12	4.5			
Poultry and game	0.14	0.60	4.7	0.03	0.18	2.7	0.01	0.04	2.4	0.01	0.06	2.6	0.01	0.04	1.1	0.02	0.08	2.0			
Offal	0.00	0.16	0.1	0.01	0.44	0.5	0.00	0.13	0.3	0.00	0.23	0.7	0.00	0.02	0.0	0.00	0.06	0.1			
Delicatessen meats	0.19	0.65	6.5	0.04	0.14	3.2	0.01	0.04	2.8	0.02	0.05	3.1	0.02	0.05	1.4	0.02	0.07	2.3			
Fish	0.02	0.09	0.7	0.01	0.05	0.8	0.01	0.03	1.8	0.01	0.04	1.8	0.01	0.04	0.7	0.02	0.09	2.2			
Crustaceans and molluscs	0.01	0.15	0.2	0.00	0.03	0.1	0.00	0.02	0.3	0.00	0.01	0.2	0.00	0.01	0.1	0.00	0.04	0.2			
Vegetables (excluding potatoes)	0.12	0.33	4.3	0.04	0.13	3.5	0.01	0.02	2.1	0.01	0.02	1.7	0.01	0.04	1.3	0.02	0.05	1.9			
Potatoes and potato products	0.05	0.18	1.8	0.04	0.13	3.0	0.01	0.04	2.5	0.01	0.03	2.0	0.01	0.04	1.0	0.02	0.07	2.4			
Pulses	0.07	0.91	2.3	0.03	0.42	2.4	0.00	0.06	1.0	0.00	0.05	0.8	0.01	0.17	1.2	0.01	0.17	1.4			
Chocolate	0.12	0.74	4.0	0.02	0.10	1.3	0.01	0.04	1.5	0.01	0.04	1.2	0.01	0.07	1.1	0.02	0.15	2.6			
Water	0.03	0.09	1.1	0.02	0.04	1.2	0.01	0.01	1.3	0.01	0.03	1.7	0.01	0.02	0.5	0.15	0.60	17.5			
Sandwiches and snacks	0.10	0.43	3.5	0.04	0.16	2.9	0.01	0.04	2.5	0.01	0.03	1.2	0.02	0.09	1.9	0.01	0.04	1.2			
Mixed dishes	0.04	0.27	1.4	0.01	0.09	1.1	0.00	0.03	1.1	0.00	0.02	0.6	0.01	0.05	0.7	0.00	0.03	0.5			
Dairy-based desserts	0.06	0.36	2.0	0.03	0.22	2.3	0.01	0.04	1.6	0.01	0.05	1.9	0.01	0.09	1.3	0.01	0.08	1.1			
Seasonings and sauces	0.02	0.14	0.8	0.00	0.02	0.3	0.00	0.01	0.3	0.00	0.01	0.5	0.00	0.01	0.1	0.00	0.02	0.4			
TOTAL	2.89	5.51	100	1.27	2.58	100	0.40	0.83	100	0.48	1.02	100	1.04	2.64	100	0.88	1.71	100	0.82	1.57	100

Food group	PFHxA			PFHxS			PFNA			PFOA			PFOS			PFPA			PFUnA			
	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95	Mean	Contrib	P95	
Bread and dried bread products	0.11	10.9	0.05	0.14	11.6	0.06	0.18	11.4	0.08	0.22	0.22	9.9	0.14	0.41	19.6	0.36	1.07	0.72	21.5	0.72	2.14	19.7
Breakfast cereals	0.01	0.04	0.00	0.02	0.7	0.00	0.02	0.7	0.00	0.03	0.03	0.6	0.01	0.05	1.2	0.02	0.12	0.04	1.3	0.04	0.24	1.2
Croissant-like pastries	0.02	0.13	0.01	0.06	2.7	0.02	0.08	3.0	0.02	0.11	0.11	2.6	0.03	0.16	4.2	0.07	0.42	0.13	4.3	0.13	0.73	3.6
Sweet and savoury biscuits and bars	0.03	2.5	0.01	0.08	2.6	0.01	0.10	2.5	0.02	0.12	0.12	2.1	0.03	0.23	4.6	0.09	0.61	0.17	5.0	0.17	1.21	4.6
Pastries and cakes	0.02	0.11	0.01	0.06	3.0	0.02	0.08	3.2	0.02	0.10	0.10	2.8	0.04	0.17	5.2	0.10	0.47	0.13	5.9	0.13	0.64	3.6
Milk	0.34	1.20	0.13	0.44	28.8	0.17	0.61	30.1	0.19	0.65	0.65	23.4	0.17	0.59	23.1	0.41	1.43	1.16	24.1	1.16	4.17	31.8
Ultra-fresh dairy products	0.13	0.45	0.05	0.18	11.9	0.09	0.32	16.0	0.09	0.35	0.35	10.8	0.08	0.32	11.0	0.15	0.50	0.43	8.6	0.43	1.62	11.7
Cheese	0.01	0.06	0.01	0.05	2.2	0.02	0.08	3.2	0.01	0.04	0.04	1.4	0.02	0.06	2.1	0.03	0.13	0.05	1.8	0.05	0.19	1.5
Eggs and egg products	0.01	0.03	0.00	0.01	0.6	0.00	0.02	0.6	0.01	0.03	0.03	0.7	0.00	0.04	0.6	0.01	0.05	0.02	0.5	0.02	0.12	0.6
Butter	0.00	0.07	0.00	0.04	0.4	0.00	0.02	0.2	0.00	0.03	0.03	0.2	0.00	0.05	0.3	0.01	0.12	0.00	0.3	0.00	0.10	0.1
Meat	0.05	0.15	0.02	0.08	5.6	0.03	0.07	4.6	0.04	0.12	0.12	4.6	0.04	0.11	5.5	0.08	0.22	0.21	4.6	0.21	0.68	5.9
Poultry and game	0.02	0.11	0.01	0.05	2.5	0.01	0.05	2.2	0.02	0.08	0.08	2.1	0.01	0.06	2.0	0.04	0.15	0.08	2.2	0.08	0.41	2.3
Offal	0.00	0.09	0.00	0.02	0.7	0.00	0.04	0.1	0.00	0.02	0.02	0.0	0.00	0.23	0.5	0.00	0.09	0.01	0.1	0.00	0.02	0.0
Delicatessen meats	0.03	0.09	0.01	0.05	3.2	0.02	0.06	2.8	0.02	0.07	0.07	2.8	0.02	0.06	2.6	0.05	0.17	0.09	3.0	0.09	0.31	2.5
Fish	0.01	0.04	0.00	0.02	0.9	0.01	0.03	1.3	0.01	0.03	0.03	0.7	0.01	0.06	1.2	0.02	0.07	0.01	0.9	0.01	0.09	0.3
Crustaceans and molluscs	0.00	0.05	0.00	0.02	0.3	0.00	0.02	0.2	0.00	0.01	0.01	0.1	0.01	0.13	1.0	0.00	0.08	0.00	0.3	0.00	0.03	0.0
Vegetables (excluding potatoes)	0.03	0.07	0.01	0.03	2.6	0.01	0.04	2.5	0.03	0.09	0.09	3.2	0.01	0.04	2.0	0.04	0.13	0.08	2.6	0.08	0.24	2.1
Potatoes and potato products	0.02	0.07	0.01	0.03	2.2	0.01	0.04	1.8	0.01	0.04	0.04	1.2	0.01	0.03	1.3	0.02	0.07	0.01	1.2	0.01	0.04	0.3
Pulses	0.02	0.23	0.01	0.11	1.7	0.01	0.17	2.2	0.03	0.45	0.45	3.9	0.01	0.16	1.6	0.02	0.28	0.07	1.2	0.07	0.91	1.8
Chocolate	0.02	0.15	0.02	0.14	4.9	0.02	0.15	4.1	0.01	0.07	0.07	1.4	0.01	0.07	1.5	0.05	0.29	0.05	2.7	0.05	0.16	1.5
Water	0.08	0.25	0.02	0.05	3.9	0.01	0.02	1.2	0.17	0.65	0.65	20.7	0.02	0.04	2.3	0.03	0.09	0.09	1.9	0.05	0.26	1.7
Sandwiches and snacks	0.03	0.13	0.02	0.07	3.4	0.02	0.07	2.8	0.01	0.06	0.06	1.7	0.02	0.08	2.7	0.04	0.17	0.06	2.4	0.06	0.26	1.7
Mixed dishes	0.01	0.07	0.01	0.04	1.2	0.01	0.04	1.1	0.01	0.03	0.03	0.7	0.01	0.04	0.9	0.01	0.09	0.04	0.9	0.04	0.45	1.1
Dairy-based desserts	0.02	0.10	0.01	0.04	1.5	0.01	0.06	1.9	0.01	0.08	0.08	1.5	0.01	0.10	2.1	0.04	0.27	0.07	2.4	0.07	0.42	2.0
Seasonings and sauces	0.00	0.03	0.00	0.03	0.9	0.00	0.01	0.2	0.01	0.05	0.05	1.0	0.01	0.04	0.9	0.00	0.02	0.01	0.2	0.01	0.09	0.1
TOTAL	1.03	2.06	0.45	0.80	100	0.57	1.13	100	0.83	1.66	1.66	100	0.72	1.44	100	1.69	3.30	3.64	100	3.64	7.75	100

Table D4: Estimated exposure (mean and P95) in women of child-bearing age (18-45 years) to brominated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	HBCCD						PBB					
	Mean		P95		Contrib		Mean		P95		Contrib	
	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB
Milk	0.002	0.004	0.018	0.025	1.4	2.2	8.72343E-07	0.001	0	0.003	0.1	4.0
Ultra-fresh dairy products	0.008	0.013	0.017	0.021	5.1	6.4	0	0.001	0	0.002	0.0	7.7
Cheese	0.002	0.007	0.003	0.011	1.5	3.7	2.78106E-05	0.002	7.26927E-05	0.002	2.5	9.2
Eggs and egg products	0.004	0.005	0.021	0.023	2.6	2.7	0	0.000	0	0.002	0.0	2.7
Butter	0.001	0.006	0.004	0.018	0.9	3.0	0	0.002	0	0.005	0.0	9.2
Oils	0.002	0.010	0.005	0.030	1.0	4.9	0	0.003	0	0.008	0.0	15.2
Margarine	0.000	0.001	0.002	0.009	0.2	0.7	0	0.001	0	0.004	0.0	4.1
Meat	0.025	0.028	0.030	0.033	16.6	14.4	4.07723E-05	0.001	0.00014888	0.002	3.7	7.6
Poultry and game	0.011	0.013	0.045	0.050	7.2	6.6	0	0.001	0	0.002	0.0	3.9
Offal	0.001	0.001	0.021	0.021	0.4	0.3	2.12275E-05	0.000	0.0000617191	0.002	1.9	0.3
Delicatessen meats	0.039	0.042	0.080	0.085	25.9	21.1	3.1818E-05	0.001	6.71579E-05	0.002	2.9	6.3
Fish	0.024	0.026	0.156	0.156	16.0	13.1	0.000898144	0.001	0.005711299	0.006	80.6	8.1
Crustaceans and molluscs	0.005	0.005	0.068	0.068	3.3	2.6	8.91507E-05	0.000	0.00074493	0.001	8.0	1.1
Vegetables (excluding potatoes)	0.000	0.001	0.004	0.009	0.3	0.4	7.56159E-08	0.000	0	0.002	0.0	0.9
Pizzas, quiches and savoury pastries	0.003	0.005	0.018	0.026	1.8	2.6	0	0.001	0	0.003	0.0	3.7
Sandwiches and snacks	0.007	0.008	0.083	0.084	4.5	4.3	0	0.001	0	0.004	0.0	4.1
Mixed dishes	0.016	0.018	0.088	0.088	10.7	8.9	4.66218E-06	0.001	4.35794E-05	0.004	0.4	7.1
Dairy-based desserts	0.001	0.002	0.004	0.012	0.5	1.2	0	0.000	0	0.002	0.0	2.4
Seasonings and sauces	0.000	0.002	0.001	0.011	0.1	0.8	0	0.000	0	0.003	0.0	2.3
Total	0.151	0.198	0.352	0.430	100.0	100.0	0.001114533	0.017	0.006045797	0.030	100.0	100.0

Food group	7 PBDE						8 PBDE					
	Mean		P95		Contrib		Mean		P95		Contrib	
	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB
Milk	0.002	0.003	0.012	0.014	1.1	1.3	0.006	0.006	0.029	0.031	1.1	1.1
Ultra-fresh dairy products	0.011	0.012	0.019	0.020	5.4	5.5	0.066	0.067	0.126	0.126	12.1	12.0
Cheese	0.009	0.010	0.014	0.016	4.5	4.9	0.020	0.021	0.036	0.038	3.7	3.8
Eggs and egg products	0.004	0.004	0.023	0.023	2.0	2.1	0.014	0.014	0.069	0.071	2.6	2.6
Butter	0.015	0.016	0.046	0.048	7.5	7.5	0.025	0.026	0.077	0.079	4.6	4.7
Oils	0.002	0.004	0.007	0.012	1.0	1.8	0.003	0.005	0.009	0.014	0.5	0.8
Margarine	0.002	0.002	0.014	0.015	1.0	1.0	0.007	0.007	0.050	0.051	1.3	1.3
Meat	0.012	0.013	0.025	0.025	6.0	6.1	0.039	0.040	0.070	0.070	7.2	7.2
Poultry and game	0.010	0.010	0.045	0.045	4.9	4.9	0.038	0.038	0.183	0.184	6.9	6.9
Offal	0.000	0.000	0.011	0.012	0.1	0.1	0.001	0.001	0.029	0.031	0.2	0.2
Delicatessen meats	0.016	0.017	0.027	0.028	8.1	8.0	0.043	0.044	0.068	0.069	7.9	7.9
Fish	0.084	0.085	0.528	0.528	41.7	39.9	0.095	0.096	0.554	0.556	17.4	17.2
Crustaceans and molluscs	0.005	0.005	0.068	0.068	2.6	2.5	0.007	0.007	0.084	0.085	1.3	1.3
Vegetables (excluding potatoes)	0.003	0.003	0.034	0.034	1.4	1.4	0.009	0.009	0.092	0.093	1.7	1.7
Pizzas, quiches and savoury pastries	0.003	0.004	0.014	0.016	1.7	1.8	0.022	0.023	0.100	0.102	4.1	4.1
Sandwiches and snacks	0.010	0.011	0.061	0.062	5.1	5.1	0.037	0.037	0.211	0.213	6.7	6.6
Mixed dishes	0.008	0.009	0.027	0.029	4.1	4.2	0.036	0.037	0.104	0.105	6.6	6.6
Dairy-based desserts	0.003	0.003	0.014	0.016	1.5	1.6	0.076	0.076	0.338	0.339	13.8	13.7
Seasonings and sauces	0.000	0.001	0.003	0.005	0.2	0.3	0.002	0.002	0.013	0.014	0.3	0.3
Total	0.203	0.212	0.613	0.624	100.0	100.0	0.546	0.556	1.106	1.115	100.0	100.0

Table D5: Estimated exposure (mean and P95) in elderly people (65 years and older) to brominated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	HBCCD						PBB					
	Mean		P95		Contrib		Mean		P95		Contrib	
	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB
Milk	0.001	0.003	0.014	0.022	1.0	1.6	3.02205E-06	0.000	0	0.003	0.3	3.0
Ultra-fresh dairy products	0.006	0.009	0.019	0.027	4.1	5.2	0	0.001	0	0.002	0.0	5.6
Cheese	0.003	0.009	0.005	0.013	2.2	5.2	5.06615E-05	0.002	0.000110714	0.003	4.6	12.0
Eggs and egg products	0.005	0.007	0.020	0.022	3.5	3.6	0	0.001	0	0.002	0.0	3.3
Butter	0.001	0.007	0.004	0.018	1.0	3.6	0	0.002	0	0.005	0.0	10.2
Oils	0.002	0.010	0.005	0.031	1.2	5.8	0	0.003	0	0.008	0.0	17.1
Margarine	0.001	0.003	0.002	0.012	0.4	1.6	0	0.002	0	0.008	0.0	10.3
Meat	0.027	0.030	0.037	0.039	19.6	16.8	2.97994E-05	0.001	9.41526E-05	0.002	2.7	7.5
Poultry and game	0.009	0.011	0.052	0.058	6.7	6.2	0	0.001	0	0.002	0.0	4.3
Offal	0.001	0.001	0.017	0.021	0.5	0.5	3.3715E-05	0.000	0.000780061	0.002	3.0	0.6
Delicatessen meats	0.039	0.041	0.072	0.077	28.6	22.8	2.13188E-05	0.001	5.41504E-05	0.001	1.9	5.7
Fish	0.023	0.024	0.136	0.145	16.6	13.3	0.000901584	0.001	0.006036964	0.006	81.0	7.5
Crustaceans and molluscs	0.004	0.005	0.042	0.044	3.3	2.6	6.30709E-05	0.000	0.000708412	0.001	5.7	1.0
Vegetables (excluding potatoes)	0.001	0.001	0.003	0.007	0.5	0.5	2.69691E-07	0.000	0	0.001	0.0	0.9
Pizzas, quiches and savoury pastries	0.002	0.003	0.028	0.033	1.4	1.5	0	0.000	0	0.003	0.0	1.6
Sandwiches and snacks	0.001	0.001	0.072	0.073	0.8	0.7	0	0.000	0	0.003	0.0	0.4
Mixed dishes	0.011	0.012	0.145	0.145	8.0	6.6	9.53013E-06	0.001	0.000108604	0.004	0.9	4.2
Dairy-based desserts	0.001	0.003	0.009	0.022	0.7	1.6	0	0.001	0	0.007	0.0	3.8
Seasonings and sauces	0.000	0.001	0.001	0.009	0.0	0.4	0	0.000	0	0.002	0.0	1.0
Total	0.137	0.181	0.363	0.421	100.0	100.0	0.00112971	0.016	0.005930917	0.027	100.0	100.0

Food group	7 PBDE										8 PBDE					
	Mean		P95		Contrib		Mean		P95		Contrib					
	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB				
Milk	0.001	0.002	0.011	0.014	0.8	1.0	0.006	0.006	0.048	0.051	1.2	1.3				
Ultra-fresh dairy products	0.008	0.009	0.018	0.019	4.5	4.5	0.052	0.052	0.133	0.136	10.9	10.8				
Cheese	0.012	0.014	0.018	0.020	6.7	7.1	0.027	0.028	0.041	0.042	5.7	5.9				
Eggs and egg products	0.004	0.005	0.020	0.021	2.3	2.4	0.017	0.017	0.048	0.048	3.5	3.5				
Butter	0.017	0.017	0.051	0.053	9.1	9.1	0.027	0.028	0.084	0.086	5.7	5.8				
Oils	0.002	0.004	0.006	0.011	1.2	2.1	0.003	0.005	0.009	0.014	0.6	1.0				
Margarine	0.004	0.004	0.017	0.019	1.9	2.1	0.012	0.013	0.061	0.064	2.6	2.7				
Meat	0.013	0.014	0.023	0.023	7.1	7.2	0.050	0.051	0.093	0.095	10.6	10.5				
Poultry and game	0.007	0.008	0.033	0.035	3.8	4.0	0.024	0.024	0.126	0.127	5.0	5.0				
Offal	0.000	0.000	0.008	0.009	0.2	0.2	0.002	0.002	0.037	0.038	0.4	0.4				
Delicatessen meats	0.013	0.014	0.024	0.024	7.4	7.3	0.034	0.034	0.049	0.049	7.2	7.1				
Fish	0.081	0.081	0.539	0.541	44.5	42.5	0.088	0.088	0.561	0.563	18.5	18.2				
Crustaceans and molluscs	0.005	0.005	0.052	0.052	2.7	2.6	0.006	0.006	0.066	0.066	1.3	1.3				
Vegetables (excluding potatoes)	0.003	0.003	0.032	0.032	1.5	1.5	0.008	0.008	0.083	0.083	1.8	1.7				
Pizzas, quiches and savoury pastries	0.002	0.002	0.017	0.018	0.9	1.0	0.009	0.009	0.098	0.100	1.9	1.9				
Sandwiches and snacks	0.001	0.001	0.045	0.047	0.5	0.5	0.002	0.002	0.110	0.112	0.5	0.5				
Mixed dishes	0.005	0.006	0.031	0.032	2.9	3.0	0.023	0.023	0.122	0.122	4.8	4.8				
Dairy-based desserts	0.003	0.004	0.031	0.036	1.8	1.9	0.084	0.084	0.623	0.624	17.6	17.4				
Seasonings and sauces	0.000	0.000	0.002	0.004	0.1	0.1	0.001	0.001	0.012	0.012	0.1	0.2				
Total	0.181	0.191	0.626	0.630	100.0	100.0	0.474	0.483	1.140	1.155	100.0	100.0				

Table D6: Estimated exposure (mean and P95) in children aged 3 to 6 years to brominated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	HBCCD						PBBD					
	Mean		P95		Contrib		Mean		P95		Contrib	
	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB
Milk	0.017	0.034	0.092	0.124	4.9	6.9	5.34296E-05	0.005	0	0.014	2.6	10.1
Ultra-fresh dairy products	0.028	0.050	0.053	0.077	8.1	10.3	0	0.005	0	0.007	0.0	10.8
Cheese	0.005	0.017	0.008	0.024	1.4	3.4	4.46343E-05	0.003	0.000141751	0.005	2.2	6.5
Eggs and egg products	0.008	0.011	0.047	0.066	2.2	2.3	0	0.001	0	0.005	0.0	2.2
Butter	0.004	0.017	0.009	0.044	1.0	3.5	0	0.005	0	0.012	0.0	9.4
Oils	0.004	0.028	0.014	0.086	1.3	5.6	0	0.007	0	0.024	0.0	14.9
Margarine	0.001	0.004	0.006	0.032	0.2	0.8	0	0.002	0	0.016	0.0	3.9
Meat	0.031	0.040	0.061	0.074	9.0	8.2	7.82709E-05	0.003	0.000328596	0.005	3.8	6.4
Poultry and game	0.021	0.025	0.082	0.097	6.1	5.1	0	0.001	0	0.004	0.0	2.5
Offal	0.000	0.001	0.020	0.020	0.1	0.1	2.0272E-05	0.000	0.001293771	0.002	1.0	0.1
Delicatessen meats	0.103	0.110	0.178	0.189	29.8	22.5	5.70044E-05	0.003	0.00013695	0.004	2.8	6.1
Fish	0.045	0.051	0.274	0.284	13.1	10.3	0.001660755	0.004	0.012668272	0.013	81.4	7.4
Crustaceans and molluscs	0.006	0.007	0.126	0.126	1.8	1.3	0.000117042	0.000	0.001593927	0.002	5.7	0.4
Vegetables (excluding potatoes)	0.001	0.002	0.007	0.015	0.2	0.3	0	0.000	0	0.004	0.0	0.8
Pizzas, quiches and savoury pastries	0.006	0.010	0.037	0.043	1.7	2.0	0	0.001	0	0.006	0.0	2.1
Sandwiches and snacks	0.007	0.009	0.190	0.191	2.1	1.9	0	0.001	0	0.007	0.0	1.7
Mixed dishes	0.054	0.059	0.161	0.161	15.7	12.1	9.81287E-06	0.004	8.55715E-05	0.009	0.5	8.8
Dairy-based desserts	0.004	0.014	0.009	0.038	1.1	2.9	0	0.002	0	0.006	0.0	4.6
Seasonings and sauces	0.000	0.003	0.004	0.025	0.1	0.6	0	0.001	0	0.007	0.0	1.4
Total	0.347	0.490	0.832	1.016	100.0	100.0	0.002041221	0.050	0.01269104	0.083	100.0	100.0

Food group	7 PBDE										8 PBDE					
	Mean		P95		Contrib		Mean		P95		Contrib					
	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB				
Milk	0.018	0.022	0.061	0.070	3.8	4.4	0.039	0.043	0.140	0.145	2.3	2.5				
Ultra-fresh dairy products	0.045	0.047	0.063	0.065	9.3	9.2	0.319	0.322	0.414	0.417	19.0	18.8				
Cheese	0.020	0.023	0.032	0.036	4.2	4.5	0.041	0.043	0.068	0.070	2.4	2.5				
Eggs and egg products	0.011	0.012	0.071	0.072	2.3	2.3	0.038	0.039	0.253	0.255	2.3	2.3				
Butter	0.045	0.047	0.124	0.129	9.4	9.2	0.075	0.077	0.208	0.212	4.5	4.5				
Oils	0.006	0.011	0.024	0.037	1.3	2.2	0.009	0.014	0.034	0.047	0.5	0.8				
Margarine	0.006	0.006	0.042	0.045	1.1	1.2	0.020	0.020	0.147	0.149	1.2	1.2				
Meat	0.031	0.033	0.053	0.053	6.4	6.4	0.104	0.105	0.274	0.278	6.2	6.2				
Poultry and game	0.022	0.023	0.076	0.076	4.7	4.6	0.057	0.058	0.169	0.169	3.4	3.4				
Offal	0.000	0.000	0.015	0.017	0.1	0.1	0.001	0.001	0.061	0.063	0.1	0.1				
Delicatessen meats	0.044	0.046	0.080	0.082	9.2	9.0	0.113	0.115	0.152	0.155	6.7	6.7				
Fish	0.153	0.154	1.008	1.008	31.8	30.2	0.176	0.177	1.026	1.028	10.5	10.4				
Crustaceans and molluscs	0.007	0.008	0.140	0.140	1.5	1.5	0.009	0.009	0.148	0.148	0.6	0.6				
Vegetables (excluding potatoes)	0.008	0.008	0.067	0.068	1.6	1.6	0.023	0.023	0.211	0.213	1.4	1.3				
Pizzas, quiches and savoury pastries	0.006	0.007	0.027	0.032	1.3	1.3	0.037	0.038	0.200	0.205	2.2	2.2				
Sandwiches and snacks	0.015	0.015	0.244	0.253	3.0	3.0	0.047	0.047	0.411	0.414	2.8	2.8				
Mixed dishes	0.028	0.030	0.064	0.066	5.8	5.9	0.121	0.123	0.241	0.244	7.2	7.2				
Dairy-based desserts	0.014	0.017	0.050	0.056	3.0	3.3	0.448	0.450	1.222	1.229	26.7	26.3				
Seasonings and sauces	0.001	0.001	0.006	0.011	0.1	0.2	0.003	0.004	0.052	0.053	0.2	0.2				
Total	0.481	0.510	1.271	1.307	100.0	100.0	1.680	1.709	3.059	3.112	100.0	100.0				

Table D7 : Estimated exposure (mean and P95) in children aged 7 to 10 years to brominated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	HBCCD						PBB					
	Mean		P95		Contrib		Mean		P95		Contrib	
	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB
Milk	0.010	0.018	0.052	0.065	3.4	4.9	4.94304E-06	0.003	0	0.008	0.3	8.3
Ultra-fresh dairy products	0.013	0.024	0.020	0.032	4.4	6.4	0	0.003	0	0.004	0.0	8.9
Cheese	0.004	0.012	0.006	0.020	1.3	3.2	2.90125E-05	0.002	9.46809E-05	0.004	1.8	7.3
Eggs and egg products	0.008	0.010	0.044	0.047	2.8	2.8	0	0.001	0	0.003	0.0	2.4
Butter	0.002	0.011	0.005	0.026	0.8	2.8	0	0.003	0	0.008	0.0	8.6
Oils	0.002	0.014	0.008	0.051	0.8	3.8	0	0.004	0	0.013	0.0	11.6
Margarine	0.001	0.003	0.004	0.024	0.2	0.9	0	0.002	0	0.009	0.0	4.7
Meat	0.058	0.065	0.070	0.075	20.2	17.2	8.47162E-05	0.003	0.000311363	0.004	5.2	8.1
Poultry and game	0.017	0.020	0.063	0.067	5.9	5.4	0	0.001	0	0.004	0.0	3.6
Offal	0.000	0.001	0.035	0.036	0.1	0.1	3.49262E-05	0.000	0.001470564	0.002	2.1	0.2
Delicatessen meats	0.083	0.088	0.126	0.130	29.0	23.5	7.20575E-05	0.002	0.000134315	0.003	4.4	7.0
Fish	0.038	0.042	0.196	0.197	13.4	11.0	0.001349919	0.003	0.008546155	0.011	82.2	8.5
Crustaceans and molluscs	0.003	0.003	0.090	0.090	1.0	0.8	4.94425E-05	0.000	0.001206215	0.002	3.0	0.3
Vegetables (excluding potatoes)	0.001	0.001	0.005	0.011	0.2	0.3	1.68986E-07	0.000	0	0.003	0.0	0.7
Pizzas, quiches and savoury pastries	0.005	0.009	0.032	0.045	1.8	2.4	0	0.001	0	0.004	0.0	3.1
Sandwiches and snacks	0.004	0.005	0.052	0.065	1.3	1.4	0	0.001	0	0.005	0.0	1.9
Mixed dishes	0.035	0.039	0.112	0.112	12.3	10.4	1.69985E-05	0.003	6.66509E-05	0.005	1.0	9.2
Dairy-based desserts	0.003	0.008	0.009	0.028	1.0	2.2	0	0.001	0	0.004	0.0	4.2
Seasonings and sauces	0.000	0.002	0.003	0.013	0.1	0.5	0	0.000	0	0.004	0.0	1.4
Total	0.285	0.376	0.664	0.772	100.0	100.0	0.001642184	0.033	0.008184247	0.057	100.0	100.0

Food group	7 PBDE										8 PBDE					
	Mean		P95		Contrib		Mean		P95		Contrib					
	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB				
Milk	0.009	0.012	0.027	0.033	2.7	3.1	0.020	0.023	0.064	0.070	1.8	2.0				
Ultra-fresh dairy products	0.025	0.026	0.037	0.038	7.2	7.2	0.161	0.163	0.236	0.238	14.5	14.4				
Cheese	0.014	0.016	0.026	0.028	4.2	4.5	0.030	0.032	0.047	0.050	2.7	2.8				
Eggs and egg products	0.007	0.007	0.034	0.038	1.9	2.0	0.025	0.026	0.112	0.113	2.3	2.3				
Butter	0.027	0.028	0.071	0.074	7.7	7.6	0.044	0.045	0.120	0.122	4.0	4.0				
Oils	0.003	0.006	0.012	0.020	0.9	1.5	0.004	0.007	0.017	0.024	0.4	0.6				
Margarine	0.005	0.005	0.038	0.040	1.3	1.3	0.016	0.017	0.133	0.135	1.5	1.5				
Meat	0.025	0.027	0.041	0.042	7.3	7.3	0.086	0.088	0.156	0.159	7.8	7.8				
Poultry and game	0.015	0.016	0.064	0.064	4.4	4.5	0.054	0.055	0.180	0.181	4.8	4.9				
Offal	0.000	0.000	0.018	0.019	0.1	0.1	0.001	0.001	0.060	0.062	0.1	0.1				
Delicatessen meats	0.038	0.039	0.055	0.056	10.8	10.6	0.093	0.094	0.128	0.128	8.3	8.3				
Fish	0.124	0.125	0.679	0.679	35.6	34.0	0.142	0.143	0.731	0.731	12.8	12.6				
Crustaceans and molluscs	0.003	0.003	0.065	0.066	0.8	0.8	0.004	0.004	0.072	0.073	0.3	0.3				
Vegetables (excluding potatoes)	0.005	0.005	0.053	0.053	1.3	1.3	0.013	0.013	0.152	0.153	1.2	1.2				
Pizzas, quiches and savoury pastries	0.006	0.007	0.026	0.030	1.6	1.8	0.037	0.037	0.151	0.155	3.3	3.3				
Sandwiches and snacks	0.011	0.011	0.097	0.098	3.1	3.1	0.033	0.033	0.264	0.267	3.0	3.0				
Mixed dishes	0.021	0.022	0.041	0.043	6.0	6.1	0.089	0.090	0.167	0.170	8.0	8.0				
Dairy-based desserts	0.010	0.011	0.035	0.037	2.8	3.0	0.256	0.257	0.783	0.784	23.0	22.7				
Seasonings and sauces	0.000	0.001	0.003	0.006	0.1	0.2	0.003	0.004	0.033	0.034	0.3	0.3				
Total	0.348	0.367	0.908	0.928	100.0	100.0	1.112	1.131	2.203	2.219	100.0	100.0				

