Problems of Legal Regulation of the Turnover of Genetically Modified Organisms in the Republic of Kazakhstan

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Abstract

One of the most important factors determining the present times are the development of both the economic and the legal system in a scientific and technological progress, based on the achievements of modern science. So, thanks to advances in molecular biology and genetics that are actively shaping the market of genetically modified organisms (hereinafter - GMO). Expansion of the turnover of goods containing GMOs. It calls for a special approach to the legal regulation of corresponding relations, taking into account the specificity of these objects.

Kazakhstan has finally decided in their attitude to genetically modify organisms. At the present stage of legal regulation in the field of genetic engineering activity, there is a preservation of a complex of outstanding issues related to the improvement of the regulatory framework and the need to research the long-term impact of genetically modified organisms on human health and the environment and requiring theoretical, methodological and regulatory approval. In addition, till date, there is no available legislation on genetic engineering to ensure the safety of human activities, as well as future generations and the environment from the adverse effects of genetically modified organisms. Absolute safety of genetically modified foods on human health has not been proven, and the use of such products carries enormous risks for humans.

Keywords: Biosafety, genetically modified foods, genetically-engineering activities, economic circulation, labeling of food products

Introduction

The food problem is one of the major problems of mankind. According to UNESCO forecasts, by 2050, the world population would be close to 10 billion. That would require a sharp increase in the volume of food and other consumer goods. Over the past 20 years, humanity has lost more than 15% of the fertile soil layer. Most of the land suitable for cultivation is already involved in agricultural production. Each week, the planet's population increases by 1.2 million, while the rate of production is increasingly lagging behind the rate of population growth. Already shortage of food in the world exceeds 60 million Tons and the total number of hungry, close to 1 billion.

In connection with the situation in the world, widespread GMOs (Genetically modified organism GMO) are living organisms, the genotype of which has been artificially modified by genetic engineering techniques in order to give it the
desired properties. The purpose of genetically modified organisms is to improve the useful characteristics of the source of the body - donor (resistance to pests, frost resistance, yield, calorie, etc.) in order to reduce product cost (The Convention «On Access to Information», 1998, p.158). Thus, the modern food production strategy has to be focused on the output of the search for the food crisis in the shortest possible time. There was the need for a fundamentally new approach to the creation of highly productive agricultural systems to provide a significant increase in crop yields and livestock productivity (UN Biodiversity Protection Convention, 1992, p.24). Genetically modified organisms (GMOs) are prepared using special molecular - biological techniques, which are often called "modern biotechnology" or "gene technology", sometimes - referred to as "recombinant DNA technology" or "genetic engineering" (Convention on Human Rights and Biomedicine, 1996, p.76). For the identification of public opinion about the use of genetically modified foods for the population, a profile was developed. The aim of the survey was to analyze consumer behavior in food markets in terms of assessing their awareness of GMOs labeling and recording their products in the choice of behavior strategies. The survey was conducted anonymously, respondents completed the survey on their own. It was interviewed 58 people, of which 16.9% of men and 83% women, the age of students who participated in the survey from 17 to 23 years, adults age - from 22 to 57 surveyed residents of Let. Sredi RMS 45.76% of respondents have an idea on genetically modified organisms. 82% of respondents were not aware of the laws regarding GMOs. These figures indicate that people are not sufficiently informed about the legislation on GMOs. 35% of respondents based their knowledge about the presence of genetically modified organisms in these categories of foods on the basis of information received from the media. Television is a source of information on GMOs to 26.7% - but the TV and the media often give biased information regarding GMOs, which contributes to a misjudgment. In literature, there are lots of materials about the impact of OAB on the body with very often, contradictory conclusions. We have studied the possible effects on the body of the GMOs and development was carried out in order to refute or confirm this information on the experimental work. Problems related to the legal regulation of genetic engineering activity in Kazakhstan have been the object of scientific analysis in the late XX and early XXI century. The motivating factor for that was an irruptive flow of imports of genetically modified food and feed.

Currently, in Kazakhstan, the regulation of genetic engineering activity takes place under the rules of the Cartagena Protocol on biosafety, adopted and approved by the Convention on Biological Diversity in Montreal, January 29 (The Cartagena Protocol on Biosafety, 2002).

However, taking into account the peculiarities of the state, staged the Government in 2010, considering the need to take the appropriate law. This statute shall be for such, a goal in the improvement of human life, health, protection, restoration of the environment and the conservation of biological diversity. This should be based on the safety of citizens and the principles of the environment, etc (Requirements for Safety of Food Products Fabricated From Genetically Modified (Transgenic) Plants and Animals, 2010).

