

# PUBLIC DANGER OF VIOLATING THE RULES OF HANDLING MICROBIOLOGICAL OR OTHER BIOLOGICAL AGENTS OR TOXINS

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**Annotation.** The article addresses public danger as a basis for establishing a criminal law prohibition of the crime stipulated by the Art. 326 of the Criminal Code of Ukraine. The subject of the character and degree of public danger of the specified crime, which encroaches on social relations in the field of biological safety, is determined. A socially dangerous nature of the investigated crime is found to be determined by the real biological threats it creates, which can be transformed into a general or local biological danger, as well as by its subject. The hypothesis is proved that the degree of public danger of the crime stipulated by Art. 326 of the Criminal Code of Ukraine, is determined by the amount of damage caused in the form of financial and social losses, as well as physical losses.

**Key words:** public danger, criminalization, biological safety, microbiological agents, toxins, rules of handling biological pathogenic agents, human life and health, environmental safety.

## 1. Problem statement.

Every year, at the global level, the biosphere undergoes irreversible changes due to anthropogenic influence. It results in the increasing threats of biological origin, which become a real danger to the existence of living organisms of the biosphere in general and humans in particular. This refers to up-to-date achievements in the field of biotechnology and microbiology, which can be used for the development and purposeful use of biological weapons, as well as cause a biological disaster due to uncontrolled spread of goods produced by these technologies.

Considering the above, the problem of the full functioning of a person as a biological being and ensuring the integrity of the human genome is in priority. This refers to threats of gene mutations, pandemics, functional disorders, premature death resulting from exposure to dangerous biological agents.

In this respect, there is an urgent need to comprehensively investigate the standard, which establishes the criminal law prohibition on violation of the rules of handling microbiological or other biological agents or toxins stipulated by Art. 326 of the Criminal Code of Ukraine.

At the same time, the criminal-legal doctrine does not contain studies of social conditioning and bases for criminalization of the specified illegal acts that encroach on the biological safety of Ukraine.

## 2. Analysis of the latest studies and publications.

Circumstances of social life determining criminal-legal norms were investigated in the works by Yu.V. Baulin, M.O. Beliayev, V.I. Borysov, V.K. Hryshchuk, G.A. Zlobin, V.M. Kogan, O.M. Kostenko, V.V. Kuznetsov, V.M. Kudriavtsev, V.M. Kuts, N.O. Lopashenko, V.O. Navrotskyi, L.I. Spirydonov, V.V. Stashys, V.Ya. Tatsii, V.P. Tykhyi, P.S. Tobolkin, P.O. Fefelov, P.L. Fris, V.I. Shakun, S.S. Yatsenko et al. Certain problematic issues of the crime investigated were discussed in the works by Yu.V. Baulin, O.P. Horokh,

O.P. Lytvyn, A.A. Muzyka, Y.V. Fesenko, M.I. Khavroniuk, O.V. Shamsutdinov, Yu.V. Yashchurynskyi and other scientists. At the same time, the abovementioned scientists investigated the specified crime as a part of other crimes committed against the health of the population, as well as at the level of scientific-practical comments to the appropriate article of the Criminal Code of Ukraine. The latest modern biological threats, which significantly affect the development of social relations, remained outside the scientific attention of Ukrainian researchers. Despite significant achievements of legal researchers in the development of the mentioned issues, the question of the main basis of criminalization of the criminal-legal norm stipulated by Art. 326 of the Criminal Code of Ukraine remained unsolved. To date, a comprehensive investigation of the nature and degree of public danger in violation of rules concerning handling microbiological or other biological agents or toxins has not been carried out in Ukraine.

3. Therefore, **the aim of the article** is investigation of public danger as the main basis of criminalization of rules violation in handling microbiological or other biological agents or toxins.

Presenting the main matter. First, it should be noted that criminal liability for violating the rules of handling microbiological or other biological agents or toxins was established for the first time in the Criminal Code of Ukraine (2001). This is due to the need for criminal-legal protection of the procedure for handling the specified objects, since its violation means an increased public danger, as well as an ongoing process of implementation into Ukrainian criminal legislation of international legal acts signed or ratified by our state. In particular, on February 21, 1975, the Presidium of the Verkhovna Rada of the Ukrainian SSR ratified the UN Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on its Destruction of April 10, 1972 [1]. Having signed the above Convention, each participating state (Ukraine in particular) made a commitment not to develop, produce, accumulate, acquire in any other way microbiological and other biological agents or toxins, regardless of their origin or method of production, in such amounts that are not intended for preventive, protective and other peaceful purposes. All the signatories made a commitment to take necessary measures to prohibit and prevent the development, production, accumulation, purchase or storage of agents, toxins etc. within their territories.

