

Contaminants, residues and food additives occurrence in the Portuguese food chain: 2009-2016 results from the national data management system "Alimentos PT•ON•DATA"

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Introduction

The development of efficient collection and management systems of occurrence data in food and feed are important to monitor its supply and safety, to support dietary exposure and risk assessments, to strengthen knowledge acquisition and dissemination and to provide better scientific advices, contributing to the safety of the food chain and, consequently, to a higher level of protection of consumer's health and life. In this context, Portugal created the National Data Management System (NDMS) "Alimentos PT•ON•DATA" in order to collect, compile, harmonize and electronically submit (Fig. 1) to the European Food Safety Authority (EFSA) coherent and trusted national data on contaminants, residues and food additives.

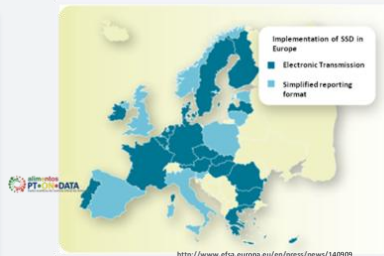


Figure 1 - Implementation of SSD in Europe (2014).
<http://www.efsa.europa.eu/en/press/news/140909>

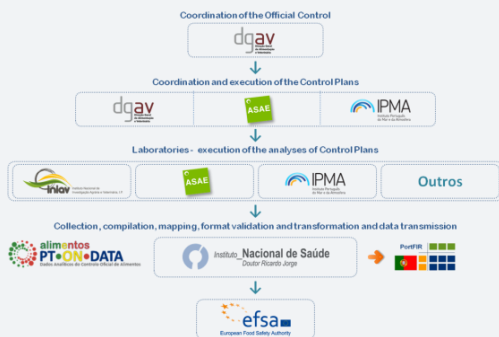


Figure 2 - Flowchart of the analytical information circuit of the national official control. Competent authorities and national official laboratories involved.

Objectives

To explore and further develop the NDMS for supporting national and international scientific risk assessments and planning more assertive monitoring activities facilitating its execution.

Methods

The NDMS was created and is being upgraded by a consortium coordinated by National Institute of Health Doutor Ricardo Jorge (INSA) and General Directorate of Food and Veterinary Affairs (DGAV) and involving other national entities (Fig. 2). The system implemented the Standard Sample Description - SSD¹ and SSD² - data models and catalogues, and involved the use of the EFSA Guidance on Data Exchange (GDE³) and the Food Classification System (FoodEx⁴ and FoodEx²) as standards and also of several Microsoft® tools.

Results

Currently Portugal has a system with functionalities to collect/upload, map, validate and store data from the official control of the food chain and to create XML files, for electronic transmission to EFSA platform. NDMS supports scientific assessments and data reports and provides tools for the future management of the information of the control plans (sampling and analytical) in real-time.

From 2009 to 2016, **260 271 results** were reported to EFSA using the NDMS, **70 216** of which in SSD format (Fig. 3), almost entirely chemical contaminants, and **190 055** according to SSD² format (Fig 4), mostly pesticide residues. The evolution over time of national data transmissions to EFSA, from 2009 to 2016, is presented in Figures 5 and 6.

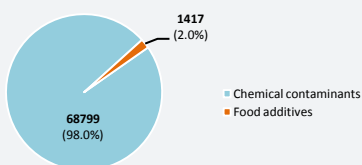


Figure 3 - Total number of results in the SSD format, by domain.

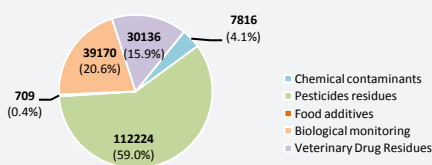


Figure 4 - Total number of results in the SSD2 format, by domain.

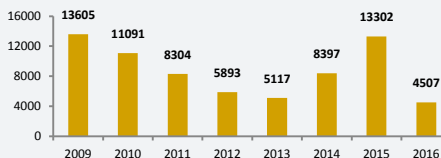


Figure 5 - Total number of results in the SSD format, by year.

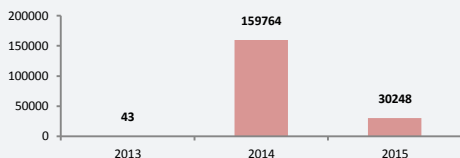


Figure 6 - Total number of results in the SSD2 format, by year.

Conclusions

The NDMS "Alimentos PT•ON•DATA" allows a continuous semi-automated collection, compilation, harmonization and submission of occurrence data produced by the various national entities, contributing to the optimization and accuracy of the control plans, the improvement of dietary exposure and risk assessments activities and the identification, characterization and monitoring of emerging risks, aiming to enhance food and feed safety and, by so, to protect the population from potential health risks deriving from the food chain. In parallel, the NDMS data can also serve to update the national contaminants database of the PortFIR Program, from INSA, I.P., allowing other levels of access, utilization and analysis to the available data/information, optimizing the use of national resources.

References

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