

THE IMPACT OF BIOSTIMULANTS ON SUNFLOWER OILSEED AT VARYING RATES

Dilfuza Qoraboeva Jo'rayevna

Termez State University, Faculty of Natural Sciences, Termez, Uzbekistan.

Abstract. biostimulants, microfertilizers and growth substances contained in the immunostimulant have been found to have a positive effect on the growth, development and formation of seeds in the basket of sunflower of the local Dilbar variety, on the weight of 1000 seeds and on the yield. The use of MERS microfertilizer made it possible to increase the productivity of one plant by 362.9-430.4 grams, the use of Fitovak immunostimulant by 288.1-388.0 grams, and the use of Biodux biostimulant by 107.7-287.7 grams.

Keywords: sunflower, biostimulant, standard, immunostimulant, microfertilizer, norm, yield, growth, development.

Introduction. In our country, special attention is being paid to the consistent development of the chemical industry and the expansion of the production of various chemical products for agriculture. New types of fertilizers are being created by our scientists, produced on the basis of local raw materials, which accelerate the growth of plants, increase their productivity, resistance to various diseases and cold.

Materials and methods. As a repeated crop, field experiments were conducted at the Thin Fiber Cotton Research Institute. The experimental field is an irrigated grassland barren soil with a reddish color barren soil that has undergone severe erosion. Soil total nitrogen is 0.4%, phosphorus is 0.6%, potassium is up to 1.5-2%, mobile phosphorus is 15-20 mg/kg, mobile nitrogen is 3-5 mg/kg, mobile potassium is 150-200 mg. /kg around. The amount of biohumus in the soil of the studied experimental area is 0.5-0.6% in the layers and decreases towards the lower layers. Methods of conducting field experiments (UzPITI 2007y), "Metodika polevogo opyta" (B. Dospekhov, 1985y) were used in the research. Field experiments

were systematically arranged as simple, 4 replicates, 8 variants. The area of the field unit taken into account is 24 m² in each option. The number of counted plants is 20. In the experiment, seeds of the Dilbar variety of sunflower were treated with "UZGUMI" biofertilizer 0.6 l/t, Fitovak 200 ml/t, Bioduks 2.0 ml/t and MERS 0.1% - 3.0 ml/t, then 7-8 leaves in the formation phase, biofertilizer "UZGUMI" was used at the rate of 0.4 l/ha, Fitovak immunostimulator 300 ml/ha, Biodux 2.0 ml/ha, and MERS 0.1% - 0.5 l/ha.

Research results. Several doses of microfertilizers and biostimulants were applied to the Dilbar variety of sunflower, and the effects on field germination of seeds, the transition of sunflower phases, the height of the plant, the number of leaves, the size of baskets, the number and weight of seeds were studied.

One basket develops in oilseed sunflower, in the experiment, the formed complete seeds in one basket were counted in the experimental plants and the following were found. In the control variant, the total number of complete seeds in one basket was 956.6 units. It was determined that UzGUMI produced 298.0 more seeds on average compared to the control. The variant using MERS microfertilizer at 2.0 ml/t yielded an average of 1387.0 seeds from one basket, and it was distinguished by the production of more seeds than all the variants studied in the experiment. The use of biostimulants, especially MERS microfertilizer and Fitovak immunostimulant (1344.6 units), was found to have a positive effect on the increase in the number of seeds in the basket. The amount of seeds in one basket was 430.4 more than the control, and 132.4 more than the UzGUMI standard in the case of MERS microfertilizer 2.0 ml/t. Among the options that used biostimulants, the option that formed the least seeds was observed in the option that used Biodux biostimulant at the rate of 1.0 ml/t (1064.3 units). In this variant, compared to the control, 107.7 seeds were formed and UzGUMI formed 190.3.7 seeds less than the standard.

Table 1. The effect of biostimulants on the productivity of one plant and the weight of 1000 seeds.

