

## EFFICIENCY OF THE FUNCTIONING OF THE STATE CONTROL SYSTEM FOR THE SAFETY AND QUALITY OF ANIMAL PRODUCTS IN UKRAINE

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**Abstract.** The study reveals the results of evaluating the effectiveness of the state control system (supervision) on the safety and individual indicators of the quality of livestock products in Ukraine. The necessity of application of such components of efficiency as legislation, management and its organizational structure, inspection and laboratory service, information, training and communications is substantiated. It has been determined that during a sufficiently long period of time (until 2015), the system of state control (supervision) was archaic and actually focused on the principles of command and administrative economy. The modern tendencies and specifics of the improvement of the Ukrainian control system in the direction of its harmonization with the European one are shown. The emphasis was on significant volumes of work that needed to be done in a very short time, as well as in the absence of adequate funding and appropriate skilled specialists. The emergence of clarity and unambiguousness in determining the responsibility of market operators for violating the legislation requirements in the field of production and circulation of animal origin food products was emphasized. Along with the achievements, there were identified systemic problems related to the technical regulation of safety assurance processes and individual quality indicators in Ukraine. Also it was noted and revealed that legislation in the area of guaranteeing the quality and safety of livestock products in Ukraine remains incomplete and not fully developed. The necessity of development of a number of by-laws and allocation of necessary financing for effective functioning of the state control system over product safety is substantiated. Article specified on the presence of insufficient number of professional inspection and laboratory services is underlined. The mechanisms of avoiding corruption risks and excessive pressure on the subjects of the livestock production market are proposed. The necessity of determining the separate by-law of the state audit mechanism of procedures based on the principles of HACCP, in the production, processing, storage and transportation of livestock products is proved. The conclusion is made about the lack of systematic, chaotic measures for the formation of an approaching European system of state control. The necessity of the legislation improvement was substantiated and other solutions were proposed to improve the effectiveness of the system of monitoring the safety and individual indicators of the quality of livestock products in Ukraine.

**Key words:** state control (supervision), safety, quality, livestock production, state veterinary inspector, accredited laboratory.

## ЕФЕКТИВНІСТЬ ФУНКЦІОНУВАННЯ СИСТЕМИ ДЕРЖАВНОГО КОНТРОЛЮ ЗА БЕЗПЕЧНІСТЮ І ЯКІСТЮ ПРОДУКЦІЇ ТВАРИННИЦТВА В УКРАЇНІ

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**Анотація.** У статті розкрито результати оцінювання ефективності системи державного контролю (нагляду) за безпечністю і окремими показниками якості продукції тваринництва в Україні. Обґрунтовано необхідність застосування таких складників ефективності як законодавство, менеджмент і його організаційна структура, інспекційна й лабораторна служба, інформація, навчання та комунікації. Визначено, що протягом досить тривалого періоду часу (до 2015 року) система державного контролю (нагляду) була архаїчною і фактично зорієнтованою на принципи командно-адміністративної економіки. Показано сучасні тенденції та специфіку удосконалення української системи контролю в напрямі її гармонізації з європейською. Акцентовано увагу на значних обсягах робіт, які для цього необхідно було здійснити в дуже стислі терміни, а також на відсутності належного фінансування та відповідних кваліфікованих фахівців. Підкреслено появу чіткості й однозначності у визначенні відповідальності операторів ринку за порушення вимог законодавства у сфері виробництва й обігу харчових продуктів тваринного походження. Поряд зі здобутками, виявлено системні проблеми, пов'язані з технічним регулюванням процесів гарантування безпечності та окремих показників якості в Україні. Відзначено, що нині законодавство у сфері гарантування якості й безпечності продукції тваринництва в Україні залишається недосконалим і розробленим не повністю. Запропоновано механізми уникнення корупційних ризиків і надмірного тиску на суб'єктів ринку продукції тваринництва. Доведено необхідність визначення окремим підзаконним актом механізму державного аудиту процедур, заснованих на принципах HACCP, при виробництві, обробленні, зберіганні й транспортуванні продукції тваринництва. Зроблено висновок про не системність, хаотичність заходів із формування наближеної до європейської системи державного контролю. Обґрунтовано необхідність удосконалення законодавства та запропоновано інші рішення для підвищення ефективності функціонування системи контролю за безпечністю і окремими показниками якості продукції тваринництва в Україні.

**Ключові слова:** державний контроль (нагляд), безпечність, якість, продукція тваринництва, державний ветеринарний інспектор, акредитована лабораторія.



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### Introduction. Formulation of the problem

European model of the control system (supervision which is considered to be one of the most effective) is being introduced in Ukraine due to acute problems in the sphere of livestock production safety. However, the results of such implementation are still far from desirable. There is an urgent need to strengthen state supervision of quality assurance processes, guaranty detailed legislative regulation of these processes, and mechanisms for the functioning of quality management systems in livestock farming in addition to solving of livestock production hazard problem.

The **purpose** of the article is to evaluate the effectiveness of the system of state control over the safety and quality of livestock products in Ukraine and to substantiate ways of improving this system.