Since this regulation is still not accepted by the state, the legislator decided on the ratification of the Cartagena Protocol, Law of 17 June 2008. Being that there are a number of laws that address issues of liability and regulatory activities in this area. This Environmental Code of 09.01.2007, the Code "On people's health and the health care system" from 18.09.2009, the Law "On Seed" from 08.02.2003, the Law "On state regulation of development of agriculture and rural areas" from 08.07. 2005 and the Law "On protection of consumers' rights.

As can be seen from the norms of the normative-legal acts of Kazakhstan in contrast to the norms of the Russian legislation, it requires labeling of GMOs and thus involves informing the population of the state of food products and their
features. In Kazakhstan, Academy of Nutrition has a laboratory, which examines products for GMO content. If the investigational product is equal to the percentage of 0.9% that was not marked and considered harmless, the need for legal regulation of the state in this direction rose sharply when the country's President in his address to the nation in 2014, ordered the government to develop and drought-resistant GM crops. Nursultan Nazarbayev noted that the population is not informed about genetically modified organisms and therefore, afraid of their consumption, while demand on GMOs in Kazakhstan is undeniable (Kazakhstan’s President Nazarbayev on GMOs, 2015).

The Ministry of Agriculture reported that the cultivation of GM crops will increase the efficiency of use of resource-saving technologies, but GMOs productivity in Kazakhstan remains in question, as the majority of created varieties adapted to the temperate climate, not continental. This specified task as noted, may lead to more vulnerable food products disappearing from circulation. And the appearance of GMOs in Kazakhstan require a system regulating issues of genetic engineering safety. There are structures responsible for the assessment of the risk of use of such cultures, as well as laboratories that can detect the presence of GMOs in products. Kazakhstan scientists have already developed and are ready to offer a number of developments in the field of plant breeding and genetic engineering. A number of products such as agricultural, livestock are the new varieties that were derived (Kazakhstan. Agricultural Biotechnology, 2015; Urazova D., 2014).

Therefore, there was a need for the introduction of a number of changes in the legislation before the adoption of a specialized regulation, in which the government was to take active measures to control and regulate the legality of genetic engineering.

This establishes a ban on the production, cultivation and use of plants, animals and other organisms that are not typical of natural ecological systems, as well as created by artificial means without the development of effective measures to prevent their uncontrolled reproduction, and the positive conclusion of the state ecological examination with the permission of the competent authorities. Kazakhstan has finally decided to genetically modify organisms. The present stage of legal regulation in the field of genetic engineering activity involves the preservation of a complex of outstanding issues related to the improvement of the regulatory framework and the need to research the long-term impact of genetically modified organisms on human health and the environment. This requires theoretical, methodological and regulatory approval. In addition, till date, there is no available legislation on genetic engineering to ensure the safety of human activities, as well as future generations and the environment from the adverse effects of genetically modified organisms. Absolute safety of genetically modified foods on human health has not been proven, and the use of such products carries enormous risks for humans (Key S., Ma J.K., Drake P.M. 2008).

Till date, these issues have not received due consideration, development and resolution in the legal field and the scientific legal doctrine.

Existing legal, theoretical, scientific and practical research in the field of genetic engineering activities are fragmented and cover only a particular aspect of a specific problem, despite the obvious nature of the practical significance of this complex problem. There is currently no scientific document on complex legal regulation in the field of genetic engineering activity that determines the relevance of the topic, as well as a necessary interest in its deeper study and analysis as a whole, and its individual segments. This article is an attempt to fill the vacuum of research on the regulation of genetic engineering activity in the international and national legal aspects.

Awareness of the rapid expansion of modern biotechnology and the public around the world, shows growing concern about its potential adverse effects on biodiversity and increasing risks on human life and health. So now the urgent problem is creating mechanisms to legally regulate the circulation of genetically modified organisms (GMOs) and the appropriate legal protection.
against the potential hazards they carry.

One of the most important factors in this present
time, is the development of both the economic and
the legal system, with the progression of science and
technology, based on the achievements of
modern science. So, thanks to advances in
molecular biology and genetics that are actively
shaping the market of genetically modified
organisms (hereinafter - GMO). Expansion of the
turnover of goods containing GMOs, calls for a
special approach to the legal regulation of
corresponding relations, taking into account the
specificity of those currently regulating the
relationships in this field, as well as normative acts
of the European Union in the sphere of production
and turnover of genetically modified products.

