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DEVELOPMENT OF THE MEDICINAL PLANTS MARKET IN TODAY'S MODERN CONDITIONS

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РОЗВИТОК РИНКУ ЛІКАРСЬКИХ РОСЛИН В СУЧАСНИХ УМОВАХ СЬОГОДЕННЯ

This article analyzes that the development of the medicinal plant market in today's modern conditions is extremely important, taking into account the growing demand for natural and organic health products, both among consumers and in the medical field. This trend stimulates innovation and investment in the field of cultivation, processing and marketing of medicinal plants. The key factors shaping the development of the market of medicinal plants today are considered, in particular such as: technological progress, environmental awareness, globalization of the market, regulatory requirements. It has been proven that the main focus in the development of export and import of medicinal plants should be focused on ensuring the country's security in the field of availability of herbal medicines for citizens. To attract investments from Ukrainian and foreign investors, it is important to create a favorable investment environment in the country, simplify the regulatory framework in accordance with agreements with the European Union and adapt it to the requirements of the European Green Course, taking into account global trends and international experience in this area. In this aspect, in modern market conditions, where competition is taking on ever sharper forms, the key factor of economic growth is the expansion of production and sales of pharmaceutical products with a high level of processing, which contributes to the increase of state budget revenues. An important problem for the development of agriculture is the need to meet the long-term environmental needs of society, including the demand for products that are environmentally safe and reducing the negative impact of humans on nature. A key aspect of environmental needs is providing the population with access to safe food to support health. Determining the volume of production of medicinal plants in 2022 is difficult due to the impact of full-scale military aggression by Russia, which caused significant damage to the ecosystems of Ukraine, estimated at approximately 1 billion dollars. Part of the land that could be used for the cultivation of medicinal plants is now unusable due to contamination with toxic metals and the destruction of fertile soil layers.

В даній статті проаналізовано, ринок лікарських рослин у сучасних умовах сьогодення, який є надзвичайно важливим, враховуючи зростаючий попит на натуральні та органічні продукти здоров'я, як серед споживачів, так і в медичній галузі. Цей тренд стимулює інновації та інвестиції в сфері вирощування, обробки та маркетингу лікарських рослин. Розглянуто ключові фактори, що формують розвиток ринку лікарських рослин на сьогодні, зокрема такі, як: технологічний прогрес, екологічна обізнаність, глобалізація ринку, регуляторні вимоги.

Доведено, що основна увага у розвитку експорту та імпорту лікарських рослин має бути зосереджена на забезпеченні безпеки країни у сфері доступності лікарських засобів рослинного походження для громадян. Для приваблення інвестицій від українських та іноземних інвесторів важливо створити в країні сприятливе інвестиційне середовище, спростити регуляторну базу у відповідності з угодами з Європейським Союзом та адаптувати її до вимог Європейського Зеленого Курсу, враховуючи глобальні тенденції та міжнародний досвід у цій сфері. В цьому аспекті в сучасних умовах ринку, де конкуренція набуває все гостріших форм, ключовим фактором економічного зростання стає розширення обсягів виробництва та збуту фармацевтичної продукції з високим рівнем переробки, що сприяє збільшенню доходів державного бюджету. Важливою проблемою для розвитку сільського господарства є необхідність задоволення тривалих екологічних потреб суспільства, що включають попит на продукцію, що є екологічно безпечною, та зменшення негативного впливу людини на природу. Ключовим аспектом екологічних потреб є забезпечення населення доступом до безпечних харчових продуктів для підтримки здоров'я. Визначити обсяги виробництва лікарських рослин у 2022 році складно через вплив повномасштабної військової агресії з боку Росії, яка завдала значної шкоди екосистемам України, оціненої приблизно в 1 мільярд доларів. Частина земель, які могли б використовуватися для культивування лікарських рослин, тепер є непридатною через забруднення токсичними металами та руйнування плідних шарів ґрунту тощо.

Key words: medicinal plants, agriculture, balanced development, rational nature management, profitability, economic efficiency.

Ключові слова: лікарські рослини, сільське господарство, збалансований розвиток, раціональне природокористування, рентабельність, економічна ефективність.

