

Evaluation of risks related to groceries' safety management

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Abstract. The article deals with the issues of cross-disciplinary approach to evaluation of the risks related to management of the safety of groceries in the Russian Federation. The objective of the article is to describe the nature of cross-disciplinary approaches to evaluation of risks of release of hazardous groceries, to study the practice of risk evaluation existing in the WTO member countries, and to consider the modern problems and singularities of risk evaluation at the stage of the transitional period at implementation of supranational technical regulations. It was shown that risk evaluation develops with account of international requirements and peculiar features of the Russian practice of control of the food safety. The advantages of the cross-disciplinary approach in the technical, legal, and economic aspects of risk evaluation have not been paid due attention. In this view, the evaluation of risk itself in the form as it exists is not efficient, as it does not fully implement economic approaches to insurance of the parity liability of the participants of the groceries movement "from the field to the fork". It provides analysis of the draft Federal Law "On statutory sanitary and epidemiological insurance" in part of implementation of the economic approach to risk evaluation at release of hazardous groceries. Adoption of the law on insurance of the manufacturers' liability to release high quality and safe products based on cross-disciplinary approaches to risk evaluation will motivate entrepreneurs by means of economic tools to comply with the requirements of technical regulations, which are oriented to the international practice.

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Introduction

Regulation of food security in the Russian Federation develops in the direction of harmonization with international standards. The priorities of the Doctrine of Food Security of the Russian Federation adopted in 2010 are:

- "harmonization with international requirements for the indicators of groceries' safety based on the fundamental research in the sphere of nutritional science;
- control over compliance of groceries with the requirements of the legislation of the Russian Federation at all stages of their production, storage, transportation, processing, and sale;
- improvement of the system of organization of control of safety of groceries, including creation of modern technical and methodological base" [1].

The policy in the sphere of harmonization is conditioned by two factors – establishing of the EurAsEC Customs Union and joining the World Trade Organization. The consequences of participation in the international integration are the changes in requirements to organization of international trade in part of technical regulation. Technical regulation is understood as non-tariff restrictions of import operations from excessive administrative pressure. An efficient system of technical regulation is described with:

- imposition of clear, unambiguous, and practicable essential requirements to products, which ensure their safety.

- reduction of administrative barriers associated with holding evaluation of the products' compliance with the adopted safety requirements.

Materials and methods

The practice of international regulation of the safety of groceries is represented by Codex Alimentarius – a code of international standards regulating the safety of groceries with regard to the whole range of alimentary raw materials. The documents take into account the requirements to the efficiency of the system of technical regulation with regard to the ensured safety of groceries that are in circulation and removal of barriers in international trade in the sphere of non-tariff methods of regulation [2]. The requirements to regulation of international trade are implemented in the principles:

- the minimum necessary requirements to the safety of groceries;
- the principle of vertical support (categorization by groups of groceries in accordance with the existing practice);
- the unified approaches to the structure of the document and the rules of its development;

• precise division of mandatory requirements (the safety requirements) and additional requirements (quality requirements) of groceries [3].

The structure of the Codex Alimentarius includes two groups of documents – "vertical" and "horizontal" table 1.

Table 1. The Structure of the documents Codex Alimentarius [4]

The group of "vertical" documents	The group of "horizontal" documents
Fruit juices; Products of meat and poultry; Fats and butters; Vegetable proteins; Meat; Sugar; Processed fruits and vegetables; Fresh tropical fruits and vegetables; Groceries containing cocoa and chocolate; Milk and dairy products; Natural mineral water; Soups and broths; Cereals, beans, and vegetables; Fish and fish products;	Basic principles; Food marking; Food additives and contaminants; Food hygiene; Residual quantity of pesticides; Residual quantity of veterinary preparations in the food; Methods of analysis and selection of samples; Inspection and systems of control of groceries during import and export operations; Groceries of special purpose; Quick freeze groceries.

The Russian practice of technical regulation of the safety of groceries started with adoption of the Federal Law of the Russian Federation #184-FZ "On technical regulation" of 2002, which declared the necessity to cancel mandatory standardization and introduce technical regulations for groups of groceries stage by stage.

Results

The result of the presented research is usage of the cross-disciplinary approach to the evaluation of the risk of releasing hazardous products, determination of the compliance of development of technical regulation with the requirements of international regulations, as well as description of the current state of usage of economic tools [5, 6, 7]. As we already mentioned, the Federal Law of the Russian Federation #184-FZ "On technical regulation" lays the foundation for evaluation of the risk of releasing hazardous products [8].

In the Russian Federation, national technical regulations and regulations of the EurAsEC Customs Union were adopted in order to implement the requirements of technical regulation. Currently, harmonization of national requirements to the safety of groceries with the international ones is being implemented within the technical regulations of the Customs Union and has the effect of a federal law.

The structure of the technical regulations of the Customs Union of EurAsEC similarly to the international practice includes two groups of documents: "vertical" and "horizontal" table 2.

