FOOD STANDARDS: UKRAINIAN REALITIES AND EUROPEAN REQUIREMENTS (ECONOMIC CONTEXT)

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Abstract

The systems of food safety management in the EU are analyzed and the components of these systems are defined. Standards on which food safety management systems are based on the stage of primary production, transportation and storage, processing of food products, wholesale and retail are classified. The main advantages of applying standards and schemes certification are determined. The main issues of the domestic enterprises of the food industry were identified, in particular: primarily raw material export of agro-industrial products instead of the offer of the end product, delay from the determined stages of the transition period to introducing food safety management systems based on the HACCP principles established by the law of Ukraine, etc. Proposed directions of development of food industry enterprises of Ukraine are offered.

Keywords: food standards, food safety, applying standards, agro-industrial products

Introduction

Within the conditions of search for effective models for business development and its further promotion at the European market, the issue of determining the level of harmonization of standards and the impact of this process on the structure of exports of domestic products abroad is becoming particularly acute. The food industry has always been considered a priority and strategically important sector for Ukraine, which, according to of the official site of the "Ukrainian Agrarian Council" Public Union provides domestic market with its products by 90% and forms more than 50% of foreign trade turnover from all agroindustrial products of Ukraine.[1] For example, international organizations such as Food and Agriculture Organization (FAO), as well as most leading experts, refer Ukraine, along with Brazil, Argentina and the Russian Federation, to countries with the greatest potential for agrarian development in the world.

Along with this, the strengthening of agriculture is a prerequisite for the development of the food industry. Given the importance of the food industry for the entire agrarian industrial sector of economy, to some extent, it is possible to consider the food industry as the locomotive for the development of the Ukrainian economy. The food industry comprises more than 40 branches of manufacture,

[1] *Ukraine's food industry provides a 90% domestic market // The official site of «Ukrainian Agrarian Council» Public Union // [Electronic resource]. – Access mode: http://milkua.info/uk/post/harcova-promislovist-ukraini-zabezpecue-vnutrisnij-rinok-na-90/*

about 25% of foreign direct investments are diverted every year, and more than 5,000 domestic enterprises deal with the manufacture of food products.[2]

According to the data of 2017, agricultural products were exported to: Asian countries – 42.6%, European Union – 32.4%, African countries – 14.2%, CIS countries – 7.6%, USA – 0.4%, and others countries – 2.8%. The top five countries-leaders, each of which acquired Ukrainian agrarian and food products for more than $ 1 billion in 2017 are India, the Netherlands, Egypt, Spain and China.[3]

Food industry of Ukraine has significant potential for further development and increase of exports to the EU countries. Harmonization of standards is one of the important aspects that contributes to the successful implementation of the business model, which leads to the "revival" of the economy.

We are sure that considering when choosing a business model is the fact that standards should be appropriate and harmonized giving the company additional advantages in entering new markets and conquering new customers.

European partners come to the conclusion that compliance with European standards for quality, safety and environmental friendliness of their imported products affects the level of food security of the EU states and is an indicator of social stability. This is one of the factors that determined the results of studies, according to which the introduction of standards – the second after the accumulation of capital, the growth factor of the economy.[4]

In this context, it is also essential to direct the efforts of scientists and practitioners to build a business model of this type, which, along with harmonization of standards, will require the creation of a value chain in the country, taking into account in-depth processing. Since such a kind of business models that will contribute to the "revival" of the economy, as it involves the creation of new jobs, the export of end products abroad, thereby achieving an increase in export earnings and ensuring general economic welfare.

That is why the selection of business models of enterprise development in the conditions of joining the European economic space should be based, first of all, on scientifically substantiated studies of the peculiarities of European requirements for food standards and Ukrainian realities of its harmonization.