Table D8: Estimated exposure (mean and P95) in children aged 11 to 14 years to brominated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	HBCCD						PBB					
	Mean		P95		Contrib		Mean		P95		Contrib	
	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB
Milk	0.005	0.010	0.030	0.037	2.7	4.1	2.15377E-05	0.002	0	0.005	1.8	7.4
Ultra-fresh dairy products	0.007	0.013	0.015	0.023	4.0	5.3	0	0.001	0	0.002	0.0	6.4
Cheese	0.002	0.008	0.004	0.013	1.3	3.2	2.4982E-05	0.002	9.50768E-05	0.003	2.1	7.6
Eggs and egg products	0.004	0.005	0.022	0.026	2.1	2.2	0	0.000	0	0.002	0.0	2.1
Butter	0.001	0.007	0.004	0.019	0.8	2.8	0	0.002	0	0.005	0.0	8.5
Oils	0.001	0.009	0.005	0.033	0.7	3.6	0	0.002	0	0.009	0.0	10.7
Margarine	0.000	0.002	0.002	0.009	0.1	0.6	0	0.001	0	0.004	0.0	3.5
Meat	0.024	0.029	0.040	0.045	13.1	12.0	6.32761E-05	0.002	0.000251691	0.003	5.2	8.9
Poultry and game	0.015	0.018	0.066	0.069	8.3	7.4	0	0.001	0	0.002	0.0	4.2
Offal	0.000	0.000	0.024	0.029	0.2	0.2	2.39487E-05	0.000	0.000979612	0.002	2.0	0.2
Delicatessen meats	0.052	0.056	0.090	0.099	28.2	23.0	5.09001E-05	0.002	0.000101716	0.002	4.2	7.1
Fish	0.026	0.028	0.173	0.174	14.0	11.5	0.000977264	0.002	0.007529053	0.008	80.6	8.1
Crustaceans and molluscs	0.004	0.004	0.127	0.130	2.2	1.7	4.14256E-05	0.000	0.001174472	0.002	3.4	0.5
Vegetables (excluding potatoes)	0.000	0.001	0.003	0.007	0.2	0.3	1.90072E-08	0.000	0	0.002	0.0	0.6
Pizzas, quiches and savoury pastries	0.005	0.009	0.028	0.035	2.8	3.6	0	0.001	0	0.004	0.0	4.5
Sandwiches and snacks	0.007	0.008	0.098	0.099	3.6	3.4	0	0.001	0	0.005	0.0	3.3
Mixed dishes	0.027	0.030	0.087	0.088	14.7	12.2	9.44619E-06	0.002	4.35794E-05	0.005	0.8	10.5
Dairy-based desserts	0.002	0.005	0.009	0.024	1.0	2.2	0	0.001	0	0.004	0.0	4.3
Seasonings and sauces	0.000	0.002	0.002	0.011	0.1	0.6	0	0.000	0	0.003	0.0	1.8
Total	0.184	0.242	0.430	0.507	100.0	100.0	0.001212799	0.022	0.007681861	0.037	100.0	100.0

Food group	7 PBDE						8 PBDE					
	Mean		P95		Contrib		Mean		P95		Contrib	
	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB
Milk	0.005	0.007	0.018	0.023	2.2	2.6	0.012	0.013	0.041	0.045	1.6	1.8
Ultra-fresh dairy products	0.011	0.012	0.020	0.021	4.5	4.5	0.075	0.076	0.137	0.138	10.0	9.9
Cheese	0.010	0.011	0.017	0.019	3.9	4.2	0.020	0.021	0.036	0.038	2.7	2.8
Eggs and egg products	0.005	0.005	0.034	0.034	2.0	2.0	0.016	0.016	0.067	0.067	2.1	2.1
Butter	0.017	0.018	0.048	0.050	7.0	6.9	0.028	0.029	0.080	0.082	3.8	3.8
Oils	0.002	0.003	0.006	0.012	0.8	1.3	0.003	0.004	0.009	0.014	0.3	0.6
Margarine	0.002	0.002	0.013	0.014	0.9	0.9	0.008	0.008	0.046	0.046	1.0	1.0
Meat	0.019	0.020	0.037	0.038	7.7	7.8	0.064	0.065	0.125	0.126	8.5	8.5
Poultry and game	0.013	0.014	0.046	0.049	5.4	5.4	0.040	0.041	0.173	0.174	5.4	5.4
Offal	0.000	0.000	0.008	0.008	0.1	0.1	0.001	0.001	0.033	0.034	0.1	0.1
Delicatessen meats	0.025	0.026	0.044	0.045	10.1	9.9	0.063	0.064	0.100	0.102	8.4	8.4
Fish	0.089	0.089	0.618	0.619	36.2	34.6	0.102	0.103	0.654	0.655	13.7	13.5
Crustaceans and molluscs	0.004	0.004	0.080	0.081	1.8	1.7	0.005	0.005	0.100	0.100	0.7	0.7
Vegetables (excluding potatoes)	0.002	0.003	0.029	0.030	1.0	1.0	0.008	0.008	0.091	0.092	1.1	1.1
Pizzas, quiches and savoury pastries	0.005	0.006	0.023	0.025	2.2	2.4	0.034	0.035	0.140	0.143	4.5	4.6
Sandwiches and snacks	0.011	0.012	0.095	0.098	4.5	4.5	0.036	0.037	0.260	0.263	4.8	4.8
Mixed dishes	0.016	0.017	0.035	0.036	6.4	6.5	0.066	0.067	0.153	0.156	8.8	8.8
Dairy-based desserts	0.008	0.009	0.036	0.042	3.3	3.4	0.165	0.165	0.769	0.771	22.0	21.7
Seasonings and sauces	0.000	0.001	0.003	0.005	0.2	0.3	0.002	0.002	0.019	0.022	0.3	0.3
Total	0.245	0.258	0.740	0.756	100.0	100.0	0.748	0.761	1.550	1.567	100.0	100.0

Table D9: Estimated exposure (mean and P95) in children aged 15 and older to brominated compounds (ng/kg bw/day) and contribution of foods (%)

Food group	HBCCD						PBB					
	Mean		P95		Contrib		Mean		P95		Contrib	
	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB
Milk	0.004	0.007	0.022	0.030	2.4	3.6	1.44067E-06	0.001	0	0.004	0.2	6.6
Ultra-fresh dairy products	0.005	0.009	0.014	0.018	3.2	4.5	0	0.001	0	0.002	0.0	6.3
Cheese	0.002	0.005	0.004	0.011	1.1	2.6	1.89496E-05	0.001	7.35004E-05	0.002	2.1	6.4
Eggs and egg products	0.003	0.004	0.016	0.018	1.9	2.1	0	0.000	0	0.002	0.0	2.3
Butter	0.001	0.004	0.003	0.013	0.6	2.3	0	0.001	0	0.004	0.0	7.1
Oils	0.001	0.007	0.004	0.026	0.7	3.5	0	0.002	0	0.007	0.0	11.1
Margarine	0.000	0.001	0.002	0.009	0.1	0.6	0	0.001	0	0.005	0.0	3.3
Meat	0.024	0.028	0.038	0.046	16.6	14.9	4.78936E-05	0.002	0.000201326	0.003	5.2	9.6
Poultry and game	0.012	0.014	0.044	0.046	7.9	7.1	0	0.001	0	0.002	0.0	4.1
Offal	0.000	0.000	0.031	0.031	0.1	0.1	1.31225E-05	0.000	0.000872782	0.002	1.4	0.2
Delicatessen meats	0.039	0.042	0.077	0.079	26.7	22.1	3.081E-05	0.001	7.5865E-05	0.002	3.3	6.7
Fish	0.020	0.021	0.147	0.148	13.4	11.0	0.000765071	0.001	0.005892308	0.006	83.1	7.4
Crustaceans and molluscs	0.002	0.002	0.034	0.034	1.1	0.9	3.58675E-05	0.000	0.000543196	0.002	3.9	0.5
Vegetables (excluding potatoes)	0.001	0.001	0.003	0.008	0.3	0.4	7.89644E-08	0.000	0	0.002	0.0	0.8
Pizzas, quiches and savoury pastries	0.004	0.007	0.020	0.034	2.6	3.7	0	0.001	0	0.004	0.0	5.3
Sandwiches and snacks	0.010	0.012	0.053	0.057	6.8	6.5	0	0.001	0	0.004	0.0	6.8
Mixed dishes	0.020	0.022	0.080	0.081	13.7	11.6	7.60543E-06	0.002	5.9544E-05	0.004	0.8	10.1
Dairy-based desserts	0.001	0.003	0.005	0.018	0.7	1.7	0	0.001	0	0.003	0.0	3.2
Seasonings and sauces	0.000	0.001	0.001	0.008	0.1	0.8	0	0.000	0	0.002	0.0	2.3
Total	0.147	0.191	0.333	0.397	100.0	100.0	0.0009	0.016	0.005	0.028	100.0	100.0

Food group	7 PBDE						8 PBDE					
	Mean		P95		Contrib		Mean		P95		Contrib	
	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB	LB	UB
Milk	0.003	0.004	0.013	0.017	1.7	2.1	0.008	0.009	0.031	0.033	1.4	1.5
Ultra-fresh dairy products	0.009	0.009	0.017	0.018	4.3	4.3	0.055	0.056	0.134	0.135	9.6	9.6
Cheese	0.006	0.007	0.015	0.017	3.1	3.3	0.013	0.014	0.033	0.036	2.3	2.4
Eggs and egg products	0.004	0.004	0.027	0.028	2.0	2.0	0.013	0.013	0.081	0.081	2.2	2.2
Butter	0.011	0.012	0.033	0.034	5.7	5.6	0.019	0.019	0.055	0.056	3.2	3.3
Oils	0.002	0.003	0.007	0.010	0.8	1.3	0.002	0.003	0.009	0.012	0.4	0.6
Margarine	0.001	0.002	0.012	0.012	0.7	0.8	0.005	0.005	0.040	0.041	0.9	0.9
Meat	0.014	0.015	0.028	0.029	7.2	7.3	0.049	0.050	0.093	0.094	8.6	8.6
Poultry and game	0.010	0.011	0.036	0.036	5.3	5.3	0.034	0.035	0.150	0.150	6.0	6.0
Offal	0.000	0.000	0.016	0.017	0.1	0.1	0.001	0.001	0.041	0.042	0.1	0.1
Delicatessen meats	0.020	0.020	0.042	0.043	9.9	9.8	0.046	0.046	0.075	0.075	7.9	7.9
Fish	0.072	0.072	0.536	0.537	36.2	34.7	0.081	0.081	0.615	0.617	14.1	13.9
Crustaceans and molluscs	0.002	0.002	0.062	0.062	0.9	0.9	0.002	0.003	0.066	0.066	0.4	0.4
Vegetables (excluding potatoes)	0.002	0.002	0.029	0.030	1.1	1.1	0.008	0.008	0.092	0.093	1.3	1.3
Pizzas, quiches and savoury pastries	0.005	0.005	0.019	0.021	2.3	2.6	0.031	0.032	0.131	0.135	5.4	5.4
Sandwiches and snacks	0.017	0.018	0.074	0.077	8.7	8.6	0.053	0.054	0.207	0.209	9.2	9.2
Mixed dishes	0.011	0.012	0.026	0.027	5.8	5.9	0.048	0.049	0.110	0.110	8.4	8.4
Dairy-based desserts	0.008	0.008	0.046	0.046	3.9	4.0	0.106	0.106	0.458	0.461	18.4	18.2
Seasonings and sauces	0.000	0.001	0.002	0.004	0.2	0.3	0.002	0.002	0.014	0.016	0.3	0.3
Total	0.199	0.208	0.621	0.632	100.0	100.0	0.575	0.585	1.302	1.316	100.0	100.0

Food group	Ochratoxins												Patulin					
	OTA				OTB				PAT									
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	0.141	0.464	0.345	1.165	68.7	26.6	0.009	0.266	0.057	0.690	49.0	18.1						
Breakfast cereals	0.003	0.018	0.077	0.278	1.3	1.0	0.003	0.018	0.077	0.278	14.5	1.2						
Pasta	0.008	0.131	0.089	0.422	4.1	7.5	0	0.118	0	0.341	0	8.0						
Rice and wheat products	0.008	0.094	0.082	0.371	4.1	5.4	0	0.081	0	0.272	0	5.5						
Croissant-like pastries	0	0.040	0	0.244	0.0	2.3	0	0.040	0	0.244	0	2.7						
Sweet and savoury biscuits and bars	0	0.033	0	0.174	0.0	1.9	0	0.033	0	0.174	0	2.2						
Pastries and cakes	0	0.095	0	0.295	0.0	5.5	0	0.095	0	0.295	0	6.4						
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game	0	0.075	0	0.257	0.0	4.3	0	0.075	0	0.257	0	5.1						
Offal	0	0.003	0	0.100	0.0	0.2	0	0.003	0	0.100	0	0.2						
Delicatessen meats	0.012	0.088	0.060	0.273	5.7	5.0	0.006	0.079	0.041	0.245	29.3	5.4						
Vegetables (excluding potatoes)	0	0.028	0	0.201	0.0	1.6	0	0.028	0	0.201	0	1.9						
Fruits	0	0.241	0	0.843	0.0	13.9	0	0.241	0	0.843	0	16.4						
Dried fruits, nuts and seeds	0	0.002	0	0.044	0.0	0.1	0	0.002	0	0.044	0	0.1						
Chocolate	0	0.021	0	0.128	0.0	1.2	0	0.021	0	0.128	0	1.4						
Non-alcoholic beverages	0.000	0.025	0.001	0.104	0.2	1.5	0.000	0.024	0	0.103	0.6	1.6						
Alcoholic beverages	0.023	0.027	0.198	0.227	11.3	1.6	0	0.006	0	0.050	0	0.4						
Coffee	0	0.031	0	0.143	0.0	1.8	0	0.031	0	0.143	0	2.1						
Other hot beverages	0	0.026	0	0.143	0.0	1.5	0	0.026	0	0.143	0	1.7						
Pizzas, quiches and savoury pastries	0	0.058	0	0.270	0.0	3.3	0	0.058	0	0.270	0	3.9						
Sandwiches and snacks	0.003	0.054	0.058	0.334	1.6	3.1	0.001	0.051	0.029	0.301	6.6	3.5						
Mixed dishes	0.006	0.124	0.057	0.476	2.8	7.1	0	0.115	0	0.445	0	7.8						
Dairy-based desserts	0	0.065	0	0.325	0.0	3.7	0	0.065	0	0.325	0	4.4						
Composites and cooked fruit																		
TOTAL	0.205	1.740	0.488	2.967	100	100	0.018856	1.475	0.091644	2.436	100	100	0.21	1.39	2.64	13.68	40.2	6.9

Food group	Trichothecenes																
	DON					DON3					DON15						
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	15 mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	178.3	178.3	455.7	455.7	51.1	0.14	4.11	0.85	10.45	100	26.1	0	3.79	0	9.61	0	24.2
Breakfast cereals	0.7	0.8	10.0	10.9	0.2	0	0.21	0	3.27	0	1.3	0.04	0.30	0.74	4.56	16.8	1.9
Pasta	32.6	32.6	93.8	93.8	9.4	0	1.77	0	5.12	0	11.3	0	1.77	0	5.12	0	11.3
Rice and wheat products	6.5	7.5	56.0	57.4	2.1	0	1.21	0	4.08	0	7.7	0	1.21	0	4.08	0	7.7
Croissant-like pastries	15.7	15.7	98.8	98.8	4.6	0	0.60	0	3.66	0	3.8	0	0.60	0	3.66	0	3.8
Sweet and savoury biscuits and bars	9.6	10.2	52.0	56.0	2.8	0	0.49	0	2.61	0	3.1	0.20	0.65	1.41	3.37	80.8	4.1
Pastries and cakes	38.4	38.7	143.0	143.4	11.1	0	1.42	0	4.42	0	9.0	0	1.42	0	4.42	0	9.1
Milk																	
Ultra-fresh dairy products																	
Cheese																	
Eggs and egg products																	
Butter																	
Poultry and game																	
Offal	0.0	0.0	0.0	1.5	0.0	0	0.05	0	1.50	0	0.3	0	0.05	0	1.50	0	0.3
Delicatessen meats	0.1	1.3	0.5	3.8	0.0	0	1.12	0	3.36	0	7.1	0	1.12	0	3.36	0	7.2
Vegetables (excluding potatoes)	0.2	0.9	2.1	7.9	0.1	0	0.42	0	3.02	0	2.7	0.01	0.43	0.10	3.10	2.4	2.8
Fruits																	
Dried fruits, nuts and seeds	0.0	0.0	0.0	0.7	0.0	0	0.02	0	0.66	0	0.1	0	0.02	0	0.66	0	0.1
Chocolate																	
Non-alcoholic beverages																	
Alcoholic beverages																	
Coffee																	
Other hot beverages																	
Pizzas, quiches and savoury pastries	26.4	26.4	123.0	123.0	7.6	0	0.87	0	4.04	0	5.5	0	0.87	0	4.04	0	5.5
Sandwiches and snacks	18.9	18.9	132.1	132.1	5.4	0	0.74	0	4.50	0	4.7	0	0.74	0	4.50	0	4.7
Mixed dishes	14.6	15.7	72.2	73.3	4.3	0	1.73	0	6.68	0	11.0	0	1.73	0	6.68	0	11.0
Dairy-based desserts	0.6	1.6	8.9	11.3	0.2	0	0.97	0	4.87	0	6.2	0	0.97	0	4.87	0	6.2
Composites and cooked fruit																	
TOTAL	342.5	348.5	655.7	664.0	100	0.14	15.73	0.85	26.03	100	100	0.24	15.68	1.21	26.03	100	100

Food group	Trichothecenes																	
	NIV				T ₂ Toxin				HT ₂ Toxin									
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	7.64	10.36	22.28	28.29	41.7	31.7	0.18	4.22	1.02	10.57	10.0	21.4	3.40	11.73	8.74	30.58	53.0	38.6
Breakfast cereals	0.10	0.45	1.64	7.09	0.6	1.4	0.08	0.40	1.50	6.52	4.5	2.0	0.08	0.40	1.50	6.52	1.3	1.3
Pasta	3.84	5.91	11.09	17.06	21.0	18.1	0.82	3.69	2.56	11.09	44.8	18.7	1.77	5.91	5.12	17.06	27.6	19.4
Rice and wheat products	2.14	3.14	18.68	19.92	11.7	9.6	0.21	1.70	1.67	7.00	11.4	8.6	0.21	1.70	1.67	7.00	3.3	5.6
Croissant-like pastries	0	0.60	0	3.66	0.0	1.8	0	0.60	0	3.66	0.0	3.0	0.06	0.73	0.61	4.68	0.9	2.4
Sweet and savoury biscuits and bars	0.20	0.65	1.41	3.37	1.1	2.0	0.21	0.99	1.25	5.42	11.7	5.0	0.23	1.02	1.25	5.54	3.6	3.4
Pastries and cakes	0	1.42	0	4.42	0.0	4.4	0	1.42	0	4.42	0.0	7.2	0.54	2.69	2.57	9.14	8.4	8.8
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game																		
Offal	0	0.05	0	1.50	0.0	0.1	0	0.05	0	1.50	0.0	0.2	0	0.05	0	1.50	0.0	0.2
Delicatessen meats	0	1.12	0	3.36	0.0	3.4	0	1.12	0	3.36	0.0	5.7	0	1.12	0	3.36	0.0	3.7
Vegetables (excluding potatoes)	0	0.42	0	3.02	0.0	1.3	0	0.42	0	3.02	0.0	2.1	0	0.42	0	3.02	0.0	1.4
Fruits																		
Dried fruits, nuts and seeds	0.01	0.05	0.33	1.43	0.1	0.2	0	0.02	0	0.66	0.0	0.1	0.02	0.08	0.66	2.20	0.4	0.3
Chocolate																		
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																		
Pizzas, quiches and savoury pastries	0	0.87	0	4.04	0.0	2.7	0.06	1.01	0.71	4.53	3.3	5.1	0	0.87	0	4.04	0.0	2.9
Sandwiches and snacks	1.08	1.70	11.71	14.57	5.9	5.2	0.09	0.96	1.38	6.21	5.1	4.9	0	0.74	0	4.50	0.0	2.4
Mixed dishes	3.30	4.97	23.11	25.99	18.0	15.2	0.15	2.07	1.47	9.35	7.9	10.5	0.09	1.95	1.19	9.15	1.4	6.4
Dairy-based desserts	0.00	0.97	0	4.87	0.0	3.0	0.02	1.02	0.27	5.62	1.3	5.2	0.01	0.99	0	5.19	0.2	3.3
Composites and cooked fruit																		
TOTAL	18.30	32.68	43.15	64.45	100	100	1.84	19.69	4.43	35.79	100	100	6.42	30.39	13.87	56.06	100	100

Food group	Trichothecenes																				
	DAS						DOM-1						FusX						Ver		
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (UB)	P95 (UB)	
Bread and dried bread products	0.14	4.11	0.85	10.45	100	26.1	0	3.79	0	9.61	0	24.4	0.14	4.11	0.85	10.45	100	26.1	3.79	9.61	24.6
Breakfast cereals	0	0.21	0	3.27	0	1.3	0	0.21	0	3.27	0	1.3	0	0.21	0	3.27	0	1.3	0.21	3.27	1.3
Pasta	0	1.77	0	5.12	0	11.3	0	1.77	0	5.12	0	11.4	0	1.77	0	5.12	0	11.3	1.77	5.12	11.5
Rice and wheat products	0	1.21	0	4.08	0	7.7	0	1.21	0	4.08	0	7.8	0	1.21	0	4.08	0	7.7	1.21	4.08	7.9
Croissant-like pastries	0	0.60	0	3.66	0	3.8	0	0.60	0	3.66	0	3.8	0	0.60	0	3.66	0	3.8	0.60	3.66	3.9
Sweet and savoury biscuits and bars	0	0.49	0	2.61	0	3.1	0	0.49	0	2.61	0	3.1	0	0.49	0	2.61	0	3.1	0.49	2.61	3.2
Pastries and cakes	0	1.42	0	4.42	0	9.0	0	1.42	0	4.42	0	9.2	0	1.42	0	4.42	0	9.0	1.42	4.42	9.2
Milk																					
Ultra-fresh dairy products																					
Cheese																					
Eggs and egg products																					
Butter																					
Poultry and game																					
Offal	0	0.05	0	1.50	0	0.3	0	0.05	0	1.50	0	0.3	0	0.05	0	1.50	0	0.3	0.05	1.50	0.3
Delicatessen meats	0	1.12	0	3.36	0	7.1	0	1.12	0	3.36	0	7.2	0	1.12	0	3.36	0	7.1	1.12	3.36	7.3
Vegetables (excluding potatoes)	0	0.42	0	3.02	0	2.7	0	0.42	0	3.02	0	2.7	0	0.42	0	3.02	0	2.7	0.42	3.02	2.7
Fruits																					
Dried fruits, nuts and seeds	0	0.02	0	0.66	0	0.1	0	0.02	0	0.66	0	0.1	0	0.02	0	0.66	0	0.1	0.02	0.66	0.1
Chocolate																					
Non-alcoholic beverages																					
Alcoholic beverages																					
Coffee																					
Other hot beverages																					
Pizzas, quiches and savoury pastries	0	0.87	0	4.04	0	5.5	0	0.87	0	4.04	0	5.6	0	0.87	0	4.04	0	5.5	0.87	4.04	5.6
Sandwiches and snacks	0	0.74	0	4.50	0	4.7	0	0.74	0	4.50	0	4.8	0	0.74	0	4.50	0	4.7	0.74	4.50	4.8
Mixed dishes	0	1.73	0	6.68	0	11.0	0.06	1.87	0.93	8.13	100	12.1	0	1.73	0	6.68	0	11.0	1.73	6.68	11.2
Dairy-based desserts	0	0.97	0	4.87	0	6.2	0	0.97	0	4.87	0	6.2	0	0.97	0	4.87	0	6.2	0.97	4.87	6.3
Composites and cooked fruit																					
TOTAL	0.14	15.73	0.85	26.03	100	100	0.06	15.55	0	25.60	100	100	0.14	15.73	0.85	26.03	100	100	15.41	25.31	100

Food group	Trichothecenes										Zearalenone									
	MAS					ZEA					Alpha zearalanol									
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)		
Bread and dried bread products	0.05	3.89	0.27	9.61	12.2	23.9	1.89	6.31	4.81	16.02	32.0	25.4	0.14	4.11	0.85	10.45	100	17.6		
Breakfast cereals	0	0.21	0	3.27	0	1.3	0.09	0.32	1.50	5.01	1.6	1.3	0	0.21	0	3.27	0	0.9		
Pasta	0	1.77	0	5.12	0	10.9	0.85	2.88	2.56	8.53	14.4	11.6	0	1.77	0	5.12	0	7.6		
Rice and wheat products	0.08	1.41	0.71	4.96	22.4	8.6	0.07	0.78	0.54	3.06	1.2	3.1	0	1.21	0	4.08	0	5.2		
Croissant-like pastries	0.16	0.96	1.33	6.38	42.2	5.9	0.30	0.99	1.83	6.10	5.0	4.0	0	0.60	0	3.66	0	2.6		
Sweet and savoury biscuits and bars	0.09	0.69	0.64	3.69	23.2	4.2	0.41	0.93	2.29	4.95	7.0	3.7	0	0.49	0	2.61	0	2.1		
Pastries and cakes	0	1.42	0	4.42	0	8.7	0.64	2.22	2.07	7.21	10.9	8.9	0	1.42	0	4.42	0	6.1		
Milk																				
Ultra-fresh dairy products																				
Cheese																				
Eggs and egg products							0	0.31	0	1.36	0.0	1.2	0	0.62	0	2.73	0	2.6		
Butter																				
Poultry and game							0	0.56	0	1.93	0.0	2.2	0	1.12	0	3.86	0	4.8		
Offal	0	0.05	0	1.50	0	0.3	0	0.02	0	0.75	0.0	0.1	0	0.05	0	1.50	0	0.2		
Delicatessen meats	0	1.12	0	3.36	0	6.9	0	0.56	0	1.68	0.0	2.3	0	1.12	0	3.36	0	4.8		
Vegetables (excluding potatoes)	0	0.42	0	3.02	0	2.6	0.08	0.40	1.02	3.88	1.4	1.6	0	0.42	0	3.02	0	1.8		
Fruits							0	1.85	0	6.32	0.0	7.4	0	3.70	0	12.65	0	15.8		
Dried fruits, nuts and seeds	0	0.02	0	0.66	0	0.1														
Chocolate							0.18	0.40	1.19	2.36	3.1	1.6	0	0.31	0	1.92	0	1.3		
Non-alcoholic beverages							0.02	0.40	0.15	1.87	0.4	1.6	0	0.70	0	2.96	0	3.0		
Alcoholic beverages																				
Coffee																				
Other hot beverages							0.02	0.43	0.13	2.23	0.3	1.7	0	0.77	0	4.29	0	3.3		
Pizzas, quiches and savoury pastries	0	0.87	0	4.04	0	5.3	0.43	1.45	2.02	6.74	7.3	5.8	0	0.87	0	4.04	0	3.7		
Sandwiches and snacks	0	0.74	0	4.50	0	4.6	0.18	0.80	1.44	4.85	3.1	3.2	0	0.74	0	4.50	0	3.2		
Mixed dishes	0	1.73	0	6.68	0	10.6	0.22	1.37	1.11	5.47	3.7	5.5	0	1.73	0	6.68	0	7.4		
Dairy-based desserts	0	0.97	0	4.87	0	6.0	0.36	1.33	2.04	7.06	6.1	5.3	0	0.97	0	4.87	0	4.1		
Composites and cooked fruit							0.14	0.56	1.60	5.60	2.4	2.3	0	0.45	0	4.46	0	1.9		
TOTAL	0.37	16.28	1.38	26.83	100	100	5.92	24.87	10.58	41.53	100	100	0.14	23.37	0.85	38.26	100	100		

Food group	Zearalenone						Fumonisin																	
	Alpha zearalenol		Beta zearalano		Beta zearalenol		FB1		FB2															
	mean (LB)	P95 (UB)	mean (UB)	P95 contrib (UB)	mean (UB)	P95 contrib (UB)	mean (LB)	P95 (UB)	mean (LB)	P95 (UB)	mean (LB)	P95 contrib (UB)												
Bread and dried bread products	0.14	4.11	0.85	10.45	100	17.6	0	0.9	3.79	9.61	16.4	2.12	10.56	6.29	29.95	25.8	40.5	0.06	2.75	0.39	6.90	1.7	17.5	
Breakfast cereals	0	0.21	0	3.27	0	0.9	0	0.9	0.21	3.27	0.9	0.39	0.83	6.00	12.24	4.8	3.2	0.11	0.58	1.40	7.50	3.3	3.7	
Pasta	0	1.77	0	5.12	0	7.6	0	7.6	1.77	5.12	7.7													
Rice and wheat products	0	1.21	0	4.08	0	5.2	0	5.2	1.21	4.08	5.3													
Croissant-like pastries	0	0.60	0	3.66	0	2.6	0	2.6	0.60	3.66	2.6													
Sweet and savoury biscuits and bars	0	0.49	0	2.61	0	2.1	0	2.1	0.49	2.61	2.1	3.68	3.93	26.42	27.22	44.8	15.1	1.97	1.97	33.26	33.26	59.6	12.5	
Pastries and cakes	0	1.42	0	4.42	0	6.1	0	6.1	1.42	4.42	6.2													
Milk																								
Ultra-fresh dairy products																								
Cheese																								
Eggs and egg products	0	0.62	0	2.73	0	2.6	0	2.6	0.62	2.73	2.7													
Butter																								
Poultry and game	0	1.12	0	3.86	0	4.8	0	4.8	1.12	3.86	4.8													
Offal	0	0.05	0	1.50	0	0.2	0	0.2	0.05	1.50	0.2													
Delicatessen meats	0	1.12	0	3.36	0	4.8	0	4.8	1.12	3.36	4.9													
Vegetables (excluding potatoes)	0	0.42	0	3.02	0	1.8	0	1.8	0.42	3.02	1.8													
Fruits	0	3.70	0	12.65	0	15.8	0	15.8	3.70	12.65	16.0													
Dried fruits, nuts and seeds																								
Chocolate	0	0.31	0	1.92	0	1.3	0	1.3	0.31	1.92	1.3													
Non-alcoholic beverages	0	0.70	0	2.96	0	3.0	0	3.0	0.70	2.96	3.0	1.87	8.86	8.42	34.44	22.8	34.0	1.16	9.14	6.81	40.31	35.2	58.0	
Alcoholic beverages												0.14	1.85	2.28	15.50	1.7	7.1	0	1.28	0	9.91	0.0	8.1	
Coffee																								
Other hot beverages	0	0.77	0	4.29	0	3.3	0	3.3	0.77	4.29	3.3													
Pizzas, quiches and savoury pastries	0	0.87	0	4.04	0	3.7	0	3.7	0.87	4.04	3.8													
Sandwiches and snacks	0	0.74	0	4.50	0	3.2	0	3.2	0.74	4.50	3.2													
Mixed dishes	0	1.73	0	6.68	0	7.4	0	7.4	1.73	6.68	7.5													
Dairy-based desserts	0	0.97	0	4.87	0	4.1	0	4.1	0.97	4.87	4.2													
Composites and cooked fruit	0	0.45	0	4.46	0	1.9	0	1.9	0.45	4.46	2.0													
TOTAL	0.14	23.37	0.85	38.26	100	100	100	23.05	37.09	100	23.05	37.09	100	8.22	26.07	25.53	60.80	100	3.31	15.75	13.32	46.86	100	100

Table E5: Estimated exposure (mean and P95) in elderly people (65 years and older) to mycotoxins (ng/kg bw/day) and contribution of foods (%)

Food group	Aflatoxins																
	AFB1			AFB2			AFG1			AFG2			AFM1				
	mean (LB)	mean (UB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)
Bread and dried bread products	0	0.100	0	0.213	0	47.9	0	48.4	0.100	0.213	48.4	0.100	0.213	48.4			
Breakfast cereals	0	0.001	0	0.083	0	0.7	0.7	0.7	0.001	0.083	0.7	0.001	0.083	0.7			
Pasta	0	0.020	0	0.067	0	9.6	9.7	9.7	0.020	0.067	9.7	0.020	0.067	9.7			
Rice and wheat products	0	0.012	0	0.065	0	5.9	6.0	6.0	0.012	0.065	6.0	0.012	0.065	6.0			
Croissant-like pastries	0	0.004	0	0.044	0	1.8	1.8	1.8	0.004	0.044	1.8	0.004	0.044	1.8			
Sweet and savoury biscuits and bars	0	0.002	0	0.016	0	0.9	0.9	0.9	0.002	0.016	0.9	0.002	0.016	0.9			
Pastries and cakes	0	0.018	0	0.075	0	8.4	8.5	8.5	0.018	0.075	8.5	0.018	0.075	8.5			
Milk															0.001	0.006	4.4
Ultra-fresh dairy products															0.009	0.036	40.7
Cheese															0.004	0.011	19.0
Eggs and egg products	0	0.012	0	0.043	0	5.8	5.9	5.9	0.012	0.043	5.9	0.012	0.043	5.9			
Butter															0.002	0.005	7.6
Poultry and game	0	0.015	0	0.067	0	7.2	7.3	7.3	0.015	0.067	7.3	0.015	0.067	7.3	0.003	0.013	13.0
Offal	0	0.001	0	0.028	0	0.6	0.6	0.6	0.001	0.028	0.6	0.001	0.028	0.6	0.000	0.006	1.1
Delicatessen meats	0	0.018	0	0.052	0	8.6	8.7	8.7	0.018	0.052	8.7	0.018	0.052	8.7	0.003	0.009	13.0
Vegetables (excluding potatoes)	0	0.001	0	0.029	0	0.3	0.3	0.3	0.001	0.029	0.3	0.001	0.029	0.3			
Fruits																	
Dried fruits, nuts and seeds	0	0.001	0	0.027	0	0.4	0.4	0.4	0.001	0.027	0.4	0.001	0.027	0.4			
Chocolate	0.0024	0.003	0.040	0.047	100	1.6	0.6	0.6	0.001	0.015	0.6	0.001	0.015	0.6	0.000	0.003	1.1
Non-alcoholic beverages																	
Alcoholic beverages																	
Coffee																	
Other hot beverages															0.000	0.001	0.1
Pizzas, quiches and savoury pastries																	
Sandwiches and snacks																	
Mixed dishes																	
Dairy-based desserts																	
Compotes and cooked fruit																	
TOTAL	0.0024	0.208	0.017	0.353	100	100	100	100	0.207	0.344	100	0.207	0.344	100	0.207	0.344	100

Exposure and levels of contamination with AFB2, AFG1, AFG2, AFM1, VER, Beta zearalenol and Beta zearalanol, under the LB hypothesis, are not shown in this Table: they are all equal to zero.

