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INFLUENCE OF MINERAL FERTILIZERS ON THE YIELD OF SUGAR BEET RE-SOWING

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Abstract: In the conditions of gray-meadow soils of the Andijan region, planting sugar beet seeds as a re-crop, moistening the seeds up to 80-100%, encapsulating the seeds using a mixture of 75% vermicompost + 25% soil and applying mineral fertilizers N200P150K200 allows you to get the maximum yield of 370.2 centner/ha of root crops.

Keywords: sugar beet, root crop, seeds, productivity, mineral fertilizers, application rate, capsule.

INTRODUCTION

Today, food shortages are felt all over the world. To eliminate this, it is necessary to increase the efficiency of the use of available land. It will be necessary to increase the yield of cultivated crops, to do this, to plant high-yielding varieties, to increase the amount of products obtained through mineral fertilizers.

In the conditions of Uzbekistan, in order to rationally use land resources, it is very important to pay attention to the cultivation of repeated crops after harvesting winter wheat, since the climatic conditions of our region allow this. Rice, carrots, radishes and other root crops, legumes, sunflowers, corn, many types of vegetables and herbs are grown as secondary crops. We conducted field experiments to study the effect of planting methods and mineral fertilizer rates on the yield of root crops and the quality of sugar beet planted as a re-crop after harvesting winter wheat.

In our experience, we also planned to plant sugar beet as a secondary crop after harvesting winter wheat grain and get a root crop from it. Sugar beet seeds germinate when they absorb 180% of their moisture weight. This amount of moisture is difficult to introduce into the soil during the summer months. Therefore, we have learned how to get flat seedlings by 100% wetting the seeds and covering them with biohumus.

LITERATURE ANALYSIS AND METHODOLOGY

N.N. Gorbunov and Nikitaeva N.N. [1; 16-18 p.] write that "to obtain the maximum yield of sugar beet root crops with a high sugar content and optimal technological properties, we recommend growing in crop rotation with annual and

perennial leguminous crops against the background of N45P120K45 and N45P60K90 + 25 t / han manure".

According to I. Zh. Sulaimanov [5; 12-p.] the application of organic fertilizers for sugar beet at the rate of 20 t/ha and mineral fertilizers at the rate of N200R150K200 kg/ha in gray-meadow soils ensures the yield of root crops of 640 centners/ha.

According to O.A. Minakova and L.V. Aleksandrova [4; 42-45-p.], against the background of P90K90, the maximum yield of sugar beet root crops with a single application of N-120-150 kg per hectare is 45.9-49.5 t/ha; 42.4-43.8 t / ha, with a sugar content of 15.3-14.9% and 16.9-16.7% per hectare, 7.0-7.38 and 7.2-7.3 tons of sugar are obtained products

I.Zh.Sulaimonov and I.K.Odilov [7; 43-46-p.] in field experiments studied the influence of the rate of mineral fertilizers on the germination of sugar beet seeds. It was noted that in the absence of mineral fertilizers, the germination of sugar beet seeds was high, despite the low seed yield. While nitrogenous minerals fertilizers reduce the germination of seeds, phosphorus and potash fertilizers increase their germination.

According to I.Zh. Sulaymonov et al [6; 25-27-p.] o tobtain full-fledged shoots of sugar beet, encapsulation of its seeds with biohumus (a mixture of biohumus and soil) by 50-75% will allow you to get 84-89% of seedlings in a short period of time.

Field experiments and their phenological observations (Metody polevyx i vegetatsionnyx opytov s khlopchatnikom v usloviyax oroshenia. Tashkent: SoyuzNIXI [3; p. 225]), mathematical analyzes (Dospekhov B.A. Metodika polevogo opyta [2; p. 416]) was carried out in styles.

RESULTS

1-table

Experience system

Options	Seeding methods		Norms of mineral fertilizers, kg\ha			Before autumn plowing		When sowing	After thinning	developing root crops
			N		K					N
1	The easy way		-	-	-	-	-	-	-	-
2			150	100	150	100	150	40	40	70
3			200	150	200	150	200	60	60	80
4	sulation	50% biohumus % soil	-	-	-	-	-	-	-	-
5			150	100	150	100	150	40	40	70
6			200	150	200	150	200	60	60	80

7		75% biohumus	-	-	-	-	-	-	-	-
8		% soil	150	100	150	150	150	40	40	70
9			200	150	200	150	200	60	60	80
10		100%	-	-	-	-	-	-	-	-
11		umus	150	100	150	100	150	40	40	70
12			200	150	200	150	200	60	60	80

2-table

Harvest of root crops by repetition of the experiment, centner/ha

Variantlar	Years			Average	Difference from control	Difference from baseline
	2017	2018	2019			
1	190,0	187,9	192,0	189,3	-	-
2	252,6	253,4	256,6	254,2	-	+64.9
3	286,3	284,4	292,9	287,9	-	+98.6
NSR 0.5 c/ga/ %	**4,54/1,87**	**3,81/1,58**	**2,37/0,96**			
4	192,3	191,3	200,5	194,7	+5,4	-
5	310,0	309,9	314,2	311,4	+57,2	+116,7
6	317,1	316,9	322,1	318,7	+30,8	+124,0
NSR 0.5 c/ga/ %	**2,32/0,85**	**1,24/0,45**	**3,49/1,25**			
7	197,5	196,2	205,7	199,8	+10,5	-
8	338,3	337,7	344,1	330,0	+75,8	+130,2
9	369,3	370,8	371,1	370,2	+82,3	+170,4
NSR 0.5 c/ga/ %	**2,61/0,86**	**1,37/0,46**	**1,49/0,48**			
10	206,1	205,6	212,0	207,9	+18,6	-
11	368,5	367,4	374,7	347,7	+93,5	+139,8
12	343,4	343,5	344,7	343,0	+55,1	+135,1
NSR 0.5 c/ga/ %	**5,03/1,7**	**2,1/0,71**	**2,95/0,97**			

Reminder: on the upper side of the fractional line, the NSR indicator is in c/ha, on the lower side of the NSR in %.

