

L.K. Arenova<sup>1\*</sup>, R.M. Zhamiyeva<sup>1</sup>, T.K. Ryabinina<sup>2</sup>

<sup>1</sup>Karaganda University of the name of academician E.A. Buketov, Kazakhstan;

<sup>2</sup>Southwest State University, Kursk, Russia

(E-mail: roza\_mus@mail.ru, Scopus ID 57209976091

super.hamka@mail.ru, Scopus ID 57211988742

tatyanakimovna-r@yandex.ru)

## Legal aspects of biological safety in Kazakhstan

The relevance of the study related to the biological safety of Kazakhstan, which has a legal nature. This is primarily due to the fact that, on the one hand, this direction is a significant element of the national security system, and on the other hand, with ensuring compliance with the legal regime, the stability of public relations, the established state order of rules and norms of behavior. In addition, the legal aspects of biological safety include real and potential risks of committing criminal acts in this area, which can range from the smallest offenses, expressed in non-compliance, disregard of mandatory regimes and compliance requirements for biological safety, to the commission of serious and especially serious crimes, related to sabotage actions, and in general the use of weapons of mass destruction. The main legal aspects of Kazakhstan's biological safety in the period of globalization are considered, and their analysis from the standpoint of preventing criminal acts associated with the use of biological threats, identifying the risks of the emergence and spread of biological threats and their types is conducted. The leading approach to the study of issues related to the legal aspects of biological safety is the system-activity approach and the method of legal analysis of the current national legislation in the area under consideration. The legal aspects of biological safety in the Republic of Kazakhstan at the present stage are presented, a legal analysis of international norms in the field of biological safety is carried out, and their implementation into national legislation, as well as legal proposals on the proposed direction and ways of achieving them, are developed. Considering legal aspects of biological safety as an integral part of the national security system allows solving a number of basic legal problems, which include prevention of the emergence of epidemics and epizootics in natural foci of dangerous infections, massive outbreaks of infectious diseases, including those imported from foreign countries; national control over the level of security of legitimate objects, where various biological agents are stored, moved, transported, manufactured, investigated; identification (monitoring) of the risks of using biological agents for extremist and terrorist purposes due to their availability, prevalence and simplicity.

*Keywords:* biological safety, biological safety concept, biological agents and materials, biological terrorism, weapons of mass destruction, legal aspects of biological safety, control and supervision in the field of biological safety.

### Introduction

The article examines the main issues of biological safety, risks and threats of biological terrorism at the present stage of development of Kazakhstan, neighboring states and the international community.

This is due to the fact that the list of biological agents, potentially dangerous materials of biological terrorism, the availability of potentially dangerous biological materials, a sharp surge in information technologies, the rapid dissemination of information, as well as the real possibility of a sufficiently large-scale use of biological pathogens that carry a biological threat in habitat of biological species, both plants, animals, and humans.

Considering legal aspects of Kazakhstan's biological security are of paramount importance in strengthening statehood, national security and consolidating at the national level the sources and reserves of countering biological terrorism and sabotage activities in this area. This determines the need to improve the regulatory framework regarding biological safety and the risks of biological terrorism at the international level, but fundamentally determines the need to update the legal issues of biological safety in the Republic of Kazakhstan.

Development of the concept of biological safety in Kazakhstan determines the need for a separate methodology for the timely detection and monitoring of biological risks and threats, in general, and biological terrorism in particular.

The methodology as a certain scientifically developed system should determine the system of measures to counter biological terrorism at the level of national legislation, national control over the mechanism of

work and research related to biological agents and biological species, prescription drugs for the population and other biological materials, as well as determine the forms and methods of combating sabotage activities in the field of strict compliance with national biological safety requirements, and the inadmissibility of their sabotage.

The legal aspects of biological safety also include fundamental issues regarding the interaction of competent authorities and departments, the creation of working groups of experts and specialists, not only at the international, but also at the national level, to solve anti-epidemiological, environmental, as well as law enforcement tasks on an international and national scale.