Materials and Methods

The problems of legal support for the safety of the
food, made with the use of genetically engineered
methods, and obligatory marking. Responsibility
for violation of legislation in the field of
genetically engineered activity. Social and ethical
problems of human cloning and its organs.
Environmental pollution by transgendered plants
and animals are researched in the works of M.M.
Brinchuk (2003), O.L. Dubovik (2010), N.G.
Zhavoronkova (2015), Stotzky G., V.N.

Certain questions of legal regulation of
genetically engineered activities were researched in
the thesis of O.A. Krassovskiy “Legal problems of
genetic engineering”.

Genetic engineering activity is based on the
following principles:
• the security of individuals and the
environment;
• clinical safety of testing techniques of gene-
diagnosis and gene therapy of somatic cells;
• the availability of information on the safety of
genetic engineering activity.

The main elements of the legal mechanism for
the treatment of genetically modified organisms are
licensing, certification, state registration of

genetically engineered modified organisms, control
and legal responsibility.

Only on the basis of permits (licenses) is
allowed the implementation of works in the field of
genetic engineering, corresponding to III or IV
level of risk. Subject to licensing are, in particular,
the following types of genetic engineering.
Depending on the degree of potential hazards
arising in the implementation of genetic
engineering, for closed systems there are set four
levels of risk of potentially harmful effects of
genetic engineering on human health:
• the level of risk corresponds to activities that
do not pose a risk to human health and is
comparable to the risk when working with non-
pathogenic micro-organisms (non-pathogenic
micro-organisms – bacteria that do not cause a
human, plant and animal diseases);
• the level of risk corresponds to activities
presenting low risk to human health and is
comparable to the risk involved in working with
opportunistic pathogens;
• the level of risk corresponds to activities
presenting a moderate risk to human health and is
comparable to the risk involved in working with
micro-organisms, potentially capable of
transmitting infection;
• the level of risk corresponds to activities that
pose a risk to human health and is comparable to
the risk involved in working with agents of
especially dangerous infections.

Performing works on the microorganisms in
closed systems contained in a scale higher than
laboratory studies relate to III or IV level of risk.

Genetic engineering activity in the conditions of
open systems is equivalent to III or IV level of risk.

Corporations and citizens (individuals)
engaging in genetic engineering activity, conduct a
risk assessment while planning, preparation and
conducting genetic engineering.

Legal basis for the treatment of substances,
materials and waste:
• all kinds of trials of genetically modified
organisms, including laboratory, clinical, field and
industrial prototypes;
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- release of genetically modified organisms into the environment;
- storage, disposal, destruction of genetically modified organisms and products; waste management of genetic engineering activity;
- purchase, sale, exchange, other transactions and other activities related to the genetic engineering technology, genetically modified organisms or their products, which do not have the quality certificate or mark of conformity issued or recognized by the authorized body, including in international activities. Permits (licenses) for works corresponding to the III and IV levels of risk should be issued in accordance with the procedure established by the Government Department of Health and Social Development of the Republic of Kazakhstan.

An important ecological importance is the legislative provision on admission to the occupation of genetic engineering activities of citizens, training and health of which comply with safety regulations of genetic engineering.

Products and services, respectively, received and provided with the use of genetically modified organisms, liable to mandatory certification in accordance with the laws of the republic, should have a certificate of quality and a sign of conformity issued or recognized by the authorized body.

One of the essential conditions of registration is an analysis of the data on Biosafety proposed for the state registration of the modified organism. Biosecurity means the absence of actual or projected undesirable effects of the modified organism to the environment. To determine the biosafety examination is being conducted. For this purpose, the Ministry has established a permanent advisory council on biosafety. Registered modified organism is introduced into the Uniform State Register of registered genetically modified organisms. Improper treatment with genetically modified organisms entails the application of disciplinary, administrative, criminal or civil liability (Ministry of Agriculture discusses prospects of GMO in Kazakhstan, 2014; Kazakhstan to set up GMO registry, 2017).

Results and Discussion

Turning to the analysis of possible legal structures that can ensure effective regulation of civil GMO turnover, it should be noted that the concept worked out the international legal level "biosecurity". This term is used to describe the systems, covering policy, regulation, and management to control potential risks associated with the production, sale and transboundary movement of GMOs, as well as with scientific experimentation in this area.

