

PAPER

DYNAMICS OF STEM GROWTH IN DIFFERENT VARIETIES OF MUNG BEAN

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Abstract

In this article, the dynamics of stem growth of 15 different varieties of “AVMU” and “Zilola” and “Marjona” varieties at different vegetation periods (three-leaf stage, budding, flowering, ripening) of various mung bean varieties were studied. As a result, it was found that the most positive result was observed in variant 16 and variant 11 among 15 different varieties of “AVMU” according to the experimental system.

Key words: mung bean varieties ”AVMU ”Zilola ”Marjona” varieties, stem growth dynamics

Introduction

Today, providing the world's growing population with quality and affordable food is one of the global issues. In recent years, due to climate change and various environmental problems, a decrease in productivity has been observed all over the world. According to statistical analyses, it is reported that in the next decade the demand for food products will exceed the level of production. Therefore, one of the urgent issues is to select and recommend early-ripening, high-yielding varieties among various agricultural crops. For this purpose, research was conducted among 17 different varieties of mung bean.

Mung beans are distinguished from other cereals by their high protein content, vitamin and mineral

content, and rapid ripening [1]. Mung beans are also easily digestible, and pasta is made from their flour, and salads are made from their sprouted grains. The pods are used as a nutritious feed for livestock, and the stems are used for silage [2].

In order to determine the dynamics of stem growth of mung bean varieties in different phenophases in the crop field of Khayrikhush mahalla of Vobkent district, research was conducted in 2023–2024 and the varieties with the highest stem growth dynamics among different mung bean varieties were identified. According to the experimental system, 15 different mung bean varieties AVMU, Zilola and Marjona were planted in the field in the Bukhara meadow-alluvial soil climatic conditions. In this case, 17 different mung bean varieties were planted in three rotations,

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on plots, and phenological and morphological observation and analysis were carried out at the beginning of each month [3]. Observation and analysis were carried out on the fifth day of each month in all mung bean varieties, in different phenophases, i.e., three-leaf, budding, flowering and podding periods. As a result, according to the experimental system, it was found that the stem length of 17 different mung bean varieties showed different indicators at different phenophases (Table 1).

Stem growth dynamics in different mung bean varieties (2023-2024.)

№	Mung bean varieties	Vegetative periods of mung bean in terms of stem length in cm			
		Three-leaf	Budding	Flowering	Flowering Podding
1	AVMU 1676	6,1	16,7	49,0	64,7
2	AVMU 1677	7,0	17,6	50,4	56,3
3	AVMU 1678	6,6	17,8	51,5	57,7
4	AVMU 1679	5,2	17,0	41,0	52,3
5	AVMU 1680	7,2	17,9	60,9	70,5
6	AVMU 1681	7,8	18,3	62,9	71,2
7	AVMU 1682	7,1	16,9	49,2	67,4
8	AVMU 1683	3,9	14,2	40,9	48,2
9	AVMU 1684	7,2	17,7	57,8	68,3
10	AVMU 1685	6,3	16,6	50,9	56,1
11	AVMU 2001	11,2	26,5	65,5	72,0
12	AVMU 2002	6,9	17,5	59,3	69,0
13	AVMU 2003	6,8	18,3	57,4	67,5
14	AVMU 2004	7,2	23,2	59,9	67,7
15	AVMU 2005	10,0	24,6	60,0	68,4
16	Zilola	12,6	29,5	69,9	76,9
17	Marjona	3,5	12,8	34,5	44,5

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When analyzing the results of the study on the dynamics of stem growth during the budding period of mung bean, in accordance with the experimental

system, the stem length of the variants from 1676 to 2005 varieties of AVMU was recorded as follows: 16.7; 17.6; 17.8; 17.0; 17.9; 18.3; 16.9; 14.2; 17.7; 16.6; 26.5; 17.5; 18.3; 23.2; 24.6 cm.

According to the results of the study conducted in the flowering phenophase, the most positive results were observed in variants 16; 11 and 6; 5, and the lowest results were observed in variants 8 and 17. Since the height of the stem in mung bean, like in a number of other plants, leads to an increase in the number of fruit branches and fruit elements in it, our experiment showed that varieties with high stem growth dynamics have higher yield compared to other variants [4].

When analyzing the mung bean plant at the end of the growing season, it was found that the Zilola variety had the highest indicator compared to the AVMU varieties, which was 4.9 cm higher than the AVMU variety, which recorded the highest result. Also, the high growth dynamics in the mung bean stem leads to the formation of more crop layers, and as a result, an increase in the yield.

Conclusion

In conclusion, the mung bean plant belongs to the heliophyte plant group and grows well when the sunlight falls directly on the ground. Therefore, in the soil and climatic conditions of the Bukhara region, high yields can be achieved from this plant by observing irrigation standards and ensuring soil fertility. When studying the dynamics of stem growth in different phenophases of different varieties of mung bean plants (3-4 leaflets, budding and flowering, and at the end of vegetation), it was found that the most positive results were in variants 16; 11; 6 and 5, and the lowest results were in variants 8 and 17, according to the experimental system, for four vegetation periods.

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