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BIOECOLOGICAL PROPERTIES OF DRUG MAVRAK (SALVIA OFFICINALIS L.) IN TERMIZ CONDITIONS

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Abstract:
This article is about the bioecological properties of the medicinal plant (Salvia officinalis L.) in the conditions of Termez. Salvia L. belongs to the most widespread family in the world. Its chemical composition includes quinones, essential oils, fatty acids, palmitin, palmitoolein, stearin, olein, linoleic, linolenes and a number of other natural compounds.

Keywords: Medicinal mavrak, Labguldosh, boimorphological, phenological, bioecological and agrotechnical.

INTRODUCTION:

Salvia L. belongs to the most widespread family in the world.

About 16 species have been identified in Uzbekistan. Dozens of species are used in folk medicine around the world for various diseases. In Latin, "Salvara" means to heal. Most species of the category are used for therapeutic purposes[2]. This means that its wide distribution, wide application, adaptability to different regions and rich chemical composition give hope for the study and innovation of this object.

RESEARCH MATERIAL AND METHODS:

The abundance of plant species poses certain difficulties in classifying them. For this reason, the issue of classification on the basis of chemical composition is also relevant, as such work has not yet been done[1].

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Jadval 1. Mavrak turkumi o‘simliklarining kimyoviy tarkibiga qarab sinflash

№	O’simlik nomi	Xinon	Efir moyi	Alkalod	Flavonod	Steroid	Oshlovci modda	Diterpenod	Uglevod	Triterped	Saponin	O‘simlik moyi	Kumarin
1.	Temir tukli mavrak	+	+										
2.	Efiopiya mavragi	+	+	+	+	+	+	+					
3.	Avstriya mavragi	+	+					+				+	
4.	Egilgan tishli mavrak	+			+								
5.	Oq (oqargan) mavrak	+	+										
6.	Shoxli mavrak	+	+									+	
7.	Cho‘l mavragi	+	+	+	+							+	
8.	Butasimon mavrak	+	+										
9.	Fomyon mavrvgi	+			+								
10.	Garedji mavragi	+	+										
11.	Yalong‘och poyali mavrak	+			+							+	
12.	Temirli mavrak	+	+		+	+	+		+	+		+	
13.	Gormin mavragi	+	+							+		+	
14.	Kopetdog‘ mavragi	+			+								
15.	Kuznetsov mavragi	+										+	
16.	Ko’kish rangli mavrak	+		+	+		+				+		+
17.	Naqshli mavrak	+	+		+					+		+	
18.	Uzun trupkali mavrak	+	+		+							+	+
19.	Kamtarin mavrak	+										+	
20.	Daraxtzor mavragi	+	+			+	+	+				+	
21.	Vaximali mavrak	+	+		+	+		+				+	
22.	Yo‘g‘on boshoqli mavrak	+	+										
23.	Oddiy mavrak				+							+	
24.	Oddiy shalfey	+	+			+	+	+	+			+	
25.	Zarafshon mavragi	+	+	+	+		+		+		+		+

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Jadval 2. Quyidagi jadvalda Salvia turlari (1-ustun), turning biologik faolligi (2-ustun), tarkibida saqlagan moddalar (3-ustun) keltirilgan.