**Research tasks:** 1) to show the current trends and specifics of the improvement of the Ukrainian system of state control over the safety and quality of livestock products in the direction of its harmonization with the European one; 2) to identify problems related to the technical regulation of the processes in ensuring the safety and specific indicators of the livestock products quality in Ukraine; 3) to substantiate the directions of increasing the efficiency of the system of monitoring the safety and individual indicators of the livestock products quality in Ukraine.

### Analysis of recent research and publications

Issues of quality and safety of livestock products, as well as state control over the processes of their guarantee, scientific works of such scholars as G. Duffy, J.-F. Hocquette, F. Medale, R. Richardson, S. Prache, N. Scollan [1], A. Nardone [2], J. Higgs [3], J. Noordhuizen, J. Metz [4], I. Kravchenko, Yu. Oglashennyi, Ye. Horovets [5] and others were devoted to these problems. The results of many of these studies have become the basis of certain government decisions to ensure the proper quality of livestock products in Ukraine.

Over the past 5 years, there has been an intensification of efforts towards the functional approximation of the Ukrainian system of technical regulation to the requirements of the EU and the WTO. However, these efforts in most cases relate to the formation of a system of technical regulation in general, regardless of the sector of livestock breeding. There is a need for a thorough assessment of the system of state control over the safety and quality of livestock products, as well as the justification of mechanisms, tools and measures that would ensure the implementation of an integrated or process approach to guaranteeing quality and safety.

**Current trends and specifics of the improvement of the Ukrainian system of state control over the safety and quality of livestock products in the direction of its harmonization with the European one.**

In the joint document of the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO), "Ensuring Food Safety and Quality: A Guide to Strengthening National Food Control Systems", the effectiveness of the system of state control is to be evaluated due to the following main components: 1) legislation; 2) management and its organizational structure; 3) inspection service; 4) laboratory service; 5) information, training and communication.

Only if all of these components are at the acceptable level, one can state the effectiveness of the system of state control (supervision), which can guarantee the safety and quality of livestock products and protect the consumer.

From our point of view, with regard to the situation in Ukraine, the process of evaluation should begin with such an element as management and its organizational structure. In accordance with modern (in particular, European and American) requirements, the precondition for ensuring the effectiveness of the system as a whole should be the existence of a single body to monitor the safety and quality of food "from field to the table" (similar to the FDA in the United States or EFSA in the EU).

However, functions for controlling the quality and safety of food products, consumer protection were scattered among the three entities in Ukraine, by 2015: 1) the State Veterinary and Phytosanitary Service of Ukraine; 2) the State Sanitary and Epidemiological Service of Ukraine; 3) the State Inspection of Ukraine on consumer rights protection. Moreover, by 09.12.2010, such control structures were even more, as the State Veterinary and Phytosanitary Service of Ukraine were created on the basis of the State Committee for Veterinary Medicine, the State Plant Inspection on Quarantine and the State Plant Protection Inspectorate.

Thus, in Ukraine for 25 years (1991-2015), the system of state control (supervision) in the field of safety and quality (as in many other areas) was too bureaucratic and in fact remained oriented on the principles of the administrative-command economy. According to O. Bakumenko [6], under the conditions of limited financing from the state budget, among the controlling bodies, there was observed rent-oriented behavior and "pursuit of finances of market operators". Each supervisory authority, under the slogan of consumer protection, tried to introduce as many paid services, types of state control, permits, as possible which do not exist in developed countries.

Departments created a "self"-regulatory framework that covered a certain segment of the food

chain. The main criteria for evaluating of the activity of these monitoring services were the total number of inspections carried out and fines imposed thereafter [6]. This contributed to a further increase in the number of inspections and fines for entities that did not perceive such rent-oriented behavior of officials and lobbied their interests in power structures. However, such a procedure did not in any way contribute into guaranteeing the quality of products and protecting the interests of consumers' problems solving.

The large number of control bodies, the dispersal and duplication of their functions, the division of the latter depending on the stages of the promotion of feed or end product to the consumer only increased the pressure on businessmen and did not contribute to raising the level of quality and safety of food products of animal origin. In fact, until 2016, in the case of the implementation of poor-quality products and consumption of it by people, it was virtually impossible to find and punish the responsible market agent or official. Only in early 2016 the State Service of Ukraine for Food Safety and Consumer Protection began to function in Ukraine (02.09.2015 Cabinet of Ministers of Ukraine approved the Regulation on State Committee for Consumer Safety, 16.12.2015 – its territorial bodies were formed). The State Committee for Standardization and Civil Service transferred functions on the implementation of state policy in the areas of veterinary medicine, safety and specific indicators of quality of livestock products, identification and registration of animals, compliance with sanitary legislation, implementation of metrological and market surveillance, consumer rights protection and advertising.

Now, due to the insignificant term of functioning of the newly created body and the lack of proper funding, the effectiveness of control and market surveillance of the processes of ensuring the quality and safety of livestock products remains extremely low.

