Influence of the Immunostimulant Zerox for Pure Photosynthesis Efficiency of Bukhara-10 Cotton

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ABSTRACT

In this article, information about universal and triple contact actional ZEROX immunostimulant at 3 various (1-2-3 l/t and 1-2-3 l/ha+ Surfactant 0.15 l /ha) norms and different (pre-sowing to cotton seed was treated, 2 - 4 true leaves, shading, flowering) periods when it affected to Bukhara 10 cotton on 3 numbers of seedlings is presented. Research has shown, when in pre-sowing of seed 2 l/t and 2 l/ha in vegetation periods of ZEROX immunostimulant in the number of left seedlings 80 - 90,000 plant/ha of Bukhara 10 cotton it was treated, it was determined that the highest pure photosynthesis efficiency was obtained.

Keywords: ZEROX immunostimulant, Bukhara -10, Pure photosynthesis efficiency, three Norms and Different Periods, The number of Seedlings.

1. Introduction

It is known that one of the most important issues is the cultivation of high-quality, early maturing products from agricultural crops and increasing resistance to various adverse environmental conditions. In this direction, immunostimulants play a special role in overcoming such problems.

Immunostimulants regulate growth and development, increase the adaptability of plant resistance to stress, increasing immunity to various diseases in nature [1].

Zerox is one of these immunostimulants and has a three-way effect on plants in comparison with other immunostimulants [2]; [3].

First, it gives plants resistance to bacterial and fungal diseases, increases phytoimmunity and regulates the activity of endogenous phytohormones in plants, ensuring growth and development [3]; [4]; [5].

Influence of the immunostimulant zerox for pure photosynthesis efficiency of bukhara-10 cotton saline soil in the bukhara region in the republic of uzbekistan has been studied for the first time.

The leaf is the photosynthetic organ of the plant, and its large or small surface area causes an increase or decrease in photosynthetic productivity. It also includes transpiration and biosynthesis of several organic compounds, including the synthesis of phytohormones (auxin, gibberellin, abstract acid, cytokine) phytohormones also affect pigment biosynthesis [6]. The role of cytokinin is especially important here. He participates in the formation of the leaf and leaf structure. In this case, the cytokine flows from the root to the leaf through the xylem tubes. Such a system ensures the functional activity of the whole organism and the interdependence of all organs [7].

Abdullaev X.A., Karimov X.X. According to the interpretation, the leaf surface area of a plant is directly related to its type, navigation, quality of agronomic activity, the number of seedlings, the type of stimulants used at different rates and at different times and changes in quantity the productivity of photosynthesis [8]. The dry mass of the plant contains about 95% of organic matter, which is formed as a result of the active process of photosynthesis. A large amount of these formed organic substances is spent on the formation of the reproductive parts of the plant. The yield is closely related to the leaf surface, and it is said that in order to obtain a high-quality yield from agricultural crops, depending on the type of crop, the leaf surface should be 45-60 thousand m^2/ha [9].

Therefore, the achievement of the optimal level of leaves is one of the important tasks when growing cotton, the surface of assimilation formed by leaves in plants plays an important role in the growth, development and accumulation of dry mass [10]. It was found that this drug increases the productivity of crops [11], germination of plants [12], improves growth and development [13] and increases productivity [14]. But how this immunostimulant affects the productivity of pure photosynthesis in cotton is not well understood.

2. Materials and methods

In 2018-2020 studied the effect of different doses and terms of the Zerox immunostimulant (1.0 – 2.0 – 3.0 *l*/t; 1.0 – 2.0 – 3.0 l/ha + Surfactant 0.15 l /ha), and leaving 3 different plant densities (80 -90; 100 - 110; and 120 - 130 thousand bushes /ha), on moderately saline soil and climatic conditions of the Bukhara region in the experimental farm SRISBATCG Bukhara SES, on the surface of leaves, dry weight and net productivity of photosynthesis. Immunostimulant Fitovak was used as a reference-200 ml/t, ml/ha, and in the control variant, drinking water was used, suspended during the growing season with water and working solutions of Zerox in different doses.

All analytical and phenological observations in the field and laboratory conditions were carried out on the basis of the "Methodology for conducting field experiments" [15] and a number of other literature developed at Scientific Research Institute for Seed Breeding and Agricultural Texnology of Cotton Growing Bukhara Scientific Experimental Station (SRISBATCG Bukhara SES). Mathematical processing of the data obtained was carried out according to the method of B. A. Dospekhov [16].

3. Result and discussion

Also, with a plant density of 80-90 thousand bushes/ha, the leaf surface was 11021-7973 cm^2 in options 7 and 13, where Zerox 1- 3 l/t, l/ha was applied (Diagram 1).

Thus, the highest result of the 15 options on a sheet surface was obtained by Zerox at 2 l/t; 2 l/ha + surfactant was observed in variant 10, leaving the number of bushes 80-90 thousand bushes / ha, and (pre-sowing seed treatment) at a rate of 2 l/t (feeding leaves during the growing season) 2 l/ha + surfactant 0.15 *l*/ ha, the use of the optimal dose of the immunostimulant has a positive effect on the of the plant.