4. Therefore, ratification by the Ukrainian Parliament of this international legal treaty became one of the determinants to establish a criminal legal prohibition on violating the rules of handling microbiological or other biological agents or toxins. Specifying the place of the international legal conditionality of the prohibition of a socially dangerous act in the system of circumstances affecting its criminalization, M.I. Havroniuk admitted that the need to fulfil obligations under international legal treaties ratified by the Parliament is not a basis, but a reason for criminalization [2, p. 451]. This approach deserves certain support, since such understanding of the international conditionality of the criminal legal prohibition place directs the legislator towards the need to consider not only the requirements of a certain international act, but also a set of other significant factors when determining the need for criminalization of a specific socially dangerous act. In particular, the public danger of the act should be recognized as an unconditional basis for criminalization.

A modern doctrine of the criminal law of Ukraine states that a legal definition of criminal offence cited in the Art. 11 of the Criminal Code of Ukraine is formal-material, since it provides both its formal attribute – prohibition of criminal law action, and material one – its social danger including mostly causing or threatening to cause destructive consequences [3, p. 45]. The material side of public danger means that criminal offence is notable, and its consequences are objectively measured and evaluated.

Therefore, human behavior can be recognized as criminally illicit under the main condition: it does considerable harm to social relations that are protected by the law on criminal liability. Any other circumstances (prevalence and negative dynamics of the act; the ability of criminal justice authorities to counteract it; requirements arising from the content of international legal documents etc.) do not justify criminalization. Their consideration is definitely necessary to ensure the effectiveness of

the criminal law prohibition, but separately or together, they do not produce it. According to the classification of false criminalization types developed by M.I. Melnyk, prohibition of the act in the Criminal Code that does not have the nature and degree of public danger specific for a crime, is unjustified (baseless) criminalization [4, p. 94]. Therefore, its result can be estimated as «illegal law» [5, p. 229].

Public danger means that the act is harmful for the society. As N.F. Kuznetsova once indicated, public danger of the act lies in the fact that it provokes or creates a threat of causing certain damage to social relations [6, p. 60]. At the same time, such a threat must exist in objective reality. The same opinion is followed by O.O. Dudorov, L.M. Kryvochenko, Ye.V. Fesenko, P.L. Fris, M.I. Khavroniuk and many other Ukrainian scientists [7, p. 78; 8, p. 24; 9, p. 108]. Moreover, socio-psychological features of an individual personality who committed a crime are not important for recognizing an act as a crime. They become rather substantial when determining punishment (that is, in the process of penalization or depenalization). Thus, public danger of an action is determined only by its external expression and the objective side of an act in particular, (first of all, harm) as well as the object of encroachment [6, p. 66].

Considering public danger of an action, it is important to determine its structure. In the criminal-legal doctrine the provision that there are two parameters defining public danger – nature and degree – is generally recognized. It is necessary to find out how the nature and degree of public danger of an encroachment affects its criminalization.

The nature of public danger lies in its quality, while its degree comprises the amount of danger of an act for the society. The nature of public danger of a crime is determined by a social value of an object of a criminal offence (generic and direct), which the criminal encroaches on.

According to our conclusions, biological safety is a part of national safety of Ukraine and provides such conditions for vital activity of people, animals, plants that exclude (minimize, neutralize) harmful effects of dangerous biological factors on the biological structure and functions of people, animals, plants and other living organisms of the biosphere (biota) [10, p. 70].

Encroachments on biological safety in one way or another reduce its level, and depending on their nature and direction create real or potential biological threats.

Depending on the subject composition, a biological threat can turn into a general biological hazard, which will be reflected on the subjects of the entire country or on a greater number of its subjects (epidemic, epizootic, epiphytotic). It can be limited to local danger, i.e. an impact on individual people or individual objects of living matter of the biosphere.

As the result of illegal encroachments on biological safety, there is a high risk of negative impact of dangerous biotic factors (phytogenic, zoogenic, microbogenic), harming the living matter of the biosphere in particular (human life and health, future generations; biota: plants, animals including agricultural ones).

