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INFLUENCE OF SOWING DATES AND SEEDLING THICKNESS ON LEAF YIELD OF STEVIA

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Abstract:

This article provides data on sowing dates and seedling thickness of stevia plant on leaf yield. Accordingly, it is recommended to sow stevia seeds in the first half of April, as well as to provide 111,000 / ha of seedlings in the field, in order to grow a stable high leaf yield from stevia plant under irrigated light sierozem soils.

Keywords: Leaf, Variant, Sowing Dates, Yield, Seedling Thickness, Norm, Stevia

INTRODUCTION

Keeping and improving product quality is one of the most important tasks in the cultivation of agricultural crops. Due to this, the study of product quality is required in all scientific works. The stevia plant is grown for its leaves, so it is advisable to study the leaf quality of stevia in practice, as well as the factors that affect leaf quality. The quality of the product in the stevia crop depends primarily on the chemical composition of the plant, the presence of minerals and vitamins in the plant and their amount. The research work on the product quality of stevia plant, the chemical composition of the plant has been studied mainly in foreign countries in the research work of scientists such as P.Larkin, T.Thorpe, J.Yasil, M.Aparajta [9]. However, these studies have been conducted in Russia, Germany, Sweden, the United States, Canada, East Asia, Japan, China, Korea, Australia, and New Zealand. Especially in countries such as Japan, China, Korea, the attention to the stevia plant is growing. In Japan, stevia cultivation has risen to the level of national value.

Interest in stevia has been growing in Uzbekistan in recent years. This has been studied in the scientific works of such scientists as I. Belolipov [1], T.M. Duseynov, T.K. Duseynov [3], I. Belolipov [7], J. Tursunov [7], B. Baykabilov [1]. The scientific work mainly studied the morphology, systematics and biological properties of the plant. However, the technology of stevia cultivation in the conditions of our republic is not sufficiently studied, there is insufficient scientific data in this regard.

MATERIALS AND METHODS

The experiment was conducted in Uychi district of Namangan region. The experimental field consists of light-colored sierozem soils, moderately sandy with a mechanical composition, irrigated from time immemorial, not saline. Field experiments were conducted according to BA.Dospekhov's (1982) "Methods of conducting field experiments". All phenological observations were made in the calculated areas of each variant, in isolated plants. Leaf area 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 most important indicators in agriculture is productivity. All agro-technical measures: plowing, planting, irrigation, mineral nutrition are primarily aimed at increasing productivity.

It is known that the influence of many factors on the yield of agricultural crops, including stevia, has been studied in the scientific work of a number of foreign scientists.

Table 1
Influence of sowing dates and seedling thickness on leaf yield of stevia

№	Sowing dates	Seedling thickness, thousand piece/ha	Leaf yield (in wet position)		Additional yield, c/ha
			kg/pm	c/ha	
1	April 1-15	83	0,30	30	-
2		111	0,35	35	5
3	April 15-30	83	0,28	28	-2

4		111	0,33	33	3
5	May 1-15	83	0,26	26	-4
6		111	0,31	21	1

However, in the conditions of irrigated light sierozem soils of the country, the positive effects of sowing dates and feeding area on stevia leaf yield have not been sufficiently studied. Therefore, the positive effect of different planting times and seedling thickness on the leaf yield of irrigated light sierozem soils of Uychi district of Namangan region was studied. The experimental data obtained are presented in Table 1 and Figure 1.

