

THE EFFECT OF BIOSTUMILATORS ON THE GROWTH AND DEVELOPMENT AND PRODUCTIVITY OF SUNFLOWER PLANTS UNDER GRASSY SWAMP SOIL CONDITIONS

*Yakhaykulova Matluba Azizaliyeva, Joraeva Kunduzkhan Turgunboevna
Andijan agriculture and Institute of Agricultural Technologies*

Abstract

The effectiveness of the joint use of preparations Eco gum bio, Eosin, Eco gum complex, Eco gum AF and Polydor in the cultivation of the sunflower hybrid "F-1", planted as the main crop, in the conditions of a meadow-wetland was studied. soil.

Keywords: biological products; sunflower; Eco gum bio; Eosin; Eco gum complex; Eco gum AF; Polydor; option; come back; application standard; fertility.

INTRODUCTION.

Sunflower (*Helianthus annulus L.*) is currently one of the most important oil crops in the world. Sunflower edible oil takes the first place among selected vegetable oils in terms of quality. Therefore, in many countries of the world, it is observed that the level of economic efficiency increases depending on the cultivated area and the amount of harvest. In the last five years, sunflowers are grown in 72 countries on average 25-26 million. grown on an area of more than 1 hectare, on average 40.5-42.0 mln. tons of crops were grown.

Ukraine, Russia, Argentina, Romania and China are the leading countries in the list of countries that grow the most sunflowers. In recent years, the sunflower cultivation area in Uzbekistan has increased to 17.5 thousand hectares, and the average yield is 12-15 t/ha is doing.

SUBJECT VALIDITY

After burning sunflower stems, alkali is extracted from the ash. Ash is also a valuable fertilizer. In the rainy regions of Uzbekistan, sunflower is grown for silage and forage. It is of great agro technical importance for other salt-tolerant plants.

Taking this into account, we studied the effect of the sunflower grown as a main crop on the growth and development of the "Information Consultative Center DUK" under the Andean Institute of Agriculture and Agro-Technology in the conditions of irrigated meadow swamp soils.

The soil of the experimental site where scientific research was carried out belongs to irrigated meadow swamp soils. According to the mineralogical composition, it mainly belongs to medium sands, and with increasing proportion of dust in the lower part, it enters heavy sands. the depth of underground water is not salty, it is about 1.2-2.0 meters. The amount of humus in the soil is 1.5-1.01% (at 0-30-50 cm). The mass density of the upper layer of the soil is 1.3 g/cm³.

RESEARCH METHODS AND EXPERIMENTAL SCHEME

Our research area is meadow swamp soils of Andean region. The following tasks have been completed. 1. To study the soil properties of the research area. 2. To study the effect of bio stimulants on plant growth and development for sunflower grown as the main crop in the research area.

Application of microbiological preparations to the soil

Table 1. EXPERIMENTAL SCHEME

Variant	Herbicide type	Herbicide rate	Application of microbiological preparations to the soil		1st treatment to plants on 4-5 leaves		2nd treatment to plants on 7-8 leaves	
			name	norm	name	norm	name	norm
I	Zellek	1 l/ha	Eco gum bio	3 l/ha	Untreated control		Untreated control	
II					Eosin	50 mg/ra	Eosin	100 mg/ha
					Eco gum AF	1,0 l/ha	Eco gum-complex	2,0 l/ha
							Eco gum FK	1,0 l/ha
III					Eosin	50 mg/ra	Eosin	100 mg/ha
					Immun-oact	2,0 l/ha	Eco gum-complex	1,0 l/ha
							Immu-noact	1,0 l/ha
IV					Eosin	50 mg/ra	Eosin	100 mg/ha
					Eco gum AF	1,0 l/ha	Eco gum-complex	2,0 l/ha
					Polydor	0,5 l/ha	Eco gum FK	1,0 l/ha
							Polydor	1,0 l/ha

RESEARCH RESULTS

Used together according to the results of the experiment (Table 2). the use of biological preparations had a positive effect on the growth of the main stem, that is, the height of the main sunflower stem, which was 32.1 cm higher than the control option. The diameter of the baskets was also 11.8 cm higher than the corresponding control variant.

Table 2. Effect of applied bio stimulants on growth, development and formation of yield elements of sunflower plant

Variant	06.07.2022 year		06.082022 year		06.09.2022 year	
	The height of the plant	Number of leaves	The height of the plant	Number of leaves	The height of the plant	Diameter of basket
I	16,6	6,4	58,8	16,3	120,5	20,9
II	19,4	7,8	76,3	19,8	121,1	20,4
III	18,6	8,3	91,6	21,0	131,6	23,7
IV	20,5	8,2	78,3	18,2	152,6	32,3

Table 3. SUNFLOWER PRODUCTIVITY (29.09.2022)

Variant	Productivity ts/ha			Average yield ts/ha	Additional yield ts/ha
	1- return	2- return	3- return		
I	23,75	22,91	25,00	23,88	-
II	26,66	26,25	25,00	25,97	2,09
III	25,00	25,83	28,75	26,52	2,64
IV	30,83	32,50	32,91	31,97	8,09

According to the results of the experiment, it was found that the productivity increased by 2.09 t/ha in the 2nd option, 2.64 t/ha in the 3rd option and 8.09 t/ha in the 4th option. found that the best effect was achieved when biological drugs were used together.

CONCLUSION

Based on field experiments with sunflower, the following preliminary conclusions can be drawn:

- The use of biological products produced at the "Be universal Product" enterprise in the Republic of Belarus together with mineral fertilizers has a positive effect on the amount of nutrients in the soil. An increase in mobile nutrients in the soil provides opportunities for sunflower growth, development and yield.
- Based on the preliminary results, we believe that the combined use of Eosin, Eco gum FK, Eco gum complex and Polydor drugs in sunflower cultivation will have a good effect.

Literature:

1. P.P. Vavilov and others. Crop production M. Kolos 1986. 547 p.
2. O. Uzokov, G. Kurbanov Seed and seed breeding sciences T. Labor 2000 Pp - 310.
3. B.S. Musaev "Agrokimyo" Tashkent. "Sharq" publishing house 2001. B. - 217-284.
4. R. O. Oripov, N. Kh. Khalilov "Cultivation" Tashkent 2007, pp. 360-368.
5. Organic farming in Germany. Express - information (VINITI), - M. 2008 - pp. 23-3
6. Armor B.A. Methodology of field experience (with fundamentals of statistical processing) M. Agropromizdat 1985 - 350 p.
7. Sattarov D.S. etc. Agrochemistry. Tashkent Khayot 2011 - 613 bets.
8. Oripov R.O., Khalilov N.Kh. "Osimlikhilik" Tashkent 2007. C 360 - 368.
9. Shoira Bekchanova "Sunflower pistachios are a boon rich in magnesium" GUJUM.UZ