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IMPACT OF AGRO AND AGROTECHNOLOGICAL FACTORS ON COTTON PRODUCTIVITY

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Abstract:
In the field experiment, three different thicknesses of cotton bushes (80; 100 and 120 thousand per hectare, as well as 7.2; 9.0 and 10.8 plants per 1 pogonometer, respectively), two different irrigations relative to the limited field moisture capacity of the soil (ChDNS) regime (70-70-60 and 75-75-60%, as well as the irrigation regime 2-3-0 and 2-4-0, respectively) and the ratio of the two norms of fertilizer (NPK) (1: 0.7: 0, 5 and 1: 1: 0.5) were studied. The annual norm of fertilizers was: N200 P140 and K100 and N200 R200 and K100 kg.
It was taken into account that the yield of cotton grown under conditions where the irrigation regime was 70-70-60% relative to the soil ChDNS (limited field moisture capacity) was higher in the years of experiments than the yield in the 75-75-60% regime irrigated variants.
In the 70-70-60% irrigation regime, the average yield was 35.7-40.9 ts / ha, depending on the thickness of the bush and the ratio of fertilizers, while in the 75-75-60% irrigation regime the yield was 33.2-36.4 on average. ts / ha. The micronair index of fiber in cotton harvested from experimental variants was 4.3-4.5, and the micronair index of cotton fiber harvested from 70-70-60% of irrigated variants was slightly higher than the 75-75-60% irrigation regime.

Keywords: Fertilization ratio, watering regime, bush thickness, fertility, the quality, limited field moisture capacity, wet capacity, gross, general, mobile, nitrogen, phosphorus, potassium, humus, economic efficiency, profitability.

1. INTRODUCTION

It is known that each variety of crops is planted in a certain area, and only when the appropriate factors are provided, it is possible to take full advantage of its potential, and abundant and high-quality yields have been proven in experiments.

As a result of the initiatives taken by our President, a cluster system has been implemented in the agricultural sector, which not only focuses on deep plowing but also emphasizes on efficient use of water resources, improving the quality of agricultural machinery and tractor parks with advanced agricultural technology, and promoting the use of water-saving and resource-conserving technologies. Therefore, creating new crops suitable for local soil and climate conditions, providing high-quality fertilizers to farmers, implementing appropriate agro-technical measures, and collaborating with scientists are all crucial for ensuring high productivity and quality. In this regard, experts in this field are providing scientific recommendations to clusters and farmers. As productivity is directly proportional to the amount of yield, it is essential to create disease-resistant crops that are suitable for local soil and climate conditions and to develop appropriate agro-technical measures to increase both the quantity and quality of production. Creating suitable agricultural technologies for each region's soil and climate conditions, ensuring proper irrigation and soil quality, and using appropriate fertilizers are essential for achieving high productivity and quality. Therefore, addressing these issues by conducting research and providing scientific recommendations to farmers and clusters is vital. As is known, productivity in the world economy is measured by the amount of crop yield. Therefore, in order to change this indicator, it is necessary to have varieties that are high in productivity and quality of soil suitable for the climatic conditions of the region. As noted, it is necessary to determine the degree of soil fertility based on scientifically based recommendations for the use and duration of mineral and organic fertilizers. To do this, it is essential to analyze the soil composition in modern laboratories. As a result of the work carried out by farmers, each soil type was studied according to the climate conditions. In the agricultural system, more than 30 types of fertilizers are used, including nitrogen, phosphorus, and potassium, as well as organic matter. However, it is possible to increase productivity by 10-12% by developing new varieties. Therefore, in our republic, it is important to create and produce resistant varieties

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that are suitable for harsh and changing conditions, and to develop appropriate agrotechnology for them to increase their quantity and quality. It is important to create and introduce agrotechnologies suitable for the soil and climate conditions of each farming region, that is, to ensure water, nutrient regimes, and bush thickness that are optimal for the cultivated varieties, in order to grow an abundant and high-quality harvest from cotton. That is why it is important to study these problems. The Zarafshan variety of cotton is grown in the main areas of the Samarkand region and in a number of regions of our Republic. In order to widely use the potential of this variety, it is the need of the moment to study the effect of different bush thicknesses, irrigation regimes, and the ratio of mineral fertilizers on cotton yield, fiber, and seed quality. Water shortages are growing from year to year, the lack of mineral fertilizers and non-compliance with the requirements for their application due to plant demand affects the complexity of environmental conditions in our country. With this in mind, one of the most pressing issues today is the efficient use of available water resources, reducing water wastage, ie determining the optimal seedling thickness for crop varieties, developing and implementing water and nutrition regimes.

