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EFFECT OF PLANTING TIME AND RATE ON STEM HEIGHT OF REPEATEDLY PLANTED SOYBEAN VARIETY "ORZU"

TAKRORIY EKILGAN SOYANING "ORZU" NAVINI POYA BALANDLIGIGA EKISH MUDDATI VA ME'YORINING TA'SIRI

ВЛИЯНИЕ СРОКОВ И НОРМЫ ПОСЕВА НА ВЫСОТУ СТЕБЛЯ ПОВТОРНО ВЫСЕВАЕМОГО СОРТА СОИ «ОРЗУ»

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Abstract. An analysis of scientific results on the stem height of the soybean variety "Orzu" planted and maintained as a repeat crop at different planting dates and rates is presented.
Annotatsiya. Takroriy ekin sifatida turli xil ekish muddati va me'yorida ekib, parvarishlangan soyaning "Orzu" navining poya balandligi bo'yicha olingan ilmiy natijalarning taxlillari keltirilgan.
Аннотация. Представлен анализ научных результатов по высоте стебля сои сорта «Орзу», высаженной и сохраняемой в повторных культурах при разных сроках и нормах посева.
Key words: soybean, variety, stem, , planting date, planting system, centimeter. Options.
Kalit so'zlar: soya, nav, poya, , ekish muddati, ekish tizimi, santmetr. Variantlar.
Ключевые слова: соя, сорт, стебель, дата посадки, система посадки, сантиметр. Параметры.

Introduction. Although the height of the stem in the growth and development of soybean plants primarily depends on the biological characteristics of the variety, it has been proven in many studies that the agrotechnical measures used during the growth period and the soil and climatic conditions of the cultivated region also have a certain effect.

In our studies, data were obtained in accordance with the above ideas, and it was observed that the effect of sowing dates and planting systems on the height of the stem of soybean plants was significant.

Research methods and techniques

Scientific research work was carried out in 2022-2024 at the experimental site of the Kopakalpoqistan Agricultural Research Institute located in the Chimboy district of the Republic of Karakalpoqistan.

The experimental system consisted of 18 plants, placed in 3 plots. The experimental field has a width of 60 cm and a length of 50 m. The area of the field is 240 m2, the area for mulching is 120 m2. The total area of the experimental field is 1.3 ha. The experiment

was conducted for 3 years in a 1:1 (cotton:wheat) short-crop rotation system. The soybean variety "Orzu" bred for the State Standard was planted in the experiment.

Research results and discussion

In particular, in the 1-2-3 variants, where the seeds were planted at a theoretical seedling density of 555 thousand plants per hectare in the 60x3-1 system, 417 thousand plants per hectare in the 60x4-1 system, and 333 thousand plants per hectare in the 60x5-1 system, the stem height in the cross-section of the development phases was 18.7-16.5-14.7 cm in the budding phase, 41.6-35.8-34.3 cm in the flowering phase, 58.7-52.2-50.1 cm in the podding phase, and 68.1-60.8-59.2 cm in the ripening phase. The highest results were recorded in the variant where the seeds were planted in the 60x3-1 system, and compared to the variants where the seeds were planted in the 60x4-1 and 60x5-1 systems it was found that it was 2.2-4.0 cm in the budding phase, 5.8-7.3 cm in the flowering phase, 6.5-8.6 cm in the podding phase, and 7.3-8.9 cm in the ripening phase.

During this period, the seeds were planted in the 90x(60x30)x3-1 system at 740,000 plants per hectare, in the 90x(60x30)x4-1 system at 555,000 plants per hectare, and in the 90x(60x30)x5-1 system at 444,000 plants per hectare. 20.5-18.8-17.2 cm, 43.5-38.5-37.0 cm in the flowering phase, 63.5-58.0-56.4 cm in the podding phase, 72.6-66.5-64.9 cm in the ripening phase, the high result for all of these options, the seeds were planted in the 90x(60x30)x3-1 system observed in the variant, the seeds Compared to the variants planted in the 90x(60x30)x4-1 and 90x(60x30)x5-1 systems, it was noted that the stem height was 1.7-3.3 cm higher in the tillering phase, 5.0-6.5 cm in the flowering phase, 5.5-7.1 cm in the podding phase, and 6.1-7.7 cm in the ripening phase.

