National Monitoring Plan for POAO: Data Analysis Report 2023-24

This is a summary of the sampling results of imported products of animal origin (POAO) undertaken at UK Border Inspection Posts (BCPs), under the UK's National Monitoring Plan (NMP), between April 2023 and March 2024.

NMP data for POAO has been sourced from IPAFFS (Import of Products, Animals, Food and Feed System), GB's replacement for the EU's TRACES system. NMP samples have been identified where the 'random' button has been selected on the 'checks' tab, as advised by the Food Standards Agency's (FSA) Trade Facilitation Unit in the UK and International Affairs Division. To be aware that not all random samples recorded on IPAFFS are necessarily taken for the NMP, for example those testing for speciation or authenticity are not normally included here. As a result, extracting the NMP data from IPAFFS has necessitated a certain amount of data cleansing.

Overview of sampling carried out

During this period, a total of 2,062 samples were identified as being taken under the POAO NMP. These were against the following hazard categories:

- Veterinary residue
- Microbiological
- Heavy metals
- Biotoxins
- Chemical contaminants

There is also a summary for NMP sampling of pet food (dog or cat food) on pages 21 to 22, and for other product types not for human consumption also classed as pet food. Otherwise, feed for animals destined for the food chain is not included in the NMP.

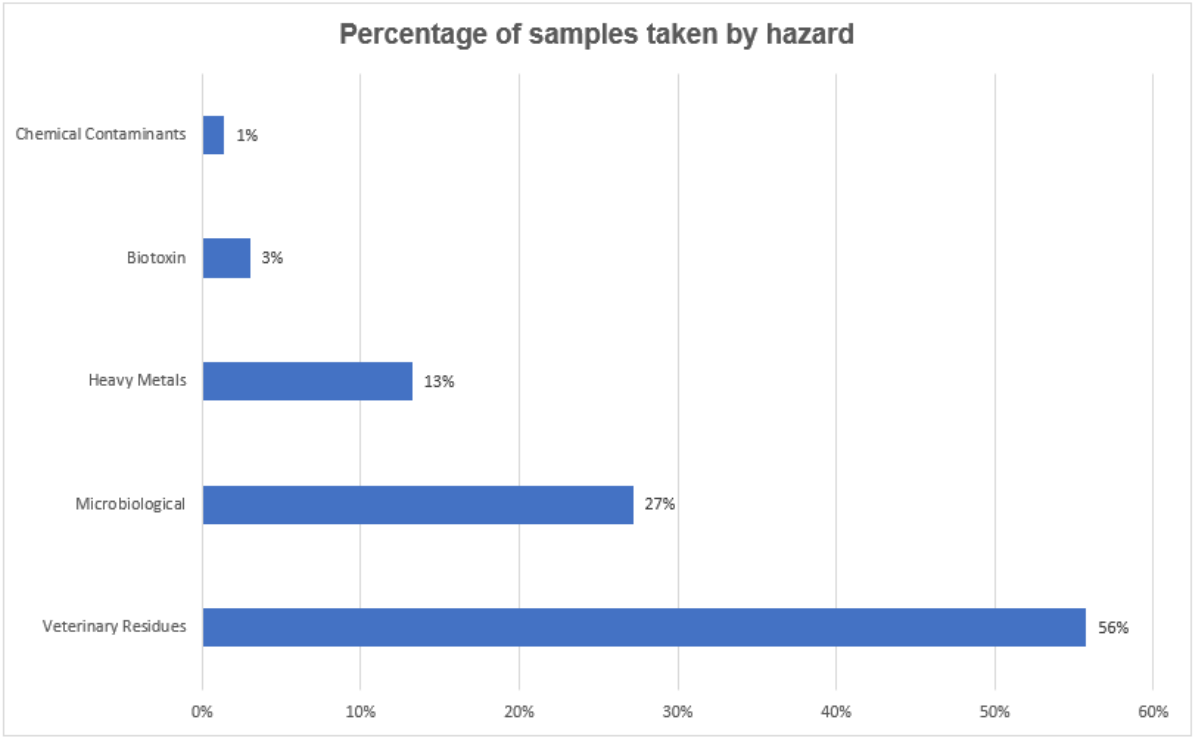


Figure 1: Samples taken by hazard & percentages of total

Hazard	No. of samples	%
Veterinary residues	1150	56
Microbiological	560	27
Heavy metals	273	13
Biotoxin	50	3
Chemical contaminants	29	1
Total	2,062	

