



THE IMPORTANCE OF USING BIOSTIMULATORS IN GROWING HIGH YIELD OF COTTON

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In the article, the importance of using biostimulants in the production of high yield from cotton is given, and Gummi 20 is treated with 0.5 and 1.0 l/t rates before sowing, during budding and flowering periods of cotton. It has been found that when applied at rates of 1.0-1.5, it is possible to obtain an additional yield of up to 4.5 c/ha.

KEY WORDS: *Biostimulant, Alvit, Gummi 20, seed germination, cotton, growth, development, productivity, growth regulators, norms.*-----

INTRODUCTION

Their biological characteristics and agro-technological measures at the level of demand are important factors in obtaining a high-quality and abundant harvest from agricultural crops.

In recent years, the cotton yield has been decreasing due to the lack of water, unfavorable weather conditions, soil salinity, decreased fertility, non-compliance with mineral fertilizers, diseases and pests in different soil and climate conditions of our republic. Early and resistant sprouting of seedlings, ensuring rapid growth and development, production of high quality products has become an urgent problem. At the same time, it is recommended to evaluate the effectiveness of stimulants that effectively affect the rapid growth of plants, ensure the production of abundant and high-quality products, in order to improve soil fertility and the rational use of land, water and other resources. Identifying the norms and terms of sowing, improving the growth and development of cotton, developing technologies for the use of growth regulators to increase the yield and quality of cotton, and implementing resource-saving agro-technologies are considered urgent issues.

Physiologically active growth regulators in plant metabolism, photosynthesis, respiration, enzyme activity, amino acids, nucleic acids and protein biosynthesis, action and metabolism of phytohormones, accumulation and distribution of nutrients, growth, development, has a positive effect on the formation of fruit organs, yield and quality of the crop, as well as ensures abundant and high-quality harvest from agricultural crops.

According to the information of Sh.Abdualimov, Sh.Karimov, F.Abdullaev [2], in different soil and climatic conditions of the Republic of humic stimulators, Relect stimulator is applied to the seed 300-400 ml/t before sowing, 200 ml/ha during the period of true leaves and during the budding period. 400 ml/ha, Geohumat 1.0 l/t to seed, Bactofert 500 kg/ha to soil before planting, 1.6 l/ha during tillage and true leaf budding periods, Fitavak 200 ml/t to seed at budding flowering 400 ml/ha, 1.5 ml/t of Obereg seed, 10 ml/ha at budding, and 10 ml/ha at flowering, when used in normal conditions, germination of seedlings is accelerated by 8.7-12.3%, plant growth is improved, and plant height is increased by 4.7-7.9 cm, 0.8-1.6 fruit branches, 1.0-1.6 bolls, cotton yield 5.0 5.4-6.3 c/ha.

In the experiments of Sh. Abdualimov [2], when cotton seeds were treated with physiologically active substances such as T-86, Roslan, Nitrolin, TJ-85, XS-2, Oxygumat, Vitavaks-200FF under adverse natural climatic conditions, the germination of seedlings emergence, growth, number and surface area of leaves, photosynthetic efficiency and productivity were found to be increased.

B.Eshqovov, A.Turdieva [3] believed that biostimulants are biologically active substances that appear in plant tissues under certain conditions and strengthen the plant's livelihood functions.

Methodology of the research. Experiments were carried out in field conditions in 2022-2023, based on the methodological manuals "Methods for conducting field experiments" (UzPITI, Tashkent 2007), "Brief methodological instructions for state testing of heat-regulating substances" (M.: 1984). For the experiment, before planting the seed were processed with 50; 75 and 100 ml/t Albit and cotton was treated at the rate of 40 ml/ha



during the budding period and before sowing with Gummi 20 at the rate of 0.5 and 1 l/t. 0.5-1.0 l/ha and 1.0-1.5 l/ha were used during flowering.

One of the ways to grow cotton seedlings correctly and strongly under environmental changes, unfavorable weather and stress conditions, improve plant development, and obtain high and quality crops is to use stimulants to stimulate the plant's growth and application during the growing season is among the necessary agromeasures.