INTRODUCTION

The development of the cultivation of medicinal plants in modern conditions is an important part of the agricultural sector of the economy, and also acquires strategic importance for the pharmaceutical industry. This direction is developing against the background of the growing demand for natural and ecologically clean products, which stimulates research and the introduction of innovative technologies in production. In this context, the cultivation of medicinal plants requires compliance with the principles of ecological safety and sustainable development. The use of organic fertilizers, the minimization of the use of pesticides and chemical fertilizers, and the protection of biodiversity are key requirements.

The development of domestic production of medicinal plants contributes to reducing dependence on imports and opens up new opportunities for export. Ukraine, with its rich natural resources, has a unique potential to expand the range of medicinal plants on international markets.

Effective legislative regulation aimed at supporting producers of medicinal plants, protecting consumer rights and ensuring high product quality standards is an important factor in stimulating the development of the industry. The development of medicinal plants in modern conditions requires an integrated approach that includes scientific research, innovation, environmental responsibility, expansion of market opportunities, as well as effective interaction between the state, producers and consumers.

In recent decades, there has been a steady increase in the global demand for herbal medicines and natural products, so there is a need for a large variety of high-quality medicinal plants. It is known that the chemical composition of plants varies significantly depending on genetic and environmental factors, methods of cultivation, terms of collection and post-harvest processing. As a result, this can negatively affect the phytochemistry of medicinal plants, which makes it necessary to ensure their relatively high quality [1].

Table 1. Aspects of expansion of medicinal plants

Aspect	Description
Geographic distribution	Uneven distribution of medicinal plants around the world, but their plantations are established in different corners of the globe.
Global interest	Rapid growth of interest in medicinal plants at the international level.
Consumer preferences	Increasing attention to natural components and herbal preparations, which are perceived as safer and more beneficial for health compared to synthetic medicines.
The need for research	Emphasizing the importance of further research in pharmacology and botany to identify new medicinal properties of plants.
Potential for changes in treatment	The possibility of revolutionary changes in the treatment of various diseases thanks to new discoveries in the medicinal properties of plants.

Source: generated by the author.

Over the past two decades, the area cultivated with medicinal plants in Ukraine has decreased by almost six times, the production of essential oils has increased by almost three times, and the quality of special food products made from medicinal plants has significantly deteriorated. According to experts, many farmers and collectors are now interested in growing medicinal plants. However, the need to invest in high-quality seeds, special equipment and drying facilities, complex harvesting techniques and manual labor involved in growing the plants, as well as unpredictable and volatile prices of raw materials force most farmers and collectors to abandon their cultivation. To compensate for the shortage of medicinal plants, domestic companies import medicinal plants (almost 60%), most of which are of low quality [2; 3]. Therefore, in modern conditions, there is a need to develop effective ways of developing the production of medicinal plants.

It is well known that the state of the global ecological environment is deteriorating every year due to the constant growth of the population and the inability of the environmental security system in its current form to ensure an adequate level of protection of natural resources, the standard of living and the health of the average population. The destruction of ecosystems is primarily related to a way of life that is aimed at consumption, rather than recovery of resources. Global climate change, the loss of part of biodiversity, atmospheric pollution, and irrational use of nature should be included among the most urgent global environmental problems. The current state of the natural environment requires drastic changes, first of all, in the economic mechanisms of using and restoring the resources of the entire ecosystem, which will be aimed at changing consumer principles and the general culture of consumption [4; 5]. Speaking about the inability of the current system of ecological security to ensure the proper level of health of the population, the field of medicinal plant raw materials and its further development acquires significant relevance. Ukraine has significant and unique natural resource potential for development and effective competitiveness in this area. However, the full-scale invasion of the Russian Federation and hostilities significantly worsened the possibilities of the ecologically safe medical industry of Ukraine due to the damage (and in some cases the destruction) of unique natural resources. It should also be noted that the military actions

also have a systemic impact on the change in the consumer priorities of the domestic Ukrainian consumer, which is also reflected in the market of medicinal plants. And ecological and economic tools, in this case balances ecological, economic and consumer components in a single mechanism.

