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PRACTICAL IMPORTANCE OF DETERMINING STEM GROWTH IN PHASEOLUS AUREUS VARIETIES

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Abstract

This article studied the dynamics of stem growth during the three-leaf, budding, flowering and pod formation periods of the mung bean varieties AVMU. As a result, it was found that the most positive results in the experimental system were observed in the variety AVMU 2001.

Keywords: Phaseolus aureus, AVMU varieties, stem, growth dynamics, practical importance

Introduction

Nowadays, the increasing demand for food products on a global scale makes it important to develop and implement methods for obtaining high yields from plants. Therefore, it is necessary to study and localize various varieties of primary and essential crops from morphological, biological, ecological and physiological points of view.

Mung bean grain is distinguished from other legumes by its nutritional value, abundance, nutritional value, and rapid ripening. It has been determined that the nutritional value of mung bean grain is 1.6-2.0 times higher than that of wheat grain, and 3.5 and 5 times higher than that of cabbage [1].

Mung beans contain 8% lysine, 7% arginine, a number of amino acids such as tryptophan, and vitamins such as B1 and PP. The amino acid tryptophan in mung

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beans is especially beneficial for young children, as it plays an important role in building proteins necessary for growth and in the formation of hemoglobin in the blood [1].

The seeds of the mung bean plant contain magnesium, potassium and calcium salts, the amount of which is twice as much as in meat and bread products. If mung beans are included in the list of foods consumed regularly, they play an important role in calming the nerves, stopping diarrhea, improving the functioning of the heart, liver, kidneys, treating eye diseases, improving vision and memory, and strengthening bones and joints [2].

In addition, in the medical field, tincture made from mung beans is used to treat allergies and asthma. Mung beans are also easily digestible, used to make pasta, and the sprouted greens are used in salads. The stems are used as a nutritious feed for livestock, and the stalks are used for silage [2].

If we get acquainted with the biology of mung bean, its life form is an annual plant, the root system penetrates to a depth of 1-1.5 m. It forms pea-shaped roots on the main and lateral roots. The stem is jagged, much branched, 40-60 cm high, creeping or semi-deciduous. The leaves are three-lobed, large, long-lobed [2].

Mung beans are a heat-loving plant and are usually planted as a follow-on crop after winter cereals, potatoes and vegetables. Mung beans also like moisture and are mainly grown in irrigated areas, with 4-5 irrigations during the growing season.

Also, since this plant is a light-loving, short-day plant, it is sown as a repeated crop in the summer heat. The plant is not picky about soil and therefore grows well on meadow-alluvial, meadow-swamp soils. It does not develop well on saline, saline soils. Mung beans are also planted as a siderate crop. When used as a fertilizer for cotton, the yield of cotton increases by 40-60%. When sown in the fall, it gives a seed yield of 15-18 t / ha [2].

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The green and dried stems of the mung bean plant are used as livestock feed. The root-knot bacteria in the plant's roots accumulate about 60-80 kg of pure nitrogen per hectare, increasing soil fertility [2].

In order to determine the dynamics of stem growth of mung bean varieties in different phenophases at the experimental site of the Faculty of Natural Sciences and Agrobiotechnology of Bukhara State University, research was carried out and the varieties with the highest stem growth dynamics were identified among various mung bean varieties.

According to the experimental system, mung bean varieties AVMU were sown in the field in the meadow-alluvial soil climatic conditions of Bukhara. In this study, mung bean varieties were planted in three replicates in plots, and phenological and morphological observations and analyses were conducted at the beginning of each month.

At the beginning of each month, field observation methods were used to determine the dynamics of stem growth in AVMU mung bean varieties. As a result, different results were recorded across all variants

According to the results of the study, in the initial phenophases of mung bean varieties, according to the experimental system, the following indicators were recorded for the stem length from the first to the fifteenth variant: 6.1; 7.0; 6.6; 5.2; 7.2; 7.8; 7.1; 3.9; 7.2; 6.3; 11.2; 6.9; 6.8; 7.2; 10.0 cm. Among these variants, the highest result was observed in the eleventh variant, 11.2 cm, and the lowest result was observed in the eighth variant, 3.9 cm.

