



**INFLUENCE OF SOWING DATES AND NORMS ON THE
SEEDLING THICKNESS SOYBEAN VARIETIES**

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ABSTRACT

This article presents data on the effect of different planting dates and rates on the seedling density of soybean varieties "Madad" and "Sevinch" and their analysis. When soybean varieties were planted 10 days later than the early planting date (25.04-30.04), the number of plants that died was from 0.8% to 1.9%, and when planted 20 days later, the number of plants that died was from 2.0% to 3.0%. When the planting rate was increased by 15 kg per hectare compared to 45 kg per hectare (60 kg), the number of seedlings that died was from 1.8% to 2.9%, and when increased by 30 kg per hectare (75 kg), the number of plants that died was from 2.3% to 5.5%.

INTRODUCTION

Soybean cultivation in our republic began in 2017, and this year soybeans were planted on 12,000 hectares and 14,000 tons of soybeans were harvested. More than 2,000 tons of soybean oil were delivered to the population and 10,000 tons of high-nutrition soybean meal to poultry enterprises due to processing of raw materials. At the same time, the area of soybean cultivation has increased 10 times, and now it is being planted on 83 thousand hectares of the irrigated area of the republic.

LITERATURE REVIEW

According to the data obtained from the research conducted by B.Khalikov [2] on obtaining a high and quality soybean crop, it is advisable to plant 80 kilograms of seeds per hectare with a row spacing of 60-70 centimeters, regardless of soil type, in soybean cultivation. O.Amirkulov [1] emphasizes that planting early varieties at a rate of 90-100 kilograms per hectare, and mid-season varieties with a high germination capacity of 70-80 kilograms per hectare, due to their height and lateral branches, as well as a large number of leaves and a large leaf surface area, ensures high yields. K.D.Sayre [4] believes that favorable conditions are important for achieving high productivity.

METHODS AND MATERIALS

This study was conducted in 2020-2022 in the experimental fields of the Rice Research Institute located in the Middle Chirchik district of the Tashkent region, in the conditions of meadow-swamp soils. The experiment consisted of 18 variants, the area of each variant was 240 m², and the calculated area was 120 m². The experiment was conducted in one layer, in three replications. The area of one replication was 4320 m², with a total area of 1.30 hectares. Phenological observations and calculations in plants were carried out based on the “Methods of conducting field experiments” and the “Methodological manual of the State Commission for Testing Agricultural Crop Varieties”.

RESULTS AND DISCUSSION

According to the initial data of the experiment, obtained in 2020, when the "Madad" variety of soybean is planted at 45 kg per hectare in the first period (04.25-04.30), the thickness of seedlings at the beginning of the period of soybean production is 251.1 thousand/ha, in the 2nd option with 60 kg planted per hectare, 318.7 thousand/units, in the 3rd option with 75 kg planted per hectare, it was 392.6 thousand/ha. In the medium period (05.05-10.05) of soybean, the density of seedlings in the 4th option, planted at 45 kg per hectare, was 252.8 thousand/ha, in the 5th option, planted at 60 kg/ha, it was 328.8 thousand/ha, and in the 6th option, planted at 75 kg/ha, it was 413.1 thousand/ha. When soybeans were planted in the late period (15.05-20.05), the planting rate was 255.9; 311.2; 419.1 thousand/ha, corresponding to the planting rates. According to the data obtained on the soybean variety "Sevinch", when this variety was planted in the first period (25.04-30.04) at 45 kg per hectare, the seedling density at the beginning of the soybean growing season was 266.1 thousand/ha, in variant 11, when 60 kg per hectare was planted, it was 348.8 thousand/ha, and in variant 12, when 75 kg per hectare was planted, it was 431.2 thousand/ha. In variant 13, where soybean was planted at a rate of 45 kg per hectare in the middle period (05.05-10.05), the seedling density was 269.4 thousand/ha, in variant 14, where soybean was planted at a rate of 60 kg/ha, it was 362.2 thousand/ha, and in variant 15, where soybean was planted at a rate of 75 kg/ha, it was 433.4 thousand/ha. When soybean was planted at a late period (15.05-20.05), the seedling density was 270.1; 353.6; 420.1 thousand/ha, corresponding to the planting norms. When analyzing the data, it was observed that the planting dates affected the seedling density of the plant. For example, when soybean variety "Sevinch" was planted at an early period, the seedling density was 266.1; 348.8; if it was 431.2 thousand/ha, 269.4 when planted in the medium term; 362.2; 433.4 thousand/ha. 270.1 when planted in the late period; 353.5; It was 420.1 thousand/ha,



that is, it was found that when soybean planting was delayed by 10 days, there were more seedlings by 2.9-4.0 thousand, and when it was delayed by 20 days, by 4.0-4.8 thousand. The same regularity was observed in the soybean variety "Madad".