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[2] *Official site of the Ministry of Agrarian Policy and Food of Ukraine // [Electronic resource]. – Access mode: http://www.minagro.gov.ua/node/25237/*

[3] *Trofimtseva O. Ukrainian agrarian exports amounted to almost $ 18 billion in 2017 // Official site of the Ministry of Agrarian Policy and Food of Ukraine. // [Electronic resource]. – Access mode:http://www.minagro.gov.ua/node/25237/*

[4] *World Bank – Ukraine Partnership: Country Program Snapshot April 2015// [Electronic resource]. – Access mode: http://www.worldbank.org/content/dam/Worldbank/document/Ukraine-Snapshot-ukr.pdf/*

The purpose of the article is to analyze the systems of harmonization of food safety management in the EU, defining on this basis the main issues of domestic food industry enterprises and outline directions of their development.

Statement of basic materials

Aware of the responsibility for food safety and the obligation to comply with food security by domestic producers to the EU requires detailed quality control of each stage of the food chain (from growing and primary processing of raw materials to the sale and consumption of end products). Certainly, this is an extremely complicated model for business development, however it is the only way to achieve food security and open prospects for food exports in the context of European integration.

The results of the first steps of the reforms on both at the state level and at the enterprise level are the change in the structure of exports and its volumes. In particular, since 2016 there has been an increase in the share of processed products. In 2017, the export of Ukrainian agrarian and food products amounted to over $ 17.9 billion. This figure amounted to $ 15.5 billion last year. Nowadays, in the total volume of foreign trade in agrarian and food products, the share of exports is 79.4%. Cereal crops rank the first place in the export structure with the share of 36.2%, the second place - vegetable oils (25.1%), and the third – oil seeds with a share in the structure of 11.3%.[5]

However, according to experts, an increase in Ukrainian exports was not only due to these product groups. The supply of Ukrainian processed and food products has significantly increased. For example, the export of sweet butter, which grew by $ 92.2 million compared to 2016, sugar – by $ 49.7 million, extracts of malt, flour and cereals - by $ 48.8 million, legumes, fresh or chilled – by $ 44.3 million, frozen beef – by $ 39.2 million.

The pilot studies conducted by us show that the above data is further illustrated that in the country a number of food industry enterprises apply procedures based on the principles of the HACCP system and carry out their activities in accordance with the requirements of the EU. Nowadays, market requirements motivate and provide to some extent acceleration of the process of updating and modernizing the production facilities of food enterprises, increase compliance of manufacturers with the requirements of technological discipline, industrial sanitation and hygiene, intensify the study of international experience in the development and implementation of food safety and quality management systems based on HACCP principles.

In Ukraine, the implementation of standards is regulated by the Laws of Ukraine "On Safety and Quality of Food Products" and "On Children's Nutrition".

[5] *Trofimtseva O. Ukrainian agrarian exports amounted to almost $ 18 billion in 2017 // Official site of the Ministry of Agrarian Policy and Food of Ukraine. // [Electronic resource]. – Access mode:http://www.minagro.gov.ua/node/25237/*

These standards are mandatory, in particular, they reflect the following requirements for products as:[6]

1. Microbiological criteria: maximum permissible levels of residues of pesticides / antibiotics; pollutants (toxic elements, mycotoxins, radiology); nutritionals and flavorings.

2. Requirements for the manufacturer: proper hygienic / industrial / agricultural practices (GHP/GMP/GAP); traceability; HACCP (for operators of food market).

According to the law, market requirements are voluntary, among which are: product standards, certification of food safety management systems, certification of organic/natural products, standards of sustainable development.

Food safety management systems are practically worldwide recognized and used as a reliable method of protecting consumers from the dangers that food may encounter. The introduced food safety management systems require the legislation of the European Union, USA, Canada, Japan, New Zealand and many other countries. In our opinion, such attention to food safety management systems practically all over the world is explained by the fact that they are recognized and used as a reliable way to protect consumers from the dangers of which carries may be food products.

Therefore, currently existing food safety management systems are based on Hazard Analysis and Critical Control Points (HACCP) principles. In Fig. 1. the components of the development of standards and certification schemes in the field of food safety management are presented. We can note that the top of the standards is the best practices that have been formed on the basis of the laws, principles and schemes of certification.