#### *Methods and materials*

The leading approach to the study of issues related to the legal aspects of biological safety is the system-activity approach and the method of legal analysis of the current national legislation in this area.

#### *Results and discussions*

The essence of the legal aspect of biological safety in modern Kazakhstan, as well as the entire international community, is the emergence and manifestation of especially dangerous infectious diseases of various etiologies, including bacterial and viral origin. This factor itself is an urgent international problem of biological threat, the consequences of which are not only socially dangerous but also predominantly economic in nature with legal consequences associated with destabilization in society and the state, an increase in the risks of political tension, and a decline in economic potential.

Economic instability leading to a crisis entails negative political and legal consequences, which, as a result, lead to the destabilization of society.

The legal nature in such situations, first of all, is reflected in the impossibility of controlling the destabilization of the situation in society and the state, social explosions and discontent, and, consequently, the deterioration of the crime situation, where the role of law is significantly reduced, the legal mechanisms for reducing social tension to a certain extent cease to correspond to the prevailing extreme conditions.

Social conditions acquire extreme character precisely during periods of sudden emergence of a biological threat, where the state is forced to introduce anti-epidemiological measures related to the restriction of human rights and freedoms. This causes negative sentiments among the population, the conditional division of society into social groups that support or, on the contrary, offer staunch resistance to various regulatory requirements in the face of a threat, both biological and technogenic and of a different nature.

It should be noted that anti-epidemiological measures are of a twofold nature. On the one hand, they are obviously of a medical nature, aimed at protecting the life and health of the population, and are aimed at quickly and efficiently solving large-scale tasks related to the prevention of dangerous diseases and the prevention of their outbreaks. On the other hand, biological safety has a legal nature, requires a legal concept, the development of its own legal measures to ensure.

In this regard, measures to ensure biological safety should include the existence of effective legal norms relevant to the topic and their observance, where the requirement to comply with sanitary-hygienic, sanitary-epidemiological, organizational and technological conditions and rules is determined and strictly fixed. In addition, measures to ensure biological safety, their legal aspect, make it possible to strictly fix the corresponding set of legal measures of a sanitary and hygienic, epidemiological, organizational nature, the use of technological advances aimed at preventing, reducing infection and eliminating the biological hazard of people, animals and plants.

In our opinion, the legal aspects in this case should be characterized not only by preventive mechanisms, but also provide for stricter measures in the form of administrative liability for minor violations, criminal liability for malicious evasion of execution, including for the dissemination of those that do not correspond to reality.

This is due not only to conceptual factors of biological safety, but also to information and media opportunities in modern societies, the ease of receiving and transmitting information of various types, including negative information, which can destabilize and create groups of social tension.

In addition, one should take into account the availability and simplicity of biological agents in the modern world, including their illegal manufacture and acquisition through cyberspace and the emergence of new payment products.

It is necessary to emphasize, on the one hand, the existence of natural factors of the emergence of a biological threat, the occurrence of dangerous infectious diseases and their consequences for biological species,

including humans, and on the other hand, the possibility of using biological agents, pathogens for criminal purposes, namely biological terrorism, the use of dual-use technologies (for example, the 2001 events in the United States, where anthrax pathogens were used for terrorist purposes; 2010, the Gulf of Mexico and the Mycoplasma laboratorium strain of mycoplasma (the bacterium Cynthia).

In our opinion, the availability of biological agents, the lack of appropriate legal control and an effective concept defining biological safety issues, creates a potential and real threat of the use of biological species, materials and technologies by terrorist organizations as weapons of mass destruction.

In this regard, a number of legal questions arise regarding the definition of biological safety, effective measures for their implementation in society, mechanisms for regulating legal relations in cases of a biological threat of various etiology and nature of manifestation, ensuring the regime of public consolidation and information and media security and stability in the considered extreme conditions, as well as the responsibility of persons for violations in the indicated directions.

