

RASFF NOTIFICATIONS OF FOOD SAFETY RISKS FROM BALKAN COUNTRIES EXPORTED TO THE EUROPEAN UNION

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Abstract. *Food safety is a key issue for food business operators and can be a major concern for consumers. The European Union (EU) introduced the Rapid Notification System for Food and Feed (RASFF) in 1979. The main task of RASFF is to collect reports on potentially risky food and feed imported into the EU and inform member states so that food can be quickly recalled and the risk to consumer health can be eliminated. The countries of the Balkan region, that are not members of the EU, are also not part of RASFF system, but they can actively use RASFF information. Information exchange is carried out through the RASFF Window, a web application launched with the aim of quickly informing countries outside the EU about relevant cases. In this paper, the authors want to present data on the number of notifications and the reasons for issuing notifications for food originating from the Balkan countries, which was marketed in EU member states. For this purpose, the total number of notifications issued, the product categories to which the notifications relate, the most common hazards, and the Hazard classification and Risk decision for contaminated food products were investigated. Data were searched for the period 2020-2025 (until 10.08.2025). The data presented in this paper represent the results of the RASFF Window search. Data was downloaded from the RASFF Window web application (<https://webgate.ec.europa.eu/rasff-window/screen/search>). Data processing was performed in Microsoft Excel. The data was exported as an Excel file and classified according to the objectives of the pivot table function. Data processing was performed using descriptive statistics. In the observed period, the largest number of notifications related to products from Serbia (92) and Albania (69). In the same period, the number of notifications for products from BiH was 40, products from Macedonia 29, while only 2 notifications related to products from Montenegro. The largest number of notifications (for all Balkan countries) were related to "Fruits and vegetables" (85) and "Cereals and bakery products" (21). The most common hazards in the product category "Cereals and bakery products" were the presence of acrylamide and aflatoxins; in the category "Fruits and vegetables" the presence of pesticides (chlorpyrifos 20, formetanate 20, etc.), and cadmium (9). "Border reject notification" (50) are the most common forms of Hazard classification. 40 cases were classified as "Serious risk. 9 cases were classified as "No risk". The data exchanged through the RASFF Window is very useful for food producers from Balkan countries and can contribute to reducing food safety risks and increasing the volume of food exports to the EU.*

Keywords: *Food safety, RASFF window, Product categories, Hazard types, Balkan countries*

Introduction

Food safety is a very important issue for consumers. All participants in the food supply chain have a responsibility to produce safe food. Government bodies and agencies are very important for defining requirements regarding food safety assurance and supervising the implementation of requirements in practice. The European Union (EU) has established a system for the supervision and monitoring of the safety of food entering the markets of EU member states. This applies equally to food produced in the EU and food imported from third countries. The European Commission (EC) has established the Alert and Cooperation Network (ACN). It is a body that collects administrative and cooperative information regarding official controls on agricultural and food products and exchanges information between member states through notifications. ACN consists of six systems that collect data on food fraud, non-compliance, animal welfare, pets and plant health. Part of the ACN is the Alert System for Food and Feed (RASFF) [1]. RASFF is a notification system established by the EU to facilitate the rapid exchange of information on food and feed safety issues between EU Member States, the European Commission and the Free Trade Association Surveillance Authority (ESA), and non-EU countries Switzerland, Iceland, Norway and Liechtenstein [2]. The RASFF system is based on a network of national contact points, which are responsible for receiving and transmitting information on food and feed safety issues within their countries [3]. RASFF consists of several IT platforms that provide access to notifications. iRASFF is an online notification system for RASFF members. The RASFF Window provides limited access to notifications to parties that are not members of RASFF, the RASFF Portal informs industry, and the Consumer Portal informs consumers about notified products.

RASFF covers a wide range of issues related to food and feed safety and is considered an important tool for protecting public health and ensuring a safe food supply in the EU [4]. The main task of RASFF is to collect reports on potentially risky food and feed imported into the EU and inform member states so that food can be quickly recalled and the risk to consumer health can be eliminated. When a food or feed safety problem is identified, the competent national contact point sends an alert to the central RASFF database. After receiving an alert, the RASFF system distributes the information to all RASFF members [2]. If necessary, RASFF alerts countries outside the EU that may be affected by the problem. The countries of the Balkan region, which are not members of the EU, are not members of RASFF, but they can actively use RASFF information. Information exchange is carried out through the RASFF Window, a web application launched with the aim of quickly notifying countries outside the EU about relevant cases.