As we can see in Fig. 1, the basis for establishing a food safety management system is legislation. So, at the level of the EU, a number of directives and regulations are actively being used in the course of product placement on the market and its subsequent circulation. Directive 2001/95/ EC of the European Parliament and of the Council introduces to function of "Rapid Alert System for non-food products posing a serious risk" – RAPEX. It was established for the purpose of the rapid exchange of information between EU Member States and the European Commission in case of product detection that poses a serious threat (direct link to the site RAPEX).[7]

The general procedure and conditions for the placement of products on the EU domestic market, handling of work of conformity assessment and accreditation and the market surveillance mechanism are outlined in the Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 and

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[6] *The Law of Ukraine "Infant Nutrition". // [Electronic resource]. – Access mode: https://zakon.rada.gov.ua/laws/show/142-16/*

[7] *The official site «Rapid Alert System for non-food products posing a serious risk» – RAPEX // [Electronic resource]. – Access mode: http://ec.europa.eu/consumers/archive/safety/rapex/index_en.htm)/*

Decision No 768/2008/EC of the European Parliament and of the Council of 9 July 2008.[8] [9]

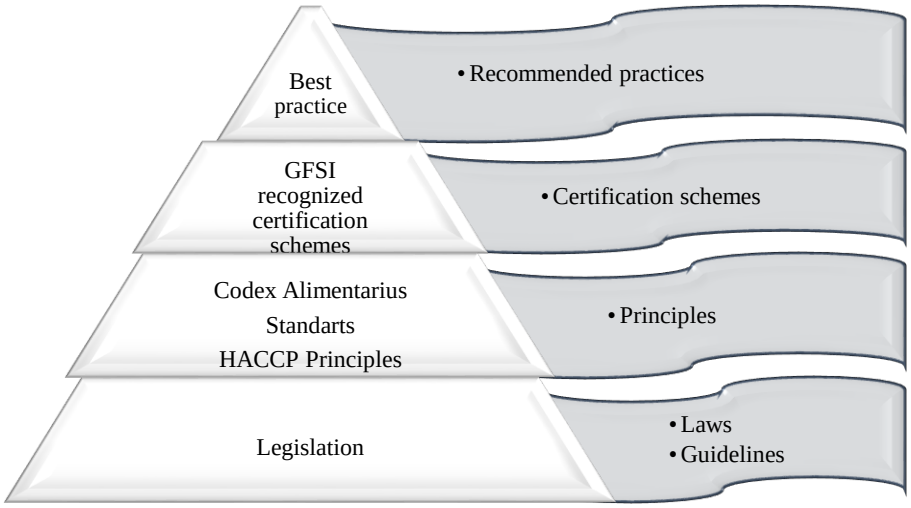

Fig. 1. Components of Food Safety Management Systems
[compiled by authors on the basis of "The official site Rapid Alert System"]

Harmonized standards can be developed by three independent standards bodies: The European Committee for Standardization (CEN); European Committee for Electrotechnical Standardization (CENELEC); The European Telecommunications Standards Institute (ETSI).

Whereas, conformity assessment procedures are carried out by the product manufacturer or by a third party responsible for such an assessment. The third party is the competent authority in each EU Member State.[10]

EU labelling indicates that the product meets all applicable requirements and has undergone a conformity assessment procedure. The packaging of goods placed on the market have to comply with the requirements laid down in European Parliament and Council Directive 94/62/EC of 20 December 1994 of the packaging and handling of packaging waste.

Environmental requirements for products delivered to the EU market consist of the following main elements:

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[8] *Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 // [Electronic resource]. – Access mode:http://www.nostroy.ru/nostroy_archive/nostroy/804061826-05%20Reglament_ES_765_2008.pdf/*

[9] *Decision No 768/2008/EC of the European Parliament and of the Council of 9 July 2008 // [Electronic resource]. – Access mode:https://zakon.rada.gov.ua/laws/show/994_b42/*

[10] *The European Commission's priorities // [Electronic resource]. – Access mode: https://ec.europa.eu/commission/index_en/*

1. Regulation of trade in dangerous chemicals. Imports of dangerous chemicals in the EU are subject to control in accordance with the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. The provisions of the Convention are implemented in the EU legislation by Regulation (EC) No 689/2008 of the European Parliament and of the Council of 17 June 2008 concerning the export and import of dangerous chemicals. All information on import requirements established for specific products is contained in the European Database Export Import of Dangerous Chemicals – EDEXIM.[11]

