



EFFECTS OF NITROGEN FERTILIZER REGULATION ON BIOMETRIC AND ECONOMIC INDICATORS OF SOYBEAN VARIETIES

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Article history:	Abstract:
Received: 11 th January 2023 Accepted: 11 th February 2023 Published: 24 th March 2023	The article describes the influence of the norms of feeding soybean varieties with mineral fertilizers on the height of the main stem, the number of branches, the position of the first pod, the number of pods in a bunch, the number of grains in a pod, the feeding rate per 1000 grains.
Keywords soybean, cultivar, fertilizer, soil, fertility, biometric data, farm productivity, nitrogen, phosphorus, potassium	

ENTER. Currently, due to the fact that the norms of feeding soybean varieties with mineral fertilizers, recommended for planting in different soil and climate conditions, are not developed on a scientific basis, they do not fully meet the requirements of the soybean industry. In this regard, today it is necessary to determine the norms and terms of feeding soybean varieties with mineral fertilizers in different soil-climatic conditions of the Republic, to study irrigation regimes, to scientifically substantiate the influence of factors on the growth and development of soybeans, on productivity and grain quality indicators, to develop agrarian technology of cultivation taking into account biological characteristics. is being born.

D. Yormatova stated that based on the conducted experiments, it can be concluded that soybean is good in our climatic conditions, only it is necessary to choose its varieties correctly and teach farmers about agrotechnics. We should start production of nitrogen or biofertilizer [1].

According to Kh.N. Atabaeva, in the conditions of the typical gray soils of the Tashkent region, 120 kg/ha of nitrogen, 90 kg/ha of phosphorus and 60 kg/ha of mineral fertilizers were given to the repeatedly planted soybean crop. It was determined that when planted in a mixture with corn, 85.5 t/ha of soybeans, 451.6 t/ha of corn, and a total of 537.1 t/ha of silage mass were obtained [2].

N. According to Umarova, R. Saitkanova, Kh. Idirsov, the photosynthetic activity of soybeans is activated when mineral fertilizers N50R100K70 are used in the norm of soybean cultivation; in soybean agrotechnology, when using micronutrients along with mineral fertilizers, the grain yield of soybean plants increases by 6.2-14.2 t/h [3].

RESEARCH METHODS In our ongoing research, each variety is experimented with nitrogen fertilizer in 5 options: option 1 without nitrogen fertilizer, option 2 with pure nitrogen fertilizer at 60 kg/ha, option 3 with pure nitrogen fertilizer at 90 kg/ha, option 4 with nitrogen fertilizer 90 kg/ha in pure state, option 5 was studied against the background of pure nitrogen fertilizer in the amount of 150 kg/ha, pure phosphorus fertilizer in 90 kg/ha, pure potash fertilizer in 60 kg/ha.

From mineral fertilizers, 100 percent of the specified annual rate of phosphorus and potash fertilizers was given under plowing or during the preparation of land before planting. 30-35% of the specified annual rate of nitrogen fertilizer is given in the stage of sowing of soybeans, and the remaining 65-70% in the phases of full flowering and podding.

ANALYSIS AND RESULTS. It was conducted in the experimental field of the Southern Farmer Scientific Research Institute.

According to the results of the conducted field experiments, the main stem height and 1000 grain mass of soybean varieties were determined in Table 1.

In the "To'maris Man-60" variety, in the control option without nitrogen fertilization, the height of the main stem was 51.4 cm on average, the number of branches was 2.4 pieces, the first pod was 10.4 cm, the number of pods in one bush was 83.4 grains in one pod it was determined that the number of 1.5 pieces of 1000 pieces of grain mass was 120.4 g.

In the conducted experiment, 60 kg/ha of nitrogen fertilizer was given in 2 variants, the height of the main stem was 69.9 cm, the number of branches was 3.5, the number of first pods was 11.6 cm, the number of pods in one bush was 138.3, the number of grains in one pod was 1.5 It was found that the mass of 1000 grains was 124.5 g, nitrogen

fertilizer was given in pure form at 90 kg/ha in 3 variants, the height of the main stem was 80.7 cm, the number of branches was 3.9, the position of the first pod was 12.6 cm, the number of pods in one bush was 168, The number of grains in one pod of 5 pieces was 1.7 pieces, the mass of 1000 pieces of grain was 126.2 g, the height of the main stem was 89 cm, the number of branches was 4.3 pieces, the number of first pods was 13, 4 cm, the number of pods in one bush is 179, the number of grains in one pod is 1.8, and the mass of 1000 grains is 129.8 g.

