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RAPID ALERT SYSTEM FOR FOOD AND FEED AND TRACEABILITY - PROTECTING CRITICAL INFRASTRUCTURE IN THE FOOD INDUSTRY

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Abstract: In the current context, the food industry is an area that interacts directly with life and health, so it was listed as critical infrastructure. Critical infrastructures are so sensitive topics worldwide and national levels. Their protection is conditioned by a legislative well structured basis, applying the specific standards and the involvement of all upper forums with competence in this area. This paper draws attention to the particular importance that must be given to this issue and will review the main ways to protect critical infrastructure in the food industry.

Keywords: traceability, food industry, rapid alert system, standards.

1. INTRODUCTION

Critical infrastructures are part of the resistance structure of a state system, being relational and functional at the same time and being the necessary support for the system to work, to individualize and to enter into relations with other systems. Depending on their place, role and importance for the stability and functionality of systems, as well as their safety and security, infrastructures can divide into three main categories: common infrastructures, special infrastructures, and critical infrastructures. Common infrastructures are structures that provide through their specificity the construction and operation of the system. These infrastructures do not possess special qualities than those justifying the existence and presence in the systems and processes. A State will always have a transport infrastructure (roads, railways), urban and rural infrastructures, agricultural and industrial infrastructures, information, educational, and IT infrastructures, etc. Some of them may even become special or critical, depending on the new role they can play, the dynamics of its importance. [4], [5].

Special infrastructures have an important role in the functioning of a state systems and processes, providing them greater efficiency, quality and performance. Typically, special infrastructures are performance infrastructure. Some of them, by extension or transformation, have an important role in the stability and security of systems and can enter even in the category of critical infrastructures.

Critical infrastructures are that part of national infrastructure which by its specificity, is so vital that destruction or making them incapable of operation can seriously weaken the defense or the state's economy. It is considered that in the category of critical infrastructures, besides telecommunications, system providing electricity and water, deposits of gas and oil, finance and banks, emergency services (medical, police and fire brigade), enter a number of areas, such as agriculture, zootechny and food industry, fields with vital conditioning on the continuity of governance, health and national security.

2. METHODS FOR CRITICAL INFRASTRUCTURES PROTECTION IN THE FOOD INDUSTRY

Practical, the methods to protect infrastructures that could become critical in the food industry, requires, first of all, to use instruments established by legislation, procedural implemented. In the

category of these instruments are part Traceability, Rapid Alert System for Food and Feed, Hazard Analysis and Critical Control Point - HACCP and Food Defense Plan, prepared on the basis of the Operator Security Planning (OSP).

The purpose of protection of critical infrastructures in the food industry is assuring resources for the food safety and quality worldwide.

2.1. The traceability of food

The ability to reconstruct the history, use or location of a food, activities or similar products by registered means of identification, leading to the definition of traceability according to ISO 8402:1994. In the same sense, the traceability and the tracking of a product is the ability to track the food product movement along specific stages of production, processing and distribution.

A traceability system involves, in practice, for keeping systematic and continuous records that can identify each tracking unit ("batch or traceable unit ") with attributes or required information for each stage of the food chain to the final consumer. The larger the data or information are recorded, the system is more complex and expensive. *Companies operating in the food industry must have systems and procedures to identify all individuals and organisations of which was purchased from.* Foods that are marketed or are to be placed on the market *must be labeled or appropriately identified to facilitate tracking them* through documentation or information in accordance with the relevant requirements of specific provisions (Art. 18 of EC Regulation no. 178 / 2002).

From legal point of view, traceability is maintained by Regulations 178/2002 and 1642/2003 applied in the European Union, and Romanian law 150/2004 on food safety. They are completed by international standard for food safety ISO 22000: 2005 and ISO / TS 22004: 2006.

Such a system enables practical, quick and definite potential to reconstruct the raw materials that constitute a finished food product, or vice versa, depending on the situation of food that can affect the critical infrastructure. Thus, we can, in imposed conditions to use two effective procedures, namely:

- *Returning* - any measure aimed at achieving the returning of a dangerous product that has already been supplied or made available to consumers by the producer or distributor;
- *Withdrawal* - any measure aimed at preventing the distribution, display and offer consumers a dangerous product.

By implementing the traceability of food products, the purpose is to achieve the highest possible degree of protection of health and safety of consumers and meet the needs and demands of them.

To support the efforts of producers in the food sector to create safe and healthy food, the European Union created the *European Food Safety Authority* which aims to provide scientific and independent expertise of the new or existing risks.

2.2. Rapid Alert System for Food and Feed (RASFF)

RASFF is a concrete and visible result of European integration. The quick exchange of information among public health authorities linked to RASFF on food and feed related risks ensures coordinated, coherent and simultaneous actions by all RASFF members which benefit consumer safety as a whole.

