



## Effects on Plant Growth and Development When Cotton is Grown Without Mineral Fertilizers

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### Abstract

This article examines the effects of growing cotton without mineral fertilizers on growth and development, as well as increasing yield.

**Keywords:** cotton, stimulus, growth, development, organic, harvest, flower, bud, bud.

### Introduction

For the good growth and development of plants, in addition to nutrients, growing environmentally friendly products using stimulants is an urgent issue. Scientists of the world have expressed their opinions in many studies about the possibility of using various stimulants for cotton to obtain a high-quality harvest, not affecting the environment and the plant, and the possibility of using them in the cultivation of organic products. However, in the conditions of Uzbekistan, scientific research work on the cultivation of organic cotton using cotton stimulants has not been carried out. It is especially important to develop their norms using stimulants that can be used in the production of ecologically clean products.

F.A. Abdullaev [2012 ; 129-130 p.] states that when 0.6-1.0 l/t per seed is treated with Gumimax at the rate of 0.3 l/ha during the flowering and flowering periods, the fiber yield is 0.5-1.5%, and the weight of 1000 seeds is 0,5-8,0 g, breaking strength 0,6-1,3 gk/tex was found to be higher.

Sh. Abdualimov, F. Abdullayev, H. Askarov [2022; 4-6 p.] in their researches, in different climatic conditions of the Republic of humic stimulators, Relect stimulator 300-400 ml/ha before sowing the seeds, 200-400 ml/ha during the spring period, Gummi 20 1.0 l/ha for seeds and 0.5-1.0 l/ha during flowering periods Geohumat 1.0 l/ha for seeds and 1.6 l/ha during leaves and flowering periods It was determined that the germination of seedlings is accelerated by 10.5-11.1-12.3 percent, the growth and development of the plant is improved, physiological processes are improved, and the cotton yield increases by 3.2-6.6 s/h.

The processes taking place in the plant depend on many environmental and management factors, so there are no clear standards for the use of stimulants in cotton. Hormones are involved in complex processes of plant growth and development.

### EXPERIMENTAL METHODS



Analysis of field experiments, phenological observations and calculations in scientific research work are accepted at UzPITI [2017; 1-147 p.]. " The field experiences transfer \_ styles " and Methodology Polevich опытов с хлопчатником . [1985; 246 -p.] methodical to manuals according to \_ Received to information mathematician statistics processing to give B. A. Dospekhov style according to done increased [1985; pp. 248-256] In the experiment Andijan-37 variety of cotton planted in Tashkent region typical gray soils conditions Naturcare , Aminol forte 20, Fosnutren 20 R, Humiforte , Kadostim stimulants 80 m long and 4.8 m wide experience The area is 384 m<sup>2</sup> in 3 floors placed . Earth to plant preparation during seed 8-10 days after sowing before Naturcare 4.5 l/ha + Aminol forte 20 0.5 l/ha, per seed planting before Aminol forte 20 0.5 l/t + Fosnutren 20 R 0.5 l/t, 3-4 true leaves during Aminol forte 20 0.75 l/ha, planing during Naturcare 4.5 l/ha+ Aminol forte 20 0.5 l/ha, flowering during Humiforte 1.25 l/ha, yield give birth during Fosnutren 20 R 0.5 l/ha+ Kadostim 0.5 l/ha in norms watery worker solution get ready , hand suitable spray in the device sprinkled \_

## RESULTS AND DISCUSSION

The seed was sown using a coulters. Experienced \_ Option 3 is fertilizer-free, and mineral fertilizers were not used at all during the growing season. In this case, in the control option, the seed was soaked in plain water. For comparison, Uzgumi was processed at the rate of 0.7 l/t, and 0.3-0.4 l/ha during the flowering period. The effect of Inagrossa stimulator on the growth and development of cotton was monitored in the vegetative and generative organs over the period and the following results were obtained.

In the observation carried out on June 1, in the control option, the height of the cotton plant was 14.0 cm, the number of true leaves was 4.9 pieces, Uzgumi 0.7 l/t, 0.3 - 0.4 l/ha applied in the 2nd option, height 13.2 cm, 4.5 pieces of chin leaf, Naturcare, Aminol forte 20, Fosnutren20 R, Humiforte, Kadostim used in the 3rd option It was 13.1 cm tall, 4.4 leaves per plant, and compared to the control, the plant height was 0.8 cm lower, and the number of leaves was 0.4 less.