In addition to official controls of food products carried out by the exporter (for example, Balkan countries), EU member states - food importers - carry out controls at several control points. Border control is the first checkpoint at which the safety of food imported from non-EU countries is assessed. There are several control points for controlling food imported from EU member states (official market control, regular monitoring, company's own checks or consumer complaints). When a food product

poses a risk, a notification is issued. Notification contains the notification type and risk-level description. Reports are submitted by EU member states (notifying_country). RASFF provides data on food traceability, tracing and action taken.

RASFF Window collects various data that can be viewed, interpreted and published. A large number of researchers around the world have used RASFF Window data to analyze the safety of different categories of food products, types of hazards that contaminate food, level of risk, etc. Due to limited space, these papers will not be analyzed in detail in this paper, and readers are referred to the following papers: heavy metals [2, 5], pesticides [6], mycotoxins [7, 8], food additives [9], and different product categories: eggs and egg products [10], fats and oils [11], products of plant origin [12], teas and spices [13], and others [14].

In this paper, the authors want to present data on the number of notifications and the reasons for issuing notifications for food and feed originating from Balkan countries (origin_country), which was marketed in EU member states. During the analysis, the following criteria will be taken into account: year, countries of origin, notifying countries, product categories, notification classification and risk decision.

Material and methods

The data presented in this paper represent the results of the RASFF Window search and they were downloaded from the RASFF Window web application (<https://webgate.ec.europa.eu/rasff-window/screen/search>). Data were searched for the period 2020-2025 (until 10.08.2025). In order to meet the set goal, the following data was collected: the total number of notifications issued, product categories to which the notifications relate, the most common hazards, and Hazard classification and Risk decision for contaminated food products. Data processing was performed in Microsoft Excel. The data was exported as an Excel file and classified according to the objectives of the pivot table function. Data processing was performed using descriptive statistics.

Results and discussion

A RASFF Window search revealed 232 notifications over a 5.5-year period (Table 1). In the observed period, the largest number of notifications related to products from Serbia (92) and Albania (69). In the same period, the number of notifications for products from BiH was 40, for products from Macedonia 29, while only 2 notifications related to products were from Montenegro. However, taking into account the fact that RASFF data only refers to the first seven months of 2025, it is expected that the number of alerts issued will exceed the number from 2024. Branković (2026) [15] published data on the number of warnings issued regarding the presence of pesticides in food produced in Balkan countries (NON-EU members). In this case there were 133 notifications.

Table 1. Overview of RASFF notifications for products originating from Balkan countries (period 01.01.2020-01.08.2025)

Country	2020	2021	2022	2023	2024	2025	Total countries
Albania	1	8	9	10	23	18	69
Bosnia and Herzegovina	3	4	10	6	8	9	40
Montenegro	0	0	0	0	2	0	2
Macedonia	0	4	6	3	13	3	29
Serbia	4	10	15	20	24	19	92
Total							232

Reports are submitted by notifying_country. Warnings were issued by 21 countries (Table 2). For food products from Balkan countries in the observed period, the largest number of warnings were issued by Croatia (76) and Slovenia (14), which is understandable because they border Balkan food-exporting countries and the first food safety control is carried out at the border. The largest number of products originates from Serbia, and somewhat less from Albania, Bosnia and Herzegovina and Macedonia (54, 34, 29, 20, respectively).

The RASFF window offers the possibility of searching 37 categories of products, which are classified into types (food, feed, animals, food contact material and other). In this research, the categories related to two types (food and animal feed). Table 3 provides an overview of the product categories originating from the Balkans NON_EU countries for which the largest number of warnings were issued. The largest number of notifications (total for all Balkan countries) related to "Fruits and vegetables" (65) and "Cereals and bakery products" (20). The most common hazards in the product category "Cereals and bakery products" were the presence of acrylamide and aflatoxins; in the category "Fruits and vegetables" the most common hazards were the presence of pesticides (chlorpyrifos 20, formetanate 20, etc.), and cadmium (9). The presence of pathogenic microorganisms is most often found in meat products from hazardous sources. An overview of other most frequently identified hazards in selected product categories originating from Balkan countries (summary data for all 5 Balkan NON-EU countries is presented) is shown in Table 4. Branković (2026) [15] states that the presence of 45 pesticides was determined in products originating from Balkan countries, of which 12 were detected multiple times and 33 once, resulting in the issuance of 146 warnings. In several cases, RASFF has indicated contamination of food with heavy metals (mercury, cadmium and lead) [16].