During the period of operation, it was observed that the technical treatment of soybean and the weather affected its seedling thickness. According to the data obtained at the end of the application period, the number of seedlings that died when the soybean variety "Madad" was planted in the late period was 12.1, according to the planting norms; 13.9; was 14.4%, which is 3.0-2.0% higher than the indicators of early-planted variants by planting rates, and 1.9-0.8% higher than the options planted in the middle term, respectively. It was found that when soybean was planted in the middle term, it was 1.1-1.9-0.9% higher than in the early term.

Table 1

**The effect of planting dates and norms on the density of soybean seedlings,
thousand/unit,
(2020)**

Options number	Soybean varieties	Sowing dates	Sowing norms kg/ha, thousand piece	In the beginning of vegetation period	In the end of vegetation period	Number of dead plants, thousand/piece	Number of dead plants, %
1	Madad	25.04-30.04	45 (280)	251,1	228,3	22,8	9,1
2			60 (375)	318,7	280,5	38,2	11,9
3			75 (465)	392,6	335,2	57,4	14,6
4		05.05-10.05	45 (280)	252,8	227,1	25,7	10,2
5			60 (375)	328,8	285,7	43,1	13,1
6			75 (465)	413,1	349,0	54,1	15,5
7		15.05-20.05	45 (280)	255,9	225,0	30,9	12,1
8			60 (375)	311,2	267,8	43,4	13,9
9			75 (465)	419,1	358,7	60,4	14,4
10	Sevinch	25.04-30.04	45 (300)	266,1	238,2	27,9	10,5
11			60 (400)	348,8	301,0	47,8	13,7
12			75 (500)	431,2	367,6	63,6	14,7
13		05.05-10.05	45 (300)	269,4	240,1	29,3	10,9
14			60 (400)	362,2	321,0	41,8	11,8
15			75 (500)	433,4	360,0	63,4	14,9
16		15.05-20.05	45 (300)	270,1	239,4	30,7	11,4
17			60 (400)	353,6	302,1	51,5	14,5
18			75 (500)	420,1	355,4	64,7	15,4

At the end of the growing season, the lowest seedling mortality in soybean was observed in options 1 and 2 planted in the early term, and these indicators were 9.1-11.9%, respectively, by planting rates.

The same patterns were observed in the data obtained for the soybean variety "Sevinch". So, the number of dead plants will be 1.9-0.8% more when planting in the soybean is delayed by 10 days than early (25.04-30.04), and by 3.0-2.0% when it is delayed by 20 days.

In addition, it was observed that the sowing rates of soybean directly affected the seedling thickness. According to the obtained data, the number of plants that died at the end of the period in option 1, when soybean was planted at 45 kg per hectare in the early period, was 9.1%, in option 2, when 60 kg was planted per hectare, it was 11.9%, and in option 3, when 75 kg was planted per hectare, it was 14.6%. Such regularities are also observed in options 4, 5, 6, 7, 8, 9, where soybeans are planted in the middle and late periods, and these indicators are 10.2-13.1-15.5%, respectively; It was found that 12.1-13.9-14.4% (table) Thus, when the sowing rate in soybeans is increased by 15 kg per hectare, the mortality of seedlings is from 1.8% to 2.9% compared to 45 kg per hectare, and when it is increased by 30 kg per hectare, it is from 2.3% to 5.5%. It can be said that increasing the sowing rate increases the level of plant mortality at the end of the growing season.

The same patterns were also observed in the data obtained in 2021 and 2022 of the study.

CONCLUSION

Based on the obtained data, it can be concluded that the number of dead plants will be 0.8-1.9% more when planting in the soybean is delayed by 10 days than the early period (25.04-30.04), and 2.0-3.0% more when it is delayed by 20 days. When the rate of planting in soybean is increased by 15 kg per hectare, compared to planting 45 kg per hectare, the death of seedlings is 1.8% to 2.9%, when it is increased to 30 kg per hectare, it is 2.3% to 5.5%, so increasing the rate of planting increases the level of plant death at the end of the period of vegetation.

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