Table 2. The structure of the technical regulations of the Customs Union of EurAsEC [9]

The group of "vertical" documents	The group of "horizontal" documents
TR TS 015/2011 "On safety of grain"; TR TS 023/2011 "Technical regulation for juice products made of fruits and vegetables"; TR TS 024/2011 "Technical regulation for butter and fat products"; TR TS 027/2012 "On the safety of individual types of specialized food products, including the diet remedial and diet preventive nutrition".	TR TS 021/2011 "On safety of food products"; TR TS 022/2011 "Food products. Marking"; TR TS 029/2012 "Requirements to the safety of food additives, flavoring agents, and technical auxiliary means".

Evaluation of the risk of releasing hazardous groceries assumes cross-disciplinary approaches: legal, technical, and economic.

The legal approach in part of evaluation of the risk of releasing hazardous groceries is implemented by means of adoption of regulations:

- The Doctrine of Food Security of the Russian Federation #120 approved on 30.01.2010;
- The Federal Law of the Russian Federation #184-FZ "On technical regulation" of 2002;
- The technical regulations that have the power of federal laws and are represented in Table 2.

Legal approach to evaluation of the risk of release of hazardous products is conditioned by with the fact that Federal Laws contain only the framework of requirements to the safety of groceries [10]. For example, in Technical Regulation TS 021/2011 "On the safety of food products" twelve procedures are stated that are specified in Article 10 and the principles of HACCP that are specified in Article 11, in which the basis of the system and process approach to management of safety of food products is laid [11]. The methodology of risk evaluation in statutory documents is not presented; therefore, it provides direct instruction to use standards, which implement the technical approach to risk evaluation.

The technical approach to evaluation of the risk of release of hazardous groceries includes the following regulations:

- the State Standard GOST R 51705.1-2001 "The Quality system. Management of quality of food products based on the principles of HACCP. General Requirements";
- the State Standard GOST R ISO 22000-2007 "The systems of food products safety management. Requirements to organizations participating in the chain of production of food products";
- the State Standard GOST R 54762-2011/ISO/TS 2202-1:2009 "The Program of preliminary requirements to the safety of food products. Part 1. Production of food products".

The Russian practice of evaluation of the risk of releasing hazardous groceries is implemented in two standards – the national standard GOST R 51705.1-2001 “The Quality system. Management of quality of food products based on the principles of HACCP. General Requirements”. This standard for the first time explains the definition of the risk: Risk is "a combination of the probability of occurrence of a dangerous factor", the criterion of the risk, and analysis of hazards in the HACCP system [12]. The procedures of the developed Technical Regulation 021/2011 "On the safety of food products" are based on the requirements of the state standard GOST R 51705.1-2001.

Unfortunately, the national standard does not fully reflect the international practice of implementation of HACCP systems; therefore, the international standard GOST R ISO 22000-2007 “The systems of food products safety management. Requirements to organizations participating in the chain of production of food products” is adopted. This standard includes elements of the safety management system, namely: the liability of the executive staff - clause 5; the resources management - clause 6; the planning and the manufacture of safe products - clause 7, etc. [13].

The logical content of the requirements of the international standard is the State Standard GOST R 54762-2011/ISO/TS 2202-1:2009 “The Program of preliminary requirements to the safety of food products. Part 1. Production of food products”, which also is the translated version of international practice - the program of mandatory preliminary measures according to clause 7.2 of GOST R ISO 22000-2007 [14].

The requirements of the international standards ISO 22000 and ISO/TS 22002-1:2009 are implemented in the European standards Publicly Available Specification (PAS) 220-2008 and Food Safety System Certification (FSSC) 22000-2010 [15]. Integration of the methodology of evaluation of risks of the HACCP system hazards adopted in international and national standards gives reasons to say that the barriers in harmonization of the requirements of technical regulations are being removed.

Discussion

The economic approach to risk evaluation in the Russian Federation is implemented to insufficient degree. In terms of risk evaluation, it is more correct to refer to management of the safety of groceries by means of administrative and economic tools. The administrative tools include the liability of the manufacturers for violation of the requirements of technical regulations, which is punished with penalties according to Article 14.43 of the Code of the Russian

Federation on Administrative Offenses [16]. The economic instruments include insurance of the liability of the manufacturer for release of high quality and safe products. The insurance of the liability is based on the methodology of risk evaluation. The size of insurance rates depends on implementation of the preventive evaluation of the risk of releasing hazardous products, such as, for example, in the HACCP system. The economic essence of insurance as the tool of risk management is conditioned by the following characteristics:

- the total of relationships concerning prevention and overcoming of emergency situations and damage remedial;

- the total of relationships of the subject and the object of insurance based on the interrelated approaches to protection of social interests of legal entities and individuals on emergence of certain events at the expense of special-purpose monetary funds and insurance fees paid by them;

- the accidental nature of an adverse event, the necessity to prevent them, to limit the influence of the risky situations, and compensation of their consequences;

- the total of the distributed and redistributed relationships associated with overcoming and liquidating damages imposed to social manufacture and the living standards of the population [17];

The international and Russian practice of insurance of the manufacturer's liability for the release of high quality and safe products, they have to compensate the material and physical damage to the aggrieved persons. The property damage caused to the aggrieved persons includes: the losses associated with revealing dangerous properties of the products, making consumers aware of this fact, free elimination of the products' deficiencies, replacement of the products for products that are compliant with the safety requirements to groceries. The physical damage caused to an aggrieved person is to be compensated in case the insurable event takes place because of consumption of the hazardous products, or if he had received incomplete or false information on the products [18].