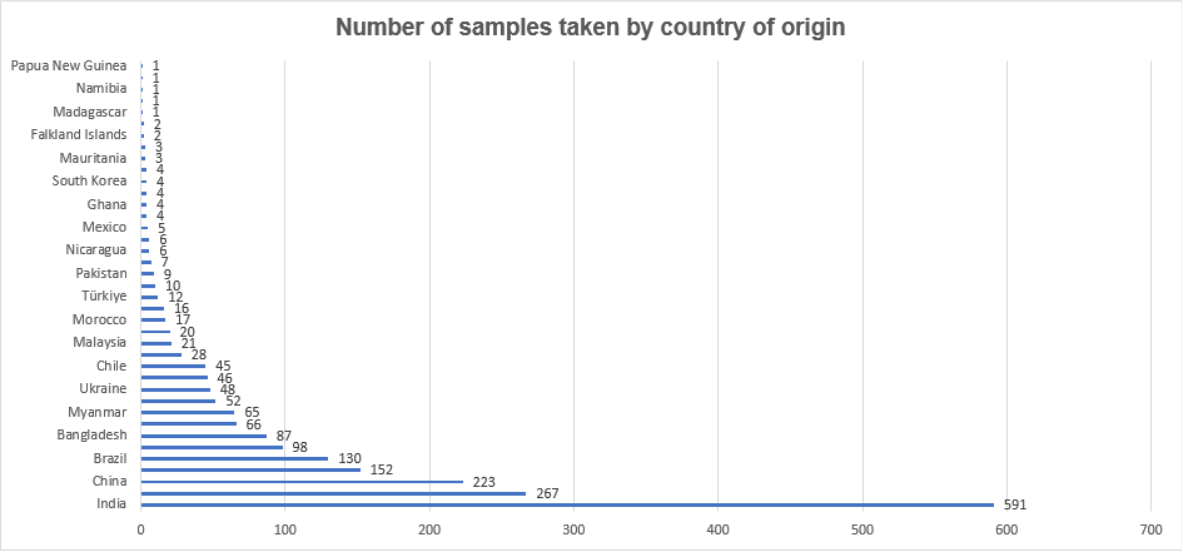
The majority of the samples taken were for veterinary residues (1150 or 56%), followed by microbiological hazards (560 or 27%); heavy metals (273 or 13%); biotoxins (50 or 3%) and chemical contaminants (29 or 1%). These ratios closely match those in the same categories in the previous twelve-months reporting period, except for veterinary residues where sampling has decreased by 10%, and heavy metals where sampling has doubled. The total amount of sampling during this period (2,062 samples) remains comparable to the previous period (2,212 samples). ***(fig 1)***

Of the samples taken, a total of six were found to be non-compliant, compared to a total of 43 in the previous period. There were non-compliances in the following hazard categories: biotoxin, chemical contaminants and microbiological, compared with forty-three non-compliances in the previous period. ***(fig 2)***.

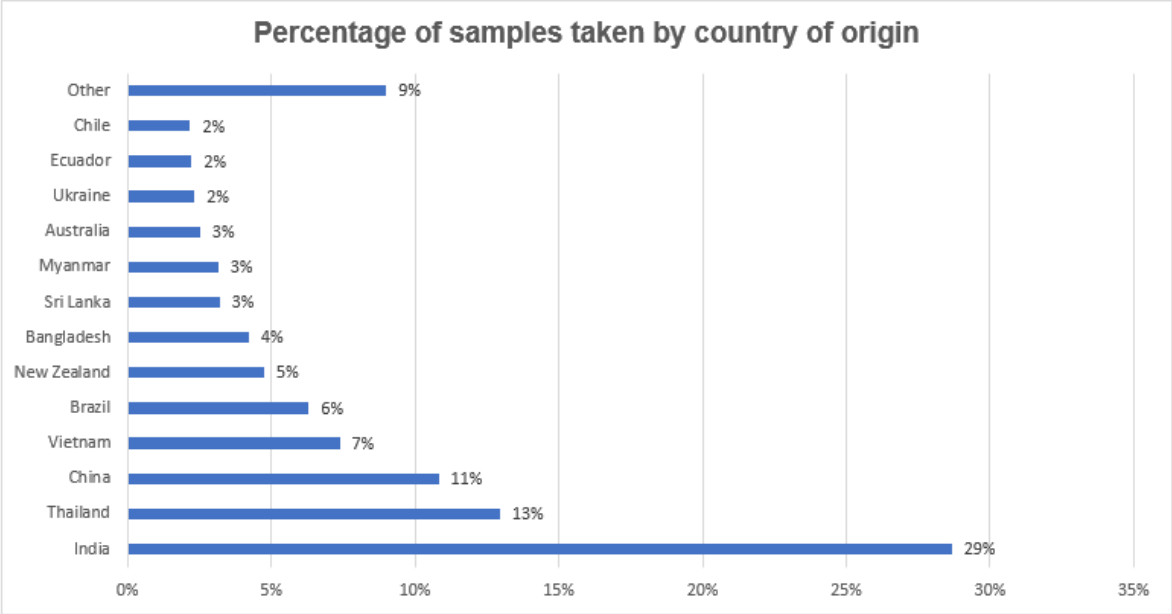
Figure 2: Non-compliances by country of origin, product & hazard

Country	Product type	Product category	Hazard category	Hazard	Non-compliances
Australia	Ovis aries	Ovine	Microbiological	*Eschericia coli*	1
China	Dog and cat food	Pet food	Microbiological	*Salmonella spp.*	1
Ukraine	Gallus gallus	Poultry	Chemical contaminants	Chlorate	1
Ukraine	Ice cream	Milk & milk products	Microbiological	*Enterobacteriaceae*	2
Vietnam	Stolephorus spp.	Fish	Biotoxin	Histamine	1

As the graph below shows, consignments from 39 countries were sampled, most frequently from India (591 or 29%), Thailand (267 or 13%), China (223 or 11%), Vietnam (152 or 7%), Brazil (130 or 6%), New Zealand (98 or 5%), Bangladesh (87 or 4%), Sri Lanka (66 or 3%) and Myanmar (65 or 3%). ***(fig 3)*** and percentages in graph chart ***(fig 4)***.