DISCUSSION

Experimental system and methodology: the field experiment was conducted in the conditions of typical gray soils of Namangan region. The experiment consisted of 12 variants, stratified in 4 replications. The total area of one delyanka is 240 m2, and the reference area is 100 m2, and the total area of the experiment is 9600 m2. variant 1 of the experiment is a general control (no mineral fertilizers are given at all), variant 2 is a control for nitrogen (no nitrogen

fertilizer is given), variant 5 is a control for phosphorus and variant 8 is a control for potassium. In the remaining options, mineral fertilizers are given in different rates. From mineral fertilizers, sodium nitrate, carbamide, simple superphosphate and potassium salt were used. For this purpose, we defined the experimental system as shown in Table 1.

Results of the experiment: Depending on the planting methods, sowing sugar beet seeds in capsules with 50% vermicompost led to a slight increase in the number of seedlings. With an increase in the number of seedlings, an additional yield of 5.4 c/ha was achieved compared to the control variant without the use of mineral fertilizers (planted in a simple way, mineral fertilizers were not used). In the same planting method, the 5th variant, where the norms of mineral fertilizers N150P100K150 kg/ha, compared with the controlled 2nd variant (by plant density) reached up to 57.2 c/ha, and compared with the 4th variant (without application of mineral fertilizers) an additional yield of 16.7 q/ha was obtained. During mathematical processing, it was noticed that everything was done correctly. With the same planting method in the 6th variant, where the norms of mineral fertilizers are N200P150K200 kg/ha, an increase in yield up to 30.8 c/ha was obtained compared to the 3rd variant, relative to the 4th variant, where mineral fertilizer was not used, the increase in yield was 24 c/ha.

Depending on the planting methods, the number of plants per 1 hectare increased. The number of seedlings in variants with encapsulated sugar beet seeds with 75% biohumus increased to 7-, 8- and 9-, respectively, 79.6; 82.1 and 82.4 thousand pieces. As a result, yields differed between variants. For example, in the 7th variant, the yield was up to 199.8 centners / ha, while the number of seedlings increased, providing a yield of 330.0 and 347.7 centners / ha, an increase in yield up to 30.2 and 47.9 centners /ha compared with the control (7-var.). When we study the effectiveness of mineral fertilizer rates, we see that a greater yield is obtained with optimal planting density.

In variants taking into account the applied mineral fertilizers, respectively N0P0K0; N150P100K150 and N200P150K200 kg/ha, an additional yield of 10.5 was obtained; 75.8 and 59.8 c/ha relative to the control variant. From this information, it can be seen that the additional yield obtained by increasing the norms of mineral fertilizers is higher than due to the number of seedlings, that is, the effectiveness of the use of fertilizers has been proven.

In the following variants of the experiment, a similar pattern was observed. When planting encapsulated seeds with 100% biohumus after soaking sugar beet seeds, the number of plantings was significantly higher than with other planting methods. It has also been found that an increase in the number of plantations does not always increase crop yields. For example, in the 10th variant with the number

of seedlings of 85.4 thousand pieces, a root crop yield of up to 207.8 centners per hectare was obtained without the use of mineral fertilizers. Here, in comparison with the control 1st variant planted in a simple way (planting density was 57.1 thousand pieces), an increase in yield was 18.6 centners per hectare. In the 11th variant of the experiment, with the number of plantations of 85.3 thousand pieces with the application of mineral fertilizers N150P100K150 kg/ha, 370.2 centners/ha of root crops were obtained, and the yield increase was 116 centners/ha due to the number of seedlings. In the same planting method and when determining the rate of mineral fertilizer N200P150K200 kg/ha, the yield of root crops obtained is 343.0 centners/ha. It can be seen that the yield of this variant is 26.8 c/ha less than the previous 11th variant of the experiment. When we compare the yield obtained taking into account the norms of mineral fertilizers, we can see that in comparison with the unfertilized 10th variant with the application of mineral fertilizers in the amount of N150P100K150 kg/ha, an increase in yield was obtained by 162.3 c/ha, and at the norm of mineral fertilizers N200P150K200 kg/ha ha, we get an increase in the yield of root crops in the amount of 135.1 q/ha. The reason for the decrease in the yield of sugar beet root crops in this variant is the greater number of seedlings.

Asaresult, they shade each other, prevent the growth and development of root crops, due to the relatively dense presence of seedlings, this led to a decrease in the yield of root crops. The data obtained were analyzed mathematically and found to be convincing.

CONCLUSION

From the data obtained, it can be concluded that under the conditions of gray-meadow soils, planting sugar beet seeds as a re-crop, moistening the seeds up to 80-100%, encapsulating the seeds using a mixture of 75% vermicompost + 25% soil and applying mineral fertilizers N200P150K200 allows you to get the maximum productivity of 370.2 c/ha of root crops.

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