ANALYSIS OF LATEST RESEARCH AND PUBLICATIONS

Studies by L. Hlushchenko [6], M. Kryvko [7] and T. Mirzoeva [4], O. Drebot [5]. The current state of the field of growing medicinal plants was the subject of research, and the analysis of the market of medicinal raw materials was presented in the works of such authors as A. Gudzenko, T. Kovalchuk, N. Kutsenko. Researchers D. Ivashin and T. Derevynska paid special attention to ecological, economic and organizational and legal factors affecting the use of medicinal plants. However, aspects related to the market of medicinal plants in the context of today's agrarian conditions still require deeper study and analysis.

MATERIALS AND RESEARCH METHODS

Within the framework of this study, such methodological approaches as the method of scientific abstraction and the analytical method were applied to the study of current data in the field of cultivation of medicinal plants. An analytical method was also used to review the current state of the medicinal plant resources market. In order to gain a deep understanding of the trends and challenges facing the medicinal plant industry, the use of these methods allowed for effective analysis of market changes, identification of potential opportunities for development, and identification of strategies to improve production efficiency. In addition, the methods of analysis and synthesis contributed to the development of recommendations for optimizing the processes of cultivation, collection and processing of medicinal plant raw materials, taking into account modern ecological requirements and market needs. This creates a basis for further scientific developments and innovations in this field, and also opens the way to improve policies in the field of agro-industrial complex and pharmaceuticals, with the aim of stimulating sustainable development and preserving biodiversity.

RESULTS AND THEIR DISCUSSION

Medicinal plants contain a significant amount of various vitamins, acids, micro— and macroelements. They can be used in natural and processed form in folk and scientific medicine as an effective natural, effective means for the treatment and prevention of various diseases. All of these are critical to maintaining the planet's biodiversity for trade and economic growth. It is also important that medicinal plants and medicinal plant raw materials are used in many fields. An argument in favor of the development of the production of medicinal crops, including essential oil and spices, is the fact that it is considered one of the most profitable in the global agro-industrial complex [8]. Despite the fact that the geographical distribution of medicinal plants can be uneven around the world, as evidenced by the establishment of plantations of these plants in different corners of the globe, there is a rapid increase in global interest in them. Such a trend reflects the growing attention of consumers to products based on natural components and herbal preparations, which they perceive as safer and more beneficial for health compared to traditional medical means. My opinion is that this trend not only reflects a change in consumer preferences, but also emphasizes the need for further research in the field of pharmacology and botany to identify new medicinal properties of plants, which can lead to revolutionary changes in the treatment of various diseases (Table 1).

It is worth noting that medicinal plants belonging to the natural flora act as renewable resources. Provided a scientific approach to their use and ensuring proper restoration, these plants can continuously serve as a source of biologically active raw materials for a long time. Despite the acute need for medicinal plant raw materials in Ukraine, the land allocated for the cultivation of valuable medicinal plants remains limited. The key to effective use of medicinal plants is to assess their resources in a specific area and analyze the ecological characteristics of species at the population level to ensure sustainable use. The protection

of medicinal plants should be comprehensive, covering a variety of interrelated actions. Such protection will be effective if harvesting is conducted rationally, plants are introduced into culture and ecologically clean technologies are used for their cultivation, which will allow obtaining high and constant yields of high-quality phytoraw materials.

In the context of sustainable development, the importance of the organization of ecologically clean production of medicinal plants becomes key to the development of the domestic pharmaceutical industry, especially in the aspects of import substitution, increasing employment of the population and improving its well-being. The main focus in the development of the export and import of medicinal plants should be focused on ensuring the country's security in the field of availability of herbal medicines for citizens. To attract investments from Ukrainian and foreign investors, it is important to create a favorable investment environment in the country, simplify the regulatory framework in accordance with agreements with the European Union and adapt it to the requirements of the European Green Course, taking into account global trends and international experience in this area. In this aspect, in modern market conditions, where competition is taking on ever sharper forms, the key factor of economic growth is the expansion of production and sales of pharmaceutical products with a high level of processing, which contributes to the increase of state budget revenues. An important problem for the development of agriculture is the need to meet the long-term environmental needs of society, including the demand for products that are environmentally safe and reducing the negative impact of humans on nature. A key aspect of environmental needs is providing the population with access to safe food to support health.

