BIOECOLOGICAL AND MORPHOPHYSIOLOGICAL CHARACTERISTICS OF SALVIA OFFICINALIS L

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Abstract. The bioecological and morphophysiological properties of the medicinal mavrak were studied in the soil and climate conditions of Khorezm region.

Key words: medicinal plant, growth, development, number of seeds, fertility, environmental factors**.**

Today, folk medicine and modern medicine have many new drugs and treatment methods, but in most cases, the types of drugs we use are chemical products, and in turn, life proves that they serve as a means of causing various side effects, that is, additional diseases. In such a situation, often, both scientific medical workers and the population are paying more attention to bioactive substances obtained from plants and natural products when using drugs.

Tincture, decoction, tincture, extract or other preparations are usually prepared from medicinal plants for the purpose of treating diseases. Medicinal products are extracted from most of them with the help of water, alcohol of various levels and other solvents. As a result, a drug consisting of a set of biologically active substances is formed.

PQ4901 of the President of the Republic of Uzbekistan dated November 26, 2020 On measures to expand the scope of scientific research on the development of cultivation and processing of medicinal plants, establishment of their seed production [1], The research of this article serves to a certain extent in the implementation of the tasks defined in the decisions of May 20, 2022 PQ251 "On measures to organize their wide use in the cultivation and processing and treatment of medicinal plants" and other regulatory legal documents related to this field[2].

The hanging feature of Salvia officinalis L. as a plant in Khorezm conditions indicates that it has a wide ecological range.

Plants of the Salvia L. family belong to the Lamiaceae family, which is very common in the world. About 20 species have been identified in Uzbekistan. Dozens of species in the world are used in folk medicine against various diseases. In Latin, Salvara means to heal. Most types of the category are used for treatment purposes. The

chemical composition of quinones, essential oils, palmitin, palmitoolein, stearin, olein, linol, linolenes and a number of other natural compounds have been determined[4]. Therefore, its wide distribution, widespread use, adaptation to different regions and rich chemical composition give hope to organize this object and gain innovation.

Growth characteristics of medicinal salvia. As a result of the hanging development of the seedling, young branches grow on it, and they, in turn, begin to branch, as a result of such continuous branching, the branches of the plant are formed. The branch consists of three parts, the place where the leaf is attached is called the branch joint, the space between two joints, the angle formed between the leaf and the stem in the branch joint is called the leaf axil [1].

In the research, the study of the seed fertility of medicinal salvia officinales was carried out in two conditions: 1. Seed fertility in room conditions. 2. Seed fertility in field conditions.

In the environment of room conditions, 20 salvia seeds were planted on the wet paper on a Petri plate. Studies were conducted in February, March and April in 3 different periods. (Table 1.1)

Table 1.1

Seed quality of Salvia officinalis L., %, (February, room conditions)

№	Observed days									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Germinated seeds. %	**3**	**7**	**10**	**15**	**22**	**10**	**9**	**7**	**4**	**1**

In February, seeds began to germinate in 5 days in room conditions. Seed germination decreased by 2% on the day of seed germination, maximum germination in 10 days (89%) and after 15 days seed germination decreased (1%). Thus, a total of 89% of seeds germinated in room conditions. The germination energy of the seed was 15.7.

The value of introduced plants is determined by the quality of the wood, the level of decoration, sanitary-hygienic, biological properties, as well as its resistance to heat and cold. For this reason, the attitude of plants to ecological factors in different climatic conditions has been widely studied. According to scientific sources, frost resistance of plants is a feature strengthened by the genetic characteristics of the species. The plant's resistance to cold or heat is usually more pronounced in extreme conditions. A number of studies show that the resistance of plants to cold or heat depends on its age. Cold tolerance is related to the geographical origin of plants. Also, plants with a wide natural area are quickly adaptable and resistant to environmental factors. Winter warmth, which is often repeated in Khorezm conditions, and evening cold in spring are a serious obstacle to acclimatization of plants.

Even in irrigated field conditions, seed germination rates were relatively consistent with room conditions. The germination rate of seeds planted in irrigated soil

in the appropriate periods was 45%, 39% and 35%, respectively. The low fertility of seeds in field conditions compared to room conditions can be explained by the influence of soil and climate. As noted, air and soil temperature change sharply during the day. The average air temperature during the day is 30-350C, and in the evening it reaches 12-180C. This causes inconvenience for the seed to collect the necessary temperature for germination in a short time and for the germination of the seed.

The growth of medicinal salvia root was checked every 5 days. 5 days after seed germination, the main root length is 1.5 cm and diameter is 0.2 cm, and the seed coat is 0.3 cm and 0.2 cm, the hypocotyl is also 0.3 cm and 0.2 cm, and 0.2 cm and 0.2 cm. was cm. Rapid growth of the root system was detected 20 days after seed germination.

Medicinal salvia phenology. Seed germination in field conditions was studied in two different periods: in autumn (20.10.2018) and in spring (25.03.2019). These studies showed that seeds were harvested in both variants, but when planted in the fall, the percentage of seed germination was higher than in the spring-planted variant (45-55 % and 25-35 %, respectively). Different numbers of flowers were observed in plants of different ages and conditions.

