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Effect of Agrotechnical Measures on Productivity of Medium and Fine Fiber Varieties of Cotton

Kurbanova Gulbakhor Abdusattorovna[1]

[1] *Associate Professor of the Department of Biology and its Teaching Methodology, Termez State Pedagogical Institute*

Abstract: *The article presents valuable scientific information about the effect of agrotechnical measures on the yield of medium and fine fiber varieties of cotton. The article also contains information about Bukhara 102 and Termiz 202 varieties of cotton.*

Keywords: *agrotechnical measures, irrigation, hydrogeological conditions, yield, varieties.*

INTRODUCTION

Land and water resources are limited in our republic, and their rational use is the most urgent problem. Therefore, in order to positively solve the problem based on the soil and climate conditions of each region, the republic should create new varieties resistant to wilt, improve the quality of fiber, implement irrigation-melioration measures, improve soil fertility, and implement all agrotechnical measures related to cotton cultivation. and it is important to introduce crop rotation and increase the level of mechanization of harvesting.

It shows that in the fields of clusters and farms engaged in cotton and other types of agricultural crops, excessive irrigation of cotton and insufficient irrigation can reduce productivity. It is known that over-irrigation is a large amount of water consumption and irrigation carried out ahead of time, in which the number of irrigations increases.

Excessive watering of the field causes the cotton to branch, and insufficient watering causes the shedding of the bolls and nodes and creates conditions for the pest. Therefore, it is necessary to carry out moderate watering at favorable times.

In the soil, reclamation, hydrogeological conditions of our country, scientific researches were conducted on the study of the main, repeated, that is, planting periods of cotton, grain, soybean varieties, i.e. when sowing after grain, planting thickness, standard ratio of fertilizers (NPK) and irrigation methods (S.N. Rajabov, M.P. Mednis (1973), S.A. Gel'diev (1965), V.V. Kochetkov, Sh.N. Nurmatov (2007), O. Ramazonov (2007), R. Tillaev (1994), M. Hamidov (1987), Q. Mirzajonov (1999), A. E. Avliyokulov (1994), B. Halikov (1997), B.S. Mambetnazarov (1990), R. Nazarov, A. Ibragimov, O. Mahmudov, T. Rajabov (2006), A.A. Abdukarimov (2001), B. Komilov (1999), A.A. Yangiboev (2000), G. Kurbonova (2000, 2013), M. Tojiev (2001, 2019).

In recent years, the creation of promising varieties of cotton by the selection scientists of our republic and the main part of the complex of agro-measures system of maintenance in the conditions of the republic's large cultivated areas, cultivation, automorphic, semi-hydromorphic, hydromorphic soils, planting periods, water-nutrient ratio (NRK) and drip irrigation on the basis of the procedures

of World, State GOST, domestic and foreign market requirements, the selection and placement of cotton varieties of types I, II, III, IV, V with different medium and fine fibers in the soil, climate, reclamation, hydrogeological conditions of the regions, the thickness of seedlings before harvest, growth , development (phenological observations) cotton weight in one bag, gross yield, quality indicators of cotton fiber, seed moisture, micro fiber, economic efficiency study according to variants, researched cotton varieties, production experiments to ensure the testing of production experiments in large areas that is to give practical recommendations to the work was reflected in our research.

Bukhara 102 variety. L-4380x7090 t was created at the Bukhara branch of the Cotton Research Institute of Uzbekistan (UzPITI) by means of selection and re-selection for many years from hybrid populations obtained from crossing Bukhara-6 varieties.

Authors: S.I. Maksudov and B.O. Mislim, E. Mavlonov and others.

The "Bukhara-102" variety is among the early varieties and the growing period is 115-124 days. The height of the stem is 100-110 centimeters, it grows in the form of a pyramid, it is moderately hairy, the first harvest king appears from the growth branch 1-2.5-6 joints. The harvest branches branch in 1.5-2 types. The leaves are medium-sized, 3-5-lobed, green in color, and the petals and stamens are yellowish in color.

Termiz 202. The cotton variety was created by selection for many years from hybrid populations obtained from crossing 6608-V x Termiz-11 varieties at the Surkhandarya branch of the Cotton Research Institute of Uzbekistan (Uz PITI).

Authors; Kh.D. Chorieva, A.A. Yangiboev, M. Tojiev and others.

In the experimental field, pre-plowing water was given at the rate of 600-700 m3/ha every year at the end of September and the beginning of October, before plowing phosphorus and potassium fertilizers were applied respectively 70% of the annual rate; A percentage of 50% was given (Table 1).

Table 1.

Types and distribution periods of mineral fertilizers, kg/ha (s.h.)

Fertilizer application periods	First standard. kg/ha			The second standard. kg/ha		
	N	P	K	N	P	K
Annual rate	200	150	100	250	175	125
Before the plough		90	50	-	115	65
Along with planting	30	20	-	30	30	-
When 3-4 true leaves appear	30	-	-	50	-	-
In preparation	70	-	50	80	-	60
At the beginning of flowering	70	40		90	30	-

In order to determine the minimum soil moisture content of the crops grown in the experimental field, the following measures were performed before each watering. In particular, soil moisture was determined before irrigation in all options for each cotton variety. In this case, soil samples were taken from 0-70 cm depth before flowering and during ripening period, and from 0-100 cm depth during flowering and harvest period.