Table 2. Notifying-country that most frequently issued notifications by RASSF member states concerning Balkan countries (total for the period 01.01.2020-10.08.2025)

	Albania	Bosnia and Herzegovina	Montenegro	Macedonia	Serbia	Total notifying-country
Belgium				1	5	6
Croatia	20	22		14	20	76
Czech Republic	2			1		3
Germany		1			2	3
Italy					4	4
Lithuania	1				2	3
Poland	1				2	3
Romania	2			1	1	4
Slovakia		3			1	4
Slovenia	3	1		2	8	14
Switzerland	1				2	3
Total origin-country	34	29	0	20	54	137

Table 3. Total number of RASSF notifications for 5 years for selected product categories originating from Balkans NON-EU countries.

Category of product	Albania	Bosnia and Herzegovina	Montenegro	Macedonia	Serbia	Total category
Cereals and bakery products	0	9	0	3	8	20
Confectionery	0	2	0	1	1	4
Fish and fish products	0	0	0	0	4	4
Fruits and vegetables	14	8	0	16	27	65
Ices and desserts	0	2	0	0	0	2
Meat and meat products (other than poultry)	1	0	0	0	1	2
Milk and milk products	0	2	0	0	1	3
Non-alcoholic beverages	0	0	0	0	2	2
Other food product / mixed	0	1	0	0	7	8
Poultry meat and poultry meat products	0	2	0	0	0	2
Prepared dishes and snacks	0	2	0	0	2	4
Wine	0	1	0	0	0	1
Total origin-country	15	29	0	20	53	117

RAFFS issues a hazard classification in 7 groups: Notification notification, Border reject notification, Information notification for attention, Information notification for follow-up, News, Non-compliance notification, Information notification undecided. Border reject notification" (50) and "Information notification for attention" (23) are the most common forms of Hazard classification. 40 identified cases were classified as "Serious risk", 19 as "Potential risk" and 17 as "Potential serious risk". 9 cases were classified as "No risk". These data refer to all Balkan countries (Table 5).

When analyzing the country of origin of food, the most frequently issued warnings for products from Albania were related to Formetanate (14), Chlorpyrifos and derivatives (8) and acrylamide (5); and for products from Serbia: Aflatoxin B1 and other aflatoxins (9), Chlorpyrifos and derivatives (8) and *Listeria monocytogenes* (4).

Table 4. Overview of the most frequently identified hazards in selected product categories originating from Balkan countries (summary data for all 5 Balkan NON-EU countries are shown)

Product	Hazard										
	acrylamide high level	Aflatoxin B1 and other aflatoxins (without patulin and orchatoxin)	Cadmium	Chlorpyrifos and derivatives	E 200 - sorbic acid too high content	Formetanate	gluten undeclared	<i>Listeria monocytogenes</i>	milk ingredient undeclared	<i>Salmonella</i> sp .	trans fatty acids too high content
Cereals and bakery products	7	4		23	3					1	1
Ices and desserts		1								1	
Milk and milk products		1									
Fruits and vegetables			9			20					
Other food product / mixed		1		1							
Confectionery	1						2				
Fish and fish products								4	1		
Meat and meat products (other than poultry)										1	
Poultry meat and poultry meat products								1		2	
Prepared dishes and snacks	3										
Total number of hazard	11	11	9	24	3	20	2	5	1	5	1

Table 5. Overview of Hazard classification and Risk decision for the most frequently identified hazards in products originating from Balkan countries (summary data for all 5 Balkan NON-EU countries are shown)

	Hazard										
	Acrylamide high level	Aflatoxin B1 and other aflatoxins (without patulin and orchatoxin)	Cadmium	Chlorpyrifos and derivatives	E 200 - sorbic acid too high content	Formetanate	Gluten undeclared	Listeria monocytogenes	Milk ingredient undeclared	Salmonella sp.	Trans fatty acids too high content
Hazard classification											
Notification notification		5	2	1		3		1		2	
Border reject notification	8	2	6	17	3	14					
Information notification for attention	2	4	1	5		3	2	4	1		1
Information notification for follow-up	1			1						3	
News											
Non-compliance notification											
Information notification undecided											
Total number of hazard	11	11	9	24	3	20	2	5	1	5	1
Risk decision											
No risk	1					8					
Not serious	1			1	2		2				
Potential risk	3	2	1	11	1			1			
Potential serious	3	2	3	6		3					
Serious	3	7	5	6		3		4	1	5	
Undecided											
Total number of hazard	11	11	9	24	3	20	2	5	1	5	1

Table 6 provides an overview of the most frequently identified hazards in products by country of origin.

