

Quality of Romanian Food Products on Rapid Alert System for Food and Feed Notifications

Silvius Stanciu

Abstract—Romanian food products sold on European markets have been accused of several non-conformities of quality and safety. Most products incriminated last period were those of animal origin, especially meat and meat products. The study proposed an analysis of the notifications made by network members through Rapid Alert System for Food and Feed on products originating in Romania. As a source of information, the Rapid Alert System portal and the official communications of the National Sanitary Veterinary and Food Safety Authority were used. The research results showed that nearly a quarter of network notifications were rejected and were withdrawn by the European Authority. Although national authorities present these issues as success stories of national quality policies, the large number of notifications related to the volume of exported products is worrying. The paper is of practical and applicative importance for both the business environment and the academic environment, laying the basis for a wider research on the quality differences between Romanian and imported products.

Keywords—Food, quality, Rapid Alert System for Food and Feed, RASFF, Romania.

I. INTRODUCTION

THE quality of food products marketed on the Community market is an essential aspect of European Policy. European Union (EU) regulations on the agri-food production have as main objective the protection of consumer health through food safety measures [1]. EU food safety policy and actions address four main protection axes related to food hygiene, animal health, plant health and the limitation of maximum permissible levels for contaminants and residues in food and feed. In support of these measures, food monitoring and control systems are implemented at European level, the most important being Rapid Alert System for Food and Feed (RASFF) (1979), traceability of animals Trade Control and Expert System (TRACES) (2005), EU Pesticides database (2005), Notification of interceptions and plant health notifications EUROPHYT (2014) [1]. Food safety risk assessment, scientific advice and information on food safety standards at European level is carried out by the European Food Safety Agency (EFSA) [2].

Although the European food safety system is one of the most effective in the world, the EU food market has not been protected from the effects of critical incidents. The fraud regarding beef, which was replaced with horse meat, has highlighted the possibility that food safety issues may also arise in the area of food fraud, including at the level of the

Community market [3]. As an additional measure to avoid food fraud, the European Commission has set up the EU Food Fraud Network (FFN) in 2014 to address situations where national authorities are faced with possible intentional violations of food chain law with a cross-border impact [4].

II. LITERATURE REVIEW

The RASFF, set up in 1979, is a computer platform with a major role in transmitting data on public health risks in the European food chain. The system provides ongoing assistance, with notifications being communicated, received and responded collectively and effectively, characteristics that enable authorities to react quickly when public health risks are detected. RASFF members are national bodies responsible for food safety in the EU-28, the European Commission, EFSA, ESA, Norway, Liechtenstein, Iceland and Switzerland [5].

The electronic notification format, available on the RASFF portal, allows you to select the information of interest based on keywords [6].

The presentation and analysis of RASFF notifications as a tool to reduce food safety risks for aquatic products were carried out by Amico et al. [7], which identified the most important non-conformities in the marketing of seafood on the European market. The study highlighted the predominance of risks associated with heavy metal content or the presence of pathogenic organisms, suggesting potential links between the notifications made and the characteristics of the incriminated products. The authors have shown that although RASFF is a valuable database, there are limitations, because despite the legal obligation for all members of the network, non-compliant products are not always notified.

An interesting study on RASFF notifications on foreign bodies in food commodities marketed on the European market during the period 1998-2015 was conducted by Djekic et al. [8]. The authors highlighted 1,446 contamination incidents with foreign substances, analyzing the types of notified foreign bodies, the food products involved and the geographical distribution in the European regions. The regional analysis showed that the distribution of the number of notifications is quite similar between regions, with most notifications coming from Eastern Europe. The main incriminated foreign bodies are biological pests, glass and metals, the most affected categories of foods being fruit and vegetables, nuts, nut products, confectionery and bakery.

RASFF has an important role to play in identifying food products at risk for the health of the population, being an important tool in avoiding critical situations on the European market [9].

Silvius Stanciu is with Dunărea de Jos University of Galati, CO 800008, Romania (phone: +40336130142; fax: +40 236468061; e-mail: sstanciu@ugal.ro).

Studies on RASFF notifications related to the biological risks in food products marketed on the European market concerned *Listeria monocytogenes* [10], *Salmonella montevideo* [11], analyzing the presence of pathogenic microorganisms in food marketed on the European market, especially from non-EU countries. Classification of RASFF notifications according to the type of contaminants showed that approximately 30% of notifications generated during 2008-2010 were due to the presence of mycotoxins, especially in products imported from Turkey, China, Iran or the USA [12].

