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Issues of Development of the Pharmaceutical Industry on the Basis of Improving the Cultivation of Medicinal Plants

Ergashev Rakhmatulla Khidirovich [1]

Khujakulova Nigora Rustamovna [2]

Khujakulov Uktam Rustam ugli [3]

Abstract

Due to the limited reserves of naturally growing medicinal plants, proposals and recommendations have been developed to determine the demand of pharmaceutical companies for raw materials for medicinal plants and the use of new technologies in the cultivation of medicinal plants on specialized farms, forests, farms and other forms of ownership.

Keywords: medicinal plants, pharmaceuticals, industry, economics, export, economic efficiency, medicinal plant raw materials, medicinal plants in nature

[1] Professor, DSc in economics at Karshi engineering-economics institute, Karshi city, Uzbekistan

[2] Karshi Engineering and Economic Institute, PhD student

[3] Karshi Engineering and Economic Institute, assistant

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Introduction

Since ancient times, mankind has used plants as a means of healing. Information about medicinal plants has been passed down from generation to generation, from tribe to tribe only orally. After the establishment of trade and other relations between the countries, the range of medicinal plant products in these countries increased due to the import of medicinal plants from other countries. After the appearance of the record, information about medicinal plants began to spread in writing. Since ancient times, people have known the healing and invigorating properties of various herbs and have used this knowledge in the treatment of various ailments. Among them you can find medicinal ingredients made from various herbs that have not lost their value so far and are used in practice.

Traditional medicine in the health care system is already playing an important role in a number of countries around the world, especially in Asian countries. Today, more than a thousand of 12,000 species of medicinal plants in the world, and 112 out of 1,200 species of medicinal plants in our country are used in the pharmaceutical industry. Uzbekistan has a unique historical place and prestige among the countries of the world in the use of medicinal plants. Our ancestor Abu Ali ibn Sina proved the effectiveness of the practical use of medicinal plants in medicine. His unique works have been recognized by scholars around the world and are still used today.

The literature review. The cultivation of medicinal plants and its role and importance in the development of the economy have been in the spotlight of scientists around the world and in our country. Assessment of the current state of the resources of the most important medicinal and food plants in Russia is carried out by their biological properties of raw materials, methods of reproduction, collection, drying and storage, and developed a methodological manual on plant pharmacology. While the technology of growing medicinal plants in the Kaliningrad region was developed by I.N.Voloshina, E.S.Ronjina, the main methods of growing nutmeg sage for the conditions of Moldova were studied by O.T.Gavshina. A.F. Gammerman's research covers the botanical description, biological and medicinal properties, ecology, and geography of wild medicinal, essential oil, and fragrant plants. "Sudak forestry and hunting in Crimea" is mentioned in the work of L.Ya. Garkusha, AA Sverbilova [1].

In her scientific research NI Kuznetsova shows the botanical, morphological, pharmacological properties, the importance of reserves and resources for production, ways of using medicinal plants, their level of demand, taking into account the formal and informal norms of medicinal plants, but the physical and does not include geographical conditions. In addition, the proposed classification is aimed at solving pharmacological problems, and its application is especially important in terms of state regulation of the production of medicinal plant raw materials. All of the above considerations create the necessary conditions for the study of the properties and classification groups of medicinal plant raw materials [2].

The study of flora in Central Asia dates back to antiquity. Abu Ali ibn Sina, the Sultan of Medicine, published his world-famous 5-volume "Laws of Medicine" (Kitab al-Qanun fit-tibb), as well as "On the Sachratki Plant" ("Fil-hindubo"), "Medicines" (" Al-Adwiyat al-Kalbiyya ") states that more than 1,400 of the 2,600 medicines mentioned in his works are made from medicinal plants.

Scientific works of AS Yuldashev, MI Ikramov and VA Tileumuvatova are devoted to the distribution of medicinal plants in Uzbekistan, including Karakalpakstan and their raw material reserves [3].