The seeds were sown in July 1 at the rate of 555,000 plants per hectare in the 60x3-1 system, 417,000 plants per hectare in the 60x4-1 system, and 333,000 plants per hectare in the 60x5-1 system. When analyzing the 7-8-9 options, the height of the stems was 17.4-15.8-14.4 cm in the flowering phase. 38.3-34.0-32.9 cm, 54.5-49.5-48.3 cm in the podding phase, 63.6-57.9-56.5 cm in the ripening phase, the higher result was observed in the variant with seeds planted in the 60x3-1 system, compared to the variants planted with the seeds in the 60x4-1 and 60x5-1 system 1.6-3.0 cm in the flowering phase 4.3-5.4 cm, 5.0-6.2 cm in the podding phase, and 5.7-7.1 cm in the ripening phase were found to be higher, but the seeds were theoretically 555 thousand plants per hectare in the 60x3-1 system, 417 thousand plants per hectare in the 60x4-1 system, and 333 thousand plants per hectare in the 60x5-1 system. compared to the 1-2-3 variants planted in seedling thickness, it was found that it showed a lower yield of 1.3-0.7-0.3 cm in the tillering phase, 3.3-1.8-1.4 cm in the flowering phase, 4.2-2.7-1.8 cm in the podding phase, and 4.5-2.9-2.7 cm in the ripening phase.

In this period, the seeds were sown at 740 thousand bushes per hectare in the 90x(60x30)x3-1 system, 555 thousand bushes per hectare in the 90x(60x30)x4-1 system, and 444 thousand bushes per hectare in the 90x(60x30)x5-1 system. 18.7-17.3-16.0 cm in the flowering phase, 40.2-36.1-35.0 cm in the flowering phase, 59.7-55.0-53.9 cm in the podding phase, 68.2-63.0-61.7 cm in the ripening phase, the high result of these options is

the seeds planted in the 90x(60x30)x3-1 system observed in the variant, the seeds Compared to the variants planted in the 90x(60x30)x4-1 and 90x(60x30)x5-1 systems, it was observed that the stem height was 1.4-2.7 cm higher in the tillering phase, 4.1-5.2 cm in the flowering phase, 4.7-5.8 cm in the podding phase, and 5.2-6.5 cm in the ripening phase. On June 20, 740 thousand bushes per hectare in the 90x(60x30)x3-1 system, 555 thousand bushes per hectare in the 90x(60x30)x4-1 system, 444 thousand bushes per hectare in the 90x(60x30)x5-1 system

Table 1

Effects of seeding times and systems on soybean stem height (2022)

No	Seed planting dates	Seed planting system	Seedling thickness, thousand plants/ha	Development phases, cm.			
				Flowering	Flowering	Pod	Plant Ripening Stage
1	20- June	60x3-1	555	18,7	41,6	58,7	68,1
2		60x4-1	417	16,5	35,8	52,2	60,8
3		60x5-1	333	14,7	34,3	50,1	59,2
4		90x(60x30)x3-1	740	20,5	43,5	63,5	72,6
5		90x(60x30)x4-1	555	18,8	38,5	58,0	66,5
6		90x(60x30)x5-1	444	17,2	37,0	56,4	64,9
7	01- July	60x3-1	555	17,4	38,3	54,5	63,6
8		60x4-1	417	15,8	34,0	49,5	57,9
9		60x5-1	333	14,4	32,9	48,3	56,5
10		90x(60x30)x3-1	740	18,7	40,2	59,7	68,2
11		90x(60x30)x4-1	555	17,3	36,1	55,0	63,0
12		90x(60x30)x5-1	444	16,0	35,0	53,9	61,7
13	10- July	60x3-1	555	16,0	36,3	49,3	59,3
14		60x4-1	417	14,9	33,0	45,2	54,7
15		60x5-1	333	13,6	31,8	44,4	53,8
16		90x(60x30)x3-1	740	17,6	38,5	53,2	62,3
17		90x(60x30)x4-1	555	16,8	35,1	49,5	58,1
18		90x(60x30)x5-1	444	15,5	34,2	48,6	57,2