(fig 3)



Note: countries that have been sampled at less than 2% are classed together as 'other' in the above chart. ***(fig 4)***

Figures 3 & 4: Samples taken by country of origin & percentage of total

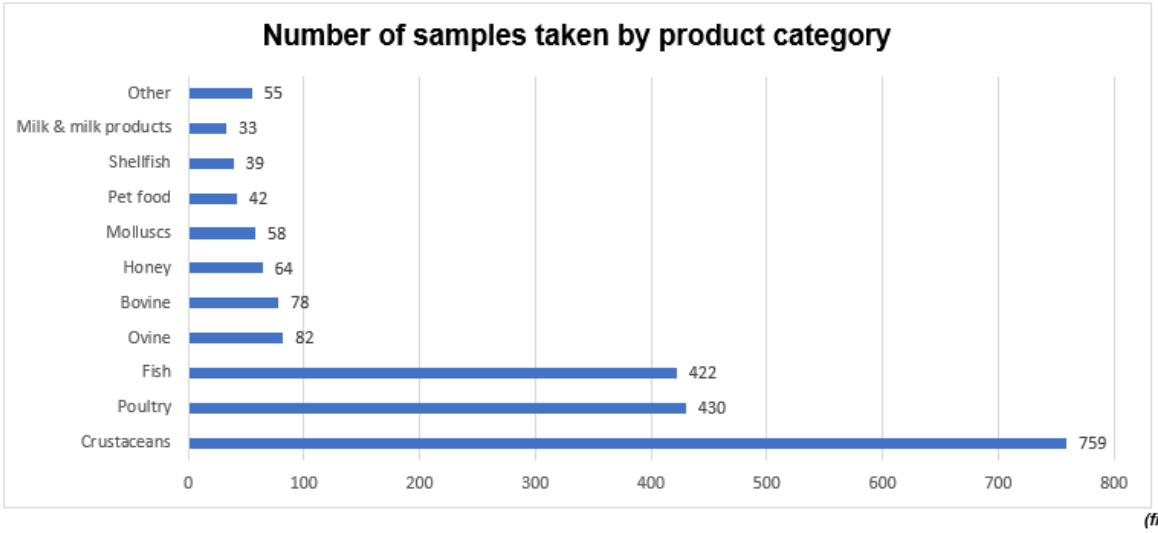
%

Country of origin	No. of samples	Country of origin	No. of samples	%	
India	591	29	Pakistan*	9	-
Thailand	267	13	Peru*	7	-
China	223	11	Nicaragua*	6	-
Vietnam	152	7	Uruguay*	6	-
Brazil	130	6	Mexico*	5	-
New Zealand	98	5	Argentina*	4	-
Bangladesh	87	4	Ghana*	4	-
Sri Lanka	66	3	Serbia*	4	-
Myanmar	65	3	South Korea*	4	-
Australia	52	3	Zambia*	4	-
Ukraine	48	2	Mauritania*	3	-
Ecuador	46	2	Mauritius*	3	-

Country of origin	No. of samples	Country of origin	No. of samples	%	
Chile	45	2	Falkland Islands*	2	-
Indonesia*	28	-	Japan*	2	-
Malaysia*	21	-	Madagascar*	1	-
Canada*	20	-	Maldives*	1	-
Morocco*	17	-	Namibia*	1	-
United States*	16	-	Oman*	1	-
Türkiye*	12	-	Papua New Guinea*	1	-
South Africa*	10	-	Total	2,062	

*Countries marked with an asterisk have been sampled at less than 2% and appear together as ‘other’ in figure 4.

Samples were taken from 15 product categories. During this period, crustaceans accounted for 759 samples, with 430 for poultry and 422 for fish. Compared with the previous period, in 2022-23 there was lower sampling of crustaceans (427samples), but higher for poultry (462 samples) and for fish 617 (samples). ***(fig 5)***.



(fig 5)

Figure 5: Samples taken by product category & percentage of total

Country of origin	No. of samples	%
Crustaceans	759	37%
Poultry	430	21%
Fish	422	20%
Ovine	82	4%
Bovine	78	4%
Honey	64	3%
Molluscs	58	3%
Pet food	42	2%
Shellfish	39	2%
Milk & milk products	33	2%
Other	55	3%
Total	2,062	

Detailed analysis

Sampling for veterinary residues

There were 1,150 samples from 22 countries ***(fig 6)*** taken and checked for the presence of veterinary residues. There were no non-compliant samples.

The greatest number of samples for veterinary residues were taken from India (529 or 46%), followed by Vietnam (110 or 10%), Brazil (94 or 8%), China (86 or 7%) and Thailand (86 or 7%). See chart on ***(fig 8)*** for percentages – countries marked with an asterisk are shown together as ‘other’ on the graph chart.

Figure 8: Samples taken by country of origin & percentage of total

Country of origin	No. of samples	%	Country of origin	No. of samples	%
India	529	46%	United States*	9	-
Vietnam	110	10%	Ukraine*	8	-
Brazil	94	8%	Nicaragua*	6	-
China	86	7%	South Africa*	6	-

Thailand	86	7%	Mexico*	4	-
Myanmar	65	6%	Uruguay*	4	-
New Zealand	47	4%	Zambia*	4	-
Australia	41	4%	Indonesia*	3	-
Bangladesh	19	2%	Pakistan*	2	-
Ecuador*	14	-	Türkiye*	2	-
Chile*	10	-	Madagascar*	1	-
			Total	1,150	

* Countries marked with an asterisk have been sampled at less than 2% and appear together as ‘other’ on figure 8.