Currently, biological safety issues are focused only on the prevention of large-scale threats to biological integrity, where protection from biological threats to society and ecological structures (flora, fauna, etc.) is reduced to the principle of solving problems as they arise.

However, biological safety is a broader concept that includes a fairly large number of related legal issues.

In particular, the presence of a national concept for ensuring biological safety requires not only determining its directions and measures for their control, but also a specific, strictly regulated system of actions, taking into account fundamental factors of security and control and supervisory.

Firstly, this will make it possible to determine a strict list of permitted actions by the party that carries out activities, including those of an experimental nature with biological materials and agents (organizations, enterprises, laboratories, etc.), strict observance by the latter of sanitary-epidemiological, medical and managerial functions, with the conditions of exclusion, the so-called human factor.

In this regard, it should be noted that the category «human factor» is not permissible in the sphere of circulation of biological materials and agents, as well as other hazardous materials with an increased risk of public danger, including industrial use (for example, polychlorinated befinyls).

A security factor of a biological threat, which should be carried out by the relevant stakeholders (organizations, enterprises, institutions and their divisions) whose activities are related to biological and other materials, both in natural reservoirs and laboratory sources.

In this case, the provision includes not only preventive mechanisms for systematic and regular reviews of the safety system of operating conditions, strict adherence to the relevant instructions, but preventive measures using modern methods of protecting information on working with biological material and preventing the occurrence of a human factor in activities with biological agents and materials.

Obviously, the rigidity and severity of the security factor, which includes prevention in activities with biological materials and agents, is explained by its specificity and unpredictable consequences that create a public danger in the social and economic spheres of the state.

It should be noted that these measures, of course, are observed by the parties that carry out activities with biological agents and potentially hazardous materials, but there is a new type of biological threat, which has arisen objectively, in accordance with the rapid scientific and technological progress, the latest achievements in the field chemistry, physics, biology and a number of other sciences of the natural cycle, changing the evolutionary stages of human development.

First of all, genetic research aimed at creating new forms of life (for example, the Mycoplasma laboratorium indicated by us) can be attributed to the new risks of biological safety, and in this sense, the legal aspect should include issues of competition between natural biological species, including humans, with the created forms, and take into account the food chain (competition and survival) and their evolutionary priorities.

Thus, a legal question arises about the transformation of biological risks into a biological threat through the impact of the influence of biological agents on natural nature and habitat.

The International Cartagena Protocol on Biological Safety, to a greater extent, defines biological developments in the agricultural industry, without taking into account the modern realities of the extreme development of information technologies, technical, natural and exact sciences, which, first of all, from the group of risks, can outgrow their impact in a threat to natural habitat and biological safety.

Moreover, additional risks and threats in the field of biological safety are created by insufficient security of the information and media space [1]. This aspect contains psychological and legal components, namely,

the impact on the mass consciousness, through distorted or false information, using methods of manipulating natural basic instincts (to cause fear for one's life, reproduction and offspring), creating foci and groups of social tension, provoking violations of established legal norms, which is acquiring a clear extremist character, with the aim of destabilizing the political situation in society.

This logically justifies the need for a control and supervisory factor, namely the inclusion of the concept of biological security of Kazakhstan in the structure of the national mechanism for control over weapons of mass destruction and their financing, as well as in the sphere of countering the financing of terrorism, since biological terrorism is the most dangerous threat, and the availability of biological materials does not make it difficult for terrorist organizations to develop pathogens.

Also, one of the fundamental indefinite documents in the field of biological safety is the 1972 UN Security Council Convention on Biological Safety, which enshrines the ban on the production of weapons of mass destruction signed by 183 states, while four signatory states have not ratified this first multilateral treaty on disarmament, and ten countries have not signed or ratified it [2]. This legal act strictly establishes an international, specific and binding norm established in the preamble, directed against various categories of weapons of mass destruction, including against biological weapons. In addition, the presented norm confirms the fact that there are no states that would officially confirm that they are developing or have such weapons in their military arsenal and can use them in their military actions and actions.

