

# Occurrence of contaminants and food additives in the Portuguese food chain: data collection and transmission of official control samples to EFSA from 2017 to 2023

Roberto Brazão (✉), Francisco Ravasco, Sidney Tomé, Maria da Graça Dias  
Food and Nutrition Department. National Institute of Health Doutor Ricardo Jorge, IP

(✉) [roberto.brazao@insa.min-saude.pt](mailto:roberto.brazao@insa.min-saude.pt)

**Introduction:** The collection of accurate and reliable data on food and feed is essential to monitor their safety and to support informed dietary exposure and risk assessments and management, contributing to higher consumer safety and health. The European Food Safety Authority (EFSA) has made available several technical procedures, systems and tools to ensure that, as far as possible, the data it receives is up-to-date, standardised and comparable across all Member States.

The National Institute of Health Doutor Ricardo Jorge (INSA) is responsible for gathering, harmonising and electronically submitting to EFSA, according to their reporting requirements, the information on food and feed contaminants and food additives from the Portuguese official control plans and from studies performed in INSA laboratories. We aim to present the process of data collection and transmission to EFSA and the main results during the period 2017-2023 (samples collected in 2016-2022).



Figure 1: EFSA data providers<sup>1)</sup>.



**Methodology:** Annually, INSA gathers information on contaminants and additives from the official control plans of the Portuguese authorities and from INSA studies. This information was reported according to the EFSA Standard Sample Description for Food and Feed (SSD2)<sup>i)</sup>, complemented by FoodEx2<sup>ii)</sup>, to ensure data harmonisation, standardisation and quality. It were also used EFSA's Excel Tools and Catalogue Browser to facilitate the process.

<sup>i)</sup> The Standard Sample Description (SSD2) data model is a format for describing food and feed samples and analytical results that must be used by EFSA's data providers. It specifies the data elements, data structure, controlled vocabularies and validation rules, mandatory for chemical contaminants and residues as well as microbiological contaminants, zoonotic agents and antimicrobial resistance data in food, feed, animals, environmental samples and food contact materials.

<sup>ii)</sup> FoodEx2 is a standardised system for classifying and describing food. FoodEx2 consists of descriptions of a large number of individual food items aggregated into food groups and broader food categories in a hierarchical parent-child relationship.

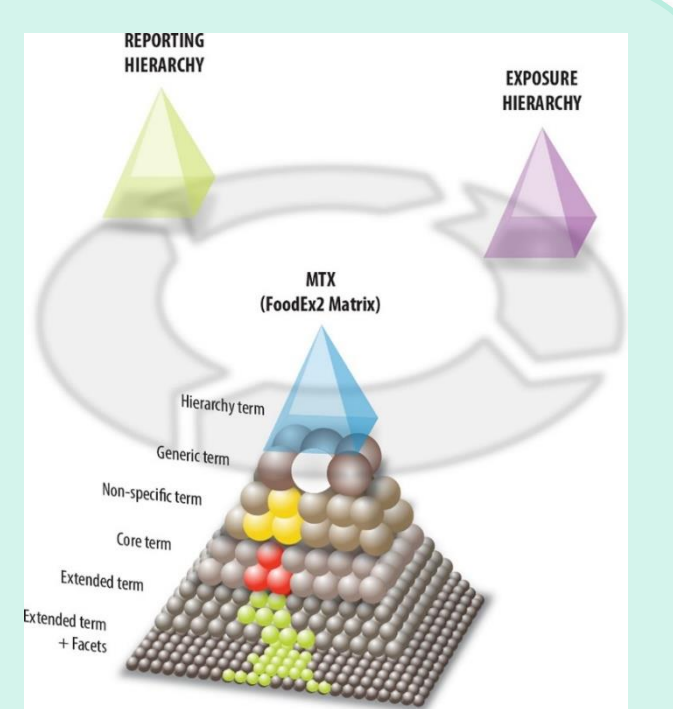


Fig. 2. The FoodEx2 classification system structure.<sup>2)</sup>

**Results:** Between 2017 and 2023, 64076 analytical results on food (62963) and feed (1113) were gathered and transmitted to EFSA according to SSD2. These results, almost entirely on contaminants (62167), correspond to 12438 food and feed samples collected. During this period, of all the reported results evaluated (60134) only 0.2% (131) were non-compliant (3942 results were classified as "not evaluated" because they corresponded to INSA studies). Animal feed data were reported just in 2023.