№	O'simlik nomi	Biologik aktivligi	Kimyoviy tarkibi
1.	Temir tukli mavrak	Xinonlar bakteriotsid xususiyatiga, Efir moyi ekstrakti zamburug'larga qarshi kurashuvchi vosita	Xinonlar, fir moylari
2.	Efiopiya mavragi	Bakteriotsid xususiyatiga,Efir moyi ekstrakti zamburug'larga qarshi kurashuvchi vosita	Alkaloidlar, oshlovchi moddalar, flavonoidlar, diterpenoidlar, xinonlar, efir moylari, steroidlar.
3.	Avstriya mavragi	Ildizinig ekstrakti, protozoy bakteriyalari va zamburug'lariga qarshi kurash vositasi	Xinonlar, efir moylari, diterpenoidlar, o'simlik yog'lari.
4.	Egilgan tishli mavrak	Xinon: tanshinonlar bakterotsid xossaga ega.	Flavnoidlar, Xinonlar
5.	Oq(oqargan) mavrak	Bakterotsid xossaga	Xinonlar, efir moyi
6.	Shoxli mavrak	Bakteriotsid xususiyatiga,Efir moyi ekstrakti zamburug'larga qarshi kurashuvchi vosita	Efir moyi, xinonlar, o'simlik moyi
7.	Cho'l mavragi	Efir moylari antimikotik (Zamburug'larga qarshi) ta'siriga ega. Ildizi va bargidan tayyorlangan qaynatma, damlamalar antibakterial faollikka ega	Organik kislotalar, alkoloidlar, vitaminlar: S,fenol karbon kislotalari, oshlovchi moddalar, flavonoidlar, xinonlar, efir moylari, o'simlik moyi.
8.	Butasimon mavrak	Royleanon antibakterial faollikka ega. Ildizining ekstrakti bakteriastatik xossaga ega	Xinonlar,efir moylari. Flavonoidlar, xinonlar, o'simlik moyi, organikk islotalar.
9.	Garedji mavragi	Bakterotsid xossaga	Xinonlar, efir moylari.
10.	Yalong'och poyali mavrak	Ildizini ekstraktlari, antimikrob faollikka ega	Flavonoidlar, xinonlar, o'simlik moyi.
11.	Temirli mavrak	Soki va ekstrakti yaralarni tuzatuvchi antibakterial va antifungal ta'siriga ega.	Triterpenoidlar, oshlovchi moddalar, flavonoidlar, xinonlar, efir moyi, yuqori alifatik uglevodorodlar, seroidlar: o'simlik moylari.
12.	Gormin mavragi	Antibakterial faollikka ega.	Triterpenoidlar, efir moylari, xinonlar, o'simlik moyi.
13.	Kopetdog' mavragi	Damlamasi va bug'latilgani stenokardiyada	Flavonoidlar, xinonlar, efir moylari
14.	Kuznetsov mavragi		Xinonlar, o'simlik moylari
15.	Ko'kish rangli mavrak	. Tut ipak qurtining yashovchanligini oshiradi	Saponinlar, alkoloidlar, oshlovchi moddalar, kumarinlar, flavonoidlar, saponinlar, xinonlar
16.	Naqshli mavrak		Efir moylari, flavonoidlar, xinonlar, triterpenoidlar, o'simlik yog'i.
17.	Uzun trupkali mavrak	Xinonlar antibakterial faollikka ega. Yer ustki qismida repellentlik xususiyati	Efir moyi, kumarinlar, flavonoidlar, xinonlar.
18.	Kamtarin mavrak		Xinonlar, o'simlik moyi
19.	Daraxtzor mavragi	Xinonlar antibakterial. Ildizining xloroformdagi fraksiyasi antibakterial xossaga. Ekstrakti bakteriostatik xos	Oshlovchi modddalar, antotsianlar, xinonlar, efir moylari, diterpenoidlar, steroidlar, vitaminlar:S,o'simlik moylari.
20.	Vaximali mavrak	. Ildizining ekstrakti bakteriyastatik. Xinonlari antibakterial xossaga ega.	Efir moylari, flavonoidlar, xinonlar, diterpenoid, steroidlar, efir moylari, o'simlik yog'lari

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Medicinal plant is a semi-shrub up to 20-50 cm tall, the stems are numerous, branched, deciduous, four-sided, the lower part is slightly woody. The leaves are simple, elongated, the upper part of the stem is bandless, opposite the stem. The flowers are short-banded, small, forming a spike-shaped inflorescence at the top of the stems and branches[3]. The inflorescence is two-lipped, serrated, the petals are two-lipped, dark purple, the father is two, the mother knot is four-lobed, above. The fruit consists of four nuts. It blooms in June-July. The surface of the plant is used as a raw material. The raw material has an extremely fragrant smell and a bitter, pleasant, slightly crunchy nature. All the organs of the plant contain essential oils[4].