However, in our opinion, this Convention has certain issues, which arose for objective reasons that we indicated earlier, namely, the extreme rate of development of technologies, both information technology and natural science. This leads to the fact that a legal response, including international organizations, government and interdepartmental commissions, is not always able to make the necessary adjustments, obligatory for the international community.

It is quite obvious that control and supervisory activities, as the name implies, provide for procedural measures and compliance with the protocols of state bodies in relation to objects carrying out activities with biological agents.

In our opinion, biological safety and its maintenance require broader competencies, namely, the norms defining the responsibility of specific individuals and legal entities, officials, as well as improving the system of their responsibility in terms of tightening. For example, there is no criminal liability for legal entities in the Republic of Kazakhstan, and there is only administrative liability and a system of sanctions. This significantly reduces the effectiveness of the control and supervision system in the biological safety system, creates opportunities to evade and/or avoid the responsibility of officials.

On the other hand, insufficient provision of information and media security, the so-called stuffing of «fake» information, weak legislative competence of state, special and law enforcement agencies, contributes to the emergence of groups of social tension, destabilization of the social and political situation in society and the state.

In this case, an example of insufficient readiness of countries and states for the COVID-19 pandemic, which, in addition to the economic recession, entailed social destabilization in societies and countries, the emergence of destructive currents such as «anti-vaxers», who do not understand the essence of sanitary and epidemiological norms using panic, painful conditions, psychologically aggravated the situation by means of «fake stuffing» about the dangers of vaccination. The result of this was a significant increase in the mortality rate of people who refused vaccination, and specific persons were not brought to real responsibility, adequate terms of imprisonment.

Moreover, biological security contains positions associated with the risks and threats of biological (toxin) terrorism, countering which is also defined as a priority task of the UN Security Council [3]. The threat of the use of biological or toxin weapons by terrorist organizations is intensified by the modern era of globalization, the availability of biological materials, information technologies, genomic developments and specialists in this field, the use of modern biological and technological production, which complicates the process of control and supervision in this area or makes them impossible.

According to expert opinions, over the past decades, there has been a surge in criminal activity related to the illegal use of potentially dangerous biological materials, agents all over the world, which have been identified and suppressed as acts of biological terrorism [2].

At the same time, formally, the aforementioned 1972 Convention «On the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction» is not violated, since some countries are quite legally implementing research projects (Great Britain, USA, Canada, Georgia etc.).

In our opinion, the legal aspect of ensuring biological safety, the reality of the implementation of control and surveillance activities in this area is possible only by a complete prohibition of the creation and modification of biological materials, which are previously known, returning (for example, *Streptococcus pneumoniae*, the causative agent of bacterial pneumonia, *Legionella pneumophila*, influenza virus and a number of other pathogens) and pathogens of new infections.

A separate threat to biological security, as we presented earlier, is represented by hybrid microorganisms and genetically modified objects, developed using molecular genetic technologies of varying degrees of complexity of such structures, and requiring significant financial capabilities that terrorist organizations of various kinds have at their disposal [4]. For example, currently the Taliban, banned in the Republic of Kazakhstan, has financial resources estimated by official sources of 85 billion weapons.

The fulfillment of the requirements of the UN Security Council Convention, 1972, is ensured by countries by various measures, the adoption by intergovernmental organizations of international standards and their implementation into national legislation, including Kazakhstan, regarding their activities in the field of pathogenic biological materials and agents.

However, in our opinion, at the international level, effective mechanisms of control and supervisory measures have not been sufficiently developed and their alternatives have not been worked out, which can guarantee the implementation of regulations by the participating countries and countries that have signed the convention under consideration.

Political and legal relevance in this sense is emphasized by the extremely fast pace of development of technologies, including natural sciences, which actually explains the emergence of the so-called synthetic biology, and their use to build up military potential.

