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PRIORITIES OF FURTHER DEVELOPMENT OF AGRARIAN BIOGEOTECHNOLOGY

The purpose. To study prospects of development of domestic agrarian biogeotechnology on the basis of efficient use of mental potential of the country. To analyze legislative basis, to substantiate practical recommendations for formation of state initiatives. **Methods.** Analysis, synthesis, statistical, generalization. **Results.** The present day state of domestic biogeotechnology, social and economic preconditions of its development, as well as legislative maintenance is observed. **Conclusions.** For settlement and further development of biogeotechnology it is necessary to structure legislative acts in force and to supplement it with statutory acts of direct action. The main levers of state innovative policy should become: comprehensive support of scientific researches and augmentation of their financing; state subsidies; creation of innovative infrastructure; state order for purchase of agrobiological products. It is offered to develop the National program of development of biogeotechnology on an instance of EU.

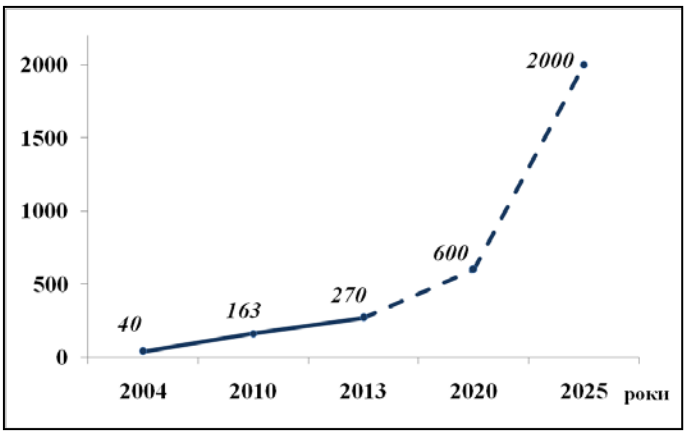
Key words: agrobiotechnology, biogeotechnology, bioindustry, biofuel, state, development, prospects.

One of the key areas of quality of technological development in a number of industries are biotechnology, which is a set of methods for biological products through the use of certain microorganisms and scientific description of these methods and their practical application. Biotechnology - interdisciplinary field that has emerged at the intersection of biological, chemical and engineering sciences. With the development of biotechnology is associated solve global challenges – the elimination of food shortages, energy, mineral resources, improvement of health and environmental quality.

It is clear that the development of biotechnology is only possible under the relevant legal framework. The legal framework of Ukraine has a significant amount of regulatory, legal and regulatory acts in any way related to this issue: defining features stimulate research activities in Ukraine, proclaim the priority thematic areas of research and scientific and technological development [1]; determine the legal, economic, organizational and financial principles of state regulation of activities in the field of technology transfer through the effective use of scientific and technological potential of the country [2]; industry regulations that govern a particular area of economic activity [3].

In fact, choosing European benchmarks in social development, it is necessary to strengthen the existing legal mechanism for documents direct action, which would become the basis for the development of national documents in the field of biotechnology, such as approved in 2002 by the European Commission "Strategy for Europe - life sciences and biotechnology. "

According to many international experts, biotechnology is an attractive investment sector of the global economy. The dynamics of the market biotech products from 2004 to 2013 as evidence (Table. 1) [4]. Experts predict global biotechnology market in 2020 will reach the level of 600 dollars mlrl and 2025 – 2 tryllyona dollars [5].



Accordingly, a significant amount of financial resources invested in the development of the industry in developed countries, causing intense climb relevant research. Thus, according to international consultancy Abercade in the global sector biotechnology spending on research and development work in 2014 increased by 20% due to investment companies in the US and Europe with products that are in development [6]. Thus, analyzing the sectoral segmentation in recent years, it should be noted that

the agricultural and environmental biotechnology accounts for only 0.5%, the bioindustriyu and bioenergy – 35% of the world market [7].

Looking to the future, we understand that the development of the state without the social (food) risk is not possible without intensive technologies, which include, in the broadest sense, and agrobiotechnology. Capable of innovations in agriculture to ensure food and energy security of the state? In this regard, what priorities will choose agricultural biotechnology on the way of development in Ukraine?

Current forecasts and modeling of the global agricultural market, which occupies leading positions Ukraine indicates that, in all countries more tools and resources to be invested in the introduction of high-tech (read - Biotechnology) is in agriculture, due of the need to improve the use of natural resources, primarily land and water. In most countries the tendency will increase the use of agricultural resources to face before, for food purposes, and as a feedstock for bioenergy production. It is necessary to increase the acreage under major crops (wheat, corn, soybean, sunflower) and increase the intensity of production technologies.

Against the background of intensive grain production will undoubtedly increase the production of animal products, especially milk and meat (all kinds of animals and birds). Positive forecasts of major agricultural products make it possible to assume that if agricultural production transition to an innovative, resource-based, requiring significantly increased growth of biotech production. The implementation of the agricultural potential in terms of increasing crop production and livestock, raw materials for the production of biofuels and bioenergy possible only with an increase in the share of biotech products in the domestic market of Ukraine. Modernization and raw processing industry, increasing the depth of processing of raw materials, reduce energy production requires new approaches and requirements for the quality and safety of agricultural products produced. This in turn requires rapid introduction of modern methods of agricultural and veterinary biotechnology in agricultural production through the use of new biological products, bio-fertilizers and Bio pesticides, deepening recycling agriculture (manure, plant waste, etc.) In order to obtain new products and production of alternative fuels and energy.