Thus, the object of legal relations in the sphere of biological safety, the values in respect of which the rights and obligations arise, is the full functioning of humans and other living organisms as a whole, preservation of genetic information. This refers to the natural right to life and its protection guaranteed by the Constitution of Ukraine (Art. 16, 27). Biological safety is the most essential of all the requirements, and it is one of the main life indices.

The Criminal Code of Ukraine does not contain a separate chapter dealing with criminal offences against biological safety. Under such terms, the studied composition of the crime is included into the chapter XIII «Criminal offences in the sphere of circulation of narcotic agents, psychotropic substances, their analogues or precursors, and other crimes against human health» (Art. 326). The disposition of an appropriate criminal-legal norm contains a direction concerning the crime, which is represented by a dangerous biotic factor in the form of microbiological, other biological agents and toxins. Accordingly, manipulations with such an object punished criminally create a real objective threat of doing significant harm to human life and health, and other biota representatives.

In this context, it is reasonable to cite the view of V.P. Tykhyi, who states that socially dangerous nature of such crimes is caused not only by the object, but the subject, which is dangerous in its nature, "potentially lethal sources in themselves that are used or can be used as weapons, as means of destruction, damage" [11, p. 40]. In other words, the nature of such objects is that they are a source of increased danger for life and health of an indefinite amount of individuals, property (first of all agricultural animals and plants) and environment. This internal, inherent ability to destroy, damage the environment, in particular the living matter of the biosphere, i. e. possessing the effect of damage, is their objective and main feature.

To prevent the danger of doing harm to human life and health and other social values, to prevent accidents and criminal offences with the use of subjects possessing increased danger for the surroundings, to use them for socially useful purposes, there is a system of norms (rules) on how to deal with them – the order of their production, purchase, storage, utilization, registration, transportation, transition etc. Their body is the requirements that human behavior must meet from the point of view of protection, guarantees for ensuring human life and health, property and other values from the danger of the specified subjects [11, p. 41].

Therefore, the basis for the criminalization of acts in the field of biological safety is putting by such action (inaction) the life and health of not only an individual, but also many other people, as well as the entire biota, in danger, threatening the irreversible changes of the genetic component of its biological nature, interference into the very bases of life on Earth. Overall, violations of biological safety can threaten the existence of humanity and lead to a sharp turn in its evolution.

In addition, committing a violation of biological safety rules (Art. 326, the Criminal Code of Ukraine) can cause further negative effects on labor productivity, demographic, epidemiological and ecological situation, touristic appeal of the country, defense capability, food supplying to the population, competitiveness of domestic agricultural, food, pharmacological, microbiological and other products.

The degree of public danger of a crime is determined by the amount of the harm done, the method to commit a crime, location, situation and stages of its commitment. The degree of public danger of an act is ultimately expressed in the criminal-legal norm sanction [12, p. 32].

The main feature that affects the degree of public danger is the ability of the act to cause significant damage to objects of criminal law protection. The significance of material damage in many cases is determined directly by the Criminal Code of Ukraine on the basis of predetermined absolutely specific criteria and is measured in monetary equivalent (regarding property damage), in fixed indicators of short-term health disorders, loss of working capacity, loss of an organ or its function, death etc. (regarding physical harm).

However, often the mentioned criteria are not provided for in the Criminal Code, and the recognition or non-recognition of non-material and sometimes material damage, especially if it is indirect, is carried out within the limits of judicial discretion. In these cases, other criteria must be taken into account in order to determine the damage as significant – method, location, time, means, instruments, situation of crime commitment, presence of the victim, who has a special status and requires special protection, presence of the subject of a crime, which is especially important, etc. [13, p. 137].

Considering the degree of public danger of the investigated crime that encroaches on the biological safety of Ukraine, it should be noted that three types of alternative socially dangerous consequences are characteristic of the main element of the rules violation for handling biological agents (part 1 of Art. 326 of the Criminal Code of Ukraine) in the form of: threat of people's death, threat of other severe consequences, or harm to the victim's health. Therefore, the first two types of consequences form the delict of creating danger (the crime is considered completed from the moment of creating the specified real threats of uncontrolled biological agents release into the environment, including infection of people or other objects of the biosphere). The third consequence is a material element of a crime (the crime is considered completed from the moment of doing harm to the individual health). The qualified composition of the crime (part 2, Art. 326 of the Criminal Code of Ukraine) makes socially dangerous consequences in the form of realized threats determined by the simple element:

death of people or other severe consequences. Therefore, a compulsory feature of the objective side of the specified crime components is the material or other damage, which is anticipated by the criminal law norm, that is caused by the criminal act to the object of the offence.