A similar problem with terms and efficiency in Ukraine is observed in the analysis of such a factor of the effectiveness of the system of state control and supervision as legislation. Although only in 2002–2014 the EU has adopted almost a hundred legislative acts on issues of food safety and quality, in Ukraine, real steps to formulate relevant legislation (its separate elements) that would meet modern requirements were made much later in Ukraine. Only in September 2015 the Law of Ukraine "On Basic Principles and Requirements for the Safety and Quality of Food Products" [7] entered into force in a new wording and under the new title (in accordance with the Law of Ukraine No. 1602 of 22.07.2014 "On Amendments to Some legislative acts of Ukraine on food products"). It envisages, without exaggeration, revolutionary measures for Ukraine to organize and implement state control over the safety and quality of livestock

products. In particular, the legal basis for the creation of a single state body for the implementation of state control and supervision throughout the food chain (plants–feed–water–animals–food products of animal origin) is laid down.

The competent authority, as noted above, has become the State Service of Ukraine for Food Safety and Consumer Protection. A number of specialists (in particular, M. Marenych, S. Arancii, N. Mariuha [8] Ye. Kyryliuk, A. Proshchalykina [9], etc.) substantiated the need for such an institution since the beginning of the 2000s, however, this idea met considerable resistance on the part of the controlling entities that were operating at that time.

Among other important provisions of the Law of Ukraine "On Basic Principles and Requirements for the Safety and Quality of Food Products" [7], it is worth highlighting:

- bringing terminology in the field of quality and safety in line with EU legislation;
- establishing detailed hygiene requirements and implementing the HACCP system, in accordance with Regulation (EC) No. 852/2004. Regarding activities with food products, which contain raw ingredients of animal origin, the functioning of the HACCP system becomes obligatory from 20.09.2017;
- implementation of traceability requirements as a compulsory element of any effective livestock production safety system. Traceability ensures obtaining as much information as possible about the origin of feed, water, veterinary drugs, the products themselves on the principle of "step back – a step forward", and in case of a threat to human life and health – to determine the source of danger and its distribution channels;
- obligation for market operators to provide information to competent authorities and other entities on the basis of records of measures taken for the integrated management of hazardous factors. Relevant entries that must be kept for 3 months after the end date of sale of products are conducted concerning: a) the type and origin of feed; b) veterinary preparations for animals, their date of application, time of rational expectation, after which the use of an animal or livestock products is permitted; c) the existence of all animal diseases that may affect the safety of livestock products; d) the results of tests of samples taken from animals for diagnostic purposes; e) data concerning inspections of animals or livestock products;
- regulation of real possibilities for stopping production and prohibiting the circulation of livestock products harmful to human health, even if its production formally complies with the norms of safety legislation and certain quality indicators;
- prohibition of the circulation of food products of animal origin, the labeling of which does not meet the requirements of safety legislation and individual indicators of food quality;

- mandatory preparation and implementation of a long-term plan of state supervision and control and its continuous improvement as a response to the identification of new risks;

- requirement for the necessity of regular reporting on the implementation of state supervision;

- the necessity of obligatory accreditation of all laboratories that carry out product testing for the purposes of state control in accordance with the standard DSTU ISO 17025: 2006 “General requirements for the competence of testing and calibration laboratories”;

- requirement to create a network of reference laboratories.

With the adoption of the Law of Ukraine No. 1602 “On Amendments to Certain Legislative Acts of Ukraine on Food Products”, significant deregulation of the livestock production market was ensured by eliminating those ineffective and bureaucratized permitting procedures, requirements and documents that do not exist in the EU. In particular, it was canceled due to lack of connection with the guarantee of safety of products obligatory sanitary-hygienic expertise, the use of GOST, DSTU and TU (their replacement with ISO standards and European standards), provides the simplification of the procedure for the market introduction of new products.

In general, this legislative act is harmonized with Regulation (EC) 178/2002, Regulation (EC) 852/2004, and partly with Regulation (EC) 882/2004.

It is also important to note some positive impact on the processes of ensuring the quality and safety of livestock products. Laws of Ukraine No. 1648 dated August 14, 2014 “On Amendments to Certain Legislative Acts of Ukraine on Identification and Registration of Animals” and # 161 of 15.07.2015 “On Amendments to the Law Of Ukraine “On identification and registration of animals”.

Recently, the formation and updating of the sanitary legislation of Ukraine, which should play a key role in establishing the parameters of product safety, has been observed.

Compliance with the State sanitary norms and rules “Medical requirements for the quality and safety of food products and food raw materials”, which provides for the availability of veterinary documents containing information on the use of pesticides for the control of ectoparasites or animal diseases for processing of food raw materials of animal origin premises where animals and poultry are kept in fish-water reservoirs intended for the breeding of fish, bees, indicating the name of pesticides, as well as veterinary remedies, antibiotics, hormones.

In the manufacture of food raw materials of animal origin it is not allowed to use veterinary preparations (feed additives, growth stimulators of animals, including hormonal preparations, veterinary preparations, including antibiotics), preparations for the treatment of animals, poultry, and also for

processing premises for their maintenance, not allowed to use.

In accordance with medical requirements, animal products (including hormonal preparations), medicines (including antibiotics) used for the purpose of fattening, treatment and prophylaxis are monitored for residues of veterinary preparations of animal growth promoters, including for infant food, in accordance with medical requirements, diseases of cattle and poultry, pond fish, and bee families. In the meat, meat products, by-products of slaughter cattle and poultry, pond fish, products of beekeeping control the content of the most commonly used in animal husbandry and veterinary feed and medical antibiotics: 1) bacitracin (Bacitracin A, B, C, zinc-bacitracin); 2) tetracycline group (tetracycline, oxytetracycline, chlortetracycline – the sum of the starting substances and their 4-epimer); 3) groups of penicillin (benzylpenicillin, phenoxymethylpenicillin, ampicillin, amoxicillin, pentametamate); 4) streptomycin; 5) levomycetin (chloramphenicol) [10].