Food group	Ochratoxins												Patulin						
	OTA						OTB						PAT						
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	
Bread and dried bread products	0.209	0.712	0.433	1.512	61.1	36.6	0.031	0.446	0.220	1.013	65.7	28.6							
Breakfast cereals	0.001	0.008	0.079	0.333	0.4	0.4	0.001	0.008	0.079	0.333	2.9	0.5							
Pasta	0.004	0.086	0.067	0.306	1.2	4.4	0	0.080	0	0.266	0	5.1							
Rice and wheat products	0.003	0.055	0.036	0.339	1.0	2.8	0	0.049	0	0.262	0	3.2							
Croissant-like pastries	0	0.015	0	0.176	0.0	0.8	0	0.015	0	0.176	0	1.0							
Sweet and savoury biscuits and bars	0	0.008	0	0.064	0.0	0.4	0	0.008	0	0.064	0	0.5		0	0.03	0	1.36	0	0.1
Pastries and cakes	0	0.070	0	0.301	0.0	3.6	0	0.070	0	0.301	0	4.5		0	2.11	0	9.03	0	9.5
Milk																			
Ultra-fresh dairy products																			
Cheese																			
Eggs and egg products																			
Butter																			
Poultry and game	0	0.060	0	0.270	0.0	3.1	0	0.060	0	0.270	0	3.9							
Offal	0	0.005	0	0.113	0.0	0.3	0	0.005	0	0.113	0	0.3							
Delicatessen meats	0.024	0.097	0.084	0.272	6.9	5.0	0.015	0.085	0.089	0.269	30.6	5.4							
Vegetables (excluding potatoes)	0	0.021	0	0.200	0.0	1.1	0	0.021	0	0.200	0	1.3							
Fruits	0	0.448	0	1.234	0.0	23.1	0	0.448	0	1.234	0	28.7		0.44	14.56	3.58	42.69	47.6	65.4
Dried fruits, nuts and seeds	0	0.003	0	0.106	0.0	0.2	0	0.003	0	0.106	0	0.2							
Chocolate	0	0.005	0	0.061	0.0	0.3	0	0.005	0	0.061	0	0.3							
Non-alcoholic beverages	0.001	0.010	0.012	0.136	0.3	0.5	0.000	0.007	0.002	0.072	0.6	0.5		0.07	2.28	2.57	22.29	7.9	10.2
Alcoholic beverages	0.095	0.111	0.382	0.427	27.8	5.7	0	0.025	0	0.098	0	1.6							
Coffee	0	0.028	0	0.081	0.0	1.5	0	0.028	0	0.081	0	1.8							
Other hot beverages	0	0.021	0	0.140	0.0	1.1	0	0.021	0	0.140	0	1.3							
Pizzas, quiches and savoury pastries	0	0.021	0	0.210	0.0	1.1	0	0.021	0	0.210	0	1.4							
Sandwiches and snacks	0.000	0.005	0.051	0.199	0.1	0.2	0.000	0.004	0	0.199	0.1	0.3							
Mixed dishes	0.004	0.088	0.067	0.481	1.2	4.5	0	0.082	0	0.481	0	5.2							
Dairy-based desserts	0	0.066	0	0.529	0.0	3.4	0	0.066	0	0.529	0	4.2							
Composites and cooked fruit														0.37	2.29	5.57	24.26	40.1	10.3
TOTAL	0.341	1.944	0.630	3.073	100	100	0.047718	1.561	0.25714	2.548	100	100		0.92	22.25	4.84	49.29	100	100

Food group	Trichothecenes																	
	DON						DON3						DON15					
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	280.9	280.9	607.2	607.2	75.3	74.3	0.47	7.09	3.30	17.52	100	48.4	0	5.99	0	12.78	0	43.8
Breakfast cereals	0.3	0.3	20.8	20.8	0.1	0.1	0	0.09	0	5.00	0	0.6	0.02	0.14	2.50	10.83	21.3	1.0
Pasta	22.1	22.1	73.2	73.2	5.9	5.9	0	1.20	0	3.99	0	8.2	0	1.20	0	3.99	0	8.8
Rice and wheat products	3.4	4.0	32.7	32.7	0.9	1.1	0	0.74	0	3.93	0	5.1	0	0.74	0	3.93	0	5.4
Croissant-like pastries	6.4	6.4	83.8	83.8	1.7	1.7	0	0.23	0	2.65	0	1.6	0	0.23	0	2.65	0	1.7
Sweet and savoury biscuits and bars	2.7	2.8	20.8	21.7	0.7	0.8	0	0.11	0	0.96	0	0.8	0.08	0.18	1.01	1.22	77.4	1.3
Pastries and cakes	35.2	35.3	171.4	171.4	9.4	9.3	0	1.06	0	4.52	0	7.2	0	1.06	0	4.52	0	7.7
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game																		
Offal	0.0	0.1	0.0	1.7	0.0	0.0	0	0.08	0	1.69	0	0.5	0	0.08	0	1.69	0	0.6
Delicatessen meats	0.1	1.3	0.5	4.3	0.0	0.3	0	1.08	0	3.10	0	7.4	0	1.08	0	3.10	0	7.9
Vegetables (excluding potatoes)	0.1	0.6	1.5	5.8	0.0	0.2	0	0.31	0	3.00	0	2.1	0.00	0.32	0.02	3.00	1.3	2.3
Fruits																		
Dried fruits, nuts and seeds	0.0	0.1	0.0	1.6	0.0	0.0	0	0.05	0	1.59	0	0.4	0	0.05	0	1.59	0	0.4
Chocolate																		
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																		
Pizzas, quiches and savoury pastries	10.5	10.5	115.8	115.8	2.8	2.8	0	0.32	0	3.15	0	2.2	0	0.32	0	3.15	0	2.4
Sandwiches and snacks	2.9	2.9	194.3	194.3	0.8	0.8	0	0.06	0	2.99	0	0.4	0	0.06	0	2.99	0	0.5
Mixed dishes	6.8	8.0	49.5	49.5	1.8	2.1	0	1.23	0	7.22	0	8.4	0	1.23	0	7.22	0	9.0
Dairy-based desserts	1.7	2.6	24.9	28.4	0.5	0.7	0	0.99	0	7.94	0	6.8	0	0.99	0	7.94	0	7.2
Composites and cooked fruit																		
TOTAL	373.2	378.0	688.0	693.9	100	100	0.47	14.65	3.14	28.57	100	100	0.11	13.67	0.56	24.82	100	100

Food group	Trichothecenes																	
	NIV				Tz Toxin				HTz Toxin									
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)						
Bread and dried bread products	12.69	16.73	30.00	36.00	66.9	54.7	0.53	7.24	3.41	18.60	36.4	42.6	5.25	18.23	11.90	40.00	70.8	59.1
Breakfast cereals	0.04	0.19	2.50	10.83	0.2	0.6	0.04	0.19	2.5	10.83	3.0	1.1	0.04	0.19	2.50	10.83	0.6	0.6
Pasta	2.61	4.01	8.65	13.30	13.8	13.1	0.57	2.54	2.00	8.65	38.9	14.9	1.20	4.01	3.99	13.30	16.2	13.0
Rice and wheat products	1.04	1.65	11.83	11.83	5.5	5.4	0.13	1.04	1.40	7.25	8.7	6.1	0.13	1.04	1.40	7.25	1.7	3.4
Croissant-like pastries	0	0.23	0	2.65	0.0	0.7	0.00	0.23	0	2.65	0.1	1.4	0.02	0.27	0.44	3.32	0.2	0.9
Sweet and savoury biscuits and bars	0.08	0.18	1.01	1.22	0.4	0.6	0.05	0.23	0.48	2.08	3.4	1.4	0.05	0.24	0.48	2.08	0.7	0.8
Pastries and cakes	0	1.06	0	4.52	0.0	3.4	0	1.06	0	4.52	0.0	6.2	0.61	2.47	3.17	11.87	8.2	8.0
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game																		
Offal	0	0.08	0	1.69	0.0	0.3	0	0.08	0	1.69	0.0	0.5	0	0.08	0	1.69	0.0	0.3
Delicatessen meats	0	1.08	0	3.10	0.0	3.5	0	1.08	0	3.10	0.0	6.4	0	1.08	0	3.10	0.0	3.5
Vegetables (excluding potatoes)	0	0.31	0	3.00	0.0	1.0	0	0.31	0	3.00	0.0	1.9	0	0.31	0	3.00	0.0	1.0
Fruits																		
Dried fruits, nuts and seeds	0.03	0.11	0.80	3.46	0.1	0.4	0	0.05	0	1.59	0.0	0.3	0.05	0.17	1.59	5.32	0.7	0.6
Chocolate																		
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																		
Pizzas, quiches and savoury pastries	0	0.32	0	3.15	0.0	1.1	0.06	0.46	1.51	6.55	4.0	2.7	0	0.32	0	3.15	0.0	1.0
Sandwiches and snacks	0.26	0.29	24.91	24.91	1.4	1.0	0.00	0.07	0.42	2.99	0.3	0.4	0	0.06	0	2.99	0.0	0.2
Mixed dishes	2.19	3.30	21.27	23.31	11.5	10.8	0.06	1.36	0.83	8.61	4.1	8.0	0.04	1.33	0.74	8.61	0.6	4.3
Dairy-based desserts	0.03	1.06	0.74	7.94	0.2	3.5	0.02	1.04	0.31	7.94	1.3	6.1	0.02	1.02	0	7.94	0.2	3.3
Composites and cooked fruit																		
TOTAL	18.96	30.61	43.72	63.52	100	100	1.47	16.98	4.82	34.50	100	100	7.41	30.84	15.26	58.17	100	100

Food group	Trichothecenes																				
	DAS						DOM1						FusX						Ver		
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (UB)	P95 (UB)	
Bread and dried bread products	0.47	7.09	3.30	17.52	100	48.4	0	5.99	0	12.78	0	44.1	0.47	7.09	3.30	17.52	100	48.4	5.99	12.78	44.2
Breakfast cereals	0	0.09	0	5.00	0	0.6	0	0.09	0	5.00	0	0.7	0	0.09	0	5.00	0	0.6	0.09	5.00	0.7
Pasta	0	1.20	0	3.99	0	8.2	0	1.20	0	3.99	0	8.9	0	1.20	0	3.99	0	8.2	1.20	3.99	8.9
Rice and wheat products	0	0.74	0	3.93	0	5.1	0	0.74	0	3.93	0	5.5	0	0.74	0	3.93	0	5.1	0.74	3.93	5.5
Croissant-like pastries	0	0.23	0	2.65	0	1.6	0	0.23	0	2.65	0	1.7	0	0.23	0	2.65	0	1.6	0.23	2.65	1.7
Sweet and savoury biscuits and bars	0	0.11	0	0.96	0	0.8	0	0.11	0	0.96	0	0.8	0	0.11	0	0.96	0	0.8	0.11	0.96	0.8
Pastries and cakes	0	1.06	0	4.52	0	7.2	0	1.06	0	4.52	0	7.8	0	1.06	0	4.52	0	7.2	1.06	4.52	7.8
Milk																					
Ultra-fresh dairy products																					
Cheese																					
Eggs and egg products																					
Butter																					
Poultry and game																					
Offal	0	0.08	0	1.69	0	0.5	0	0.08	0	1.69	0	0.6	0	0.08	0	1.69	0	0.5	0.08	1.69	0.6
Delicatessen meats	0	1.08	0	3.10	0	7.4	0	1.08	0	3.10	0	8.0	0	1.08	0	3.10	0	7.4	1.08	3.10	8.0
Vegetables (excluding potatoes)	0	0.31	0	3.00	0	2.1	0	0.31	0	3.00	0	2.3	0	0.31	0	3.00	0	2.1	0.31	3.00	2.3
Fruits																					
Dried fruits, nuts and seeds	0	0.05	0	1.59	0	0.4	0	0.05	0	1.59	0	0.4	0	0.05	0	1.59	0	0.4	0.05	1.59	0.4
Chocolate																					
Non-alcoholic beverages																					
Alcoholic beverages																					
Coffee																					
Other hot beverages																					
Pizzas, quiches and savoury pastries	0	0.32	0	3.15	0	2.2	0	0.32	0	3.15	0	2.4	0	0.32	0	3.15	0	2.2	0.32	3.15	2.4
Sandwiches and snacks	0	0.06	0	2.99	0	0.4	0	0.06	0	2.99	0	0.5	0	0.06	0	2.99	0	0.4	0.06	2.99	0.5
Mixed dishes	0	1.23	0	7.22	0	8.4	0.02	1.27	0	7.53	100	9.3	0	1.23	0	7.22	0	8.4	1.23	7.22	9.0
Dairy-based desserts	0	0.99	0	7.94	0	6.8	0	0.99	0	7.94	0	7.3	0	0.99	0	7.94	0	6.8	0.99	7.94	7.3
Composites and cooked fruit																					
TOTAL	0.47	14.65	3.14	28.57	100	100	0.02	13.59	0	24.41	100	100	0.47	14.65	3.14	28.57	100	100	13.55	24.41	100

Food group	Trichothecenes						Zearalenone											
	MAS						ZEA						Alpha zearalanol					
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	0.06	6.14	0.45	13.00	24.8	43.4	3.00	9.99	6.39	21.31	55.7	41.3	0.47	7.09	3.30	17.52	100	28.8
Breakfast cereals	0	0.09	0	5.00	0	0.6	0.04	0.15	2.50	8.33	0.8	0.6	0	0.09	0	5.00	0	0.4
Pasta	0	1.20	0	3.99	0	8.5	0.59	1.97	2.00	6.65	10.9	8.2	0	1.20	0	3.99	0	4.9
Rice and wheat products	0.08	0.92	1.31	5.71	30.1	6.5	0.05	0.49	0.65	3.17	1.0	2.0	0	0.74	0	3.93	0	3.0
Croissant-like pastries	0.08	0.41	1.00	5.65	30.7	2.9	0.11	0.38	1.32	4.41	2.1	1.6	0	0.23	0	2.65	0	0.9
Sweet and savoury biscuits and bars	0.04	0.20	0.41	1.76	14.5	1.4	0.13	0.24	1.11	1.68	2.4	1.0	0	0.11	0	0.96	0	0.5
Pastries and cakes	0	1.06	0	4.52	0	7.5	0.49	1.68	2.26	7.53	9.2	7.0	0	1.06	0	4.52	0	4.3
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products							0	0.37	0	1.28	0.0	1.5	0	0.73	0	2.56	0	3.0
Butter																		
Poultry and game							0	0.45	0	2.02	0.0	1.9	0	0.91	0	4.05	0	3.7
Offal	0	0.08	0	1.69	0	0.5	0	0.04	0	0.85	0.0	0.2	0	0.08	0	1.69	0	0.3
Delicatessen meats	0	1.08	0	3.10	0	7.6	0	0.54	0	1.55	0.0	2.2	0	1.08	0	3.10	0	4.4
Vegetables (excluding potatoes)	0	0.31	0	3.00	0	2.2	0.06	0.31	0.77	2.90	1.2	1.3	0	0.31	0	3.00	0	1.3
Fruits							0	3.39	0	9.26	0.0	14.0	0	6.77	0	18.51	0	27.5
Dried fruits, nuts and seeds	0	0.05	0	1.59	0	0.4												
Chocolate							0.06	0.14	0.57	1.50	1.1	0.6	0	0.08	0	0.91	0	0.3
Non-alcoholic beverages							0.01	0.11	0.26	0.99	0.1	0.5	0	0.19	0	1.45	0	0.8
Alcoholic beverages																		
Coffee																		
Other hot beverages							0.00	0.32	0.03	2.11	0.1	1.3	0	0.62	0	4.21	0	2.5
Pizzas, quiches and savoury pastries	0	0.32	0	3.15	0	2.3	0.16	0.54	1.58	5.25	3.0	2.2	0	0.32	0	3.15	0	1.3
Sandwiches and snacks	0	0.06	0	2.99	0	0.4	0.02	0.09	1.49	4.98	0.5	0.4	0	0.06	0	2.99	0	0.3
Mixed dishes	0	1.23	0	7.22	0	8.7	0.06	0.74	0.58	4.38	1.0	3.1	0	1.23	0	7.22	0	5.0
Dairy-based desserts	0	0.99	0	7.94	0	7.0	0.36	1.33	1.98	8.60	6.6	5.5	0	0.99	0	7.94	0	4.0
Composites and cooked fruit							0.24	0.91	2.80	9.33	4.4	3.8	0	0.72	0	6.64	0	2.9
TOTAL	0.26	14.15	1.09	24.69	100	100	5.38	24.16	10.50	40.52	100	100	0.47	24.61	3.14	43.51	100	100

Food group	Zearalenone						Fumonisin																		
	Alpha zearalenol			Beta zearalanol			Beta zearalenol			FB1			FB2												
	mean (LB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)										
Bread and dried bread products	0.47	7.09	3.30	17.52	100	28.8	5.99	12.78	25.5	5.99	12.78	25.5	3.02	15.80	7.49	38.84	50.7	55.37	0.04	4.14	0.16	8.68	2.5	30.6	
Breakfast cereals	0	0.09	0	5.00	0	0.4	0.09	5.00	0.4	0.09	5.00	0.4	0.07	0.30	3.33	16.67	1.2	1.06	0.05	0.24	3.33	16.67	3.2	1.8	
Pasta	0	1.20	0	3.99	0	4.9	1.20	3.99	5.1	1.20	3.99	5.1													
Rice and wheat products	0	0.74	0	3.93	0	3.0	0.74	3.93	3.2	0.74	3.93	3.2													
Croissant-like pastries	0	0.23	0	2.65	0	0.9	0.23	2.65	1.0	0.23	2.65	1.0	0	0.00	0	0.24	0.0	0.01							
Sweet and savoury biscuits and bars	0	0.11	0	0.96	0	0.5	0.11	0.96	0.5	0.11	0.96	0.5	1.52	1.56	18.82	18.82	25.4	5.48	0.81	0.81	11.90	11.90	58.2	6.0	
Pastries and cakes	0	1.06	0	4.52	0	4.3	1.06	4.52	4.5	1.06	4.52	4.5													
Milk																									
Ultra-fresh dairy products																									
Cheese																									
Eggs and egg products	0	0.73	0	2.56	0	3.0	0.73	2.56	3.1	0.73	2.56	3.1	0.73	2.56	3.1										
Butter																									
Poultry and game	0	0.91	0	4.05	0	3.7	0.91	4.05	3.9	0.91	4.05	3.9													
Offal	0	0.08	0	1.69	0	0.3	0.08	1.69	0.3	0.08	1.69	0.3													
Delicatessen meats	0	1.08	0	3.10	0	4.4	1.08	3.10	4.6	1.08	3.10	4.6													
Vegetables (excluding potatoes)	0	0.31	0	3.00	0	1.3	0.31	3.00	1.3	0.31	3.00	1.3													
Fruits	0	6.77	0	18.51	0	27.5	6.77	18.51	28.8	6.77	18.51	28.8													
Dried fruits, nuts and seeds																									
Chocolate	0	0.08	0	0.91	0	0.3	0.08	0.91	0.3	0.08	0.91	0.3													
Non-alcoholic beverages	0	0.19	0	1.45	0	0.8	0.19	1.45	0.8	0.19	1.45	0.8	0.74	3.32	6.68	25.88	12.3	11.62	0.50	3.23	4.90	24.53	35.7	23.9	
Alcoholic beverages													0.60	7.47	4.17	33.18	10.1	26.18	0	5.07	0	19.50	0.0	37.5	
Coffee																									
Other hot beverages	0	0.62	0	4.21	0	2.5	0.62	4.21	2.6	0.62	4.21	2.6													
Pizzas, quiches and savoury pastries	0	0.32	0	3.15	0	1.3	0.32	3.15	1.4	0.32	3.15	1.4													
Sandwiches and snacks	0	0.06	0	2.99	0	0.3	0.06	2.99	0.3	0.06	2.99	0.3													
Mixed dishes	0	1.23	0	7.22	0	5.0	1.23	7.22	5.2	1.23	7.22	5.2													
Dairy-based desserts	0	0.99	0	7.94	0	4.0	0.99	7.94	4.2	0.99	7.94	4.2													
Composites and cooked fruit	0	0.72	0	6.64	0	2.9	0.72	6.64	3.0	0.72	6.64	3.0													
TOTAL	0.47	24.61	3.14	43.51	100	100	23.51	37.79	100	23.51	37.79	100	5.96	28.53	16.30	58.68	100	100.00	1.40	13.53	5.92	32.47	100	100	

Table E6: Estimated exposure (mean and P95) in children aged 3 to 6 years to mycotoxins (ng/kg bw/day) and contribution of foods (%)

Food group	Aflatoxins																	
	AFB1						AFB2			AFG1			AFG2			AFM1		
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)
Bread and dried bread products	0	0.080	0	0.218	0	15.2	0.080	0.218	15.2	0.080	0.218	15.2	0.080	0.218	15.2			
Breakfast cereals	0	0.029	0	0.143	0	5.5	0.029	0.143	5.5	0.029	0.143	5.5	0.029	0.143	5.5			
Pasta	0	0.085	0	0.238	0	16.1	0.085	0.238	16.1	0.085	0.238	16.1	0.085	0.238	16.1			
Rice and wheat products	0	0.055	0	0.177	0	10.4	0.055	0.177	10.5	0.055	0.177	10.5	0.055	0.177	10.5			
Croissant-like pastries	0	0.037	0	0.129	0	7.0	0.037	0.129	7.0	0.037	0.129	7.0	0.037	0.129	7.0			
Sweet and savoury biscuits and bars	0	0.039	0	0.122	0	7.5	0.039	0.122	7.5	0.039	0.122	7.5	0.039	0.122	7.5			
Pastries and cakes	0	0.071	0	0.224	0	13.5	0.071	0.224	13.5	0.071	0.224	13.5	0.071	0.224	13.5			
Milk																0.011	0.028	11.4
Ultra-fresh dairy products																0.050	0.126	54.1
Cheese																0.008	0.024	8.2
Eggs and egg products	0	0.024	0	0.109	0	4.5	0.024	0.109	4.5	0.024	0.109	4.5	0.024	0.109	4.5			
Butter																0.004	0.012	4.7
Poultry and game	0	0.035	0	0.123	0	6.7	0.035	0.123	6.7	0.035	0.123	6.7	0.035	0.123	6.7			
Offal	0	0.001	0	0.034	0	0.1	0.001	0.034	0.1	0.001	0.034	0.1	0.001	0.034	0.1			
Delicatessen meats	0	0.046	0	0.123	0	8.7	0.046	0.123	8.7	0.046	0.123	8.7	0.046	0.123	8.7			
Vegetables (excluding potatoes)	0	0.005	0	0.080	0	0.9	0.005	0.080	0.9	0.005	0.080	0.9	0.005	0.080	0.9			
Fruits																		
Dried fruits, nuts and seeds	0	0.000	0	0.047	0	0.1	0.000	0.047	0.1	0.000	0.047	0.1	0.000	0.047	0.1			
Chocolate	0.0012	0.020	0.012	0.084	100	3.9	0.020	0.082	3.7	0.020	0.082	3.7	0.020	0.082	3.7	0.004	0.016	4.2
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																0.001	0.005	0.9
Other hot beverages																		
Pizzas, quiches and savoury pastries																		
Sandwiches and snacks																		
Mixed dishes																		
Dairy-based desserts																		
Compotes and cooked fruit																		
TOTAL	0.0012	0.538	0.007	0.844	100	100	0.527	0.844	100	0.527	0.844	100	0.527	0.844	100	0.093	0.170	100

Exposure and levels of contamination with AFB2, AFG1, AFG2, AFM1, VER, Beta zearalenol and Beta zearalanol, under the LB hypothesis, are not shown in this Table: they are all equal to zero.