2. Control of the presence of persistent organic pollutants. EU policy is aimed at eliminating or minimizing the usage of these products in accordance with Stockholm Convention on Persistent Organic Pollutants and the Protocol to the Convention on Long-range Transboundary Air Pollution within the framework of the United Nations Economic Commission for Europe (UNECE). The basic legal document of the European Union - Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004.[12]

3. Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). REACH was introduced by Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006. It established a system for recording existing and new substances, as well as requirements for manufacturers of EU Member States and importers of EU products containing chemicals. REACH system is managed by the European Chemicals Agency (ECHA).[13]

4. Classification, labeling and packaging of substances and mixtures. Chemicals can be placed on the EU market if they are classified, labeled and packaged in accordance with the provisions of the Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008.[14]

5. Requirements for plant protection and biocides. In the EU, the placing of plant protection products on the market should be authorized in accordance with the provisions of the Regulation (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009. In turn, biocides (disinfectants, preservatives, non-agricultural pesticides), supplied to the EU market should comply with the requirements of the Directive 98/8/EC of the European

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[11] *Joint Research Centre. Chemical Lists Information System (CheLIST) // [Electronic resource]. – Access mode: http://chelist.jrc.ec.europa.eu/*

[12] *The main requirements of the EU legislation for the safety and quality of goods // [Electronic resource]. – Access mode: https://ukraine-eu.mfa.gov.ua/ua/Ukraine+-+EU+export-import+helpdesk+/Non-tariff+regulation/Загальні+вимоги+ЄС+до+імпортованих+товарів/*

[13] *The official Site of the European Chemical Agency // [Electronic resource]. – Access mode: https://www.echa.europa.eu/*

[14] *Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 // [Electronic resource]. – Access mode: https://dokipedia.ru/document/5180851/*

Parliament and of the Council of 16 February 1998 and a few other legislative acts of the EU. Along with the above, the main environmental requirements also regulate the import into the EU of detergents, fertilizers, ozone-depleting substances, fluorinated greenhouse gases, extinct species of animals, waste, etc.

6. Requirements in the field of sanitary and phytosanitary measures. Goods imported into the customs territory of the EU should comply with the sanitary and phytosanitary requirements of the EU on the protection of human and animal health. These requirements are classified in the food and feed safety sectors, plant health and public health. SPS control is carried out by the competent authorities of the EU Member States, coordinated by the European Commission and the European Food Safety Authority.[15]

According to the EU legislation, food products imported into the EU must comply with the conditions, which include:

− general principles and requirements of food law (Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002);[16]
− registration by EU importers of suppliers of products from the country of origin of the goods;
− general rules of food hygiene and specific requirements for the hygiene of food products of animal origin;
− rules on microbiological criteria for food products;
− rules on residues of pesticides, veterinary drugs and contaminants in food;
− special rules for genetically modified food and feed, bio-proteins and new products;
− special rules for certain groups of food products (mineral waters, cocoa, quick-frozen food) and food products directed at specific groups of the population (products for infants and children);
− specific marketing requirements and labeling requirements, requirements for primary goods, feed and constituents of feed intended for specific nutritional purposes;
− general rules for materials intended to contact with food.

The next component of the system, in accordance with Fig. 1 there are principles that distinguish HACCP principles. HACCP (Hazard Analysis and Critical Control Points) is a scientifically grounded system that enables the production of safe products through the identification and control of hazardous factors. The HACCP system is the only food safety management system that has proven its effectiveness and accepted by international institutions.

[15] *The official Site of the European Food Safety Authority // [Electronic resource]. – Access mode: http://www.efsa.europa.eu/*

[16] *Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002// [Electronic resource]. – Access mode: https://www.fsvps.ru/fsvps-docs/ru/usefulinf/files/es178-2002.pdf/*

In Ukraine, the usage of the HACCP system is mandatory for all enterprises involved in the production or dealing with food products.