In addition, the Order of the Ministry of Health of Ukraine No 548 “On Approval of Microbiological Criteria for Determination of Food Safety Indicators” [11], which was harmonized with Regulation (EU) No. 2073/2005, came into force on 08.20.2015. The order sets the list of sanitary-microbiological indicators in food products and criteria of their safety, hygienic criteria of the technological process; general requirements for testing on microbiological criteria, requirements for research (testing) and sampling of food products; measures to address shortcomings in unsatisfactory results of the study.

The system of microbiological risk assessment on microbiological and bacteriological parameters includes monitoring of four groups of microorganisms: 1) sanitary-indicative, which include mesophilic aerobic and optional anaerobic microorganisms (MAFAM) and bacteria of the group of intestinal sticks (BGKP), including *E. coli*; 2) potentially pathogenic microorganisms, which include *S. aureus*, bacteria of the genus *Proteus*, *B. cereus* and sulfite-reducing clostridia; 3) normalization and control of pathogenic microorganisms – *Salmonella* and *L. monocytogenes*; 4) microorganisms of damage – mold, yeast and lactic acid microorganisms.

Somewhat earlier, May 18, 2016, the Order of the Ministry of Health of Ukraine No 368 “On Approval of State Hygiene Regulations and Norms” of the Regulation of Maximum Levels of Certain Pollutants in Food Products [12], which established maximum levels in livestock production of mycotoxins (in particular, aflatoxins metals (lead, cadmium, mercury), dioxins and dioxin-like PCBs, polycyclic aromatic hydrocarbons, melamine), came into force.

It should be noted also the fact that the 03.09.2016 orders of the Ministry of Health of Ukraine No 694 “On approval of hygienic requirements for

poultry meat and certain indicators of its quality” [13] and No 695 “On Approval of Parameters on the Safety of Poultry Meat” came into force.

The first of these is a complex document harmonized with the EU regulations, which contains clear terms and definitions, specific hygiene requirements for slaughter, cutting and slaughtering meat, slaughtering requirements, processing plants, crushing meat production facilities, semi-processed products from meat and meat processing, requirements for raw materials, as well as for minced meat, meat semi-processed products, meat products and their production, requirements for poultry carcasses for sale to the consumer, packaging requirements, labeling and informing consumers, hygiene requirements for the content of water in products, the procedure for making decisions on non-compliance with requirements, etc.

The document provides the regulation of the concepts of “extensive retention or growing indoors”, “free walking”, “traditional free walk”, “free walking – full freedom”.

The second order (No 695) approved clear parameters of the safety for poultry meat for the admissible content of toxic elements, antibiotics, nitrosamines, pesticides, dioxins, microbiological indicators. Compliance with the requirements of these documents will increase the competitiveness of Ukrainian poultry farming, will facilitate the conquest of domestic segments of the world poultry market by Ukrainian producers.

This is evidenced by official Derzhstat data on exports of the specified products: during 7 months of 2017, Ukrainian enterprises exported 169.5 thousand tons of poultry meat, which is 31% higher than in the same period in 2016 [14].

It is important to transfer the progressive provisions of the document and establish modern hygienic requirements for beef, veal, pork, lamb, goat milk, milk, eggs, honey and other livestock products.

However, the key legislative act was adopted to improve the efficiency of the control system and the supervision of the safety and quality of livestock products in Ukraine only in 2017. This is the Law of Ukraine No 2042, May 18, 2017 “On State Control over Compliance with Legislation on Food Products, Forages, By-products of Animal Origin, Health and Welfare of Animals” [15], which will take effect in April 2018.

This law (in case of further ensuring of the implementation) introduces a new level of the system of state control over the safety of livestock products, eliminating those drawbacks that do not allow to guarantee safety in an appropriate manner. It defines the system of state control bodies, their power and basic principles of activity; rights and obligations of market operators; principles and requirements for the state control of food products of animal origin (fresh meat, raw milk and colostrum, fishery products, etc.) and the welfare of living animals; requirements for

sampling and laboratory research (tests) and methods for their implementation; qualification requirements for the persons who control (state veterinary inspectors and their assistants, official veterinarians, authorized veterinarians); the basic principles of planning and financing of state control, its implementation at the border and in exporting countries; strict liability for violating the legislation on food and feed.

It is worth emphasizing the details of the types of state control (supervision) in the market of livestock products, methods of its implementation, and those who have the right to implement it. So, if one of the types of state supervision is considered - the audit of procedures based on the principles of HACCP, then it contains verification: documentation; keeping records of processes that affect the safety of livestock and feed products; internal control system of the market entity; corrective actions taken by them as a result of the analysis of detected inconsistencies; level of qualification of the personnel. Authorized persons for state supervision – state veterinary inspectors and their assistants - only can be official veterinarians, authorized veterinarians, employees of the massacre, authorized by the competent authority of the laboratory. Other physical and legal persons are not authorized to exercise state supervision.