The results of the experiment showed that the soil moisture content of the cotton field before irrigation varied from 59.6 to 71.8% compared to ChDNS, which raised a number of issues that needed to be resolved. In particular, it is recommended to conduct laboratory and field experiments, taking into account the soil type, groundwater level, calculation layer, as well as the biological characteristics of medium and fine fiber cotton varieties.

Based on the conducted field experiments in 2006-2008 (Bukhara 102) and 2009-2011 (Termiz 202), optimal options are 70-75-60 percent humidity, seasonal irrigation standards are 54.5 cubic meters in three years, seedling thickness is 120.4-150.7 thousand bushes per ha, on September 1-5, the height of the main stem is 87.8-92.0 cm, the average yield is 37.9-39.7 tons/ha (Termiz 202).

Water consumption in Termiz 202 variety is 127.1 m3/ha, and in Bukhara 102 variety, soil moisture is optimal at 70-70-60%, seasonal irrigation norms are 5307 m3/ha, pre-harvest seedling thickness is 82.0-84.2 thousand on September 1-5, the main stem height is 90.0-98.2 cm, the average yield is 43.2-46.0 t/ha, the water consumption for 1 centner is 114.1-115.3 m3/ha did.

In the barren, barren-meadow, hydromorphic soils of the southern Termiz group districts of the desert-desert region of the Surkhan-Sherabad oasis, the newly zoned Bukhara 102 and the promising Termiz of the medium-fiber -III-IV-V type of cotton in the hydromorphic soils with a soil level of 1.2 - 2.0 m Based on experiments carried out in the laboratory, field and production, while the growth, development, yield of 202 varieties, technological indicators of cotton fiber, weight of cotton in one boll, according to harvests, moisture content of the seed, water and nutrition standards, irrigation order and seedling thickness were studied. concluded as follows:

The mechanical composition of the irrigated barren, barren-meadow soils of the oasis where the experiments were conducted, light, medium, heavy-loam, sand, the texture of a one-meter layer is different. 1.36 g/cm3, specific gravity - 2.61-2.65 g/cm3, porosity - 48.5-50.4%, water permeability in six hours was 729 m3/ha to 801 m3/ha.

When Bukhara 102 and 65-75-60%, Termiz 202 were irrigated at a suitable pre-irrigation soil moisture level of 70-70-60%, the quality-technological parameters of cotton fiber were high - fiber yield, metric number, fiber break length, microneurium, seed moisture increased.

In the soils of the Sahara-desert region, the optimal seedling thickness of cotton varieties planted in the first half of April is 82.0-84.2 in Bukhara 102 varieties, and 120.4-130.7 thousand bushels/ha in Termiz-202 varieties, mineral fertilizers (NPK) norm: 250; 175; 125 kg/ha (s.h.), soil moisture before irrigation was 70-70-60% compared to ChDNS, average yield was 44.0 ts/ha. (Bukhara 102 variety) and Termiz 202 variety yielded 38.8 t/ha, ChDNS 65-65-60%.

The southern districts of Surkhandarya region are irrigated barren, barren-meadow, zahab level - 1.2-2.0 m. The following practical recommendations were made based on the data of the field production experiments conducted in the soils of Light, medium, heavy, sand, gravel level 1.2-2.0 m. in irrigated barren, barren-meadow soils, zoned Bukhara 102, varieties of medium-fiber cotton 5-6 times in 1-3-1, 1-3-2 systems, 70-70-60% humidity, new promising varieties Termiz-202 6-7 times 1-4-1, 1-3-2, 1-4-2 system, 70-75-60% moisture relative to ChDNS should be provided.

In this case, the norm of cotton's operating water is -700-800 m3/ha before flowering in the humidity system of 70-70-60%, 900-1360 m3/ha during flowering and 700-920 m3/ha during ripening; In the 65-65-60% system, 780-850 m3/ha before flowering, 940-1480 m3/ha during flowering-harvest, and 760-1100 m3/ha during the ripening period, respectively, seasonal irrigation rates are 5307-5415 m3/ha and 4970-5933 m3/ha, it should be watered at least 4-5 times during the flowering-harvest period in extreme years when the weather is very dry and hot.

The start date of Amal water was from May 29 to June 6, and its completion fell on August 21 and September 10.

The duration of each irrigation during the period of operation, according to the phases of cotton development; 20-24 hours before flowering, 29-46 hours during flowering-harvest and 23-40 hours during ripening (opening of pods), watering interval 18-22 (70-75-60%), 18-24 (70-70-60 %) days should be organized.

When cotton is planted 90 cm wide (in the 90x15x1-2, 90x8x1 system), the length of the egate (between the arrow ditches) does not exceed 100-120 m, the water supplied to each egate is -

0.45-0.55 l/sec in the upper 3/4 of the egate ., then it is 0.15-0.20 l/sec. reduced to 0.12-0.14 l/sec. it is necessary to reduce it to 1000 m, and to ensure stable flow of water in an alternating flow.

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