

В целом, развитие селекции в выше обозначенных направлениях в ближайшей перспективе потребуют от законодателя дальнейшего совершенствования правового регулирования селекции в растениеводстве и в животноводстве.

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## ASSESSMENT OF INNOVATIVE DEVELOPMENT OF BELARUS

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Ключевые слова: инновации; инновационный потенциал; инновационная деятельность; инновационная активность; инновационная инфраструктура.  
Key words: innovations; Innovation potential; innovative activity; innovative activity; innovative infrastructure.

Аннотация: В современном мире инновации выполняют не только экономическую функцию, а охватывают все стороны жизни общества. В долгосрочной перспективе без инновационной деятельности невозможен дальнейший экономический и культурный рост по интенсивному пути развития. В настоящее время инновации являются активным звеном всех сфер жизнедеятельности общества. Инновации превратились в основную движущую силу экономического и социального развития.

Summary: In the modern world, innovations perform not only an economic function, but cover all aspects of society. In the long term, without innovative activity, further economic and cultural growth along an intensive path of development is impossible. At present, innovations are an active link in all spheres of society's life. Innovation has become the main driver of economic and social development.

The competitiveness of the national economy in the modern world is largely determined by the knowledge economy, formed taking into account the country's innovative potential. It is almost impossible to create competitive products without innovation. Innovative processes in production serve as a condition for achieving success on world markets, increasing the level of welfare of citizens and society as a whole. Therefore, they should be an integral part of the state's economic strategy. In a market economy, innovations create new needs, attract investment, raise the rating of manufacturers of new products, and open new markets. The purpose of the study is to study and analyze the innovative processes taking place in the Republic of Belarus, and the main task is to assess the innovative potential of the country.

The economic aspects of the problem of the development of innovative activity are constantly in the focus of attention of many scientists and practitioners. At present, it should be recognized that innovative activity can become a real strategic resource, one of the main factors for ensuring sustainable economic development and achieving a normal standard of living for the population. Belarus, having chosen an innovative path of development, has determined the strategic goal of innovation policy - the formation of a competitive economy through the creation of new and modernization of existing high-tech and knowledge-intensive industries in various sectors of the country's economy. The strategy "Science and technology: 2018-2040" has been prepared and approved in the Republic of Belarus [1]. In connection with the implementation of the strategy, innovation activities are governed by the following theses: science is the basis of advanced technologies; innovations must meet global trends and the interests of society; it is necessary to reach a new level of competitiveness; research activities must rely on their own resources and on international scientific cooperation.

To date, there are examples of effective testing of modern innovations. In crop production: resource-saving technologies, No-till (zero tillage system), precision farming methods based on satellite navigation (GIS, GPS, Galileo), innovative potato production using Dutch technology, and the use of biodiesel [2]. In animal husbandry: production of pork with interbreeding of pigs according to the Dutch scheme, cultivation of high-quality "marble" beef, Dutch robotic technology in dairy farming, software for setting diets for feeding dairy cows, processing of manure and waste with the help of the red California worm [3].

Modern energy – efficient refrigerating equipment with a total capacity of more than 168 MW has been introduced in meat and milk processing organizations, the use of which has allowed to reduce its ammonia capacity by more than 10 times. Cogeneration and tri-generation plants with a total capacity of more than 30 MW are operating in 16 organizations of the Ministry of agriculture and food. The largest – at UE «Agrokombinat" Zhdanovichi», at JSC "Molochny Mir", JSC "Berezovsky cheese factory", at UE "Borisovsky combine of bread products" and at JSC "Baranovichkheleboprodukt", at JSC "Savushkin product", LLC "Primilk". [4]. Currently, the results of innovative development of the country are considered as an essential component of its economic growth and one of the main bright examples of innovation is the High – Tech Park (HTP). After the signing of the decree "on the development of the digital economy", 267 companies joined the HTP-in 2018, more than in the entire 12 – year history of the Park. The work of a hundred companies has become more active, creating 5,000 new jobs over the past year. Together with the new companies, the Park has grown by 13 thousand employees. As of the beginning of 2019, HTP residents employed 45.7 thousand people.