Food group	Ochratoxins										Patulin								
	OTA					OTB					PAT								
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	
Bread and dried bread products	0.179	0.588	0.475	1.528	72.6	15.2	0.006	0.329	0.038	0.937	29.0	9.3							
Breakfast cereals	0.001	0.118	0.021	0.571	0.6	3.0	0.001	0.118	0.021	0.571	6.9	3.3							
Pasta	0.010	0.356	0.084	0.952	4.2	9.2	0	0.340	0	0.952	0	9.7							
Rice and wheat products	0.032	0.268	0.204	0.884	13.0	6.9	0	0.221	0	0.707	0	6.3							
Croissant-like pastries	0	0.147	0	0.514	0.0	3.8	0	0.147	0	0.514	0	4.2							
Sweet and savoury biscuits and bars	0	0.158	0	0.487	0.0	4.1	0	0.158	0	0.487	0	4.5		0	0.55	0	12.51	0	0.9
Pastries and cakes	0	0.285	0	0.895	0.0	7.4	0	0.285	0	0.895	0	8.1		0	8.55	0	26.84	0	13.9
Milk																			
Ultra-fresh dairy products																			
Cheese																			
Eggs and egg products																			
Butter																			
Poultry and game	0	0.142	0	0.490	0.0	3.7	0	0.142	0	0.490	0	4.0							
Offal	0	0.002	0	0.134	0.0	0.1	0	0.002	0	0.134	0	0.1							
Delicatessen meats	0.006	0.192	0.050	0.497	2.4	5.0	0.010	0.193	0	0.526	50.2	5.5							
Vegetables (excluding potatoes)	0	0.058	0	0.420	0.0	1.5	0	0.058	0	0.420	0	1.6							
Fruits	0	0.558	0	1.437	0.0	14.4	0	0.558	0	1.437	0	15.8		0.21	17.54	2.36	43.12	9.2	28.4
Dried fruits, nuts and seeds	0	0.002	0	0.188	0.0	0.0	0	0.002	0	0.188	0	0.1							
Chocolate	0	0.078	0	0.329	0.0	2.0	0	0.078	0	0.329	0	2.2							
Non-alcoholic beverages	0.002	0.075	0.017	0.214	0.9	1.9	0.001	0.070	0.008	0.169	3.9	2.0		0.81	24.52	6.43	80.95	36.2	39.7
Alcoholic beverages	0.000	0.000	0.013	0.015	0.1	0.0	0	0.000	0	0.015	0	0.0							
Coffee	0	0.000	0	0.020	0.0	0.0	0	0.000	0	0.020	0	0.0							
Other hot beverages	0	0.009	0	0.066	0.0	0.2	0	0.009	0	0.066	0	0.3							
Pizzas, quiches and savoury pastries	0	0.103	0	0.563	0.0	2.7	0	0.103	0	0.563	0	2.9							
Sandwiches and snacks	0.003	0.059	0.133	0.600	1.2	1.5	0.002	0.058	0	0.600	9.9	1.6							
Mixed dishes	0.013	0.337	0.103	1.307	5.2	8.7	0	0.317	0	1.197	0	9.0							
Dairy-based desserts	0	0.338	0	1.286	0.0	8.7	0	0.338	0	1.286	0	9.6							
Composites and cooked fruit														1.21	10.09	10.18	58.79	53.9	16.4
TOTAL	0.247	3.874	0.688	6.309	100	100	0.020	3.525	0.076	5.610	100	100	2.24	61.70	8.57	135.40	100	100	100

Food group	Trichothecenes																	
	DON				DON3				DON15									
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	230.0	230.0	607.6	607.6	34.5	33.5	0.09	5.00	0.56	14.05	100	12.5	0	4.80	0	13.10	0	11.6
Breakfast cereals	5.6	6.8	30.4	34.6	0.8	1.0	0	1.73	0	8.57	0	4.4	0.59	3.11	3.64	16.22	62.7	7.5
Pasta	93.7	93.7	261.9	261.9	14.0	13.6	0	5.10	0	14.29	0	12.8	0	5.10	0	14.29	0	12.3
Rice and wheat products	24.2	26.7	119.9	121.9	3.6	3.9	0	3.31	0	10.60	0	8.3	0	3.31	0	10.60	0	8.0
Croissant-like pastries	59.2	59.2	236.2	236.2	8.9	8.6	0	2.21	0	7.71	0	5.5	0	2.21	0	7.71	0	5.3
Sweet and savoury biscuits and bars	39.9	42.4	138.9	141.8	6.0	6.2	0.33	2.37	0	7.31	0	5.9	0.33	2.63	1.81	7.71	35.0	6.4
Pastries and cakes	92.7	94.0	330.6	330.6	13.9	13.7	0	4.27	0	13.42	0	10.7	0	4.27	0	13.42	0	10.3
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game																		
Offal	0.0	0.0	0.0	2.0	0.0	0.0	0	0.03	0	2.02	0	0.1	0	0.03	0	2.02	0	0.1
Delicatessen meats	0.2	3.2	0.9	8.2	0.0	0.5	0	2.76	0	7.41	0	6.9	0	2.76	0	7.41	0	6.7
Vegetables (excluding potatoes)	0.4	1.8	4.8	15.0	0.1	0.3	0	0.86	0	6.30	0	2.2	0.02	0.91	0.26	6.30	2.3	2.2
Fruits																		
Dried fruits, nuts and seeds	0.0	0.0	0.0	2.8	0.0	0.0	0	0.03	0	2.83	0	0.1	0	0.03	0	2.83	0	0.1
Chocolate																		
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																		
Pizzas, quiches and savoury pastries	48.0	48.0	267.9	267.9	7.2	7.0	0	1.55	0	8.45	0	3.9	0	1.55	0	8.45	0	3.8
Sandwiches and snacks	21.9	21.9	247.5	247.5	3.3	3.2	0	0.82	0	9.00	0	2.1	0	0.82	0	9.00	0	2.0
Mixed dishes	49.6	52.0	163.5	176.3	7.4	7.6	0	4.76	0	17.96	0	11.9	0	4.76	0	17.96	0	11.5
Dairy-based desserts	1.9	7.0	20.1	33.4	0.3	1.0	0	5.07	0	19.29	0	12.7	0	5.07	0	19.29	0	12.3
Composites and cooked fruit																		
TOTAL	667.4	686.7	1189.8	1205.0	100	100	0.09	39.88	0.45	66.05	100	100	0.94	41.37	3.57	68.70	100	100

Food group	Trichothecenes																	
	NIV						Tz Toxin						HTz Toxin					
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	10.07	13.54	27.21	36.26	24.7	16.8	0.14	5.12	0.67	14.05	2.4	9.7	4.34	14.93	10.97	38.87	33.2	21.3
Breakfast cereals	0.87	3.76	4.29	18.57	2.1	4.7	0.61	3.16	3.64	16.22	10.9	6.0	0.61	3.16	3.64	16.22	4.7	4.5
Pasta	11.06	17.01	30.95	47.62	27.2	21.1	2.47	10.88	6.93	30.04	44.1	20.6	5.10	17.01	14.29	47.62	39.0	24.2
Rice and wheat products	8.03	10.56	43.37	45.16	19.7	13.1	0.78	5.12	4.29	17.72	13.8	9.7	0.78	5.12	4.29	17.72	5.9	7.3
Croissant-like pastries	0	2.21	0	7.71	0.0	2.7	0	2.21	0	7.71	0.0	4.2	0.10	2.43	0.80	9.74	0.7	3.5
Sweet and savoury biscuits and bars	0.33	2.63	1.81	7.71	0.8	3.3	0.95	4.58	3.62	15.84	16.9	8.7	1.09	4.90	3.62	15.84	8.3	7.0
Pastries and cakes	0	4.27	0	13.42	0.0	5.3	0	4.27	0	13.42	0.0	8.1	0.85	6.25	4.49	21.86	6.5	8.9
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game																		
Offal	0	0.03	0	2.02	0.0	0.0	0	0.03	0	2.02	0.0	0.1	0	0.03	0	2.02	0.0	0.0
Delicatessen meats	0	2.76	0	7.41	0.0	3.4	0	2.76	0	7.41	0.0	5.2	0	2.76	0	7.41	0.0	3.9
Vegetables (excluding potatoes)	0	0.86	0	6.30	0.0	1.1	0	0.86	0	6.30	0.0	1.6	0	0.86	0	6.30	0.0	1.2
Fruits																		
Dried fruits, nuts and seeds	0.01	0.06	1.41	6.13	0.0	0.1	0	0.03	0	2.83	0.0	0.1	0.03	0.10	2.83	9.43	0.2	0.1
Chocolate																		
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																		
Pizzas, quiches and savoury pastries	0	1.55	0	8.45	0.0	1.9	0.15	1.90	1.34	12.44	2.7	3.6	0	1.55	0	8.45	0.0	2.2
Sandwiches and snacks	1.39	2.11	20.24	22.67	3.4	2.6	0.05	0.93	1.33	9.00	0.8	1.8	0	0.82	0	9.00	0.0	1.2
Mixed dishes	8.92	14.04	67.14	71.17	21.9	17.4	0.40	5.69	3.38	20.11	7.1	10.8	0.17	5.15	2.26	19.61	1.3	7.3
Dairy-based desserts	0.01	5.10	0.17	19.29	0.0	6.3	0.06	5.22	0.89	20.71	1.2	9.9	0.02	5.11	0	20.71	0.2	7.3
Composites and cooked fruit																		
TOTAL	40.69	80.50	98.85	146.19	100	100	5.61	52.76	12.80	89.09	100	100	13.07	70.18	26.55	122.39	100	100

Food group	Trichothecenes																				
	DAS						DOM1						FusX						Ver		
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (UB)	P95 (UB)	
Bread and dried bread products	0.09	5.00	0.56	14.05	100	12.5	0	4.80	0	13.10	0	12.0	0.09	5.00	0.56	14.05	100	12.5	4.80	13.10	12.1
Breakfast cereals	0	1.73	0	8.57	0	4.4	0	1.73	0	8.57	0	4.3	0	1.73	0	8.57	0	4.4	1.73	8.57	4.4
Pasta	0	5.10	0	14.29	0	12.8	0	5.10	0	14.29	0	12.7	0	5.10	0	14.29	0	12.8	5.10	14.29	12.9
Rice and wheat products	0	3.31	0	10.60	0	8.3	0	3.31	0	10.60	0	8.3	0	3.31	0	10.60	0	8.3	3.31	10.60	8.3
Croissant-like pastries	0	2.21	0	7.71	0	5.5	0	2.21	0	7.71	0	5.5	0	2.21	0	7.71	0	5.5	2.21	7.71	5.6
Sweet and savoury biscuits and bars	0	2.37	0	7.31	0	5.9	0	2.37	0	7.31	0	5.9	0	2.37	0	7.31	0	5.9	2.37	7.31	6.0
Pastries and cakes	0	4.27	0	13.42	0	10.7	0	4.27	0	13.42	0	10.7	0	4.27	0	13.42	0	10.7	4.27	13.42	10.8
Milk																					
Ultra-fresh dairy products																					
Cheese																					
Eggs and egg products																					
Butter																					
Poultry and game																					
Offal	0	0.03	0	2.02	0	0.1	0	0.03	0	2.02	0	0.1	0	0.03	0	2.02	0	0.1	0.03	2.02	0.1
Delicatessen meats	0	2.76	0	7.41	0	6.9	0	2.76	0	7.41	0	6.9	0	2.76	0	7.41	0	6.9	2.76	7.41	7.0
Vegetables (excluding potatoes)	0	0.86	0	6.30	0	2.2	0	0.86	0	6.30	0	2.2	0	0.86	0	6.30	0	2.2	0.86	6.30	2.2
Fruits																					
Dried fruits, nuts and seeds	0	0.03	0	2.83	0	0.1	0	0.03	0	2.83	0	0.1	0	0.03	0	2.83	0	0.1	0.03	2.83	0.1
Chocolate																					
Non-alcoholic beverages																					
Alcoholic beverages																					
Coffee																					
Other hot beverages																					
Pizzas, quiches and savoury pastries	0	1.55	0	8.45	0	3.9	0	1.55	0	8.45	0	3.9	0	1.55	0	8.45	0	3.9	1.55	8.45	3.9
Sandwiches and snacks	0	0.82	0	9.00	0	2.1	0	0.82	0	9.00	0	2.0	0	0.82	0	9.00	0	2.1	0.82	9.00	2.1
Mixed dishes	0	4.76	0	17.96	0	11.9	0.17	5.16	2.02	20.54	100	12.9	0	4.76	0	17.96	0	11.9	4.76	17.96	12.0
Dairy-based desserts	0	5.07	0	19.29	0	12.7	0	5.07	0	19.29	0	12.6	0	5.07	0	19.29	0	12.7	5.07	19.29	12.8
Composites and cooked fruit																					
TOTAL	0.09	39.88	0.45	66.05	100	100	0.17	40.07	1.50	66.05	100	100	0.09	39.88	0.45	66.05	100	100	39.68	66.05	100

Food group	Zearalenone																	
	MAS					ZEA					Alpha zearalano							
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (UB)			
Bread and dried bread products	0.05	4.92	0.30	13.10	4.1	11.6	2.40	8.00	6.55	21.83	14.9	12.1	0.09	5.00	0.56	14.05	100	8.5
Breakfast cereals	0	1.73	0	8.57	0	4.1	0.74	2.59	3.98	13.39	4.6	3.9	0	1.73	0	8.57	0	2.9
Pasta	0	5.10	0	14.29	0	12.0	2.51	8.41	7.04	23.81	15.6	12.8	0	5.10	0	14.29	0	8.7
Rice and wheat products	0.30	4.00	2.68	13.95	24.5	9.4	0.27	2.28	1.53	7.97	1.7	3.5	0	3.31	0	10.60	0	5.6
Croissant-like pastries	0.65	3.73	3.5	15.88	53.9	8.8	1.10	3.68	3.86	12.86	6.9	5.6	0	2.21	0	7.71	0	3.7
Sweet and savoury biscuits and bars	0.21	2.86	0.90	9.42	17.5	6.7	1.41	4.00	4.27	12.73	8.8	6.1	0	2.37	0	7.31	0	4.0
Pastries and cakes	0	4.27	0	13.42	0	10.1	1.88	6.51	5.32	17.92	11.7	9.9	0	4.27	0	13.42	0	7.2
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products							0	0.71	0	3.28	0.0	1.1	0	1.41	0	6.55	0	2.4
Butter																		
Poultry and game							0	1.06	0	3.68	0.0	1.6	0	2.13	0	7.35	0	3.6
Offal	0	0.03	0	2.02	0	0.1	0	0.02	0	1.01	0.0	0.0	0	0.03	0	2.02	0	0.1
Delicatessen meats	0	2.76	0	7.41	0	6.5	0	1.38	0	3.70	0.0	2.1	0	2.76	0	7.41	0	4.7
Vegetables (excluding potatoes)	0	0.86	0	6.30	0	2.0	0.15	0.79	1.79	7.51	1.0	1.2	0	0.86	0	6.30	0	1.5
Fruits							0	4.26	0	10.78	0.0	6.5	0	8.53	0	21.56	0	14.5
Dried fruits, nuts and seeds	0	0.03	0	2.83	0	0.1												
Chocolate							0.50	1.17	2.50	4.71	3.1	1.8	0	1.17	0	4.93	0	2.0
Non-alcoholic beverages							0.10	1.22	0.68	3.86	0.6	1.9	0	1.99	0	5.08	0	3.4
Alcoholic beverages																		
Coffee																		
Other hot beverages							0.12	0.42	0.81	2.69	0.7	0.6	0	0.28	0	1.97	0	0.5
Pizzas, quiches and savoury pastries	0	1.55	0	8.45	0	3.7	0.78	2.59	4.22	14.08	4.8	3.9	0	1.55	0	8.45	0	2.6
Sandwiches and snacks	0	0.82	0	9.00	0	1.9	0.18	0.82	2.25	9.75	1.1	1.2	0	0.82	0	9.00	0	1.4
Mixed dishes	0	4.76	0	17.96	0	11.2	0.75	4.14	3.01	12.20	4.7	6.3	0	4.76	0	17.96	0	8.1
Dairy-based desserts	0	5.07	0	19.29	0	11.9	2.08	7.39	8.57	29.56	12.9	11.2	0	5.07	0	19.29	0	8.6
Composites and cooked fruit							1.12	4.42	5.36	23.21	6.9	6.7	0	3.64	0	16.88	0	6.2
TOTAL	1.21	42.49	3.99	69.91	100	100	16.08	65.87	26.12	106.77	100	100	0.09	59.00	0.45	91.93	100	100

Food group	Zearalenone						Fumonisin																		
	Alpha zearalenol			Beta zearalenol			FB1			FB2															
	mean (LB)	P95 (UB)	contrib (UB)	mean (LB)	P95 (UB)	contrib (UB)	mean (LB)	P95 (UB)	contrib (UB)	mean (LB)	P95 (UB)	contrib (UB)													
Bread and dried bread products	0.09	5.00	0.56	14.05	100	8.5	4.80	13.10	8.2	4.80	13.10	8.2	2.67	13.48	7.90	34.76	13.5	23.2	0.05	3.40	0.48	9.44	0.6	8.2	
Breakfast cereals	0	1.73	0	8.57	0	2.9	1.73	8.57	3.0	1.73	8.57	3.0	4.23	7.49	28.57	39.80	21.3	12.9	1.14	5.73	5.71	28.57	13.3	13.7	
Pasta	0	5.10	0	14.29	0	8.7	5.10	14.29	8.7	5.10	14.29	8.7													
Rice and wheat products	0	3.31	0	10.60	0	5.6	3.31	10.60	5.6	3.31	10.60	5.6													
Croissant-like pastries	0	2.21	0	7.71	0	3.7	2.21	7.71	3.8	2.21	7.71	3.8													
Sweet and savoury biscuits and bars	0	2.37	0	7.31	0	4.0	2.37	7.31	4.0	2.37	7.31	4.0	6.14	7.45	33.80	35.11	31.0	12.8	3.29	3.29	35.71	35.71	38.4	7.9	
Pastries and cakes	0	4.27	0	13.42	0	7.2	4.27	13.42	7.3	4.27	13.42	7.3													
Milk																									
Ultra-fresh dairy products																									
Cheese																									
Eggs and egg products	0	1.41	0	6.55	0	2.4	1.41	6.55	2.4	1.41	6.55	2.4													
Butter																									
Poultry and game	0	2.13	0	7.35	0	3.6	2.13	7.35	3.6	2.13	7.35	3.6													
Offal	0	0.03	0	2.02	0	0.1	0.03	2.02	0.1	0.03	2.02	0.1													
Delicatessen meats	0	2.76	0	7.41	0	4.7	2.76	7.41	4.7	2.76	7.41	4.7													
Vegetables (excluding potatoes)	0	0.86	0	6.30	0	1.5	0.86	6.30	1.5	0.86	6.30	1.5													
Fruits	0	8.53	0	21.56	0	14.5	8.53	21.56	14.5	8.53	21.56	14.5													
Dried fruits, nuts and seeds																									
Chocolate	0	1.17	0	4.93	0	2.0	1.17	4.93	2.0	1.17	4.93	2.0													
Non-alcoholic beverages	0	1.99	0	5.08	0	3.4	1.99	5.08	3.4	1.99	5.08	3.4	6.78	29.73	22.76	85.36	34.2	51.1	3.94	28.59	17.90	93.94	46.0	68.5	
Alcoholic beverages														0	0.02	0	3.01	0.0	0.0	0	0.02	0	3.01	0.0	0.0
Coffee																									
Other hot beverages	0	0.28	0	1.97	0	0.5	0.28	1.97	0.5	0.28	1.97	0.5													
Pizzas, quiches and savoury pastries	0	1.55	0	8.45	0	2.6	1.55	8.45	2.6	1.55	8.45	2.6													
Sandwiches and snacks	0	0.82	0	9.00	0	1.4	0.82	9.00	1.4	0.82	9.00	1.4													
Mixed dishes	0	4.76	0	17.96	0	8.1	4.76	17.96	8.1	4.76	17.96	8.1													
Dairy-based desserts	0	5.07	0	19.29	0	8.6	5.07	19.29	8.6	5.07	19.29	8.6													
Composites and cooked fruit	0	3.64	0	16.88	0	6.2	3.64	16.88	6.2	3.64	16.88	6.2													
TOTAL	0.09	59.00	0.45	91.93	100	100	58.79	91.93	100	58.79	91.93	100	19.83	58.20	60.00	130.55	100	100	8.56	41.71	27.66	107.31	100	100	

Table E7: Estimated exposure (mean and P95) in children aged 7 to 10 years to mycotoxins (ng/kg bw/day) and contribution of foods (%)

Food group	Aflatoxins																	
	AFB1				AFB2				AFG1				AFG2				AFM1	
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)
Bread and dried bread products	0	0.089	0	0.211	0	20.3	0.089	0.211	20.3	0.089	0.211	20.3	0.089	0.211	20.3			
Breakfast cereals	0	0.024	0	0.097	0	5.4	0.024	0.097	5.4	0.024	0.097	5.4	0.024	0.097	5.4			
Pasta	0	0.067	0	0.182	0	15.2	0.067	0.182	15.3	0.067	0.182	15.3	0.067	0.182	15.3			
Rice and wheat products	0	0.034	0	0.116	0	7.7	0.034	0.116	7.7	0.034	0.116	7.7	0.034	0.116	7.7			
Croissant-like pastries	0	0.028	0	0.112	0	6.4	0.028	0.112	6.4	0.028	0.112	6.4	0.028	0.112	6.4			
Sweet and savoury biscuits and bars	0	0.027	0	0.100	0	6.2	0.027	0.100	6.2	0.027	0.100	6.2	0.027	0.100	6.2			
Pastries and cakes	0	0.059	0	0.173	0	13.5	0.059	0.173	13.5	0.059	0.173	13.5	0.059	0.173	13.5			
Milk																0.006	0.016	9.9
Ultra-fresh dairy products																0.028	0.069	46.6
Cheese																0.006	0.016	9.8
Eggs and egg products	0	0.018	0	0.071	0	4.1	0.018	0.071	4.1	0.018	0.071	4.1	0.018	0.071	4.1			
Butter																		
Poultry and game	0	0.031	0	0.103	0	7.1	0.031	0.103	7.1	0.031	0.103	7.1	0.031	0.103	7.1	0.003	0.008	4.6
Offal	0	0.001	0	0.036	0	0.2	0.001	0.036	0.2	0.001	0.036	0.2	0.001	0.036	0.2	0.000	0.007	0.3
Delicatessen meats	0	0.038	0	0.109	0	8.5	0.038	0.109	8.5	0.038	0.109	8.5	0.038	0.109	8.5	0.007	0.021	11.2
Vegetables (excluding potatoes)	0	0.003	0	0.051	0	0.6	0.003	0.051	0.6	0.003	0.051	0.6	0.003	0.051	0.6			
Fruits																		
Dried fruits, nuts and seeds	0	0.000	0	0.020	0	0.1	0.000	0.020	0.1	0.000	0.020	0.1	0.000	0.020	0.1			
Chocolate	0.0016	0.021	0.017	0.074	100	4.7	0.019	0.072	4.4	0.019	0.072	4.4	0.019	0.072	4.4	0.004	0.014	6.4
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																0.001	0.005	0.8
Pizzas, quiches and savoury pastries																		
Sandwiches and snacks																		
Mixed dishes																		
Dairy-based desserts																		
Compotes and cooked fruit																		
TOTAL	0.0016	0.440	0.016	0.713	100	100	0.439	0.713	100	0.439	0.713	100	0.439	0.713	100	0.061	0.110	100

Exposure and levels of contamination with AFB2, AFG1, AFG2, AFM1, VER, Beta zearalenol and Beta zearalanol, under the LB hypothesis, are not shown in this Table; they are all equal to zero.

Food group	Ochratoxins												Patulin					
	OTA				OTB				PAT									
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	0.200	0.657	0.513	1.597	79.0	21.1	0.006	0.365	0.043	0.857	37.9	13.2						
Breakfast cereals	0.001	0.096	0	0.399	0.5	3.1	0.001	0.096	0	0.399	8.9	3.5						
Pasta	0.010	0.283	0.095	0.752	3.9	9.1	0	0.268	0	0.727	0	9.7						
Rice and wheat products	0.016	0.158	0.110	0.612	6.1	5.1	0	0.135	0	0.462	0	4.9						
Croissant-like pastries	0	0.113	0	0.449	0.0	3.6	0	0.113	0	0.449	0	4.1						
Sweet and savoury biscuits and bars	0	0.110	0	0.399	0.0	3.5	0	0.110	0	0.399	0	4.0	0	0.28	0	7.35	0	0.7
Pastries and cakes	0	0.237	0	0.692	0.0	7.6	0	0.237	0	0.692	0	8.6	0	7.12	0	20.77	0	16.9
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game	0	0.125	0	0.411	0.0	4.0	0	0.125	0	0.411	0	4.5						
Offal	0	0.004	0	0.143	0.0	0.1	0	0.004	0	0.143	0	0.1						
Delicatessen meats	0.014	0.166	0.088	0.504	5.4	5.3	0.005	0.154	0.034	0.450	32.2	5.6						
Vegetables (excluding potatoes)	0	0.040	0	0.343	0.0	1.3	0	0.040	0	0.343	0	1.5						
Fruits	0	0.368	0	1.242	0.0	11.8	0	0.368	0	1.242	0	13.3	0.12	11.56	0	39.16	9.5	27.5
Dried fruits, nuts and seeds	0	0.002	0	0.082	0.0	0.1	0	0.002	0	0.082	0	0.1						
Chocolate	0	0.078	0	0.290	0.0	2.5	0	0.078	0	0.290	0	2.8						
Non-alcoholic beverages	0.002	0.058	0.011	0.179	0.8	1.9	0.001	0.052	0.004	0.153	3.4	1.9	0.54	18.05	4.05	59.35	43.8	42.9
Alcoholic beverages	0.000	0.000	0.031	0.034	0.1	0.0	0	0.000	0	0.009	0	0.0						
Coffee	0	0.000	0	0.125	0.0	0.0	0	0.000	0	0.125	0	0.0						
Other hot beverages	0	0.007	0	0.058	0.0	0.2	0	0.007	0	0.058	0	0.2						
Pizzas, quiches and savoury pastries	0	0.094	0	0.451	0.0	3.0	0	0.094	0	0.451	0	3.4						
Sandwiches and snacks	0.003	0.049	0.052	0.353	1.1	1.6	0.003	0.049	0.048	0.353	17.6	1.8						
Mixed dishes	0.008	0.272	0.071	0.786	3.1	8.7	0	0.260	0	0.768	0	9.4						
Dairy-based desserts	0	0.205	0	0.837	0.0	6.6	0	0.205	0	0.837	0	7.4						
Composites and cooked fruit													0.58	5.00	5.54	30.46	46.6	11.9
TOTAL	0.253	3.123	0.669	5.467	100	100	0.015	2.762	0.086	4.630	100	100	1.24	42.06	7.39	95.45	100	100

Food group	Trichothecenes																	
	DON						DON3						DON15					
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	256.0	256.0	617.4	617.4	42.3	41.4	0.08	5.55	0.64	13.41	100	17.4	0	5.36	0	12.63	0	16.1
Breakfast cereals	4.6	5.5	20.5	23.1	0.8	0.9	0	1.41	0	5.81	0	4.4	0.49	2.56	2.38	10.46	54.8	7.7
Pasta	73.8	73.8	200.0	200.0	12.2	11.9	0	4.02	0	10.91	0	12.6	0	4.02	0	10.91	0	12.1
Rice and wheat products	11.5	13.1	74.1	76.9	1.9	2.1	0	2.02	0	6.93	0	6.3	0	2.02	0	6.93	0	6.1
Croissant-like pastries	45.3	45.3	193.3	193.3	7.5	7.3	0	1.70	0	6.73	0	5.3	0	1.70	0	6.73	0	5.1
Sweet and savoury biscuits and bars	28.6	30.4	101.5	109.1	4.7	4.9	0	1.64	0	5.99	0	5.2	0.40	1.96	2.50	7.27	44.4	5.9
Pastries and cakes	83.5	84.3	298.4	298.4	13.8	13.6	0	3.56	0	10.38	0	11.2	0	3.56	0	10.38	0	10.7
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game																		
Offal	0.0	0.1	0.0	2.1	0.0	0.0	0	0.06	0	2.14	0	0.2	0	0.06	0	2.14	0	0.2
Delicatessen meats	0.1	2.5	0.9	6.8	0.0	0.4	0	2.25	0	6.54	0	7.1	0	2.25	0	6.54	0	6.8
Vegetables (excluding potatoes)	0.3	1.2	2.4	9.1	0.0	0.2	0	0.60	0	5.15	0	1.9	0.01	0.62	0.13	5.15	0.8	1.9
Fruits																		
Dried fruits, nuts and seeds	0.0	0.0	0.0	1.2	0.0	0.0	0	0.03	0	1.22	0	0.1	0	0.03	0	1.22	0	0.1
Chocolate																		
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																		
Pizzas, quiches and savoury pastries	43.2	43.2	234.3	234.3	7.1	7.0	0	1.40	0	6.76	0	4.4	0	1.40	0	6.76	0	4.2
Sandwiches and snacks	18.4	18.4	168.9	168.9	3.0	3.0	0	0.67	0	5.30	0	2.1	0	0.67	0	5.30	0	2.0
Mixed dishes	37.3	39.7	108.6	108.6	6.2	6.4	0	3.90	0	11.52	0	12.2	0	3.90	0	11.52	0	11.8
Dairy-based desserts	2.2	5.1	16.0	21.7	0.4	0.8	0	3.07	0	12.56	0	9.6	0	3.07	0	12.56	0	9.3
Composites and cooked fruit																		
TOTAL	604.8	618.7	1073.7	1088.3	100	100	0.08	31.90	0.64	50.77	100	100	0.89	33.18	3.33	52.51	100	100

Food group	Trichothecenes																	
	NIV				Tz Toxin				HTz Toxin									
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	11.19	15.05	29.42	36.71	36.0	24.0	0.14	5.69	0.94	14.09	3.3	13.7	4.87	16.73	12.35	42.03	41.6	28.3
Breakfast cereals	0.71	3.06	2.90	12.58	2.3	4.9	0.51	2.60	2.46	10.65	12.0	6.3	0.51	2.60	2.46	10.65	4.4	4.4
Pasta	8.71	13.40	23.64	36.36	28.0	21.3	1.94	8.54	5.22	22.62	45.7	20.5	4.02	13.40	10.91	36.36	34.3	22.7
Rice and wheat products	3.84	5.50	24.80	27.08	12.4	8.8	0.36	2.86	2.52	10.29	8.5	6.9	0.36	2.86	2.52	10.29	3.1	4.9
Croissant-like pastries	0	1.70	0	6.74	0.0	2.7	0	1.70	0	6.73	0.0	4.1	0.16	2.08	1.08	8.50	1.4	3.5
Sweet and savoury biscuits and bars	0.40	1.96	2.50	7.27	1.3	3.1	0.69	3.25	2.82	12.98	16.3	7.8	0.77	3.44	2.82	12.98	6.6	5.8
Pastries and cakes	0	3.56	0	10.38	0.0	5.7	0	3.56	0	10.38	0.0	8.6	0.77	5.36	5.10	21.43	6.6	9.1
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game																		
Offal	0	0.06	0	2.14	0.0	0.1	0	0.06	0	2.14	0.0	0.1	0	0.06	0	2.14	0.0	0.1
Delicatessen meats	0	2.25	0	6.54	0.0	3.6	0	2.25	0	6.54	0.0	5.4	0	2.25	0	6.54	0.0	3.8
Vegetables (excluding potatoes)	0	0.60	0	5.15	0.0	1.0	0	0.60	0	5.15	0.0	1.5	0	0.60	0	5.15	0.0	1.0
Fruits																		
Dried fruits, nuts and seeds	0.01	0.06	0.61	2.65	0.0	0.1	0	0.03	0	1.22	0.0	0.1	0.03	0.10	1.22	4.08	0.3	0.2
Chocolate																		
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																		
Pizzas, quiches and savoury pastries	0	1.40	0	6.76	0.0	2.2	0.12	1.69	1.32	8.70	2.9	4.1	0	1.40	0	6.76	0.0	2.4
Sandwiches and snacks	0.86	1.44	14.64	15.15	2.8	2.3	0.08	0.85	1.47	9.22	1.8	2.0	0	0.67	0	5.30	0.0	1.1
Mixed dishes	5.34	9.67	30.12	35.76	17.2	15.4	0.33	4.66	2.46	14.57	7.7	11.2	0.20	4.38	2.21	13.26	1.7	7.4
Dairy-based desserts	0.00	3.08	0	12.56	0.0	4.9	0.07	3.24	0.60	13.21	1.7	7.8	0.01	3.09	0	12.56	0.1	5.2
Composites and cooked fruit																		
TOTAL	31.05	62.80	66.70	110.76	100	100	4.24	41.59	9.03	68.44	100	100	11.71	59.03	22.91	99.28	100	100

Food group	Trichothecenes																				
	DAS						DOM-1						FusX						Ver		
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)
Bread and dried bread products	0.08	5.55	0.64	13.41	100	17.4	0	5.36	0	12.63	0	16.8	0.08	5.55	0.64	13.41	100	17.4	5.36	12.63	16.9
Breakfast cereals	0	1.41	0	5.81	0	4.4	0	1.41	0	5.81	0	4.4	0	1.41	0	5.81	0	4.4	1.41	5.81	4.5
Pasta	0	4.02	0	10.91	0	12.6	0	4.02	0	10.91	0	12.6	0	4.02	0	10.91	0	12.6	4.02	10.91	12.7
Rice and wheat products	0	2.02	0	6.93	0	6.3	0	2.02	0	6.93	0	6.3	0	2.02	0	6.93	0	6.3	2.02	6.93	6.4
Croissant-like pastries	0	1.70	0	6.73	0	5.3	0	1.70	0	6.73	0	5.3	0	1.70	0	6.73	0	5.3	1.70	6.73	5.4
Sweet and savoury biscuits and bars	0	1.64	0	5.99	0	5.2	0	1.64	0	5.99	0	5.1	0	1.64	0	5.99	0	5.2	1.64	5.99	5.2
Pastries and cakes	0	3.56	0	10.38	0	11.2	0	3.56	0	10.38	0	11.2	0	3.56	0	10.38	0	11.2	3.56	10.38	11.2
Milk																					
Ultra-fresh dairy products																					
Cheese																					
Eggs and egg products																					
Butter																					
Poultry and game																					
Offal	0	0.06	0	2.14	0	0.2	0	0.06	0	2.14	0	0.2	0	0.06	0	2.14	0	0.2	0.06	2.14	0.2
Delicatessen meats	0	2.25	0	6.54	0	7.1	0	2.25	0	6.54	0	7.0	0	2.25	0	6.54	0	7.1	2.25	6.54	7.1
Vegetables (excluding potatoes)	0	0.60	0	5.15	0	1.9	0	0.60	0	5.15	0	1.9	0	0.60	0	5.15	0	1.9	0.60	5.15	1.9
Fruits																					
Dried fruits, nuts and seeds	0	0.03	0	1.22	0	0.1	0	0.03	0	1.22	0	0.1	0	0.03	0	1.22	0	0.1	0.03	1.22	0.1
Chocolate																					
Non-alcoholic beverages																					
Alcoholic beverages																					
Coffee																					
Other hot beverages																					
Pizzas, quiches and savoury pastries	0	1.40	0	6.76	0	4.4	0	1.40	0	6.76	0	4.4	0	1.40	0	6.76	0	4.4	1.40	6.76	4.4
Sandwiches and snacks	0	0.67	0	5.30	0	2.1	0	0.67	0	5.30	0	2.1	0	0.67	0	5.30	0	2.1	0.67	5.30	2.1
Mixed dishes	0	3.90	0	11.52	0	12.2	0.10	4.13	1.27	11.79	100	12.9	0	3.90	0	11.52	0	12.2	3.90	11.52	12.3
Dairy-based desserts	0	3.07	0	12.56	0	9.6	0	3.07	0	12.56	0	9.6	0	3.07	0	12.56	0	9.6	3.07	12.56	9.7
Composites and cooked fruit																					
TOTAL	0.08	31.90	0.64	50.77	100	100	0.10	31.94	0	50.77	100	100	0.08	31.90	0.64	50.77	100	100	31.71	50.77	100