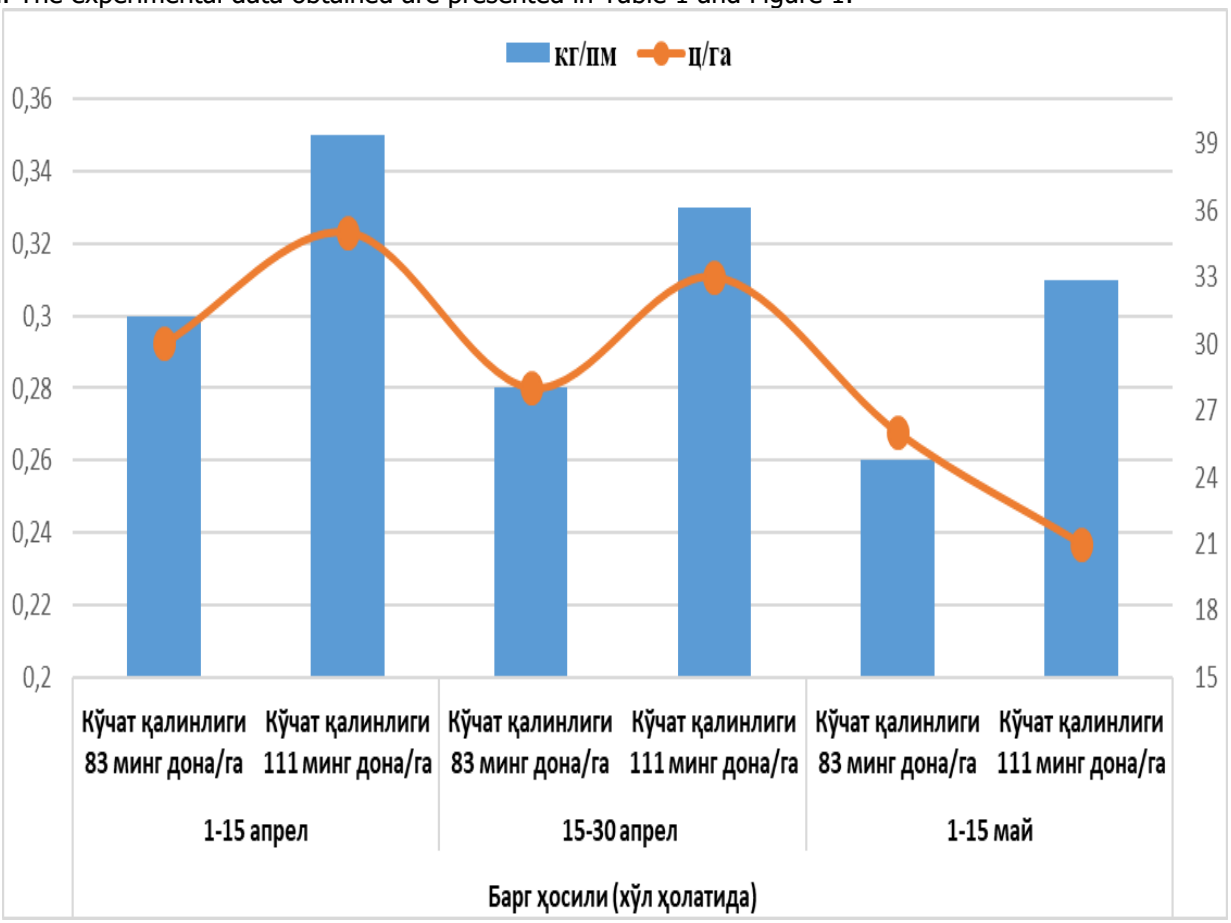

Figure1. Influence of sowing dates and seedling thickness on leaf yield of stevia

In the experiment, the leaf mass formed in the area of 1 m^2 in the stevia plant was 0.26-0.35 kg / m^2 according to the options. The lowest rate of leaf yield per 1 m^2 area in the stevia plant was 0.26 kg / m^2 seeds sown in the first half of May, observed in variants with a relatively rare seedling thickness of 83 thousand / ha. In the experimental area unit, i.e. a relatively high rate of leaf mass formed in 1 m^2 area, 0.35 kg / m^2 seeds are sown in the first half of April, the seedling thickness 111 thousand / ha is relatively high in the first half of April.

In the experiment, the leaf yield of the stevia plant was 26-35.1 c / ha according to the variants. Relatively high rates of leaf yield were recorded in variants of stevia with a seedling thickness of 111 thousand / ha, in which variants 4-5 cm / ha of additional leaf yield was grown due to seedling thickness. The highest leaf yield from the stevia plant was 35.0 c / ha. In this variant, an additional leaf yield of 5.0 c / ha was grown compared to the control variant. The reliability of the experimental results increases with the number of iterations. According to the adopted methodology, field experiments under irrigated conditions should be carried out in 3-4 repetitions.

Table 2
Influece of sowing dates and seedling thickness on leaf harvest of stevia

№	Sowing dates	Seedling thickness, thousand piece/ha	Yield, c/ha				Average yield, c/ha
			I	II	III	IV	
1	April 1-15	83	31,3	29,2	31,1	28,3	30,0
2		111	35,8	34,5	36,6	33,5	35,1

3	April 15-30	83	29,9	26,3	28,7	27,9	28,2
4		111	34,5	31,4	33,2	32,6	32,9
5	May 1-15	83	27,4	25,5	26,3	24,8	26,0
6		111	23,2	20,7	23,4	17,9	21,3
NSR_{05}=							1,34 c/ha
Sx=							4,62 %

Due to this, field experiments to study the effect of sowing dates and seedling thickness on stevia plant yield were conducted in 4 repetitions. In the experiment, all repetitions were placed in one tier. Productivity was determined and statistically analyzed according to the adopted methodology in each repetition and in the calculated fields of each variant.

The results of experiments on the effect of planting date and seedling thickness on leaf yield of stevia in the conditions of ancient irrigated light sierozem soils of Namangan region are given in Table 2 and Figure 2.

In all repetitions of the experiment, relatively high rates of stevia plant yields were recorded in the variants carried out in the first half of April at a relatively early stage of planting.

From the data in the table above, it can be seen that there was no significant difference in the yield of Stevia plant in terms of repetitions, a small advantage was noted in the 2nd and 3rd repetitions. The highest leaf yield in the stevia plant was observed in the second repetition of the second variant of 36.6 c / ha, in the early stages of the stevia plant, in the variants planted at a high rate.

In all repetitions, relatively high rates of leaf yield of stevia plant were observed in variants with high plant seedling thickness, i.e. 111 thousand / ha.

CONCLUSION

Therefore, in the conditions of irrigated light sierozem soils, it is recommended to sow stevia seeds in the first half of April to ensure a stable high yield of stevia plant, as well as to ensure 111 thousand seedlings per hectare in the field.

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