2. MATERIALS AND METHODS

"Chipoletti" devices were used to calculate the water consumption of the experimental field, and "Thomson" devices were used for waste water. The amount of total nitrogen and phosphorus was determined by the method of K.S. Ginzburg, E.I.shcheglova and S.V. Wilfius, the amount of mobile nitrogen was determined by the method of Granwald-Lyaju, phosphorus by the method of B.P.Machigin, and humus by the method of I.V. Tyurin.

The obtained results were analyzed by the method of B.A. Dospekhov. Fiber and seed quality analyzes Certification of the quality of cotton fiber of Uzbekistan was carried out in the laboratory of the Samarkand network of the "Sifat" Samarkand regional laboratory, the Cotton Research Institute of Uzbekistan [5, 6].

In order to study the influence of cotton on the Зарафшон variety by combining these technologies, research work was carried out for three years on meadow-gray soils of the fields of the Samarkand branch of the Cotton Research Institute of Uzbekistan.

The soil of the experimental field was irrigated and cultivated for a long time, and according to its mechanical composition, the average level of seepage water is 7-8 meters. On the experimental field, wide rows (90 cm wide) were planted with cotton seeds of the Зарафшон variety.

Three different bush densities were used in the experiment (80, 100 and 120 thousand plants/ha), two irrigation regimes (70-70-60 and 75-75-60% compared to LFWC) and two different ratios of fertilizers (1: 0,7:0.5 and 1:1:0.5, i.e. N200 P140 K100 and N200 P200 K100).

Twelve options that were planned to be studied in field experiments were placed in one layer and carried out in four repetitions. The total area of each field (paykal) was 720 m2 (100x7.2), the estimated area was 360 m2. All agrotechnical processes, biometric measurements and phenological observations in the experimental field were carried out on the basis of the recommendations of the Institute of Cotton Growing of Uzbekistan.

Before the experiment, the average content of nitrate nitrogen was 21.4 mg / kg, phosphorus – 32.2 mg / kg, humus – 1.13% in the arable layer (0-30 cm) and 9.2% in the soil layer 30-50 cm respectively. 14.3 mg / kg, humus – 0.80%, and the total amount of nutrients nitrogen – 0.125%, phosphorus – 0.220%, respectively, 0.078-0.155% in a layer of 30-50 cm.

The volumetric mass of the soils of the experimental field is on average 1.28 g. Cm in a layer of 0-70 cm, the moisture capacity of a closed field is 21.3%, and in a layer of 0-100 cm this figure is 1.31 g cm3, 22, it turned out to be 4 percent. Irrigation of cotton was carried out according to soil moisture in the 0-70 cm layer before flowering and ripening and in the 0-100 cm layer during flowering and harvesting. At the same time, soil moisture before irrigation was 14.6-16.3% with a water regime of 70-70-60%, which was 68.3-71.9% compared to the limited field soil moisture capacity. Under the irrigation regime of 75-75-60%, soil moisture varied from 15.7 to 17.4%, which was about 74.1-76.5% of the maximum field moisture capacity of the soil.

3. RESULTS AND DISCUSSION

In the years of the experiment (2018-2020), in the irrigation regime of 70-70-60% compared to LFWC, the average pre-irrigation soil moisture of cotton was from 68.3% to 71.9% compared to LFWC, 75-75-60% planned irrigation and it was determined to change to 74.1-76.5% in the mode.

In the experimental field, the first irrigation of cotton was started earlier than the 70-70-60% regime with respect to LFWC, on June 4 in 2018, June 5 in 2019, and June 7 in 2020.

In the 70-70-60% planned irrigation regime of the experiment, the first watering was carried out on June 10 in 2018, June 9 in 2019, and June 10 in 2020.

In the 75-75-60% irrigation regime of the experiment, the period between irrigations after the first water is 15-

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17 days in 2018, 14-15 days in 2019, and 14-17 days in 2020, more in the 70-70-60% irrigation regime, i.e. in 2018 It was 18-22 days, 19-22 days in 2019, and 20-22 days in 2020.