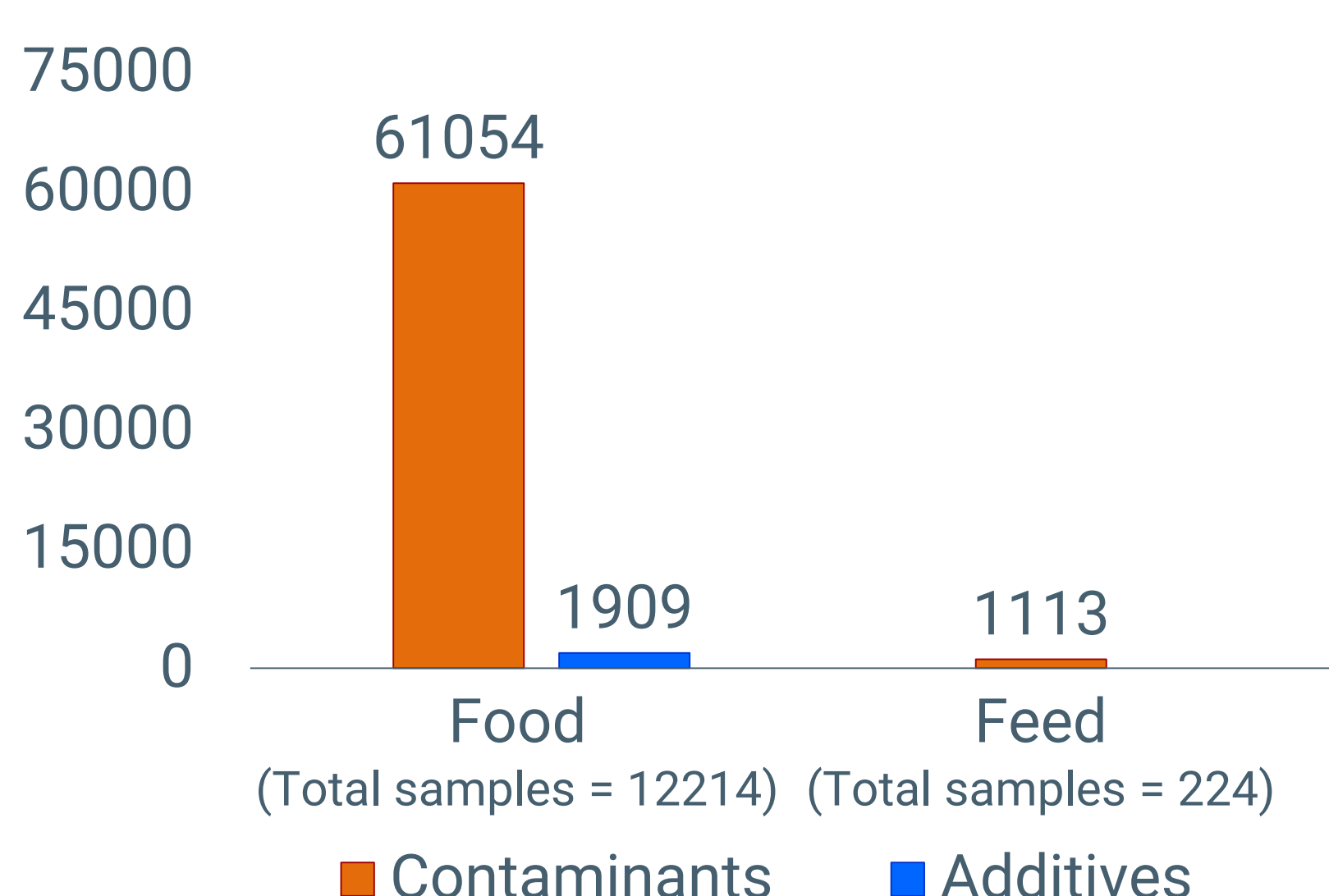


Fig. 3: Total number of analytical results on food and feed reported to EFSA between 2017-2023, in compliance with the SSD2.

