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Effect of sowing time on growth and yield of corn

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Abstract: The timing of corn planting and the thickness of the seedlings significantly affect its growth and development. As a result, the greatest growth and development were observed in the variants planted early and with a large thickness of seedlings.

Keywords: corn, sowing rates, timing, seedling thickness, stem height, number of leaves, number of pods, planting scheme, growth.

Providing the population of our republic, which is growing every year, with the necessary amount of food products is a pressing problem of our time. To solve this problem, it is necessary to use the available lands more efficiently, especially irrigated ones. After expanding the area under wheat in our republic at the expense of irrigated lands, a number of measures are being implemented to ensure that these lands do not remain empty after harvesting the wheat.

In the Strategy of Actions of the Republic of Uzbekistan for 2017-2021, "... introduce intensive methods in the sphere of agricultural production, primarily to create new breeding varieties of agricultural crops adapted to local climatic and environmental conditions, Particular attention is paid to the introduction of modern agricultural technologies in the fields, especially the development of grain production. In addition to the efficient use of land through rapid cultivation, scientific research on the preservation and improvement of soil fertility, improvement of the technology of growing grain twice a year, selection of suitable types of agricultural crops, and then the production of high-generation seed wheat are relevant.

The purpose of our experiment was to study the optimal sowing dates and growing rates of corn as a secondary crop for silage. The experiment was conducted in the conditions of pre-irrigated

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meadow sozovina of the Fergana region, where 12 variants were planted in 4 replicates (Table 1).

According to him, corn seeds were sown in 2 periods (July 1 and 10). The experiment also studied the sowing rates of corn seeds. In this case, their standards are 15; 20 and 25 kg. In our research work based on the manual "Methodology of Agrophysical Research", laboratory, field and production experiments, biometric measurements, phenological observations, and various analyzes were carried out. Statistical analysis of the results obtained in the experiments was carried out using the method of B.A. Dospekhov. At the same time, we studied the experimental results of many scientists.

Table – 1

Experimental scheme

№	Type of crop	Planting period	Sowing rate (kg/ha)
1	Узбекистон-300	01.VII	15,0
2			20,0
3			25,0
4		10.VII	15,0
5			20,0
6			25,0
7	Юлдуз	01.VII	15,0
8			20,0

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9			25,0
10		10.VII	15,0
11			20,0
12			25,0

Many external factors (soil, climate, fertilizers, water) affect the growth and development of plants. According to P.V. Protasov, under the influence of these factors, a general unity arises in the growth and development of plants, physiological and biochemical processes in the body of plants, their nutrition through roots and air, energy supply, the sum of all processes. participation in assimilation and dissimilation will be acceptable. Therefore, in our studies, we conducted a study of the timing of growth and development of corn planted after winter wheat.

Analyzing the obtained data on crop growth, we see that the initial observations obtained on sowing mash (August 1) did not differ significantly between the options, with an increase in the thickness of the seedlings, plant growth and development also increased. At the same time, the seeding rate was set at 15 kg, and the actual thickness of seedlings remained at 58,000 / ha.

In variant 1, the plant height was 14.2 cm, the number of true leaves was 2.3 pcs., the planting rate was 20 kg, the actual seedling thickness was 74 thousand/ha in variant 2. According to the indicators, it was 14.6 cm and 2.3 pcs., in variants 3 (seeding rate 25 kg/ha, the actual seedling thickness was 86 thousand/ha) it was 15.3 cm and 2.5 pcs. We see these data in Table 2. In the next sowing period of the experiment (10.07), the difference between the variants in sowing rates was the same as before. In a later period of phenological observations, no reliable difference was found between the variants. By the end of the growing season, on October 1, the difference between the variants became noticeable.

Table-2

The influence of planting dates and rates on the growth and development of corn (average over 3 years)

№	Actual number of seedlings, pcs.	1-August		1-September			1-October		15-October	
		Height (cm)	number of leaves (pcs.)	Height (cm)	number of leaves (pcs.)	number of corn kernels (pcs.)	Height (cm)	number of corn kernels (pcs.)	Height (cm)	number of corn kernels (pcs.)

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1	54 thousand	27,0	5,4	128,0	11,0	0,09	198,7	1,08	200,2	1,11
2	68 thousand	28,6	5,6	129,1	11,4	0,12	202,0	1,16	203,5	1,19
3	84 thousand	29,5	5,8	130,4	11,9	0,14	203,5	1,25	204,7	1,31
4	57 thousand	28,4	5,5	130,1	11,2	0,08	193,4	1,03	189,2	1,06
5	71 thousand	29,1	5,5	128,7	11,0	0,10	198,0	1,12	197,9	1,15
6	86 thousand	29,2	5,6	130,0	11,4	0,11	200,1	1,17	200,5	1,21
7	58 thousand	27,0	5,8	128,0	11,0	0,10	199,7	1,10	206,2	1,16
8	70 thousand	29,6	5,5	129,1	11,4	0,12	203,0	1,18	208,5	1,19
9	90 thousand	27,5	5,9	130,4	11,9	0,15	206,5	1,25	209,7	1,35
10	57 thousand	32,4	5,5	130,1	11,2	0,08	193,4	1,06	190,2	1,09
11	71 thousand	30,1	5,7	128,7	11,0	0,11	196,0	1,14	197,9	1,15
12	92 thousand	33,2	5,9	130,0	11,4	0,13	208,1	1,19	209,5	1,22

According to the table, in the first period of phenological observations on August 1 and September 1, there was no reliable difference between the variants, and by October 1, the height of the plants in the first planting period was 198.7; 202.0; 203.5 cm. ni, the number of pods 1.08; 1.16; Having produced 1.25 pieces, this law was maintained until the end of the period of validity.

It was noted that the growth and development of variants with a large number of seedlings was high even in subsequent periods of sowing corn.

For corn, the optimal parameters (plant height 204.7 cm and the number of stems 1.31 pcs.) were observed in the 3rd variant of the experiment (the thickness of the seedlings remained at the level of 84 thousand / ha), the lowest indicators were noted in the 4th variants. with a seedling density of 56 thousand / ha (plant height 189.2 cm and the number of stems 1.04 pcs.). In general, it can be concluded that in studies, increasing the thickness of replanted corn sprouts has a positive effect on the development of the vegetative part of the plant, but the effect on the crop organs was acceptable in the 86 thousand/ha variants.

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