The law lays the basis for a risk-oriented approach during inspections – each company is assigned a certain risk category each year, which will determine the frequency of inspections. At the same time, it should be noted that assessing the effectiveness of specific options for introducing a risk-oriented approach will only be possible in the process of implementing the provisions of the law, the development and implementation of the relevant by-laws.

In general, a risk-based approach makes it possible to reduce the cost of checking procedure led by the state by increasing their effectiveness. For operators of livestock products market there is an opportunity to act "ahead" due to compliance with safety legislation and separate quality indicators. The consumer, in turn, gets guaranty of the products safety. This confidence will be further enhanced by the complexity of inspections at all stages of the production and circulation of livestock products.

One of the problems which negatively affected the effectiveness of inspections was the necessity to inform market operators about it what is a contradictory with European principles. The State Procurement Service generally could not carry out planned inspections of livestock production market operators before 2017. At the same time, in order to carry out an unscheduled inspection, it was required to receive a corresponding complaint from the consumer and agree with the Ministry of Agrarian Policy and Food of Ukraine (Ministry of Agrarian Policy). Because of the bureaucracy between the filing of the complaint and the actual inspection it could take up to

a month and a half, which undermined the meaning of verification [16].

Currently, the Law of Ukraine "On state control over compliance with legislation on food products, feed, animal by-products, animal health and welfare" clearly states the need for audits of market operators without any warning. The procedure for obtaining an unscheduled inspection permit is simplified. Unified forms of state veterinary inspection acts were approved (Orders of the Ministry of Agrarian Policy No. 41 and No 42 of 02.06.2017). A norm has been applied that enables the audit of procedures based on the HACCP principles to be carried out at an enterprise only if the state veterinary inspector sent to the audit has not participated in the state control over such an enterprise during the last three years.

In general, the emergence of clarity and unambiguity in determining the responsibility of operators of the market of livestock products for violation of the legislation in the field of production and circulation of food products should be emphasized.

Also, according to European approaches, a special regime of control on food products of animal origin at the border is defined. Products should not be allowed on the territory of the country until they are properly checked at the designated border inspection post. Prior to that, in Ukraine, state control of imported animal food products at the border took place in the form of preliminary documentary control. Other types of inspections were taken at the customs office at the place of destination. Hence, dangerous products could only be detected inside the country, far from the point of import. At the same time, the system of constant official control of the production and circulation of products and raw materials of animal origin of the European Union (one of the hardest in the world) was recognized as equivalent to the system of ensuring the safety and quality of food products of Ukraine (Order of the Ministry of Agrarian Policy of 01.04.2014, No 118).

#### **Problems related to the technical regulation of the processes of ensuring the safety and specific indicators of the livestock products quality in Ukraine.**

Despite the significant achievements in the field of ensuring the safety of livestock products, there is a need to develop a number of by-laws and to allocate the necessary funding to implement in practice the provisions of the Law of Ukraine "On State Control over Compliance with Legislation on Food Products, Forms, By-products of Animal Origin, Health and Animal Welfare", which came into force in April 2018. As V. Lapa, the chairman of the State Committee for Consumer Goods and Consumer Protection, said that now it is necessary to develop and adopt about 40 subordinate acts (more than half of which refer to livestock products) and to bring Ukrainian system of state control of the safety of animal products in compliance with EU directives and regulations [16].

Indeed, as experts note, the success of the introduction of European norms concerning the quality and safety of livestock products in Ukraine depends on the attention to the details in the by-laws, as well as on the efficiency and transparency of the work of the controlling body, the State Committee for Consumer Goods and Consumer Protection.

Currently, only certain subordinate acts are adopted, in particular, the CMU Resolution No 460 of July 4, 2017, "Issue of Strengthening Veterinary and Sanitary Control as to Movement of Animals and Animal Food Products of Animal Origin", which provided creation of Interdepartmental Mobile Group on the Prevention and Detection of Violations of Veterinary-sanitary legislation at the State Committee for Proceedings of Consumer Goods. Participants of the mobile group, in the case of suspicion on the spreading of infections, have the appropriate authority for unrestricted access to controlled facilities, vehicle stops, inspections, sampling and dispatch for research and examination.

From our point of view, it is expedient to ensure the avoidance of corruption risks and excessive pressure on the subjects of the livestock production market in developing the above-mentioned by-laws. Otherwise, the system of guaranteeing the safety of products will be corrupt, ineffective, will lead to excessive expenditures of agricultural producers. Corruption became one of the factors of the ineffectiveness of the system of state price regulation in Ukraine, which in fact was abolished in 2017.

It is important to define the mechanism of state audit of procedures based on the principles of HACCP, in the production, processing, storage and transportation of livestock products by a separate by-law. The indicated mechanism should include a complex checking of: a) the necessary documentation; b) records of processes that affect the safety of livestock products and feed; c) the system of internal control of dangerous factors by the relevant commodity producer or other market entity; d) corrective actions taken by the market operator as a result of the analysis of detected inconsistencies; e) level of personnel qualification.

In our research, other problems related to the technical regulation of the processes of ensuring the quality and safety of livestock products in Ukraine have been identified.