Seasonal water consumption per hectare at the end of the cotton growing season in the 70-70-60% irrigation regime changed from 5180 m3 to 5280 m3 during the years of the experiment (2018-2020).

In the 75-75-60% irrigation mode of the experiment, it was determined that the seasonal water consumption per hectare was 5360 m3 – 5555 m3.

Analyzing the results of the phenological observations, it was found that the irrigation regime, the thickness of the trunk, as well as the presence of fertilizers in different proportions, have a great influence on the growth and development of plants.

If the irrigation regime is increased from 70-70-60% to 75-75-60% compared to the limited field moisture capacity (LFWC) of the soil, the head stem of cotton is increased up to 7.6 cm. Height was found to be high at the beginning of the growing season (up to 1.2 cm in 1. VI and 3.4 cm in 1. VII) depending on the irrigation regime and the ratio of fertilizers, but, on the contrary, in observations in August, the number of bushes was 80,000 per hectare With an increase of up to 120,000, the reduction of the growth of the main stem of plants to 7.4 cm was taken into account. Because by this period, due to the increase in the leaf level and dry mass of plants, crop elements, the increase in cotton's demand for water and nutrients in the soil and their rapid assimilation, as a result of increasing the number of seedlings to 80-120 thousand, it was observed that the growth of plant height slowed down

In relation to the LFWC of the experiment, the height of the main stem of the cotton treated in the 70-70-60% irrigation regime on August 1 in the ratio of NPK 1:0.7:0.5 and the thickness of 80 thousand seedlings per hectare, i.e. 90.9 in the control option cm and the number of harvested branches was 12.0 units per plant, and in the option where the number of bushes was increased to 100,000, the height of the cotton head stem was 88.5 cm, the number of harvested branches was 11.2 units, and the number of seedlings per hectare was further increased, that is when there are 120,000 bushes, the plant height is 84.0 cm and the number of crop branches is reduced to 10.6 units. Similar changes were observed in the options where cotton was irrigated in the 75-75-60% regime.

On August 1 and September 1, the number of bolls and opened bolls per boll of cotton was taken into account, as the number of bolls changed from 80,000 to 120,000. The increase in the above parameters with increasing the element of phosphorus in the ratio of NPK or reducing the thickness of the trunk from 120 thousand to 80 thousand per hectare can be explained by the nutritional area of one plant and the optimization of the assimilation of nitrogen and potassium by the plant due to the increase of phosphorus and the speed of air exchange.

When cotton was irrigated in a regime of 75-75-60% in relation to LFWC, it was considered that the flowering process was delayed in relation to the 70-70-60% irrigation regime in all studied stem thickness and fertilizer ratios [7, 8, 9].

In the experiment carried out in 2020, it was fed with fertilizers in the ratio of 1:1:0.5, irrigation was carried out in the mode of 70-70-60%, and the number of bushes per hectare was on average 80,000 bushes, as of July 9, 81%, the number of seedlings per 100,000 it was found that 62% in the increased version and finally 46% in the version where the number of bolls increased to 120,000 entered the flowering phase.

It turned out that increasing the phosphorus element in the ratio of fertilizers (1:1:0.5) has an effective effect on the flowering process of cotton.

During the flowering phase of plants, water consumption and the increase in the thickness of the stem and the decrease in the phosphorus element in the ratio of NPK caused a relative delay in the ripening phase [11, 12].

In the 2020 experiment, at the end of the ripening phase on September 11, the average planting thickness of 80,000 plants per hectare was planned and the 70-70-60% irrigation regime was provided. 78% of cotton buds were opened, 72% when 100,000 seedlings were left, and 69% when the number of plants was increased to 120,000, when cotton was irrigated in the 75-75-60% regime, compared to the above number of plants compared to the 70-70-60% irrigation regime, 12; 10; It was found that the ripening phase was delayed by 16%. However, when feeding cotton with fertilizers, increasing the amount of phosphorus element (increased from 1:0.7:0.5 to 1:1:0.5 ratio) was found to cause a significant (up to 8%) acceleration of the ripening phase of cotton, depending on the irrigation regimes.

Similar data were obtained in experiments conducted in other years.