Of the samples tested for veterinary residues, the highest numbers were for nitrofurans (243), chloramphenicol (228) followed by tetracyclines (211), avermectins (55), antibacterials (48), coccidiostats (45), macrolides (29) and benzimidazoles (25). *(fig 7)*

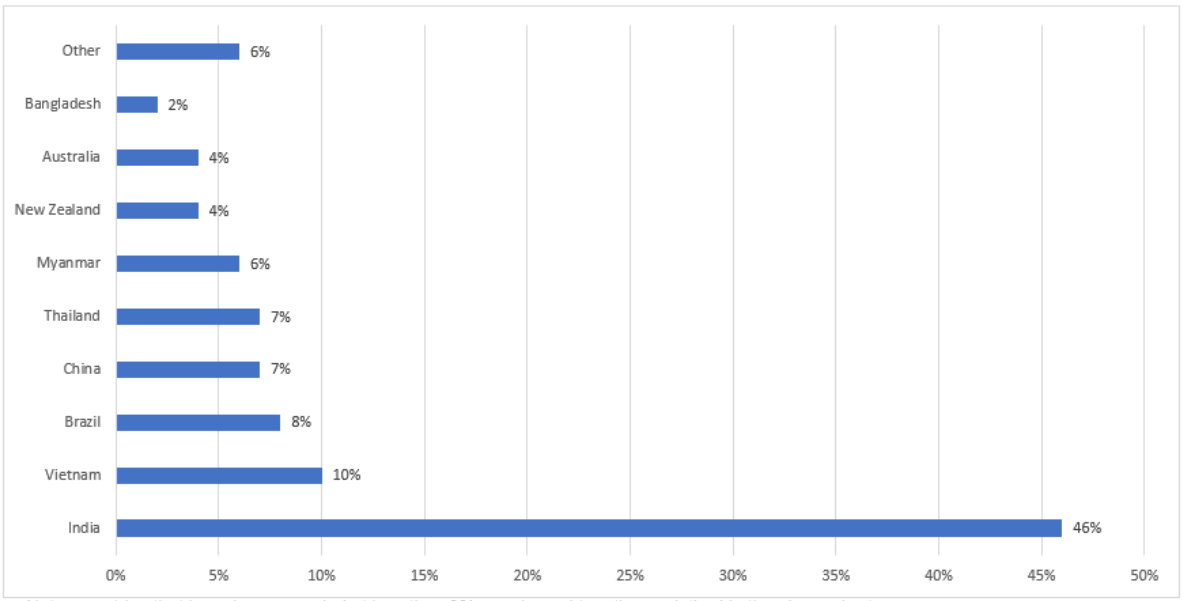
Samples tested for veterinary residues

Substance	No. of samples	Substance	No. of samples
Nitrofurans	243	Nitroimidazoles	3
Chloramphenicol	228	Penicillin	3
Tetracyclines	211	Pleuromutilins	3
Avermectins	55	Quinolones/Fluoroquinolones	3
Antibacterials	48	Rifamycin	3
Coccidiostats	45	Sulphadimidine	3
Macrolides	29	Trenbolone	3
Benzimidazoles	25	Zeranol (Alpha-Zearalanol)	3
Phenicoles	24	Dapsone	2
Sulfonamides	23	Diclazuril	2
Other Pharmacologically Active Substances	19	Doxycyclin	2
Quinolones	17	Lasalocid	2

Pesticides residues	16	Malachite Green	2
Anticoccidials including nitroimidazoles	15	Methacylin	2
Dyes	15	Moxidectin	2
Beta-agonists (screening multisubstances)	12	Nicarbazin	2
Beta-lactamics	11	Thiamphenicol	2
Streptomycin	10	AMOZ	1
Fluoroquinolones	5	Anthelmintics	1
Nitromidazoles (group)	5	AOZ	1
Trimethoprim	5	Epi-Oxytetracycline	1
Nitrofurans metabolites	4	Erythromycin	1
Organochlorine compounds inc PCBs	4	Lincosamides	1
Oxytetracyclin	4	Medroxyprogesterone	1
Sulfamides/Sulfonamides	4	Miscellaneous Veterinary	1
Amphenicols	3	Quinolones/Fluroquinolones	1
Cephalosporins	3	Tylosin	1
		Total	1,150

(fig 7)

Percentage of consignments by country of origin sampled for veterinary residues



Note: countries that have been sampled at less than 2% are classed together as 'other' in the above chart. ***(fig 8)***

Sampling for microbiological contamination

There were 560 samples from 22 countries ***(fig 9)*** taken and checked for the presence of microbiological contamination. There were four non-compliant results identified: one each for *Eschericia coli* in ovine from Australia and *Salmonella* in pet food from China; and two for *Enterobacteriaceae* in milk products from Ukraine.

The greatest number of microbiological samples, were taken from Thailand (167 or 30%), China (96 or 17%), New Zealand (43 or 8%), Ukraine (35 or 6%), Brazil (32 or 6%), Vietnam (29 or 5%), Chile (27 or 5%), Malaysia (21 or 4%), Canada (20 or 4%), Indonesia (17 or 3%), Sri Lanka (12 or 2%), Australia (11 or 2%) and India (11 or 2%). See graph chart on ***(fig 11)*** for percentages – countries marked with an asterisk below are shown together as 'other' on the chart.