The collaboration of the Hungarian national authority with responsibilities in the field of food safety with the RASFF network was analyzed by Krisztina et al., who processed the notifications regarding Hungary in 2004 [13]. The study highlighted the frequent microbiological, chemical and biological contaminants in food sold in the Hungarian market, the categories of products affected and specific aspects related to food safety at national level.

III. MATERIAL AND METHODS

Notification information was retrieved from the portal of the RASFF. For the bibliographic documentation, scientific articles available on Clarivate Analytics, Google Academic, ResearchGate have been used. Official information on food production and trade, if necessary, were provided by the National Institute of Statistics, Eurostat, Faostat.

Data collected were systematized, statistically processed, plotted and interpreted. The results were compared with the scientific literature for a better interpretation.

IV. RESULTS

Romania is one of the European countries with the highest potential in the agricultural sector, occupying the sixth position in the EU countries from the perspective of the agricultural area used [14]. The European market is the main partner in Romania's agri-food trade, both in the field of exports and imports of food products. Domestic agri-food manufacturers receive important proceeds mainly from agricultural and livestock exports (cereals, tobacco and processed products, oil seed crops).

Although domestic regulations on food quality have been correlated with European standards, domestic companies face a number of quality issues, RASFF notifications of nonconformities due to raw materials, processing, storage or transportation of finished products. Between 1980 and 2018, agri-food products and feed from Romania received 210 notifications (Table I).

Animal products (meat, poultry, milk, eggs or fish) are ranked first in the notifications list, with over 50% of the notifications, while products of plant origin represent about 25% of the total recorded over the period analyzed (Fig. 1).

According to the data presented, it can be seen that a small part of the notifications concern finished products, food fats or other categories of food. Romania does not excel in the export of animal feed, being an importer for these products, mainly

represented by soybean, with few notifications.

TABLE I
ROMANIAN FOOD PRODUCTS RASFF NOTIFICATIONS

Products	Notifications	Products	Notifications
Cereals and bakery products	10	Honey and royal jelly	10
Cocoa, coffee and tea	4	Meat and meat products (other than poultry)	42
Confectionery	3	Milk and milk products	13
Dietetic foods, food supplements, fortified foods	7	Mollusks and products thereof - (obsolete)	3
Eggs and egg products	8	Natural mineral water	1
Fats and oils	2	Non-alcoholic beverages	1
Feed for food-producing animals	1	Nuts, nut products and seeds	9
Feed additives	2	Other food product/ mixed	1
Feed materials	16	Pet food	1
Fish and fish products	3	Poultry meat and products	30
Food contact materials	9	Prepared dishes and snacks	5
Fruits and vegetables	25	Soups, broths, sauces and condiments	1
Herbs and spices	3		
TOTAL 210 RASFF Notifications			

Source: Author, by using [6].

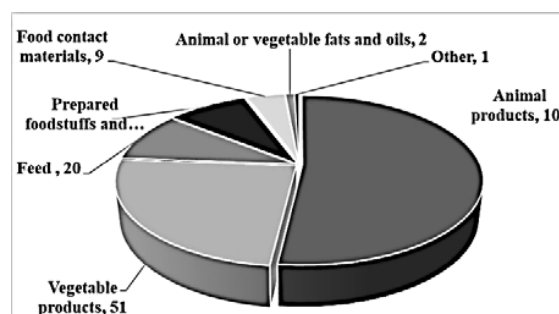


Fig. 1 Notifications by product origin, Source: Author calculation by using RASFF [6]

An analysis of the yearly evolution of notifications shows that almost 25% of non-conformities were recorded for exported products during 2013-2014 (Fig. 2). This development of notifications, with a peak in the period 2013-2014, must be correlated with horse-meat fraud. During the horse meat scandal, many beef products marketed on the European market were suspected to be from Romania. The slaughterhouses in Romania were wrongfully accused of selling horse as beef, and the products were exported with fraudulent documents. Although the incident did not affect the health of European citizens, it was a classic example of affecting consumer confidence in a product [3], [14].

Alert-type notifications that are sent when a food or feed distributed on the market has a serious risk to the health of the population were the most common RASFF ways to amend Romanian products by European market authorities (Fig. 3). Compared to this, information (general, for attention or for follow-up) represented about 55% of the total RASFF notifications submitted during the analyzed period. A single product (prepared dishes and snacks category) was notified with border rejection for exceeding the expiration date.