The main provisions of the biosafety defined by the following international legal instruments:

1. UN Biodiversity Protection Convention (June 5, 1992, Rio de Janeiro) - the first time at international level, declared the need for a careful formation in living organisms that are modified, derived from biotechnology.

2. The Cartagena Protocol on Biosafety (30 January 2002 Montreal) - proclaimed the precautionary principle - determines the appropriate level of human and environmental protection in the field of the safe transfer, handling and use of living modified organisms - focusing on transboundary movements of GMOs, a certain area of responsibility for the violation of rules for dealing with GMOs.

3. The Convention "On Access to Information" (June 25, 1998, Aarhus) - Public access to environmental information, public participation in decision-making on environmental decision-making, public access to justice in environmental matters.


5. UNESCO's Universal Declaration on Bioethics and Human Rights on October 19, 2005

However, till date, the provisions of the aforementioned international instruments are not fully implemented in the system of the current legislation of the Republic of Kazakhstan.
It appears that effective legal regulation of the turnover of GMO is impossible without legislative consolidation of the provisions on biosafety to guarantee the right of everyone to be protected from the potentially negative effects of biotechnology. The norms on biosafety in the present conditions are an integral part of a person's legal status. Therefore, human security from unauthorized exposure of GMOs is a fundamental principle in the legal regulation of relations in this sphere.

In the Republic of Kazakhstan legislation on GMO revolution is still in its formative stages. For example, in Russia the Federal Law of July 5, 1996, N 86-FZ "On state regulation in the field of genetic engineering activity". However, this law is a framework, and contains a large number of references to other normative legal acts, which has not yet been adopted or entered into force. For example, Article 7 of the Act stipulates that genetically modified organisms intended for release into the environment, as well as products obtained from the use of such organisms or containing such organisms, subject to state registration in the order established by the RF Government. However this time, a procedure is established. Russian Government adopted the Decree of September 23, 2013 N 839 "On state registration of genetically modified organisms intended for release into the environment, as well as products derived from the use of such organisms or containing such organisms Similar provisions are contained in section 4.11 of the Technical regulation of the Customs Union "Food products are part of its labeling".

In Kazakhstan, the turnover of GMO is not provided at the legislative level. As an example, with respect to the total turnover of the legal regulation of GMOs is possible to bring the legislation of the European Union in this area.


The above-mentioned EU Regulation N 1829/2003 determines the legal regulation of economic turnover of food and feed containing GMOs or produced from them in two ways:

1) The procedure of obtaining permission to engage in business turnover of food and feed produced from GMOs;

2) Requirements for the labeling of food and feed produced from GMOs, to ensure monitoring and control at any stage of the placing on the market of the relevant goods.

Regulation also defines the requirements for the labeling of products containing GMOs in the course of transfer of the goods in the case of wholesale trade, and for products intended for retail sale to end consumers. The above-mentioned Directive of 12 March 2001 2001/18 / EC establishes that the applicant who wishes to register a product containing GMOs, must provide full information on GMOs, including the information relative to the GMO, the potential of the medium of the planned issue, the interaction with all the biotic and abiotic factors of the environment, taking into account the specific area of the planned release of GMOs. Development a strict system, enables the state to control the spread of GMOs on its territory, and the information reduces the likelihood of adverse consequences or allows to take timely effective measures to eliminate them. The requirements of this directive are clear, understandable and achievable. At the same time, such an approach to the legal regulation does not prevent the development of biotechnology in the direction of creating GMOs, while ensuring the safety of the environment and human health. Provision for the legislation of the European Union must certainly be taken into account in the improvement of the Russian legislation regulating GMO revolution. In particular, it requires an immediate introduction to the current legislation of state registration as the GMOs themselves and their
producers. This procedure is aimed at limiting the GMO turnover that would prevent the uncontrolled proliferation of data objects of civil rights in the Russian Federation Consumer markets.

In addition, according to the author of this article, to better meet the balance of private and public interests in this sphere it is necessary to pay attention to the possibility of implementing the legislation of legal structures aimed at creating procedures for public control over the safety of GMO use in the production of goods. This legal construction can be a licensing mechanism for the production of GMO activities. It appears that the development of requirements for licensees to ensure production safety and the prevention of any contact with the GMO in unmarked products will prevent the uncontrolled spread of GMOs and products containing GMOs in the consumer markets.