	Consumption rate ml,l/t (factor V)	Productivity of one plant, gram	1000 seed weight, grams
Sample	-	94,8	87.9
UZGUMI (benchmark)	0,6l/t	112,9	97.5
Microbiofertilizer MERS	2,0 l/t	144,2	107,5
	3,0 l/t	140,9	95,6
	4,0 l/t	124,9	89,4
Biostimulant Biodux	1,0 ml/t	119,6	106,3
	2,0 ml/t	119,0	104,6
	3,0 ml/t	131,0	93,8
Иммуностимулятор Фитовак	200 ml/t	143,6	99,6
	300 ml/t	126,0	100,5
	400 ml/t	126,0	91,3

It was found that the productivity of one plant was positively affected by the use of biostimulants in different rates, especially when MERS microfertilizer was used from biostimulants, a high yield was achieved. This microfertilizer is applied at the rate of 2.0 ml/ton of seed and 144.2 grams, 3.0 ml/t during the growing season. 140.9 grams and 4.0 ml/t when used. 124.9 grams were obtained when used. This means an additional yield of 49.4, 46.1 and 30.1 grams per plant, respectively, compared to the control. 31.3, 28.0 and 12.0 grams of additional yield was obtained in

comparison with UzGUMI standard. The yield obtained from one plant when using the biostimulant Biodux. In the experiment, it was found that the yield was less than the variants using other biostimulants. 1000 seed weight was found to be heavier in the variant using MERS microfertilizer compared to other biostimulants used in the experiment. In this case, in the variant used in the amount of 2.0 ml/t, compared to the control, UzGUMI was heavier by 10.0 grams compared to the standard. When Fitovak immunostimulant was used, the results were similar to the options where MERS myrobiofertilizer was used and 300 ml/t. in the used option, it was determined that the weight of 1000 seeds was 100.5 grams. Applying Biodux biostimulant at 1.0 ml/ton of seed resulted in 106.3 grams per 1000 seeds, while increasing application rates indicated that the seeds could be relatively light. The lightest weight of 1000 seeds was observed in the control variant (87.9 grams). (Table 1).

Discussion. It was found that the growth substances contained in various biostimulants have a positive effect on the growth, development and yield of the local sunflower variety Dilbar.

It led to an increase in the number of seeds in one basket, and the application of microfertilizer, immunostimulator and biostimulants depending on the type had a positive effect on the increase in the number of seeds in the basket, compared to the control, the number of seeds in one basket increased from 42.4 to 107.7, and these seeds were distinguished by the formation of more seeds and the fact that these seeds were large and whole. stood up Based on this, it was proved that the weight of 1000 seeds is higher than 100.5-107.5 grams.

REFERENCES

1. Варшавская В.Б. Стимулирование прорастания семян сахарной свёклы регуляторами роста и другими физиологически активными веществами / Физиология семян: формирование, прорастание, прикладные аспекты. –

Душанбе, 1990. – С. 311–314.

1. Yuldasheva Z. F., Karabayeva D. J. The effect of different doses of different biostimulants on the yield of oily sunflower //IOP Conference Series: Earth and Environmental Science. – IOP Publishing, 2023. – Т. 1142. – №. 1. – С. 012097.

2. Юлдашева З. К., Карабаева Д. Ж. Такрорий Экилган Мойли Кунгабоқар Ҳосилдорлигига Биостимуляторларни Ҳар Хил Меъёрда Қўллашнинг Таъсири //Journal of Integrity in Ecosystems and Environment. – 2023. – Т. 1. – №. 3. – С. 12-15.

3. Kamalovna Y. Z., Zhuraevna K. D. The effect of using biostimulants at different rates on the stem height of replanted oilseed sunflower //JOURNAL OF ECONOMY, TOURISM AND SERVICE. – 2023. – Т. 2. – №. 11. – С. 23-27.

4. Kamalovna Y. Z., Jo'raevna K. D. The effect of biostimulants at different rates on the yield of replanted oilseed sunflower //Spectrum Journal of Innovation, Reforms and Development. – 2023. – Т. 21. – С. 35-40.

5. Amonova G. R., Rashidov N. E. Useful Properties of Medicinal Chamomile (*Matricaria Recutita*) //European journal of innovation in nonformal education. – 2024. – Т. 4. – №. 4. – С. 130-132.

6. Musurmonovich F. S., Baxriddinova R. U. Oqsil taqchilligini ta'minlashda soya o'simligining o'rni //nazariy va amaliy fanlardagi ustuvor islohotlar va zamonaviy ta'limning innovatsion yo'nalishlari. – 2024. – Т. 1. – №. 4. – С. 254-258.

7. Normuminovna Q. D., Musurmonovich F. S. Bioecological Properties of *Salvia Officinalis* L //Texas Journal of Multidisciplinary Studies. – 2022. – Т. 6. – С. 249-252.

8. Чухланцев А.Ю. Элементы интегрированной системы защиты растений подсолнечника от болезней в Тамбовской области [Эффективность предпосевной обработки семян баковыми смесями протравителей, биопрепаратов и регуляторов роста в борьбе с белой гнилью и фузариозом] //

Масличные культуры. – ВНИИМК. – 2010. – Вып. 2. – С. 90–93.