The use of biotechnology in many sectors of the economy in the world science has identified its "color" typology. In 2004 it was proposed extended 10 color classification biotechnology segments depending on the area of application. Directly to the agricultural concern, "green" biotechnology, which combines agriculture and biotechnology environment (biofuels, bio-fertilizer, bioremedyatsiya, heomikrobiologi) and indirectly bioindustriya so-called "white" biotechnology, based on genetic industry [8]. The latter combines biofuels, biotechnology in the food, chemical and oil refining industries. In Ukraine this type of biotechnology needs most targeted state support. Today we have favorable conjuncture revival hydrolysis conditions for the industry based on advanced biotechnology to produce a large range of products - enzymes, amino acids, and other various hydrolysates and other. Relevant is the creation biozavodiv for deep processing of biomass and production of new dietary supplements, feed and food. The priority areas of "white" biotechnology also include the development of food biotechnology to improve the quality and nutritional value of local foods, increasing the production of food enzymes, sweeteners and more other.

Precedence has become "green" biotechnology, which is divided into biotechnology for crop production (biological plant protection, creating plant varieties biotechnological methods, biotechnology soils and bio), biotechnology for livestock (technology of molecular breeding of animals and birds, transgenic and cloned animals, biological products for animal and biological components of the feed and premixes), and includes the processing of agricultural waste.

Today, the world of science there is a rapid surge areas of genetic engineering of plants (isolation and cloning of new genes, creating different genetic structures, the use of antisense nucleic acid structures) and developing new direction - metabolic engineering of plant alkaloid biosynthesis. [9]

Ukraine has huge possibilities for using new technologies in crop production, namely, large areas of agricultural land, and the current low level of performance compared to production systems in the western agricultural economies. Therefore, the introduction of genetically modified technology is significant potential for

domestic arable crop areas and can provide fast and efficient technological progress if farmers will have access to technology. At the same time the creation of genetically modified (transgenic) plants at industrial scale, in Ukraine have not yet been conducted, but there are some prerequisites for the development of this area.

As a result of the current practice regulation of the production and processing of genetically modified crops uncompetitive advantages of having to import these products and keep developing "green" biotechnology in agriculture in Ukraine. Increased production of crops which can serve as raw material for biofuels (corn, canola, sorghum, soybeans, etc.) Is only possible through the use of modern biotechnology. Against the background of increasing rate of global biofuel production in Ukraine it is commercially not carried out, and this is one of the priorities in agricultural biotechnology.

Domestic production of solid biofuels (wood and its waste), biogas (hydrogen and methanogenic fermentation biomass) is sporadic, though undoubtedly a projection area of "green" biotechnology due to large volumes, low cost and availability of biomass for energy production. The perspective in this area for economic development of Ukraine is the technology of second generation biofuels, ie the non-food biomass, wood, straw, biowaste, energy-intensive plants. For example, economically justified energy potential of available biomass residues in Ukraine is 24.5 million tons of fuel equivalent, and potential energy plantations and energy crops that can be grown on agricultural land (around 4 million ha) unused - about 13.7 million. The total capacity of 38.2 million tons standard fuel, which accounts for 18 percent of total primary energy consumption in Ukraine. Potential biogas production is 2.9 billion m3 / year of animal waste and 31.7 billion m3 / year of crop waste [10].

It is clear that a comprehensive approach to create a mechanism to stimulate the development of biotechnology in the agricultural sector will address the following issues: improving the efficiency of all sectors of agriculture (crops, livestock, processing, etc.), Get high performance cultures and types of farm animals resistant

to viral, bacterial, fungal diseases and pests; improve their productive and quality characteristics.

"Green" Biotechnology will reduce the use of pesticides and herbicides, maintain ecological security. The special role of "green" biotechnology can play in the development of industrial wood production through genetic modifications seedlings of trees that are resistant to diseases with a high growth rate, increased retention of cellulose in wood. All this together will provide an increase in forest area and improve the environment, preventing soil erosion and so on.

The strategic direction of development of agricultural biotechnology, which corresponds to the issue of biosafety country is the development of veterinary science in the direction bio-production vaccines and diagnostic tools, Biopharmaceutics with emphasis on livestock and poultry.

Early diagnosis of infectious diseases and infectious nature using biochips and detection of genetic resistance to technological animal stress and disease are the most relevant areas of veterinary biomedicine. The use of modern biotechnology techniques allow to implement cell therapy tissue engineering and obtaining transgenic animals with the planned capacity and useful properties (quality of milk, meat, etc.). Work towards cell technology provides a donor animals for Medical purposes for transplantation of certain organs and skin donors from animals to humans. Will develop genomic selection of highly productive breeds of animals and birds, using modern biotechnological methods. This will provide opportunity to increase livestock production and reduce imports by major types of food.

So, biotechnology is a prime example of innovative development model, based on deep fundamental research, which are characterized by high rates of production growth. At the same time understanding the relevance of tasks to ensure the country's food and energy security, environmental conservation, epizootic welfare also needs revision of state policy in the field of agricultural biotechnology and its support. The current system of funding of research activities in the field of agricultural biotechnology is not able to ensure the effective development and transition to innovative model being discussed areas of biotechnology in agriculture. Only tandem

advanced science and technological approaches to ensure optimization of production processes in order to obtain pure products while simultaneously preserving the environment.

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