Also, from the point of view of the author of this article, a lot of potential for public safety against the risks of GMO use has legal construction procedures that state mandatory and environmental impact assessment for the GMO producers. Conducting the state environmental review to determine the appropriate level of negative impact on the environment will prevent unauthorized GMO from entering into the natural bio-system and this would help reduce the environmental risks of GMO production. Realization of the above proposals would require the development of appropriate methodologies for the state ecological expertise. These procedures should take into account the specifics of the production of GMOs and ensure the impossibility of their uncontrolled entry into the environment.

At present, the Ukrainian legislation in the field of GMOs and GMO products have sufficient capacity, but often internally inconsistent and in need of serious revision. General provisions are contained, in particular, in the Law of Ukraine "On the state system of biosafety in creating, testing, transportation and use of genetically modified organisms" (hereinafter - the Law on GMOs) and the Law "On Protection of Consumer Rights" and "On safety, and as foods." Pursuant to these laws, have been adopted numerous regulations that define certain aspects of the development of GMOs and GMO-turnover products.

Because before this time, there is no credible scientific evidence of harm or no harm to the human body of GMOs and products containing GMOs in Ukraine. In the development of the principles and regulatory framework, the handling of such products is taken as a basis for a presumption of danger, until proven otherwise. In connection with this development, the introduction into circulation, transit, import and export of GMOs and GMO products are to be subject to strict regulation.

There are the following types of state regulation:

– Genetically engineering activities in closed or open systems, are to be licensed. They must also comply with the established rules, regulations and safety criteria. The release of GMOs in open systems, import, industrial production and introduction into circulation of GMO products is possible only after the state registration;

– To state registration of GMOs and GMO products they import or release, the open system is allowed only for research purposes, or public approbation of open systems, and also on the basis of special permits;

– Transit movement of non-registered GMOs in Ukraine is possible only on the basis of a special permit;

– The procedure for disposal of materials, GMOs, and packaging them should be performed by a separate procedure, approved by the Ministry of Education and Science and the Ministry of Environment of Ukraine.

**Discussion**

The urgency of the safe handling of GMOs and GMO-theme products in Kazakhstan today involves the need for a full and thorough review of the legal regulation of this sphere. Unfortunately, the imperfect legal framework and lack of necessary sub-legal acts have led to the fact that in Kazakhstan, some aspects of the turnover of GMO
are not regulated at all (for example, carrying out veterinary and epidemiological expertise), and some are regulated so that they lose efficiency (for example, labeling of food products). We have to state that the system of state registration of GMOs is not actually operating in Kazakhstan. In this regard, no proactive actions of the government in this area, GMOs, and GMO products in Kazakhstan will continue to be distributed illegally.

1) Activities to create modified organisms in closed systems (laboratories, in vivo) 2) turnover (change of ownership) of genetically modified organisms in closed systems (i.e. any physical structures: installations, structures, tubes) limiting (exclusive) contact with the outside (surrounding) environment is no detailed procedure for the notification / public access to information on GMOs (handling, use and so on. activities) No detailed procedure involving the public in the decision-making process GMOs.

- the main problems of legal regulation in the sphere of turnover genetic modified products:
  - active development of genetic engineering, the constant emergence of new relations in the field;
  - the absence of the historical roots of the legal directions, limited opportunity for growing standards in legal framework development;
  - lack of duration within the period of law application and enforcement, does not allow an assessment of the effectiveness of legal regulation;
  - low degree of scientific elaboration in the context of the legal problems of biotechnology law;
  - the rejection of "the theme GMO" society (the rule of law are effective only when they are understood and perceived positively) affected by multiple sectors of the economy (problems the division of powers of government).

Conclusion

A large number of diseases appeared after in 1996 the genetically modified products started to be produced. In America, the number of people suffering from three or more chronic diseases, increased from 7 to 13 percent in just 9 years. There rapidly raised the amount of food allergies and such problems as autism, reproductive disorders, digestive problems, and others. Although there was no detailed studies which have confirmed that all the fault of GMOs, Academy experts warn that we should not wait for the coming of these problems and should protect our health right now, especially the health of children, who are at the greatest risk.

Problems related to the legal regulation of genetic engineering activity in Kazakhstan, have become the object of scientific analysis in the late XX – early XXI century. The motivating factor for that was an irruptive flow of imports of genetically modified food and feed.