In the studies, when nitrogen fertilizer was given in pure form at 150 kg/ha, the height of the main stem was 99.5 cm, the number of branches was 4.8 pieces, the number of first pods was 14.4 cm, the number of pods in one bush was 193.1 pieces, the number of grains in one pod was 1.9 pieces, 1000 pieces grain mass was 130.6 g. The size of the first pod was 10.4-14.4 cm according to options. With the increase of nitrogen fertilizer rate by options, the change in plant height was 48.1 cm higher than the control in 5 options. It was observed that there was a difference of 4 cm in the location of the first pod on the stem among the variants. It was determined that the weight of 1000 grains was 4.1-10.2 g/ha more in the fertilized variants compared to the control variant without nitrogen fertilization.

In the soybean variety "Oyjamol" in the control option without nitrogen fertilization, the average height of the main stem is 56.3 cm, the number of branches is 2.9, the first pod is 10.1 cm, the number of pods in one bush is 78.2, the number of grains in one pod is 1.6, 1000 the mass of one grain was 109.2 g.

As a result of the research, nitrogen fertilizer was given in pure form at 60 kg/ha in 2 options, the height of the main stem was 79.9 cm, the number of branches was 3.5 pieces, the position of the first pods was 11.3 cm, the number of pods in one bush was 127.7 pieces, one pod was The number of grains was 1.9, 1000 grains and the weight of grains was 112.5 g. Nitrogen fertilizer was given in the form of 90 kg/ha in 3 variants. the number of pods in one bush is 149.5 grains, the number of grains in one pod is 2.1 grains, the weight of 1000 grains is 115.7 g, nitrogen fertilizer is given at 120 kg/ha in 4 options, the height of the main stem is 99.2 cm, the number of branches is 4 It was found that the number of pods in one bush was 172.1, the number of pods was 2.2 per 1000 pods, and the mass of pods was 117.6 g.

In the study, when 150 kg/ha of nitrogen fertilizer was applied, the height of the main stem was 103.4 cm, the number of branches was 5.4, the number of first pods was 15.4 cm, the number of pods in a pod was 197, the number of grains in a pod was 2.3, and the weight of 1000 pods was 118. It was 4 g. With the increase of the nitrogen fertilizer rate according to the options, the change in plant height was 47.1 cm higher than the control in 5 options.

Table 1

Effect of rates and periods of feeding soybeans with mineral fertilizers on biometric and economic indicators of varieties.

	New name	Option	The height of the main stem, cm	Shohlar sony, dona	The first dukkak place, cm	1 tupdagi dukkaklar soni, dona	Bitta dukkakdagi don sony, don	1000 dona don massasi, g
1	Tomaris Man-60	Supervision	51,4	2,7	10,4	83,4	1,5	120,4
		N60 kg/ha	69,9	3,5	11,6	138,3	1,6	124,5
		N90 kg/ha	80,7	3,9	12,6	168,5	1,7	126,2
		N120 kg/ha	89	4,3	13,4	179	1,8	129,8
		N150 kg/ha	99,5	4,8	14,4	193,1	1,9	130,6
2	Oijamol	Supervision	56,3	2,9	10,1	78,2	1,6	109,2
		N60 kg/ha	79,9	3,5	11,3	127,7	1,9	112,5
		N90 kg/ha	89,1	3,6	12,8	149,5	2,1	115,7
		N120 kg/ha	99,2	4,4	14	172,1	2,2	117,6
		N150 kg/ha	103,4	5,4	15,4	197	2,3	118,4
3	Selecta-201	Supervision	39,9	1,6	10,1	55,6	1,9	143,2
		N60 kg/ha	56,9	3,2	11,1	89,9	1,9	145,7
		N90 kg/ha	59,2	3,6	11,8	102,3	2	148,1
		N120 kg/ha	61,6	3,9	12,4	120,2	2,1	149,7

		N150 kg/ha	66,3	4,6	13,5	130,4	2,2	152,2
4	Amigo	Supervision	36,5	2,5	10,9	50,4	1,3	128,4
		N60 kg/ha	54,5	4,7	12	81,3	1,6	129,6
		N90 kg/ha	58	5,3	12,8	94,4	1,7	130,3
		N120 kg/ha	60,2	5,6	9,6	112,2	1,8	131,5
		N150 kg/ha	63,5	5,9	13,5	121,3	1,9	132,7