Thus, practice has proved the need for a substantial revision of the Law of Ukraine "On the Production and Circulation of Organic Agricultural Products and Raw Materials" [17], which came into force in January 2014, as well as the development of a number of sub-legal acts for its implementation. Also, certain adjustments are required for "Detailed rules for the production of organic products (raw materials) of animal origin", approved by the CMU (March 30, 2016, No 241). The norms of the current normative legal acts do not foresee the certification of the whole

process of organic production, according to the EU, and regulate the certification of the final product only. There is no organic feed in Ukraine similar to that in the European countries. No relevant standards and regulations have been developed, which forces domestic producers to undergo organic certification of their production in accordance with current international standards. They are the European standards most often.

Among other things, the necessity of elaborating the new edition of the Law of Ukraine "On Veterinary Medicine" became evident if to take into account European requirements. Nowadays, there are significant difficulties in the enforcement of its basic provisions. The new wording of the law should, first of all, regulate the issues of ensuring the health and welfare of animals, the implementation of private veterinary practice, the circulation of veterinary drugs, etc. As experts note, for the implementation of a systematic approach to addressing these issues in one document it is advisable to combine a number of developments that are contained in the draft laws "On Veterinary Medicines", "On Private Veterinary Practice", "On Amendments to the Law of Ukraine", "On Veterinary medicine" etc.

Consequently, legislation in the sphere of guaranteeing the quality and safety of livestock products in Ukraine remains incomplete and not fully developed. The veterinary rules regulating the production, processing, distribution and importation of products of animal origin (in line with Council Directive 2002/99/EC) remain inadequately detailed and developed; There are no special hygiene rules for most types of food products of animal origin - fresh meat of domestic ungulates, industrial animals and game, including internal organs, minced meat (minced meat), meat semi-processed products, mechanical collapse meat, fresh products, live bivalve molluscs, fishery products, raw milk, colostrum, dairy products and colostrum products, eggs and egg products, frog legs and snails, fried animal fat and ghee, gelatin well, raw materials for the production of gelatine for human consumption, treated stomachs, bubbles and intestines, collagen (Regulation (EC) No 853/2004); special hygiene rules for honey and beekeeping products (Council Directive 2001/110/EC); not prepared and implemented measures to implement the rapid alert system for food products of animal origin and forage (Regulation (EC) No 16/2011), measures for the proper labeling of products (Regulation (EC) No 1169/2011), measures for food additives, dyes (Regulations (EC) No 1331/2008 and No 1333/2008), flavorings, including with a smell of smoke (Regulations (EC) No 2065/2003 and No 1334/2008); Measures for Genetically Modified Organisms (GMOs) (Regulations (EC) No 1829/2003 and No 1830/2003).

**Areas of increasing the effectiveness of the system of monitoring the safety and individual**

#### **indicators of the livestock products quality in Ukraine.**

At the present stage it is necessary to ensure the development and adoption of the Laws of Ukraine "On the Safety and Hygiene of Foodstuffs", "On Providing Information to Consumers on Foodstuffs of Animal Origin", "On the Newest Food Products and Ingredients", "On Items and Materials in Contact with Food Products".

In addition, as mentioned above, within 3-4 years it is necessary to adopt a large number (about 40) by-laws, designed to fulfill already adopted key Laws of Ukraine "On the Basic Principles and Requirements for the Safety and Quality of Food Products" and "On State Control in compliance with the legislation on food products, feed, animal by-products, animal health and welfare" if not to mention the subordinate acts necessary for the implementation of the laws mentioned in the preceding paragraph. In general, this area has the largest amount of work, and it is almost impossible to make it quickly. One of the reasons is the limited range of professionals who can professionally work with such secondary legislation.

Proper implementation of the new requirements needs to be ensured – legislative harmonization itself is not enough. This applies primarily to another component of the assessment of the effectiveness of state control (supervision) – existence of a sufficient number of professional inspection and laboratory services. After all, in Ukraine, territorial bodies of the State Committee for Consumer Goods and Consumer Protection have only recently been formed, there is an urgent need for training of at least four thousand inspectors in accordance with European standards (primarily on the issues of carrying out the HACCP system audit, on the basis of which an appropriate act is drawn up, the form of which is approved by the Order of the Ministry of Agrarian Policy and Food of Ukraine Feb. 06, 2017, No 41).

After all, the audit of the HACCP system is the basis of a modern system of state supervision (control) in the field of production and circulation of livestock products. It is impossible to introduce one of the most important principles of the European model of state supervision (control) – the priority of the application of risk-oriented approach without proper training.

In order to ensure effective state laboratory control, an immediate optimization and improvement of the laboratory diagnostic network (first of all, by consolidation and corresponding reduction of the number of laboratories several times) is necessary. Currently, the technical and technological equipment of these laboratories remains at an extremely low level, which does not allow to effectively do research (tests) for the purposes of state control. The lack of appropriate equipment and the necessary qualifications of staff may prevent the accreditation

procedure to meet the requirements of ISO/IEC 17025 of most laboratories. There is an objective need to introduce and improve a quality management system for test laboratories that can provide the appropriate level and accuracy of tests.