The legal basis of the RASFF is Regulation EC/178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety. In Articles 50, 51 and 52 scope and procedures of the RASFF are defined. [8]

The goal of establishing such a system consists of:

- a) preventing market entry or ensuring the return from the market or the final consumer of foods posing a risk to public health;
- b) preventing the entry in the consumption of animal feed that can indirectly affect the health of consumers;
- c) preventing market entry of any material or product that comes or can come into contact with food and feed and may pose a risk to public health;
- d) rapid information between competent authorities on food safety at three levels, central, county and local level, related to the dangers or risks regarding food and feed which do not meet the

requirements of legislation on food safety, so they can constitute a risk factor in the food chain for consumers.

Among the major objectives of RASFF we remembered rapid exchange of information between the European Commission and the National Sanitary Veterinary and Food Safety, as the national coordinator of the Rapid Alert System and the point of contact with European Alert System for Food and Feed (Rapid Alert System for Food and Feed - RASFF); the rapid exchange of information between the National Sanitary Veterinary and Food Safety and the other governing entities with direct links to the health and safety of consumers, both through central, county, and local structures; rapid exchange of information between county and local authorities, as local integrators of Rapid Alert System, and the national authorities as National Sanitary Veterinary and Food Safety, Ministry of Agriculture and Rural Development, Ministry of Health and National Authority for Consumer Protection; the rapid exchange of information between laboratories and local integrators of Rapid Alert System; the rapid exchange of information between inspection posts at the border and central and county structures of the National Sanitary Veterinary and Food Safety, Ministry of Agriculture and Rural Development, Ministry of Health and National Authority for Consumer Protection; the rapid exchange of information between consumers, producers and processors, on one hand, and local integrators of the Rapid Alert System, on the other hand. [6]

The structure of the Rapid Alert System is based on transmitted / received information to and / or from the European Commission or by other third countries by and / or the National Sanitary Veterinary and Food Safety.

The national rapid alert system is based on information transmitted or received at central or local level by The National Sanitary Veterinary and Food Safety, Ministry of Agriculture and Rural Development, the National Authority for Consumer Protection and Ministry of Health.

The rapid alert system operates by transmitting information in the form of written notification in a standard form. The transmission system is carried out in informatic closed circuit or by fax or e-mail.

In case of the primary information transmitted / received between local and county structures, it is feasible the telephonic communication also. [5]

The circuit of information communicated in the Rapid Alert System is between competent authorities, horizontally, on two levels, namely the central and county structures. Within each competent authority, the information shall circulate vertically, between the county and the central structure.

When there are sufficient reasons to believe that a food, feed, material or product that comes or can come into contact with food and feed may pose a public health risk, depending on the nature, severity and extension of the risk, the competent authorities shall take necessary measures to inform the consumers on the nature of the risk, identifying as completely as possible the incriminated factor, the risk associated and the measures taken or to be taken to prevent, reduce and eliminate that risk.

Where appropriate, the consumers will have access to information related to the identification factor incriminated, the nature of the risk and the measures taken.[7]

Rapid Alert System members will take the necessary measures to ensure that staff will not disclose information obtained for the purposes of the system, which, by their nature, are covered by professional secrecy, unless the information must be made public, if circumstances require, in order to protect public health.

Protection of professional secrecy shall not prevent the dissemination by the competent authorities of information relevant to the effectiveness of market surveillance and enforcement measures needed on food and feed safety.

The main categories of threats notified through the Rapid Alert System are biological, chemical, physical and organoleptic changes, incomplete labeling, falsification, packaging, radiation.

Approved solutions will be implemented by operators of critical infrastructures and services, with the help of local authorities and public and private sector partners. [9]

The following basic requirements shall be accomplished:

- Identification of the critical elements;
- Conduct a risk analysis based on major threat scenarios, the vulnerabilities of each element and the potential impact;
- Identification, selection, and prioritization regarding countermeasures and procedures, distinguishing between:

- a) permanent security measures, which identify indispensable security investments and means which are relevant for use in any situation, such as:
- technical methods (including the installation of means for detection, access control, protection, and prevention);
 - organizational methods (including procedures for alerts and crisis);
 - methods for control and verification;
 - communication and information of the consumers;
 - the training of staff for intervention;
 - the security of information systems.
- b) gradual security measures, that can be activated depending on the different levels of risks and threats. [1]

3. CONCLUSIONS

1. Critical infrastructures are a domain that must be well implemented, monitored, analyzed, evaluated, predicted, and improved in every state of the U.E.
2. Establish specific vulnerabilities and ways of protection for each critical infrastructure.
3. Professionalization of human resources involved in the identification and protection of critical infrastructures.
4. Actions to counter bioterrorism require combining several elements of protection, starting with prevention act directed against critical infrastructures.
5. Critical infrastructures in the food chain have high levels of vulnerability. It requires a specific risk assessment for each category of economic objectives, accompanied by specific measures for monitoring and evaluation.
6. From this perspective, a pilot study must be designed for the safety of the food chain.
7. The already existing food safety structures, must adapt to new challenges.
8. It should be discussed within specialized structures about strengthening the control and prevention of hazards and potential risks subsequent biological terrorist attacks.

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