Regarding the market of medicinal plants, which faced certain challenges, in particular due to the COVID-19 pandemic in 2020, when the demand for some types of medicinal raw materials experienced a significant decline. This has led to lower prices for plants such as wormwood, nettle, St. John's wort, mint, lemon balm and lavender. At

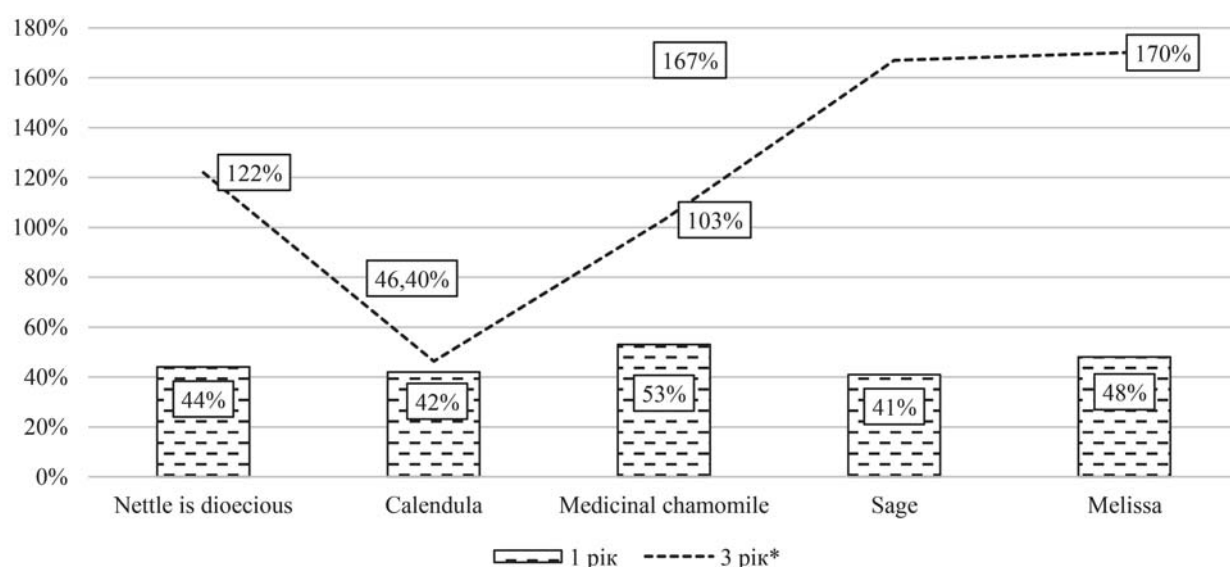


Fig. 1. General indicators of profitability of some types of medicinal plants

Source: built by the author based on data [9].

the same time, immune-stimulating plants such as echinacea, immortelle, elderberry flowers and berries, and rose hips were in high demand as consumers actively sought out immune-boosting products. On the Ukrainian market, the most common medicinal crops are chamomile, calendula, mint, lemon balm, valerian, sage, rose hip and lavender. Their popularity is due to high demand in pharmaceuticals, traditional medicine, cosmetology and the food industry. These plants have pronounced medicinal properties, which are confirmed by scientific research, and are used for the production of a wide range of health products.

The popularity of these medicinal plants on the Ukrainian market is largely due to their adaptability to local growing conditions, which makes growing economically profitable for farmers. In addition, the trend towards natural and organic products worldwide is increasing the demand for these plants, positioning Ukraine in the international market thanks to its fertile lands and favorable climate. The development of this sector not only supports the local economy by creating jobs and increasing exports, but also contributes to the global supply of essential medicinal and aromatic plants. As for individual medicinal plants, specific indicators of profitability look as follows (Fig. 1).