In the observation it was carried out on July 1, the height of the plant in the control variant was 43.0 cm, the number of branches was 6.5, the number of pods was 7.1. , 3-0.4 l/ha applied in the 2nd option, if the height is 41.0 cm, the harvest branch is 5.9 pieces, the cob is 6.0 pieces, Naturcare, Aminol forte 20, Fosnutren20 R, Humiforte, In the 3rd variant, where Kadostim was used, the height was 38.3 cm, the number of harvest branches was 5.9 pieces, and the number of the cobs was 5.3 pieces.

In the observation conducted on August 2, the height of the plant in the control was 66.8 cm, the number of branches was 12.5, the number of pods was 1.8, the number of flowers and buds was 1.6, the number of pods was 9.5 0.7 l/t of Uzgumi, 0.3-0.4 l/t during the flowering-flowering periods, in the 2nd option, the height is 69.1 cm, the harvest branch is 13.0 pieces, the stem is 1, 9 pieces, flower and knot 1.9 pieces, if the number of pods is 10.8 pieces, , Naturcare, Aminol forte 20, Fosnutren20 R, Humiforte, Kadostim used in option 3, height 68.6 cm, the number of harvest branches is 13.0 pcs., 5.3 pcs. of pods, 1.7 pcs. of flowers and buds, 10.1 pcs. It showed a difference of 0.5 pcs. The same law is preserved in the third option regarding control.

In the observation carried out on September 1, the height of the plant in the control was 71.5 cm,



the number of branches of the crop was 12.9 pieces, the pod was 9.8 pieces, the yield was 0.7 l/t, during the flowering-flowering periods 0,3-0.4 l/ha used in the 2nd option, the height is 73.9 cm, the harvest branch is 12.9 pieces, the number of pods is 10.8 pieces, Naturcare, Aminol forte 20, Fosnutren 20 R , Humiforte, Kadostim, in the 3rd variant, the height is 72.6 cm, the number of harvest branches is 12.8 pieces, the number of pods is 11.3 pieces, and the second variant is 2.4 cm tall. , showed a difference of 1 pc. The same law is preserved in the third option regarding control. The end of the growing season, September 15, during the period of ripening of pods, 10.9 pieces in control, of which 5.9 pieces were opened, 54.1% , Harvest 0.7 l/t, 0.3-0.4 l during the flowering-flowering periods 11.6 pcs. in the 2nd option, 6.6 pcs., 56.9%, Naturcare, Aminol forte 20, Fosnutren20 R, Humiforte, Kadostim, 12.9 pcs. in the 3rd option, 6.6 pcs. ,6 units and 51.2%, compared to the control, the number of cysts in 2 variants was 0.7 units and in 3 variants, the number of cysts was 2 units higher.

## CONCLUSION

Naturcare, Aminol forte 20, Fosnutren 20 R, Humiforte, Kadostim were used in the 3rd variant, the height of the cotton was 1.1 cm higher than the control, the number of spikelets increased by 0.5, and the number of flower buds increased by 0. ,1 piece, the number of cysts increased by 2 pieces, the degree of opening of the cysts was accelerated by 0.7, 2.9%tuality" T .: 2009. 396 pages.



Table 1

**Effect on growth and development of cotton grown without mineral fertilizers, Andijan-37 variety, Tashkent 2021.**

No	Experience options	Soil , seed and in cotton apply norm	Plant height , cm				Chin leaf , grain	Harvest horn number , pcs				Shona number , pcs		flower , piece	Flower and until the knot number , pcs	I'm sick number , pcs			From this opened			
			1.06	1.07	2.08	1.09		1.06	1.07	2.08	1.09	1.07	2.08			1.07	2.08	2.08	1.09	15.09	15.09	
																		piece	%			
1	Control		14.0	43.0	66.8	71.5	4.9	6.5	12.5	12.9	7.1	1.8	0	1.6	9.5	9.8	10.9	5.9	54.1			
2	An example	0.7 l/t, 0.3-0.4 l/ ha	13.2	41.0	69.1	73.9	4.5	5.9	13.0	12.9	6.0	1.9	0	1.9	10.8	10.8	11.6	6.6	56.9			
3	Naturcare , Aminol forte 20, Fosnutren 20 R, Humiforte , Kadostim		13.1	38.3	68.6	72.6	4.4	5.9	13.0	12.8	5.3	1.9	0	1.7	10.1	11.3	12.9	6.6	51.2			



Based on this, it was recommended to the cotton growing farms and clusters to apply the seed to the seed and during the cotton growing season in the above-mentioned norms, as if the cotton crop was grown without mineral fertilizers.

#### **LIST OF LITERATURE**

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