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Research methodology. As a result of our research, the issues of further development of cultivation and processing of medicinal plants in agriculture have been studied, and scientific conclusions and proposals for the further development of the introduction of innovative technologies in the cultivation and processing of medicinal plants in agriculture have been developed. Methods such as abstract thinking, logical approach, comparative analysis were widely used in the research process.

Analysis and results. Today, the development of the scientific basis for the cultivation of medicinal plants, technologies for deep processing of plant materials, as well as the study of biodiversity and strengthening the protection of endangered wild medicinal plants, as well as their restoration through the construction of natural plantations are urgent issues. . The cultivation, protection, and rational use of medicinal plants require the collaboration of many specialists, including botanists, pharmacologists, chemists, biochemists, technologists, source scientists, and others. According to experts, in order to protect the plant world, it is necessary to know it in all respects - structural, functional, taxonomic and evolutionary. All this, of course, is reflected in the training of qualified personnel in modern medicine and folk medicine, as well as in the deep processing of local plants, the creation of a scientific basis for obtaining medicines for the health of our people and the transfer of scientific experience to pharmaceutical free economic zones. These regulate the opportunities of science, business, folk medicine, pharmaceutical production related to the protection and use of valuable medicinal plants of our country.

Medicinal plants grown in irrigated areas are very different from wild-grown medicinal plants, i.e. there are no foreign plant mixtures in the medicinal plant product grown. Medicinal plants grown on the basis of agronomic rules are rich in fertile and biologically active substances [6]. In general, one of the main tasks of the agricultural sciences is to fully and continuously meet the needs of the pharmaceutical industry with raw materials for medicinal plants, as well as their cultivation to create a raw material base of medicinal plants, as well as the development of medicinal plants in the country.

Today, 148 enterprises of the country produce more than 2,000 types of medicines, which is more than 55% of the market share. These drugs fall into 35 pharmacological groups and are used in 28 areas of medicine. 6300 types of 8500 drugs are imported. Of the 350 medicinal plants used in international medical practice, 71 species are grown on industrial plantations in the country [4].

We can get acquainted with the information on the cultivation and sale of the medicinal plant licorice below (Table 1) [5].

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Table 1 The state of cultivation and sale of licorice in the Republic in 2018[1]

№	Name of forestry	Quantity of raw materials sold		Name of the purchased enterprises
		Quantity (tons)	Amount (thousand soums)	
Shirinmiya				
1.	Taxtakupir State forestry	15,0	9000,0	SP OOO Lenekst Extract,
2.	Nukus Special State Forestry	54,0	5400,0	Daeyungmedikal LLC
3.	Chimbay State Forestry	50,8	27400,0	BIO LIQUORICE EXTRACT
4.	Khujayli state forestry	160,0	424500,0	Shifobaxsh DO'EQIM Xavai LLC
5.	Ellikkala State Forestry	24,0	16500,0	Boburjon LLC
6.	Karauzak State Forestry	95,6	95600,0	SP OOO Lanekst Extract,
7.	Muynak State Forestry	38,5	38515,0	SP OOO Nukus Likorise SP OOO Lanekst extrakt
8.	Kazakhdarya State Forestry	15,0	15000,0	BIO LIQUORICE EXTRACT
9.	Bekabad State Forestry	6,0	600,0	Lakkor Intennatsional MChJ

The share of foreign partners is 35.7% of the capital of pharmaceutical companies, and the share of local participants is 64.3%. We can also see this in the example of the sweet medicinal plant shown in the table above, where the main consumer of medicinal plants grown in our country are pharmaceutical companies [4].

The nature of Kashkadarya region, especially the mountainous and foothill areas, is rich and varied according to the favorable climatic conditions. According to preliminary estimates, there are more than 120 species of plants used or recommended in scientific medicine, and more than 1,000 species of plants used in folk medicine [4]. However, currently there are no more than 40 species of medicinal plants officially used as raw materials.

Today in Kashkadarya region there are 8 forestries in the system of regional forestry management. A total of about 50 species of medicinal plants are grown in these forests.

[1] Source. Prepared by the author on the basis of data from the Kashkadarya Regional State Committee for Forestry.