Achieving a high level of economic benefit from the cultivation of medicinal plants is quite a challenging task due to a number of unique difficulties that accompany this process. It is difficult to ensure the production of plant raw materials with appropriate characteristics, quality and in the required volume. Yields often fluctuate from year to year due to climate change. Environmental pollution can cause the accumulation of unwanted or even harmful substances in plants. In addition, one of the obstacles to the development of the field of medicinal plants and the reason for the reluctance of large agricultural producers to engage in this type of activity is the significant need for labor for crop cultivation. This need for manual labor to harvest and process medicinal plants significantly increases production costs, making the business less attractive to farmers seeking to maximize efficiency and minimize costs. The lack of highly efficient equipment specialized to mechanize the processes of collection and primary processing of medicinal plants is also a critical issue holding back the scaling of the industry. Therefore, innovations in agricultural technologies and the development of new mechanization methods can become key factors that will help to overcome these barriers, reduce the dependence on manual labor and make the cultivation of medicinal plants more economically profitable for the agro-industrial sector.

It is difficult to accurately determine the amount of medicinal plant production in 2022 due to the impact of full-scale military aggression by Russia, which caused significant damage to the ecosystems of Ukraine, estimated at approximately \$1 billion. Part of the land that could be used for the cultivation of medicinal plants is now unusable due to contamination with toxic metals and the destruction of fertile soil layers.

With regard to marketing strategies, it is necessary to pay attention to several key aspects for their further development:

Changes in consumer incomes require revision of the price policy so that it corresponds to the new economic realities;

The role of social networks as product distribution channels is gaining particular importance;

It is important to focus on the development of small businesses, such as farms and cooperatives, instead of the globalization of production;

Ensuring product quality control and protecting consumer rights are critical elements for maintaining trust.

It is worth noting that the market for medicinal herbs is characterized by a lack of stability, with sales that can both rise and fall suddenly. Some plants such as calendula, chamomile, mint, lemon balm, valerian, sage, rosehip, lavender and licorice remain in constant demand. During cultivation, climatic features must be taken into account.

Regarding sales channels, products can be offered both directly to manufacturers and through private individuals or wholesale buyers. Although the price may be lower in the latter option, it allows you to sell large volumes of goods. The highest prices are offered by direct manufacturers, which include companies in the cosmetic, pharmaceutical, perfume industry, and tea manufacturers. Products can also be sold through stores, outlets and social networks, where a wide range is important. There is practically no competition in the market of medicinal plants, and the need for herbs is met by only 60%.

The development of the medicinal plant market in today's environment is characterized by several key trends that reflect the growing demand for natural and organic products in health and well-being. This trend is driven by increasing consumer awareness of the benefits of natural ingredients and their potential health benefits, as well as concerns about the side effects of synthetic drugs.

First of all, there is an intensification of scientific research in the field of phytotherapy, which contributes to a better understanding of the mechanisms of action of medicinal plants and the discovery of new active substances. This, in turn, leads to an expansion of the assortment of herbal preparations, an increase in their effectiveness and safety.

In addition, there is a trend in the market towards certification and standardization of medicinal plants and products made from them. This allows consumers to be sure of the high quality of products and their compliance with international standards.

There is also a growing interest in the cultivation of medicinal plants as an alternative source of income for farmers, especially in the conditions of organic farming. This not only contributes to increasing biodiversity and preserving ecosystems, but also opens up new economic prospects for agricultural producers.

An important role in the development of the market is also played by the growth of online trade, which makes medicinal plants and products based on them more accessible to a wide range of consumers. Digitization allows consumers to easily find information about products, their properties and methods of application.

CONCLUSIONS

The further development of this industry will depend on the ability to adapt to changing market conditions, taking into account environmental aspects and ensuring the sustainable use of natural resources, while satisfying the growing demand for natural and safe health products.

Cultivation of medicinal plants should be considered suitable for small businesses, particularly for farmers and households, with the key being the creation of cooperatives based on the principle of demand. The main advantage of agricultural and forestry cooperatives is the joint use of the added value chain, which allows you to receive profits directly. The creation of cooperatives that are able to collect large batches of products for supply to processing companies is important. State support for the development of these value-added chains in the field of medicinal plants is critical.

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