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VEGETATION PERIOD OF MEDICINAL AMARANTH PLANT MORPHOBIOLOGICAL INDICATORS

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Abstract
This article analyzes the morphobiological indicators of the amaranth plant, which is widely used in scientific medicine, during the vegetation period.

Keywords: Alkaloids, flavonoids, glycosides, essential oils, vitamins, vegetation, morphobiological.

Introduction

Currently, the demand for medicinal plants is increasing as a result of the daily increase in the number of people, and at the same time, the types of diseases that occur in them. It is known that approximately 50% of drugs produced by pharmaceutical companies worldwide are made from raw materials of medicinal plants. The rapid development of the pharmaceutical industry in most countries, including the Republic of Uzbekistan, causes a sharp increase in the demand for raw materials of medicinal plants. It should be noted that due to the limitation of naturally growing medicinal plant reserves, the demand of pharmaceutical industry enterprises for medicinal plant raw materials can be met mainly only by growing medicinal plants.[1].

Many wild and cultivated species of medicinal plants grow, develop and yield in Uzbekistan. They can be used in the fight against a number of diseases. In accordance with this, the production of medicinal raw materials on an industrial scale based on the development of agrotechnics for the cultivation of wild medicinal plants that grow in different soil and climate conditions is the demand of the time.[2,3].

Medicinal plants are evaluated by their presence of chemical substances that have a positive effect on the human body: alkaloids, flavonoids, glycosides, essential oils, vitamins, etc. [4]. The effect of medicinal plants on the body depends on the amount of chemical compounds in their composition. These compounds accumulate in vegetative and generative organs of plants. The necessary parts of the plants for the preparation of medicine are collected at different times. For example, bark, shoots, in early spring; the leaves are taken before or when the plant blooms, when the fruits and seeds are ripe, and the roots and rhizomes are taken in spring or late autumn.[5,6].

Today, medicinal preparations obtained from plants are important in the prevention and treatment of many diseases. For example, cardiovascular, nervous system and nerve diseases, kidney, liver, gastrointestinal tract, pain reliever, etc. Currently, one out of three drugs on the farmers' market is of plant origin. At the same time, the price of drugs

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made from plants is several times cheaper than drugs obtained by artificial or synthetic means. [7,8].

Research object, method and climatic conditions

In order to determine the morphobiological indicators of the medicinal amaranth plant during the vegetation period, we conducted field experiments in the conditions of Andijan region, choosing the medicinal amaranth plant as a research object. The climate of the region is mainly of a sharp continental character and is characterized by a low amount of precipitation. The amount of precipitation is around 300 mm per year. In the autumn, winter and spring months, the air temperature changes sharply and is monitored. In the summer months, it is characterized by very hot temperatures and very little rainfall. At the end of spring, the temperature drops. In April-May, the average temperature is 20-22 C°, in summer it is 28-33 C°, in September it is 16-23 C°. [9].

The soil structure of the experimental site is slightly sandy and has a small amount of saline. Plowing, phosphorus and nitrogen fertilizers are carried out on the experimental site every year. The most convenient time for planting amaranth plant is in the first half of May, it is planted by hand to a depth of 4-5 cm, after that, the practice of watering is carried out in order for the seeds to germinate evenly. During the growing season, depending on the conditions of the seasons, watering 5-6 times, weeding 2-3 times, and after each watering practice, manual loosening of the interstices was carried out.

The obtained results and their analysis

In recent years, the pharmaceutical industry is rapidly developing in our republic, and the demand for medicinal plants is increasing day by day. For this reason, in the process of growing medicinal plants, one of the most important tasks facing specialists is to study the plant first morphologically and then anatomically during the growing season, to determine the cycle of biologically active substances in medicinal plants and to apply them for the pharmaceutical industry is considered to be.

During our experiment, we analyzed the morphobiological indicators of the amaranth plant during the vegetation period (germination, growth, flowering and ripening) (9 variants, 3 repetitions of the experiment) (Table 1).

During our analysis, the average height of the plant in the germination phase of the vegetation period was 5.27 cm, and the average number of leaves was 3.5. In the growth phase, the average height of the plant was 16.2 cm, and the average number of leaves was 3.5 in this period. The average height of the plant in the flowering phase was 1m 12.4 cm, the average number of leaves was 27.2, and the average height of the plant in the ripening phase was 2m 18.2 cm. and at this time the number of leaves of the plant was so great that their number was considered infinite.

Also, during our study of the plant, the plant did not suffer from any diseases, and there were no significant differences between the studied variants and replicates.

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After the beginning of the plant vegetation period, 3 variants were taken from each repetition and fixed in 70% alcohol in order to study the plant anatomically in our further studies.

Table 1:

The name of the phases	Average plant height and average number of leaves	
	Height indicator	The number of leaves
Germination	5.27 cm	3,5
Growth	16.2 cm	3,5
Flowering	1 m 12.4 cm	27,5
Ripe	2 m 18.2 cm	----

Conclusion

In this period, when the demand and need for medicinal plants is increasing, it is urgent to conduct fundamental research on medicinal plants. With that in mind. Anatomical analysis of the stem of the amaranth plant, which is of special importance among medicinal plants due to its medicinal properties in Andijan climate, in different phases of the plant's vegetation period can answer many questions. Based on this information, during our further scientific research, it is important to study the anatomical structure of the stem of the plant in the phases of germination, growth, flowering, ripening, and to analyze the order in which the medicinal properties of the plant change in different phases.

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