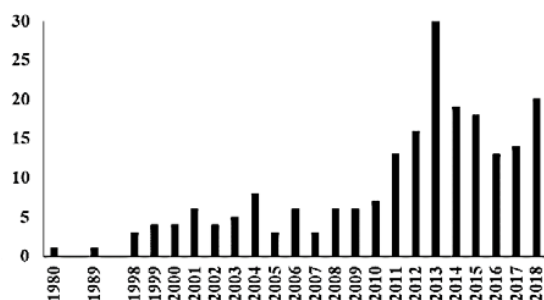


Fig. 2 RASFF Notifications by year, Source: Author calculation by using RASFF [6]

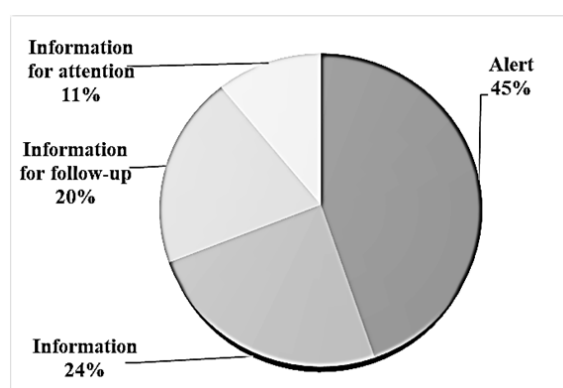


Fig. 3 RASFF notifications to local products, Source: Author calculation by using RASFF [6]

In 74 cases (35% of the total), the measures taken included various methods of limiting consumption (limitation of distribution, return to the manufacturer/distributor, additional consumer information measures) or even the official detention of the distributors responsible for distributing the products in the market in cases of serious deviations (Fig. 4).

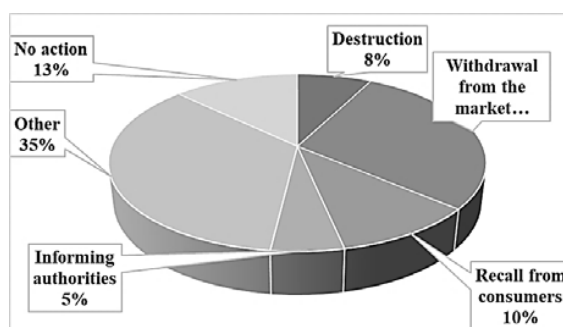


Fig. 4 Measures taken for non-compliant products, Source: Author calculation by using RASFF [6]

Withdrawals from the market, voluntary or ordered by the distributor, or even recall from consumers who purchased the products were taken in 59 and 22 cases, respectively. Destruction of products, which could pose a serious threat to the market, was ordered in 16 situations, and in 26 cases no measures were taken by the authorities.

The information on the website of the National Sanitary Veterinary and Food Safety Authority (ANSVSA), Romania's RASFF national partner on the notified products, is quite brief [15]. Latest RASFF notifications for products with the country of origin Romania presented on the portal of the institution date from 2016. Among the measures taken by the Romanian authorities, in response to the RASFF notifications, one can mention the appointment of an analysis committee (2008, for genetically modified rice lots coming from China); withdrawal from the market, additional analyzes to identify the pesticide level for lots of agricultural products.

V.CONCLUSION

The Romanian products exported to the European market registered an average of about 10 RASFF notifications/year in the period 1998-2018. The most frequently notified were products of animal origin, namely meat and meat products and poultry meat. The motivation for the notifications was, in most cases, the exceeding of the limits allowed for different pollutants, or cases of fraud during the time of the horse meat scandal. Although grain exports ranked first in the Romanian foreign trade, only 10 notifications (out of which 9 were for finished products) were sent to the network, demonstrating the corresponding quality of agricultural production, while also showing deficiencies of the processing sectors.

The National Authority for Soil Safety in Romania is working to adapt the quality of domestic agro-food products to European requirements, but the results are poor. Romania needs to make efforts to improve the quality of agri-food production, especially in the processing sectors, in order to ensure the competitiveness of domestic products on the European market.

