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EFFECT OF MINERAL FERTILIZER NORMS ON THE MAIN STEM HEIGHT OF STEVIYA PLANT

Abstract : This article provides information on the effect of mineral fertilizer rates on stem plant height. Accordingly, the stem height of the plant averaged 91.0 -105.3 cm according to the options. The lowest value was determined in the control variant with 91.0 cm, and the highest value was noted in the variant with 105.3 cm of phosphorus fertilizers applied at high 175 kg / ha.

Key words : nitrogen, variant, phosphorus, potassium, mineral fertilizer, norm, stem height, stevia.

Аннотация : В данной статье представлена информация о влиянии норм минеральных удобрений на высоту стеблевых растений. Соответственно, высота стебля растения в среднем составила 91,0 -105,3 см по вариантам. Наименьшее значение было установлено на контрольном варианте с 91,0 см, а наибольшее значение отмечено на варианте с 105,3 см фосфорных удобрений, внесенных при высокой норме внесения 175 кг/га.

Ключевые слова : азот, вариант, фосфор, калий, минеральное удобрение, норма, высота стебля, стевия.

INTRODUCTION. There is a great demand in the world today for the use of natural plant sources that give a sweet taste and do not harm human health. In the developed

countries of Europe, 6 -7% stevioside sweet substance of stevia leaf has been widely used for several years in the preparation of confectionery products, various beverages, canned goods and as a medicine. Stevia extract is about 30 times sweeter than sugar cane and saccharose, but 1/300 of it has a caloric value. Due to the high content of beneficial elements in the aqueous solution of stevia extract, it is widely used in food and medicine.

LITERATURE REVIEW. Stevia rebaudiana Bertoni is a perennial herb of the Asteraceae family. The plant is native to Paraguay and has been used by locals for more than 1,500 years. Adapted to the tropical region of South America, the leaves of this plant contain 6-7% stevioside. It is 25-30 times sweeter than the sugar consumed, though low in calories, has no power supply [4; B. B. 4 -5], [1; B. B. 2-23], [3; B. B. 147], [2; B. B. 156-157], [5; B. B. 888-892], [6; B. B. 379], [7; B. B. 56-60] [8; B. B. 133-140].Currently, more than 15 developed countries (USA, UK, France, Japan, China, South Korea, Canada, Russia, Ukraine and other developed countries) have produced and bred S. rebaudiana to include confectionery, sweet drinks, diet foods, canned goods and medicines are widely used in extent [5; B. B. 888-892], [7; 56-60], [9; B. B. 37-39], [10; B. B. 14].

MATERIALS AND METHODS. The experiment was conducted in Uychi district of Namangan region. The experimental field consists of lightcolored gray sierozem soils, moderately sandy with a mechanical composition, irrigated from time immemorial, not saline. Field experiments were conducted according to B.A.Dospekhov's (1982) "Methods of conducting field experiments." All phenological observations were made in the calculated areas of each variant, in isolated plants. Leaf level of stevia plant and total leaf area per hectare are determined by the method of A.A.Nichiparovich, biological productivity is determined by the method of I.S.Shatilov, M.K.Kayumov.

RESULTS AND DISCUSSION. One of the key indicators determining the optimal growth of a stevia plant is the height of the main stem. The height of the stem is primarily an indicator of the growth process in the plant. If the higher the stem height of the stevia plant was, the better the photosynthesis, metabolism, water properties, aeration processes would observe. Growth is the increase in size and mass due to important physiological processes that take place in a plant.

The results of the experiments obtained are presented in Table 1.

In the experiment, it was observed that in all variants using mineral fertilizers, the height of the main stem was higher than in the control variant without mineral fertilizers. In all years of the study, the lowest stem height of the stevia plant was observed in the control variants without the use of mineral fertilizers.