compared to the 4-5-6 variants planted in seedling thickness, it was noted that the stem height was 1.8-1.5-1.2 cm in the tillering phase, 3.3-2.4-2.0 cm in the flowering phase, 3.8-3.0-2.5 cm in the podding phase, and 4.4-3.5-3.2 cm in the ripening phase.

When the seeds were sown in the 60x3-1 system 555 thousand bushes per hectare in the July 10 period, 60x4-1 system 417 thousand bushes per hectare and 60x5-1 system 333 thousand bushes per hectare in the theoretical seedling thickness, when analyzing options 13-14-15, the height of the stem in the planing phase was 16.0-14.9-13.6 cm, showing 36.3-33.0-31.8 cm in the flowering phase, 49.3-45.2-44.4 cm in the pod phase, 69.3-64.7-63.8 cm in the ripening phase, the higher result was observed in the variant planted with seeds in the 60x3-1 system, compared to the variants planted with the seeds in the 60x4-1 and 60x5-1 systems 1.1-2.4 cm in the planing phase, 3.3-4.5 cm in the flowering phase, 4.1-4.9 cm in the podding phase, and 4.6-5.5 cm in the ripening phase, but the seeds were 555,000 plants per hectare in the 60x3-1 system, 417,000 plants per hectare in the 60x5-1 system, and 333 in the 60x5-1 system. compared to the 1-2-3 options planted in the thickness of 1000 bushels, it was found that it showed a low yield of up to 2.7-1.6-1.1 cm in the tillering phase, 5.3-2.8-2.5 cm in the flowering phase, 9.4-7.0-5.7 cm in the podding phase, and 8.8-6.1-5.4 cm in the ripening phase.

In this period, the seeds were planted in the 90x(60x30)x3-1 system at 740 thousand bushes per hectare, in the 90x(60x30)x4-1 system at 555 thousand bushes per hectare, and in the 90x(60x30)x5-1 system at 444 thousand bushes per hectare. 17.6-16.8-15.5 cm in the flowering phase, 38.5-35.1-34.2 cm in the flowering phase, 53.2-49.5-48.6 cm in the podding phase, 72.3-68.1-67.2 cm in the ripening phase, the high result of these options is the seeds planted in the 90x(60x30)x3-1 system observed in the variant, the seeds Compared to the variants planted in the 90x(60x30)x4-1 and 90x(60x30)x5-1 system, it was observed that the stem height was 0.8-2.1 cm higher in the tillering phase, 3.4-4.3 cm in the flowering phase, 3.7-4.6 cm in the podding phase, and 4.2-5.1 cm in the ripening phase. 740,000 bushes per hectare in the 90x(60x30)x3-1 system, 555,000 bushes per hectare in the 90x(60x30)x4-1 system, 444,000 bushes per hectare in the 90x(60x30)x5-1 system, compared to the 4-5-6 options planted in the thickness of the seedling in the phase of cutting 2.9-2.0-1.7 cm, in the flowering phase 5.0-3.4-2.8 cm, 10.3-8.5-7.8 cm in the podding phase, and 10.3-8.4-7.7 cm in the ripening phase.

It can be seen from the results obtained from the variants that the stem height in the cross section of the development phases showed higher results in all planting systems when the seeds were planted early, that is, on June 20.

These patterns were preserved in the 2023 and 2024 research years, and it was observed that higher results were recorded when the seeds were planted on June 20.

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