Figure 11: Samples taken by country of origin & percentages of total

Country of origin	No. of samples	%	Country of origin	No. of samples	%
Thailand	167	30%	Sri Lanka	12	2%
China	96	17%	Australia	11	2%
New Zealand	43	8%	India	11	2%
Ukraine	35	6%	Türkiye*	6	-
Brazil	32	6%	Serbia*	4	-
Vietnam	29	5%	South Africa*	4	-

Chile	27	5%	United States*	4	-
Malaysia	21	4%	Bangladesh*	2	-
Canada	20	4%	Falkland Islands*	2	-
Indonesia	17	3%	Japan*	1	-
Ecuador	15	3%	Namibia*	1	-
			Total	560	

(fig 9)

* Countries marked with an asterisk have been sampled at less than 2% and appear together as ‘other’ on figure 11.

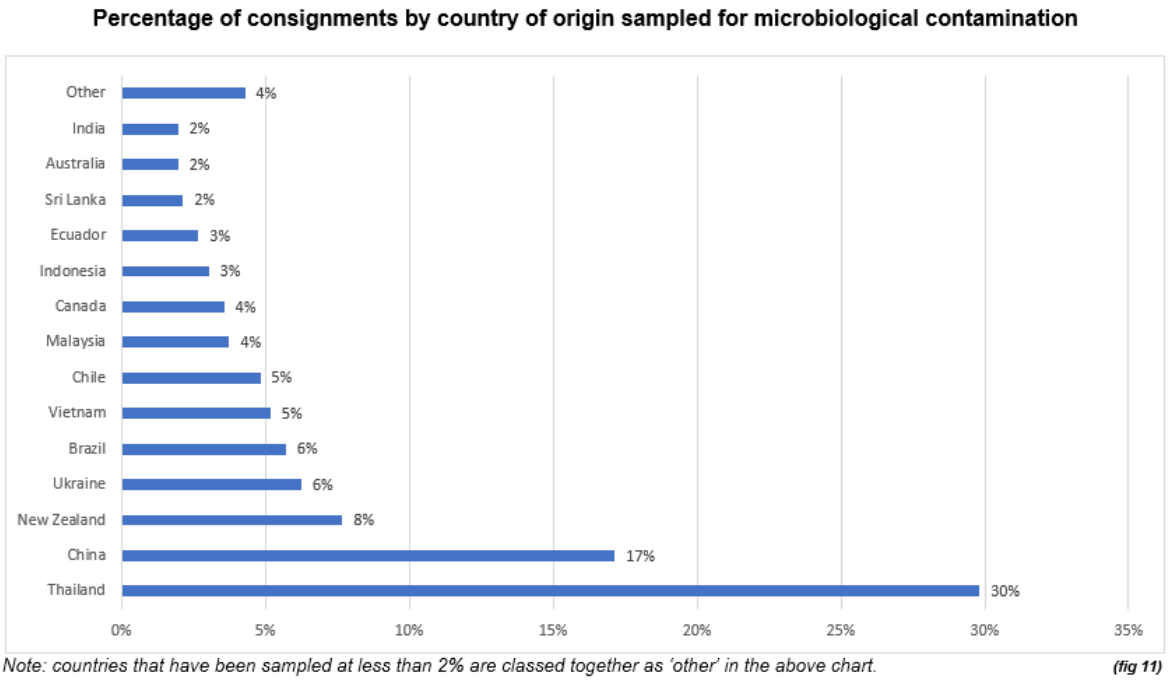
Of the samples tested for microbiological contamination, the highest numbers were for Salmonella (120), followed by Eschericia coli (81), Enterobacteriaceae (72), aerobic microorganisms 30°C (49), Listeria monocytogenes (36), Staphylococcus aureus (35), Listeria spp (excl L monocytogenes) (27) and Clostridium perfringens (21) ***(fig 10)***

Samples tested for microbiological contamination

Hazard	No. of samples	Hazard	No. of samples
Salmonella spp.	120	*Coagulase* Positive *Staphylococci*	6
Eschericia coli	81	*Salmonella* Typhimurium	6
Enterobacteriaceae	72	*Listeria* species (total)	5
Aerobic microorganisms 30°C	49	*Salmonella* species	5
Listeria monocytogenes	36	ß-*Glucuronidase* Positive *Escherichia coli*	5
Staphylococcus aureus	35	*Vibrio* species	5
Listeria spp (excl *L. monocytogenes*)	27	*Vibrio* spp.	3
Clostridium perfringens	21	Microbiological	2
Vibrio cholerae	12	AHD	1
Vibrio parahaemolyticus	12	*Escherichia coli* and *Salmonella* spp.	1
Staphylococcus coagulase +	11	Full micro screen	1

Eschericia coli (STEC)	10	*Listeria* spp	1
Campylobacter spp (excl *C. jejuni and C. coli*)	9	*Listeria* spp. (total)	1
Campylobacter (*C. jejuni, C. coli*)	7	Presumptive *Bacillus cereus*	1
Salmonella Enteritidis	7	*Salmonella* spp	1
Aerobic colony count at 30 ºC for 48h	6	*Vibrio vulnificus*	1
		Total	560

(fig 10)



Note: countries that have been sampled at less than 2% are classed together as 'other' in the above chart. ***(fig 11)***

Sampling for heavy metals

There were 273 samples from 21 countries ***(fig 12)*** taken and checked for the presence of heavy metals. There were no non-compliant samples. The greatest number of heavy metals samples were taken from Bangladesh (66 or 24%), followed by Sri Lanka (54 or 20%), India (33 or 12%), China (29 or 11%) and Morocco (14 or 5%). See chart on ***(fig 14)*** for percentages – countries marked with an asterisk below are shown together as 'other' on the chart.

