BIOECOLOGICAL FEATURES OF MOMORDICA CHARANTIA L. IN THE CONDITIONS OF INTRODUCTION

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БИОЛОГИЧЕСКАЯ ХАРАКТЕРИСТИКА ВИД МОМОРДИСА ЧАРАНТИА Л В УСЛОВИЯХ ИНТРОДУКЦИИ

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Annotation
The raw material resources of naturally growing medicinal plants are also limited, and the study of their protection, bioecological properties, the proper use of raw materials and the development of scientifically based methods of reproduction is one of the urgent problems. Therefore, in this article, a comprehensive analysis of seed germination, phenological properties of the species of medicinal plant Momordica charantia L. in the laboratory.

Аннотация
Природные ресурсы выращивания лекарственных растений также ограничены, и разрабатывается один из наиболее научно обоснованных методов сохранения, изучения их биоэкологических свойств, правильного использования сырья и его воспроизводства. Поэтому в данной статье детально проанализировано плодородие семян и фенологические свойства вид Момордиса чарантиа Л. в лабораторных условиях.

Keywords. curative, introduction, raw materials, ether oil, ontogenesis, phenology, pharmaceuticals, treatment, reserve.

Ключевые слова: лекарство, интродукция, сырье, эфирное масло, онтогенез , Фенология, фармацевтика, лечение, резерв.

Introduction

In recent years, a lot of work has been done to meet the demand for plant raw materials of the pharmaceutical industry in Uzbekistan. Medicinal plants are of great importance in restoring human health. Currently, medicinal plants are widely used in folk medicine and scientific medicine. Supplying the population with medicinal products, the extremely increasing demand for natural medicinal products in the countries of the world increases the need for medicinal and spice plants.

About 4,500 species of tall plants are naturally distributed on the territory of Uzbekistan, and about 1,200 of them have medicinal properties. Currently,
112 types of medicinal plants are allowed to be used in official medicine in our Republic, and 80% of them are naturally growing plants.
In Uzbekistan, research is being carried out on the cultivation of medicinal plants in different soil-climatic conditions, studying their bioecological properties.
Based on these, this article comprehensively analyzed the seed germination and phenological characteristics of medicinal plants Momordica charantia in laboratory conditions.
Object and methods of research.
The research object is Momordica charantia L. belonging to the (Cucurbitaceae) family type.
The main task of the research is to establish bioecological properties and industrial plantations of this medicinal plant in the gray soil of Andijan region, and to create a reserve of raw materials.
This medicinal plant has not been studied in other regions of our republic, therefore there is very little information on the growth, development and productivity of momordica charantia in the gray soil conditions of Andijan region. The research was conducted in a small area in the soil and climate conditions of the experimental field of the Andijan experimental exhibition experimental station in the Marhamat district of the Andijan region.
Scientific experiments were carried out in the spring (April) season of
2021 on the 1 ha field, in the early spring of 2022 (the first decade of April), the seeds were planted at a planting depth of 2-3 cm in the experimental base of the Andijan experimental exhibition.
During scientific experiments in plantation practical work, the planting period of Momordica charantia in the spring season was chosen as the most optimal option according to the order of planting in the field, and the optimal agrotechnical measures were used. Plantation-scale practical work was carried out in the fields of the pilot exhibition area in Marhamat district.
In studying the rhythm of seasonal development of plants the methods of I.V.Borisova and I.N.Beideman were used. During the growing season, the formation of sprouts, the appearance of real leaves, the formation of branches and the growth of stems, budding, the beginning of flowering, the completion of flowering, fruiting, fruiting, and the end of vegetation were studied. Phenological observations are made every five days.
A.N.Ponomarev, Z.G.Bespalova methods were used to study the flowering biology of plants, their diurnal and seasonal dynamics.
The obtained results and their analysis
Pumpkins (Cucurbitaceae) are annual and perennial creeping or creeping, monoecious or dioecious plants in the family of dicotyledonous plants. The family has about 100 genera, 900 species, mostly growing in the tropics and subtropics. The fruits of many species are used for food.
Momordica Charantia is a monoecious vine growing up to 4 m tall. The stem is pentagonal with longitudinal grooves and simple tendrils. The leaves are flattened kidney-shaped or rounded, deeply toothed five-nine lobes, heart-shaped. The length of the leaves is 1-7 cm, the size of the leaf plate is 3-12 cm, the leaves are arranged alternately on the stem. The flowers are unisexual, placed one by one in the axils of the leaves. The petals are yellow, five in

number, and the stems are long. The fruits are green at first and turn bright yellow or orange when ripe. The shape of the fruit is different, they can be cylindrical, spindle-shaped, oval. The sizes are 3-5 and 2-5 cm. The pulp of unripe fruits is light green, dense, juicy, very bitter. The color of ripe seeds is red-brown.

Phenological indicators include the development of plant growth during the season, the flowering phase (before budding and withering of flowers), the formation and ripening of fruits, yellowing and shedding of leaves.

Flowering biology. The flowering biology of plants and the study of each phase separately, in their cultivation in new climates, as well as selection, are important for carrying out work.