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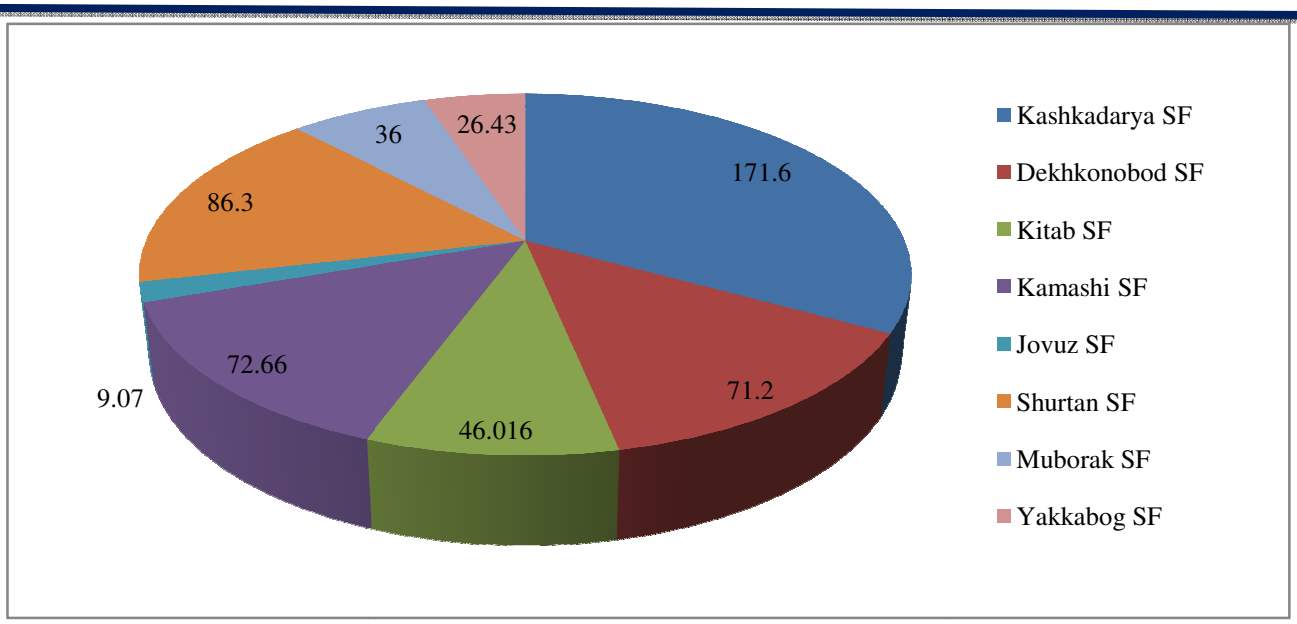

Figure 1. Information on medicinal plants grown in forestry in the system of forestry management of Kashkadarya region in 2018 (in tons)

As can be seen from the picture above, while the cultivation of medicinal plants in Kashkadarya and Dehkanabad SMEs is satisfactory, the condition of medicinal plants in Jovuz, Yakkabag and Mubarek SMEs is not good. This will have a negative impact not only on the region, but also on the pharmaceutical industry of the country.

Current research and analysis of the cultivation of medicinal plants shows that the existing opportunities in this area are not used enough, not only in our region but throughout the country.

Especially in the current era of viral and infectious diseases around the world, the need for natural medicines made from plant raw materials and harmless to the human body, boosting human immunity is growing day by day. This situation requires a wider use of medicinal plants. In addition, the cultivation of medicinal plants is a good source of income. The financial difference between the sale of cultivated medicinal plants as a raw material and its processing and delivery to the consumer in the form of a finished product can be seen in the example of chamomile [6].

