AMERICAN JOURNALS
Open Access, Peer Reviewed Journals

American Journal of Technology and Applied Sciences
ISSN (E): 2832-1766 Volume 31, December - 2024

INFLUENCE OF FOLIAR NUTRITION ON THE FORMATION OF THE CROP STRUCTURE

Kh. Muydinov,
Associate Professor
Andijan Regional Branch of the Institute of SSAR

K. Juraeva,
Assistant, Andijan Institute of Agriculture and Agritechnologies
muydinovxoshimjon@gmail.com

ABSTRACT

The article presents data on the speed and quantity of formation of a free crop structure when using organomineral fertilizers when caring for sunflowers and corn. At the same time, the most optimal results in the formation of sunflower and corn crop elements were achieved using combinations of the preparations Ecogum bio, Ecosil + Ecogum AF + Polybor and Ecosil + Ecogum complex + Ecogum FC + Polybor.

KEYWORDS

Biostimulator, biological product, Ecogum bio, Hydrohumate, Ecosil VE 50 l/ha, Ecogum AF, Ecogum complex, Ecogum FC, Polybor, Immunoact corn, sunflower, nitrate.

Introduction

Leading scientific centers and higher education institutions around the world are conducting research on the use of effective organomineral fertilizers in crop nutrition, primarily to achieve the production of environmentally friendly agricultural products by reducing the annual rates of mineral fertilizers by 20-40 percent, while simultaneously developing productive land use technologies aimed at increasing crop yield and soil fertility, norms, timing and methods of applying organomineral fertilizers and biostimulants for high-yielding varieties, and effective crop rotation systems. Based on this, one of the urgent issues in agriculture is the correct selection of organomineral fertilizers suitable for the soil and climatic conditions of a particular region in the effective use of land, the creation and implementation of scientific foundations for the use of organomineral fertilizers in crop nutrition while reducing the norms of mineral fertilizers in order to achieve the production of ecologically pure agricultural products [1].

The novelty of the conducted scientific research is that for the first time, the effect of organomineral fertilizers such as Ecogum bio, Hydrogumat, Ecosil VE 50 l/ha, Ecogum AF, Ecogum complex, Ecogum FC, Polybor, Immunoact on the productivity of repeatedly planted sunflower and corn crops in the pasture soil conditions of the Andijan region is determined;

The impact of the use of organomineral fertilizers such as Ekogum bio, Hidrogumat, Ekosil VE 50 l/ha, Ekogum AF, Ekogum complex, Ekogum FK, Polibor, Immunoact on soil fertility, mobile amounts of nitrogen, phosphorus and potassium in the soil is determined;
the influence of organomineral fertilizers on the growth, productivity and quality indicators of repeatedly planted sunflower and corn is studied;
Depending on the growth and development of the crops, the formation of their crop structure was also different in the experimental options [2].
In the sunflower crop structure, the weight of grain in 1 basket, the weight of 1000 grains and grain yield are the main indicators. In particular, in studies conducted in 2022, the results of the analysis to determine the weight of grain in 1 basket showed that the highest yield was obtained in variant 4, in which, in addition to rooting, the 1st feeding was supplemented with ecosil, ecogum AF and polybor organomineral preparations, and in the 2nd feeding, ecosil, ecogum complex, ecogum FC and polybor organomineral preparations were used. In it, the weight of grain in 1 basket was on average 76.69 grams, which was almost 21.2 grams more than in the control variant where organomineral preparations were not used. In variants 2 and 3, the weight of grain in 1 basket was 59.92 and 61.34 grams, which was almost 4.43 and 5.85 grams more than in the control variant [3].

Table 1 Effect of organomineral fertilizers on sunflower yield structure quantities

Options	2022 year				2023 year				average			
	Weight of 1 basket with grain, g	Grain weight in 1 basket, g	Weight of 1000 grains, g	Grain yield, (%)	Weight of 1 basket with grain, g	Grain weight in 1 basket, g	Weight of 1000 grains, g	Grain yield, (%)	Weight of 1 basket with grain, g	Grain weight in 1 basket, g	Weight of 1000 grains, g	Grain yield, (%)
1(control)	192.1	55.49	63,68	28.9	193	55.8	64.05	29.8	192.6	55.6	63.9	29.4
2	209.4	59.92	67.91	28.6	211.1	60.2	69	28.2	210.3	60.1	68.5	28.4
3	203.7	61.34	71.01	30.1	204.9	72.4	70.5	29.5	204.3	66.9	70.8	29.8
4	205.9	76.69	76.4	37.2	207.5	79	76	38.8	206.7	77.8	76.2	38.0
5(control)	187	53.89	61.56	32.9	185	53	60.2	30	186.0	53.4	60.9	31.5
6	204.3	58.32	65.79	32.2	205.5	56.6	64.6	32	204.9	57.5	65.2	32.1
7	198.9	59.94	68,89	34.6	196	56.9	67	36	197.5	58.4	67.9	35.3
8	201.1	75.29	74.28	36.9	203	73	73	38	202.1	74.1	73.6	37.5

Also, in option 4, the weight of 1000 grains and the grain yield index were the highest among the options, which were 76.40 grams and 37.23%, respectively (Table 1).
In option 8, where hydrohumate was used before planting in the soil and during the vegetation period, ecosil, ecogum AF and polybor organomineral preparations were used in the 1st feeding, and ecosil, ecogum complex, ecogum FC and polybor organomineral preparations were used in the 2nd feeding, results close to option 4 were obtained. Accordingly, the weight of grains in 1 basket of sunflower, the weight of 1000 grains and the percentage of grain yield were 75.29 g; 14.28 g and 36.9%, it was determined that the weight of grain in one basket is 21.40 g, the weight of 1000 grains is 12.72 g, and the yield of grain is 4% higher than control variant 5. It was observed that the results obtained in 2023

are in accordance with the laws of this year. Table 1 shows the two-year and average indicators of the influence of sunflower on the formation of the crop structure carried out within the framework of the project.