The socio-economic effect of implementation of insurance of the manufacturer's liability for the release of high quality and safe products takes into account the interests of all parties involved in the economic process. Consumers obtain guarantees of their lawful rights for consumption of high quality and safe groceries [19]. The entrepreneurs are relieved from potential economic payoffs in case of the risk of releasing hazardous products, which is followed by the necessity to compensate physical or property damage. The state, due to implementation of the insurance mechanisms, reduces the burden of the

federal budget on holding expert studies by the bodies of Rospotrebnadzor, on the number of supervisory events; also, the conditions are created for efficient implementation of the requirements of technical regulations and the Doctrine of the Food Security of the Russian Federation.

The tariff of insurance of the manufacturer's liability to produce high quality and safe products is influenced by the results of audits of enterprises, the purpose of which is to define the conditions of fulfillment of the requirements of the Technical regulation TS 021/2011 "On the safety of food products" and association of them with a certain risk group. As for the Russian practice of audits, it is currently being formed, namely: the development of methodological approaches to evaluation and determination of the criteria of classification depending on the risk degree is taking place.

The Russian practice of risk evaluation has appeared quite recently and assumes breaking the risks up into five categories: from insignificant to critical risk. The methodology of risk evaluation is of comprehensive nature and provides for both the analysis of the program of preliminary measures, and evaluation of the hazards of all technological operations. This is determined by the necessity of essential fulfillment of all requirements of the technical regulation despite the completeness of the technological process and the contingent of the people who consume the food [16].

The methodology of risk evaluation during the inspectional control in the USA has a number of peculiar features determined by the following factors: the contingent of people who consume the food, the completeness of the technological process, the technological operations related to heating and cooling, and vacuuming [20]. Thus, despite the common usage of the HACCP system at evaluation of the risk of releasing hazardous products, the criteria of classification of the risk degree are determined by the national peculiarities.

The national singularities also determine the objects of insurance of the manufacturer's liability to release high quality and safe products. In the EU, the object of insurance is:

- the professional activity of a specialist;
- the liability for products;
- the liability of a manufacturer;
- the industrial liability [21].

The EU has adopted parity liability, which demonstrates systematic approach as is stated in ISO 22000, namely: the liability of the executive staff; the resources management; the manufacturing environment. The insurance agreement contains description of insured risks, which include the risk of

place, the risk of liability for the product, the risks of liability to recall products [21].

The Russian practice of insurance of the manufacturer's liability to produce high quality and safe products is currently being formed. The draft Federal Law "On statutory sanitary and epidemiological insurance" was discussed as far back as in 2007. It was suggested to consider "insurance of liability of manufacturers (sellers, contractors), which occurs in view of causing damage to the life, the health, the property of legal entities and individuals and the environment as a result of performance of activity related to carrying out works, rendering services, manufacturing, transporting, storing, and selling groceries" as the object of insurance [22].

Conclusion

Currently, the legislative initiative suggested in the draft law is not urgent already, as the risk evaluation is adopted in the technical regulation, and the document under discussion refers to sanitary and epidemiological insurance, where the methodology of compliance is prescribed for execution by mandatory standards. At the same time, insurance of the manufacturer's liability to release high quality and safe products for the purposes of management of the safety of groceries has, as the international experience shows, good prospects and requires further elaboration and implementation in the procedures of risks evaluation and risk management in the Russian Federation.

Despite the positive international experience in the sphere of economic approaches to evaluation of the risk of releasing hazardous products, the risk evaluation infrastructure in the Russian Federation has not yet been formed. It is determined by the following factors: No certified methodology has been created, no programs of training appraisers in risk determination exist, and there are no rules of insurance of the manufacturer's liability to release high quality and safe products in professional unions of insurers. This all limits the opportunities of implementation of economic approaches at risk evaluation. In the nearest future, the work on creation of the methodology of evaluation of the risk of releasing hazardous products will become urgent and will allow overcoming the mentioned infrastructural gaps.

Evaluation of the risk of releasing hazardous products is of cross-disciplinary nature and develops with account of international requirements and peculiar features of the Russian practice of controlling safety of groceries. At that, the evaluation of risk itself in the form as it exists is not efficient, as it does not fully implement economic approaches to insurance of the parity liability. Adoption of the law on insurance of the manufacturers' liability with regard to release high quality and safe products based on risk

evaluation will motivate entrepreneurs by means of economic tools to abide by the requirements of technical regulations, which are oriented to the international practice. Thus, the tasks of harmonization of releasing safe products with account of international standards can be achieved.

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