Today, a kilogram of dried chamomile flowers can be sold to processors for 25-35 thousand soums. However, in pharmacies, the sale price of chamomile in small 2-gram bags in a cardboard box with ten pieces is 5-6 thousand soums. The cost of 1 kg of chamomile packaged in such packages is 250-300 thousand soums. It can be seen that the difference between the price of a product sold as a raw material and a processed, directly consumed product is ten times higher. Experiments have shown that for cultivation of 1 hectare of valerian root in culture 11 mln. 50 million soums were spent. At the same time, the net profit is 39 mln. soums. 45 million somoni will be allocated for the cultivation of Tajik kovra. 63 million soums were spent. soums of income. Net profit was $ 18 million. soums. Kovrak juice is processed into semi-finished products, as well as processed anise root extract in the form of semi-finished products can be exported up to 180 mln.. As can be seen, medicinal plants are not only medicinal, but also economically beneficial [7].

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Table 2 Status of preparation and sale of raw chamomile in 2018 in the state forestry of the Kashkadarya region[2]

№	Name of state forestry	Quantity of preparation (tons)		From that				Total amount of raw materials sold		Including							
		Plan	In actual	Culturally		Naturally		Quantity, in tonns	Sums, in thousand	To "Uzpharm Sanoat" enterprises		To the enterprises of JSC "Dori-Darmon"		To the enterprises of the Ministry of Health		To other enterprises	
				plan	in actual	plan	in actual			tons	soums	tons	soums	tons	soums	tons	soums
1.	In the Kashkadarya region	8,8	4,2	8,8	4,2			2,9	4700							2,9	4700
2.	Kashkadarya SF	2,0	2,0	2,0	2,0			2	4700							2	4700
3.	Dekhkonobod SF		1,76		1,76			0,5	1500							0,5	1500
4.	Kitab SF	2,0		2,0													
5.	Kamashi SF	0,6	0,20	0,6	0,2			0,2	800			0,2	800				
6.	Jovuz SF	0,6		0,6													
7.	Shurtan SF	1,2	0,2	1,2	0,2			0,2	4200			0,2	4200				
8.	Muborak SF	0,4		0,4													
9.	Yakkabog SF	2,0		2,0													

From the table above, we can see that the situation with the cultivation and sale of medicinal plants in our region is not as planned in the example of a single chamomile medicinal plant. For example, Kitab DO'X, Jovuz DO'X, Muborak DO'X and Yakkabog DO'X did not fulfill the planned work.

The rapid development of the pharmaceutical industry in developed countries, including the Republic of Uzbekistan, has led to a sharp increase in demand for medicinal plant raw materials. Insufficient stocks of naturally growing medicinal plants show that the pharmaceutical industry's demand for medicinal plant raw materials can be met only through the cultivation of these plants [8].

Thus, effective cultivation of medicinal plants will affect the formation of the market of

[2] Source. Prepared by the author on the basis of data from the Kashkadarya Regional State Committee for Forestry

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medicinal plant raw materials, protect the interests of local producers and improve the supply of medicines to the population and health facilities, as well as the organization of production of medicinal plants in a market economy. regulation and rational use of not only natural resources, but also the creation of specialized organizations for the cultivation of medicinal plants, protection and compliance with the production of environmentally friendly medicinal plant raw materials.

Conclusion and suggestions. The creation of a favorable agribusiness environment for the protection of medicinal plants in nature, the further development of plantation cultivation and processing, innovative ideas based on strengthening the export potential of the industry are important.

From this it is clear that the demand for medicines made from plant raw materials is growing day by day. This situation requires a wider use of medicinal plants. In this case, it is advisable to implement the following recommendations:

- Participate in the formation and coordination of programs for the integrated development of cultivation and processing of medicinal plants, the implementation of a unified scientific and technical, technological, investment and export policy in this area;
- Gradual increase in the volume of cultivation of medicinal plants through the establishment of special plantations in areas suitable for their growth, including through the introduction of intensive cultivation technologies and the rational use of natural growth areas;
- effective organization of interaction of business entities with public administration bodies, local public authorities at all levels in the framework of the establishment of plantations, deep processing of medicinal plants on an industrial basis and the production of export-oriented products with high added value;
- Coordination of implementation of investment programs and projects in the field of cultivation and processing of medicinal plants.

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