Food group	Trichothecenes						Zearalenone											
	MAS			ZEA			Alpha zearalanol											
	mean (LB)	P95 (UB)	contrib (LB)	mean (UB)	P95 (LB)	contrib (UB)	mean (LB)	P95 (UB)	contrib (LB)	mean (UB)	P95 (LB)	contrib (UB)						
Bread and dried bread products	0.06	5.49	0.28	12.86	6.8	16.3	2.68	8.93	6.32	21.05	20.9	17.4	0.08	5.55	0.64	13.41	100	12.3
Breakfast cereals	0	1.41	0	5.81	0	4.2	0.61	2.13	2.46	8.72	4.7	4.1	0	1.41	0	5.81	0	3.1
Pasta	0	4.02	0	10.91	0	11.9	1.97	6.61	5.22	17.40	15.4	12.9	0	4.02	0	10.91	0	8.9
Rice and wheat products	0.13	2.32	1.34	9.18	15.1	6.9	0.12	1.30	0.95	4.84	0.9	2.5	0	2.02	0	6.93	0	4.5
Croissant-like pastries	0.47	2.79	2.57	13.23	56.2	8.3	0.85	2.83	3.37	11.22	6.6	5.5	0	1.70	0	6.73	0	3.8
Sweet and savoury biscuits and bars	0.18	2.07	1	6.84	21.9	6.2	1.14	2.91	4.16	9.99	8.9	5.7	0	1.64	0	5.99	0	3.6
Pastries and cakes	0	3.56	0	10.38	0	10.6	1.61	5.54	4.89	16.48	12.6	10.8	0	3.56	0	10.38	0	7.9
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products							0	0.54	0	2.14	0.0	1.1	0	1.08	0	4.29	0	2.4
Butter																		
Poultry and game							0	0.94	0	3.09	0.0	1.8	0	1.87	0	6.17	0	4.1
Offal	0	0.06	0	2.14	0	0.2	0	0.03	0	1.07	0.0	0.1	0	0.06	0	2.14	0	0.1
Delicatessen meats	0	2.25	0	6.54	0	6.7	0	1.13	0	3.27	0.0	2.2	0	2.25	0	6.54	0	5.0
Vegetables (excluding potatoes)	0	0.60	0	5.15	0	1.8	0.09	0.51	1.04	4.24	0.7	1.0	0	0.60	0	5.15	0	1.3
Fruits							0	2.82	0	9.32	0.0	5.5	0	5.64	0	18.63	0	12.5
Dried fruits, nuts and seeds	0	0.03	0	1.22	0	0.1												
Chocolate							0.47	1.19	2.38	4.52	3.6	2.3	0	1.17	0	4.35	0	2.6
Non-alcoholic beverages							0.07	0.91	0.50	2.96	0.5	1.8	0	1.50	0	4.52	0	3.3
Alcoholic beverages																		
Coffee																		
Other hot beverages							0.08	0.28	0.62	2.06	0.6	0.5	0	0.20	0	1.74	0	0.4
Pizzas, quiches and savoury pastries	0	1.40	0	6.76	0	4.2	0.70	2.34	3.38	11.27	5.5	4.6	0	1.40	0	6.76	0	3.1
Sandwiches and snacks	0	0.67	0	5.30	0	2.0	0.14	0.67	2.03	7.94	1.1	1.3	0	0.67	0	5.30	0	1.5
Mixed dishes	0	3.90	0	11.52	0	11.6	0.62	3.40	2.55	10.85	4.8	6.6	0	3.90	0	11.52	0	8.6
Dairy-based desserts	0	3.07	0	12.56	0	9.1	1.22	4.38	5.36	19.88	9.5	8.5	0	3.07	0	12.56	0	6.8
Composites and cooked fruit							0.47	2.02	3.09	11.82	3.7	3.9	0	1.83	0	9.96	0	4.0
TOTAL	0.84	33.66	2.87	52.51	100	100	12.83	51.37	23.05	86.36	100	100	0.08	45.16	0.64	76.52	100	100

Food group	Zearalenone						Fumonisinis																		
	Alpha zearalenol			Beta zearalanol			FB1			FB2															
	mean (LB)	P95 (LB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (LB)	P95 (UB)	contrib (LB)	mean (UB)	P95 (LB)	contrib (UB)													
Bread and dried bread products	0.08	5.55	0.64	13.41	100	12.3	5.36	12.63	11.9	5.36	12.63	11.9	3.01	15.19	8.24	40.06	16.4	30.4	0.05	3.78	0.31	10.01	0.7	11.7	
Breakfast cereals	0	1.41	0	5.81	0	3.1	1.41	5.81	3.1	1.41	5.81	3.1	3.31	6.03	20.57	25.16	18.1	12.1	0.93	4.66	3.87	19.35	12.4	14.5	
Pasta	0	4.02	0	10.91	0	8.9	4.02	10.91	8.9	4.02	10.91	8.9													
Rice and wheat products	0	2.02	0	6.93	0	4.5	2.02	6.93	4.5	2.02	6.93	4.5													
Croissant-like pastries	0	1.70	0	6.73	0	3.8	1.70	6.73	3.8	1.70	6.73	3.8													
Sweet and savoury biscuits and bars	0	1.64	0	5.99	0	3.6	1.64	5.99	3.7	1.64	5.99	3.7	7.42	8.32	46.67	46.67	40.5	16.7	3.98	3.98	62.21	62.21	53.0	12.4	
Pastries and cakes	0	3.56	0	10.38	0	7.9	3.56	10.38	7.9	3.56	10.38	7.9													
Milk																									
Ultra-fresh dairy products																									
Cheese																									
Eggs and egg products	0	1.08	0	4.29	0	2.4	1.08	4.29	2.4	1.08	4.29	2.4													
Butter																									
Poultry and game	0	1.87	0	6.17	0	4.1	1.87	6.17	4.2	1.87	6.17	4.2													
Offal	0	0.06	0	2.14	0	0.1	0.06	2.14	0.1	0.06	2.14	0.1													
Delicatessen meats	0	2.25	0	6.54	0	5.0	2.25	6.54	5.0	2.25	6.54	5.0													
Vegetables (excluding potatoes)	0	0.60	0	5.15	0	1.3	0.60	5.15	1.3	0.60	5.15	1.3													
Fruits	0	5.64	0	18.63	0	12.5	5.64	18.63	12.6	5.64	18.63	12.6													
Dried fruits, nuts and seeds																									
Chocolate	0	1.17	0	4.35	0	2.6	1.17	4.35	2.6	1.17	4.35	2.6													
Non-alcoholic beverages	0	1.50	0	4.52	0	3.3	1.50	4.52	3.3	1.50	4.52	3.3	4.56	20.37	16.93	62.94	24.9	40.8	2.54	19.75	12.62	65.71	33.9	61.4	
Alcoholic beverages													0.00	0.02	0.22	1.85	0.0	0.0	0	0.02	0	1.85	0.0	0.1	
Coffee																									
Other hot beverages	0	0.20	0	1.74	0	0.4	0.20	1.74	0.4	0.20	1.74	0.4													
Pizzas, quiches and savoury pastries	0	1.40	0	6.76	0	3.1	1.40	6.76	3.1	1.40	6.76	3.1													
Sandwiches and snacks	0	0.67	0	5.30	0	1.5	0.67	5.30	1.5	0.67	5.30	1.5													
Mixed dishes	0	3.90	0	11.52	0	8.6	3.90	11.52	8.7	3.90	11.52	8.7													
Dairy-based desserts	0	3.07	0	12.56	0	6.8	3.07	12.56	6.8	3.07	12.56	6.8													
Composites and cooked fruit	0	1.83	0	9.96	0	4.0	1.83	9.96	4.1	1.83	9.96	4.1													
TOTAL	0.08	45.16	0.64	76.52	100	100	44.96	75.71	100	44.96	75.71	100	18.30	49.93	53.12	125.01	100	100	7.50	32.18	26.33	83.10	100	100	

Table E8: Estimated exposure (mean and P95) in children aged 11 to 14 years to mycotoxins (ng/kg bw/day) and contribution of foods (%)

Food group	Aflatoxins														
	AFB1			AFB2			AFG1			AFG2			AFM1		
	mean (LB)	P95 (UB)	contrib (LB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)
Bread and dried bread products	0	0.069	0	0.167	0	21.2	0.069	0.167	21.3	0.069	0.167	21.3	0.069	0.167	21.3
Breakfast cereals	0	0.017	0	0.080	0	5.3	0.017	0.080	5.3	0.017	0.080	5.3	0.017	0.080	5.3
Pasta	0	0.057	0	0.163	0	17.5	0.057	0.163	17.6	0.057	0.163	17.6	0.057	0.163	17.6
Rice and wheat products	0	0.032	0	0.118	0	9.7	0.032	0.118	9.7	0.032	0.118	9.7	0.032	0.118	9.7
Croissant-like pastries	0	0.020	0	0.102	0	6.1	0.020	0.102	6.2	0.020	0.102	6.2	0.020	0.102	6.2
Sweet and savoury biscuits and bars	0	0.015	0	0.063	0	4.5	0.015	0.063	4.5	0.015	0.063	4.5	0.015	0.063	4.5
Pastries and cakes	0	0.039	0	0.137	0	11.9	0.039	0.137	11.9	0.039	0.137	11.9	0.039	0.137	11.9
Milk															
Ultra-fresh dairy products															
Cheese															
Eggs and egg products	0	0.010	0	0.048	0	3.2	0.010	0.048	3.2	0.010	0.048	3.2	0.010	0.048	3.2
Butter															
Poultry and game	0	0.023	0	0.082	0	7.1	0.023	0.082	7.1	0.023	0.082	7.1	0.023	0.082	7.1
Offal	0	0.001	0	0.029	0	0.2	0.001	0.029	0.2	0.001	0.029	0.2	0.001	0.029	0.2
Delicatessen meats	0	0.026	0	0.077	0	8.0	0.026	0.077	8.1	0.026	0.077	8.1	0.026	0.077	8.1
Vegetables (excluding potatoes)	0	0.002	0	0.031	0	0.5	0.002	0.031	0.5	0.002	0.031	0.5	0.002	0.031	0.5
Fruits															
Dried fruits, nuts and seeds	0	0.000	0	0.008	0	0.0	0.000	0.008	0.0	0.000	0.008	0.0	0.000	0.008	0.0
Chocolate	0.0015	0.015	0.014	0.064	100	4.6	0.014	0.049	4.2	0.014	0.049	4.2	0.014	0.049	4.2
Non-alcoholic beverages															
Alcoholic beverages															
Coffee															
Other hot beverages															
Pizzas, quiches and savoury pastries															
Sandwiches and snacks															
Mixed dishes															
Dairy-based desserts															
Compotes and cooked fruit															
TOTAL	0.0015	0.325	0.010	0.580	100	100	0.324	0.580	100	0.324	0.580	100	0.324	0.580	100

Exposure and levels of contamination with AFB2, AFG1, AFG2, AFM1, VER, Beta zearelanol and Beta zearelanol, under the LB hypothesis, are not shown in this Table: they are all equal to zero.

Food group	Ochratoxins												Patulin						
	OTA				OTB				PAT										
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	
Bread and dried bread products	0.151	0.503	0.360	1.170	70.5	21.5	0.010	0.291	0.074	0.737	39.4	14.2							
Breakfast cereals	0.005	0.076	0.092	0.375	2.1	3.3	0.005	0.076	0.092	0.375	18.4	3.7							
Pasta	0.011	0.245	0.095	0.670	5.2	10.5	0	0.228	0	0.653	0	11.1							
Rice and wheat products	0.019	0.154	0.143	0.655	8.6	6.6	0	0.126	0	0.472	0	6.1							
Croissant-like pastries	0	0.080	0	0.406	0.0	3.4	0	0.080	0	0.406	0	3.9							
Sweet and savoury biscuits and bars	0	0.058	0	0.252	0.0	2.5	0	0.058	0	0.252	0	2.8					0	0.7	
Pastries and cakes	0	0.155	0	0.548	0.0	6.6	0	0.155	0	0.548	0	7.5					0	16.1	
Milk																			
Ultra-fresh dairy products																			
Cheese																			
Eggs and egg products																			
Butter																			
Poultry and game	0	0.093	0	0.327	0.0	4.0	0	0.093	0	0.327	0	4.5							
Offal	0	0.003	0	0.114	0.0	0.1	0	0.003	0	0.114	0	0.1							
Delicatessen meats	0.015	0.122	0.080	0.404	7.2	5.2	0.008	0.112	0.051	0.308	33.9	5.5							
Vegetables (excluding potatoes)	0	0.025	0	0.180	0.0	1.1	0	0.025	0	0.180	0	1.2							
Fruits	0	0.231	0	0.900	0.0	9.9	0	0.231	0	0.900	0	11.3					0.09	7.29	
Dried fruits, nuts and seeds	0	0.001	0	0.034	0.0	0.0	0	0.001	0	0.034	0	0.0							
Chocolate	0	0.055	0	0.196	0.0	2.4	0	0.055	0	0.196	0	2.7							
Non-alcoholic beverages	0.001	0.042	0.005	0.132	0.3	1.8	0.000	0.041	0.002	0.123	1.1	2.0					0.36	13.86	
Alcoholic beverages	0.000	0.000	0.023	0.025	0.1	0.0	0	0.000	0	0.013	0	0.0							
Coffee	0	0.001	0	0.058	0.0	0.0	0	0.001	0	0.058	0	0.0							
Other hot beverages	0	0.006	0	0.058	0.0	0.2	0	0.006	0	0.058	0	0.3							
Pizzas, quiches and savoury pastries	0	0.086	0	0.404	0.0	3.7	0	0.086	0	0.404	0	4.2							
Sandwiches and snacks	0.004	0.054	0.072	0.405	1.9	2.3	0.002	0.050	0.038	0.400	7.2	2.5							
Mixed dishes	0.009	0.224	0.089	0.764	4.0	9.6	0	0.211	0	0.720	0	10.3							
Dairy-based desserts	0	0.123	0	0.641	0.0	5.3	0	0.123	0	0.641	0	6.0							
Composites and cooked fruit																			
TOTAL	0.214	2.335	0.553	4.024	100	100	0.025	2.050	0.128	3.616	100	100	0.30	2.29	4.20	18.21	0.77	28.82	
																		100	100
																		39.3	7.9

Food group	Trichothecenes																
	DON					DON3					DON15						
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	198,0	198,0	473,6	473,6	40,4	0,15	4,49	1,11	12,14	100	18,5	0	4,14	0	10,03	0	16,6
Breakfast cereals	3,5	4,0	18,5	19,0	0,7	0	1,04	0	4,82	0	4,3	0,34	1,82	2,22	9,61	55,0	7,3
Pasta	62,8	62,8	179,6	179,6	13,1	0	3,42	0	9,80	0	14,1	0	3,42	0	9,80	0	13,7
Rice and wheat products	13,8	15,2	91,8	93,0	2,9	0	1,89	0	7,08	0	7,8	0	1,89	0	7,08	0	7,6
Croissant-like pastries	33,1	33,1	184,5	184,5	6,9	0	1,20	0	6,09	0	4,9	0	1,20	0	6,09	0	4,8
Sweet and savoury biscuits and bars	16,1	17,0	65,8	68,5	3,4	0	0,87	0	3,79	0	3,6	0,27	1,09	2,10	5,02	44,6	4,4
Pastries and cakes	62,2	62,6	242,8	242,8	12,9	0	2,32	0	8,21	0	9,6	0	2,32	0	8,21	0	9,3
Milk																	
Ultra-fresh dairy products																	
Cheese																	
Eggs and egg products																	
Butter																	
Poultry and game																	
Offal	0,0	0,0	0,0	1,7	0,0	0	0,04	0	1,71	0	0,2	0	0,04	0	1,71	0	0,2
Delicatessen meats	0,1	1,7	0,4	5,1	0,0	0	1,57	0	4,61	0	6,5	0	1,57	0	4,61	0	6,3
Vegetables (excluding potatoes)	0,2	0,8	1,5	6,3	0,0	0	0,37	0	2,70	0	1,5	0,00	0,38	0,04	2,70	0,4	1,5
Fruits																	
Dried fruits, nuts and seeds	0,0	0,0	0,0	0,5	0,0	0	0,01	0	0,50	0	0,0	0	0,01	0	0,50	0	0,0
Chocolate																	
Non-alcoholic beverages																	
Alcoholic beverages																	
Coffee																	
Other hot beverages																	
Pizzas, quiches and savoury pastries	40,1	40,1	181,6	181,6	8,4	0	1,30	0	6,06	0	5,3	0	1,30	0	6,06	0	5,2
Sandwiches and snacks	19,5	19,5	190,5	190,5	4,1	0	0,71	0	5,60	0	2,9	0	0,71	0	5,60	0	2,9
Mixed dishes	29,5	31,5	120,6	126,9	6,1	0	3,17	0	10,80	0	13,1	0	3,17	0	10,80	0	12,7
Dairy-based desserts	1,7	3,4	22,0	29,4	0,4	0	1,85	0	9,62	0	7,6	0	1,85	0	9,62	0	7,4
Composites and cooked fruit																	
TOTAL	480,6	489,9	912,7	920,2	100	0,15	24,24	1,11	42,01	100	100	0,61	24,91	2,28	44,37	100	100

Food group	Trichothecenes																	
	NIV				Tz Toxin				HTz Toxin									
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	8.95	11.67	23.21	28.84	31.7	22.6	0.18	4.57	1.11	12.27	5.1	14.2	3.79	12.98	9.20	31.83	40.7	28.5
Breakfast cereals	0.52	2.25	2.41	10.45	1.8	4.4	0.41	1.98	2.22	9.61	11.6	6.2	0.41	1.98	2.22	9.61	4.4	4.4
Pasta	7.41	11.39	21.22	32.65	26.2	22.1	1.63	7.21	4.90	21.22	46.3	22.5	3.42	11.39	9.80	32.65	36.8	25.0
Rice and wheat products	4.59	6.05	31.12	32.35	16.2	11.7	0.44	2.91	2.68	11.43	12.4	9.1	0.44	2.91	2.68	11.43	4.7	6.4
Croissant-like pastries	0	1.20	0	6.09	0.0	2.3	0	1.20	0	6.09	0.0	3.7	0.05	1.31	0.47	6.60	0.5	2.9
Sweet and savoury biscuits and bars	0.27	1.09	2.10	5.02	1.0	2.1	0.37	1.75	1.67	7.66	10.7	5.4	0.40	1.80	1.71	8.13	4.3	4.0
Pastries and cakes	0	2.32	0	8.21	0.0	4.5	0	2.32	0	8.21	0.0	7.2	0.68	3.90	4.29	15.97	7.3	8.5
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game																		
Offal	0	0.04	0	1.71	0.0	0.1	0	0.04	0	1.71	0.0	0.1	0	0.04	0	1.71	0.0	0.1
Delicatessen meats	0	1.57	0	4.61	0.0	3.0	0	1.57	0	4.61	0.0	4.9	0	1.57	0	4.61	0.0	3.4
Vegetables (excluding potatoes)	0	0.37	0	2.70	0.0	0.7	0	0.37	0	2.70	0.0	1.2	0	0.37	0	2.70	0.0	0.8
Fruits																		
Dried fruits, nuts and seeds	0.00	0.02	0.25	1.09	0.0	0.0	0	0.01	0	0.50	0.0	0.0	0.01	0.03	0.50	1.68	0.1	0.1
Chocolate																		
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																		
Pizzas, quiches and savoury pastries	0	1.30	0	6.06	0.0	2.5	0.13	1.60	1.05	7.97	3.7	5.0	0	1.30	0	6.06	0.0	2.8
Sandwiches and snacks	1.08	1.69	15.48	16.67	3.8	3.3	0.06	0.85	1.34	7.14	1.7	2.7	0	0.71	0	5.60	0.0	1.6
Mixed dishes	5.43	8.74	27.66	36.17	19.2	17.0	0.24	3.72	1.57	13.23	6.7	11.6	0.12	3.45	1.22	12.38	1.3	7.6
Dairy-based desserts	0.01	1.88	0	9.62	0.0	3.6	0.07	2.00	0.94	11.08	1.9	6.2	0.00	1.85	0	9.62	0.0	4.1
Compotes and cooked fruit																		
TOTAL	28.27	51.57	68.73	105.98	100	100	3.51	32.09	8.51	59.91	100	100	9.30	45.59	19.00	85.49	100	100

Food group	Trichothecenes																				
	DAS						DOM-1						FusX						Ver		
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (UB)	P95 (UB)	
Bread and dried bread products	0.15	4.49	1.11	12.14	100	18.5	0	4.14	0	10.03	0	17.2	0.15	4.49	1.11	12.14	100	18.5	4.14	10.03	17.3
Breakfast cereals	0	1.04	0	4.82	0	4.3	0	1.04	0	4.82	0	4.3	0	1.04	0	4.82	0	4.3	1.04	4.82	4.3
Pasta	0	3.42	0	9.80	0	14.1	0	3.42	0	9.80	0	14.2	0	3.42	0	9.80	0	14.1	3.42	9.80	14.3
Rice and wheat products	0	1.89	0	7.08	0	7.8	0	1.89	0	7.08	0	7.8	0	1.89	0	7.08	0	7.8	1.89	7.08	7.9
Croissant-like pastries	0	1.20	0	6.09	0	4.9	0	1.20	0	6.09	0	5.0	0	1.20	0	6.09	0	4.9	1.20	6.09	5.0
Sweet and savoury biscuits and bars	0	0.87	0	3.79	0	3.6	0	0.87	0	3.79	0	3.6	0	0.87	0	3.79	0	3.6	0.87	3.79	3.7
Pastries and cakes	0	2.32	0	8.21	0	9.6	0	2.32	0	8.21	0	9.6	0	2.32	0	8.21	0	9.6	2.32	8.21	9.7
Milk																					
Ultra-fresh dairy products																					
Cheese																					
Eggs and egg products																					
Butter																					
Poultry and game																					
Offal	0	0.04	0	1.71	0	0.2	0	0.04	0	1.71	0	0.2	0	0.04	0	1.71	0	0.2	0.04	1.71	0.2
Delicatessen meats	0	1.57	0	4.61	0	6.5	0	1.57	0	4.61	0	6.5	0	1.57	0	4.61	0	6.5	1.57	4.61	6.6
Vegetables (excluding potatoes)	0	0.37	0	2.70	0	1.5	0	0.37	0	2.70	0	1.5	0	0.37	0	2.70	0	1.5	0.37	2.70	1.5
Fruits																					
Dried fruits, nuts and seeds	0	0.01	0	0.50	0	0.0	0	0.01	0	0.50	0	0.0	0	0.01	0	0.50	0	0.0	0.01	0.50	0.0
Chocolate																					
Non-alcoholic beverages																					
Alcoholic beverages																					
Coffee																					
Other hot beverages																					
Pizzas, quiches and savoury pastries	0	1.30	0	6.06	0	5.3	0	1.30	0	6.06	0	5.4	0	1.30	0	6.06	0	5.3	1.30	6.06	5.4
Sandwiches and snacks	0	0.71	0	5.60	0	2.9	0	0.71	0	5.60	0	3.0	0	0.71	0	5.60	0	2.9	0.71	5.60	3.0
Mixed dishes	0	3.17	0	10.80	0	13.1	0.09	3.37	1.09	12.92	100	14.0	0	3.17	0	10.80	0	13.1	3.17	10.80	13.3
Dairy-based desserts	0	1.85	0	9.62	0	7.6	0	1.85	0	9.62	0	7.7	0	1.85	0	9.62	0	7.6	1.85	9.62	7.7
Compotes and cooked fruit																					
TOTAL	0.15	24.24	1.11	42.01	100	100	0.09	24.10	0.52	42.01	100	100	0.15	24.24	1.11	42.01	100	100	23.90	42.01	100

Food group	Trichothecenes						Zearalenone											
	MAS						ZEA						Alpha zearalano					
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	0.03	4.22	0.22	10.16	4.9	16.6	2.07	6.91	5.01	16.71	22.3	18.6	0.15	4.49	1.11	12.14	100	13.7
Breakfast cereals	0	1.04	0	4.82	0	4.1	0.46	1.60	2.22	7.39	5.0	4.3	0	1.04	0	4.82	0	3.2
Pasta	0	3.42	0	9.80	0	13.4	1.67	5.60	4.90	16.33	18.0	15.0	0	3.42	0	9.80	0	10.4
Rice and wheat products	0.16	2.26	1.38	9.82	23.1	8.9	0.15	1.29	1.07	5.13	1.6	3.5	0	1.89	0	7.08	0	5.8
Croissant-like pastries	0.39	2.12	2.79	12.09	57.4	8.3	0.60	2.00	3.05	10.15	6.5	5.4	0	1.20	0	6.09	0	3.7
Sweet and savoury biscuits and bars	0.10	1.11	0.67	4.82	14.6	4.3	0.67	1.61	3.78	6.60	7.2	4.3	0	0.87	0	3.79	0	2.7
Pastries and cakes	0	2.32	0	8.21	0	9.1	1.06	3.64	3.66	12.37	11.5	9.8	0	2.32	0	8.21	0	7.1
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products							0	0.31	0	1.43	0.0	0.8	0	0.62	0	2.86	0	1.9
Butter																		
Poultry and game							0	0.69	0	2.46	0.0	1.9	0	1.39	0	4.91	0	4.2
Offal	0	0.04	0	1.71	0	0.2	0	0.02	0	0.86	0.0	0.1	0	0.04	0	1.71	0	0.1
Delicatessen meats	0	1.57	0	4.61	0	6.2	0	0.79	0	2.30	0.0	2.1	0	1.57	0	4.61	0	4.8
Vegetables (excluding potatoes)	0	0.37	0	2.70	0	1.5	0.07	0.34	0.68	3.07	0.7	0.9	0	0.37	0	2.70	0	1.1
Fruits							0	1.77	0	6.99	0.0	4.8	0	3.54	0	13.98	0	10.8
Dried fruits, nuts and seeds	0	0.01	0	0.50	0	0.0												
Chocolate							0.24	0.73	1.38	3.22	2.6	2.0	0	0.83	0	2.94	0	2.5
Non-alcoholic beverages							0.05	0.71	0.29	2.13	0.5	1.9	0	1.18	0	3.56	0	3.6
Alcoholic beverages																		
Coffee																		
Other hot beverages							0.06	0.22	0.43	1.47	0.6	0.6	0	0.17	0	1.73	0	0.5
Pizzas, quiches and savoury pastries	0	1.30	0	6.06	0	5.1	0.65	2.16	3.03	10.10	7.0	5.8	0	1.30	0	6.06	0	4.0
Sandwiches and snacks	0	0.71	0	5.60	0	2.8	0.17	0.74	1.40	5.64	1.8	2.0	0	0.71	0	5.60	0	2.2
Mixed dishes	0	3.17	0	10.80	0	12.4	0.40	2.51	1.84	8.76	4.3	6.8	0	3.17	0	10.80	0	9.7
Dairy-based desserts	0	1.85	0	9.62	0	7.2	0.75	2.67	3.73	14.24	8.1	7.2	0	1.85	0	9.62	0	5.6
Composites and cooked fruit							0.22	0.92	2.10	7.00	2.4	2.5	0	0.79	0	6.09	0	2.4
TOTAL	0.69	25.50	2.79	45.44	100	100	9.28	37.21	17.03	62.43	100	100	0.15	32.74	1.11	56.66	100	100

Food group	Zearalenone						Fumonisinis																		
	Alpha zearalenol			Beta zearalanol			FB1			FB2															
	mean (LB)	P95 (UB)	contrib (UB)	mean (LB)	P95 (UB)	contrib (UB)	mean (LB)	P95 (UB)	contrib (LB)	mean (LB)	P95 (UB)	contrib (LB)	mean (LB)	P95 (UB)	contrib (UB)										
Bread and dried bread products	0.15	4.49	1.11	12.14	100	13.7	4.14	10.03	12.8	4.14	10.03	12.8	2.31	11.83	6.07	30.16	17.5	31.5	0.02	2.86	0	6.96	0.4	11.1	
Breakfast cereals	0	1.04	0	4.82	0	3.2	1.04	4.82	3.2	1.04	4.82	3.2	2.03	4.20	13.87	23.08	15.4	11.2	0.65	3.27	3.14	15.71	11.3	12.7	
Pasta	0	3.42	0	9.80	0	10.4	3.42	9.80	10.5	3.42	9.80	10.5													
Rice and wheat products	0	1.89	0	7.08	0	5.8	1.89	7.08	5.8	1.89	7.08	5.8													
Croissant-like pastries	0	1.20	0	6.09	0	3.7	1.20	6.09	3.7	1.20	6.09	3.7													
Sweet and savoury biscuits and bars	0	0.87	0	3.79	0	2.7	0.87	3.79	2.7	0.87	3.79	2.7	5.11	5.56	39.22	39.22	38.8	14.8	2.74	2.74	41.85	41.85	47.9	10.7	
Pastries and cakes	0	2.32	0	8.21	0	7.1	2.32	8.21	7.2	2.32	8.21	7.2													
Milk																									
Ultra-fresh dairy products																									
Cheese																									
Eggs and egg products	0	0.62	0	2.86	0	1.9	0.62	2.86	1.9	0.62	2.86	1.9													
Butter																									
Poultry and game	0	1.39	0	4.91	0	4.2	1.39	4.91	4.3	1.39	4.91	4.3													
Offal	0	0.04	0	1.71	0	0.1	0.04	1.71	0.1	0.04	1.71	0.1													
Delicatessen meats	0	1.57	0	4.61	0	4.8	1.57	4.61	4.8	1.57	4.61	4.8													
Vegetables (excluding potatoes)	0	0.37	0	2.70	0	1.1	0.37	2.70	1.1	0.37	2.70	1.1													
Fruits	0	3.54	0	13.98	0	10.8	3.54	13.98	10.9	3.54	13.98	10.9													
Dried fruits, nuts and seeds																									
Chocolate	0	0.83	0	2.94	0	2.5	0.83	2.94	2.5	0.83	2.94	2.5													
Non-alcoholic beverages	0	1.18	0	3.56	0	3.6	1.18	3.56	3.7	1.18	3.56	3.7	3.71	15.91	16.67	49.28	28.1	42.3	2.29	16.66	9.15	56.88	40.0	64.9	
Alcoholic beverages													0.00	0.03	0.15	2.51	0.0	0.1	0	0.03	0	2.51	0.0	0.1	
Coffee																									
Other hot beverages	0	0.17	0	1.73	0	0.5	0.17	1.73	0.5	0.17	1.73	0.5													
Pizzas, quiches and savoury pastries	0	1.30	0	6.06	0	4.0	1.30	6.06	4.0	1.30	6.06	4.0													
Sandwiches and snacks	0	0.71	0	5.60	0	2.2	0.71	5.60	2.2	0.71	5.60	2.2													
Mixed dishes	0	3.17	0	10.80	0	9.7	3.17	10.80	9.8	3.17	10.80	9.8													
Dairy-based desserts	0	1.85	0	9.62	0	5.6	1.85	9.62	5.7	1.85	9.62	5.7													
Composites and cooked fruit	0	0.79	0	6.09	0	2.4	0.79	6.09	2.5	0.79	6.09	2.5													
TOTAL	0.15	32.74	1.11	56.66	100	100	32.40	54.87	100	32.40	54.87	100	13.18	37.58	43.42	83.09	100	100	5.72	25.67	20.00	65.64	100	100	

Table E9: Estimated exposure (mean and P95) in children aged 15 to 17 years to mycotoxins (ng/kg bw/day) and contribution of foods (%)

Food group	Aflatoxins																	
	AFB1			AFB2			AFG1			AFG2			AFM1					
	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	mean (UB)	P95 (UB)	contrib (UB)	
Bread and dried bread products	0	0.063	0	0.171	0	26.1	0.063	0.171	26.1	0.063	0.171	26.1	0.063	0.171	26.1			
Breakfast cereals	0	0.010	0	0.050	0	4.2	0.010	0.050	4.2	0.010	0.050	4.2	0.010	0.050	4.2			
Pasta	0	0.040	0	0.106	0	16.6	0.040	0.106	16.7	0.040	0.106	16.7	0.040	0.106	16.7			
Rice and wheat products	0	0.021	0	0.083	0	8.5	0.021	0.083	8.5	0.021	0.083	8.5	0.021	0.083	8.5			
Croissant-like pastries	0	0.014	0	0.069	0	5.9	0.014	0.069	6.0	0.014	0.069	6.0	0.014	0.069	6.0			
Sweet and savoury biscuits and bars	0	0.009	0	0.061	0	3.9	0.009	0.061	3.9	0.009	0.061	3.9	0.009	0.061	3.9			
Pastries and cakes	0	0.025	0	0.086	0	10.2	0.025	0.086	10.2	0.025	0.086	10.2	0.025	0.086	10.2			
Milk																0.002	0.008	9.0
Ultra-fresh dairy products																0.011	0.037	40.6
Cheese																0.002	0.009	9.4
Eggs and egg products	0	0.008	0	0.043	0	3.4	0.008	0.043	3.4	0.008	0.043	3.4	0.008	0.043	3.4			
Butter																0.001	0.004	4.5
Poultry and game	0	0.018	0	0.078	0	7.6	0.018	0.078	7.7	0.018	0.078	7.7	0.018	0.078	7.7	0.004	0.016	14.3
Offal	0	0.000	0	0.024	0	0.2	0.000	0.024	0.2	0.000	0.024	0.2	0.000	0.024	0.2	0.000	0.005	0.3
Delicatessen meats	0	0.019	0	0.057	0	7.7	0.019	0.057	7.7	0.019	0.057	7.7	0.019	0.057	7.7	0.003	0.011	12.6
Vegetables (excluding potatoes)	0	0.002	0	0.035	0	0.6	0.002	0.035	0.6	0.002	0.035	0.6	0.002	0.035	0.6			
Fruits																		
Dried fruits, nuts and seeds	0	0.001	0	0.065	0	0.3	0.001	0.065	0.3	0.001	0.065	0.3	0.001	0.065	0.3			
Chocolate	0.0008	0.011	0.007	0.040	100	4.7	0.011	0.039	4.5	0.011	0.039	4.5	0.011	0.039	4.5	0.002	0.008	8.3
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																0.000	0.003	1.0
Pizzas, quiches and savoury pastries																		
Sandwiches and snacks																		
Mixed dishes																		
Dairy-based desserts																		
Compotes and cooked fruit																		
TOTAL	0.0008	0.242	0.004	0.452	100	100	0.241	0.452	100	0.241	0.452	100	0.241	0.452	100	0.026	0.054	100

Exposure and levels of contamination with AFB2, AFG1, AFG2, AFM1, VER, Beta zearealenol and Beta zearealenol, under the LB hypothesis, are not shown in this Table: they are all equal to zero.

