

EFFECT OF BOMS PREPARATION ON SEED OILINESS WHEN COTTON IS GROWN WITHOUT MINERAL FERTILIZERS

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Abstract. *In our country, biostimulants are important in growing high and quality crops from agricultural crops. As a result of uniform germination of seeds and improvement of cotton growth, a high and high-quality cotton harvest is achieved. In particular, Boms biopreparation is environmentally friendly, economically cheap and highly effective.*

In the conditions of typical gray soils of Tashkent region, when various standards of Boms drug are used, as a result of seed germination, growth and development of cotton, as well as acceleration of physiological processes, it is possible to grow a high-quality and environmentally friendly cotton crop without the use of mineral fertilizers and chemical agents.

Keywords: *boms, stimulant, cotton, seed germination, plant height, crop branch, cob, flower, boll, cotton crop.*

INTRODUCTION. The use of mineral fertilizers, fungicides, herbicides, pesticides and other chemical agents in the cultivation of cotton pollutes the soil and the environment, causing environmental problems. As a result, the soil is degraded, the harvest and its quality are decreasing due to climate change and water scarcity. Cultivation of high-quality cotton from cotton, development of new, modern, resource-efficient agrotechnical measures, and organic cotton cultivation are among the urgent problems of today.

In the Republic, it is important to carry out scientific research on the development of systems of product manufacturing, regulation and coordination in accordance with the requirements of international standards Organic and Global G.A.P., improvement of the quality and safety indicators of manufactured products, expansion of the export geography, as well as increasing the opportunity to fully use the potential of our country's organic product manufacturing, expanding the manufacture of environmentally friendly products, increasing the export potential of agricultural sector, especially the selection of seeds, increasing the resistance to diseases and improving the growth and development of cotton in the cultivation of organic cotton, the use of biological preparations and their implementation in the production of high and quality cotton.

Conducting scientific researches on realization of the tasks defined in the Decree of the President of the Republic of Uzbekistan PD- No. 5995 dated May 18, 2020 "Additional measures to ensure compliance of quality and safety indicators of agricultural products with international standards", regulations of the Cabinet of Ministers No. 729 of November 18, 2020 "On the approval of certain normative legal documents on the safety of organic products and raw materials and organic-mineral fertilizers" and No. 33 dated January 22, 2021 "On the form and procedure for installing signs and indicators on organic land areas" and in other regulatory legal documents are among the current issues.

Research methods

Field experiments were conducted in 2019-2021 and implemented in accordance with the manual "Methods for Conducting Field Experiments" (T:2007). The obtained data were analyzed mathematically by the method of B.A. Dospekhov (1985). Also, during the period of use of chemicals, "Brief methodical instructions for state testing of growth regulators" (Moscow, 1984) and "Methodological instructions for testing insecticides, acaricides, biologically active substances and fungicides" (1994) were used.

The experiment was carried out on Andijan-37 variety of cotton in the conditions of typical gray soils of Tashkent region. The experimental plots were 25 m long, 2.4 m wide (60 cm between cotton rows), and had an area of 60 m² and were placed in 3 rows.

In the control variant of the experiment, cotton was cultivated on the basis of generally accepted agrotechnical measures in accordance with conventional agrotechnology and the annual rate of mineral fertilizers was 200 kg per hectare of nitrogen, 140 kg of phosphorus and 100 kg of potassium in pure form, in option 2, the rate of Boms preparation was 600 kg/ha, and mineral fertilizers were applied in the above rates of N-200, P-140, K-100 kg/ha. In the next versions of the experiment, the Boms preparation was used at the rate of 300, 600 and 1000 kg per hectare, and in these versions, mineral fertilizers and chemical agents were not applied at all.

Boms is an organic fertilizer obtained from the humification of lignite and peat compost, in a dry, black, granular form. It contains humic and fulvic acids, various macro and microelements. It transforms phosphate and potassium, the most important elements in the soil, from non-absorbable form to easily absorbable form. Restores soil fertility and increases humus content, improves microflora. Before planting the seed in the plowed field, it is put into the soil and mixed with the ground 8-10 cm. It is recommended to use in the morning and in the evening when it is cool. Boms preparation is prepared from natural raw materials peat, coal and other humus residues, it consists of humic and fulvic acids, macro and micro elements, which are important for plants and soil, and it is considered a natural product that beautifies the environment. It has also been found that it has a positive effect on the activation of physiological processes of plants.

Analysis of obtained results

In the period of preparing the land for planting, Boms preparation was applied to the soil at the rate of 300-600 kg/ha, and the number of sprouts germinated in the field was 126.3-129.7 units, which was 5.3-8.7 units more than the control, and had a positive effect on the germination of seedlings. When the Boms drug is used at the rate of 300-600 kg/ha, the height of the cotton is 9.8-8.9 cm, the number of branches increased by 1.3-1.8, the number of pods increased by 2.1-3.2 and their opening 0,3-5.0% decrease was found.

When Boms preparation is applied at 600 kg/ha, the leaf surface is 210.4 cm², the number of leaves is increased by 4.9 pieces, when 1000 kg/ha is applied, the leaf surface is 213.3 cm², the number of leaves is increased by 1.6 pieces, and the net productivity of photosynthesis is 13.03-13.28 g/m² and increased by 2.32-2.34 g/m² compared to the control variant. Also, when 600-1000 kg/ha of Boms drug was used, the yield of cotton was 36.5-38.0 t/ha, the productivity was 3.4-4.9 t/ha and fiber quality was improved.

In the experiment, the effect of Boms preparation on seed fertility was studied when cotton was grown without mineral fertilizers. (Table 1).

Table 1

Effect of Boms preparation on seed oiliness, Andijon-37 variety, 2019-2021

№	Experience options	The standard of use of booms, kg/ha	Seed oiliness, %					
			2019 year	difference from control	2020 year	difference from control	2021 year	difference from control
1	Control N-200, P-140, K-100 kg/ha	-	15,51	-	15,05	-	15,09	-
2	Boms+ N-200, P-140, K-100 kg/ha	600	14,90	-0,61	15,06	0,01	15,11	0,02
3	Boms	300	15,02	-0,49	14,67	-0,39	15,02	-0,07
4	Boms	600	15,08	-0,43	14,42	-0,63	16,20	1,11
5	Boms	1000	14,71	-0,80	15,57	0,52	15,20	0,11

According to the data, slightly lower indicators were observed with the seed oil content of 14-15%. Especially in the first years of 2019 and 2020, in the Boms applied options where mineral fertilizers were not used, it was found that the seed oiliness was 0.43-0.80% and 0.39-0.63% lower than the control, while in 2021, on the contrary, an increase of the oiliness indicators of these options of 0.11- 1.11% was observed.

In this case, in the control version of the experiment, the seed oiliness was 15.09%, 15.11% when Boms was applied with mineral fertilizers at 600 kg/ha, 15.02% when Boms was applied at 300 kg/ha without mineral fertilizers, and 16.20% at the rate of Boms at 600 kg/ha. , 15.20% at the rate of Boms at 1000 kg/ha. We explain this situation by the fact that as a result of the use of Boms microbiological preparation without mineral fertilizers, soil microflora improves, the number of beneficial microorganisms increases, and as a result, favorable conditions are created for plant growth, development and harvest.

Conclusion

In order to grow ecologically clean raw cotton in the conditions of typical gray soils of Tashkent region, without applying mineral fertilizers and pesticides to cotton, before planting seeds with Boms microbiological preparation, the growth and development of cotton is accelerated, the quality of fiber is improved, the oiliness of the seed was increased by 0.11- 1.11% and ecologically clean cotton production was achieved.

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