In the "Selecta-201" soybean variety, in the control variant without nitrogen fertilization, the average height of the main stem is 39.9 cm, the number of branches is 1.6, the number of first pods is 10.1 cm, the number of pods in one bush is 55.6, the number of grains in one pod is 1.9, 1000 The mass of one grain was determined to be 143.2 g. In the conducted research, nitrogen fertilizer was given in its pure state at 60 kg/ha in 2 options, the height of the main stem was 56.9 cm, the number of branches was 3.2, the number of first pods was 11.1 cm, the number of pods in one bush was 89.9, the number of grains in one pod was 1.9 per 1000 pieces, the mass of the grain was 145 g, nitrogen fertilizer was given in pure form at 90 kg/ha in 3 options, the height of the main stem was 59.2 cm, the number of branches was 3.6, the position of the first pods was 11.8 cm, the number of pods in one bush was 102.3 the number of grains in one pod is 2, the mass of 1000 grains is 148.1 g, nitrogen fertilizer is given in pure form at 120 kg/ha in 4 options, the height of the main stem is 61.6 cm, the number of branches is 3.9, the first pod is 12.4 It was found that the number of pods in one bush is 120.2, the number of grains in one pod is 2.1, and the mass of 1000 grains is 149.7 g.

In the study, when nitrogen fertilizer was given in pure form at 150 kg/ha, the height of the main stem was 66.3 cm, the number of branches was 4.6, the number of first pods was 13.5 cm, the number of pods per bush was 130.4, the number of grains per pod was 2.2 per 1000 grains. mass was found to be 152.2 g.

With the increase of the rate of nitrogen fertilizer according to the options, the change in plant height was 26.4 cm higher than the control in 5 options, it was found that the weight of 1000 grains was 2.5-8.5 grams more in the options given fertilizer compared to the control option without nitrogen fertilizer.

In the soybean variety "Amigo" in the control variant without nitrogen fertilization, the average height of the main stem is 36.5 cm, the number of branches is 2.5, the number of first pods is 10.9 cm, the number of pods in one bush is 50.4, the number of grains in one pod is 1.3, 1000 grains mass was found to be 128.4 g.

In the study, nitrogen fertilizer was given to Boril in its pure state at 60 kg/ha in 2 variants. The height of the main stem was 54.5 cm. grain mass was 129.6 g, nitrogen fertilizer was given in pure form at 90 kg/ha in 3 options, the height of the main stem was 58 cm, the number of branches was 5.3, the first pod was 12.8 cm, the number of pods in one bush was 94.4 grains in one pod the number of 1.7 pieces, the mass of 1000 pieces of grain was 130.3 g, the nitrogen fertilizer was given in pure form at 120 kg/ha in 4 options, the height of the main stem was 60.2 cm, the number of branches was 5.6 pieces, the first pod position was 9.6 cm per bush the number of pods was 112.2, the number of grains in one pod was 1.8, and the mass of 1000 grains was 131.5 g.

According to the experimental results, when 150 kg/ha of pure nitrogen fertilizer is given, the height of the main stem is 63.5 cm, the number of branches is 5.9 pcs. grain mass was 132.7 g. With the increase of nitrogen fertilizer rate in the options, the change in plant height was 27 cm higher than the control in 5 options.

It was determined that the weight of 1000 grains was 1.2-4.3 grams more in the fertilized variants than the control variant without nitrogen fertilization.

SUMMARY. It is permissible to draw conclusions from the conducted studies. In the conditions of irrigated light-colored gray soils of Kashkadarya region, the height of the main stem of the "To'maris Man-6" variety was 48.1 cm and the weight of 1000 grains was 10.2 g in the "Oyjamol" variety when fed with mineral fertilizers. height 47.1 cm, mass of 1000 grains was 9.2 g, it was found that the height of the stem in "Selecta-201" variety changed to 26.4 cm.

LIST OF USED LITERATURE

1. Yormatova D., Conclusions about the cultivation of soybeans in our country. - 2019 - No. 1. – B 20-21.
2. Atabaeva H.N., Impact of the symbiotic nature of the soybean plant on the ecological environment // Ecological aspects of rational use of soil. Tashkent 1997 – B 43.
3. Umarova.N, Saitkanova.R, Idirsov.Kh., Influence of microelements on the photosynthetic activity and yield of soybean.// Journal of Agro science. - 2019 #4. – B 40.