Figure 14: Samples taken by country of origin & percentage of total

Country of origin	No. of samples	%	Country of origin	No. of samples	%

Bangladesh	66	24%	Pakistan	5	2%
Sri Lanka	54	20%	Argentina*	4	-
India	33	12%	Ghana*	4	-
China	29	11%	Peru*	4	-
Morocco	14	5%	South Korea*	4	-
Vietnam	9	3%	Mauritania*	3	-
Ecuador	8	3%	United States*	3	-
Indonesia	8	3%	Brazil*	2	-
Thailand	8	3%	Uruguay*	2	-
Chile	6	2%	Mexico*	1	-
New Zealand	6	2%	Total	273	

(fig 12)

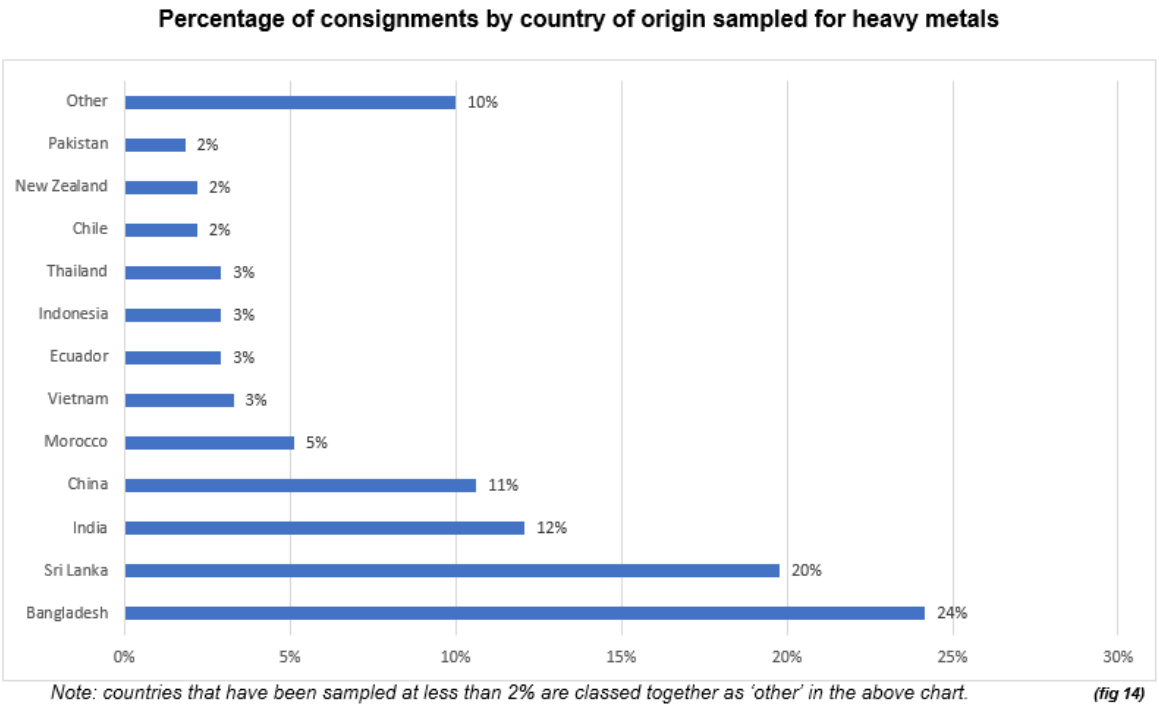
* Countries marked with an asterisk have been sampled at less than 2% and appear together as ‘other’ on figure 14.

Of the samples tested for heavy metals, the highest numbers were for lead Pb (89) followed by mercury Hg (88), cadmium Cd (69) and arsenic As (24). *(fig 13)*

Samples tested for heavy metals

Hazard	No. of samples
Lead Pb	89
Mercury Hg	88
Cadmium Cd	69
Arsenic As	24
Chromium Cr	1
Cupper Cu	1
Zinc Zn	1
Total	273

(fig 13)



Note: countries that have been sampled at less than 2% are classed together as 'other' in the above chart. ***(fig 14)***

Sampling for biotoxins

There were 50 samples from 12 countries ***(fig 15)*** taken and checked for the presence of biotoxins. There was one non-compliant sample for histamine from Vietnam. The greatest number of samples for biotoxins were taken from India (12 or 24%) followed by China (8 or 16%), Ecuador (6 or 12%) and Thailand (6 or 12%). See chart on ***(fig 17)*** for percentages.

