International Journal of Management, IT & Engineering
Vol. 12 Issue 3, March 2022
ISSN: 2249-0558 Impact Factor: 7.119
Journal Homepage: http://www.ijmra.us, Email: editorijmie@gmail.com
Double-Blind Peer Reviewed Refereed Open Access International Journal - Included in the International Serial Directories Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gate as well as in Cabell's Directories of Publishing Opportunities, U.S.A

THE ROLE AND IMPORTANCE OF MEDICINAL PLANTS IN THE DEVELOPMENT OF THE PHARMACEUTICAL INDUSTRY

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Abstract

It is known that about 50-60% of medicines produced in the pharmaceutical industry worldwide are made from medicinal plant raw materials. The rapid development of the pharmaceutical industry in the Republic of Uzbekistan is leading to a sharp increase in demand for medicinal plant raw materials. It should be noted that due to the limited reserves of naturally growing medicinal plants in the country, the demand of pharmaceutical companies for raw materials for medicinal plants can be met mainly through the cultivation of medicinal plants. Currently, medicinal plants are grown in specialized farms, forests, dehkan farms and other forms of ownership in the country. However, because the technologies for growing them are not perfectly developed, they pose some problems that need to be solved and developed. Therefore, one of the urgent tasks is to provide the pharmaceutical industry with quality, abundant, low-cost and environmentally friendly raw materials.

Keywords:
medicinal plants, pharmaceutical, industry, economy, export, economic efficiency

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1. Introduction

From time immemorial, 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 states, the range of medicinal plant products increased in these countries at the expense of medicinal plants imported 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 12,000 species of medicinal plants are used 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.

At present, science and technology are developing rapidly. At the same time, progress is being made in various areas. If we look at history, we will see that even among primitive

people there were intelligent physicians of their time, that is, among them the life experience of the disease was more instructive to others. Later, over time, the medicinal properties of plants were determined, and the methods of treatment with medicinal herbs were improved. Nowadays, as the demand for medicines made from natural plants is growing day by day, attention is also paid to the development of the pharmaceutical industry.

As the demand for medicinal plant products grows, so does the production of their raw materials. This, in turn, can lead to a decrease in the number of medicinal plants in the growing area, resulting in a sharp restriction or complete cessation of their preparation of raw materials. With this in mind, the cultivation of medicinal plants in the conditions of typical irrigated gray soils, as well as the study of the effect of fertilizers on their raw materials and quality is one of the important issues of our time.

Our country is rich in medicinal plants. Of the more than 4,300 plants belonging to the local flora, 750 species are medicinal, of which 112 species are registered for use in scientific medicine, of which 70 species are actively used in the pharmaceutical industry. In 2019, $ 48 million worth of processed medicinal plant products were exported. In this regard, the Resolution of the President of the Republic of Uzbekistan dated April 10, 2020 "On measures to protect, cultivate, process and rationally use available resources of wild-growing medicinal plants" is very relevant [1]. This Resolution identifies the need for further development of cultivation and processing of medicinal plants, increasing the export potential of the industry, as well as the integration of education, science and production processes in this area. From May 1, 2020, the creation of clusters for the cultivation, storage, primary or deep processing of medicinal plants, as well as the specialization of areas for the cultivation of medicinal plants is scheduled. The cluster system proposed by the head of our state Sh.M.Mirziyoev in the current era of globalization and on the basis of market economy requirements, full and effective use of every opportunity to supply competitive products to the world market in the agricultural sector, including cotton processing as a finished product It should be noted that a new cluster system has been created in the agricultural sector, dramatically increasing the production capacity of light industry products, food industry products (cottonseed oil and cotton products) and feed for livestock (various feeds, premixes) [1-2]. The tasks set for the clusters will enable the clusters to create, produce and replace drugs imported and used in various folk medicine, health care through the cultivation, storage, primary and deep processing of medicinal plants. . The resolution sets tasks for clusters for the sale of finished products from June 1 this year, which will create a new industry called "Medicinal Plants".

2. Materials and methods

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.

3. Results and discussion

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, creating a scientific basis for obtaining medicines for the health of our people and transferring 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 [14].

We can get acquainted with the information on the cultivation and sale of licorice medicinal plant below (Table 1) [12].

Table 1

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

т/р	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 [14].

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.

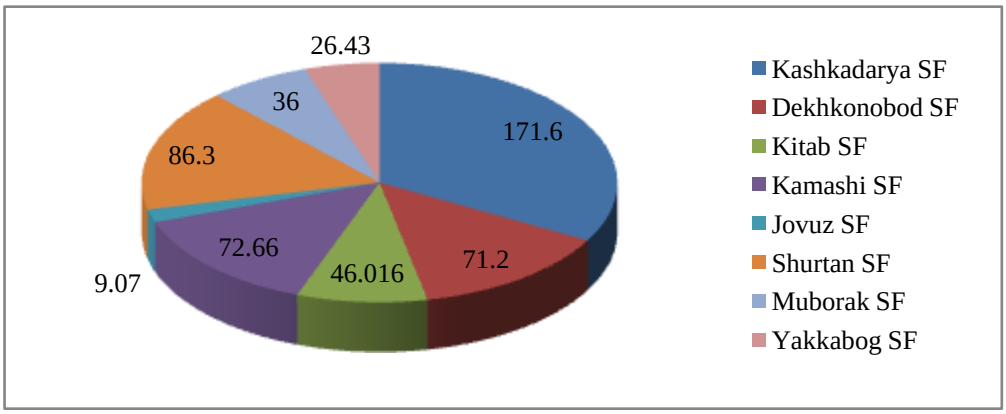

Figure 1. Information on medicinal plants grown in forestry in the system of forestry management of Kashkadarya region in 2018 (in tons)

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 our region, but also on the pharmaceutical industry of our country.

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

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 [3].

Today, one 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. soums of income. 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 licorice root extract in the form of semi-finished products for 180 mln. can be exported up to $. As can be seen, medicinal plants are not only medicinal, but also economically beneficial [9].

Table 2

Status of preparation and sale of raw chamomile in 2018 in the state forestry of the Kashkadarya region *

№	Name of state forestry	Quantity of preparation (tons)		From that				Total amount of raw materials sold		Including							
		Plam	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 state forestry, Jovuz state forestry, Muborak state forestry and Yakkabog state forestry 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 [11].

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

4. Conclusion

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

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

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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