Food group	Ochratoxins												Patulin					
	OTA				OTB				PAT									
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	0.136	0.455	0.369	1.220	76.7	25.1	0.008	0.264	0.056	0.743	42.6	16.7						
Breakfast cereals	0.002	0.043	0.032	0.231	1.1	2.4	0.002	0.043	0.032	0.231	10.5	2.7						
Pasta	0.005	0.168	0	0.476	2.7	9.2	0	0.161	0	0.423	0	10.2						
Rice and wheat products	0.011	0.098	0.114	0.420	6.0	5.4	0	0.082	0	0.333	0	5.2						
Croissant-like pastries	0	0.057	0	0.275	0.0	3.2	0	0.057	0	0.275	0	3.6						
Sweet and savoury biscuits and bars	0	0.038	0	0.243	0.0	2.1	0	0.038	0	0.243	0	2.4			0	6.00	0	0.4
Pastries and cakes	0	0.099	0	0.345	0.0	5.4	0	0.099	0	0.345	0	6.3			0	2.96	0	10.34
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game	0	0.074	0	0.313	0.0	4.1	0	0.074	0	0.313	0	4.7						
Offal	0	0.002	0	0.098	0.0	0.1	0	0.002	0	0.098	0	0.1						
Delicatessen meats	0.010	0.086	0.039	0.260	5.6	4.8	0.005	0.079	0.018	0.251	28.9	5.0						
Vegetables (excluding potatoes)	0	0.022	0	0.167	0.0	1.2	0	0.022	0	0.167	0	1.4						
Fruits	0	0.191	0	0.751	0.0	10.5	0	0.191	0	0.751	0	12.1			0.14	6.25	1.49	26.27
Dried fruits, nuts and seeds	0	0.003	0	0.259	0.0	0.2	0	0.003	0	0.259	0	0.2						
Chocolate	0	0.043	0	0.157	0.0	2.4	0	0.043	0	0.157	0	2.7						
Non-alcoholic beverages	0.000	0.037	0	0.117	0.2	2.1	0.000	0.036	0	0.107	0.7	2.3			0.21	11.96	1.43	37.88
Alcoholic beverages	0.003	0.003	0.167	0.183	1.4	0.2	0	0.001	0	0.033	0	0.1						
Coffee	0	0.003	0	0.057	0.0	0.2	0	0.003	0	0.057	0	0.2						
Other hot beverages	0	0.006	0	0.039	0.0	0.3	0	0.006	0	0.039	0	0.4						
Pizzas, quiches and savoury pastries	0	0.080	0	0.383	0.0	4.4	0	0.080	0	0.383	0	5.0						
Sandwiches and snacks	0.005	0.084	0.068	0.360	2.9	4.6	0.003	0.081	0.034	0.354	17.2	5.1						
Mixed dishes	0.006	0.153	0.063	0.531	3.3	8.4	0	0.144	0	0.520	0	9.1						
Dairy-based desserts	0	0.071	0	0.455	0.0	3.9	0	0.071	0	0.455	0	4.5						
Composites and cooked fruit																		
TOTAL	0.177	1.817	0.4321	3.443	100	100	0.018	1.580	0.112	2.951	100	100	0.17	1.23	2.76	12.59	32.3	5.4

Food group	Trichothecenes																	
	DON					DON3					DON15							
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)
Bread and dried bread products	181.0	181.0	498.7	498.7	45.8	45.1	0.12	4.06	0.84	11.27	100	22.2	0	3.78	0	10.26	0	20.4
Breakfast cereals	1.9	2.3	12.2	12.2	0.5	0.6	0	0.60	0	3.00	0	3.3	0.19	1.04	1.32	5.71	60.2	5.6
Pasta	44.2	44.2	116.4	116.4	11.2	11.0	0	2.41	0	6.35	0	13.2	0	2.41	0	6.35	0	13.0
Rice and wheat products	8.0	9.0	69.9	72.0	2.0	2.2	0	1.24	0	5.00	0	6.8	0	1.24	0	5.00	0	6.7
Croissant-like pastries	21.2	21.2	96.7	96.7	5.4	5.3	0	0.86	0	4.13	0	4.7	0	0.86	0	4.13	0	4.6
Sweet and savoury biscuits and bars	10.4	11.0	63.7	68.2	2.6	2.7	0	0.57	0	3.64	0	3.1	0.12	0.66	1.17	3.83	38.1	3.6
Pastries and cakes	38.5	38.8	163.3	163.3	9.7	9.7	0	1.48	0	5.17	0	8.1	0	1.48	0	5.17	0	8.0
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products																		
Butter																		
Poultry and game																		
Offal	0.0	0.0	0.0	1.5	0.0	0.0	0	0.03	0	1.47	0	0.1	0	0.03	0	1.47	0	0.1
Delicatessen meats	0.1	1.3	0.4	4.0	0.0	0.3	0	1.11	0	3.44	0	6.1	0	1.11	0	3.44	0	6.0
Vegetables (excluding potatoes)	0.1	0.6	1.8	6.3	0.0	0.2	0	0.34	0	2.50	0	1.8	0.01	0.35	0.15	2.75	1.7	1.9
Fruits																		
Dried fruits, nuts and seeds	0.0	0.1	0.0	3.9	0.0	0.0	0	0.05	0	3.89	0	0.3	0	0.05	0	3.89	0	0.3
Chocolate																		
Non-alcoholic beverages																		
Alcoholic beverages																		
Coffee																		
Other hot beverages																		
Pizzas, quiches and savoury pastries	36.4	36.4	172.1	172.1	9.2	9.1	0	1.20	0	5.74	0	6.5	0	1.20	0	5.74	0	6.4
Sandwiches and snacks	32.1	32.1	150.1	150.1	8.1	8.0	0	1.15	0	5.00	0	6.3	0	1.15	0	5.00	0	6.2
Mixed dishes	20.3	21.5	76.9	78.8	5.1	5.4	0	2.16	0	7.80	0	11.8	0	2.16	0	7.80	0	11.6
Dairy-based desserts	0.9	1.9	10.7	12.9	0.2	0.5	0	1.07	0	6.82	0	5.8	0	1.07	0	6.82	0	5.7
Composites and cooked fruit																		
TOTAL	395.0	401.4	764.6	769.0	100	100	0.12	18.31	0.84	32.45	100	100	0.31	18.58	1.36	33.26	100	100

Food group	Trichothecenes																		
	NIV				Tz Toxin				HTz Toxin										
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)							
Bread and dried bread products	8.44	10.82	25.09	30.62	39.6	27.9	0.13	4.09	0.84	11.36	5.3	17.2	3.49	11.92	10.21	34.03	48.1	34.1	
Breakfast cereals	0.30	1.31	1.5	6.50	1.4	3.4	0.22	1.11	1.46	6.34	8.8	4.7	0.22	1.11	1.46	6.34	3.0	3.2	
Pasta	5.22	8.03	13.76	21.16	24.5	20.7	1.17	5.14	3.17	13.76	47.6	21.6	2.41	8.03	6.35	21.16	33.2	23.0	
Rice and wheat products	2.66	3.64	24.29	26.12	12.4	9.4	0.25	1.83	1.91	7.86	10.3	7.7	0.25	1.83	1.91	7.86	3.5	5.2	
Croissant-like pastries	0	0.86	0	4.13	0.0	2.2	0	0.86	0	4.13	0.0	3.6	0.05	0.99	0.45	4.80	0.8	2.8	
Sweet and savoury biscuits and bars	0.12	0.66	1.17	3.83	0.6	1.7	0.25	1.16	1.82	7.89	10.3	4.9	0.26	1.18	1.82	7.89	3.6	3.4	
Pastries and cakes	0	1.48	0	5.17	0.0	3.8	0	1.48	0	5.17	0.0	6.2	0.41	2.44	2.66	10.65	5.7	7.0	
Milk																			
Ultra-fresh dairy products																			
Cheese																			
Eggs and egg products																			
Butter																			
Poultry and game																			
Offal	0	0.03	0	1.47	0.0	0.1	0	0.03	0	1.47	0.0	0.1	0	0.03	0	1.47	0.0	0.1	
Delicatessen meats	0	1.11	0	3.44	0.0	2.9	0	1.11	0	3.44	0.0	4.7	0	1.11	0	3.44	0.0	3.2	
Vegetables (excluding potatoes)	0	0.34	0	2.50	0.0	0.9	0	0.34	0	2.50	0.0	1.4	0	0.34	0	2.50	0.0	1.0	
Fruits																			
Dried fruits, nuts and seeds	0.03	0.11	1.94	8.43	0.1	0.3	0	0.05	0	3.89	0.0	0.2	0.05	0.17	3.89	12.96	0.7	0.5	
Chocolate																			
Non-alcoholic beverages																			
Alcoholic beverages																			
Coffee																			
Other hot beverages																			
Pizzas, quiches and savoury pastries	0	1.20	0	5.74	0.0	3.1	0.08	1.39	0.85	6.91	3.4	5.8	0	1.20	0	5.74	0.0	3.4	
Sandwiches and snacks	1.20	2.36	11.69	14.64	5.6	6.1	0.09	1.37	1.54	7.18	3.8	5.8	0	1.15	0	5.00	0.0	3.3	
Mixed dishes	3.36	5.68	19.24	23.68	15.8	14.7	0.17	2.57	1.38	9.13	7.1	10.8	0.11	2.42	1.25	9.02	1.5	6.9	
Dairy-based desserts	0.01	1.09	0	7.14	0.0	2.8	0.08	1.25	0.95	6.85	3.3	5.3	0	1.07	0	6.82	0.0	3.0	
Composites and cooked fruit																			
TOTAL	21.34	38.71	51.25	72.62	100	100	2.46	23.76	6.04	42.19	100	100	7.25	34.96	16.09	66.00	100	100	

Food group	Trichothecenes																				
	DAS						DOM-1						FusX						Ver		
	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	mean (UB)	P95 (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (UB)	P95 (UB)	
Bread and dried bread products	0.12	4.06	0.84	11.27	100	22.2	0	3.78	0	10.26	0	20.8	0.12	4.06	0.84	11.27	100	22.2	3.78	10.26	21.0
Breakfast cereals	0	0.60	0	3.00	0	3.3	0	0.60	0	3.00	0	3.3	0	0.60	0	3.00	0	3.3	0.60	3.00	3.3
Pasta	0	2.41	0	6.35	0	13.2	0	2.41	0	6.35	0	13.3	0	2.41	0	6.35	0	13.2	2.41	6.35	13.4
Rice and wheat products	0	1.24	0	5.00	0	6.8	0	1.24	0	5.00	0	6.8	0	1.24	0	5.00	0	6.8	1.24	5.00	6.9
Croissant-like pastries	0	0.86	0	4.13	0	4.7	0	0.86	0	4.13	0	4.7	0	0.86	0	4.13	0	4.7	0.86	4.13	4.8
Sweet and savoury biscuits and bars	0	0.57	0	3.64	0	3.1	0	0.57	0	3.64	0	3.1	0	0.57	0	3.64	0	3.1	0.57	3.64	3.1
Pastries and cakes	0	1.48	0	5.17	0	8.1	0	1.48	0	5.17	0	8.2	0	1.48	0	5.17	0	8.1	1.48	5.17	8.2
Milk																					
Ultra-fresh dairy products																					
Cheese																					
Eggs and egg products																					
Butter																					
Poultry and game																					
Offal	0	0.03	0	1.47	0	0.1	0	0.03	0	1.47	0	0.1	0	0.03	0	1.47	0	0.1	0.03	1.47	0.1
Delicatessen meats	0	1.11	0	3.44	0	6.1	0	1.11	0	3.44	0	6.1	0	1.11	0	3.44	0	6.1	1.11	3.44	6.2
Vegetables (excluding potatoes)	0	0.34	0	2.50	0	1.8	0	0.34	0	2.50	0	1.9	0	0.34	0	2.50	0	1.8	0.34	2.50	1.9
Fruits																					
Dried fruits, nuts and seeds	0	0.05	0	3.89	0	0.3	0	0.05	0	3.89	0	0.3	0	0.05	0	3.89	0	0.3	0.05	3.89	0.3
Chocolate																					
Non-alcoholic beverages																					
Alcoholic beverages																					
Coffee																					
Other hot beverages																					
Pizzas, quiches and savoury pastries	0	1.20	0	5.74	0	6.5	0	1.20	0	5.74	0	6.6	0	1.20	0	5.74	0	6.5	1.20	5.74	6.6
Sandwiches and snacks	0	1.15	0	5.00	0	6.3	0	1.15	0	5.00	0	6.3	0	1.15	0	5.00	0	6.3	1.15	5.00	6.4
Mixed dishes	0	2.16	0	7.80	0	11.8	0.05	2.27	0	7.83	100	12.5	0	2.16	0	7.80	0	11.8	2.16	7.80	12.0
Dairy-based desserts	0	1.07	0	6.82	0	5.8	0	1.07	0	6.82	0	5.9	0	1.07	0	6.82	0	5.8	1.07	6.82	5.9
Composites and cooked fruit																					
TOTAL	0.12	18.31	0.84	32.45	100	100	0.05	18.15	0	32.34	100	100	0.12	18.31	0.84	32.45	100	100	18.03	32.18	100

Food group	Trichothecenes						Zearalenone											
	MAS			ZEA			Alpha zearalanol											
	mean (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	P95 (UB)	contrib (LB)	contrib (UB)	mean (LB)	P95 (UB)	contrib (LB)	contrib (UB)						
Bread and dried bread products	0.01	3.81	0.10	10.26	3.7	20.2	1.89	6.30	5.13	17.10	26.9	22.2	0.12	4.06	0.84	11.27	100	16.2
Breakfast cereals	0	0.60	0	3.00	0	3.2	0.26	0.91	1.46	4.88	3.7	3.2	0	0.60	0	3.00	0	2.4
Pasta	0	2.41	0	6.35	0	12.8	1.19	3.97	3.17	10.58	16.9	14.0	0	2.41	0	6.35	0	9.6
Rice and wheat products	0.09	1.45	1.05	5.88	26.9	7.7	0.09	0.82	0.54	3.22	1.2	2.9	0	1.24	0	5.00	0	4.9
Croissant-like pastries	0.17	1.26	1.22	6.50	50.1	6.7	0.43	1.43	2.06	6.88	6.1	5.1	0	0.86	0	4.13	0	3.4
Sweet and savoury biscuits and bars	0.07	0.72	0.49	4.44	19.2	3.8	0.39	1.01	2.05	6.07	5.5	3.6	0	0.57	0	3.64	0	2.3
Pastries and cakes	0	1.48	0	5.17	0	7.9	0.68	2.34	2.52	8.40	9.7	8.2	0	1.48	0	5.17	0	5.9
Milk																		
Ultra-fresh dairy products																		
Cheese																		
Eggs and egg products							0	0.25	0	1.29	0.0	0.9	0	0.50	0	2.58	0	2.0
Butter																		
Poultry and game							0	0.55	0	2.35	0.0	2.0	0	1.11	0	4.70	0	4.4
Offal	0	0.03	0	1.47	0	0.1	0	0.01	0	0.73	0.0	0.0	0	0.03	0	1.47	0	0.1
Delicatessen meats	0	1.11	0	3.44	0	5.9	0	0.56	0	1.72	0.0	2.0	0	1.11	0	3.44	0	4.4
Vegetables (excluding potatoes)	0	0.34	0	2.50	0	1.8	0.05	0.29	0.80	3.13	0.7	1.0	0	0.34	0	2.50	0	1.3
Fruits							0	1.48	0	5.63	0.0	5.2	0	2.96	0	11.26	0	11.8
Dried fruits, nuts and seeds	0	0.05	0	3.89	0	0.3												
Chocolate							0.26	0.66	2.16	3.24	3.7	2.3	0	0.64	0	2.36	0	2.6
Non-alcoholic beverages							0.03	0.62	0.28	2.05	0.5	2.2	0	1.08	0	3.20	0	4.3
Alcoholic beverages																		
Coffee																		
Other hot beverages							0.04	0.18	0.50	1.65	0.6	0.6	0	0.17	0	1.18	0	0.7
Pizzas, quiches and savoury pastries	0	1.20	0	5.74	0	6.3	0.60	1.99	2.87	9.57	8.5	7.0	0	1.20	0	5.74	0	4.8
Sandwiches and snacks	0	1.15	0	5.00	0	6.1	0.31	1.29	1.60	5.84	4.3	4.5	0	1.15	0	5.00	0	4.6
Mixed dishes	0	2.16	0	7.80	0	11.5	0.28	1.74	1.28	5.91	4.0	6.1	0	2.16	0	7.80	0	8.6
Dairy-based desserts	0	1.07	0	6.82	0	5.7	0.42	1.52	2.75	9.17	6.0	5.3	0	1.07	0	6.82	0	4.2
Composites and cooked fruit							0.12	0.49	1.45	5.95	1.7	1.7	0	0.41	0	4.73	0	1.6
TOTAL	0.34	18.83	1.36	32.84	100	100	7.04	28.41	12.93	51.56	100	100	0.12	25.12	0.84	44.96	100	100

Food group	Zearalenone						Fumonisinis																		
	Alpha zearalenol			Beta zearalanol			FB1			FB2															
	mean (LB)	P95 (UB)	contrib (LB)	mean (UB)	P95 (UB)	contrib (UB)	mean (LB)	P95 (UB)	contrib (LB)	mean (UB)	P95 (LB)	contrib (UB)													
Bread and dried bread products	0,12	4,06	0,84	11,27	100	16,2	3,78	10,26	15,2	3,78	10,26	15,2	2,17	11,04	6,69	33,45	24,2	36,1	0,02	2,60	0	7,31	0,5	12,4	
Breakfast cereals	0	0,60	0	3,00	0	2,4	0,60	3,00	2,4	0,60	3,00	2,4	1,41	2,57	8,89	12,77	15,8	8,4	0,38	1,93	1,95	10,00	10,5	9,2	
Pasta	0	2,41	0	6,35	0	9,6	2,41	6,35	9,7	2,41	6,35	9,7													
Rice and wheat products	0	1,24	0	5,00	0	4,9	1,24	5,00	5,0	1,24	5,00	5,0													
Croissant-like pastries	0	0,86	0	4,13	0	3,4	0,86	4,13	3,5	0,86	4,13	3,5													
Sweet and savoury biscuits and bars	0	0,57	0	3,64	0	2,3	0,57	3,64	2,3	0,57	3,64	2,3	2,22	2,53	24,00	24,54	24,7	8,3	1,19	1,19	26,37	26,37	32,7	5,6	
Pastries and cakes	0	1,48	0	5,17	0	5,9	1,48	5,17	6,0	1,48	5,17	6,0													
Milk																									
Ultra-fresh dairy products																									
Cheese																									
Eggs and egg products	0	0,50	0	2,58	0	2,0	0,50	2,58	2,0	0,50	2,58	2,0													
Butter																									
Poultry and game	0	1,11	0	4,70	0	4,4	1,11	4,70	4,5	1,11	4,70	4,5													
Offal	0	0,03	0	1,47	0	0,1	0,03	1,47	0,1	0,03	1,47	0,1													
Delicatessen meats	0	1,11	0	3,44	0	4,4	1,11	3,44	4,5	1,11	3,44	4,5													
Vegetables (excluding potatoes)	0	0,34	0	2,50	0	1,3	0,34	2,50	1,4	0,34	2,50	1,4													
Fruits	0	2,96	0	11,26	0	11,8	2,96	11,26	11,9	2,96	11,26	11,9													
Dried fruits, nuts and seeds																									
Chocolate	0	0,64	0	2,36	0	2,6	0,64	2,36	2,6	0,64	2,36	2,6													
Non-alcoholic beverages	0	1,08	0	3,20	0	4,3	1,08	3,20	4,3	1,08	3,20	4,3	3,07	13,82	12,36	45,67	34,2	45,2	2,02	14,92	8,79	49,29	55,5	71,0	
Alcoholic beverages													0,06	0,45	1,90	11,39	0,6	1,5	0	0,23	0	6,67	0,0	1,1	
Coffee																									
Other hot beverages	0	0,17	0	1,18	0	0,7	0,17	1,18	0,7	0,17	1,18	0,7													
Pizzas, quiches and savoury pastries	0	1,20	0	5,74	0	4,8	1,20	5,74	4,8	1,20	5,74	4,8													
Sandwiches and snacks	0	1,15	0	5,00	0	4,6	1,15	5,00	4,6	1,15	5,00	4,6													
Mixed dishes	0	2,16	0	7,80	0	8,6	2,16	7,80	8,7	2,16	7,80	8,7													
Dairy-based desserts	0	1,07	0	6,82	0	4,2	1,07	6,82	4,3	1,07	6,82	4,3													
Composites and cooked fruit	0	0,41	0	4,73	0	1,6	0,41	4,73	1,7	0,41	4,73	1,7													
TOTAL	0,12	25,12	0,84	44,96	100	100	24,84	44,09	100	24,84	44,09	100	8,98	30,60	29,22	74,29	100	100	3,63	21,02	14,72	60,44	100	100	

Table F4: Estimated intake (mean and P95) of phytoestrogens (ng/day) by women of childbearing age (18-45 years) and contribution of foods (%)

Food group	Food	Biochanin A			Daidzein			Equol			Formononetin		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Misc. foods	tofu	88.56	72857.14	32.981	18858.77	1514928.57	13.068	0	0	68.01	55954.29	6.255	
Non-alcoholic beverages	soy or soy milk (tonyu) drink	70.976	13928.57	26.433	79634.81	15627857.14	55.182	0	0	428.41	84072.86	39.402	
Seasonings and sauces	ketchup	0	0	0	0	0	0	0	0	0	0	0	
	mayonnaise	0	0	0	22.36	188.57	0.015	0	0	0	0	0	
	soy sauce	0	0	0	650.36	49421.43	0.451	0	0	0	0	0	
Dairy-based desserts	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	
	chocolate flavoured soy dessert	0	0	0	12364.52	1422571.43	8.568	0	0	85.23	9805.71	7.839	
	soy dessert with fruit	101.227	26285.71	37.699	12510.28	3248571.43	8.669	70.42	18285.71	252.36	65531.43	23.21	
	plain soy dessert	0	0	0	7897.52	1645714.29	5.473	0	0	17.85	3720	1.642	
Milk	semi-skimmed milk	0	0	0	95.08	6375	0.066	2831.02	18302.14	186.3	1682.5	17.134	
	skimmed milk	0	0	0	9.42	367.5	0.007	428.7	18985.71	11.708	857.14	1303	
	full fat milk	7.752	700	2.887	0.62	32.68	0	155.83	9750	4.256	894.79	0.939	
	artichoke	0	0	0	0	0	0	0	0	0	0	0	
	carrot	0	0	0	0	0	0	0	0	0	0	0	
	celery	0	0	0	0.09	10.71	0	0	0	0	0	0	
	celeriac	0	0	0	0.65	51.43	0	0	0	0	0	0	
	cauliflower	0	0	0	0	0	0	0	0	0	0	0	
	raw cucumber	0	0	0	1.93	35.39	0.001	0	0	0	0	0	
	courgette	0	0	0	0	0	0	0	0	0	0	0	
Vegetables (excluding potatoes)	endive	0	0	0	0	0	0	0	0	0	0	0	
	spinach	0	0	0	0.66	53.44	0	0	0	0	0	0	
	canned beansprouts	0	0	0	208.02	58928.57	0.144	0	0	0	0	0	
	beans	0	0	0	5154	23198.88	3.571	0	0	0	0	0	
	sweetcorn	0	0	0	0	0	0	0	0	0	0	0	
	turnip	0	0	0	0	0	0	0	0	0	0	0	
	onion	0	0	0	0	0	0	0	0	0	0	0	
	peas	0	0	0	16.45	202.5	0.011	0	0	0	0	0	
	leek	0	0	0	0	0	0	0	0	0	0	0	
	bell pepper	0	0	0	0	0	0	0	0	0	0	0	
	radish	0	0	0	0	0	0	0	0	0	0	0	
	lettuce	0	0	0	0	0	0	0	0	0	0	0	
	tomato	0	0	0	0	0	0	0	0	0	0	0	
Pulses	lentils	0	0	0	0	0	0	0	0	0	0	0	
	scrambled egg, omelette	0	0	0	595.85	4340	0.413	109.66	1659.43	2.995	0	0	
Eggs and egg products	hard-boiled egg	0	0	0	303.82	2126.78	0.211	66	1062.64	1.803	0	0	
	soy-based vegetable cutlets	0	0	0	5987.43	1614285.71	4.149	0	0	24.74	6671.43	2.276	
TOTAL		268.514	0	100	144312.66	35551	100	3661.64	16033.93	100	1087.29	100	

Food group	Food	Genistein			Glycitein			Matairesinol			Secoisolariciresinol		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Misc. foods	tofu	24999.5	20566842.86	12.92	3201.43	2633785.71	11.827	55.252	45455.57	5.608	360.44	296528.57	3.276
Non-alcoholic beverages	soy or soy milk (tonyuu) drink	112262.38	22030821.43	58.019	19830.63	3891642.86	73.259	740.277	145275	75.141	1281.82	251550	11.65
Seasonings and sauces	ketchup	0	0	0	0	0	0	0	0	0	15.42	563.14	0.14
	mayonnaise	0	0	0	3.18	26.79	0.012	0	0	0	267.21	2253.21	2.429
	soy sauce	183.01	13907.14	0.095	145.79	11078.57	0.539	0	0	0	0	0	0
Dairy-based desserts	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
	chocolate flavoured soy dessert	16367.65	1883142.86	8.459	605.93	69714.29	2.238	0	0	0	637.27	7320	5.792
	soy dessert with fruit	16262.27	4222857.14	8.405	655.77	170285.71	2.433	0	0	0	981.08	254760	8.917
Milk	plain soy dessert	10525.91	2193428.57	5.44	287.93	60000	1.064	133.168	27750	13.517	571.95	119185.71	5.198
	semi-skimmed milk	65.13	585	0.034	755.84	5622.43	2.792	15.423	170.1	1.565	147.26	232.5	1.338
	skimmed milk	1.27	108.04	0.001	97.74	6772.5	0.361	0.433	2753	0.044	0	0	0
Vegetables (excluding potatoes)	full fat milk	0.48	35.54	0	21.58	1794.38	0.08	0.06	3.96	0.006	10.54	950	0.096
	artichoke	0	0	0	0	0	0	0	0	0	100.74	3776.91	0.916
	carrot	0	0	0	0	0	0	0	0	0	499.33	3531.75	4.538
	celery	0	0	0	0	0	0	0	0	0	12.72	1597.14	0.116
	celeriac	0	0	0	0	0	0	0	0	0	27.03	2145.71	0.246
	cauliflower	0	0	0	0	0	0	0	0	0	162.8	2579.51	1.48
	raw cucumber	0	0	0	0	0	0	0	0	0	20.08	340.12	0.182
	courgette	0	0	0	0	0	0	0	0	0	280.64	3984	2.551
	endive	0	0	0	0	0	0	0	0	0	42.66	848.96	0.388
	spinach	0	0	0	0	0	0	0	0	0	0	0	0
	canned beansprouts	188.04	53270	0.097	0	0	0	0	0	0	47.41	13431.79	0.431
	beans	5332.62	32963.9	2.859	460.55	2846.47	1.701	0	0	0	3989.32	20396.97	36.259
	sweetcorn	0	0	0	0	0	0	0	0	0	11.22	301.29	0.102
turnip	0	0	0	0	0	0	0	0	0	16.37	993.75	0.149	
onion	0	0	0	0	0	0	0	0	0	361.65	4886.43	3.287	
peas	0.86	18.38	0	48.43	645	0.179	0	0	0	0	0	0	
leek	0	0	0	0	0	0	0	0	0	136.27	5771.41	1.239	
bell pepper	0	0	0	0	0	0	0	0	0	71.83	2326.41	0.653	
radish	0	0	0	0	0	0	0	0	0	0	0	0	
lettuce	0	0	0	0	0	0	0	0	0	0	0	0	
tomato	29.23	171.59	0.015	0	0	0	0	0	0	0	109.74	635.39	0.997
Pulses	lentils	0	0	0	0	0	0	0	0	0	112.29	1705.49	1.021
Eggs and egg products	scrambled egg, omelette	231.58	1542.86	0.12	76.85	455	0.284	0	0	0	154.55	1458	1.405
	hard-boiled egg	115.12	854.59	0.059	39.73	280.06	0.147	0	0	0	16.38	184.19	0.149
Mixed dishes	soy-based vegetable cutlets	6726.58	1813571.43	3.476	837.71	225857.14	3.095	40.577	10940	4.119	275.44	74261.43	2.503
TOTAL		193491.65	37554.51	100	27069.09	9446.73	100	985.189	170.1	100	11002.34	27558.18	100