The HACCP concept was developed in the 1960s by the joint efforts of the Pillsbury Company, the US Army Laboratories and the National Aeronautics and Space Administration (NASA) while working on the American Space Program. NASA wished to have a system that guarantees the safety of foods consumed by astronauts in space with zero defects. The concept of HACCP was publicly announced in 1971 at a food safety conference. In the mid-80's the National Academy of Sciences of the United States proposed to introduce this system to service "terrestrial" consumers. In 1996, the final version of the system was approved by the President of the United States and recommended by the dhotellas of wide introduction initially at meat processing enterprises, and later - at all enterprises of the food industry. In 1993, the Codex Alimentarius Commission approved guidelines for the HACCP system.[17]

Over the 40-year-old use of the HACCP concept, it was based on the concept of total quality management (TQM) and it was determined that the HACCP system works best if it is based on the following basic principles:

1 – conducting analysis of dangerous factors;

2 – definition of critical points of control (CPC);

3 – definition of critical limits for CPC;

4 – establishment of a monitoring system for CPC;

5 – establishment of corrective actions if the monitoring results indicate a loss of control in the CPC;

6 – establishment of verification procedures to confirm the effectiveness of the HACCP system;

7 –establishment of a system of documentation and registration of data.

Advantages of using the HACCP system are multiple. The most important ones are:

• HACCP is a systematic approach covering all aspects of food safety, starting from growing, harvesting, purchasing raw materials to end-user usage;

• the use of HACCP will transfer emphasis from testing the final product to the use of preventive methods for ensuring safety during manufacture and sale;

• a properly conducted analysis of dangerous factors allows you to identify hidden dangers and direct the relevant resources to the critical points of the process;

• reduction of losses connected with product recall, penalties and legal claims;

• HACCP is able to integrate into the total management system, rather organically combining with other management concepts - quality management (ISO 9000 standards), environmental management (ISO 14000 standards), etc;

[17] *Sliva Yu. V., Shvets T.G. (2013), The current state of development of international and national regulatory frameworks on the food safety management system // [Electronic resource]. – Access mode: http://nd.nubip.edu.ua/2013_6/11.pdf/*

• HACCP usage can be useful for confirming the implementation of legislative and regulatory requirements, as in many countries HACCP is a mandatory statutory requirement.

Consequently, HACCP is a management tool that provides a more structured approach to identifying dangers compared to traditional methods such as inspection or quality control. Along with this, it also covers the quality of management, involving all team members in the process and aimed to achieve long-term benefits by meeting the needs of consumers. For the effective use of this tool, it is essential to have a solid knowledge of the systems, system approach and optimization, which is schematically shown in Fig. 2

The use of the HACCP system allows enterprises to move from testing the final product to the development of preventive methods. According to the HACCP, the dangers are divided into three groups that may be of biological, chemical and physical origin.

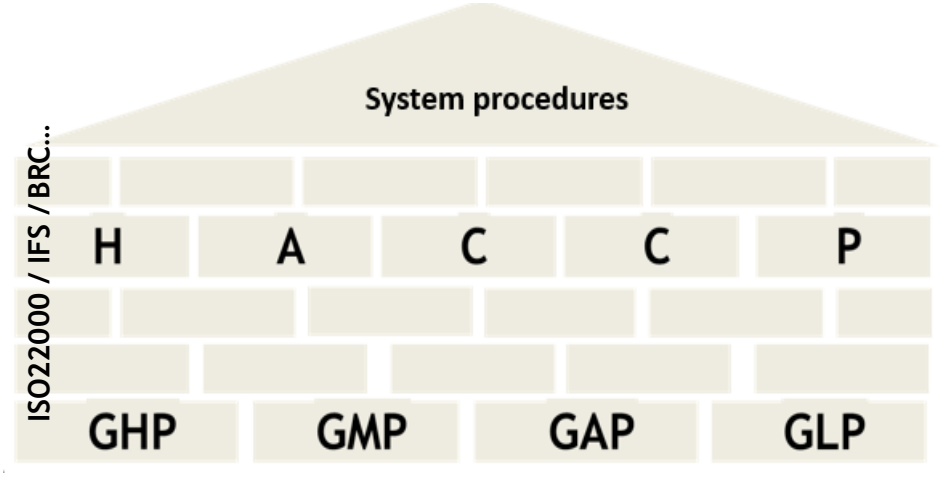


Fig. 2. Food safety management system [compiled by authors on the basis of 17-21]