Figure 17: Samples taken by country of origin & percentage of total

Country of origin	No. of samples	%
India	12	24%
China	8	16%
Ecuador	6	12%
Thailand	6	12%
Vietnam	4	8%
Mauritius	3	6%
Morocco	3	6%
Peru	3	6%

Chile	2	4%
Maldives	1	2%
Oman	1	2%
Papua New Guinea	1	2%
Total	50	

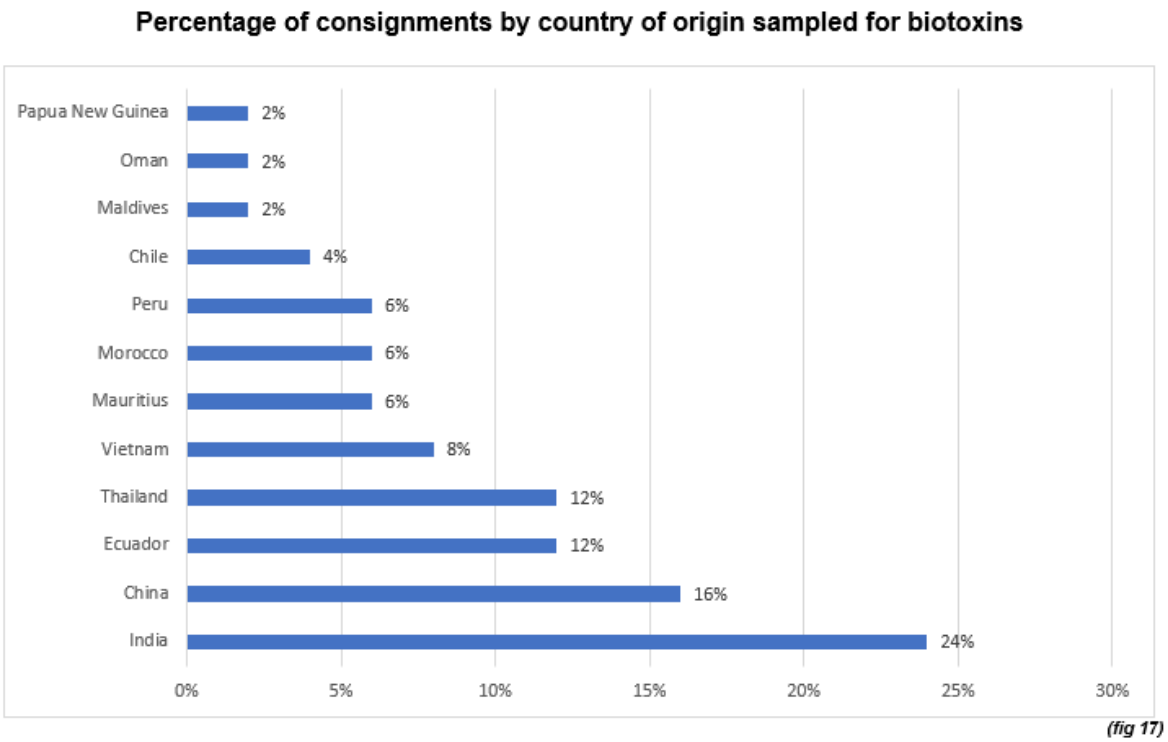
(fig 15)

Of the samples tested for biotoxins, only histamine was recorded (50) ***(fig 16)***

Samples tested for chemical biotoxin

Hazard	No. of samples
Histamine	50
Total	50

(fig 16)



(fig 17)

Sampling for chemical contaminants

here were 29 samples from 9 countries ***(fig 18)*** taken and checked for the presence of chemical contaminants. There was one non-compliant sample for chlorate in chicken from Ukraine. The greatest number of samples for chemical contaminants were taken from India (6 or 21%), Ukraine (5 or 17%), China (4 or 14%) and Türkiye (4 or 14%). See chart on **(*fig 20)***.

Samples taken by country of origin & percentage of total

Country of origin	No. of samples	%
India	6	21%
Ukraine	5	17%
China	4	14%
Türkiye	4	14%
Ecuador	3	10%
Brazil	2	7%
New Zealand	2	7%
Pakistan	2	7%
Japan	1	3%
Total	29	

(fig 18)