Food group	Food	Coumestrol			Lignans			Isoflavones			Isoflavones+ Coumestrol+Equol		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Misc. foods	tofu	0	0	0	415.69	341984.14	3.468	47216.27	38844368.57	12.893	47216.27	38844368.57	12.707
Non-alcoholic beverages	soy or soy milk (tonyuu) drink	0	0	0	2022.1	396825	16.868	212227.21	41648322.86	57.949	212227.21	41648322.86	57.116
Seasonings and sauces	ketchup	0	0	0	15.42	563.14	0.129	0	0	0	0	0	0
	mayonnaise	0	0	0	267.21	2253.21	2.229	25.54	215.36	0.007	25.54	215.36	0.007
	soy sauce	0	0	0	0	0	0	979.15	74407.14	0.267	979.15	74407.14	0.264
Dairy-based desserts	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
	chocolate flavoured soy dessert	0	0	0	637.27	73320	5.316	294233.33	3382334.29	8.034	294233.33	3382334.29	7.919
	soy dessert with fruit	239.86	62285.71	14.244	981.08	254760	8.184	29781.92	7733531.43	8.132	30092.2	7814102.86	8.099
Milk	plain soy dessert	0	0	0	705.12	146935.71	5.882	18729.22	3902862.86	5.114	18729.22	3902862.86	5.04
	semi-skimmed milk	0	0	0	162.68	2413.75	1.357	1102.35	7971.25	0.301	3933.37	24416	1.059
	skimmed milk	0	0	0	0.43	27.53	0.004	122.6	7332.5	0.033	551.31	26162.5	0.148
Vegetables (excluding potatoes)	full fat milk	0.04	2.36	0.002	10.6	950	0.088	40.64	3097.92	0.011	196.51	11530	0.053
	artichoke	0	0	0	100.74	3776.91	0.84	0	0	0	0	0	0
	carrot	0	0	0	499.33	3531.75	4.165	0	0	0	0	0	0
	celery	0	0	0	12.72	15971.4	0.106	0.09	10.71	0	0.09	10.71	0
	celeriac	0	0	0	27.03	2145.71	0.225	0.65	51.43	0	0.65	51.43	0
	cauliflower	0	0	0	162.8	2579.51	1.358	0	0	0	0	0	0
	raw cucumber	0	0	0	20.08	340.12	0.167	1.93	35.39	0.001	1.93	35.39	0.001
	courgette	0	0	0	280.64	3984	2.341	0	0	0	0	0	0
	endive	0	0	0	42.66	848.96	0.356	0	0	0	0	0	0
	spinach	0	0	0	0	0	0	0.66	53.44	0	0.66	53.44	0
	canned beansprouts	305.09	86428.57	18.118	47.41	13431.79	0.396	396.06	112198.57	0.108	701.15	198627.14	0.189
	beans	1138.93	597139	67.636	3989.32	20396.97	33.279	11147.17	570337.6	3.044	12286.1	64606.17	3.306
	sweetcorn	0	0	0	11.22	301.29	0.094	0	0	0	0	0	0
turnip	0	0	0	16.37	993.75	0.137	0	0	0	0	0	0	
onion	0	0	0	361.65	4886.43	3.017	0	0	0	0	0	0	
peas	0	0	0	0	0	0	65.74	810.86	0.018	65.74	810.86	0.018	
leek	0	0	0	136.27	5771.41	1.137	0	0	0	0	0	0	
bell pepper	0	0	0	71.83	2326.41	0.599	0	0	0	0	0	0	
radish	0	0	0	0	0	0	0	0	0	0	0	0	
lettuce	0	0	0	109.74	635.39	0.915	0	0	0	0	0	0	
tomato	0	0	0	280.88	2352.64	2.343	29.23	171.59	0.008	29.23	171.59	0.008	
Pulses	lentils	0	0	0	112.29	1705.49	0.937	0	0	0	0	0	0
Eggs and egg products	scrambled egg, omelette	0	0	0	154.55	1458	1.289	904.28	6195	0.247	1013.94	7362.86	0.273
	hard-boiled egg	0	0	0	16.38	184.19	0.137	458.67	3403.44	0.125	524.67	3403.44	0.141
Mixed dishes	soy-based vegetable cutlets	0	0	0	316.01	85201.43	2.636	13576.46	3660385.71	3.707	13576.46	3660385.71	3.654
TOTAL		1683.92	6500	100	11987.53	27558.18	100	366229.19	74775.66	100	371574.75	86082.13	100

Table F5: Estimated intake (mean and P95) of phytoestrogens (ng/day) in elderly people (65 years and older) and contribution of foods (%)

Food group	Food	Biochanin A			Daidzein			Equol			Formononetin		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Misc. foods	tofu	18.828	10714.29	7.203	4009.53	22816071.14	2.368	0	0	14.46	8228.57	1.207	
Non-alcoholic beverages	soy or soy milk (tonyu) drink	85.134	10442.86	32.567	95520.25	11716885.71	56.418	0	0	513.87	63033.09	42.884	
Seasonings and sauces	ketchup	0	0	0	0	0	0	0	0	0	0	0	
	mayonnaise	0	0	0	11.58	169.71	0.007	0	0	0	0	0	
	soy sauce	0	0	0	491.67	31450	0.29	0	0	0	0	0	
Dairy-based desserts	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	
	chocolate flavoured soy dessert	0	0	0	7597.1	1778214.29	4.487	0	0	52.37	12257.14	4.37	
	soy dessert with fruit	152.409	27928.57	58.302	18835.82	34516071.14	11.125	106.02	19428.57	379.96	69627.14	31.709	
	plain soy dessert	0	0	0	27077.58	1920000	15.993	0	0	61.21	4340	5.108	
	semi-skimmed milk	0	0	0	51.79	61793	0.031	1726.25	16394	81.42	945.93	6.795	
Milk	skimmed milk	0	0	0	12.1	504	0.007	656.2	31896	24.88	1440	2.076	
	full fat milk	3.941	1430	1.508	7.23	626.79	0.004	291	19917.86	41.94	2231.25	3.5	
Vegetables (excluding potatoes)	artichoke	0	0	0	0	0	0	0	0	0	0	0	
	carrot	0	0	0	0	0	0	0	0	0	0	0	
	celery	0	0	0	0.35	17.55	0	0	0	0	0	0	
	celeriac	0	0	0	1.44	51.43	0.001	0	0	0	0	0	
	cauliflower	0	0	0	0	0	0	0	0	0	0	0	
	raw cucumber	0	0	0	2.38	88.47	0.001	0	0	0	0	0	
	courgette	0	0	0	0	0	0	0	0	0	0	0	
	endive	0	0	0	0	0	0	0	0	0	0	0	
	spinach	0	0	0	1.56	89.07	0.001	0	0	0	0	0	
	canned beansprouts	0	0	0	30.19	21428.57	0.018	0	0	0	0	0	
	beans	0	0	0	8068.69	32569.27	4.766	0	0	0	0	0	
	sweetcorn	0	0	0	0	0	0	0	0	0	0	0	
	turnip	0	0	0	0	0	0	0	0	0	0	0	
	onion	0	0	0	0	0	0	0	0	0	0	0	
	peas	0	0	0	19.11	154.29	0.011	0	0	0	0	0	
	leek	0	0	0	0	0	0	0	0	0	0	0	
	bell pepper	0	0	0	0	0	0	0	0	0	0	0	
	radish	0	0	0	0	0	0	0	0	0	0	0	
	lettuce	0	0	0	0	0	0	0	0	0	0	0	
	tomato	0	0	0	0	0	0	0	0	0	0	0	
Pulses	lentils	0	0	0	0	0	0	0	0	0	0	0	
	scrambled egg, omelette	0	0	0	900.9	3875.14	0.532	162.95	1479.43	5.321	0	0	
Eggs and egg products	hard-boiled egg	0	0	0	358.79	2159.19	0.212	107.14	1062.64	3.499	0	0	
	soy-based vegetable cutlets	0	0	0	5597.38	807142.86	3.306	0	0	23.13	3335.71	1.93	
Mixed dishes		261.413	0	100	169307.76	807250.52	100	3062.44	14512.64	1198.27	2451.43	100	
TOTAL													

Food group	Food	Genistein			Glycitein			Matairesinol			Secoisolaricresinol		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Misc. foods	tofu	535.1	3024535.71	2.336	680.65	387321.43	2.32	11.75	6684.64	0.833	76.63	43607.14	0.475
Non-alcoholic beverages	soy or soy milk (tonyuu) drink	134656.31	1651746714	59.185	23786.42	2917734.29	81.08	887.95	108919	62.993	1537.52	188598	9.53
	ketchup	0	0	0	0	0	0	0	0	0	0.64	62.57	0.004
Seasonings and sauces	mayonnaise	0	0	0	1.65	24.11	0.006	0	0	0	138.41	2027.89	0.858
	soy sauce	138.36	8850	0.061	110.22	7050	0.376	0	0	0	0	0	0
	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
Dairy-based desserts	chocolate flavoured soy dessert	10056.74	2353928.57	4.42	372.3	87142.86	1.269	0	0	0	391.56	91650	2.427
	soy dessert with fruit	24484.91	4486785.71	10.762	987.35	180928.57	3.366	0	0	0	1477.15	270682.5	9.156
	plain soy dessert	36089.33	2559000	15.862	987.2	70000	3.365	456.58	32375	32.391	1961.01	139050	12.155
	semi-skimmed milk	27.58	367.54	0.012	344.98	3585.62	1.176	8.62	182.25	0.612	41.75	301.29	0.259
Milk	skimmed milk	0.93	73.8	0	78.74	6219.64	0.268	0.17	12.18	0.012	0	0	0
	full fat milk	6.11	506.25	0.003	66.83	5507.14	0.228	0.67	67.5	0.048	5.98	1940.71	0.037
	artichoke	0	0	0	0	0	0	0	0	0	293.85	5140.8	1.821
	carrot	0	0	0	0	0	0	0	0	0	667.59	3876.29	4.138
	celery	0	0	0	0	0	0	0	0	0	56.05	2249	0.347
	celiac	0	0	0	0	0	0	0	0	0	60.18	2145.71	0.373
	cauliflower	0	0	0	0	0	0	0	0	0	154.54	2832	0.958
	raw cucumber	0	0	0	0	0	0	0	0	0	8.91	291.53	0.055
	courgette	0	0	0	0	0	0	0	0	0	319.8	2845.71	1.982
	endive	0	0	0	0	0	0	0	0	0	174.59	1431.96	1.082
	spinach	0	0	0	0	0	0	0	0	0	0	0	0
Vegetables (excluding potatoes)	canned beansprouts	27.29	19370.91	0.012	0	0	0	0	0	0	6.88	4884.29	0.043
	beans	8951.99	40027.59	3.935	793.18	4171.52	2.704	0	0	0	6792.59	31001.85	42.102
	sweetcorn	0	0	0	0	0	0	0	0	0	2.98	112.24	0.018
	turnip	0	0	0	0	0	0	0	0	0	16.16	1624.29	0.1
	onion	0	0	0	0	0	0	0	0	0	282.33	2662.86	1.75
	peas	1.32	28.88	0.001	66.55	611.25	0.227	0	0	0	0	0	0
	leek	0	0	0	0	0	0	0	0	0	301.66	6518.57	1.87
	bell pepper	0	0	0	0	0	0	0	0	0	40.31	1493.47	0.25
	radish	0	0	0	0	0	0	0	0	0	0	0	0
	lettuce	0	0	0	0	0	0	0	0	0	232.61	1111.92	1.442
	tomato	33.88	200.19	0.015	0	0	0	0	0	0	359.61	2008.93	2.229
Pulses	lentils	0	0	0	0	0	0	0	0	0	186.38	1705.49	1.155
Eggs and egg products	scrambled egg, omelette	34.88	1439.11	0.153	106.36	452.14	0.363	0	0	0	198.12	1215	1.228
	hard-boiled egg	135.31	811.56	0.059	48	326.74	0.164	0	0	0	22.39	257.09	0.139
Mixed dishes	soy-based vegetable cutlets	6288.39	906785.71	2.764	783.14	112928.57	2.669	37.93	5470	2.691	257.49	3730.71	1.596
TOTAL		227519.56	906807.32	100	29336.99	30150	100	1409.61	387	100	16133.56	62822.42	100

Food group	Food	Coumestrol		Lignans		Isoflavones		Isoflavones+ Coumestrol+Equol					
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib			
Misc. foods	tofu	0	0	0	88.38	50291.79	0.504	10038.56	5712407.14	2.348	10038.56	5712407.14	2.318
Non-alcoholic beverages	soy or soy milk (tonyuu) drink	0	0	0	2425.47	297517	13.826	254561.98	31225563.09	59.529	254561.98	31225563.09	58.772
	ketchup	0	0	0	0.64	62.57	0.004	0	0	0	0	0	0
Seasonings and sauces	mayonnaise	0	0	0	138.41	2027.89	0.789	13.23	193.82	0.003	13.23	193.82	0.003
	soy sauce	0	0	0	0	0	0	740.24	47350	0.173	740.24	47350	0.171
	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
Dairy-based desserts	chocolate flavoured soy dessert	0	0	0	391.56	91650	2.232	18078.51	4231542.86	4.228	18078.51	4231542.86	4.174
	soy dessert with fruit	361.14	66178.57	14.743	1471.15	270682.5	8.42	44840.44	8216877.14	10.486	45307.61	8302484.29	10.46
	plain soy dessert	0	0	0	2417.59	171425	13.781	64215.32	4553340	15.017	64215.32	4553340	14.826
	semi-skimmed milk	0	0	0	50.38	387	0.287	505.76	4704.56	0.118	2232.01	20928	0.515
Milk	skimmed milk	0	0	0	0.17	12.18	0.001	116.65	6733.93	0.027	772.85	34416	0.178
	full fat milk	0.01	4.67	0.001	6.65	1940.71	0.038	126.06	7710	0.029	417.06	23554.14	0.096
	artichoke	0	0	0	293.85	5140.8	1.675	0	0	0	0	0	0
	carrot	0	0	0	667.59	3876.29	3.805	0	0	0	0	0	0
	celery	0	0	0	56.05	2249	0.32	0.35	17.55	0	0.35	17.55	0
	celeriac	0	0	0	60.18	2145.71	0.343	1.44	51.43	0	1.44	51.43	0
	cauliflower	0	0	0	154.54	2832	0.881	0	0	0	0	0	0
	raw cucumber	0	0	0	8.91	291.53	0.051	2.38	88.47	0.001	2.38	88.47	0.001
	courgette	0	0	0	319.8	2845.71	1.823	0	0	0	0	0	0
	endive	0	0	0	174.59	1431.96	0.995	0	0	0	0	0	0
	spinach	0	0	0	0	0	0	1.56	89.07	0	1.56	89.07	0
Vegetables (excluding potatoes)	canned beansprouts	44.28	31428.57	1.808	6.88	4884.29	0.039	57.49	40799.48	0.013	101.77	72228.05	0.023
	beans	2033.93	9195.07	83.028	6792.59	31001.85	38.719	17813.86	69255.28	4.166	19847.79	78450.35	4.582
	sweetcorn	0	0	0	2.98	112.24	0.017	0	0	0	0	0	0
	turnip	0	0	0	16.16	1624.29	0.092	0	0	0	0	0	0
	onion	0	0	0	282.33	2662.86	1.609	0	0	0	0	0	0
	peas	0	0	0	0	0	0	86.98	928.5	0.02	86.98	928.5	0.02
	leek	0	0	0	301.66	6518.57	1.72	0	0	0	0	0	0
	bell pepper	0	0	0	40.31	1493.47	0.23	0	0	0	0	0	0
	radish	0	0	0	0	0	0	0	0	0	0	0	0
	lettuce	0	0	0	232.61	1111.92	1.326	0	0	0	0	0	0
Pulses	tomato	0	0	0	359.61	2008.93	2.05	33.88	200.19	0.008	33.88	200.19	0.008
	lentils	0	0	0	186.38	1705.49	1.062	0	0	0	0	0	0
Eggs and egg products	scrambled egg, omelette	0	0	0	198.12	1215	1.129	1356.06	6062.57	0.317	1519	6626.57	0.351
	hard-boiled egg	0	0	0	22.39	257.09	0.128	542.1	3042.01	0.127	649.24	3469.31	0.15
Mixed dishes	soy-based vegetable cutlets	0	0	0	295.43	42600.71	1.684	12692.04	1830192.86	2.968	12692.04	1830192.86	2.93
TOTAL		2449.68	9195.07	100	17543.16	66058.79	100	427624	1830414.98	100	433136.11	1831418.2	100

Table F6: Estimated intake (mean and P95) of phytoestrogens (ng/day) in children aged 3 to 6 years and contribution of foods (%)

Food group	Food	Biochanin A			Daidzein			Equol			Formononetin		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Misc. foods	tofu	8.783	2857.14	8.309	1870.4	608428.57	2.692	0	0	6.746	2194.29	0.77	
Non-alcoholic beverages	soy or soy milk (tonyu) drink	46.267	6428.57	43.769	51911.74	7212857.14	74.713	0	0	279.269	38802.86	31.872	
	ketchup	0	0	0	0	0	0	0	0	0	0	0	
Seasonings and sauces	mayonnaise	0	0	0	12.39	125.71	0.018	0	0	0	0	0	
	soy sauce	0	0	0	199.29	26957.14	0.287	0	0	0	0	0	
	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	
Dairy-based desserts	chocolate flavoured soy dessert	0	0	0	1639.95	533464.29	2.36	0	0	11.304	3677.14	1.29	
	soy dessert with fruit	30.302	9857.14	28.666	3744.97	1218214.29	5.39	0.3	6857.14	75.545	24574.29	8.622	
	plain soy dessert	0	0	0	5837.07	960000	8.401	0	0	13.194	2170	1.506	
	semi-skimmed milk	0	0	0	181.9	708.33	0.262	5842.1	17330.8	379.172	1682.5	43.273	
Milk	skimmed milk	0	0	0	4.26	324	0.006	169.14	13024.8	2.404	6.516	546.6	
	full fat milk	20.355	1485	19.256	10.47	555.54	0.015	867.28	20683.93	12.326	3108.57	11.924	
Vegetables (excluding potatoes)	artichoke	0	0	0	0	0	0	0	0	0	0	0	
	carrot	0	0	0	0	0	0	0	0	0	0	0	
	celery	0	0	0	0.03	5.36	0	0	0	0	0	0	
	celeriatic	0	0	0	0.09	6.43	0	0	0	0	0	0	
	cauliflower	0	0	0	0	0	0	0	0	0	0	0	
	raw cucumber	0	0	0	1.44	20.64	0.002	0	0	0	0	0	
	courgette	0	0	0	0	0	0	0	0	0	0	0	
	endive	0	0	0	0	0	0	0	0	0	0	0	
	spinach	0	0	0	0.5	17.81	0.001	0	0	0	0	0	
	beans	0	0	0	3435.31	14738.93	4.944	0	0	0	0	0	
	sweetcorn	0	0	0	0	0	0	0	0	0	0	0	
	turnip	0	0	0	0	0	0	0	0	0	0	0	
	onion	0	0	0	0	0	0	0	0	0	0	0	
	peas	0	0	0	15.36	135	0.022	0	0	0	0	0	
	leek	0	0	0	0	0	0	0	0	0	0	0	
	bell pepper	0	0	0	0	0	0	0	0	0	0	0	
	radish	0	0	0	0	0	0	0	0	0	0	0	
lettuce	0	0	0	0	0	0	0	0	0	0	0		
tomato	0	0	0	0	0	0	0	0	0	0	0		
Pulses	lentils	0	0	0	0	0	0	0	0	0	0	0	
	scrambled egg, omelette	0	0	0	446.23	3329.49	0.642	100.65	1627.37	1.43	0	0	
Eggs and egg products	hard-boiled egg	0	0	0	169.94	1073.83	0.245	36.01	531.32	0.512	0	0	
	TOTAL	105.708	0	100	69481.34	15081.28	100	7036.26	18380.36	100	876.222	2295	

Food group	Food	Genistein			Glycitein			Matairesinol			Secoisolaricresinol		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Misc. foods	tofu	2479.43	806542.86	2.615	317.52	103285.71	1.985	5.48	1782.57	0.886	35.75	11628.57	0.572
Non-alcoholic beverages	soy or soy milk (tony) drink	7318.075	10168071.43	77172	12927.04	1796142.86	80.819	482.566	67050	78.033	835.58	116100	13.374
	ketchup	0	0	0	0	0	0	0	0	0	30.61	406.71	0.49
Seasonings and sauces	mayonnaise	0	0	0	1.76	17.86	0.011	0	0	0	148.06	1502.14	2.37
	soy sauce	56.08	7585.71	0.059	44.67	6042.86	0.279	0	0	0	0	0	0
	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
Dairy-based desserts	chocolate flavoured soy dessert	2170.9	706178.57	2.289	80.37	26142.86	0.502	0	0	0	84.52	27495	1.353
	soy dessert with fruit	4868.13	158371.43	5.134	196.31	63857.14	1.227	0	0	0	293.69	95535	4.701
	plain soy dessert	7779.71	1279500	8.204	212.81	35000	1.33	98.424	16187.5	15.916	422.73	69525	6.766
Milk	semi-skimmed milk	130.01	585	0.137	1503.26	5466.25	9.398	30.355	198.41	4.909	313.51	2312.5	5.018
	skimmed milk	1.21	61.5	0.001	33	2891.4	0.206	0.705	58.57	0.114	0	0	0
	full fat milk	8.49	604.11	0.009	252.66	7801.79	1.58	0.882	55.71	0.143	27.93	2015.36	0.447
	artichoke	0	0	0	0	0	0	0	0	0	57.73	3118.5	0.924
	carrot	0	0	0	0	0	0	0	0	0	362.53	2225.89	5.803
	celery	0	0	0	0	0	0	0	0	0	4.21	798.57	0.067
	celiac	0	0	0	0	0	0	0	0	0	3.74	268.21	0.06
	cauliflower	0	0	0	0	0	0	0	0	0	91.65	1770	1.467
	raw cucumber	0	0	0	0	0	0	0	0	0	9.2	145.76	0.147
	courgette	0	0	0	0	0	0	0	0	0	88.67	1308.21	1.419
	endive	0	0	0	0	0	0	0	0	0	7.32	184.29	0.117
	spinach	0	0	0	0	0	0	0	0	0	0	0	0
Vegetables (excluding potatoes)	beans	3897.61	19820.73	4.11	305.86	1472.3	1.912	0	0	0	2845.98	12238.18	45.553
	sweetcorn	0	0	0	0	0	0	0	0	0	9.81	224.47	0.157
	turnip	0	0	0	0	0	0	0	0	0	0.05	22.29	0.001
	onion	0	0	0	0	0	0	0	0	0	130.8	2004.17	2.094
	peas	0.73	10.5	0.001	46.18	525	0.289	0	0	0	0	0	0
	leek	0	0	0	0	0	0	0	0	0	51.02	2333.79	0.817
	bell pepper	0	0	0	0	0	0	0	0	0	8.23	334.32	0.132
	radish	0	0	0	0	0	0	0	0	0	0	0	0
	lettuce	0	0	0	0	0	0	0	0	0	29.29	317.69	0.469
	tomato	18.83	120.11	0.02	0	0	0	0	0	0	148.21	988.26	2.372
Pulses	lentils	0	0	0	0	0	0	0	0	0	77.69	1065.93	1.244
Eggs and egg products	scrambled egg, omelette	180.43	170.71	0.19	53.01	452.14	0.331	0	0	0	115.99	972	1.856
	hard-boiled egg	55.81	452.46	0.059	20.57	186.71	0.129	0	0	0	13.17	146.91	0.211
TOTAL		94828.14	16452.64	100	15995.01	7881.71	100	618.413	198.41	100	6247.66	13364.54	100

Food group	Food	Coumestrol			Lignans			Isoflavones			Isoflavones+ Coumestrol+Equol		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Misc. foods	tofu	0	0	0	41.23	13411.14	0.6	4682.88	1523308.57	2.583	4682.88	1523308.57	2.475
Non-alcoholic beverages	soy or soy milk (tonyuu) drink	0	0	0	1318.15	183150	19.198	138345.07	19222302.86	76.313	138345.07	19222302.86	73.13
	ketchup	0	0	0	30.61	406.71	0.446	0	0	0	0	0	0
Seasonings and sauces	mayonnaise	0	0	0	148.06	1502.14	2.156	14.15	143.57	0.008	14.15	143.57	0.007
	soy sauce	0	0	0	0	0	0	300.05	40585.71	0.166	300.05	40585.71	0.159
	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
Dairy-based desserts	chocolate flavoured soy dessert	0	0	0	84.52	27495	1.231	3902.52	1269462.86	2.153	3902.52	1269462.86	2.063
	soy dessert with fruit	71.803	23357.14	8.412	293.69	95535	4.277	8915.26	2900074.29	4.918	9008.14	2930288.57	4.762
	plain soy dessert	0	0	0	521.16	85712.5	7.59	13842.78	2276670	7.636	13842.78	2276670	7.317
	semi-skimmed milk	0	0	0	343.86	2413.75	5.008	2194.34	7971.25	1.21	8036.44	24416	4.248
Milk	skimmed milk	0	0	0	0.7	58.57	0.01	44.98	3823.5	0.025	214.13	16848.3	0.113
	full fat milk	0.609	60	0.071	28.81	2015.36	0.42	396.45	10922.5	0.219	1264.35	28306.29	0.668
	artichoke	0	0	0	57.73	3118.5	0.841	0	0	0	0	0	0
	carrot	0	0	0	362.53	2225.89	5.28	0	0	0	0	0	0
	celery	0	0	0	4.21	798.57	0.061	0.03	5.36	0	0.03	5.36	0
	celeriac	0	0	0	3.74	268.21	0.054	0.09	6.43	0	0.09	6.43	0
	cauliflower	0	0	0	91.65	1770	1.335	0	0	0	0	0	0
	raw cucumber	0	0	0	9.2	145.76	0.134	1.44	20.64	0.001	1.44	20.64	0.001
	courgette	0	0	0	88.67	1308.21	1.291	0	0	0	0	0	0
	endive	0	0	0	7.32	184.29	0.107	0	0	0	0	0	0
	spinach	0	0	0	0	0	0	0.5	17.81	0	0.5	17.81	0
Vegetables (excluding potatoes)	beans	78.1197	3599.24	91.517	2845.98	12238.18	41.45	7638.78	34991.54	4.214	8419.98	38196.79	4.451
	sweetcorn	0	0	0	9.81	224.47	0.143	0	0	0	0	0	0
	turnip	0	0	0	0.05	22.29	0.001	0	0	0	0	0	0
	onion	0	0	0	130.8	2004.17	1.905	0	0	0	0	0	0
	peas	0	0	0	0	0	0	62.27	660	0.034	62.27	660	0.033
	leek	0	0	0	51.02	2333.79	0.743	0	0	0	0	0	0
	bell pepper	0	0	0	8.23	334.32	0.12	0	0	0	0	0	0
	radish	0	0	0	0	0	0	0	0	0	0	0	0
	lettuce	0	0	0	29.29	317.69	0.427	0	0	0	0	0	0
	tomato	0	0	0	148.21	988.26	2.159	18.83	120.11	0.01	18.83	120.11	0.01
Pulses	lentils	0	0	0	77.69	1065.93	1.132	0	0	0	0	0	0
Eggs and egg products	scrambled egg, omelette	0	0	0	15.99	972	1.689	679.67	4918.64	0.375	780.32	5924.57	0.412
	hard-boiled egg	0	0	0	13.17	146.91	0.192	246.32	1621.65	0.136	282.33	1734.65	0.149
TOTAL		853.609	3088.84	100	6866.08	13460.01	100	181286.42	42906.11	100	189176.29	55150.05	100

Table F7: Estimated intake (mean and P95) of phytoestrogens (ng/day) in children aged 7 to 10 years and contribution of foods (%)

Food group	Food	Biochanin A		Daidzein		Equol		Formononetin					
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib			
Non-alcoholic beverages	soy or soy milk (tonyū) drink	139.714	17857.14	77.192	156759.6	2003574.29	87.533	0	0	0	843.32	107785.71	59.315
	ketchup	0	0	0	0	0	0	0	0	0	0	0	0
Seasonings and sauces	mayonnaise	0	0	0	13.51	150.86	0.008	0	0	0	0	0	0
	soy sauce	0	0	0	254.21	53914.29	0.142	0	0	0	0	0	0
	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
Dairy-based desserts	chocolate flavoured soy dessert	0	0	0	7946.04	1066928.57	4.437	0	0	0	54.77	7354.29	3.852
	soy dessert with fruit	36.349	6571.43	20.083	4492.22	812142.86	2.508	25.29	4571.43	0.392	90.62	16382.86	6.374
	plain soy dessert	0	0	0	924.19	342857.14	0.516	0	0	0	2.09	775	0.147
Milk	semi-skimmed milk	0	0	0	186.02	746.55	0.104	5768.9	20101.07	89.352	372.32	1922.86	26.187
	skimmed milk	0	0	0	3.73	433.75	0.002	129.65	10753.75	2.008	7.01	811.25	0.493
	full fat milk	3.73	375	2.061	8.65	487.5	0.005	329.86	10380.69	5.109	32.94	1591.25	2.317
	artichoke	0	0	0	0	0	0	0	0	0	0	0	0
	carrot	0	0	0	0	0	0	0	0	0	0	0	0
	celery	0	0	0	0.07	10	0	0	0	0	0	0	0
	celeriac	0	0	0	0.53	32.14	0	0	0	0	0	0	0
	cauliflower	0	0	0	0	0	0	0	0	0	0	0	0
	raw cucumber	0	0	0	2.31	23.59	0.001	0	0	0	0	0	0
	courgette	0	0	0	0	0	0	0	0	0	0	0	0
Vegetables (excluding potatoes)	endive	0	0	0	0	0	0	0	0	0	0	0	0
	spinach	0	0	0	1.01	35.63	0.001	0	0	0	0	0	0
	canned beansprouts	0	0	0	25.51	5357.14	0.014	0	0	0	0	0	0
	beans	0	0	0	4276.45	17044.07	2.388	0	0	0	0	0	0
	sweetcorn	0	0	0	0	0	0	0	0	0	0	0	0
	turnip	0	0	0	0	0	0	0	0	0	0	0	0
	onion	0	0	0	0	0	0	0	0	0	0	0	0
	peas	0	0	0	21.98	138.62	0.012	0	0	0	0	0	0
	leek	0	0	0	0	0	0	0	0	0	0	0	0
	bell pepper	0	0	0	0	0	0	0	0	0	0	0	0
Pulses	radish	0	0	0	0	0	0	0	0	0	0	0	0
	lettuce	0	0	0	0	0	0	0	0	0	0	0	0
	tomato	0	0	0	0	0	0	0	0	0	0	0	0
	lentils	0	0	0	0	0	0	0	0	0	0	0	0
	scrambled egg omelette	0	0	0	499.31	2987.43	0.279	99.37	887.66	1.539	0	0	0
Eggs and egg products	hard-boiled egg	0	0	0	241.47	2126.78	0.135	60.38	1062.64	0.935	0	0	0
	soy-based vegetable cutlets	0	0	0	2239.56	605357.14	1.251	0	0	0	9.26	2501.79	0.651
TOTAL		180.996	0	179086.47	22949.3	100	6456.34	18441.32	100	1421.76	2019	100	

