

**INNOVATION AS FACTOR OF PROVIDING COMPETITIVENESS OF ENTERPRISES ON GROWING GRAINS OF CEREAL CROPS**

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**Abstract:** *The use of innovation and investment factors that increase the competitiveness of products is a prerequisite in order to ensure the effective development of agricultural production. Innovative development of the agricultural complex of Ukraine and its reorientation on environmentally friendly and high-productive production should determine the strategy of development of each agricultural enterprise. Therefore, it can be argued that the higher is the quality of the product and its price, the higher is the competitiveness and efficiency of production in general.*

**Key words:** *innovations, innovativeness, investments, competitiveness of enterprises, competitive advantages, cereal crops.*

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**Introduction.** The topicality of issues on the research of innovations impact on the level of competitiveness of national agricultural enterprises is increasing more and more. Contemporary concepts of competition are more and more based on understanding of the competition essence, namely, the process of managing competitive advantages in a market environment. Innovations provide the most stable competitive advantages and are applied in all spheres of activity. The strategic behavior of the company relies heavily on cooperation in business, or on the avoidance of an open competition.

**Analysis of recent research and publications.** Problems concerning the role of innovation in the development of the national economy and their impact on the competitiveness of enterprises are the subject of research of many national and foreign scientists such as Boris Burkinisky, O. Vinogradova, A. Dagaev, O. Datsiy, P. Drucker, B. Johnson, J. Keynes, O. Kuzmin, V. Geits, K. Marx, A. Marshall, M. Porter, A. Poruchnik, K. Prahalad, E. Rainert, P. Samuelson, M. Tugan-Baranovsky, I. Fischer, V. Hartman, M. Chumachenko, K. Stalman, J. Schumpeter.

The scientific works of V. Ambrosov, V. Andriychuk, V. Boyko, A. Danilenko, M. Demyanenko, A. Ermakova, I. Konovalova, V. Krivoruchka, M. Malika, P. Mosiyuka, O. Onishchenko, P. Sabluka, P. Rusnak, O. Shpichak are dedicated to the issues of innovations implementation in the activities of agro-enterprises, the development of agro-industrial integration and increasing the efficiency of grain cereal crops production.

**The main body of the academic paper.** The purpose of the article is to provide a theoretical substantiation of the impact of innovations on the enterprises competitiveness of the cultivation of grains of cereal crops.

The reasons that caused the necessity of transition of the agrarian sector of Ukraine to the innovative model of development are such:

- globalization of the world economy, the spread of the latest information technologies, knowledge intensive industries encourages countries to actively pursue the formation of a new technological

structure for the development of their economies, which is the basis for increasing its efficiency and raising the living standards of the population;

- accelerating the development of the economies of the countries on the basis of mutual integration of science, real and financial sector, reproductive processes in various spheres of human activity of the agrarian economy of countries with developed national innovation system;
- an increase of dependence between the constant economic growth of each country and the ability to produce and use new knowledge, to introduce technological and economic innovations;
- strengthening the competitive position of Western firms in agriculture in terms of their high technical level and product quality and price competition in Asian countries (China, India, South Korea), based on cheap labor;
- exhaustion of sources of extensive growth of agro-industrial complex;
- slowing of the investment rate of technical and technological updating of national enterprises;
- the aggravation of the problem of scientific and technical potential loss of agro-industrial complex due to the lack of conformity of transition needs of the economy to the innovative way of development and financial capabilities of the state, that caused the decline of the scientific and technological and innovation sphere, etc.

In broad sense, innovation is the ability of the system to continuously develop, update and modify the activity based on assimilating innovations. Also, innovativeness means the use of existing scientific and technical, informational and intellectual potential for further development, improvement of performance and quality of life [6, 110 p.].

Innovativeness is aimed at the development and introduction of new products, updating of technologies, machinery, the fundamental improvement of the organization of production, modernization of goods and services affects the growth of production efficiency, increase the competitiveness of the enterprise.

To effectively implement the latest advances in science and technology into the production process, it is necessary to have highly qualified personnel who can not only implement the ideas offered by the authorities, but also take direct part in initiating the changes. Initiative and qualified employees is one of the most important economic resources of agricultural enterprises, which allows the production to reach a new level of development.

Scientist J.F. Moore stated that all enterprises can achieve significant financial results if their products and services are more unique than other companies' products and services. However, to implementation innovation, the partners-consumers and partners-suppliers are needed – creating the network of organizations, united by the general idea of innovation implementation. And the more radical the innovation is, the more other partners should be involved, especially buyers.