We analyzed the growth and development, flowering phase, fruit formation of the medicinal Momordica charantia in the conditions of Andijan region in

4 varieties and 16 variants. The results of the analysis showed that Option

1 blooms in the 1st growing year of the plants in the 1st return and the duration of flowering is 11 days, and in the 2nd return - 10 days, and in the 3rd return 12 days, and in the 4th return we saw that it lasted 12 days, 10 days for the 1st return of the second option, 11 days for the 2nd return, 10 days for the 3rd return,

And in the 4th return, we saw the duration of flowering in 9 days. In the third variant, we saw that the duration of flowering lasted 12 days in the 1st cycle, 9 days in the 2nd cycle, 12 days in the 3rd cycle, and 11 days in the 4th cycle. In the fourth variant, the duration of flowering was 11 days in the 1st row, 13 days in the 2nd row, 10 days in the 3rd row, and 10 days in the 4th row. In the conditions of Andijan region, it was noted that the flowering phase started quite early in the plants planted in April, and its duration was 11, 10, 12, 12 days in the first option, 10, 10, 11, 9 days in the second option, 12, 9, 12, 11 days in the third option. and in the fourth option, we saw that it lasted 11,13,10,10 days. It was observed that 3,000 flowers were opened on one plant planted in April in the first vegetation year in the first option, 2,100 in the second option, 2,500 in the third option, and 2,300 in the fourth option. As the age of plants increases, the number of generative organs in them increases.

When the diurnal flowering dynamics of momordica charantia plant was studied in June, that is, the beginning of flowering, 30-40 flowers opened at 8-1000 in the morning, option I (5.VI.2022). 60-70 flowers opened between 12-1400. At 16-1800, 20-25 flowers were

observed to open. Thus, a total of 125 flowers were opened for 1 day. When observed in option II (4.VI.2022): that is, 35-40 flowers opened at 8-1000 in the morning. It was known that 80-85 flowers will open at
12-1400. By 16-1800 hours, 30 flowers were observed to open. 140 flowers opened in 1 day. In option III, when the flowering period (09.VI.2022) is observed, at
8-1000 in the morning 40-45 flowers opened. By 16:00-18:00, 30 flowers were observed to open. At 1400, 90 flowers were observed to open. During this period, 160 flowers were opened for 1 day. IV- option at the beginning of flowering in plants (09.VI.2022) 8-1000, respectively, 40; 70 at 12-1400; 16-1800 opened
30 flowers. In this period, it was 140 in 1 day.
Thus, the results of our observations show that the largest number of opened flowers in the period of the beginning of diurnal flowering dynamics, the period of total flowering, and the final flowering periods corresponded to
12-1400 hours. From 16:00 to 18:00, the opening of flowers decreases. Duration of blooming of one flower was 11-12 days. When we observed the seasonal and daily flowering dynamics of plants, it was observed that the number of flowers opening increased with the increase in air temperature.

Phenological parameters of Momordica charantia L planted in the experimental field

Return	The name of plants	Growth period	Budding period		Time from growth to budding, days	Flowering period		Duration of flowering, days	Formation of fruits		Duration of fruit ripening, days	End of vegetation	Vegetation duration, days
			The beginning	the end		The beginning	the end		the beginning	Ripening			
	Momordica L	14.IV	28.V	4.VI	49	5.VI	14.VI	10	18.VI	14.VII	20	1.XI	195
	Momordica L	15.IV	28.V	5.VI	46	6.VI	15.VI	11	18.VI	18.VII	25	3.XI	194
	Momordica L	16.IV	29.V	4.VI	48	5.VI	15.VI	10	17.VI	17.VII	20	2.XI	195
	Momordica L	14.IV	25.V	4.VI	50	5.VI	15.VI	10	20.VI	20.VII	25	5.XI	194
I	*Momordica L*	15.IV	29.V	3.VI	45	4.VI	14.VI	10	15.VI	15.VII	25	2.XI	193
	Momordica L	16.IV	26.V	6.VI	49	7.VI	17.VI	10	19.VI	14.VII	24	6.XI	195
	Momordica L	18.IV	27.V	4.VI	48	5.VI	16.VI	11	18.VI	20.VII	23	2.XI	194
	Momordica L	18.IV	28-V	8.VI	50	9.VI	15.VI	9	17.VI	20.VII	26	3.XI	195
II	*Momordica L*	14.IV	28.V	8.VI	45	9.VI	22.VI	12	23.VI	19.VII	24	2.XI	194

	Momordica L	15.IV	29.V	9.VI	48	9.VI	16.VI	9	17.VI	16.VII	25	3.XI	193
	Momordica L	16.IV	29.V	6.VI	47	7.VI	19.VI	12	20.VI	17.VII	25	4.XI	195
	Momordica L	14.IV	29.V	8.VI	45	9.VI	20.VI	11	22.VI	16.VII	23	3.XI	194
V	*Momordica L*	15.IV	27.V	8.VI	48	9.VI	21.VI	11	22.VI	14.VII	25	1.XI	195
	Momordica L	16.IV	29.V	6.VI	49	7.VI	20.VI	13	21.VI	15.VII	24	2.XI	194
	Momordica L	18.IV	29-V	6.VI	48	7.VI	17.VI	10	18.VI	16.VII	26	2.XI	193
	Momordica L	17.IV	28.V	8.VI	50	9.VI	19.VI	10	20.VI	15.VII	24	2.XI	195

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