Food group	Food	Genistein			Glycitein			Matairesinol			Secoisolaricresinol		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Non-alcoholic beverages	soy or soy milk (tonyū) drink	220986.32	28244642.86	89.199	39036.21	4989285.71	91.847	1457.22	186250	95.247	2523.24	322500	28.134
	ketchup	0	0	0	0	0	0	0	0	0	42.23	563.14	0.471
	mayonnaise	0	0	0	1.92	21.43	0.005	0	0	0	161.48	1802.57	1.8
Seasonings and sauces	soy sauce	71.53	15171.43	0.029	56.99	12085.71	0.134	0	0	0	0	0	0
	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
	chocolate flavoured soy dessert	10518.64	1412357.14	4.246	389.4	52285.71	0.916	0	0	0	409.54	54990	4.566
Dairy-based desserts	soy dessert with fruit	5839.49	1055714.29	2.357	235.48	42571.43	0.554	0	0	0	352.29	63690	3.928
	plain soy dessert	1231.78	456964.29	0.497	33.69	12500	0.079	15.58	5781.25	1.019	66.93	24830.36	0.746
	semi-skimmed milk	129.4	668.57	0.052	1542.01	6403.32	3.628	30.06	184.29	1.965	305.94	2642.86	3.411
Milk	skimmed milk	0.41	43.93	0	38.61	6137.5	0.091	0.1	17.57	0.007	0	0	0
	full fat milk	3.94	393.75	0.002	50.03	2156.57	0.118	1.63	91	0.107	5.52	508.93	0.061
	artichoke	0	0	0	0	0	0	0	0	0	106.98	2913.75	1.193
Vegetables (excluding potatoes)	carrot	0	0	0	0	0	0	0	0	0	388.13	2304.35	4.328
	celery	0	0	0	0	0	0	0	0	0	10.09	1200.71	0.113
	celeriac	0	0	0	0	0	0	0	0	0	22.14	1341.07	0.247
	cauliflower	0	0	0	0	0	0	0	0	0	136.44	2781.43	1.521
	raw cucumber	0	0	0	0	0	0	0	0	0	14.51	194.35	0.162
	courgette	0	0	0	0	0	0	0	0	0	134.58	3130.29	1.501
	endive	0	0	0	0	0	0	0	0	0	20.45	490	0.228
	spinach	0	0	0	0	0	0	0	0	0	0	0	0
	canned beansprouts	23.06	4842.73	0.009	0	0	0	0	0	0	5.81	1221.07	0.065
	beans	4465.4	18836.51	1.802	372	1963.07	0.875	0	0	0	3266.92	13877.02	36.426
	sweetcorn	0	0	0	0	0	0	0	0	0	5.31	177.5	0.059
	turnip	0	0	0	0	0	0	0	0	0	5.98	1517.74	0.067
	onion	0	0	0	0	0	0	0	0	0	173.97	2672.23	1.94
peas	0.99	14.38	0	62.29	525	0.147	0	0	0	0	0	0	
Pulses	leek	0	0	0	0	0	0	0	0	0	86	4011.43	0.959
	bell pepper	0	0	0	0	0	0	0	0	0	17.07	802.61	0.19
	radish	0	0	0	0	0	0	0	0	0	0	0	0
	lettuce	0	0	0	0	0	0	0	0	0	48.44	399.91	0.54
	tomato	15.58	128.69	0.006	0	0	0	0	0	0	176.06	1339.29	1.963
	lentils	0	0	0	0	0	0	0	0	0	165.03	1918.68	1.84
	scrambled egg, omelette	216.33	12771.4	0.087	59.47	376.79	0.14	0	0	0	134.41	1458	1.499
	hard-boiled egg	80.29	854.59	0.032	27.64	263.22	0.065	0	0	0	20.67	276.29	0.23
	soy-based vegetable cutlets	2516.04	680089.29	1.016	313.34	84696.43	0.737	15.18	4102.5	0.992	103.03	27848.04	1.149
	TOTAL	247745.55	19528.98	100	42501.5	8000.04	100	1529.95	184.29	100	8968.78	16522.69	100

Food group	Food	Coumestrol			Lignans			Isoflavones			Isoflavones+ Coumestrol+Equol		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Non-alcoholic beverages	soy or soy milk (tonyū) drink	0	0	0	3980.46	508750	37.914	417765.16	53395285.71	88.709	417765.16	53395285.71	87.309
	ketchup	0	0	0	42.23	563.14	0.402	0	0	0	0	0	0
Seasonings and sauces	mayonnaise	0	0	0	161.48	1802.57	1.538	15.43	172.29	0.003	15.43	172.29	0.003
	soy sauce	0	0	0	0	0	0	382.73	81171.43	0.081	382.73	81171.43	0.08
	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
Dairy-based desserts	chocolate flavoured soy dessert	0	0	0	409.54	54990	3.901	18908.85	2538925.71	4.015	18908.85	2538925.71	3.952
	soy dessert with fruit	86.13	15571.43	7.837	352.29	63690	3.356	10694.16	1933382.86	2.271	10805.58	1953525.71	2.258
	plain soy dessert	0	0	0	82.52	30611.61	0.786	2191.75	813096.43	0.465	2191.75	813096.43	0.458
Milk	semi-skimmed milk	0	0	0	336	2758.57	3.2	2229.74	9110	0.473	7998.64	27553.75	1.672
	skimmed milk	0	0	0	0.1	17.57	0.001	49.76	7382.5	0.011	179.41	18136.25	0.037
	full fat milk	1.25	98	0.113	7.15	508.93	0.068	99.28	3768.05	0.021	430.39	14148.75	0.09
	artichoke	0	0	0	106.98	2913.75	1.019	0	0	0	0	0	0
	carrot	0	0	0	388.13	2304.35	3.697	0	0	0	0	0	0
	celery	0	0	0	10.09	1200.71	0.096	0.07	10	0	0.07	10	0
	celeriac	0	0	0	22.14	1341.07	0.211	0.53	32.14	0	0.53	32.14	0
	cauliflower	0	0	0	136.44	2781.43	1.3	0	0	0	0	0	0
	raw cucumber	0	0	0	14.51	194.35	0.138	2.31	23.59	0	2.31	23.59	0
	courgette	0	0	0	134.58	3130.29	1.282	0	0	0	0	0	0
	endive	0	0	0	20.45	490	0.195	0	0	0	0	0	0
	spinach	0	0	0	0	0	0	1.01	35.63	0	1.01	35.63	0
Vegetables (excluding potatoes)	canned beans/prouts	37.42	785714	3.405	5.81	1221.07	0.055	48.57	10199.87	0.01	85.99	18057.01	0.018
	beans	966.86	4327.09	87.98	3266.92	13877.02	31.117	9113.85	33645.71	1.935	10080.7	36917.81	2.107
	sweetcorn	0	0	0	5.31	1775	0.051	0	0	0	0	0	0
	turnip	0	0	0	5.98	1517.74	0.057	0	0	0	0	0	0
	onion	0	0	0	173.97	2672.23	1.657	0	0	0	0	0	0
	peas	0	0	0	0	0	0	85.27	660	0.018	85.27	660	0.018
	leek	0	0	0	86	4011.43	0.819	0	0	0	0	0	0
	bell pepper	0	0	0	17.07	802.61	0.163	0	0	0	0	0	0
	radish	0	0	0	0	0	0	0	0	0	0	0	0
	lettuce	0	0	0	48.44	399.91	0.461	0	0	0	0	0	0
	tomato	0	0	0	176.06	1339.29	1.677	15.58	128.69	0.003	15.58	128.69	0.003
Pulses	lentils	0	0	0	165.03	1918.68	1.572	0	0	0	0	0	0
Eggs and egg products	scrambled egg, omelette	0	0	0	134.41	1458	1.28	775.11	4540.29	0.165	874.47	5263	0.183
	hard-boiled egg	0	0	0	20.67	276.29	0.197	349.4	3170.78	0.074	409.78	3626.55	0.086
Mixed dishes	soy-based vegetable cutlets	0	0	0	118.2	31950.54	1.126	5078.2	1372644.64	1.078	5078.2	1372644.64	1.061
TOTAL		1098.95	4327.09	100	10498.73	16522.69	100	470936.28	44586.93	100	478491.58	60106.98	100

Table F8: Estimated intake (mean and P95) of phytoestrogens (ng/day) in children aged 11 to 14 years and contribution of foods (%)

Food group	Food	Biochanin A		Daidzein		Equol		Formononetin				
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib		
Non-alcoholic beverages	soy or soy milk (tonyū) drink	28.832	6428.57	71.228	33349.56	7212857.14	74.579	0	174.03	38802.86	29.991	
	ketchup	0	0	0	0	0	0	0	0	0	0	
Seasonings and sauces	mayonnaise	0	0	0	16.52	150.86	0.038	0	0	0	0	
	soy sauce	0	0	0	78.82	26957.14	0.182	0	0	0	0	
	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	
Dairy-based desserts	chocolate flavoured soy dessert	0	0	0	1143.32	355642.86	2.636	0	7.881	2451.43	1.358	
	soy dessert with fruit	8.7656	4107.14	21.655	1083.31	507589.29	2.497	6.1	21.853	10239.29	3.766	
	plain soy dessert	0	0	0	1181.61	342857.14	2.724	0	2.671	775	0.46	
	semi-skimmed milk	0	0	0	149.12	664.82	0.344	4614.41	276.062	1720.96	47.574	
Milk	skimmed milk	0	0	0	8.26	53	0.019	291.77	11.246	917.87	1.938	
	full fat milk	2.8023	116.67	6.923	5.28	307.71	0.012	526.54	77.455	5525	13.348	
	artichoke	0	0	0	0	0	0	0	0	0	0	
	carrot	0	0	0	0	0	0	0	0	0	0	
	celery	0	0	0	0.03	5.01	0	0	0	0	0	
	celeriac	0	0	0	0.53	38.57	0.001	0	0	0	0	
	cauliflower	0	0	0	0	0	0	0	0	0	0	
	raw cucumber	0	0	0	0.91	26.54	0.002	0	0	0	0	
	courgette	0	0	0	0	0	0	0	0	0	0	
	endive	0	0	0	0	0	0	0	0	0	0	
Vegetables (excluding potatoes)	spinach	0	0	0	0.42	17.81	0.001	0	0	0	0	
	canned beansprouts	0	0	0	39.79	17142.86	0.092	0	0	0	0	
	beans	0	0	0	4623.63	18661.74	10.659	0	0	0	0	
	sweetcorn	0	0	0	0	0	0	0	0	0	0	
	turnip	0	0	0	0	0	0	0	0	0	0	
	onion	0	0	0	0	0	0	0	0	0	0	
	peas	0	0	0	13.34	151.07	0.031	0	0	0	0	
	leek	0	0	0	0	0	0	0	0	0	0	
	bell pepper	0	0	0	0	0	0	0	0	0	0	
	radish	0	0	0	0	0	0	0	0	0	0	
Pulses	lettuce	0	0	0	0	0	0	0	0	0	0	
	tomato	0	0	0	0	0	0	0	0	0	0	
	lentils	0	0	0	0	0	0	0	0	0	0	
	scrambled egg, omelette	0	0	0	455.14	2800.71	1.049	91.45	887.66	1.636	0	
	hard-boiled egg	0	0	0	218.76	1744.97	0.504	47.07	531.32	0.842	0	
	soy-based vegetable cutlets	0	0	0	1923.54	645714.29	4.435	0	7.95	2668.57	1.37	
	TOTAL	40.4787	0	100	43376.38	20872	100	5588.21	16816.07	580.278	2019	100

Food group	Food	Genistein			Glycitein			Matairesinol			Secoisolariciresinol		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Non-alcoholic beverages	soy or soy milk (tonyū) drink	45603.65	10168071.43	78.636	8055.67	1796142.86	77.266	300.718	67050	83.463	520.71	116100	7.77
	ketchup	0	0	0	0	0	0	0	0	0	43.82	625.71	0.654
	mayonnaise	0	0	0	2.35	21.43	0.023	0	0	0	197.35	1802.57	2.945
Seasonings and sauces	soy sauce	22.18	7585.71	0.038	17.67	6042.86	0.169	0	0	0	0	0	0
	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
Dairy-based desserts	chocolate flavoured soy dessert	1513.48	470785.71	2.61	56.03	17428.57	0.537	0	0	0	58.93	18330	0.879
	soy dessert with fruit	1408.21	659821.43	2.428	56.79	266071.4	0.545	0	0	0	84.96	39806.25	1.268
	plain soy dessert	1574.87	456964.29	2.716	43.08	12500	0.413	19.924	5781.25	5.53	85.57	24830.36	1.277
	semi-skimmed milk	95.69	598.37	0.165	114.12	6012.88	10.686	22.817	153.32	6.333	196.85	2365.36	2.937
Milk	skimmed milk	2.39	189	0.004	70.66	9453.86	0.678	2.336	184.5	0.648	0	0	0
	full fat milk	3.04	298.5	0.005	189.4	13260	1.817	0.766	91.43	0.213	3.89	165	0.058
Vegetables (excluding potatoes)	artichoke	0	0	0	0	0	0	0	0	0	63.06	4234.07	0.941
	carrot	0	0	0	0	0	0	0	0	0	461.78	3709.82	6.89
	celery	0	0	0	0	0	0	0	0	0	6.5	3729.25	0.097
	celeriac	0	0	0	0	0	0	0	0	0	22.27	1609.29	0.332
	cauliflower	0	0	0	0	0	0	0	0	0	118.31	1842.51	1.765
	raw cucumber	0	0	0	0	0	0	0	0	0	8.16	218.65	0.122
	courgette	0	0	0	0	0	0	0	0	0	146.3	3301.21	2.183
	endive	0	0	0	0	0	0	0	0	0	23.99	502.56	0.358
	spinach	0	0	0	0	0	0	0	0	0	0	0	0
	canned beansprouts	35.97	15496.73	0.062	0	0	0	0	0	0	9.07	3907.43	0.135
	beans	5176.68	25994.39	8.926	408.3	2699.22	3.916	0	0	0	3790.64	20298.83	56.561
	sweetcorn	0	0	0	0	0	0	0	0	0	8.59	185	0.128
	turnip	0	0	0	0	0	0	0	0	0	5.39	334.07	0.08
	onion	0	0	0	0	0	0	0	0	0	133.03	2443.21	1.985
peas	0.62	14.38	0.001	39.29	526.86	0.377	0	0	0	0	0	0	
Pulses	leek	0	0	0	0	0	0	0	0	0	63.92	3510	0.954
	bell pepper	0	0	0	0	0	0	0	0	0	29.96	1820.41	0.447
	radish	0	0	0	0	0	0	0	0	0	0	0	0
	lettuce	0	0	0	0	0	0	0	0	0	60.66	529.49	0.905
	tomato	18.81	134.29	0.032	0	0	0	0	0	0	202.57	1430.66	3.023
	lentils	0	0	0	0	0	0	0	0	0	113.69	1705.49	1.696
	scrambled egg, omelette	192.2	1282.86	0.331	54.6	351.64	0.524	0	0	0	125.08	1458	1.866
	hard-boiled egg	71.88	608.67	0.124	28.56	222.6	0.274	0	0	0	15.31	171.39	0.228
	soy-based vegetable cutlets	2161.01	725428.57	3.726	269.13	90342.86	2.581	13.036	4376	3.618	88.49	29704.57	1.32
	TOTAL	57993.64	26463.05	100	10425.95	7626.81	100	360.3	172	100	6701.91	20639.39	100

Food group	Food	Coumestrol		Lignans		Isoflavones		Isoflavones+ Coumestrol+Equol					
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib			
Non-alcoholic beverages	soy or soy milk (tonyū) drink	0	0	0	821.43	183150	11.631	86211.74	19222302.86	76.689	86211.74	19222302.86	72.35
	ketchup	0	0	0	43.82	625.71	0.621	0	0	0	0	0	0
Seasonings and sauces	mayonnaise	0	0	0	197.35	1802.57	2.794	18.86	172.29	0.017	18.86	172.29	0.016
	soy sauce	0	0	0	0	0	0	118.66	40585.71	0.106	118.66	40585.71	0.1
	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
Dairy-based desserts	chocolate flavoured soy dessert	0	0	0	58.93	18330	0.834	2720.72	846308.57	2.42	2720.72	846308.57	2.283
	soy dessert with fruit	20.77	9732.14	1.8	84.96	39806.25	1.203	2578.92	1208364.29	2.294	2605.79	1220953.57	2.187
Milk	plain soy dessert	0	0	0	105.5	30611.61	1.494	2802.24	813096.43	2.493	2802.24	813096.43	2.352
	semi-skimmed milk	0	0	0	219.67	2468.92	3.11	1634.99	8220	1.454	6249.4	2367.5	5.245
	skimmed milk	0	0	0	2.34	184.5	0.033	92.56	10235.57	0.082	384.33	36520.71	0.323
	full fat milk	0.72	98.47	0.063	4.66	180.67	0.066	277.98	18785	0.247	805.24	50310	0.676
	artichoke	0	0	0	63.06	4234.07	0.893	0	0	0	0	0	0
	carrot	0	0	0	461.78	3709.82	6.539	0	0	0	0	0	0
	celery	0	0	0	6.5	3729.25	0.092	0.03	5.01	0	0.03	5.01	0
	celeriac	0	0	0	22.27	1609.29	0.315	0.53	38.57	0	0.53	38.57	0
	cauliflower	0	0	0	118.31	1842.51	1.675	0	0	0	0	0	0
	raw cucumber	0	0	0	8.16	218.65	0.116	0.91	26.54	0.001	0.91	26.54	0.001
Vegetables (excluding potatoes)	courgette	0	0	0	146.3	3301.21	2.072	0	0	0	0	0	0
	endive	0	0	0	23.99	502.56	0.34	0	0	0	0	0	0
	spinach	0	0	0	0	0	0	0.42	17.81	0	0.42	17.81	0
	canned beans/prouts	58.35	25142.86	5.058	9.07	3907.43	0.128	75.75	32639.58	0.067	134.11	57782.44	0.113
	beans	1071.68	5293	92.885	3790.64	20298.83	53.675	10208.62	44975.2	9.081	11280.3	50946.58	9.467
	sweetcorn	0	0	0	8.59	185	0.122	0	0	0	0	0	0
	turnip	0	0	0	5.39	334.07	0.076	0	0	0	0	0	0
	onion	0	0	0	133.03	2443.21	1.884	0	0	0	0	0	0
	peas	0	0	0	0	0	0	53.25	698.29	0.047	53.25	698.29	0.045
	leek	0	0	0	63.92	3510	0.905	0	0	0	0	0	0
Pulses	bell pepper	0	0	0	29.96	1820.41	0.424	0	0	0	0	0	0
	radish	0	0	0	60.66	529.49	0.859	0	0	0	0	0	0
Eggs and egg products	lettuce	0	0	0	202.57	1430.66	2.868	18.81	134.29	0.017	18.81	134.29	0.016
	tomato	0	0	0	113.69	1705.49	1.61	0	0	0	0	0	0
Mixed dishes	lentils	0	0	0	125.08	1458	1.771	701.94	4133.57	0.624	793.39	4736.7	0.666
	scrambled egg, omelette	0	0	0	15.31	171.39	0.217	319.19	2284.94	0.284	366.26	2601.98	0.307
TOTAL	hard-boiled egg	0	0	0	101.52	34080.57	1.438	4361.62	1464154.29	3.88	4361.62	1464154.29	3.66
	soy-based vegetable cutlets	1153.77	4867.98	100	7062.21	20639.39	100	112416.73	47711.98	100	119158.71	63406.09	100

Table F9: Estimated intake (mean and P95) of phytoestrogens (ng/day) in children aged 15 to 17 years and contribution of foods (%)

Food group	Food	Biochanin A			Daidzein			Equol			Formononetin		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Non-alcoholic beverages	soy or soy milk (tonyu) drink	26,554.6	12,500	96.194	29,794.23	14,025,000	72.74	0	0	0	160.283	7,545.0	32.865
	ketchup	0	0	0	0	0	0	0	0	0	0	0	0
Seasonings and sauces	mayonnaise	0	0	0	22.18	188.57	0.054	0	0	0	0	0	0
	soy sauce	0	0	0	421.65	10,108,929	1.029	0	0	0	0	0	0
	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
Dairy-based desserts	plain soy dessert	0	0	0	1551.56	34,285,714	3.788	0	0	0	3.597	775	0.719
	semi-skimmed milk	0	0	0	153.6	743.75	0.375	4671.27	19,189.29	90.47	278,564	1682.5	57.117
Milk	skimmed milk	0	0	0	4.1	365.75	0.01	195.98	23,146.75	3.796	7.537	1045	1.545
	full fat milk	0.9301	500	3.369	4.22	581.25	0.01	147.1	12,125	2.849	16.612	2125	3.406
Vegetables (excluding potatoes)	artichoke	0	0	0	0	0	0	0	0	0	0	0	0
	carrot	0	0	0	0	0	0	0	0	0	0	0	0
	celery	0	0	0	0.08	18.75	0	0	0	0	0	0	0
	celeriac	0	0	0	0.42	38.57	0.001	0	0	0	0	0	0
	cauliflower	0	0	0	0	0	0	0	0	0	0	0	0
	raw cucumber	0	0	0	0.88	26.54	0.002	0	0	0	0	0	0
	courgette	0	0	0	0	0	0	0	0	0	0	0	0
	endive	0	0	0	0	0	0	0	0	0	0	0	0
	spinach	0	0	0	0.22	35.63	0.001	0	0	0	0	0	0
	canned beansprouts	0	0	0	30.72	12,857.14	0.075	0	0	0	0	0	0
	beans	0	0	0	3459.57	188,479.6	8.446	0	0	0	0	0	0
	sweetcorn	0	0	0	0	0	0	0	0	0	0	0	0
	turnip	0	0	0	0	0	0	0	0	0	0	0	0
	onion	0	0	0	0	0	0	0	0	0	0	0	0
	peas	0	0	0	21.92	15,107	0.054	0	0	0	0	0	0
	leek	0	0	0	0	0	0	0	0	0	0	0	0
	bell pepper	0	0	0	0	0	0	0	0	0	0	0	0
	radish	0	0	0	0	0	0	0	0	0	0	0	0
	lettuce	0	0	0	0	0	0	0	0	0	0	0	0
	tomato	0	0	0	0	0	0	0	0	0	0	0	0
Pulses	lentils	0	0	0	0	0	0	0	0	0	0	0	0
	scrambled egg, omelette	0	0	0	495.62	3,229.29	1.21	93.64	1,109.57	1.814	0	0	0
Eggs and egg products	hard-boiled egg	0	0	0	204.18	15,95.08	0.498	32.82	796.98	0.636	0	0	0
	soy-based vegetable cutlets	0	0	0	4616.08	96,857.43	11.27	0	0	0	19.077	4,002.86	3.912
Mixed dishes													
TOTAL		27,605.3	0	100	40,960.09	19,252.71	100	5,163.36	16,714.39	100	48,771	16,78.11	100

Food group	Food	Genistein			Glycitein			Matairesinol			Secoisolariciresinol		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Non-alcoholic beverages	soy or soy milk (tonyū) drink	42001.36	19771250	78.228	7419.35	3492500	74.746	276.964	130375	77.265	479.58	225750	8.47
	ketchup	0	0	0	0	0	0	0	0	0	39.76	750.86	0.702
Seasonings and sauces	mayonnaise	0	0	0	3.15	26.79	0.032	0	0	0	265.08	2253.21	4.682
	soy sauce	118.65	28446.43	0.221	94.52	22660.71	0.952	0	0	0	0	0	0
Daily-based desserts	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
	plain soy dessert	2067.93	456964.29	3.852	56.57	12500	0.57	26.162	5781.25	7.298	112.37	24830.36	1.985
Milk	semi-skimmed milk	97.48	585	0.182	1184.56	5466.25	11.934	21.613	182.25	6.029	213.11	1982.14	3.764
	skimmed milk	0.65	168.54	0.001	31.11	4146.43	0.313	0.102	29.29	0.028	0	0	0
	full fat milk	1.99	444.38	0.004	27.48	5100	0.271	0.773	172.71	0.216	1.47	678.57	0.026
	artichoke	0	0	0	0	0	0	0	0	0	25.64	4234.07	0.453
Vegetables (excluding potatoes)	carrot	0	0	0	0	0	0	0	0	0	470.49	2967.86	8.31
	celery	0	0	0	0	0	0	0	0	0	19.36	3044.29	0.342
	celeriac	0	0	0	0	0	0	0	0	0	17.51	1609.29	0.309
	cauliflower	0	0	0	0	0	0	0	0	0	91.53	2832	1.617
	raw cucumber	0	0	0	0	0	0	0	0	0	10.05	364.41	0.178
	courgette	0	0	0	0	0	0	0	0	0	117.3	2710.71	2.072
	endive	0	0	0	0	0	0	0	0	0	15.9	866.14	0.281
	spinach	0	0	0	0	0	0	0	0	0	0	0	0
	canned beansprouts	27.77	11622.54	0.052	0	0	0	0	0	0	7	2930.57	0.124
	beans	3657.63	23545.64	6.812	264.47	1818.83	2.664	0	0	0	2650.76	15828.04	46.818
	sweetcorn	0	0	0	0	0	0	0	0	0	6.27	112.24	0.111
	turnip	0	0	0	0	0	0	0	0	0	5.02	1082.86	0.089
	onion	0	0	0	0	0	0	0	0	0	226.56	2443.21	4.002
	peas	1.01	18.38	0.002	66.76	526.86	0.673	0	0	0	0	0	0
leek	0	0	0	0	0	0	0	0	0	44.33	3385.71	0.783	
bell pepper	0	0	0	0	0	0	0	0	0	26.71	1744.81	0.472	
radish	0	0	0	0	0	0	0	0	0	0	0	0	
lettuce	0	0	0	0	0	0	0	0	0	71.19	444.34	1.257	
tomato	22.03	162.5	0.041	0	0	0	0	0	0	183.28	1347.63	3.237	
Pulses	lentils	0	0	0	0	0	0	0	0	0	172.05	2558.24	3.039
	scrambled egg, omelette	199.55	1285.71	0.372	63.54	421.43	0.64	0	0	0	142.29	1863	2.513
Eggs and egg products	hard-boiled egg	74.18	678.69	0.138	25.44	280.06	0.256	0	0	0	10.16	146.91	0.179
	soy-based vegetable cutlets	5185.94	1088142.86	9.659	645.84	135514.29	6.506	31.283	6564	8.727	212.35	44556.86	3.751
TOTAL		53690.64	20335.95	100	9926.14	6518.21	100	358.462	172.71	100	5661.85	18537.91	100

Food group	Food	Coumestrol			Lignans			Isoflavones			Isoflavones+Coumestrol+Equol		
		Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib	Mean	P95	Contrib
Non-alcoholic beverages	soy or soy milk (tonyū) drink	0	0	0	756.54	356125	12.566	79401.77	37376700	75.554	79401.77	37376700	71.507
	ketchup	0	0	0	39.76	750.86	0.66	0	0	0	0	0	0
Seasonings and sauces	mayonnaise	0	0	0	265.08	2253.21	4.403	25.34	215.36	0.024	25.34	215.36	0.023
	soy sauce	0	0	0	0	0	0	634.82	152196.43	0.604	634.82	152196.43	0.572
Dairy-based desserts	meat-free tomato sauce	0	0	0	0	0	0	0	0	0	0	0	0
	plain soy dessert	0	0	0	138.53	30611.61	2.301	3679.56	813096.43	3.501	3679.56	813096.43	3.314
Milk	semi-skimmed milk	0	0	0	234.73	2068.93	3.899	1714.21	7971.25	1.631	6385.48	27553.75	5.751
	skimmed milk	0	0	0	0.1	29.29	0.002	43.4	4489.29	0.041	239.38	24975.5	0.216
Vegetables (excluding potatoes)	full fat milk	0.597	186	0.076	2.24	678.57	0.037	51.24	7225	0.049	198.93	19350	0.179
	artichoke	0	0	0	25.64	4234.07	0.426	0	0	0	0	0	0
Pulses	carrot	0	0	0	470.49	2967.86	7.815	0	0	0	0	0	0
	celery	0	0	0	19.36	3044.29	0.322	0.08	18.75	0	0.08	18.75	0
Eggs and egg products	celeriac	0	0	0	17.51	1609.29	0.291	0.42	38.57	0	0.42	38.57	0
	cauliflower	0	0	0	91.53	2832	1.52	0	0	0	0	0	0
Mixed dishes	raw cucumber	0	0	0	10.05	364.41	0.167	0.88	26.54	0.001	0.88	26.54	0.001
	courgette	0	0	0	117.3	2710.71	1.948	0	0	0	0	0	0
TOTAL	endive	0	0	0	15.9	866.14	0.264	0	0	0	0	0	0
	spinach	0	0	0	0	0	0	0.22	35.63	0	0.22	35.63	0
TOTAL	canned beansprouts	45.063	18857.14	5.74	7	2930.57	0.116	58.5	24479.69	0.056	103.56	43336.83	0.093
	beans	735.972	5408.86	93.747	2650.76	15828.04	44.03	7381.67	41464.72	7.024	8117.64	48028.51	7.311
TOTAL	sweetcorn	0	0	0	6.27	112.24	0.104	0	0	0	0	0	0
	turnip	0	0	0	5.02	1082.86	0.083	0	0	0	0	0	0
TOTAL	onion	0	0	0	226.56	2443.21	3.763	0	0	0	0	0	0
	peas	0	0	0	0	0	0	89.69	698.29	0.085	89.69	698.29	0.081
TOTAL	leek	0	0	0	44.33	3385.71	0.736	0	0	0	0	0	0
	bell pepper	0	0	0	26.71	1744.81	0.444	0	0	0	0	0	0
TOTAL	radish	0	0	0	0	0	0	0	0	0	0	0	0
	lettuce	0	0	0	71.19	444.34	1.183	0	0	0	0	0	0
TOTAL	tomato	0	0	0	183.28	1947.63	3.044	22.03	162.5	0.021	22.03	162.5	0.02
	lentils	0	0	0	172.05	2558.24	2.858	0	0	0	0	0	0
TOTAL	scrambled egg, omelette	0	0	0	142.29	1863	2.364	758.71	4941.43	0.722	852.35	5978.57	0.768
	hard-boiled egg	0	0	0	10.16	146.91	0.169	303.8	2432.47	0.289	336.62	3347.59	0.303
TOTAL	soy-based vegetable cutlets	0	0	0	243.64	5120.86	4.047	10466.94	219621.43	9.96	10466.94	219621.43	9.426
	TOTAL	785.061	3786.2	100	6020.31	18741.34	100	105092.18	47425.01	100	111040.61	59438.29	100

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