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Influence Of Soybeans Seedling Thickness And Fertilization Norms On Cotton Yield

Kholmurod Makhmudovich Bozorov
Doctor Of Philosophy In Agricultural Sciences, Scientific Research Institute Of Cotton Breeding, Seed Production And Cultivation Agro-Technologies, Uzbekistan

Murodjon Makhamadjanovich Atajanov
Doctor Of Philosophy In Agricultural Sciences, Andijan Institute Of Agriculture And Agro-Technology, Uzbekistan

Nazokat Kakhorova
Independent Researcher, Karshi Institute Of Engineering Economics, Uzbekistan

ABSTRACT

This article presents the results of a research of the influence of soybeans on the thickness of the seedling and fertilization norms on the cotton harvest

KEYWORDS

Cotton, soybeans, thickness seedling, yield, nutrients, method, recurring.

INTRODUCTION

It is known that one of the factors increasing the productivity of agricultural crops is the use of science-based crop rotation systems. The choice of past crops is important in crop rotation. Achieving food security, soil fertility and natural crop yields has also been proven in many years of experience to achieve direct crop rotation through the cultivation of legumes as a primary and secondary crop.

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THE MAIN FINDINGS AND RESULTS

The influence of legumes on the change in the general and mobile forms of humus, nitrogen, phosphorus and potassium content in the soil from repeated crops planted after winter wheat has a special place. This is due to the fact that the amount of root residues in legumes, which quickly turn into various forms of nutrients, has a positive effect on soil fertility and increasing the yield of crops planted next year (A.Bolkunov [1, p. 4], K.Mirzajonov [2, p. 37]. , R.Oripov, Ya.Bo'riev [5, pp. 123-125], Z.Tursunxodjaev, O.Bekmurzaev [4, pp. 55-59]).

According to K. Mirzajanov [3, p. 26], the periodic rotation of crops is an important agricultural measure in agricultural culture. Cotton in low-fertility, eroded soils: alfalfa 3: 3, 3: 4, and in fertile soils 3: 5 or 2: 5 systems gave good results.

In the researches carried out by M.Tadjiev, K.Tadjiev [6, pp. 17-20] in the conditions of fertile soils of Surkhandarya region, hashaki grown as an intermediate crop was 214.6-220.6 ts / ha of green peas and 200.3-220.6 ts / ha of triticale. it was found that soil fertility and cotton yield increased significantly compared to the control option when the mass crop was harvested and the grown blue mass crop was driven as a siderate.

According to B.Khalikov, F.Namozov [7, p. 5], the introduction of legumes as a secondary crop in the system of cotton-grain rotation provides an increase in the amount of organic matter in the soil, due to the increase in humus and total nitrogen in the soil 2.8-3. , 7 ts / ha.

According to U. Nematov [8, p. 245], the transition to short-rotation rotations of cotton and legumes, while maintaining the system of cotton-alfalfa rotations, and the cultivation of soybeans as a secondary crop will have a positive impact on increasing the yield of cotton next year.

B.M. Khalikov, A.A. Iminov In their research, the advantages of sowing repetitive, intermediate and siderate crops in short-crop rotation systems: how much organic waste accumulates per hectare in one season, how much humus, nitrogen, phosphorus, potassium per hectare? ; opportunities to reduce annual nitrogen by 25-30% and potassium by 45-50% in the coming season; The tasks of increasing the yield of winter wheat by 15-17% and the yield of cotton by 10-12% in the cotton-grain rotation system have been studied [9, p. 66; 10].

The study of the effect of shade seedling thickness and fertilization standards on soil fertility and the growth, development and yield of cotton planted after them in the conditions of loamy soils further complements the above tasks.

RESEARCH METHODS

Experiments were conducted to study the effect of crop rotation on soil fertility and cotton yield in the shade system of cotton in the desert region of Kashkadarya region. The experiment was placed in 11 variants, 3 returns. The experiment was planted at 90 cm row spacing, with each option being 30 m long and located at 108 m2. The calculated area for phenological observations of accounting works is 54 m2, the total area is 0.39 ha.
Research on the basis of the methodological manual "Methods of field experiments" (Tashkent, 2007) Shade of crop rotation: in the cotton system against the background of

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norms of shade mineral fertilizers N100P120K100 and N75P100K75 kg / ha 185; 222; 270; The effect of soybean grown on 370 and 555 thousand / ha seedlings on cotton yield was studied on the basis of the following experimental system.

Table 1
Experimental system

Type. №	The norm of mineral fertilizers	Seedling thickness of shade, thousand bushes / ha	Follow crop
1	Cotton (control)N-200 P-140 K-100	90	Cotton
2	Soy N-100 P-120 K-100	185	Cotton
3		222	Cotton
4		270	Cotton
5		370	Cotton
6		555	Cotton
7	Soy N-75 P-100 K-75	185	Cotton
8		222	Cotton
9		270	Cotton
10		370	Cotton
11		555	Cotton

RESULTS OF THE STUDY

It is known that the effectiveness of each applied agro-technical measure is determined by productivity. In our study, the yield was determined by weighing the weight of one bale of cotton, along with determining the yield before each harvest. The results obtained are shown in Figure 1.

According to the data obtained, along with the agronomic measures carried out in the cultivation of cotton in the past, the past crop, their seedling thickness and the weight of cotton in one pod under the influence of the norms of mineral fertilizers applied caused them to vary. In the 1st variant of the experiment, when control of cotton instead of cotton, the average weight of 1 piece of cotton in 2 years was 2.63 grams, in the 2nd variant the weight of 1 piece of cotton was 2.73 grams, the best indicator was 370 thousand bushes / ha of seedlings. fertilizer N100P120K100 kg / ha was observed in the normally applied variant and amounted to 2.91 grams, respectively. This was found to be 0.28 grams higher compared to the control option.