There are 21 regional (regional) state veterinary laboratories, 15 branches of regional laboratories of veterinary medicine, and also the testing center of the Institute of Animal Husbandry of the National Academy of Agrarian Sciences (NAAN), accredited by the National Accreditation Agency of Ukraine according to DSTU ISO/IEC 17025: 2006 on 01.09.2017 [18]. However, only the testing center of the State Research Institute for Laboratory Diagnostics and Veterinary and Sanitary Expertise (DNDILDEVSE) accredited according to ISO/IEC 17025 by the German accreditation body DAkkS. Therefore, it was decided to create a reference laboratory for the identification of residues of veterinary drugs, including forbidden, toxic elements, mycotoxins, pesticides, microbiological parameters, GMOs, vegetable fats in dairy products, etc. on the basis of DNDILDEVSE.

Thus, there is actually one accredited laboratory (center), which is accredited by a foreign accreditation body and has the appropriate technological equipment for complex testing through European technical assistance projects in Ukraine. This is clearly not enough to carry out a large number of investigations on the safety and quality of livestock products in all regions of Ukraine. At present, there is no reason to carry out a large amount of such research, because the necessary equipment in most of the regional accredited laboratories is absent.

There is a need to facilitate the technical equipment and accreditation of foreign accreditation bodies by a number of testing laboratories; otherwise, effective state control of the safety and quality of livestock products is technically impossible. There is an urgent need for strategic investments that will improve the work of accredited laboratories and their innovative development.

In addition, taking into account a large number of studies on the safety and quality of livestock products for the purposes of state control, it is important to ensure that specialist accredited internship laboratories are trained in the leading laboratories of veterinary medicine in the USA and EU countries (in particular, the United Kingdom, Germany, France, Belgium, Sweden, Denmark, Poland, Lithuania, Latvia, etc.), as well as participation in internship-level professional testing (FAPAS, GEMMA) rounds. These measures involve the need for significant amount of financial resources, so part of these costs should be assumed by the state [19].)

Finally, it should be noted that for the development of a network of accredited laboratories for the purpose of state control in the field of safety

and quality of livestock products, it should be ensured:

- radical updating of devices and laboratory equipment of a number of accredited laboratories authorized by the competent authority to carry out research (tests) for the purposes of state control, or those test laboratories which are yet to undergo accreditation and authorization;
- participation of specialists in international professional testing (FAPAS, GEMMA, etc.);
- passing internships in reference laboratories in the USA and EU countries;
- purchase of reagents, referent materials, test systems, consumables for validation, verification, methodical provision of laboratory research;
- increase of inspection audits by foreign accreditation bodies – members of the European Cooperation for Accreditation (EA).

Without the measures indicated in the preceding paragraphs, the financial resources of the state budget, market operators, and, ultimately, consumers will continue to be extremely ineffective, without them it is impossible to achieve an acceptable level of protection of health of people and animals.

## Conclusions

1. During the past four years, a number of measures have been implemented in Ukraine aimed at harmonizing the national system for controlling the safety and quality of livestock products with the European one. The State Service of Ukraine for Food Safety and Consumer Protection was created in the new wording and under the new title of the Law of Ukraine “On Basic Principles and Requirements for the Safety and Quality of Food Products”, which provides for revolutionary measures for Ukraine to organize and carry out state control over the safety and quality of livestock products. There is a formation and updating of sanitary legislation, which should play a key role in establishing the safety parameters of products. In April 2018 the Law of Ukraine “On State Control over Compliance with Legislation on Food Products, Forages, By-products of Animal Origin, Health and Animal Welfare” will come into force, which introduces a system of state control over the safety of livestock products at a qualitatively new level. Finally, the details of the types of state control (supervision) in the market of livestock products, methods of its implementation and persons who have this right are regulated.

2. Comprehensive assessment according to FAO and WHO classification of the five main components of the system of state control (supervision) in the field of safety and quality of livestock products in Ukraine (legislation, public management and its organizational structure, inspection and laboratory services, information, training and communications) gives the reasons for the conclusion that the efficiency of the operation of this system remains extremely low.



In view of the unsystematic nature of the measures to create an equal to the European system of state control, a large amount of work that is to be carried out in a very short time, lack of proper funding and appropriate qualified specialists, this system does not yet guarantee the proper quality and safety of livestock products. The competent authorities are still not able to stop the production of low-quality domestic livestock products and the import of foreign products of dubious quality into the territory of Ukraine.

In Ukraine, according to the Consumer Protection Committee, about 80% of food products of animal origin are falsified on one or more indicators. The most widespread is assortment falsification or, in other words, fake. It is carried out by a complete or partial replacement of food ingredients with their substitutes (most often - of vegetable or chemical origin). In the organism of the average Ukrainian, more than 10 kg of various chemicals come into contact with food each year, which gives the food fresh appearance, pleasant smell and extends the storage period (the inhabitant of Europe gets more than 2.5 kg of them) [8]. The consequence for our health is the existence of various types of diseases, primarily cancer. A particular threat to the health of the population is food poisoning of microbial origin (botulism, salmonella, etc.) derived from the use of low-quality food products of animal origin.

According to numerous studies, about 60% of dairy products in Ukraine do not meet quality standards. If earlier butter and condensed milk were basically falsified, now these processes include cheese and whole milk products. Quite often, manufacturers use animal fat substitutes, not indicating this when marking products.