According to Ya. Bzhuska, one of the most significant factors of the effective enterprise competition is its ability and effectiveness of the innovations implementation.

His view on innovation as an important element in the formation of strategies is worth attention, as well as the approach to the formation of the structure and principles of building modern business models, in which the various forms of innovation play a special role. It offers the following elements of an innovative business model:

1. The four most important elements of it are – communication and customer relations, the main basic strategy, strategic reserves, network values are interconnected, that creates three "bridges":

- Basic strategy ⇒ actions configuration ⇒ strategic tools
- Basic strategy ⇒ usefulness for client ⇒ communication and customer relationship
- Strategic tools ⇒ the boundaries of the enterprise ⇒ the value of the network.

2. The basis for constructing a model, its elements and connecting "bridges" is the profit potential, which determines four factors: efficiency; uniqueness; internal precondition; intentions and ability to create profits [1, 30 p.]

The most important advantages of the described model are the interpretation of its elements and as sources of innovation, as well as the spheres of influence, as well as the identification of the essential in terms of introducing links of innovation between individual elements of the model. For the results of the model, the internal connections (bridges) between the components of the model and the external relations are of great importance.

The application of innovative technologies at enterprises significantly improves the efficiency of the activity, while the competitiveness of capital in many respects is based on readiness for the introduction of innovations. The problem of energy and resource conservation became a priority in a situation where the cost of material and technical resources and energy resources increased significantly in comparison with the cost of agricultural products.

Overcoming the technological lag of the agro-food complex in the short-term perspective necessitates a holistic system of new approaches regarding the development of entrepreneurship in the scientific and technical sphere, the attraction of innovations to production, that is, the organizational and economic mechanism for the development of innovation processes in the industry.

In accordance with the Law of Ukraine "On Innovation Activity", innovation is a newly created or improved competitive technology, products or services, as well as organizational and technical decisions of an industrial, administrative, managerial, commercial or other nature that significantly improve the structure and quality of production [5, Art. 1].

For the current stage of the innovation process, agricultural enterprises in Ukraine are characterized by:

- 1) Sufficiently high level of innovation activity of enterprises (57% in crop production).
- 2) Limited use by agricultural enterprises of their own innovations (both in terms of resources and technologies), agricultural enterprises use or adapt to their own terms development of specialized organizations, or foreign development.
- 3) Interdependence of the degree of innovation activity of the enterprise and its profitability. The most innovative activity in enterprises with a relatively higher level of profitability, in crop production – these are enterprises for the cultivation of cereal and technical crops with a net income of 50 million UAH and higher, among which 64% carry out innovative activity. At the same time, innovation activity is one of the important factors in the growth of incomes of producers.
- 4) Diversification of directions of innovative activity of effective enterprises. So, from enterprises specializing in the cultivation of cereals and industrial crops, 50% used new breeds of animals (both domestic and foreign) and purchased specialized equipment for livestock, and 33% used advanced technologies (both national and foreign) for milk production and fattening of livestock.
- 5) Absolute predominance of own funds of enterprises among sources of innovations financing. Thus, in crop production enterprises with a net income of more than 50 million UAH. Innovative activities invested exclusively in own funds, enterprises with lower income also attracted funds from the state budget (2%) and loans (5%).
- 6) The low level of use of institutional sources of information about innovations and their implementation possibilities by institutional investors – first of all from universities and state research institutes, as well as from private research institutes and commercial laboratories.
- 7) Orientation of innovative activity of plant and livestock enterprises by its types. Thus, in the crop production innovations (resource innovations) were implemented by 88% of innovation-intensive enterprises, process innovations (technologies) – 77% of enterprises, management (organizational and marketing) innovations – 62%.
- 8) Innovations for the environment. More than half of the companies surveyed noted the existence of certain benefits brought to the environment. As a result of the introduction of innovations for the environment of the agro-enterprises, they received the following economic effect: reducing the use of materials per unit of production, reducing energy consumption per unit of production, reducing the level of soil pollution, water or air. But energy saving has not been sufficiently spread. Thus, among the plants that introduced innovative processes, only 10% (enterprises for growing cereals and industrial crops) have indicated the use of energy saving systems (alternative fuel boilers).