REFERENCES

- [1] European Union EU, "Food safety in the EU. Ensuring safe food from farm to fork", 2018, https://europa.eu/european-union/topics/food-safety_en, accessed on 20.01.2019.
- [2] European Food Safety Agency EFSA, How we work, available at <http://www.efsa.europa.eu/en/about/howwework>, accessed on 15.01.2019.
- [3] S. Stanciu, "Horse Meat Consumption - Between Scandal and Reality", *Procedia Economics and Finance* 23 (2015), pp. 697 – 703, January 2015.
- [4] European Commission EC, EU Food Fraud Network, available at https://ec.europa.eu/food/safety/food-fraud/ffn_en, accessed on 18.01.2019.
- [5] European Commission EC, RASFF - Food and Feed Safety Alerts, available at https://ec.europa.eu/food/safety/rasff_en, accessed on 17.01.2019.
- [6] European Commission EC, RASFF Portal, available at <https://webgate.ec.europa.eu/rasff-window/portal/?event=SearchForm&cleanSearch=1>, accessed on 20.01.2019.
- [7] P. D'Amico, D. Nucera, L. Guardone, M. Mariotti, R. Nuvoloni, A. Armani, Seafood products notifications in the EU Rapid Alert System for Food and Feed (RASFF) database: Data analysis during the period 2011-2015, *Food Control*, 93, pp. 241-250, DOI: 10.1016/j.foodcont.2018.06.018.
- [8] I. Djekic, D. Jankovic, A. Rajkovic, Analysis of foreign bodies present in European food using data from Rapid Alert System for Food and Feed (RASFF), *Food Control*, 79, pp. 143-149, DOI: 10.1016/j.foodcont.2017.03.047.
- [9] Anonymous, RASFF Indispensable in Crisis Situations, *Fleischwirtschaft*, 97 (9), pp. 17-17.

- [10] S. Luth, I. Boone, S. Kleta, S. Al Dahouk, Analysis of RASFF notifications on food products contaminated with *Listeria monocytogenes* reveals options for improvement in the rapid alert system for food and feed, *Food Control*, 96, pp. 479-487
- [11] P. Stocker, B. Rosner, D. Werber, M. Kirchner, A. Reinecke, H. Wichmann-Schauer, R. Prager, W. Rabsch, C. Frank, Outbreak of *Salmonella* Montevideo associated with a dietary food supplement flagged in the Rapid Alert System for Food and Feed (RASFF) in Germany, 2010, *Eurosurveillance*, 16 (50), pp. 14-19.
- [12] A. Petroczi, T. Nepusz, G. Taylor, D.P. Naughton, Network analysis of the RASFF database: a mycotoxin perspective, *World Mycotoxin Journal*, 4(3), pp. 329-338, DOI: 10.3920/WMJ2010.1271.
- [13] B. Krisztina, H. Zsolt, B. Peter, Rapid Alert System for Food and Feed (RASFF) in the European Union, *Magyar Allatorvosok Lapja*, 127(5), pp. 299-306.
- [14] S. Stanciu, N. Stanciu, L. Dumitrascu, R. Ion, C. Nistor, The effects of horse meat scandal on Romanian meat market, *SEA- Practical Application of Science*, I/2013, pp. 174-181.
- [15] National Sanitary Veterinary and Food Safety Authority ANSVSA, available at http://www.ansvsa.ro/search_gcse/?q=RASFF#, accessed on 22.01. 2019

Silvius Stanciu is Professor and the Director of the Department of Department of Continuous Training and Technology Transfer at "Dunărea de Jos" University of Galați since 2016. He received a B.S. in Food Engineering from Faculty of Food Science and Engineering in 1992 (the highest grade level and scholarship of excellence), a B.S. in Management and an M.S in International Business Administration from Faculty of Economics Studies and Administration "Dunărea de Jos" University of Galați. Silvius completed his first Ph.D in Engineering ("Dunărea de Jos" University, 2006), and the second Ph.D in Economics, Business Administration (The Bucharest University of Economics Studies, Magna cum laude, 2015). Since 1993 he has been working at "Dunărea de Jos" University of Galați.

Silvius is Member of the National Council for Titles, Diplomas and Certificates, Expert of The Ministry of National Education, Expert and Member of the Romanian Agency for Quality Assurance in Higher Education. His research interests are Food Economics, Food Quality and Technology, Business Administration in the agri-food sector. Silvius published over 100 scientific papers, his research profile being available on ResearchGate, Web of Knowledge, Scopus, or Google Academic.

Currently Silvius Stanciu is Ph.D Coordinator of the Doctoral School in Engineering and Management in Agriculture and Rural Development, a new doctoral domain in Romania, and. his research projects with doctoral students focus on food security, food safety and business continuity in the food supply chain.