The mandatory introduction of food safety management systems based on the HACCP principles is determined by the law of Ukraine, which establishes the stages of the transition period, which envisage:[18]

− **the first stage**, which is defined until 20.09. 2016 - use of programs of prerequisites of the HACCP system - all capacities;

− **the second stage**, which is defined until 20.09. 2017 - use of procedures based on the principles of the HACCP system in enterprises that carry out activities with food products which contain of unprocessed ingredients of animal origin (except for small capacities);

[18] *Susol N. (2017), The system of HACCP – is it imperative norm or requirement of market today? // [Electronic resource]. – Access mode: http://ena.lp.edu.ua:8080/bitstream/ntb/41965/2/2017_Susol_N-Systema_NASSR-imperatyvna_135-136.pdf/*

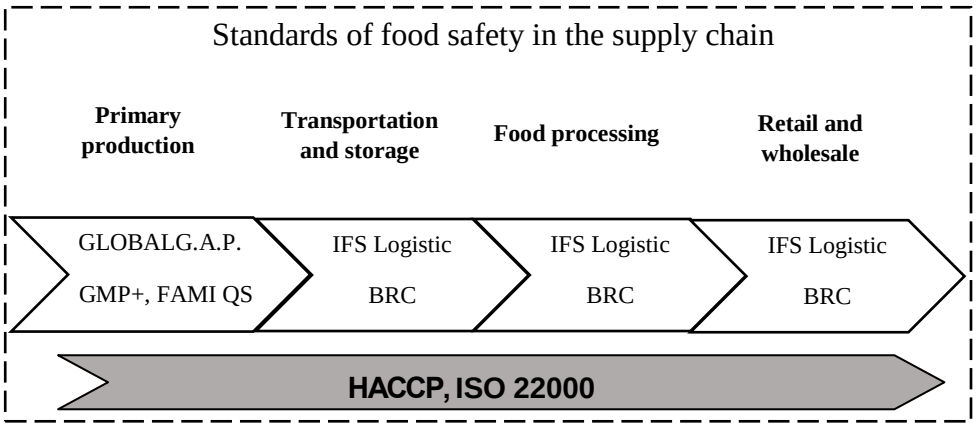
– **the third stage**, which is defined until 20.09. 2018 - use of procedures based on the principles of the HACCP system in enterprises that carry out activities with food products which do not contain unprocessed ingredients of animal origin (except for small capacities);

– **the fourth stage**, which is defined until 20.09. 2019 - use of procedures based on the principles of the HACCP system in small enterprises, including operators supplying food products to the end user, staff ≤10 employees, area ≤ 400 m^2, or not supplying food to the end user, staff ≤ 5 employees.

Such transitional periods are intended enabling market operators to reorient themselves in a timely manner to new market requirements and, if necessary, to optimize the production of food products in accordance with the legislation provisions.

It should be noted that nowadays more than 426 enterprises in Ukraine work in accordance with the requirements of the HACCP system. The Standards of the analysis system are actively used at the "Progress", "Svitanok", Kulindorovsky Factory of Bakery Products, Okhtyrsky Factory of Bakery Products, Bread Factory №76, and Bread Factory №77. Obviously, most executives understand that compliance of HACCP is a prerequisite for increased trust and, consequently, the attraction of new customers, so the introduction of standards for most businesses is a prerequisite for ensuring competitiveness and maintaining market positions.[19]

The HACCP system integrates the food safety standards in the supply chain, which are presented in more details in Fig. 3.