RESULTS OF THE EXPERIMENT

In the conducted experiments, the effect of biostimulants used in cotton on the growth, development and harvesting of the plant was studied. Albit and Gummi 20 biostimulants applied to cotton showed their positive effect. It was found that the germination rate was high when the seed was treated with Albit and Gummi 20 biostimulator at different rates. In the experiment, seed germination was 62.4% in the control option, 85.3% in the option treated with Dalbron 6.5 kg/t of seed before planting, and 86.6% when 0.8 l/t of seed treated with Uzgumi stimulator before planting, it was found that 81.7-90.7% in the options treated at the rate of 50, 75 and 100 ml/t before planting the seed with Albit stimulator; and 87.0-92.6% in the options treated at the rate of 0.5 and 1 l/t before planting with Gummi 20 stimulator and 19.3-28.3% higher results were obtained with Albit and 24.6-30.2% when treated with Gummi 20 compared to the control option.

The plant height was 88.2-91.7 cm as of August 1st in the variants treated at the rate of 50, 75 and 100 ml/t before planting the seed with Albit stimulator and used at the rate of 40 ml/ha during the budding period of cotton. 0.5 and 1 l/t before sowing with Gummi 20 stimulator, 0.5-1.0 l/ha during budding and 1.0-1.5 l/ha during flowering it was found that the height of the plant was 87.3-93.6 cm in the variants used in the norms. When Albit is applied to the seed at different rates before planting and at the rate of 40 ml/ha during the cotton budding period, compared to the control option, the length of the cotton is 6.1-9.6 cm, and the seed with Gummi 20 stimulator when applied at the rate of 0.5 and 1 l/t before planting, and at different rates during the budding and flowering periods, compared to the control option, the length of cotton was 5.2-11.5 cm higher.

When the effect of biostimulants applied to cotton during seed treatment and fruit set was studied, Dalbron 6.5 kg/t compared to the control option as of 1st September, the number of fruit branches increased by 0.5 pcs., the number of bolls increased by 0.6 pcs. Compared to the control option, the number of fruit branches is 1.0 pcs., the number of bolls is 0.8 pcs. 50; 75 and 100 ml/t in the norm, and during the budding period of cotton, the variant used in the norm of 40 ml/ha compared to the control variant is 0.7-1.5 and 0.9-2.0 more than the above if there is, 0.5 and 1 l/t before seeding with Gummi 20 stimulator, 0.5-1.0 l/ha during cotton budding and 1.0-1.5 l/ha during flowering, it was found that 1.0-1.7 and 0.7-2.1 pieces were more. According to these indicators, the highest yield is achieved when applied with the Gummi 20 stimulator at the rate of 1.0 l/t per seed and 1.0 l/ha during the budding period of cotton and 1.5 l/ha during the flowering period. The highest indicators were reached and it was found that the number of fruit branches was 1.7 units and the number of bolls was 2.1 units higher than the control option.

Also, biostimulants have their importance in obtaining a high yield from cotton, in the case of the untreated control, the yield of cotton was 25 c/ha, while 6.5 kg/t of Dalbron was used before planting. The yield of cotton in the pre-treated option is 25.3 c/ha, when treated with the 0.8 l/t Uzgumi seed stimulator before planting, and 0.3 l/ha during the cotton budding period and flowering 27.3 c/ha in the variant used at the rate of 0.4 l/ha during the period, before planting the seed with Albit stimulator; 50, 75 and 100 ml/t were processed, and the yield was 27.2, 28.9; 27.8 c/ha in the options used at the rate of 40 ml/ha during the budding period of cotton; 0.5 and 1 l/t before seeding with Gummi 20 stimulator, 0.5-1.0 l/ha during cotton budding and 0.5-1.0 l/ha 27.5, respectively, when treated at rates of 1.0-1.5 l/ha during flowering it was 28.4; 26.7; 29.5 c/ha. According to the experiment, the highest cotton yield was treated with Albit stimulator at the rate of 75 ml/t before planting, and 40 ml/ha during the cotton budding period, with an additional 3.9 c/ha compared to the control option, 4.5 c/ha in the variant used with the Gummi 20 stimulator at the rate of 1 l/t before sowing, 1.0 l/ha during budding and 1.5 l/ha during flowering compared to the control option additional cotton yield was achieved.

CONCLUSION

In short, when biostimulants are applied to cotton, seed germination and plant growth are accelerated, and as a result, a high yield is created. When the seed is treated with Gummi 20 biostimulator at the rate of 1.0 l/t before planting, and when applied at the rate of 1.0 l/ha during the budding period and 1.5 l/ha during the flowering period, seed germination is accelerated. As a result of the favorable growth and development of the plant, the possibility of obtaining an additional yield of up to 4.58 c/ha of cotton was determined.



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