### *Conclusions*

The emergence of new risks in the field of biological safety includes genetic research aimed at creating new forms of life (for example, the *Mycoplasma laboratorium* indicated by us), and in this sense the legal aspect should provide for the regulation of competition between natural biological species (including humans with the created forms artificial life), taking into account the food chain, that is, the issue of competition and survival in evolution.

In this sense, there is a transformation of biological risks into a biological threat, through the impact of the influence of biological agents on natural nature and habitat, the use of biological materials through biological technologies, synthetic biology in the manufacture of biological agents for terrorist purposes, the conduct of hostilities using weapons of mass destruction.

The implementation of international norms and standards in national biosafety legislation requires the development of new legal norms in accordance with the modern realities of ensuring biological safety, the introduction of stricter sanctions within the country, the introduction of criminal liability and tougher punishment for non-compliance with both physical, official and legal persons.

The lack of effective, modernized large-scale control mechanisms leads to violations of the provisions of the conventions and resolutions of the UN Security Council, and from a legal standpoint have different interpretations and double interpretations, which will significantly weaken the biological security regime, latent military build-up associated with potentially dangerous biological agents.

In our opinion, there is an outdated legal provision of the UN Security Council Convention, 1972, which clearly and specifically does not limit the study of hybrid (chimeric) and genetically modified strains of pathogens, the production of synthetic toxins, pathogenic biological materials, including aerosol types and other organic objects and dual-use materials.

The modernization of this convention will allow in the shortest possible time to use legal methods to guarantee biological safety and increase the effectiveness of means of prevention and counteraction to criminal manifestations in this area.

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## Қазақстанның биологиялық қауіпсіздігінің құқықтық аспектілері

Қазақстанның биологиялық қауіпсіздігімен байланысты мәселелері негізінен құқықтық сипатқа ие. Бұл ең алдымен, бір жағынан осы бағыттың ұлттық қауіпсіздікті қамтамасыз ету жүйесінің маңызды элементі болып табылады, ал екінші жағынан, құқықтық режимді, қоғамдық қатынастардың тұрақтылығын, мемлекетпен белгіленген ережелер мен мінез-құлық нормаларын сақтауды қамтамасыз етумен байланысты. Бұдан басқа, биологиялық қауіпсіздіктің құқықтық аспектілері өзіне осы салада криминалдық әрекеттерді жасаудың шынайы және потенциалдық тәуекелділіктерді қамтиды, олар болса ең ұсақ құқық бұзушылықтардан бастап, атап айтсақ, биологиялық қауіпсіздікті сақтаудың міндетті режимдері мен талаптарын сақтамаудан, елемеуден бастап, диверсиялық іс-әрекеттермен және де жалпы жаппай қырып-жою (зақым келтіру) қаруын қолданумен байланысты, ауыр және аса ауыр қылмыстар жасаумен ауытқып тұруы мүмкін. Жаһандану кезеңіндегі Қазақстанның биологиялық қауіпсіздігінің негізгі құқықтық аспектілері және оларды биологиялық қатерлерді пайдаланумен байланысты қылмыстық іс-әрекеттерге жол бермеу және олардың алдын алу, биологиялық қатердің туындау және таралу тәуекелдерін және оның түрлерін анықтау тұрғысынан талдау қаралды. Биологиялық қауіпсіздіктің құқықтық аспектілерімен байланысты мәселелерді зерттеудің жетекші тәсілі қарастырылатын салада қолданыстағы ұлттық заңнаманы құқықтық талдаудың жүйелі-қызметтік тәсілі және әдісі болып табылады. Қазіргі кезеңде Қазақстан Республикасындағы биологиялық қауіпсіздіктің құқықтық аспектілері ұсынылды, биологиялық қауіпсіздік саласындағы халықаралық нормаларға құқықтық талдау жүргізілді және олардың ұлттық заңнамаға имплементациясы, сондай-ақ ұсынылған бағытқа қол жеткізудің жолдары бойынша құқықтық ұсыныстар әзірленді. Биологиялық қауіпсіздіктің құқықтық аспектілерін ұлттық қауіпсіздікті қамтамасыз ету жүйесінің ажырамас бөлігі ретінде қарау бірқатар негізгі құқықтық міндеттерді шешуге мүмкіндік береді, олардың қатарына мыналарды жатқызуға болады: қауіпті инфекциялардың табиғи ошақтарында эпидемиялар мен эпизоотиялардың туындауына, инфекциялық аурулардың, оның ішінде шет елдерден әкелінгендердің жаппай тұтануына жол бермеу; әртүрлі биологиялық агенттер сақталатын, жылжитын, тасымалданатын, дайындалатын, зерттелетін заңды объектілердің қорғалуының деңгейін ұлттық бақылау; қолжетімділігіне, таралуына және қарапайымдылығына байланысты биологиялық агенттерді экстремистік және террористік мақсаттарда қолдану тәуекелдерін анықтау (мониторинг жүргізу).