Also, when analyzing the results of a study on the dynamics of stem growth during the budding period in mung bean varieties, the following indicators were recorded for stem length from the first to the fifteenth option according to the experimental system: 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.

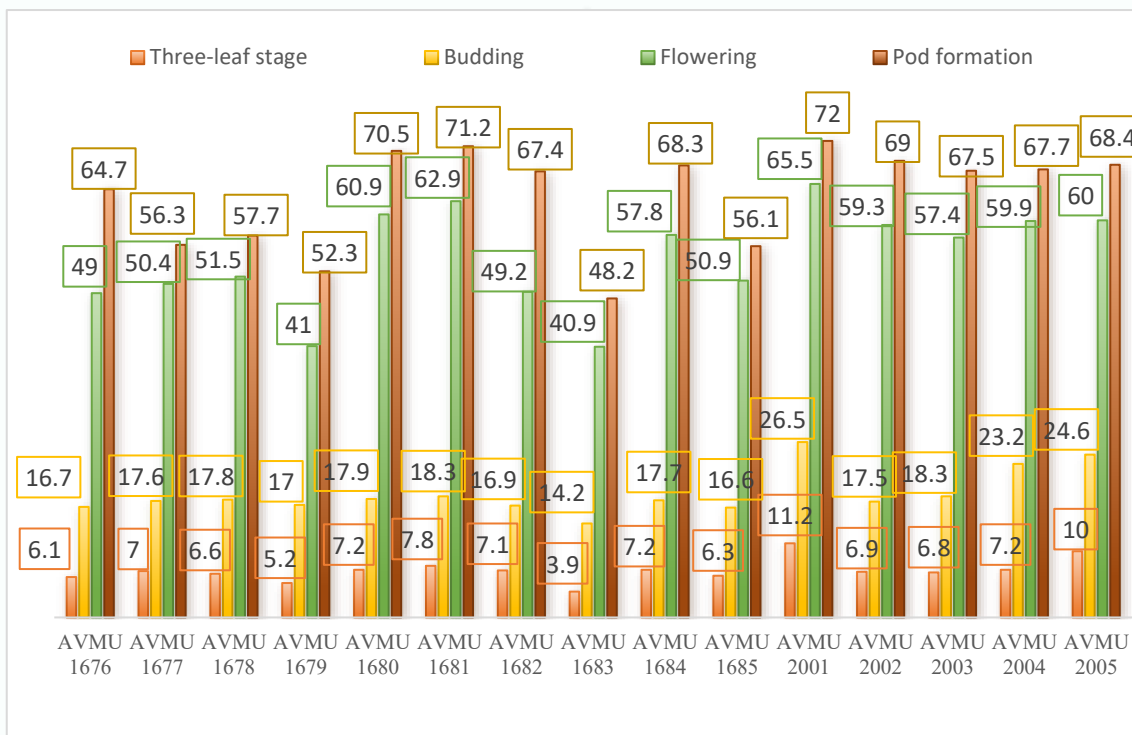
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Picture 1. Stem length of mung beans during the growing season (cm)

In the flowering phenophase of the study, the most positive results were observed in the eleventh, sixth, and fifth variants, and the lowest indicators were observed in the eighth and seventeenth variants. Also, when analyzing the podding stage of the growing season, the highest result was observed in the eleventh option.

The practical significance of the high growth dynamics in the mung bean stem is that the taller the stem, the more crop elements are produced, which has a positive effect on the increase in the number of pods and the amount of the crop yield [3]. In modern agriculture, immunostimulants also play an important role in increasing the number of plant nutrients [4], [5], [6], [7]. Immunostimulants play an important role in increasing not only the biological productivity of plants [8], but also their crop yield [9],[10]. Immunostimulants also play an important role in increasing plant resistance to disease[11], [12]. Therefore, the application of

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immunostimulants to mung bean crops plays an important role in increasing the dynamics of stem growth.

In conclusion, since the formation of a number of other plants in the mung bean plant led to an increase in the number of branches and the number of pods in the stem, in our experiment, the varieties with high stem growth dynamics had a higher net economic yield.

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