It has been determined in many experiments that the presence of the factors necessary for the life activity of plants at an acceptable level is of decisive importance in the formation of cotton bushes and their structure (habitus). Compared to the LFWC, in the background of 70-70-60% irrigation regime and NPK ratio of 1:0.7:0.5, the thickness of seedlings per hectare is on average 80,000. 4 cm, 15.3 cm in the option with 100,000

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seedlings, and 16.1 cm in the option with 120,000 bush thickness.

16.6 in accordance with the above in the options where watering is carried out in the 75-75-60% mode; 18.2; 18.7 cm, the emergence of the first harvest branch at a high distance was taken into account in the cotton of variants with a stem thickness of 120 thousand pieces.

Therefore, with the increase of seedling thickness in the background of both irrigation regimes and fertilizers, the height of the first sympodial branches and the joint intervals of the 1-10 crop branches were long, but the length of the joint interval of the 11th and subsequent crop branches and the length of the daily sections of the stems were taken into account.

It was observed that the height of the first sympodia branches was relatively short in both irrigation regimes studied in the experiment compared to the cotton grown in the 1:1:0.5 ratio, i.e., with the increase in the amount of phosphorus nutrient in fertilization.

In order to better understand the influence of seedling thicknesses, and irrigation regimes on the structure of cotton branches and their sizes, biometric measurements were carried out on cotton at the end of the growing season, the number of growth and crop branches, their total length, the length and thickness of the joint intervals of the main stem of the plant, i.e. the appearance of the habitus of the cotton bush were studied [10].

Compared to cotton LFWC, 75-75-60% irrigated variants were found to have longer all shoot branches up to 16 cm and all yielding branches up to 18.1 cm depending on stem thickness and fertilizer ratio compared to variants provided with 70-70-60 % irrigation regime.

In the variant where the seedling thickness is 80,000 bushels when cotton is irrigated in the 70-70-60% mode, the total length of the branches, depending on the ratio of nutrients, is 63.4-66.5 cm. It was found that the thickness of the bush was 79.2-81.4 cm.

While the length of all plant branches and all crop branches was observed with the increase of irrigation regime, the total length of plant branches and sympodial branches decreased with the increase of NPK ratio and bush thickness from 80 thousand to 120 thousand per hectare.

In the flowering and harvesting phase of cotton, in the control option, one bush of cotton plants had an average of 51.4 leaves and their surface area was 1392.2 cm2, when the number of seedlings was increased to 100 thousand per hectare, the number of leaves was reduced to 8.2 compared to cotton grown in the thickness of 80 thousand bushes. , and the leaf surface is reduced by 113.8 cm2 and even more difference is taken into account in the options where the number of bushes is increased to 120 thousand per hectare, compared to the thickness of 80 thousand seedlings in the above irrigation and nutrition regime, the number of leaves is 18.9 pieces, and the level of the leaf surface is 452.4 cm2 was observed to decrease up to

It was found that in both studied irrigation regimes and seedling thicknesses, cotton increased leaf number and dry weight in a 1:1:0.5 ratio compared to a 1:0.7:0.5 ratio [9, 10].

It was found that the number of cotton leaves and their dry mass increased in the irrigation regime maintained at 75-75-60% compared to the irrigation regime of 70-70-60% during the flowering and harvesting phase. However, in both studied irrigation regimes, the number of leaves and their dry mass were sharply reduced due to the reduction of the feeding area of one plant with the increase in the thickness of the bush from 80,000 to 120,000 per hectare.

During the ripening phase of cotton, in the control option, the dry mass of one plant is 141.7 g, of which 21.8% consists of stems and branches, 19.1% of leaf weight, and 59.1% of generative organs (cobs, pods, nodes, and flowers). It was noted that

The dry mass of the plant in the 75-75-60% irrigated variants was much higher (up to 37.9 g), as well as their stem and branch weight (up to 6.8%) and leaf weight, compared to the 70-70-60% regime. High in total dry mass, however, a significant decrease in the number of generative organs (up to 7.9%) was taken into account. This situation can be described by the slightly stunted growth of cotton in the 75-75-60% irrigation regime.

When cotton is irrigated in the 70-70-60% mode, the dry weight of plants increased to 1.1 g and the number of generative organs increased to 3.9% with an increase in the phosphorus element in the ratio of fertilizers (1:1:0.5) in all studied stem thicknesses, but, when the irrigation regime increased to 75-75-60%, as a result of increasing the phosphorus element in the proportion of fertilizers, it was observed that vegetative organs increased and generative organs decreased up to 2.1%.