[19] *HACCP: More than 400 enterprises have introduced a control system in Ukraine/ Ukrainian national news. Information agency // [Electronic resource]. – Access mode: https://www.unn.com.ua/uk/news/1752975-nassr-v-ukrayini-ponad-400-pidpriyemstv-zaprovadili-sistemu-kontrolyu/*

Fig.3. 3 Standards for Food Safety Management Systems
[systematized by authors on the basis of 20][20]

It can also be noted that most retailers and large food companies (Unilever, Nestle, etc.) are demanding their suppliers to have a management system compliance certificate in one of the recognized GFSI (Global Food Safety Initiatives) standards and schemes certification.

Idea of GFSI «Once certified, accepted everywhere» is that companies that have been certified to meet one of the standards recognized by the GFSI do not need to be certified further by another equivalent standard. The mission of GFSI is to ensure continuous improvement of food safety management systems to ensure confidence in providing safe food to consumers around the world.

Regulation of standards and certification schemes and their recognition by the GFSI is based on the provisions of the Guidance Document GFSI (GFSI Guidance Document, version 6): part I – The Benchmarking Process; part II – Requirements for the Management of Schemes; part III – Scheme Scope and Key Elements; part IV – Glossary of Terms.

Nowadays recognized GFSI standards and certification schemes are following: FSSC 22000 (version October 2011); IFS Food Standard (version 6); BRC Global Standard (version 6); SQF CODE (7 видання, 2 рівень); Global Red Meat Standard (GRMS) (4 видання, версія 4.1); GLOBAL GAP (version 4); Canada GAP Scheme (version 6).

Thus, the leading food and ingredients companies recognize the approved GFSI standards and certification schemes, namely: McDonald's Corporation, Hormel Foods Corporation, AEON Co., The Coca-Cola Company, Carrefour SA Auchan, Wal-Mart Stores Inc., Campbell's Cargill Inc., Kraft Foods Inc. Migros, Burger King Corporation, METRO GROUP Groupe, Danone, Sodexo and others. The main benefits of using standards and schemes approved by the GFSI for manufacturers, food consumers and the country of manufacture are presented in Table 1.

Table 1. Main advantages of using standards and certification schemes*

Advantages of using standards and schemes approved by the GFSI		
For enterprises	**For consumers**	**For the country of origin**

[20] *Food safety: business development and consumer choice // [Electronic resource]. – Access mode: https://www.ifc.org/wps/wcm/connect/806e9e6b-cd3e-48f4-82f5-940bd2cdbdbc/FS+Brochure+RUS+March+2016.pdf?MOD=AJPERES*

*Developed by the authors

− increase reliability of safety of the finished product; − increase of safety of the food chain; − increase of competitiveness; − entry into new markets; − reduction of duplication of audits and improving efficiency	− increase of trust and confidence in the safety of products and services; − reduction of probability of contraction of a disease connected with dangerous products; − reduction of cases jof withdrawal and confiscation of products	− improvement of the health care; − stable compliance with the requirements of the legislation; − improving reputation

Certification schemes recognized by the GFSI are influential mechanisms for regulating the global food supply chain. Third party certification means that an independent organization has analyzed the processes of the company and independently determined the compliance of the management system with the safety and / or quality standards of food products.

Certification for compliance with leading internationally recognized management schemes reduces information asymmetry in supply chains, thereby contributing to the creation of an internationally comprehensible standard for the processing and production of food products.

Along with the above, it is worth pointing out FSSC 22000 scheme. It is designed for organizations to establish and continuously improve their management systems and good manufacturing practices.

The FSSC 22000 is a leading international certification scheme for food safety management systems, considering that:

1) fully includes existing ISO standards, industry specifications, HACCP;
2) fully recognized by the Global Food Safety Initiative;
3) allows to integrate food safety and quality management with other management systems such as environmental management, sustainable development management and occupational safety and health management;
4) is regulated by a non-profit fund and managed by an independent stakeholder council;
5) increases traceability throughout the supply chain of food products.

However, considering the peculiarities of the functioning of the food industry enterprises of Ukraine (according to official statistics, physically and morally outdated equipment in the processing industries of the agroindustrial complex is (65-75%), the average period of use of production technological lines reaches 12-15 years, and at certain enterprises – 25-30 years. In our opinion, it is rather difficult for such a short time allocated for the transition period to perform fundamentally new, specific imperative requirements. In particular, for the country as a whole and for the food industry, this is a challenge, since, apart from the inappropriate food safety legislation, issues with outdated equipment and financial support for this process should be addressed.