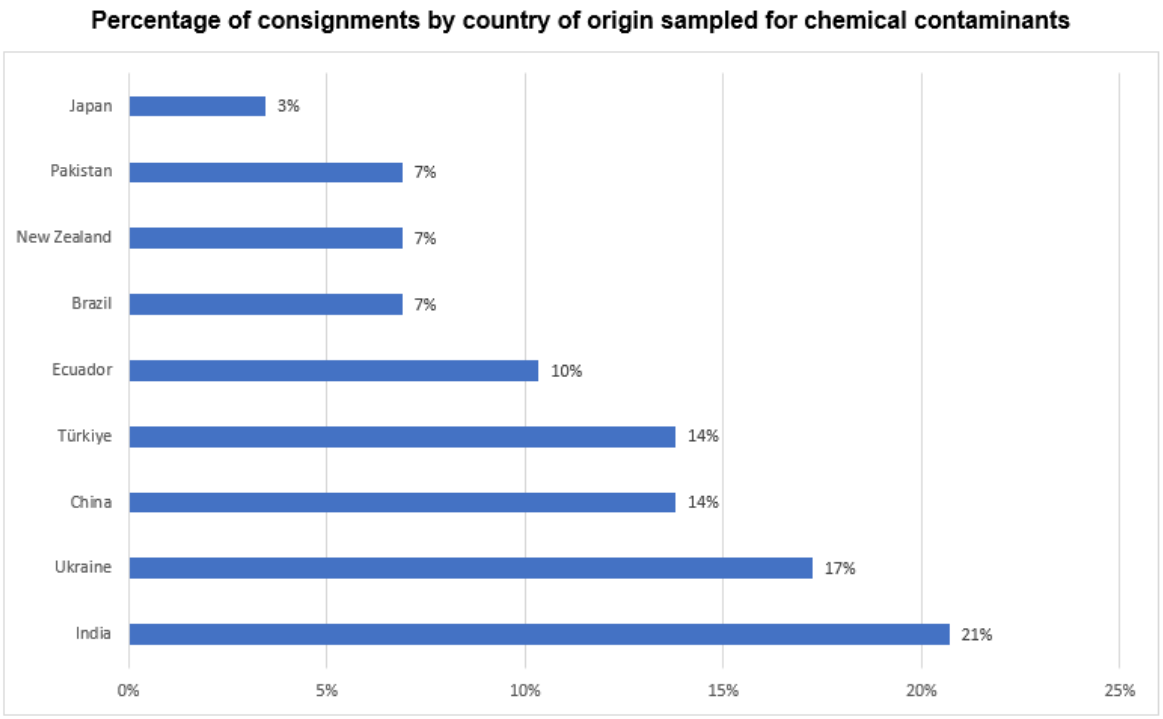
Of the samples tested for chemical contaminants, the highest number were for lead Pb (89), followed by mercury Hg (88), cadmium Cd (69) and arsenic As (24). ***(fig 19)***

Samples tested for chemical contaminants

Hazard	No. of samples
Chlorate	12
Dioxins	6
Polyphosphates STPP (E452)	4
sulphur dioxide (SO2)	2
Benzo-a-pyrene	1
Hydrogen peroxide (H2O2)	1

PAH4	1
Perchlorate	1
SEM (semicarbazide)	1
Total	29

(fig 19)



(fig 20)

Sampling of pet food (dog or cat food & other pet food)

here were 42 samples from 5 countries ***(fig 21)*** taken and checked for *Salmonella* spp., *Enterobacteriaceae*, chloramphenicol and nitrofurans. There was one non-compliant result for *Salmonella* in pet food from China. The greatest number pet food samples were taken from China (24 or 57%) and India (12 or 29%). See chart on ***(fig 23)*** for percentages.

Samples taken by country of origin & percentage of total

Country of origin	No. of samples	%
China	24	57%
India	12	29%
New Zealand	2	5%

Türkiye	2	5%
United States	2	5%
Total	42	

(fig 21)

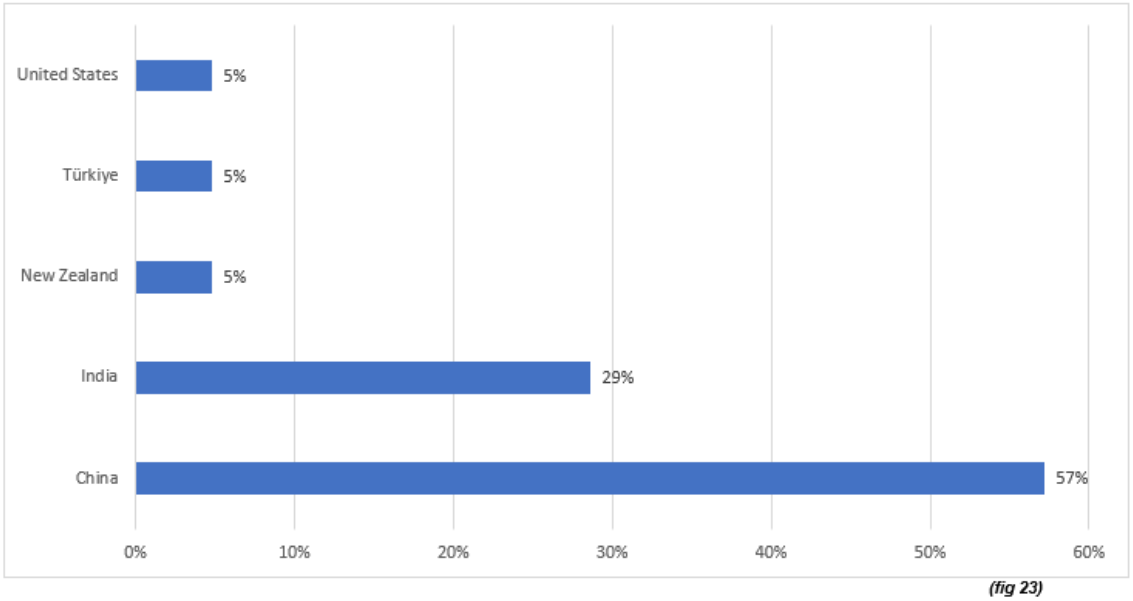
Of the samples of pet food tested, the highest number of tests was for *Salmonella* spp (45). ***(fig 22)***

Samples of pet food tested

Hazard	No. of samples
Salmonella spp.	21
Enterobacteriaceae	19
Chloramphenicol	1
Nitrofurans	1
Total	42

(fig 22)

Percentage of consignments by country of origin sampled of pet food (dog or cat food & other pet food)



(fig 23)