*Кілт сөздер:* биологиялық қауіпсіздікті қамтамасыз ету, биологиялық қауіпсіздіктің тұжырымдамасы, биологиялық агенттер мен материалдар, биологиялық терроризм, жаппай қырып-жою қаруы, биологиялық қауіпсіздіктің құқықтық аспектілері, биологиялық қауіпсіздікті сақтау саласындағы бақылау және қадағалау.

Л.К. Аренова, Р.М. Жәмиева, Т.К. Рябина

## Правовые аспекты биологической безопасности Казахстана

Вопросы, связанные с биологической безопасностью Казахстана, прежде всего, имеют правовую природу. Это обусловлено, в первую очередь, тем, что, с одной стороны, данное направление является значимым элементом системы обеспечения национальной безопасности, а с другой — с соблюдением правового режима, стабильности общественных отношений, установленного государственного порядка правил и норм поведения. Кроме того, правовые аспекты биологической безопасности включают в себя реальные и потенциальные риски совершения криминальных действий в этой сфере, которые могут варьироваться от наиболее мелких правонарушений, выражающихся в несоблюдении, игнорировании обязательных режимов и требований соблюдения биологической безопасности, до совершения тяжких и особо тяжких преступлений, связанных с диверсионными действиями и, в целом, с использованием оружия массового уничтожения (поражения). Рассмотрены основные правовые аспекты биологической безопасности Казахстана в период глобализации, и проведен их анализ с позиций недопущения и предупреждения криминальных деяний, связанных с применением биологических угроз, выявления рисков возникновения и распространения биологической угрозы и ее видов. Ведущими подходами к исследованию вопросов, связанных с правовыми аспектами биологической безопасности, являются системно-деятельностный и метод правового анализа действующего национального законодательства в рассматриваемой сфере. Представлены правовые аспекты биологической безопасно-

сти в Республике Казахстан на современном этапе, проведен правовой анализ международных норм в сфере биологической безопасности и их имплементация в национальное законодательство, а также выработаны правовые предложения по предложенному направлению и пути их достижения. Рассмотрение правовых аспектов биологической безопасности как неотъемлемой части системы обеспечения национальной безопасности позволяет решить ряд основных правовых задач, к числу которых можно отнести: недопущение возникновения эпидемий и эпизоотий в природных очагах опасных инфекций, массовые вспышки инфекционных заболеваний, в том числе завезенных из зарубежных стран; национальный контроль за уровнем защищенности легитимных объектов, где хранятся, перемещаются, транспортируются, изготавливаются, исследуются различные биологические агенты; мониторинг рисков применения биологических агентов в экстремистских и террористических целях в силу доступности, распространенности и простоты.

*Ключевые слова:* обеспечение биологической безопасности, концепция биологической безопасности, биологические агенты и материалы, биологический терроризм, оружие массового уничтожения, правовые аспекты биологической безопасности, контроль и надзор в сфере соблюдения биологической безопасности.

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