From the variants of mineral fertilizers N100P120K100 kg / ha, it was found that the weight of cotton in the pods was 0.11-0.14 grams higher than the control in the cultivars with a seedling thickness of 222.0 and 270

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thousand bushes per hectare. Soybean N75P100K75 kg / ha was found to be 0.09 g higher in cotton than the control in the cotton-fed variant against the background of seedling thickness of 370,000 bushes / ha in the variants with mineral fertilizers in the norm, while in the remaining variants this figure was reduced.

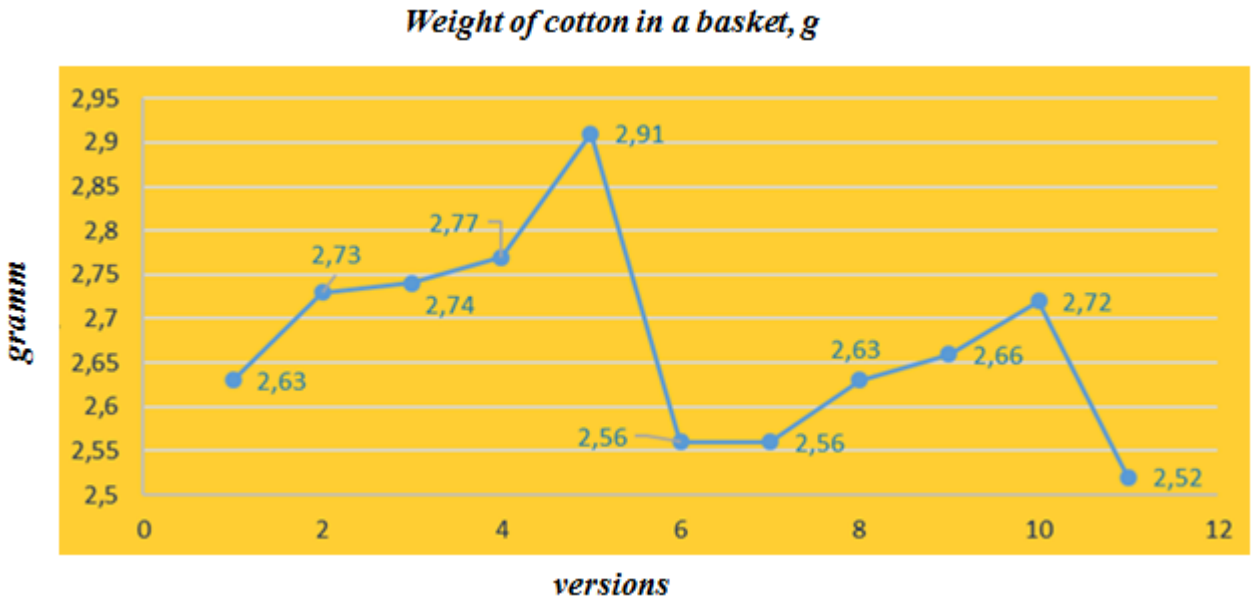

Figure 1: The weight of cotton in a cocoon observed in the experiment, g

Harvest was carried out twice a season in the experimental field. Based on these data, the yield of cotton was determined by variants. According to him, the average yield of cotton in the control variant (option 1) was 35.3 ts / ha. The best indicator of the total cotton yield of cotton was observed in the variant of soybean application of mineral fertilizers $N_{100}P_{120}K_{100}$ kg / ha, which left 370 thousand bushes / ha, respectively, and amounted to 45.7 ts / ha, respectively. In the remaining variants of the experiment, it was also noted that the yield was higher than the control. As an example, in 3-4 variants, the average in 2 harvests was 39.4 and 41.7 ts / ha, respectively.

Even in the variants of soybean $N_{75}P_{100}K_{75}$ kg / ha with the application of mineral fertilizers, the yield of cotton was observed against the background of seedling thickness of 370 thousand bushes / ha in the cultivated variant, and the yield was 7.1 ts / ha higher than the control. These options reported lower results compared to the options that used high-dose fertilizer.

The lowest rate was observed in cotton growing after the cultivated variant, leaving 550 thousand bushes per hectare of soybeans in both backgrounds, the yield was 40.0 ts / ha against the background of high fertilizers and 36.0 ts / ha against the background of low fertilizers. The data are presented in Table 2.

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Table 2
Cotton weight and yield per hectare of cotton, ts / ha (2019)

Versions №	Cotton yield by returns, ts / ha			
	I	II	III	Medium
1	37	34	34	35,3
2	37,3	35,4	37,5	36,7
3	40,1	38,0	40,2	39,4
4	41,8	40,6	42,3	41,6
5	46,0	44,3	46,7	45,7
6	40,3	39,0	40,8	40,0
7	35,6	35,1	36,9	35,9
8	39,3	37,1	40,7	39,0
9	41,2	41,4	39,5	40,7
10	42,0	41,9	43,2	42,4
11	36,2	34,7	37,1	36,0

Sd=0,63 ц HCP05=1,32ц
Sd=0,28 ц HCP05(A)=0,59ц
Sd=0,44 ц HCP05(B)=0,92ц
*Sx=√S2/n=0,44 Sx%=Sx*100/X=1,10%*
*Sx=√S2/n=0,2 Sx%=Sx*100/X=0,50%*
*Sx=√S2/n=0,31 Sx%=Sx*100/X=0,78%*

CONCLUSION

From the results obtained, it can be concluded that the application of soybean mineral fertilizers at the rate of $N_{100}P_{120}K_{100}$ kg / ha, leaving 370 thousand bushes per hectare of seedling thickness, and subsequent cultivation of cotton provides a basis for high yields of cotton.

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