Table 6. Overview of the most frequently identified hazards in products by country of origin (summary data for all 5 NON-EU Balkan countries are shown)

Origin-country	Hazard									
	acrylamide high level	Aflatoxin B1 and other aflatoxins (without patulin and orchatoxin)	Cadmium	Chlorpyrifos and derivatives	E 200 - sorbic acid too high content	Formetanate	gluten undeclared	Listeria monocytogenes	milk ingredient undeclared	trans fatty acids too high content
Albania	5			8		14				
Bosnia and Herzegovina	2	2	6		3	1	2			
Montenegro	2					2				
Macedonia	2		1	8					1	
Serbia		9	2	8		3		4		1
Total number of hazard	11	11	9	24	3	20	2	4	1	1

Conclusion

When a food or feed product is identified as a potential health risk, RASFF issues an alert to countries, which can then take appropriate measures to remove the product from the market or inform the public about the problem. This process can help inform consumers about the risks associated with food contamination and encourage them to be more careful about the food they consume. The data exchanged through the RASFF Window is very useful for food producers from Balkan countries and can contribute to reducing food safety risks and increasing the volume of food exports to the EU.

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RASFF OBAVJEŠTENJA O RIZICIMA BEZBJEDNOSTI HRANE IZ BALKANSKIH DRŽAVA IZVEZENOJ U EVROPSKU UNIJU

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Sažetak. *Bezbjednost hrane je ključno pitanje za subjekte koji posluju sa hranom i može predstavljati veliku zabrinutost za potrošače. U Evropskoj uniji (EU) je 1979. godine uveden Sistem brzog uzbunjivanja za hranu i stočnu hranu (RASFF). Osnovni zadatak RASFF-a je prikupljanje izvještaja o potencijalno rizičnoj hrani i stočnoj hrani koja se uvozi u EU i obavještava države članice kako bi se mogao izvršiti brzi opoziv hrane i eliminisao rizik po zdravlje potrošača. Zemlje balkanske regije, koje nisu članice EU, nisu članice RASFF-a, ali mogu aktivno koristiti RASFF informacije. Razmjena informacija se provodi putem RASFF Window, odnosno web aplikacije pokrenute sa ciljem brzog obavještavanja zemalja izvan EU o relevantnim slučajevima. Autori u ovom radu žele da prikažu podatke o broju notifications i razloge za izdavanje notifications za hranu porijeklom iz balkanskih zemalja, a koja je prometovana u državama članicama EU. U tu svrhu istražen je ukupan broj izdatih obavještenja, kategorije proizvoda na koje se odnose obavještenja, najčešći hazardi, te Hazard classification i Risk decision za kontaminirane prehrambene proizvode. Pretraženi su podaci za period 2020-2025 (do 10.08.2025). Podaci predstavljeni u ovom radu predstavljaju rezultate pretrage RASFF Window i preuzeti su sa web aplikacije RASFF Window (<https://webgate.ec.europa.eu/rasff-window/screen/search>). Obrada podataka je izvršena u programu Microsoft Excel. Podaci su izvezeni u obliku Excel datoteke i klasifikovani prema ciljevima funkcije pivot table. Obrada podataka izvršena je korištenjem deskriptivne statistike. U posmatranom periodu najveći broj notifikacija odnosio se na proizvode iz Srbije (92) i Albanije (69). U istom periodu broj notifikacija za proizvode iz BiH iznosio je 40, proizvode iz Makedonije 29, dok su se svega 2 notifikacije odnosile na proizvode iz Crne Gore. Najveći broj notifikacija (za sve balkanske države) odnosio se na „Fruits and vegetables“ (85) i „Cereals and bakery products“ (21). Najčešći hazardi u kategoriji proizvoda „Cereals and bakery products“ bili su prisustvo acrylamide i aflatoxins; u kategoriji „Fruits and vegetables“ prisustvo pesticida (chlorpyrifos 20, formetanate 20 i dr), te cadmiuma (9). U proizvodima od mesa od hazarda najčešće je utvrđeno prisustvo patogenih mikroorganizama. „Border reject notification“ (50) su najčešći oblici Hazard classification. Kao „Serious risk“ klasifikovano je 40. Podaci koji se razmjenjuju kroz RASFF Window su veoma korisni za proizvođače hrane iz balkanskih država i mogu doprinijeti smanjenju rizika po bezbjednost hrane i uticati na povećanje obima izvoza hrane u EU.*

Ključne riječi: *Bezbjednost hrane, RASFF prozor, Kategorije proizvoda, Vrste hazarda, Zemlje Balkana*