During the growing period of cotton, when irrigation is carried out in the mode of 70-70-60%, the mutual ratio of fertilizers is 1:0.7:0.5, the amount of the total nitrogen element in the stems of the plants in the control variant with a seedling thickness of 80,000 per hectare is 0.81%, the thickness of the bush per hectare is 0.78% in the above water and food regime when it is 100,000, and 0.76% when the number of bushes is increased to 120,000 was taken into account. In the above irrigation regime, when cotton is fed in the ratio of 1:1:0.5, the total amount of nitrogen in the stem is

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0.82 according to the seedling thickness; It was found that it changed to 0.79 and 0.75%.

Therefore, as a result of increasing the thickness of the bush from 80 thousand to 120 thousand, it was observed that the total amount of nitrogen in the stem and other organs of the plant decreases due to the absorption of more nutrients from the soil and the subsequent reduction of these substances in the soil.

It was found that the total nitrogen content in the stems and other organs decreased in the ratio of all studied bush thicknesses and fertilizers in the variants of 75-75-60% irrigation in the experimental field compared to cotton in the 70-70-60% irrigation regime**.**

Taking this into account, as a result of studying the irrigation and nutrition regimes of the Zarafshan variety of cotton, which is widely cultivated in a number of regions of the country, including Samarkand region, it is possible to make full use of the potential of this variety. For this purpose, in order to study different irrigation regimes in relation to the norms of mineral fertilizers, field experiments were conducted in the conditions of meadow-gray soils of PSUEAITI (Scientific Research Institute of Cotton Breeding, Seed Production and Agrotechnology) Samarkand ITS (Scientific Experimental Station).

Field experiments were conducted in 4 repetitions, the variants were placed in two tiers, the total area of each delyanka was 360 sq.m., taking into account 180 sq.m. All agro-technical processes, biometric measurements and phenological observations in the experimental field were carried out on the basis of the recommendations of UzPITI (Uzbek Cotton Research Institute).

The soil of the experimental field is meadow-gray, the average sand content depending on the mechanical composition, the groundwater level is 3-4 meters deep. It is an old cultivated land, a past crop of cotton.

Prior to the experiment, in the driving layer (0-30 cm) mobile nitrogen-15.3 mg-kg, phosphorus-22.4 mg-kg, humus-1.13 percent, in the 30-50 cm layer of soil, respectively 9.2-13 , 4 mg-kg, humus-0.86 percent and the amount of nutrients in the general form was nitrogen-0.125 percent, phosphorus-0.173 percent, in a layer of 30-50 cm, respectively 0.078-0.155 percent.

The volumetric mass of soils in the experimental field is 1.27 g.cubic cm in the 0-70 cm layer, 21.0% in the limited field moisture capacity, and in the 0-100 cm layer it is 1.30 g.cubic cm, 22 , Was found to be 0 percent.

In the experimental field, cotton was irrigated in two irrigation regimes (70-70-60 and 75-75-60 percent) and treated with mineral fertilizers (N 200-200, P 140-200 and K 100-100 kg) in two different proportions.

Irrigation of cotton was carried out on the basis of soil moisture 0-70 cm before flowering and ripening, and 0-100 cm during flowering and harvesting. At the same time, pre-irrigation soil moisture was 14.6-15.8% in the 70-70-60% water regime, which was 69.5-71.8% of the soil's limited field moisture capacity. When the irrigation regime is 75-75-60%, the soil moisture is 15.7 to 16.8%, which is around 74.5-76.4% on the limited field moisture capacity of the soil.

In general, the interval between irrigations of cotton in the irrigation regime of 70-70-60% of the experiment was 18-22 days, and in the irrigation regime of 75-75-60% 15-17 days. At the same time, the maximum amount of water consumed per 1 hectare in each irrigation was observed in the irrigation regime of 7020-70% of 1220 m3, while the seasonal amount of water (net), on the contrary, in the 75-75-60% irrigation regime, the water consumption was slightly higher. was found to be high.

In order to maintain the irrigation regime of 70-70-60% of the experiment, the cotton was irrigated 2-3-0 during the growing season, using a seasonal water norm of 5180 cubic meters per hectare. In order to ensure an irrigation regime of 75-75-60 percent, 5360 cubic meters of water was poured per hectare per season and irrigated in 2-4-0 order.