The main types of progressive technologies introduced in national agricultural production are: soil protection systems of cultivation, seed material (new varieties, hybrids, etc.), organic agriculture, agricultural technologies No-till (direct sowing system), the use of biopesticides, bio fertilizers, modern machines and equipment, alternative fuels boilers, biogas installations, marketing technologies (in particular, organization of own points of sales of manufactured products, participation in fairs and exhibitions, etc.), etc.

In our opinion, the incentives for innovation in the cultivation of grains of cereals are as follows:

- increase of product quality, orientation to world standards;
- increase of volumes of production, decrease of production cost, increase of profitability, increase of investment attractiveness and improvement of other production-financial indicators of activity of the enterprise;
- expansion of the market share, obtaining competitive advantages;
- increase of scientific and technical level of production;
- increase in the efficiency of production and sales;
- increase in productivity.

In the agricultural sector in the cultivation of cereals, innovation is represented by three groups:

1. Process (production) innovations: the use of intensive crop rotation and other measures of progressive farming systems; application of automatic systems, machines, other high-performance equipment; the use of advanced intensive technologies; development of transport and communication; expansion and improvement of the storage and sales base; expansion of irrigation and improvement of watering methods; application of fertilizers, chemical and biological means of plant protection.

One of the main elements of a variety of crop growing technologies is the cultivation of soil. It is the soil state that most influences crop yields.

The use of innovative farming systems increases the profits of agro-industrial business to 15%.

2. Product innovations: use and output of new high-yielding and fast-growing varieties of agricultural crops.

The central link in the innovation program for the development of the grain economy is the selection and seeding of grain crops, the creation of such a system that would ensure the most effective use of domestic varieties potential and contributed to increasing their competitiveness.

Innovative development of seed production contributes to the increasing of seed production efficiency in two ways: firstly, creating conditions for maximizing the use of Ukrainian varieties with high yields and the most adapted to the natural and climatic conditions of Ukraine, and secondly, increasing the level of intensity due to the full use of material-technical resources in accordance with the requirements of the latest technologies [2].

In order to ensure the potential of the grain market of buckwheat (domestic and export) from the estimated 500 thousand tons, it is necessary to increase the area under buckwheat up to 255 thousand hectares, at constant yields, even under current ecological conditions, up to 20 hundredweights per hectare. It is a question of introducing new highly productive yields with stable sort yields in relation no less than to the indicated yields that realize the genetic potential of intensive technologies, as well as scientifically grounded rational placement of buckwheat crops in the regions of Ukraine [3,4].

3. Management (organizational and marketing) innovations: development of specialization and concentration of production, improvement of management; improvement of forms and methods of product sales, organization of labor and its material incentives; training of highly skilled scientists and specialists.

Active integration of agricultural producers with processing enterprises and other organizations for the sale of products and supplies of raw materials, promote both the modernization of the production base and the increase of the competitiveness of products, the use of new technologies and technology, minimize risks, increase investment attractiveness, etc.

**Conclusions.** Consequently, the main directions of innovation development of enterprises for growing cereals grains are:

- 1) renovation, modernization and technical re-equipment of the material and technical base, in particular, the use of modern equipment for cultivating and harvesting cereal grain, investing in construction of modern seed-treatment complexes;

2) the transition to intensive, resource-saving and energy-saving technologies of ecological production cereal grains for direct sowing, support and protection of crops, decrease of dependence of seed crops on weather conditions, use of agro-biological factors in increasing production of crop products, for example, compatible crops of cereal crops;

3) to ensure the development of scientifically grounded crop rotation and optimal structure of sown areas, the structure of the rock and sort composition of plantations and the implementation of intensive resource-saving and environmentally sound technologies of production;

4) sorting up and creating a technology for their cultivation, which would ensure the most effective use of the potential of domestic varieties and hybrids, contributed to increasing their competitiveness;

5) selective activities, the distribution of new varieties that will increase the productivity and quality of the grain, growing varieties of high demand, etc.;

6) the intensification of production processes on a market-innovative basis is aimed at increasing the productivity of grain crops due to the introduction of high-yielding varieties and the improvement of the agricultural management system;

7) implementation of new advanced methods of product sales through the creation of a client base, deepening of cooperation with regular clients, Internet marketing, etc.

8) application of high technologies of agro-innovations in the production of cereal grains: Kray Technologies (drone for unmanned plant protection products), BioSens (sensor for rapid diagnosis of food safety) - See more at: AgriEye (field mapping with unmanned aerial vehicles with self-developed cameras), WattCMS (environmental monitoring sensors).

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