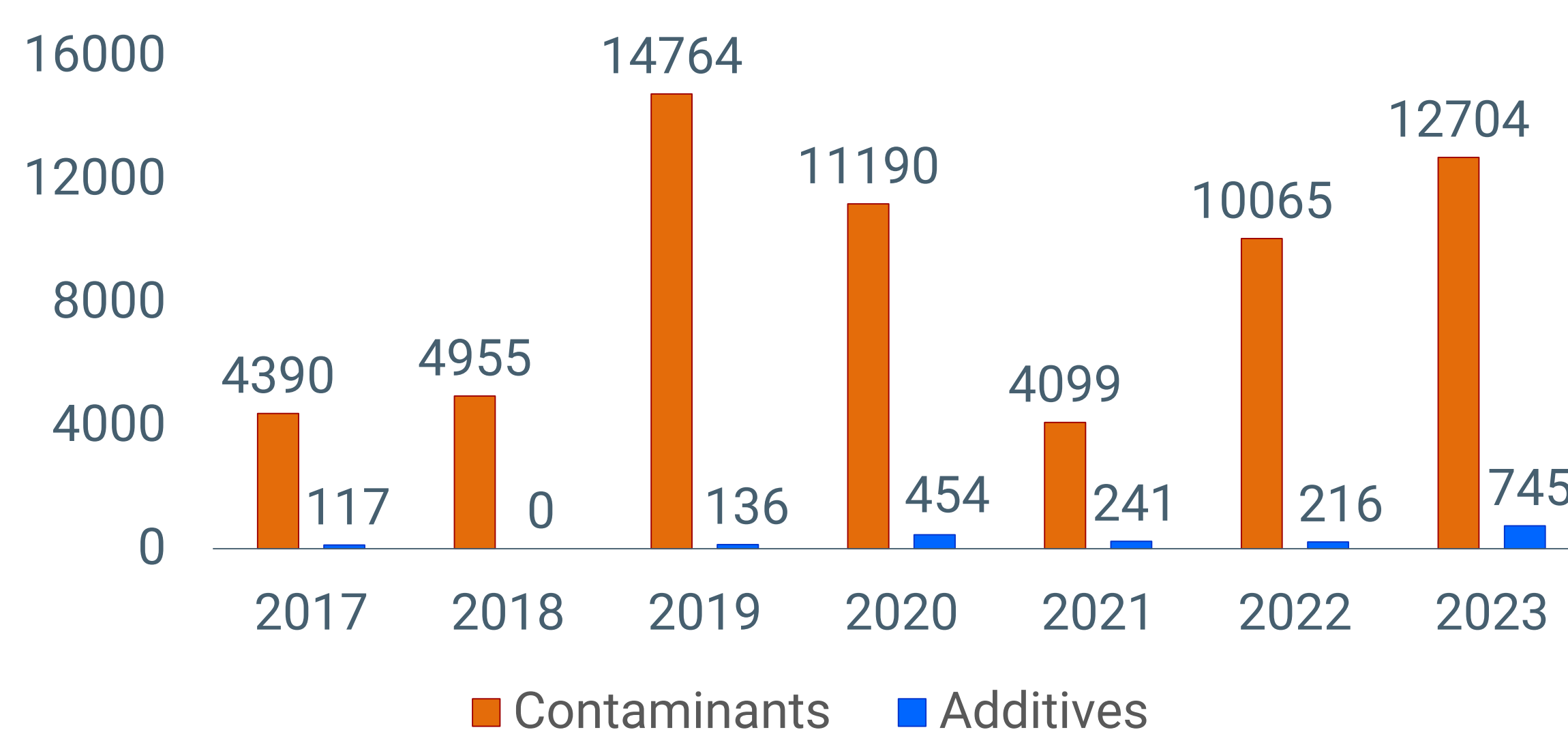


Fig. 4: Total number of analytical results reported to EFSA on food and feed, between 2017-2023, in compliance with the SSD2, per year.