When studying the effect of the immunostimulant Zerox in different doses on pure photosynthesis efficiency, leaving 3 different plant densities (80-90; 100-110; and 120-130 thousand bushes /ha) of cotton of the Bukhara-10 variety, the following three-year results were obtained. At the same time, the greatest result from different plant density in the control variant was obtained in variant 1 - 80 - 90 thousand pcs. bushes /ha. So, in all variants, left per hectare for 80-90 thousand pieces' shrubs hectares' accumulation of dry matter was greater than other options.

Also, when using different norms and density of standing of cotton, the most positive result on dry weights was observed in the Zerox variant with a consumption dose of 2 l/t, and 2 l/ha, it was 225,6 g, compared with the application of Zerox at 1 - 3 l/t, 1 – 3 l/ha was, respectively, 44,4-18,4 g more

Table 2

The use of the Zerox immunostimulant at different rates and timing and different plant density of the bushes on the medium-fiber cotton variety Bukhara-10, on the effect of the leaf surface, the accumulation of dry matter and the productivity of photosynthesis, (average 3 years).

т/р	Variants of experiment and applied doses	Density of standing of plants	Dry mass in the phase of emergen-ce in 2-4 infusions sheet surface , in g, (B_1)	Dry mass in the ripenin g phase in (B_2)	Dry mass in the ripenin g phase during 90 days (B_2-B_1)	Leaflet surface, m^2		Pure produc tivity of photos ynthesi s g/m^2
						In the beginnin g of ve getation (L_1)	At the end of vegetat ion (L_2) м	
1	control	80-90	1,0	164,0	163,0	0,00695	0,4713	7,6
2		100-110	1,2	137,0	135,8	0,00436	0,4159	7,2
3		120-130	0,97	117,0	116,0	0,00381	0,3686	6,9
4	Fitovak 200ml/t; l/ha	80-90	1,4	192,0	190,6	0,00605	0,5172	8,1
5		100-110	1,0	156,0	155,0	0,00607	0,4370	7,8
6		120-130	1,3	138,7	137,4	0,00497	0,3980	7,7
7	Zerox 1 l/t l/ha	80-90	1,5	182,7	181,2	0,00559	0,5010	7,9
8		100-110	1,5	153,0	151,5	0,00380	0,4417	7,6
9		120-130	1,5	132,7	131,2	0,00381	0,3935	7,3
10	Zerox 2l/t l/ha	80-90	1,7	227,3	225,6	0,00916	0,5670	8,7
11		100-110	1,5	201,0	199,5	0,00690	0,5323	8,2
12		120-130	1,3	158,7	157,4	0,00603	0,4405	7,8
13	Zerox 3 l/t l/ha	80-90	1,5	208,7	207,2	0,00768	0,5329	8,5
14		100-110	1,5	173,0	171,5	0,00653	0,4623	8,1
15		120-130	1,2	148,7	147,5	0,00606	0,4159	7,8

According to the scheme of the experiment, the number of bushes per hectare was 80-90 thousand pieces, on the optimal version of Zerox, which was used at – 2 l/t, 2 l/ha + surfactant in the phase ripening 62,6 g of dry matter accumulated more in comparison with the 1st control variant of the same number of bushes. As a result, when comparing the control option with the criterion of mathematical accuracy in the studies, it was found that there is a significant difference between them.

Thus, it was found that the optimal rate of application of the Zerox immunostimulant in different doses due to one plant is the maximum level of dry matter when applied in an amount of 80-90 thousand bushes/ha.

The net photosynthetic productivity of a plant depends on the level of the leaf surface and the amount of dry matter. According to the results of a three-year study, the largest amount of leaf surface, with a high dry matter content and net productivity of photosynthesis was found in the variant with the use of the Zerox immunostimulant at the rate of 2 *l/t*, and 2 *l/ha.* Indeed, depending on the number of bushes left per hectare, treated with Zerox in different doses before sowing (1-2-3 *l/t*) and during the growing season (1-2-3 *l/ha* + surfactant 0,15 *l / ha*) periods of Zerox applied at 2 *l/t*, and 2 *l/ha* + surfactant 0,15 ha, leaving 80 -90 thousand pieces of the productivity of photosynthesis in option 10 and left with the same number of bushes per hectare with 1-control and other tested options were higher than compared with 2-3-control options, which

were left for 100-110 and 120-130 thousand bushes /ha.

4. Conclusion

In short, you can summarize the plant density of cotton varieties "Bukhara-10" for 80-90 thousand bushes/ha and with seeds before sowing with Zerox immunostimulants at the rate of 2 l/t, and suspending during the growing season at 2 l/ha + surfactant 0,15 l/ha in the 10th variant, the main reason for the maximum growth and development, the accumulation of biomass, in the development of cotton fiber and an increase in the, pure photosynthesis efficiency is related to the fact that the optimal dose of the Zerox immunostimulant was determined from a scientific point of view.

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