According to the decree (dated March 28, 2018), HTP residents are exempt from most taxes, including income tax, until January 1, 2049. Today, 460 companies are residents of the Hi-Tech Park. Their exports in 2018 grew by 40 % compared to 2017 and amounted to \$1 billion 414 million. GDP growth in 2018 is about 0.5 % of the 3.7 % growth in the economy. The main consumers of HTP products are the EU and the USA: 91.9% of the software produced in the Park is exported, of which 49.1% is supplied to Europe, 44% to the USA and Canada, and 4.1% to Russia and the CIS. The total volume of HTP production amounted to 4 billion rubles, an increase of 47% compared to 2017 [5]. In the domestic market, residents developed and implemented it solutions worth 59 % more than in 2021. At the beginning of 2022, the network of technoparks covers all the regional centers of Belarus without exception, as well as the capital – Minsk (table 1).

The main influence on the level of innovation activity in the country is provided by industrial organizations. Organizations that spend on technological innovations are considered to be innovation-active. Table 2 gives a definite idea of their innovative activity in 2002–2020 [7].

**Table 1. Number of innovation infrastructure entities for 2022**

Region	Number of innovation infrastructure entities in the region, units
Brest region	3
Vitebsk region	4
Gomel region	3
Grodno region	3
Minsk region	4
Mogilev region	2
Minsk	5

The analysis of statistical data shows stable growth of innovation activity of industrial organizations in Belarus, despite the fact that the share of innovative-active organizations in 2002–2020 increased, but this is less than the average for the EU–27, where 39.8% of enterprises were recognized as innovative–active in the field of technological innovations [8]. Low innovative activity of industrial enterprises in Belarus led to the fact that in 2002–2020, the number of the share of shipped innovative products of enterprises in the total volume of shipped products of goods remained at a fairly level (table 2) so in 2017 was only 12,1% for 2020 19,8% [9].

**Table 2. Main indicators of innovation activity of industrial organizations**

Indicators	2002	2006	2011	2015	2017	2020
Number of organizations that implement technological innovations, units.	50	55	67	44	49	94
The share of organizations that implement technological innovations in the total number of organizations, %	11,4	12,4	17,8	12,7	15,2	35,1
Expenditures on technological innovations, billion rubles	84,8	215,8	299,6	721,4	196,9	137,1
The share of shipped innovative products (works, services) in the total volume of shipped products (works, services), %	14	14,3	12,4	7,8	12,1	19,8

Thus, this period can be characterized in General by the positive dynamics of indicators of the innovative potential of the economy of the Republic of Belarus. And in

the perspective of its development, the following directions can be proposed: strengthening of human potential due to the growth of the number of highly qualified personnel and researchers; preservation of the positive dynamics of the number of organizations creating advanced production technologies; creation of high technology zones. EU methodology is of particular interest now. The methodology of the national Innovation Union Allows us to analyze the ability of the personnel potential to perceive innovations, the degree of qualification of personnel, the level of financing of innovation activities and the economic effects of this activity.

**Table 3. Positioning of the Republic of Belarus in the context of the European innovation scoreboard [10]**

Total innovation index	Efficiency relative to the EU-2010		Compared to the EU in 2017
	2010	2017	2017
Belarus	52,5	60,7	52,5
Russia	47,0	51,0	49,0

The effectiveness of the Belarusian innovation sector is quite high (table 3). according to the calculations, the effectiveness of the innovation system has increased from 52.5% to 60.7%. Also, at present Belarus is starting to form innovative industries of the VI technological order. This is evidenced by the draft strategy "Science and Technology: 2018–2040", the implementation of which will make it possible to achieve the following indicators: internal expenditures on research and development will amount to 2.5–3% of GDP; breakthrough research and development will receive 30% of these costs; the share of high-tech sectors in the structure of the economy will reach 10%; the share of innovative products in the total volume of shipped industrial products will approach 25%. These measures will ensure the achievement of high results corresponding to the world level, will form the basis for effective research activities, and will also help to increase the competitiveness of the economy.

Today, we can clearly state that building a modern and effective innovation economy in Belarus is only a matter of time. In the general system of economic relations, innovative activity has a key place, since its final results are determined in modern conditions by the economic power of the country. And priority should be given to the development of the country on the basis of enhancing innovative activities in the most knowledge-intensive and high-tech sectors of the national economy, which are the most significant and progressive engines for the development of the national economy. Orientation of the development of the national economy towards enhancing innovative activities using scientific methods and approaches is the key to the success and prosperity of the country, increasing the welfare and living standards of the population.

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### МОТИВАЦИЯ И МАТЕРИАЛЬНОЕ СТИМУЛИРОВАНИЕ РАБОТНИКОВ СЕЛЬСКОГО ХОЗЯЙСТВА

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