Along with this, practical experience shows that the implementation of HACCP systems at Ukrainian enterprises revealed a low level of industrial

sanitation and hygiene, technological discipline and insufficient knowledge of personnel about the HACCP system and GMP/GHP rules, and the lack of practical experience in their use. In most cases (up to 40%) reasons for the production of poor-quality or potentially dangerous food products lie in the negligence or lack of knowledge of specialists and workers, (up to 36%) due to non-compliance with the necessary technological parameters of the process, the absence of production regulations and sufficient technical equipment.

The situation is also complicated in technical regulation. The standardization of permissible doses and residual amounts and levels of various harmful substances in food products in Ukraine differs from the EU norms, which raises issues for conducting appropriate food testing for export. In the structure of most state testing laboratories there is a lack of modern equipment, they do not meet international standards, therefore certification at the national level is either very expensive or impossible at all.[21]

Fundamental technological upgrading and/or equipment replacement mainly take place at the large enterprises that already have access to European markets and significant foreign investment. Unfortunately, in the current economic constraints, small and medium enterprises, which are also adequately represented in the Ukrainian food industry, are deprived of technological opportunities for modernization. Therefore, most of such enterprises operate only on the domestic market.

However, with sufficient potential to strengthen the market position by increasing production and sales, these enterprises are promising objects for the implementation of the HACCP system. Obviously, the improvement of standards, schemes of norms and regulations is a necessary condition for the emergence of a solvent and at the same time very demanding European market. At the same time, and we are absolutely convinced, we should not ignore those powerful markets where it is possible to exist considerable demand for products of the Ukrainian food industry and at the same time entry barriers are much lower, including due to the lack of such meticulous quality control as Europe. These are primarily the countries of North Africa, Central and South-East Asia, the Persian Gulf, and among them are particularly the following: India, Indonesia, Myanmar, Thailand, Vietnam, etc. For reference: because of the religious beliefs of the Indian population (and this is more than a billion people) and other countries in Southeast Asia are vegetarians and get animal protein mainly due to the consumption of dairy products. Among the animals they consume only chickens, however, for the most part - such exotic species of fauna compare with us as: rats, bats, snakes, cockroaches, etc. Growth in the welfare of the population of Southeast Asia has contributed to the rapid growth in demand for dairy products, Australia and New Zealand have already become traditional suppliers to these

[21] *Sklyar D., Osipova M. (2016), Features of implementation of European standardization in agriculture and food industry of Ukraine, Scientific herald, №1, pp. 134-146. // [Electronic resource]. – Access mode: http://nbuv.gov.ua/UJRN/Nv_2016_1_12/*

markets. We believe that Ukrainian producers should also carefully study the possibilities of this market.[22]

Conclusion. The role of the food industry as determinants of the economic revival of Ukraine is unmatched in view of its close relationship with a large number of other industries, a significant amount of foreign direct investment, as well as unique opportunities not only for large but also for medium and small businesses. Particular attention in this context should be given to the development of such types of business models that are based on the export of end products abroad, which involves providing employment opportunities in Ukraine, and thus contributes to the growth of export foreign exchange earnings and the rise of the level of economic welfare of the population.

However, access to foreign markets for Ukrainian food producers is complicated by the fact that developed countries have established reliable security management systems for these products. These systems, based on the relevant laws, directives and regulations, are recognized and applied to protect consumers from the potential dangers, the source of which may be food products. For example, HACCP systems (Hazard Analysis and Critical Control Points) and GFSI (Global Food Safety Initiative) provide a fairly high level of control over identified dangers. Thus, enterprises of the food industry of Ukraine should to fulfill fundamentally new, specific imperative requirements in a short time to enter the developed solvent markets of European countries. Additional source of revenues, and perhaps a transitional stage for the formation of the necessary logistical and, above all, financial basis, may become less demanding for the quality and at the same time more capacious markets of the countries of North Africa, Central and Southeast Asia, as well as the Persian Gulf.

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