Kazakhstan hasn’t finally decided its attitude to genetically modified organisms yet. At the present stage of legal regulation in the field of genetic engineering activity is preserved complex of outstanding issues related to the improvement of the regulatory framework and the need to research the long-term impact of genetically modified organisms on human health and the environment and requiring theoretical and methodological and regulatory approval. In addition, nowadays there is no legislation in the field of genetic engineering on human security, as well as future generations and the environment from the adverse effects of genetically modified organisms. Absolute safety for genetically modified foods on human health has not been proven, and the use of such products carries enormous risks for humans.

To date, these issues have not received proper consideration, development and resolution in the legal field and the scientific legal doctrine.

Existing legal, theoretical, scientific and practical researches in the field of genetic engineering activities are fragmented and cover only a particular aspect of a specific problem, despite the obvious nature of the practical significance of this complex problem. There are currently no scientific papers on complex legal regulation in the field of genetic engineering activity that determines the relevance of the topic,
as well as a necessary interest in its deeper study and analysis as a whole, and its individual segments. Consequently, subject of the article is an attempt to fill the vacuum of research on the regulation of genetic engineering activity in the international and national legal aspects.

Permit (license) for the operation corresponding to the III and IV levels of risk should be issued in accordance with the procedure established by the Government of the Republic of Kazakhstan. Licenses are issued by the Ministry of Health and Social Development of the Republic of Kazakhstan. An important ecological significance is the provision of the legislation on admission to the occupation of genetic engineering activities of citizens, training and health of which, comply with safety regulations of genetically engineered activities. Products and services, respectively, received and provided with the use of genetically modified organisms, liable to mandatory certification in accordance with the laws of the republic, should have a certificate of quality and a sign of conformity issued or recognized by the authorized body. Genetically modified organisms that are intended for the first time on the territory of the Republic of Kazakhstan release into the environment, industrial use or import, are subject to obligatory state registration. The genetically modified organism means an organism or several organisms, any non-cellular, unicellular or multicellular formation able to reproduce or transfer of hereditary genetic material, different from natural organisms, obtained with the use of genetic engineering methods and containing genetically engineered material, including genes, fragments or combinations of genes. Genetic engineering is a set of methods for gene isolation from an organism, the implementation of genetic manipulation and introducing it into other organisms. Implementation of the results of genetic engineering activity is associated with potential negative consequences for the environment. In this connection there is a need for legal regulation of environmental relations arising during the implementation of genetic engineering. The problem is the absence of the law "On state regulation of genetic engineering activity."

To the considered issues refers directly the Environmental Code of the Republic of Kazakhstan establishing a ban on the production, cultivation and use of plants, animals and other organisms that are not typical of natural ecological systems, as well as created by artificial means, without the development of effective measures to prevent their uncontrolled breeding, a positive conclusion of state environmental expertise, permits of national enforcement authorities which are carrying out state administration in the field of environmental protection, other central bodies of executive power (UNESCO’s Universal Declaration on Bioethics and Human Rights, 2005).

State regulation in the field of genetic engineering activities is carried out in the areas of:
- improving human condition and protection of his health;
- protection and restoration of the environment, conservation of biological diversity;
- improving efficiency of agriculture;
- Improving efficiency of the mining and processing industry.

The authors believe it is necessary to note the following: - The law governing GMOs turnover require fixing a number of legal structures that take into account the moral ideas of society on the use of data objects of civil rights in the economy. As these legal constructs the author proposes the following:

1) The legal structure of the state registration as the GMO itself and GMO producers;
2) The legal structure of licensing for GMO production activities;
3) The legal structure of ecological examination, mandatory for all manufacturers of GMOs carried out to determine the appropriate level of negative impact on the environment;

The legal structure indirectly embodies the moral and ethical principles of justice and humanity, have the function to balance private and
public interests in the legal regulation, expressing social and humanistic content rights.

7. **Genetically Modified Maize: Doctors' Chamber Warns of 'Unpredictable Results' to Humans.** (2013). – PR Newswire, November 11
13. **Requirements for Safety of Food Products Fabricated From Genetically Modified (Transgenic) Plants and Animals**, (2010). – Governmental Decree RK of 21 September; №969
14. **Khegai D.**, (2012). GMO may become a necessity for Kazakhstan. – RIA Novosti, August 09
17. **Meeting in Kazakhstan highlights the importance of regional initiatives to strengthen laboratory biosafety and quality**, (2012). – The WHO, October 30
19. **Ellis M., Atshabar B.**, (2016). **Biosafety Association for Central Asia & the Caucasus.** – Canada