After obtaining export quotas for dairy products to the EU, it turned out that no brand of products meets European quality standards and cannot be present on the European market. Almost 50% of the products contained antibiotics, and they were in large quantities [20]. Currently, it is virtually impossible to check the compliance of milk with European standards systematically, because in Ukraine, as noted above, practically there are no specialized accredited laboratories. Systemic and extremely acute is also the problem of the content of residues of antibiotics, hormones, veterinary drugs, insecticides, heavy metals in meat and meat products, and eggs.

3. Studies have shown that over the coming years, it is necessary to adopt the large number (about

40) by-laws, designed to fulfill already adopted key Laws of Ukraine "On Basic Principles and Requirements for Food Safety and Quality" and "On State Control over Compliance with Legislation on foodstuffs, feed, animal by-products, animal health and welfare". The Laws of Ukraine "On the Production and Circulation of Organic Agricultural Products and Raw Materials", "On Veterinary Medicine" should be substantially amended and adopted in the new editions, and the Law of Ukraine "On Safety and Hygiene of Feeds" should be adopted, to develop by-laws and the regulations necessary for the implementation of the above-mentioned laws.

It is important to ensure the proper implementation of new safety requirements and certain indicators of the quality of livestock products, since harmonization of legislation itself is not enough. This primarily concerns professional inspection and laboratory services – an important component of state control (supervision). There is a need to facilitate the technical equipment and accreditation of foreign accreditation bodies by a number of testing laboratories; otherwise, effective state control of the safety and quality of livestock products is technically impossible.

It is advisable to introduce effective mechanisms of audit of the HACCP system as the basis of the modern system of state supervision (control) in the field of production and circulation of livestock products. The indicated mechanisms should be based on risk assessment in order to avoid the threat of corrupt actions by the controlling bodies and excessive pressure on the livestock market producers. One of the factors to avoid corruption risks should be the mechanism for assessing the risk of animal husbandry market operators, which is based on four criteria: 1) the type of products and way of handling it; 2) processes of handling or recycling of livestock products; 3) potential negative impact on certain groups of consumers in the event of non-compliance with safety and quality standards; 4) compliance with the procedures for managing the safety and quality of products. All risk categories for each of the four criteria must have their own scale of scores, which ultimately will depend on further inspections. That is, a certain commodity producer according to the received amount of points will be assigned one of the following risk categories each year: very high, high, average, low or very low.

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## ЭФФЕКТИВНОСТЬ ФУНКЦИОНИРОВАНИЯ СИСТЕМЫ ГОСУДАРСТВЕННОГО КОНТРОЛЯ БЕЗОПАСНОСТИ И КАЧЕСТВА ПРОДУКЦИИ ЖИВОТНОВОДСТВА В УКРАИНЕ

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**Аннотация.** В статье изложены результаты оценки эффективности системы государственного контроля (надзора) за безопасностью и отдельными показателями качества продукции животноводства в Украине. Обоснована необходимость применения таких составляющих эффективности как законодательство, менеджмент и его организационная структура, инспекционная и лабораторная служба, информация, обучение и коммуникации. Определено, что в течение достаточно длительного периода времени (до 2015 года) система государственного контроля (надзора) была архаичной и фактически ориентированной на принципы командно-административной экономики. Показаны современные тенденции и специфика совершенствования украинской системы контроля в направлении ее гармонизации с европейской системой. Подчеркнуты значительный объем работ, который для этого необходимо было осуществить в очень сжатые сроки, а также отсутствие надлежащего финансирования и соответствующих квалифицированных специалистов.

Подчеркнута четкость и однозначность в определении ответственности операторов рынка за нарушение требований законодательства в сфере производства и оборота пищевых продуктов животного происхождения. Наряду с достижениями, обнаружены системные проблемы, связанные с техническим регулированием процессов обеспечения

безопасности и отдельных показателей качества в Украине. Отмечено, что в настоящее время законодательство в сфере обеспечения качества и безопасности продукции животноводства в Украине остается несовершенным и разработанным не полностью. Обоснована необходимость разработки ряда подзаконных актов и выделения необходимого финансирования для эффективного функционирования системы государственного контроля безопасности продукции. Указано на наличие недостаточного количества профессиональных инспекционных и лабораторных служб. Предложены механизмы предотвращения коррупционных рисков и чрезмерного давления на субъекты рынка продукции животноводства. Доказана необходимость определения отдельным подзаконным актом механизма государственного аудита процедур, основанных на принципах НАССР, при производстве, обработке, хранении и транспортировке продукции животноводства. Выявлено, что в настоящее время законодательство в сфере обеспечения качества и безопасности продукции животноводства в Украине остается несовершенным и разработанным не полностью. Указано на наличие недостаточного количества профессиональных инспекционных и лабораторных служб. Сделан вывод о несистемности, хаотичности мероприятий по формированию приближенной к европейской системы государственного контроля. Обоснована необходимость усовершенствования законодательства и предложены другие решения для повышения эффективности функционирования системы государственного контроля над безопасностью и отдельными показателями качества продукции животноводства в Украине.

**Ключевые слова:** государственный контроль (надзор), безопасность, качество, продукция животноводства, государственный ветеринарный инспектор, аккредитованная лаборатория.

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