(Table 1.2)

He grew up at different ages and in different conditions The number of vegetative and generative shoots in 1-year branches of the plant age (years)	Average stem diameter (mm)	Average stem length (cm)	Average stem diameter (mm)	Number of generative shoots (per 1m branch) Number of vegetative shoots (per 1 m branch)
5	In soil conditions that are not regularly irrigated.	87,3+1,9	8,0+0,09	6,3+0,55 38,7+0,71
6		74,0+0,9	8,1+0,07	15,9+1,04 9,9+0,54
7		74,1+0,8	8,2+0,32	22,8+0,78 8,1+0,35
8		84,6+2,5	8,3+0,31	48,5+0,88 5,5+0,42
9		67,9+2,8	8,6+0,22	51,3+0,94 3,9+0,23
10		62,7+2,6	8,6+0,25	98,3+1,08 6,9+0,56
10	In permanently irrigated soil conditions.	66,0+1,8	8,8+0,16	120,8+0,8 18,0+0,3

Phenological observations are important not only in determining the transition periods of different phases, but also in determining the durability, productivity, decorativeness of plants, as well as the rhythm of life processes in them. Species originating from different geographical areas begin their growing season in a certain

sequence, which is preserved regardless of how spring comes. While temperature is the main factor, this process is controlled by genotypic properties strengthened in the natural range of the plant. The seasonal development of the plant reflects the historical development of the species under the influence of the external environment. Annual meteorological factors (heat, precipitation, relative humidity of the atmosphere, etc.) have little effect on the seasonal development of the plant. When the conditions of introduction correspond to the conditions of the plant in its natural area, it is noted that they are well acclimatized. Different plants start spring vegetation at different times.

Medicinal properties of medicinal mavrak. The water obtained from fresh fruits is prescribed for stomach and duodenal ulcers, hypoacid gastritis, spastic collitis, mixed with honey in diseases of the upper respiratory tract. In cases of diabetes, rheumatism, gout, tuberculosis of the lymph glands, cystitis, kidney-stone disease, colds, as well as diuretics, it is prescribed to brew blackberry leaves and drink them instead of tea. If you drink medicinal mavrak with its buds and fruits in musallas, it will be a surgi. If it is sprinkled with sugar and eaten, a person's mind will be opened and his soul will be refreshed. [2,3]

A decoction made from medicinal marigold flowers is also applied to liver diseases, hemorrhoids, women's diseases. In medicine, it has been found that blackberry leaves and fruits have an anti-inflammatory, antipyretic, diuretic, laxative-stopping effect (because they contain an astringent), as well as their pectins form mucus and replace suppositories. Tincture made from medicinal leaves helps to remove excess uranium and oxalic acids from the body. Medicinal juice revives the work of the cardiovascular system, the gastrointestinal tract, increases the body's protective forces, reduces the permeability of capillaries, and slows down the excitation processes in the central nervous system [6].

Medicinal leaves and fruits of mavrak are included in various aggregates brewed as tea. Medicinal mavrak is often prescribed to people who recover from peptic ulcer disease during various infectious diseases, hypoacid gastritis, hypertension, and it is recommended to wash the fruits and eat them at a rate of 100 gm [3]. Children suffering from skin tuberculosis, tuberculosis and diates are baptized with a decoction made from blackberry leaves and its young branches. Medicinal fruits or fruit decoction are useful for heart, kidney, and gastrointestinal diseases and are a sweating and diuretic factor [5].

A tincture made from the leaves of medicinal mavrak removes urinary and kidney stones. In medicine, blackberry fruit and leaves are used in the treatment of eczema, joint pain, boils, kidney stones, cystitis, and colds. When vitamin C is lacking, it is regularly consumed in sinus, anemia enterontolitis. Patients suffering from hypertensive disease are recommended to eat 200-250 g of freshly cut fruit of black medicinal mavrak every day, to regularly eat its fruit and juice in case of anemia.

Patients with diabetes are recommended to eat as follows: put 1 tablespoon (20 g) of dried black currant leaves in 1 glass of boiling water and let it rest for 15-20 minutes and eat it 3-4 times a day before meals.

REFERENCES:

1. S.S.Sahobiddinov. O□simliklar sistematikasi. Toshkent: O□qituvchi. 1996, 253- 254 b.

2. Xolmatov X.X., Ahmedov O'.A. Farmakognoziya Toshkent: Ibn Sino nomidagi NMB, 1995. 218b.

3. Растительные ресурсы СССР: Цветковые растения, их химический состав, использование: Семейство(Lamiaceae). - Спб. : Наука, 1993, т.2, 628с.

4. Байкова Е.В., Королюк Е.А., Компонентный состав эфирных масел некоторых видов рода Salvia L.,выращенных в условиях Новосибирска (Россия) // Химия растительного сырья, 2002. № 1.С. 3742.

5. Ascensao L., Glandular trichomes on vegetative and reproductive organs of Leonotis leonurus (Lamiaceae) //Ann. Bot., 1995. V. 75. N. 6. P. 619-626.

6. Nakiboglu M. The classification of the Salvia L. (Labiatae) species distributed in West Anatolia according tophenolic compounds // Turk. J. Bot., 2002. V. 26. P. 103-108.