In the context of growing shortage of irrigation water from year to year, it is necessary to take measures to use it as sparingly as possible. First of all, it is necessary to pay attention to irrigation standards. They should not exceed the amount of insufficient moisture in the diffused layer of the root system of the soil during a certain period of cotton development, because excess water is wasted — cotton can not use it.

This means that in order to increase the yield of cotton, it is necessary to irrigate the cotton regularly, not to over-irrigate it or to over-irrigate it.

On August 1, the number of pods per plant decreases with increasing seedling thickness.

In the 70-70-60 percent of the irrigation regime options, the average was 5.0-6.4 bushes per plant, while in the 75-75-60 percent irrigation regime, the average was 4.6-5.9. up to one piece was taken into account.

Mutual variation of the fertilizer ratio, i.e., a 1: 0.7 to 1: 1 increase in the phosphorus element relative to the nitrogen fertilizer, had a positive effect on the increase in the number of pods, albeit slightly, in both studied irrigation regimes.

Taking into account the opening of the cocoons collected on September 1, it was found that in the 70-70-60% of the experiment, the irrigated variant had an average of 80,000 seedlings per hectare, with more cocoons (1.7-1.8) than the other options. however, a

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decrease in the number of open buds was observed with an increase in the number of seedlings.
It should be noted that cotton was found to have a positive role in opening the cocoons of cotton grown under a 1: 1 ratio compared to feeding nitrogen fertilizer in a 1: 0.7 ratio to phosphorus fertilizer.

It was found that the increase in irrigation regime delayed the ripening of cotton with increasing seedling thickness, but in contrast to the equalization of the amount of phosphorus fertilizer to nitrogen fertilizer (1: 1 ratio) slightly accelerated the ripening phases of cotton.

Table-1
Influence of irrigation regime, seedling thickness and fertilizer ratio on cotton growth, development and yield

Options	Irrigation mode,%	Planned seedling thickness	The ratio of NRK	Productivity.
1	70-70-60	80	1:0,7:0,5	36,4
2		100		38,8
3		120		35,7
4		80	1:1:0,5	38,2
5		100		40,9
6		120		37,3
7	75-75-60	80	1:0,7:0,5	34,7
8		100		35,8
9		120		33,2
10		80	1:1:0,5	35,2
11		100		36,4
12		120		34,6

A (water). $EKF_{0,5}$=1.59 s/ga, B(NPK). $EKF_{0,5}$=1.59 s/ga, C(plant thickness). $EKF_{0,5}$=1.3 s/ga
In the 70-70-60 percent irrigation regime of the experiment, cotton yields averaged 35.7 to 40.9 quintals per hectare, depending on seedling thickness and fertilizer ratio. When 6,000 seeds were left, the fertilizer ratio (NPK) was taken from the variant with a ratio of 1: 1: 0.5, and the quality indicators of the crop were observed in the same variant. In the same irrigation regime (70-70-60%) when the thickness of seedlings is increased to 117.5 thousand pieces per hectare, and in the variant with a ratio of NRK 1: 1: 0.5, the yield is 3.6 quintals and 79.2 thousand seedlings per hectare. a decrease in yield of 2.7 quintals was taken into account.
It was taken into account that the yield increased from 2.5 to 5.1 quintals per hectare, depending on the thickness of seedlings and fertilizer ratios in the 75-75-60% irrigation regime, compared to 70-70-60% irrigation of cotton.
Thus, based on the results of the experiment, it can be concluded that the interaction of agro-technological elements is a key factor in improving productivity and crop quality.

CONCLUSION

In conclusion, it can be said that cotton was maintained in the irrigation regime of 70-70-60%, with an average of 100,000 plants per hectare, and fertilizers were applied in the ratio of 1:1:0.5 (N200 P140 and K100 and N200 R200 and K100 kg/ha). The option was found to be the most effective option in terms of economic and technological quality indicators of cotton fiber. It was found that the microneural index of fiber in the cotton harvested from the experimental variants was 4.3-4.5, and the microneural index of the cotton fiber harvested from the variants irrigated in the 70-70-60% regime was slightly higher than in the 75-75-60% irrigation regime table 3.
When cotton was irrigated in the 75-75-60% mode, compared to the variants irrigated in the 70-70-60% mode, a decrease in the industrial grade of cotton was also noted

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