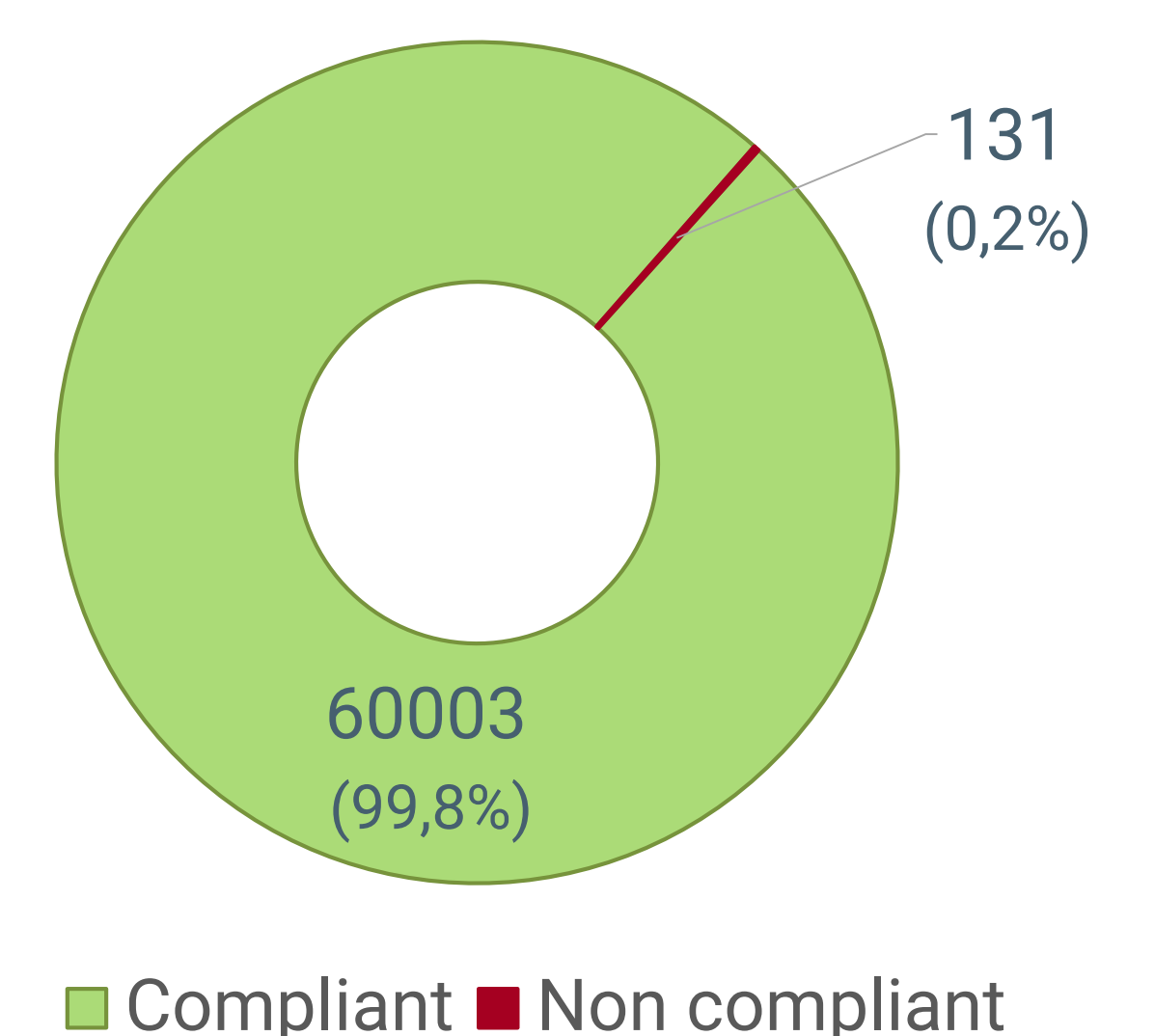


Fig. 5: Number and percentage of compliant and non compliant results reported to EFSA, between 2017-2023.

**Conclusions:** The use of the SSD2 and FoodEx2 data model and system and all other tools made available by EFSA ensure data harmonisation, standardisation, and overall quality, consistency, and reliability in the information reported. During the period under review, there was a high level of compliance (99.8%) in the results of samples collected under the Portuguese official control plans.

**Topic relevance:** These data, combined with reliable information on food consumption, makes it possible to assess consumer exposure to certain hazards at the EU and at country-level. So, up-to-date, reliable and comparable information across Member States is crucial to both scientists carrying out risk assessments and decision-makers in making informed decisions and ensuring food and feed safety, ultimately aiming to protect and promote consumer health in Europe.

**References:** 1) <https://www.efsa.europa.eu/pt/data/data-reports>;

2) Sofia Ioannidou, Claudia Cascio, Mary B. Gilsean, European Food Safety Authority open access tools to estimate dietary exposure to food chemicals, Environment International, Volume 149, 2021, 106357, ISSN 0160-4120;