Seed germination is a key indicator of crop area. To this end, our scientific research has studied the methods of propagation from plant seeds. Medicinal mavrak seeds are spherical, 2-2.5 cm in diameter. 1000 seeds weigh 7 g. The fertility of plant seeds was studied in the laboratory, and its fertility was 80-86%.

RESULTS OBTAINED AND THEIR ANALYSIS:

In the study, the study of seed germination in medicinal plants was carried out under two conditions:
1. Seed germination in room conditions.
2. Seed germination in field conditions.

In a room environment, 20 mavrak seeds were planted on paper soaked in Petri dishes. The studies were conducted in March and April at 2 different intervals. In March, the seeds germinated in 5 days at room temperature. Seed germination decreased by 2% on the day of germination, maximum germination at 10 days (89%) and after 15 days (1%). Thus, a total of 89% of the seeds germinated under room conditions. Seed germination energy was 15.7%. In our experimental variants, the seeds were sown in two periods. In the field, the rate of forgetfulness was recorded at 70-80% in both periods. Early spring seeds are sown in late March, when the soil temperature is 12-15 C, row spacing 60-70 cm, depth 2-3 cm. observed. The seeds are round in shape. The petals of the seed pods were short, 0.1-0.3 mm. The main root is 3.5-4 mm long, and the total length of the grass is 1-1.5 cm[6].

Photo: Seeds sown in room conditions in March.

On days 10-12 of the observation, the length of the grass seed leaves was 2-4 m. From the grass period, it was observed that they were covered with hairs. At the same time, the total length of the plant reached 1.0-1.2 cm. When the appearance of the first true leaves was observed on 12-15 days of development, the upper part of the leaf blade was covered with small hairs. The shape of the Chinese leaf is 0.5 mm wide by 0.8 mm long. At this time, the main root is 4.5-5 cm, and the side roots are 0.8-1 cm[5].

The grasses grew slowly and their total length was 3-3.8 cm. In the spring, precipitation caused the formation of clots in the areas where medicinal herbs were collected. In order to get rid of the clumps, the plant spaces were softened, rotten gong was added, and 2-3 plants were left every 20 cm. Observations show that in the first growing year, the length of the main stem of the plant reached 40-48 cm, and the number of leaves reached 20-26. The woodiness of the lower part of the main stem is 3-5 cm, and the number of leaves shed from this place is on average 4-

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6. In the first growing year, the number of first-order branches reached 8-10 and 25-27 cm in length, the number of leaves reached 15-18. The leaf blade was 8-10 cm long, 2-2.8 cm wide, and 5-6.1 cm long. Thus, scientific studies have shown that medicinal mavrak plants grow well in irrigated soils with moderately high mechanical content. Sowing the seeds in autumn and early spring gives good results.

The value of the introduced plants is determined not only by the quality of essential oils, the level of landscape, sanitary and biological properties, but also their resistance to heat and cold. Therefore, the relationship of plants to environmental factors in different climatic conditions has been extensively studied. According to scientific sources, the cold tolerance of plants is a genetic trait of the species. The plant's resistance to cold or heat is usually more pronounced in extreme conditions.

A number of studies have shown that a plant's resistance to cold or heat also depends on its age. Cold tolerance depends on the geographical origin of the plants. Plants with a wide range of natural habitats are also more adaptable and resistant to environmental factors. Frequent winter heat in Termez and cold spring evenings are a serious obstacle to climate change.

Even in irrigated fields, seed germination rates were relatively consistent with room conditions.

CONCLUSION:

The germination rates of seeds sown in irrigated soils in the respective periods were 45%, 39% and 35%, respectively. The low seed germination in field conditions compared to room conditions can be explained by the influence of soil-climate. It is noted that the air and soil temperatures fluctuate sharply during the day. The average daytime temperature is 30-350C, and 12-180C in the evening. This prevents the seed from accumulating the temperature needed for germination in time and prevents the sprout from germinating.

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

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