The data obtained in the experiment to determine the structure of the corn crop are presented in Table 3.12 and the corresponding appendix. In the corn yield structure, grain weight in 1 bushel, 1000 grain weight and grain yield are the main indicators.

The grain yield of corn depends on the number of seedlings per hectare, the number of cotyledons per plant, the weight of the grain in 1 cotyledon, and the size of the grain. In terms of the yield structure of corn, hydrohumate and ecohum biopreparations were applied to the soil before sowing, as in the case of sunflower. Against this background, the highest indicators were recorded in variant 4, where ecosil, ecohum AF and polybor organomineral preparations were used in the 1st foliar feeding, and ecosil, ecohum complex, ecohum FC and polybor organomineral preparations were used in the 2nd feeding.

In this variant, the grain weight of 1 soot is 224.76 grams, the weight of 1000 grains is 319.86 grams, and the grain yield is 68.16%, compared to the control variant, it is 49.86 grams, 68.36 grams, and 4.79 grams, respectively. % was high. Before planting, the hydrohumate preparation was applied to the soil and the weight of 1000 grains was 219.06 grams, and the grain yield was 67.89%, compared to the control option, 43 ,16 grams, 62.59 grams and 6.48% higher. In the 1st feeding, ecosil and immunoact organomineral preparations were used, and in the 2nd feeding, ecosil, ecogum complex and immunoact organomineral preparations were used in the 7th option, the difference from the control was 27.62 grams, 56.07 grams, and 5.08%.

It is also worth noting that after applying Ekogum bio and Hydrogumat preparations to the soil before planting, in both backgrounds, Ecosil, Ecogum AF and polybor organomineral preparations were used in the 1st feeding, and Ecosil, Ecogum complex, Ecogum FK and Polybor organomineral preparations were used in the 2nd feeding. 4 and 8 used plant crop elements showed positive results in terms of formation. At the same time, in terms of grain weight per 1 sot, 1000 grain weight and percentage of grain emergence, variant 4, where ecogum bio was applied before sowing, showed an increase of 5.7 grams, 4.1 grams and 0.27% compared to variant 8, where hydrohumate was applied during the same period. It can be seen that the above table shows that in 2023, the data obtained on the quality and quantity of the crop continued to develop according to the same pattern as in the previous year [4].

From the results obtained, we have drawn the following conclusions: firstly, before planting crops, the soil is sprinkled with the Ecogum bio preparation and during the vegetation period, the 1st feeding is the use of ecosil, ecogum AF and polybor organomineral preparations, and the 2nd feeding is the use of ecosil, ecogum complex, ecogum FC and polybor organomineral preparations, and the same feeding is used , but it was found to be more effective than applying hydrohumate to the soil before planting;

Secondly, among the organomineral preparations used for foliar feeding of crops, the most effective was the use of ecosil and immunoact organomineral preparations in the 1st feeding, and the most effective was the use of ecosil, ecohum complex and immunoact organomineral preparations in the 2nd feeding. while it gives good results [5].

REFERENCES

1. Muydinov X.G., Juraeva Q.T., Mirzarahimov A.M.. Organomineral o'g'itlarlarning tuproq agrokimyoviy xossalariga ta'siri. International scientific and technical conference on the topic of the scientific andpractical foundations of the effective use of resource-saving innovative technologies inagriculture" Andijan Institute of Agricultureand Agrotechnologies.
2. Muydinov X.G., Mirzarahimov A., Abdubannonov B., Makkajo'xori yetishtirish samaradorligiga bioo'gitlar va biostimulyatorlarning ta'siri. International scientific and technical conference on the topic of the scientific andpractical foundations of the effective use of resource-saving innovative technologies inagriculture" Andijan Institute of Agricultureand Agrotechnologies.
3. Muydinov X.,Fazliddinov U., Karimov J., Organomineral o'g'itlarning makkajo'xorini rivojlanishi va hosil to'plashidagi samarasi. International scientific and technical conference on the topic of the scientific andpractical foundations of the effective use of resource-saving innovative technologies inagriculture" Andijan Institute of Agricultureand Agrotechnologies.
4. Muydinov X. G., Davranov A.M., Kungaboqar yetishtirishda qo'llaniladigan yuqori samarali bioo'g'it kombinatsiyalarini yaratish. Tuproqshunoslik va agrokimyo jurnali, 4-son.
5. Muydinov Kh. Creation of effective combinations of biofertilizers used in sunflower growing. Журнал Проблемы агрохимии и экологии ИПАИ.