Establishing criminal responsibility for the very fact of creating a danger to human life and health, or the environment, the legislator thereby emphasized the public danger degree of this kind of actions sufficient to bring criminal responsibility.

In order to imagine possible harm from violations of biological safety, and accordingly, the degree of public danger of such violations, we will illustrate our theoretical considerations with certain practical examples.

Thus, according to the US Congress Research Service, if biocriminals are able to cause an epizootic, it could cost the US economy between 10 and 30 billion dollars. Considering an inevitable drop in the volume of exports of agricultural products, losses may increase to 140 billion dollars [14, p. 79].

The danger of epizootics is not only in the damage it can cause to agriculture and trade. One of the consequences of outbreaks of infectious diseases that are not even transmitted to people is decrease in business activity in the suffered country or region, and decrease of tourism. Although foot-and-mouth disease in Great Britain (2001) did not threaten people directly, it destroyed British tourism. Its losses were estimated in 24 billion dollars. In 2002-2004, due to the epidemic of atypical pneumonia caused by SARS-CoV from the family of coronaviruses, China was particularly affected. Its direct losses were estimated in 7,6 billion dollars, and approximately 2,8 million of working places in tourism sphere [15, p. 89].

Speaking about material and physical harm caused by epidemics, let's focus on the consequences of the coronavirus disease COVID-19, which in 2019 caused a pandemic and is not abating even today. Thus, according to analysts' forecasts, the losses of the world economy due to the coronavirus pandemic in the worst case scenario may reach the limit of 2,7 trillion US dollars. At the same time, at the end of March 2020, the International Monetary Fund mobilized 1 trillion US dollars to help countries that suffered financial and economic losses from the spread of the coronavirus pandemic. 80 countries have already turned to the IMF for help [16, p. 21, 23]. At the same time, physical losses as of November 07, 2021, according to the WHO, are more than 249 million confirmed cases of the disease and more than 5 million deaths [17]. According to the information of the Ministry of Health of Ukraine (the same date), during the whole time of the pandemic, 3.155 million people fell ill with the coronavirus in Ukraine, and 74.8 thousand deaths were recorded [18]. At the same time, the National Bank of Ukraine estimates the negative contribution of all quarantine restrictions in the first half of 2021 to the annual real GDP of Ukraine amounted to 0.6 of the gross product [19].

Thus, the above examples clearly prove that the public danger of illegal handling of dangerous biological agents and violation of established, sanitary-epidemic, hygienic, biotechnological and other norms and rules has its own characteristic features. The harm that such actions actually cause is much less than the consequences they may lead to in the future: endangering the life of not only an individual but many other people as well.

## **5. Conclusions.**

Summing up the results of our research, we admit that the most important basis for criminalization is a public danger of the action, which lies in the fact that it causes or creates a threat resulting in certain damage to social relations.

The public danger nature of violating the rules of handling microbiological or other biological agents or toxins is manifested in the fact that the indicated criminally illegal acts reduce the level of biological safety of Ukraine. In particular, it creates real biological threats that can develop into a general (epidemic, epizootic, epiphytotic) or local (infection of separate individuals or certain objects of the living matter of the biosphere) biological hazard. The socially dangerous nature of the crime investigated is determined by its subject – biological pathogenic agents, which are the source

of an increased danger to life and health of an indefinite group of individuals, property (first of all, agricultural plants and animals) and environment. They may be used as means of mass destruction – biological weapon.

The degree of public danger of the crime provided for in Art. 326 of the Criminal Code of Ukraine, determined by the amount of damage caused in the form of financial and social losses (direct losses due to the death and destruction of agricultural plants and animals, expenses for disinfection or quarantine measures, and losses in the form of a lack of budget revenues due to a decrease in business activity, drop in tourism amount, investment outflow etc.), and physical losses (physical injuries of various degrees in victims, death of people, modification or disturbances in the stability of their genome).

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