The height of the main stem of the stevia plant in the first year of the experiment, i.e. in 2017, was 92.0 cm in the control variant without mineral fertilizers, 105.0 cm in the variant with mineral fertilizers N50P175K50 kg / ha, 101.0 cm in the variant with N50P150K50 kg / ha, In the variant with N50K50 kg / ha, it was 96.0 cm. In the second year of the experiment, i.e. in 2018, 90.0 cm in the control variant without mineral fertilizers, 104.0 cm in the second variant with mineral fertilizers N50P175K50 kg/ha, 98.0 cm in the third variant with N50P150K50 kg/ha, N50K50 kg/ha in the fourth variant was 94.0 cm.

Table 1

Influence of mineral fertilizer norm on stem height of stevia plant, cm

№	Options	Plant height by years, cm			Average 3 years, cm
		2017	2018	2019	
1	Control	92	90	93	91,7
2	N50 P175 K50	105	104	107	105,3

3	N50 P150 K50	101	98	103	100,7
4	N50 K50	96	94	97	95,7

In the last year of the experiment, i.e. in 2019, 93.0 cm in the control variant without mineral fertilizers, 107.0 cm in the second variant with mineral fertilizers N50P175K50 kg/ha, 103.0 cm in the third variant with N50P150K50 kg/ha, In the fourth variant of the experiment where mineral fertilizers used N50K50 kg/ha, the height of the main stem was 97.0 cm.

In all the years of the conducted field experiments, relatively high rates of stevia p lant stem height were noted in variants where mineral fertilizers were fully applied, including variants where phosphorus fertilizers were applied at high rates.

Therefore, based on the obtained experimental results, it is recommended to meet the plant's n eed for mineral nutrients, especially phosphorus fertilizers, during the season for optimal growth of stevia plant under irrigated conditions and high main stem height.

CONCLUSION. The stem height of the plant averaged 91.7-105.3 cm according to the options. The lowest indicator was noted in the control variant with 91.7 cm, and the highest value was noted in the variant with 105.3 cm of phosphorus fertilizers applied at high 175 kg/ha.

References :

1. Abduraxmanova A. Technology of stevia cultivation in Syrdarya conditions. Bulletin of Gulistan State University. 2018. –P.23.

2. Baykabilov B., Belolipov I. Cultivation of stevia (Stevia rebaudiana Bertoni (Hemsl) from seeds in the south of Uzbekistan // Biology - science of the XXI century: Proceedings of the Pushchino school-conf. of young scientists. - Pushchino, 2003.–P 156-157.

3. Belolipov I.V. Introduction of herbaceous plants of the natural flora of Central Asia. Tashkent, ed. "FAN" 1989, -P 147.

4. Belolipov I.V., Allayorov X., Raximov I., Boyqobilov B. Basic agronomic techniques of growing stevia from seed. Tash DAU Publishing and Editing Department, Tashkent - 2002. –P 4-5.

5. Bondarev N.I. Influence of exogenous growth regulators on callusogenesis and growth of cultivated Stevia rebaudiana cells // Plant Physiology. - Moscow, 1998. - No. 6 (3). –P 888-892.

6. Bondarev N.I. Composition and content of steviol-glycosides in aboveground and underground organs of Stevia rebaudiana Bertoni and their dynamics during ontogenesis report International scientific confe rence. - Penza, 2003. -P 379.

7. Dospexov B.A. Methods of field experiments /-M., Agroproizdat 1985.-P 56-60.

8. Duseynov T.K. and Kim Yu.M. "Cultivation of stevia in Uzbekistan" V. collection of problems of storage and use of genetic resources of agriculture crops for breeding work. T.-1995. –P 133-140.

9. Duseynov T.K., Kim Yu.M., Rustamova A.S. Propagation of stevia plant by cuttings. Bulletin of Agrarian Science of Uzbekistan, 2001. №1 – P 37-39.

10. Ermolaeva G.A., Sapronova L.A. Sugar and sugary products in the beverage industry. M., 2012.–P

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